

THERMAL MANAGEMENT SOLUTIONS

NORTH AMERICAN CATALOG

CHILLERS

COOLING UNITS

HEAT EXCHANGERS

HEATERS & THERMOSTATS

FILTERFANS 4.0™



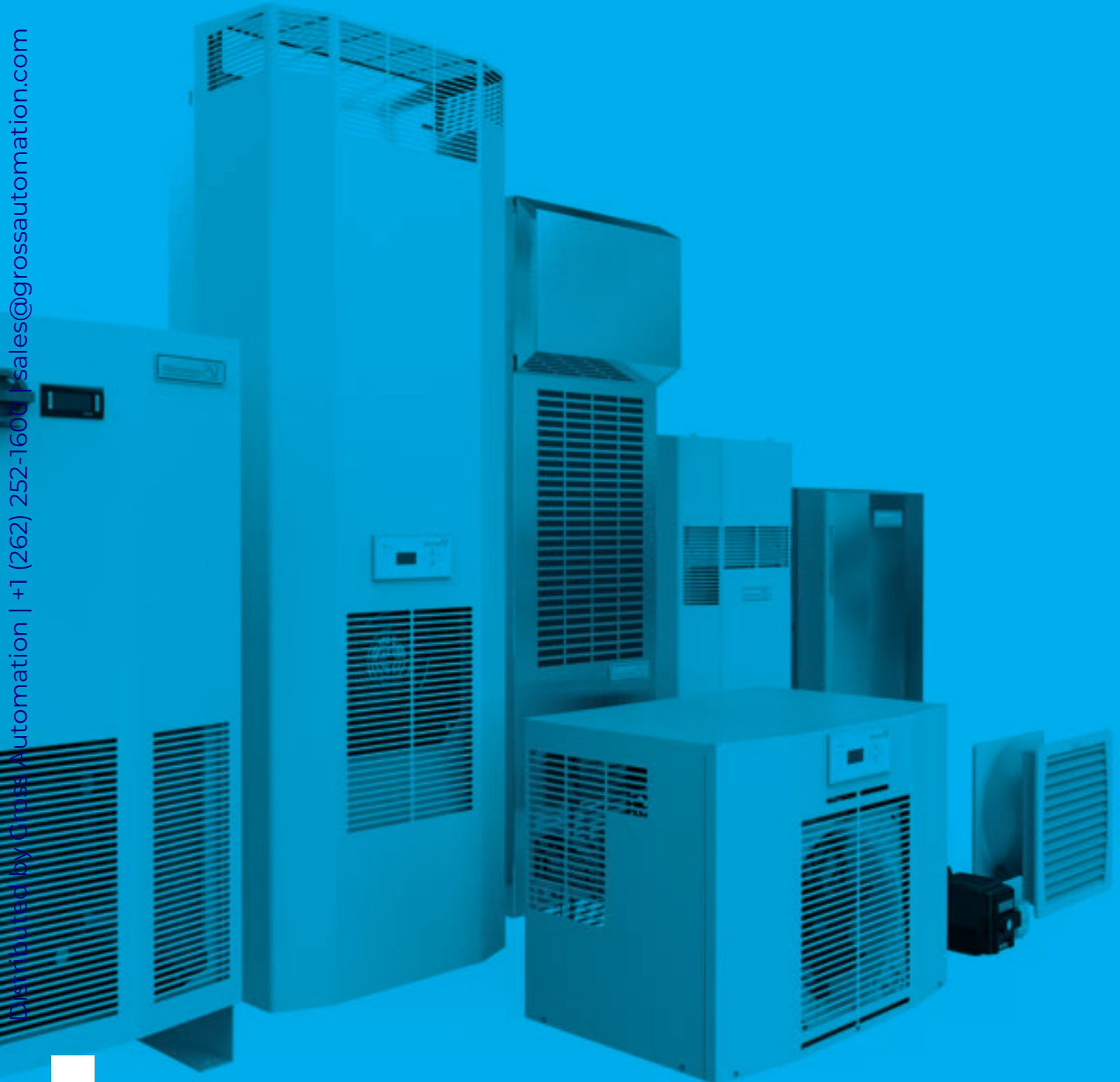
PROTECTING PEOPLE, MACHINES AND THE ENVIRONMENT

Pfannenberg
ELECTRO-TECHNOLOGY FOR INDUSTRY



Distributed by Gross Automation | +1 (262) 252-1600 | sales@grossautomation.com

Critical Thermal Management Solutions for Maximum Uptime & Efficiency



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Why Pfannenberg?

For more than 60 years, we have been helping guarantee production safety for companies throughout the world. Our mission is to satisfy the increasing demands of modern industries by developing progressive ideas for the protection of electronics. This led to the invention of the Filterfan® and other innovations in the field of thermal management for electrical enclosures and process cooling.

A spirit of invention and German engineering genius are not our only strengths. We are also proud of the close relationships we maintain with our clients and their industries.

Pfannenberg's broad experience in delivering individual thermal management solutions positions us to provide unique, innovative benefits to our clients. Through our wide product range and a consultative team approach we develop customized high quality, cost effective, energy efficient solutions for demanding industrial requirements. This is the real value for our customers.

This catalog represents a new format for our products and services. We can provide the proper solution for any type of application. Included are our most widely requested products for North America and an overview of our comprehensive solution-orientated consultative successes, industry group applications and worldwide services.

To learn more about how we can help you, contact us today. As one of the few companies around the world to have developed and produced a complete range of industrial thermal management solutions in-house, we have a wide range of expertise to share with you.

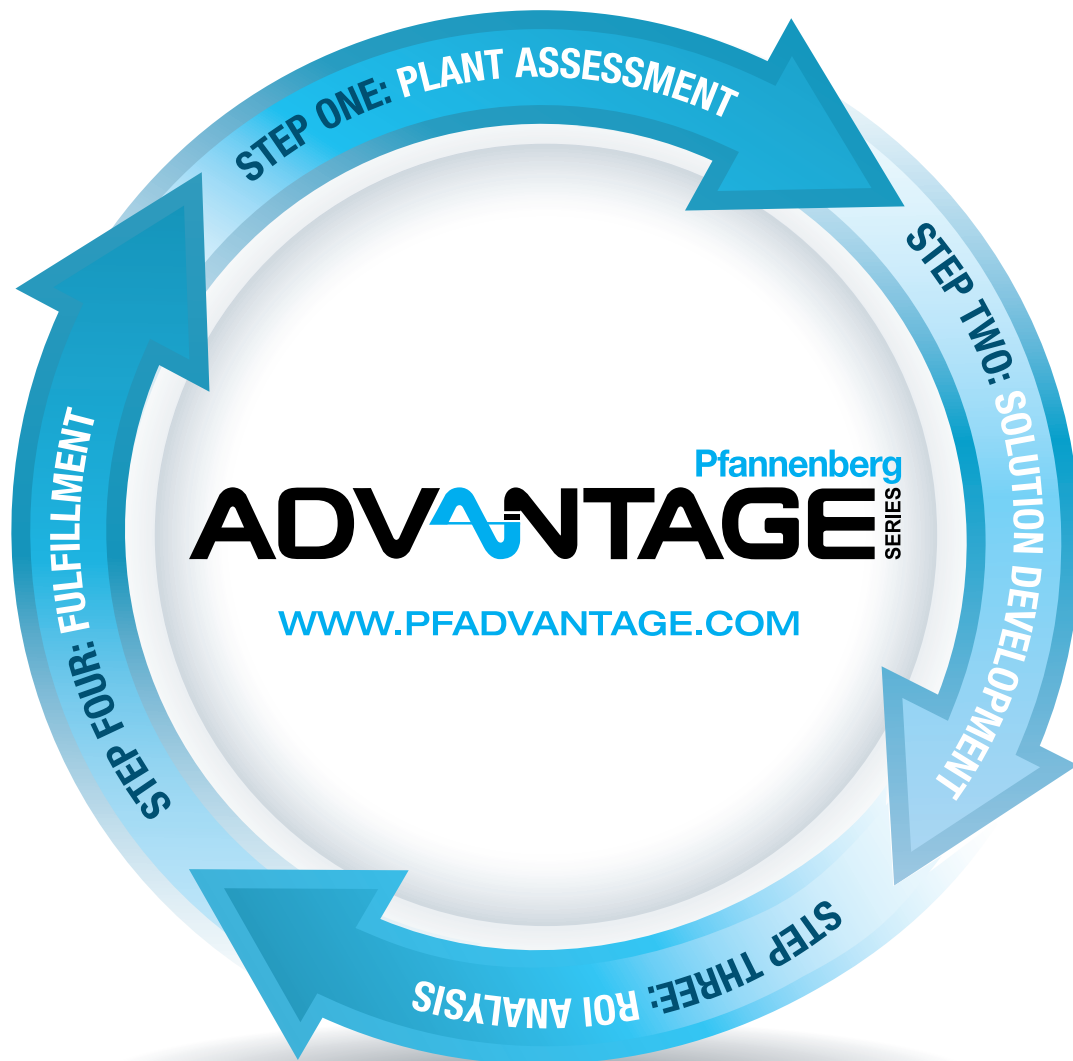
True to our motto "Sharing Competence", we place the knowledge and technical expertise of our engineers and experts at your disposal so that you can find the best possible solutions for your requirements. Today and in the future.

What can we do for you?

Andreas Pfannenberg, CEO



WHAT IS THE PFANNENBERG ADVANTAGE™?



The Pfannenberg Advantage™ follows a results-driven, four-step process that begins and ends with the user.

It's a value proposition which provides solutions to problems encountered by the automation user (plant) that are associated with thermal management products. It allows Pfannenberg to take the experience gained in supplying these products to the machine builder and extend it to the point of use where it can be applied to meet specific challenges, and/or to take advantage of specific opportunities.

Step One: Plant Assessment

Pfannenberg's field engineering team visits the facility to meet with plant personnel and survey the application in order to fully understand specific thermal management challenges

Step Two: Solution Development/ Product Selection

Factory and field personnel work together to develop an application-specific solution using the best products and practices available to meet process requirements.

Step Three: ROI Analysis

Savings associated with energy usage, maintenance, "up-time", etc. are quantified and compared to total project costs to verify solution feasibility.

Step Four: Fulfillment

The complete solution is implemented through the coordinated efforts of an experienced team of factory engineers and local partners, from installation, commissioning & training to preventative maintenance & life cycle service.

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The longevity of critical electronics is ensured with proper enclosure climate control.

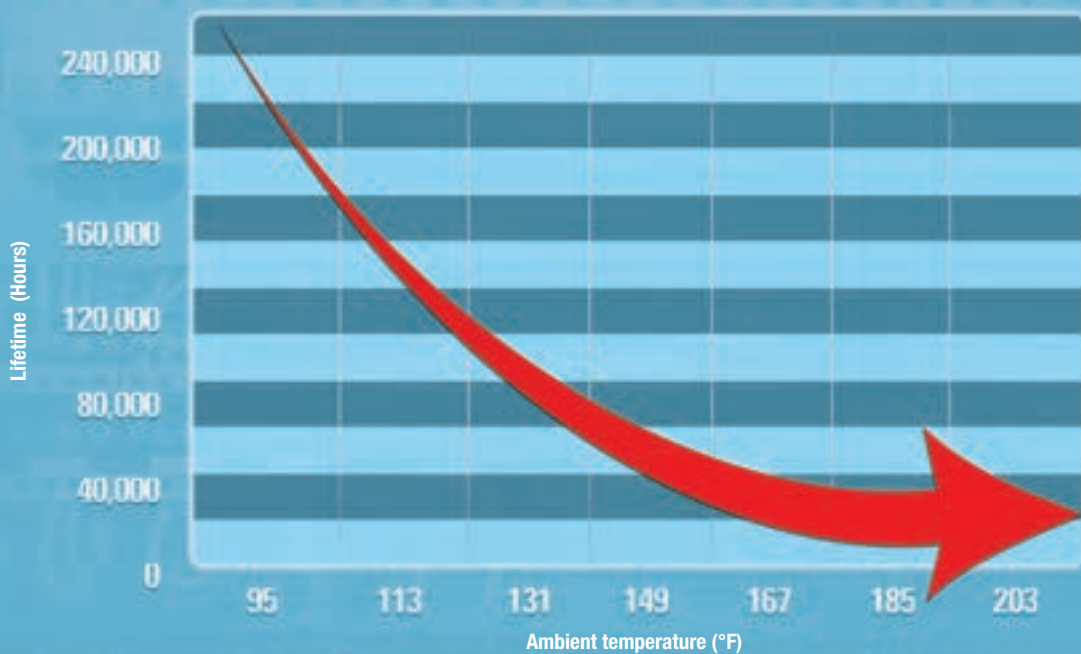
Electrical enclosures house high performance components that are critical for the control of today's production processes. These electrical components generate a significant amount of heat. Imagine the consequences when sensitive circuitry, VFDs and PLCs begin to overheat. If not properly managed this high heat leads to premature aging of electrical components and eventual shutdown of systems, leading to downtime and loss of revenue.

To ensure that sensitive electronics maintain their rated life expectancy and that they function reliably, proper regulation of the enclosure climate is necessary. Electronics are typically most efficient in an environment

where the humidity is low and the temperature is approximately 95°F. As the temperature in an enclosure rises it can have a lasting effect on the electronics. Tests have shown that an increase in temperature of as little as 18°F shortens the life expectancy of electrical components by more than 50%.

Proper thermal management is necessary. This prevents critical temperature fluctuations, avoids overheating and protects against the formation of condensate. It is essentially the backbone of your entire production process, prolonging the life of your electronics and protecting your investment.

The life expectancy of capacitors fall as the ambient temperature increases.



An increase in temperature of 18°F shortens the life time of electrical components by more than 50%.

Outside the “box” thinking is vital to protect the electronics inside.

A properly selected thermal management solution requires not only an understanding of the climate inside the enclosure but also the environment outside of the enclosure.

It is the ambient conditions around the outside of the enclosure that can have a direct effect on the best thermal management solution chosen for your application.

The environment in the electrical enclosure can be affected by weather conditions, solar radiation or other external temperature sources.

For example: An enclosure placed in an environment that is hostile to a cooling unit may require an air to

water heat exchanger. An air to water heat exchanger is not susceptible to the effects of dust and debris that would typically foul a standard air conditioner.

Electronics sensitive to electromagnetic interference, may need a shielded EMC Filterfan®.

An enclosure located outdoors or in a humid environment may require a hygostat or thermostat and a heater to eliminate the formation of condensate, leading to corrosion and short circuiting.

Contact one of our applications engineers or use our sizing software online at pfannenbergusa.com/pss to determine the proper thermal management solution.

Both internal thermal losses and external conditions make thermal management necessary.



Determining the correct thermal management products for your application.



3 Basic Cooling Methods for Enclosure Cooling:

It is important to understand the types of cooling methods available and how the ambient conditions may effect the product chosen. Choosing the wrong method may lead to a solution that is undersized or oversized, or fails due to being specified for incompatible ambient conditions.

1 Natural Convection

The use of louvers or grills with filters (see **PFA Exhaust Filters**) can be effective when the amount of heat being removed from your enclosure is minimal. This method usually provides less of a cooling effect than is necessary with today's components.



2 Forced Convection

If the installation will be in a clean, non-hazardous environment with an acceptable ambient (outside the enclosure) temperature range, a simple forced-air cooling system utilizing outside air is usually adequate. Combined with an air filter, such devices generally meet the heat removal needs of typical electronic equipment and many electrical applications. An example of forced convection air cooling is Filterfans®.

When can Filterfans® be used for Forced Convection Cooling?

- If the ambient temperature is always lower than the temperature required in the electrical enclosure, then Filterfans® represent an economical solution for thermal management of electrical enclosures.

Important for the use of Filterfans®:

- Use Filterfans® to force the surrounding air into the electrical enclosure, so that a slight overpressure builds up inside the enclosure.
- The surrounding air enters the electrical cabinet exclusively via the Filterfans®, which ensures that it is filtered.
- Install the Filterfans® in the lower third of the electrical enclosure and the exhaust filter as close to the top as possible. This assists the natural convection of the air and avoids hot spots within the enclosure.



3 Closed-loop Cooling

In harsh environments involving high temperatures, wash-down requirements, heavy particulate matter or the presence of chemicals capable of damaging components (NEMA 4 or 12 environments), ambient air must be kept out of the enclosure. Closed-loop cooling consists of two separate circulation systems. One system seals out the ambient air, cooling and re-circulating clean, cool air throughout the enclosure. The second system uses ambient air or water to remove and discharge the heat. Example of closed-loop cooling equipment employed with electronics and process controls are cooling units and heat exchangers.

When are cooling units necessary?

- If cooling cannot be accomplished by the outside air.
- If the temperature required inside the electrical cabinet should be equal to or lower than the ambient temperature.
- If the ambient air is strongly contaminated with oil or conductive dust.
- When higher ingress protection is required (Type rating).

Important for the use of cooling units:

- Ensure a good supply of air intake and outtake from the external circuit of the cooling unit, so that thermal energy can be transferred to the surroundings.
- The lowest temperature inside the enclosure may not necessarily be the best. The 95 °F (35 °C) preset by Pfannenber represents a good compromise between service life and the accumulation of condensation.



When should air to air heat exchangers be used?

- If the panel temperature is allowed to be higher than the maximum ambient temperature.
- If vapors, particulates or other foreign materials in the environment that must not be allowed to penetrate the enclosure.
- Important for air/air: Air to air units have performances that are rated on the difference in temperature between the ambient and enclosure. This makes this solution ideal for equipment that can take high temperatures or systems in environments with modern ambients.

When should air to water heat exchangers be used?

- If a chilled water supply is available.
- If the ambient air cannot be used to provide cooling.
- If a very high IP class is required (up to IP 65).
- If a maintenance-free cooling solution is desired.
- If looking for an energy efficient "green" solution.



Using Chillers for efficient equipment and process cooling.

Understanding How a Chiller Works:

A chiller uses a refrigeration cycle to remove the collected heat from a circulating liquid. As the liquid moves through a system of tubes and pipes it absorbs the heat generated by equipment and processes. This generated heat is then transferred by the liquid back to the chiller where it is dissipated. Fluid is cooled and sent back into the system.



When can a chiller be used for thermal management?

- When higher heat loads that exceed traditional enclosure cooling methods need to be managed.
- When precise temperature control is required as part of the manufacturing process.
- Large fluctuations in heat load requirements need to be managed.
- When efficient cooling is desired, liquid is more efficient for cooling vs. air.
- It allows the source of cooling to be located separately from harsh environments.

Important for the use of Chillers:

- Chillers can be installed indoors if the area around the unit is relatively clean and the air is temperate.
- Locating the chiller outside can be a good option and can improve the efficiency of the chiller depending on temperature.
- Extreme temperatures can cause capacity issues or the need for additional options such as a low ambient package.
- A chiller should be sized as close to the required capacity based on the desired chilled liquid supply temperature and the highest expected ambient temperature.

CHILLER APPLICATION EXAMPLES

	Automotive (Manufacturing)		Food & Beverage		Renewable Energy
	Spindle Motor Cooling – High speed spindles need continuous cooling to insure accuracy and motor life. Temperature control of the tooling is required for high precision cutting applications.		Pouch Sealer Cooling – The heat used to melt the pouch material must be dissipated to allow the joined materials to cool and create the seal before moving the pouch. Efficient liquid cooling accommodates this high speed process.		Solar Inverter Cooling – Power inverters are used to convert the DC power created by solar collectors to the AC power that can be transferred to the power grid. Inverters lose up to 3% of their rated capacity in the form of heat and liquid cooling provides reliable thermal management to keep this renewable energy source on line.
	Cutting Oil Cooling – Temperature control of the work piece in machining applications is needed to control dimensions. Chillers provide cooling of the recirculated and filtered cutting oil.		Mold Cooling (Injection, Thermoforming, Blow Molding) – Plastic molding involves melting (heating) the material to allow it to take the shape of the mold and then solidifying (cooling) it before the mold is opened so the shape is maintained. The use of chilled water allows rapid cooling of the molds between heating cycles in this high speed process.		Hydrogen Fuel Cell Compressor Cooling – A byproduct of raising the pressure of hydrogen gas for use in fuel cell “engines” is the heat associated with compression. Recirculated chilled water manages the temperature of both the hydrogen gas and the mechanical compressor.
	Hydraulic Oil Cooling – Hydraulic power systems are often the primary driver in manufacturing processes. The heat added to the oil by the hydraulic pump is removed by the chiller either directly, or through an intermediate heat exchanger.		Baking Process Cooling – Control for baking processes are normally subjected to the high air temperature and flour-laden environment of the oven system. Cooling control enclosures with chilled water keeps process controls operating in these “hostile” areas.		Storage Battery Cooling – Heat is created in the electrochemical process associated with the storage of electrical energy. Maintaining the temperature of the cells by removing this heat increases the overall efficiency of the storage system. Liquid cooling provides a convenient solution regardless of ambient conditions.
	Polyurethane Foam Mixer – Cooling is required to remove the heat created by the mixing of the two chemicals in this process. The chiller also provides cooling for the high pressure pumps needed to convey the foam product.		Glass Inspection Camera Cooling – The inspection of glass bottles takes place in immediate proximity to this extreme high temperature process. Inspection cameras include a liquid cooled housing that protects the sensitive optics.		
	Automation Control Cooling				
	Automation Control Cooling – Variable frequency drives (VFDs) are used to precisely control the motion in highly automated manufacturing and packaging processes. VFDs can lose up to 3% of their rated capacity in the form of heat, so the enclosures that house them must be continuously cooled. As these enclosures are usually located close to the process machinery, cooling with recirculated liquid provided by a Pfannenberg packaged chiller offers an efficient, low maintenance solution regardless of the process environment.				



Combining products to create a complete system solution.

Chillers and PWS Air/Water Heat Exchangers

Use the combination of chillers and air/water heat exchangers to simplify the cooling of your processes, machines and controllers as part of a system based solution. Via a closed pipeline system that uses a highly economical supply of cooled liquid (e.g. water, glycol or oil) as the cooling medium, temperature can be managed within your process and as the cooling medium for the air conditioning of control cabinets. When cooling cabinets with PWS Air/Water Heat Exchangers the thermal management is 100% independent from the ambient temperatures at the installation location.



Cooling Units, Heaters, Thermostats and Hygrostats

Adding an accessory such as a heater or thermostat to an enclosure with a cooling unit can help protect electronics from being exposed to temperatures below the recommended operating range. Another benefit to using a heater and thermostat in an enclosure is to protect from the formation of condensation within the cabinet. In a very humid environment where condensation may form at higher temperatures the hygrostat will control the heater based upon relative humidity. As a system; cooling units, heaters, thermostats and hygrostats will ensure that the environment within the enclosure is ideal for performance and service life of the critical electronics.

Filterfans® and Thermostats

When combining a Pfannenberg thermostat with a Filterfan®, the fan can be controlled to turn on and off based on the temperature inside the cabinet.

The benefits to this combined system are:

- Extended fan life.
- Reduced energy consumption.
- Reduced consumables and maintenance.

Improving performance, lowering costs and providing greater reliability in your manufacturing processes and bottom line.



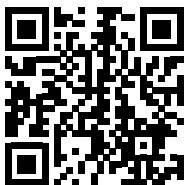
PSS - Pfannenberg Sizing Software

Online step-by-step product selection tool.



Need Help? Use our free software to find the recommended thermal management solution for your application.

Our Thermal Management will guide you through the sizing process, step-by-step to calculate the correct solution for your application. The sizing software is available at: <https://www.pfannenbergusa.com/pss>



Use your smartphone or tablet's QR Code Reader to access the web version of our sizing software. May not be compatible on all devices. You may also download an app version from the App Store or Google Play.

Also available as an app for iOS and Android. Search for Pfannenberg



Proper thermal management is key to saving resources and keeping electronics (and machinery) up and running on a consistent basis. To provide the best thermal management engineering support in the industry, Pfannenberg has developed a powerful web-based sizing application containing an easy-to-use interface. The software can be customized to your applications by allowing you to enter your own components and enclosure styles in the database for easy and fast calculations. The software also accounts for indoor/outdoor applications and assists in calculating heat dissipation within enclosure cabinets.



Selection of the preferred thermal management method, based on various environmental conditions

PRODUCTS			AMBIENT TEMPERATURE				DUST			WATER			SPECIFIC		
			Low <40 °F	Climate Controlled 65-80 °F	Medium 80-100 °F	High 100 + °F	Clean	Moderate	Heavy	Dry	Light (rain)	Washdown	Corrosive	Oily	Sea Air
FILTERFANS®	PF	p.14	○	+	○	-	+	○	-	+	○	○	-	-	-
AIR / AIR HEAT EXCHANGERS	Air/Air ▶ PKS 3000	p. 28	+	+	○	-	+	+	○	+	+	***	○	○	-
COOLING UNITS	Indoor ▶ DTS 3000	p. 40	-	○	+	○	+	○	-	+	-	*	*	-	-
COOLING UNITS	Outdoor ▶ DTS 3000	p. 40	+	○	+	+	+	○	-	○	+	-	○	○	○
COOLING UNITS	Washdown ▶ DTS 3000	p. 40	+	○	+	+	+	○	-	○	○	+	+	+	+
COOLING UNITS	Cool ▶ DTS / DTI 9000 DTT /DTI 6000	p. 62	-	○	+	○	+	○	-	+	-	-	-	○	-
AIR / WATER HEAT EXCHANGERS	Air/Water ▶ PWS 3000	p. 82	+	○	+	+	+	+	+	+	+	+	+	+	+
CHILLERS	CCE	p.110	-	+	+	-	+	○	-	+	○	-	-	-	-
CHILLERS	EB	p.112	○	+	+	○	+	○	-	+	○	-	-	-	-
CHILLERS	EB 250-450	p.114	-	+	+	+	**	+	+	+	○	-	-	○	-
HEATERS	FLH / PFH	p.118	+	+	○	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

- + Best Option - Consult Factory for Best Solution ○ Good N/A Not Applicable
 * W/Rainhood ** Requires Special Options *** Washdown Version





PF/PFA Series Filterfans 4.0™ and Exhaust Filters

Trust in the Original

Otto Pfannenberger's invention of the Filterfan® in 1958 was a milestone in the area of industrial thermal management. As a result of over 50 years of experience and continuous development, Pfannenberger's Filterfans® have evolved into the trusted name for forced convective cooling to circulate and cool the air in your cabinets.

With our flow optimized fins and rotor blades, the Filterfan 4.0™ reaches a particularly high airflow and at the same time provide a NEMA Type 12 system of protection. The flat-profile, uni-colored design complements modern machines and plants.

Pfannenberger's patented click mechanism on our Filterfans 4.0™ have a unique patented 4-corner fastening system enabling safe and quick, tool-free installation allowing the filter medium to be replaced in seconds.

The fluted filter mat's folded structure provides an unrivaled airflow guaranteeing NEMA Type 12 protection, while also extending the filters lifetime 300% longer than conventional filter.

All in all, our Filterfans 4.0™ contain 11 field-proven patented features.



THE TECHNOLOGY OF COOLING

Cooling with Filterfans®

If the installation will be in a clean, non-hazardous environment with an acceptable ambient (outside the enclosure) temperature range, a simple forced-air cooling system utilizing outside air is usually adequate. Combined with an air filter, such devices generally meet the heat removal needs of typical electronic equipment and many electrical applications.

How do I know if a Filterfan® is the right product for my application?

- If the temperature rise inside the enclosure can be higher than the ambient.
- If multiple configurations are needed. Filterfans® can be located in a number of locations within complex enclosure configurations.

Utilizing Filterfans®

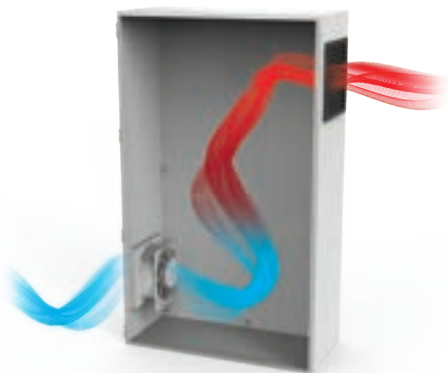
- Always use the Filterfans® to propel the cool ambient air into enclosure.
- Slight positive pressure builds up inside the cabinet so that only air filtered by the Filterfans® flows into the enclosure.
- The air propelled into the cabinet displaces the warm air which exits through the exhaust filter.
- When installing a combination of Filterfans® and exhaust filters, fit the Filterfans® in the lower third of the cabinet and the exhaust filter(s) near the top of the cabinet.

Calculating the required airflow

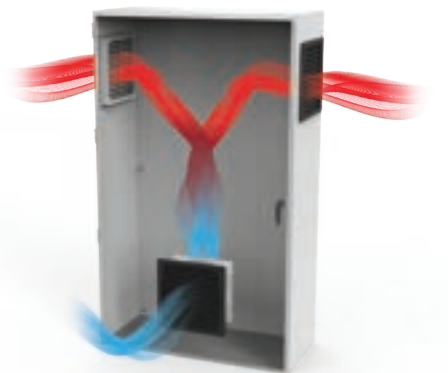
To properly size a Filterfan® it's important to understand how static pressure effects the performance of a fan. See [Understanding CFM](#) on the opposite page.

$$V = \frac{1.82 (P_D)}{\Delta T} \text{ [cfm]}$$

- **V[cfm]:**
Airflow volume of Filterfans®
- **P_D [Watt]:**
Dissipation loss: Thermal power generated inside a cabinet by the dissipation loss of components
- **ΔT[°C]:**
Difference in temperature between the ambient and inside the electronic cabinet



Model No.	CFM (Filterfan® + exhaust filter)
PF11000	11
PF22000	28
PF32000	38
PF42500	74
PF43000	122
PF65000	224
PF66000	295
PF 67000	368



Model No.	CFM (Filterfan® + 2 exhaust filters)
PF11000	12
PF22000	31
PF32000	47
PF42500	79
PF43000	138
PF65000	256
PF66000	335
PF 67000	452



FILTERFANS 4.0™ QUICK SELECTION CHART

Type	Air flow rate ¹	Rated voltage	Cut-out dimensions (HxW) ³ inches (mm)	Approvals					Page
	CFM ² (Type 12)			UL	cUL	EAC	CSA	CE	
PF Series Filterfans 4.0™									
PF 11000	17	115 V / 230 V AC	3.62 x 3.62 (92 x 92)	●	●	●	●	●	19
		24 V DC							
PF 22000	38	115 V / 230 V AC	4.92 x 4.92 (125 x 125)	●	●	●	●	●	19
		24 V DC							
PF 32000	65	115 V / 230 V AC	6.97 x 6.97 (177 x 177)	●	●	●	●	●	20
		24 V DC							
PF 42500	94	115 V / 230 V AC	8.78 x 8.78 (223 x 223)	●	●	●	●	●	21
		24 V DC							
PF 43000	169	115 V / 230 V AC	8.78 x 8.78 (223 x 223)	●	●	●	●	●	21
		24 V DC							
PF 65000	297	115 V / 230 V AC	11.49 x 11.49 (292 x 292)	●	●	●	●	●	22
PF 66000	462	115 V / 230 V AC	11.49 x 11.49 (292 x 292)	●	●	●	●	●	23
		400 V / 460 V 3 Ø							
PF 67000	560	115 V / 230 V AC	11.49 x 11.49 (292 x 292)	●	●	●	●	●	23
		400 V / 460 V 3 Ø							
PF Slim Line Filterfans 4.0™									
PF 33000 SL	152	115 V / 230 V AC	6.97 x 6.97 (177 x 177)	●	●			●	20
PF 65000 SL	325	115 V / 230 V AC	11.49 x 11.49 (292 x 292)	●	●		●	●	22
PF 67000 SL	427	115 V / 230 V AC	11.49 x 11.49 (292 x 292)	●	●		●	●	23
		400 V / 460 V 3 Ø							
PTF Series Top-Mounted Filterfans 4.0™									
PTF 60500	206	115 V / 230 V AC	11.49 x 11.49 (292 x 292)	●	●	●		●	24
PTF 60700	324	115 V / 230 V AC	11.49 x 11.49 (292 x 292)	●	●	●		●	24
		400 V / 460 V 3 Ø							
PTF 61000	441	115 V / 230 V AC	11.49 x 11.49 (292 x 292)	●	●	●		●	24
PTFA Series Top Exhaust Filters									
PTFA 60000	N/A	N/A	11.49 x 11.49 (292 x 292)	●	●	●		●	24
PFA Series Exhaust filters									
PFA 10000	N/A	N/A	3.62 x 3.62 (92 x 92)	●	●	●	●	●	25
PFA 20000			4.92 x 4.92 (125 x 125)	●	●	●	●	●	25
PFA 30000			6.97 x 6.97 (177 x 177)	●	●	●	●	●	25
PFA 40000			8.78 x 8.78 (223 x 223)	●	●	●	●	●	25
PFA 60000			11.49 x 11.49 (292 x 292)	●	●	●	●	●	25

¹ free-blowing

● available ○ pending

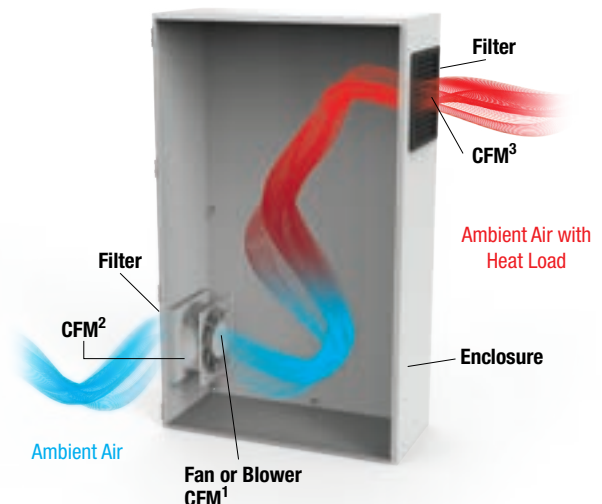
Understanding CFM

Model No.	CFM ¹	CFM ²	CFM ³
PF11000	36	17	11
PF22000	105	38	28
PF32000	105	65	38
PF42500	121	94	74
PF43000	224	155	122
PF65000	489	297	224
PF66000	1024	462	295
PF 67000	1250	560	368

¹ Fan only (unfiltered)

² Filterfan® assembly (uninstalled)

³ Single Filterfan® installed on an enclosure with one filtered exhaust assembly
(Note: Always calculate cooling capacity of Filterfans® with the CFM³ value.)



FILTERFANS 4.0™

Filterfans® / Exhaust Filters

Trust in the Original. Otto Pfannenberg's invention of the Filterfan® in 1958 was a milestone in the area of industrial thermal management. Today Pfannenberg provides a wide range of different solutions for industrial thermal management and is thus one of the few specialists that can provide the appropriate devices for virtually all industrial requirements – worldwide.

NEMA Type 12 Protection

The closed frame design prevents unfiltered air from penetrating the cabinet.

Highest Quality Fans

German manufactured fans that exceed industry standards for quality, performance and service life.

Highest System Airflow Compared to Competitors Filter Fans.

The design of the louvers supports the greatest airflow while further protecting against airborne dust and dirt.

Patented Tool-Less 4 Corner Fastening System

The patented fastening system allows for fast installation (possible to install in seconds) and easy removal reducing MTTR.

Aesthetically Pleasing Design Using Neutral Colors

Available in a standard RAL 7035 Grey and an optional Black color. These units blend in well with the modern styles and colors used for existing machines and systems.

300% Longer Service Time via Patented Fluted Filter Mat

A larger surface area on the filter mat allows for a high filtration level, greater service life and maximum airflow. Saving time and money.



Versatile Options

Options including UV Protected Plastic for use in direct sunlight, EMC shielding to attenuate RF signals and exhausting fans for custom applications.

Globally Compatible

ERP compliant to meet European efficiency directives. Units also comply with additional national and international standards, e.g. TÜV, NEMA, UL, CSA and EAC.

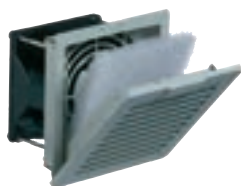
PF SERIES

FILTERFANS 4.0™



PF 11000

- Airflow rate up to 17 CFM
- System of protection: NEMA type 12
- Cut-out dimensions: 92 x 92 mm

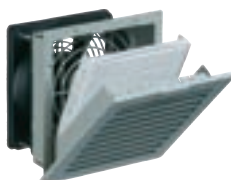


PF 11000 FILTERFANS®

Available voltages ± 10%	115 V, 230 V, 24 VDC	System of protection (UL Listed)	NEMA Type 12 - fleece filter
Design (housing and protection against accidental contact)	made of injection-molded thermoplastic, self-extinguishing, UL 94 VO	Filter mat quality class	G 4
Service life L ₁₀ (+ 40 °C)	52,500 h / 55,000 h / 70,000 h (DC)	Unimpeded airflow	17 CFM
Weight	1.2 lb / .35 (DC)	Airflow rate in combination (PF + PFA 20.000)	11 CFM
Color	RAL 7035 (Lt. Grey) RAL 9011 (Black)	Filtration efficiency	88%
Noise level (EN ISO 3741)	33 dB (A)	Part no. * 115 V, Lt. Grey	11611151055
Type of connection	cable, 2-core, length 310 mm	Part no. * 115 V, Black	11611151050
Bearing type	sleeve bearing / ball bearing (DC)	Part no. * 230 V, Lt. Grey	11611101055
Approvals	UL, cUL, CE, (on request: GOST)	Part no. * 230 V, Black	11611101050
Power consumption	11 W / 2.4 W (DC)	Part no. * 24 VDC, Lt. Grey	11611801055
Width x height x depth	4.29 x 4.29 x 2.44 in	Part no. * 24 VDC, Black	11611801050
		Part no. Spare part filter mats (5 pieces)	18611600029
		Part no. NEMA Type 3R Rainhood *	See page 27 for part no.

PF 22000

- Airflow rate up to 38 CFM
- System of protection: NEMA type 12
- Cut-out dimensions: 125 x 125 mm



PF 22000 FILTERFANS®

Available voltages ± 10%	115 V, 230 V, 24 VDC	System of protection (UL Listed)	NEMA Type 12 - fluted filter
Design (housing and protection against accidental contact)	made of injection-molded thermoplastic, self-extinguishing, UL 94 VO	Filter mat quality class	G 4
Service life L ₁₀ (+ 40 °C)	40,000 h / 37,500 h / 62,500 h (DC)	Unimpeded airflow	18
Weight	1.5 lb / .97 (DC)	Airflow rate in combination (PF + PFA 20.000)	38 CFM
Color	RAL 7035 (Lt. Grey) RAL 9011 (Black)	Filtration efficiency	91%
Noise level (EN ISO 3741)	44 dB (A)	Part no. * 115 V, Lt. Grey	11622154055
Type of connection	terminal strip / cable, 2 core, length 310 mm	Part no. * 115 V, Black	11622154050
Bearing type	sleeve bearing / ball bearing (DC)	Part no. * 230 V, Lt. Grey	11622104055
Approvals	UL, cUL, CE, (on request: GOST)	Part no. * 230 V, Black	11622104050
Power consumption	20 W / 18 W / 5 W (DC)	Part no. * 24 VDC, Lt. Grey	11622804055
Width x height x depth	5.71 x 5.71 x 2.76 in	Part no. * 24 VDC, Black	11622804050
		Part no. Spare part filter mats (5 pieces)	18611600034
		Part no. NEMA Type 3R/4X Rainhoods *	See page 27 for part no.

*Consult factory for additional options



DID YOU KNOW?

Installing a thermostat with a Filterfan® can save energy and extend the service life of the Filterfan®.

Pfannenber's FLZ 530 Thermostats are designed to work directly with our Filterfans®. This provides efficient operation of the Filterfan® based on the temperature setting leading to greater reliability within the production process.

For additional thermostat models please visit the Heaters & Thermostat section found within this catalog.



Energy Savings Solution

FLZ Series Thermostats

Model number	Range	Part Number RAL 7035 (Light Grey)
FLZ 530	0-60 °C	17121000000
	32-140 °F	17121000010

PF SERIES

FILTERFANS 4.0™

PF 32000

- Airflow rate up to 65 CFM
- System of protection: NEMA type 12
- Cut-out dimensions: 177 x 177 mm



PF 32000 FILTERFANS®

Available voltages ± 10%	115 V, 230 V, 24 VDC	System of protection (UL Listed)	NEMA Type 12 - fluted filter
Design (housing and protection against accidental contact)	made of injection-molded thermoplastic, self-extinguishing, UL 94 VO	Filter mat quality class	G 4
Service life L ₁₀ (+ 40 °C)	40,000 h / 37,500 h / 62,500 h (DC)	Unimpeded airflow	65 CFM
Weight	1.9 lb / 1.3 lb (DC)	Airflow rate in combination (PF + PFA 30.000)	38 CFM
Color	RAL 7035 (Lt. Grey) RAL 9011 (Black)	Filtration efficiency	91%
Noise level (EN ISO 3741)	40 dB (A)	Part no. * 115 V, Lt. Grey	11632154055
Type of connection	terminal strip / cable, 2 core, length 310 mm	Part no. * 115 V, Black	11632154050
Bearing type	sleeve bearing / ball bearing (DC)	Part no. * 230 V, Lt. Grey	11632104055
Approvals	UL, cUL, CE, (on request: GOST)	Part no. * 230 V, Black	11632104050
Power consumption	20 W / 18 W / 5 W (DC)	Part no. * 24 VDC, Lt. Grey	11632804055
Width x height x depth	7.95 x 7.95 x 3.66 in	Part no. * 24 VDC, Black	11632804050
		Part no. Spare part filter mats (5 pieces)	18611600035
		Part no. NEMA Type 3R/4/4X Rainhoods *	See page 27 for part no.

PF 33000 SL

- Airflow rate up to 152 CFM
- System of protection: NEMA type 12
- Cut-out dimensions: 177 x 177 mm



PF 33000 SL SLIM LINE FILTERFANS®

Available voltages ± 10%	115 V, 230 V, 24 VDC	System of protection (UL Listed)	NEMA Type 12 - fluted filter
Design (housing and protection against accidental contact)	made of injection-molded thermoplastic, self-extinguishing, UL 94 VO	Filter mat quality class	G 4
Service life L ₁₀ (+ 40 °C)	40,000 h / 80,000 h (DC)	Unimpeded airflow	152 CFM
Weight	3.68 lb	Airflow rate in combination (PF + PFA 30.000)	115 CFM
Color	RAL 7035 (Lt. Grey) RAL 9011 (Black)	Filtration efficiency	91%
Noise level (EN ISO 3741)	42 dB (A)	Part no. * 115 V, Lt. Grey	11633156055
Type of connection	cables (DC) / Terminal (AC)	Part no. * 115 V, Black	11633156050
Bearing type	ball bearing (DC)	Part no. * 230 V, Lt. Grey	11633106055
Approvals	UL, CE, CSA	Part no. * 230 V, Black	11633106050
Power consumption	40 W / 39 W / 12 W (DC)	Part no. * 24 VDC, Lt. Grey	11633806055
Width x height x depth	7.95 x 7.95 x 3.70 in	Part no. * 24 VDC, Black	11633806050
		Part no. Spare part filter mats (5 pieces)	18611600035
		Part no. NEMA Type 3R/4/4X Rainhoods *	See page 27 for part no.

*Consult factory for additional options

DID YOU KNOW?

That if you need to install a Filterfan® in an environment that requires additional protection from the weather or a direct water spray, Pfannenberger offers protective hoods. These NEMA 3R/4 Rain Hoods offer protection from falling water, snow/ice and washdown spray with minimal airflow reduction. The hoods are available in light grey or dark grey to match your enclosures and a 4X stainless steel option. **Note: This technique will not prevent hazardous gases or humidity from entering the cabinet.**

Turn to page 27 for an overview of our new and improved rainhoods.

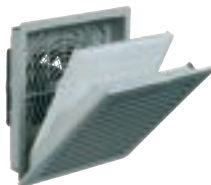


PF SERIES

FILTERFANS 4.0™

PF 42500

- Airflow rate up to 94 CFM
- System of protection: NEMA type 12
- Cut-out dimensions: 223 x 223 mm



PF 42500 FILTERFANS®

Available voltages ± 10%	115 V, 230 V, 24 VDC	System of protection (UL Listed)	NEMA Type 12 - fluted filter
Design (housing and protection against accidental contact)	made of injection-molded thermoplastic, self-extinguishing, UL 94 VO	Filter mat quality class	G 4
Service life L ₁₀ (+ 40 °C)	42,500 h / 40,000 h / 70,000 h (DC)	Unimpeded airflow	94 CFM
Weight	3 lb / 2 lb (DC)	Airflow rate in combination (PF + PFA 40.000)	74 CFM
Color	RAL 7035 (Lt. Grey) RAL 9011 (Black)	Filtration efficiency	91%
Noise level (EN ISO 3741)	43 dB (A)	Part no. * 115 V, Lt. Grey	11642154055
Type of connection	spring-type terminal	Part no. * 115 V, Black	11642154050
Bearing type	ball bearing	Part no. * 230 V, Lt. Grey	11642104055
Approvals	UL, cUL, CE, (on request: GOST)	Part no. * 230 V, Black	11642104050
Power consumption	17 W / 4.7 W (DC)	Part no. * 24 VDC, Lt. Grey	11642804055
Width x height x depth	9.92 x 9.92 x 4.05 in	Part no. * 24 VDC, Black	11642804050
		Part no. Spare part filter mats (5 pieces)	18611600036
		Part no. NEMA Type 3R/4/4X Rainhoods *	See page 27 for part no.

PF 43000

- Airflow rate up to 155 CFM
- System of protection: NEMA type 12
- Cut-out dimensions: 223 x 223 mm



PF 43000 FILTERFANS®

Available voltages ± 10%	115 V, 230 V, 24 VDC	System of protection (UL Listed)	NEMA Type 12 - fluted filter
Design (housing and protection against accidental contact)	made of injection-molded thermoplastic, self-extinguishing, UL 94 VO	Filter mat quality class	G 4
Service life L ₁₀ (+ 40 °C)	40,000 h / 80,000 h (DC)	Unimpeded airflow	155 CFM
Weight	3.68 lb / 3.33 lb (DC)	Airflow rate in combination (PF + PFA 40.000)	122 CFM
Color	RAL 7035 (Lt. Grey) RAL 9011 (Black)	Filtration efficiency	91%
Noise level (EN ISO 3741)	46 dB (A) / 42 dB (A) (DC)	Part no. * 115 V, Lt. Grey	11643154055
Type of connection	spring-type terminal	Part no. * 115 V, Black	11643154050
Bearing type	ball bearing	Part no. * 230 V, Lt. Grey	11643104055
Approvals	UL, cUL, CE, (on request: GOST)	Part no. * 230 V, Black	11643104050
Power consumption	40 W / 39 W / 12 W (DC)	Part no. * 24 VDC, Lt. Grey	11643804055
Width x height x depth	9.92 x 9.92 x 4.69 in	Part no. * 24 VDC, Black	11643804050
		Part no. Spare part filter mats (5 pieces)	18611600036
		Part no. NEMA Type 3R/4/4X Rainhoods *	See page 27 for part no.

*Consult factory for additional options

DID YOU KNOW?

Untreated plastics exposed to continuous sunlight will experience UV degradation; becoming damaged, cracked and brittle. Pfannenber's specially treated UV-Resistant Plastic Filterfans® and UV-Resistant Plastic Exhaust Filters are the best option for use in outdoor applications exposed to the sun.

Protect your investment, reduce maintenance costs and extend the life of the product.

Available in PF 22000 - PF 67000 series models. Just add "UV" to the model number when ordering.

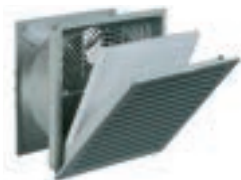


PF SERIES

FILTERFANS 4.0™

PF 65000

- Airflow rate up to 297 CFM
- System of protection: NEMA type 12
- Cut-out dimensions: 292 x 292 mm



PF 65000 FILTERFANS®

Available voltages ± 10%	115 V, 230 V	System of protection (UL Listed)	NEMA Type 12 - fluted filter
Design (housing and protection against accidental contact)	made of injection-molded thermoplastic, self-extinguishing, UL 94 VO	Filter mat quality class	G 4
Service life L ₁₀ (+ 40 °C)	40,000 h	Unimpeded airflow	297 CFM
Weight	7 lb	Airflow rate in combination (PF + PFA 60.000)	224 CFM
Color	RAL 7035 (Lt. Grey) RAL 9011 (Black)	Filtration efficiency	91%
Noise level (EN ISO 3741)	52 dB (A)	Part no. * 115 V, Lt. Grey	11665154055
Type of connection	spring-type terminal	Part no. * 115 V, Black	11665154050
Bearing type	ball bearing	Part no. * 230 V, Lt. Grey	11665104055
Approvals	UL, cUL, CE, (on request: GOST)	Part no. * 230 V, Black	11665104050
Power consumption	90 W / 80 W	Part no. Spare part filter mats (5 pieces)	18611600037
Width x height x depth	12.6 x 12.6 x 6.18 in	Part no. NEMA Type 3R Rainhood *	See page 27 for part no.

PF 65000 SL

- Airflow rate up to 325 CFM
- System of protection: NEMA type 12
- Cut-out dimensions: 292 x 292 mm



PF 65000 SL SLIM LINE FILTERFANS®

Available voltages ± 10%	115 V, 230 V	System of protection (UL Listed)	NEMA type 12 - fluted filter
Design (housing and protection against accidental contact)	made of injection-molded thermoplastic, self-extinguishing, UL 94 VO	Filter mat quality class	G 4
Service life L ₁₀ (+ 40 °C)	40,000 h	Unimpeded airflow	325 CFM
Weight	7 lb	Airflow rate in combination (PF + PFA 60.000)	249 CFM
Color	RAL 7035 (Lt. Grey) RAL 9011 (Black)	Filtration efficiency	91%
Noise level (EN ISO 3741)	52 dB (A)	Part no. * 115 V, Lt. Grey	11675154055
Type of connection	spring-type terminal	Part no. * 115 V, Black	11675154050
Bearing type	ball bearing	Part no. * 230 V, Lt. Grey	11675104055
Approvals	UL, cUL, CE, (on request: GOST)	Part no. * 230 V, Black	11675104050
Power consumption	80 W	Part no. Spare part filter mats (5 pieces)	18611600037
Width x height x depth	12.6 x 12.6 x 5.16 in	Part no. NEMA Type 3R/4/4X Rainhoods *	See page 27 for part no.

*Consult factory for additional options

DID YOU KNOW?

Installing a standard intake Filterfan® lower than the exhaust filter is the most efficient method for removing heat from an enclosure. There are times when the placement of internal electronics prevents this type of installation. You can flip the fan in the field or you can order reverse flow Filterfans® that exhausts air from the upper portion of the enclosure. This process creates a partial vacuum allowing air to be drawn in through a PFA Exhaust Filter maintaining the same system airflow. Reverse Filterfans® can also be used in series with intake Filterfans® to increase airflow through the system.

Reverse flow Filterfans® are available for all models. Just add "A" to the model number when ordering. Consult factory for 11 digit part number.

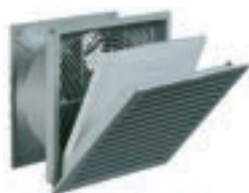


PF SERIES

FILTERFANS 4.0™

PF 66000

- Airflow rate up to 462 CFM
- System of protection: NEMA type 12
- Cut-out dimensions: 292 x 292 mm

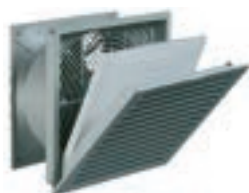


PF 66000 FILTERFANS®

Available voltages ± 10%	115 V, 230 V, 400 / 460 V	System of protection (UL Listed)	NEMA type 12 - fluted filter
Design (housing and protection against accidental contact)	made of injection-molded thermoplastic, self-extinguishing, UL 94 VO	Filter mat quality class	G 4
Service life L ₁₀ (+ 40 °C)	40,000 h	Unimpeded airflow	462 CFM
Weight	7 lb	Airflow rate in combination (PF + PFA 60.000)	295 CFM
Color	RAL 7035 (Lt. Grey) RAL 9011 (Black)	Filtration efficiency	91%
Noise level (EN ISO 3741)	64 dB (A)	Part no. * 115 V, Lt. Grey	11666154055
Type of connection	spring-type terminal	Part no. * 115 V, Black	11666154050
Bearing type	ball bearing	Part no. * 230 V, Lt. Grey	11666104055
Approvals	UL, cUL, CE, (on request: GOST)	Part no. * 230 V, Black	11666104050
Power consumption	160 W / 150 W / 155 W	Part no. * 400/460 V, Lt. Grey	11666024055
Width x height x depth	12.6 x 12.6 x 6.18 in	Part no. * 400/460 V, Black	11666024050
		Part no. Spare part filter mats (5 pieces)	18611600037
		Part no. NEMA Type 3R/4/4X Rainhoods *	See page 27 for part no.

PF 67000

- Airflow rate up to 560 CFM
- System of protection: NEMA type 12
- Cut-out dimensions: 292 x 292 mm



PF 67000 FILTERFANS®

Available voltages ± 10%	115 V, 230 V, 400 / 460 V	System of protection (UL Listed)	NEMA type 12 - fluted filter
Design (housing and protection against accidental contact)	made of injection-molded thermoplastic, self-extinguishing, UL 94 VO	Filter mat quality class	G 4
Service life L ₁₀ (+ 40 °C)	40,000 h	Unimpeded airflow	560 CFM
Weight	8.16 lb	Airflow rate in combination (PF + PFA 60.000)	368 CFM
Color	RAL 7035 (Lt. Grey) RAL 9011 (Black)	Filtration efficiency	91%
Noise level (EN ISO 3741)	66 / 69 dB (A)	Part no. * 115 V, Lt. Grey	11667154055
Type of connection	spring-type terminal	Part no. * 115 V, Black	11667154050
Bearing type	ball bearing	Part no. * 230 V, Lt. Grey	11667104055
Approvals	UL, cUL, CE, (on request: GOST)	Part no. * 230 V, Black	11667104050
Power consumption	195 W / 200 W / 170 W	Part no. * 400/460 V, Lt. Grey	11667024055
Width x height x depth	12.6 x 12.6 x 6.18 in	Part no. * 400/460 V, Black	11667024050
		Part no. Spare part filter mats (5 pieces)	18611600037
		Part no. NEMA Type 3R Rainhood *	See page 27 for part no.

PF 67000 SL

- Airflow rate up to 427 CFM
- System of protection: NEMA type 12
- Cut-out dimensions: 292 x 292 mm



PF 67000 SL SLIM LINE FILTERFANS®

Available voltages ± 10%	115 V, 230 V, 400 / 460 V	System of protection (UL Listed)	NEMA type 12 - fluted filter
Design (housing and protection against accidental contact)	made of injection-molded thermoplastic, self-extinguishing, UL 94 VO	Filter mat quality class	G 4
Service life L ₁₀ (+ 40 °C)	40,000 h	Unimpeded airflow	427 CFM
Weight	8.82 lb / 8.93 lb / 8.49 lb	Airflow rate in combination (PF + PFA 60.000)	342 CFM
Color	RAL 7035 (Lt. Grey) RAL 9011 (Black)	Filtration efficiency	91%
Noise level (EN ISO 3741)	69 dB (A)	Part no. * 115 V, Lt. Grey	11677154055
Type of connection	spring-type terminal	Part no. * 115 V, Black	11677154050
Bearing type	ball bearing	Part no. * 230 V, Lt. Grey	11677104055
Approvals	UL, cUL, CE, (on request: GOST)	Part no. * 230 V, Black	11677104050
Power consumption	165 W / 180 W / 165 W	Part no. * 400/460 V, Lt. Grey	16677124055
Width x height x depth	12.6 x 12.6 x 5.27 in	Part no. * 400/460 V, Black	16677124050
		Part no. Spare part filter mats (5 pieces)	18611600037
		Part no. NEMA Type 3R/4/4X Rainhoods *	See page 27 for part no.

*Consult factory for additional options

DID YOU KNOW?

Pfannenberg's Filterfans 4.0™ were developed and optimized after more than 1,000 tests in our modern test laboratory. Our engineers use specially designed climate chambers to test and measure the capabilities of our thermal management products.



PTF SERIES

ROOF MOUNT FILTERFANS®

PTF 60500

- Airflow rate up to 206 CFM
- Tool-less mounting, patented quick fastening system
- System of protection: NEMA type 12
- Cut-out dimensions: 292 x 292 mm



PTF 60500 ROOF MOUNT FILTERFANS®

Available voltages ± 10%	115 V, 230 V
Design (housing and protection against accidental contact)	sheet steel, cover powder-coated; snap-in housing made of injection-molded thermoplastic (ABS-FR) self-extinguishing, UL 94 VO
Service life L ₁₀ (+ 40 °C)	approx. 50,000 h
Weight	5.5 lb
Color	RAL 7035 (Lt. Grey)
Noise level (EN ISO 3741)	67 dB (A)
Type of connection	terminal strip
Bearing type	ball bearing
Approvals	UL, cUL, CE, (on request: GOST)
Power consumption	4 x 24 W / 4 x 29 W

Width x Depth x Height	16.93 x 16.93 x 4.92
Filter mat quality class	G 3
Unimpeded airflow	206 CFM
Airflow rate in combination (PF + PFA 60.000)	142 CFM
Filtration efficiency	81% 0%

Part no. * (115 V) 11685151055

Part no. Spare part filter mats (20 pieces) 18611600038

PTF 60700

- Airflow rate up to 324 CFM
- Tool-less mounting, patented quick fastening system
- System of protection: NEMA type 12
- Cut-out dimensions: 292 x 292 mm



PTF 60700 ROOF MOUNT FILTERFANS®

Available voltages ± 10%	115 V, 230 V, 400 / 460 V
Design (housing and protection against accidental contact)	sheet steel, cover powder-coated; snap-in housing made of injection-molded thermoplastic (ABS-FR) self-extinguishing, UL 94 VO
Service life L ₁₀ (+ 40 °C)	approx. 40,000 h
Weight	5.8 lb
Color	RAL 7035 (Lt. Grey)
Noise level (EN ISO 3741)	69 dB (A)
Type of connection	terminal strip
Bearing type	ball bearing
Approvals	UL, cUL, CE, (on request: GOST)
Power consumption	90 W / 80 W

Width x Depth x Height	18.5 x 18.5 x 5.51 in
Filter mat quality class	G 3
Unimpeded airflow	324 CFM
Airflow rate in combination (PF + PFA 60.000)	218 CFM
Filtration efficiency	81%

Part no. * (115 V) 11687152055

Part no. Spare part filter mats (20 pieces) 18611600039

PTF 61000

- Airflow rate up to 441 CFM
- Tool-less mounting, patented quick fastening system
- System of protection: NEMA type 12
- Cut-out dimensions: 292 x 292 mm



PTF 61000 ROOF MOUNT FILTERFANS®

Available voltages ± 10%	115 V, 230 V
Design (housing and protection against accidental contact)	sheet steel, cover powder-coated; snap-in housing made of injection-molded thermoplastic (ABS-FR) self-extinguishing, UL 94 VO
Service life L ₁₀ (+ 40 °C)	approx. 40,000 h
Weight	6 lb
Color	RAL 7035 (Lt. Grey)
Noise level (EN ISO 3741)	77 dB (A)
Type of connection	terminal strip
Bearing type	ball bearing
Approvals	UL, cUL, CE, (on request: GOST)
Power consumption	160 W / 150 W

Width x Depth x Height	18.5 x 18.5 x 5.51 in
Filter mat quality class	G 3
Unimpeded airflow	441 CFM
Airflow rate in combination (PF + PFA 60.000)	294 CFM
Filtration efficiency	81%

Part no. * (115 V) 11681152055

Part no. Spare part filter mats (20 pieces) 18611600039

PTFA 60000

- Tool-less mounting, patented quick fastening system
- System of protection: NEMA type 12
- W x D x H: 16.93 x 16.93 x 4.92 in
- Cut-out dimensions: 292 x 292 mm



PTFA 60000 TOP MOUNT EXHAUST FILTERS

Design (housing and protection against accidental contact)	sheet steel, cover powder-coated; snap-in housing made of injection-molded thermoplastic (ABS-FR) self-extinguishing, UL 94 VO
Color	RAL 7035 (Lt. Grey)
Approvals	UL, cUL, CE, (on request: GOST)
Filter mat quality class	G 3
Part no. *	11786001055
Part no. Spare filter mats (20 pieces)	18611600038

*Consult factory for additional options

PFA SERIES

EXHAUST FILTERS

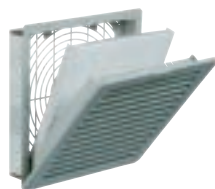
PFA 10000

- Snap fastener without screws
- Simple filter mat exchange
- With integrated foam seal to enclosure
- W x H x D: 4.29 x 4.29 x .90 in
- Cut-out dimensions: 92 x 92 mm
- Color: RAL 7035 (Lt. Grey)
RAL 9011 (Black)



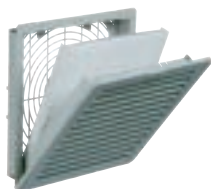
PFA 20000

- Snap fastener without screws
- Simple filter mat exchange
- With integrated foam seal to enclosure
- W x H x D: 5.71 x 5.71 x 1.22 in
- Cut-out dimensions: 125 x 125 mm
- Color: RAL 7035 (Lt. Grey)
RAL 9011 (Black)



PFA 30000

- Snap fastener without screws
- Simple filter mat exchange
- With integrated foam seal to enclosure
- W x H x D: 7.95 x 7.95 x 1.57 in
- Cut-out dimensions: 177 x 177 mm
- Color: RAL 7035 (Lt. Grey)
RAL 9011 (Black)



PFA 40000

- Snap fastener without screws
- Simple filter mat exchange
- With integrated foam seal to enclosure
- W x H x D: 9.92 x 9.92 x 1.74 in
- Cut-out dimensions: 223 x 223 mm
- Color: RAL 7035 (Lt. Grey)
RAL 9011 (Black)



PFA 60000

- Snap fastener without screws
- Simple filter mat exchange
- With integrated foam seal to enclosure
- W x H x D: 12.6 x 12.6 x 1.8 in
- Cut-out dimensions: 292 x 292 mm
- Color: RAL 7035 (Lt. Grey)
RAL 9011 (Black)



PFA 10000 EXHAUST FILTERS

Design (housing and protection against accidental contact)	made of injection-molded thermoplastic, self-extinguishing, UL 94 VO
Approvals	UL, cUL, CE, (on request: GOST)
System of protection (EN 60529 / UL Listed)	NEMA type 12 - standard filter
Filter mat quality class	G 3
Part no. *	11710001055 (Lt. Grey)
Part no. *	11710001050 (Black)
Part no. Spare filter mats (5 pieces)	18611600029
Part no. NEMA Type 3R/4/4X Rainhoods *	See page 27 for part no.

PFA 20000 EXHAUST FILTERS

Design (housing and protection against accidental contact)	made of injection-molded thermoplastic, self-extinguishing, UL 94 VO
Approvals	UL, cUL, CE, (on request: GOST)
System of protection (EN 60529 / UL Listed)	NEMA type 12 - fluted filter
Filter mat quality class	G 4
Part no. *	11720004055 (Lt. Grey)
Part no. *	11720004050 (Black)
Part no. Spare filter mats (5 pieces)	18611600034
Part no. NEMA Type 3R/4/4X Rainhoods *	See page 27 for part no.

PFA 30000 EXHAUST FILTERS

Design (housing and protection against accidental contact)	made of injection-molded thermoplastic, self-extinguishing, UL 94 VO
Approvals	UL, cUL, CE, (on request: GOST)
System of protection (EN 60529 / UL 50)	NEMA type 12 - fluted filter
Filter mat quality class	G 4
Part no. *	11730004055 (Lt. Grey)
Part no. *	11730004050 (Black)
Part no. Spare filter mats (5 pieces)	18611600035
Part no. NEMA Type 3R/4/4X Rainhoods *	See page 27 for part no.

PFA 40000 EXHAUST FILTERS

Design (housing and protection against accidental contact)	made of injection-molded thermoplastic, self-extinguishing, UL 94 VO
Approvals	UL, cUL, CE, (on request: GOST)
System of protection (EN 60529 / UL Listed)	NEMA type 12 - fluted filter
Filter mat quality class	G 4
Part no. *	11740004055 (Lt. Grey)
Part no. *	11740004050 (Black)
Part no. Spare filter mats (5 pieces)	18611600036
Part no. NEMA Type 3R/4/4X Rainhoods *	See page 27 for part no.

PFA 60000 EXHAUST FILTERS

Design (housing and protection against accidental contact)	made of injection-molded thermoplastic, self-extinguishing, UL 94 VO
Approvals	UL, cUL, CE, (on request: GOST)
System of protection (EN 60529 / UL Listed)	NEMA type 12 - fluted filter
Filter mat quality class	G 4
Part no. *	11760004055 (Lt. Grey)
Part no. *	11760004050 (Black)
Part no. Spare filter mats (5 pieces)	18611600037
Part no. NEMA Type 3R/4/4X Rainhoods *	See page 27 for part no.

*Consult factory for additional options

PTF SERIES

TOP MOUNT FILTERFAN® - NEMA TYPE 12/3R

The latest addition to the industry leading Filterfan® family, the PTF 1200 Top Mount Filterfan® is a cutting-edge filter fan engineered to address the escalating cooling demands arising from increased electronic enclosure density and power electronics requirements. The PTF 1200 offers over 30% more airflow over its nearest counterpart in the market, making it the perfect solution between traditional passive cooling and active cooling. Available in Indoor or Outdoor versions.

Highest Airflow Rate

Over 30% more airflow than any filter fan in the market pulling more hot air from the enclosure to reach the optimal temperature.

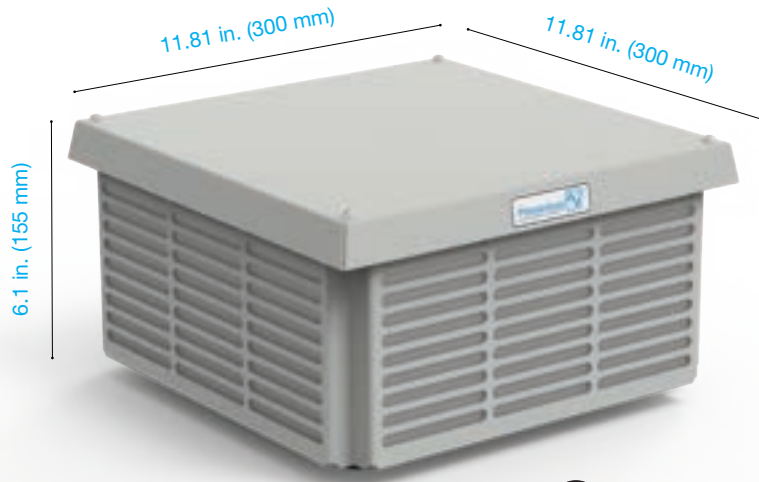
The PTF 1200 Product Kit is equivalent to a 3000BTU air conditioner with a 5.6° F temperature difference.

Energy Efficient Fan

The highly efficient EC centrifugal fan uses precise control of the fan speed to reduce energy consumption.

Robust Steel Housing

Durable and robust powder coated 16 gauge steel or 304 stainless steel for the 3R version.



Easy to Change Filters

The top plate removes by undoing four screws and filter media slides out.

Long Service Life

The EC fan with advanced motor technology reduces mechanical stress providing 75% longer service life than standard axial fans.

Easy to Ship

The rugged design makes standard shipping possible.

All Weather Protection

Available in a Type 3R rated version for protection against ingress of falling dirt, harmful effects of rain, sleet, snow and external ice formation.



Space-Saving Design

Designed for use in crowded enclosures. This solution has no intrusion into the cabinet.

Heat Removal

Removal of heat via natural convection reduces "Hot Spots" in cabinets.



Easy and Fast Mounting

Gravity supported loading and secured with nut locks on four M6 studs.



PTF SERIES - TOP MOUNT FILTERFAN®

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Starting Current @ 35A/35A °C	Fuse (maximum) Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) (lb)
Indoor - Type 12	11692152055	115	50/60	170	2.20	6	<74	14.4
	11692102055	230			1.40			
Outdoor - Type 3R	11692152120	115	50/60	170	2.20	6	<74	14.4
	11692102120	230			1.40			
Design	Powder coated sheet steel RAL 7035; 3R Stainless steel 304. Screw mounting on the enclosure roof.							
Part Number	11692152055	11692152120		11692102055		11692102120		
Unimpeded Airflow	589							CFM2
Airflow rate in comb.with 2x exhaust	512							CFM3
Type of connection	X-COM plug							
Fuse	6							A
System of protection according to EN 60529 / UL 50	IP 54 / NEMA Type 12*	IP 54 / NEMA Type 3R		IP 54 / NEMA Type 12*		IP 54 / NEMA Type 3R		
Filtration efficiency	81							%
Filter mat quality class - EN 779	G4							
Bearing type	ball bearing							
Service life L ₁₀ (+ 40 °C) ¹	approx. 70000							h
Operating temperature	- 25 ... + 60 / - 13 ... + 140			- 25 ... + 50 / + 13 ... + 122				°C / °F
Storage temperature	- 40 ... + 80 / - 40 ... + 175							

*Contact factory for NEMA 3R/Variable speed options



For additional technical data,
drawings and templates.
www.pfannenbergsusa.com

PTF SERIES ACCESSORIES KITS

Spare Filter Mat	20 pieces spare filters	18611600193
FLZ 530 Thermostat	Thermostat	17121000000
FLZ 600 Hygrostat 40-90% rh DT	Hygrostat	17207000000
PFA 60000 Filter Fan	Inlet Filter (2x Need per One PTF 1200)	11760004055
PFA 60000 3R Filter Fan	Inlet Filter (2x Need per One PTF 1200)	11760004055
PTF 1200 115V 54 7035	PTF 1200, IP54, 115VAC, Lt grey	11692152055
PTF 1200 230V 54 7035	PTF 1200, IP54, 230VAC, Lt grey	11692102055
Power Cord	Plug and Cord Whip	18125401412

Available Models:

PTF 1200
Indoor Rated
Type 12



PTF 1200
Outdoor Rated
Type 3R



DATAWIND FILTERFANS®

Externally Mounted Fans

Introducing our newest product the Datawind Filterfan®. This externally mounted Filterfan was designed for the new IT space, the manufacturing floor. As IT moves away from the clean rooms and closer to the manufacturing equipment, cooling requirements and equipment need to change. This new Datawind Filterfan® delivers the same advantages as our Filterfans 4.0, protecting your IT equipment in much dirtier manufacturing environments without sacrificing critical rack space.

DATAWIND FILTERFAN®

Designed to protect
IT equipment in
dirty manufacturing
environments
without sacrificing
critical rack space.



Zero Protrusion Into The Enclosure

- Externally mounted, allowing for full use of all racks within the bays.

Maintenance Indication LED Light

- LED indicator warns when the temperature exceeds the desired temperature inside the cabinet.
- Indication of fan malfunction or clogged filter.

IEC Power Connector 6ft Cable (Located on center of fan to allow door to hinge in both directions)

- Fan side - IEC C13 plug with lock mechanism.
- Power side - NEMA 5-15P (115v) & IEC C14 (230v).

30° Sloped Top

- Designed to avoid dust collection and improve safety.

Cable to Adjustable Thermostat

- 13ft cable attached to an adjustable thermostat with DIN mounted bracket allowing fan to toggle on/off depending on cooling need. This feature extends both fan and filter lives.

Fits Existing Filterfan® Cutout

- Only need to drill mounting holes with power tools. Pre-existing 2.5" hole cut to allow pass through wiring.

Filterfan® 4.0 Benefits

- Design based on the Filterfan 4.0™ line to provide the same airflow as standard Filterfans® using a fluted filter mat with a 3x longer service life.
- The Datawind Filterfan® is also designed to be used with our existing PFA exhaust filters.



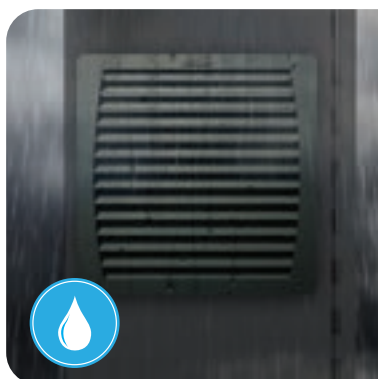
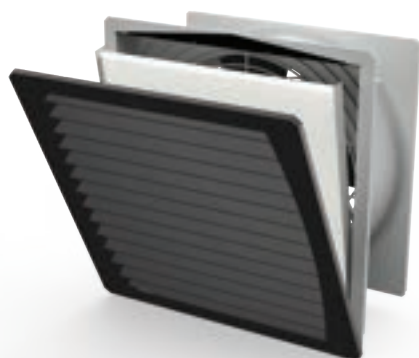
Datawind Filterfan

Part Number	Unimpeded CFM	Description	Replacement Filter Mat	Physical Dimensions W x H x D (inches)
18182000039	38	Datawind PF22000 115V RAL 9003	18611600034	6.8 x 9.4 x 2.8
18182000040	38	Datawind PF22000 115V RAL 9004	18611600034	6.8 x 9.4 x 2.8
18182000041	38	Datawind PF22000 230V RAL 9003	18611600034	6.8 x 9.4 x 2.8
18182000042	38	Datawind PF22000 230V RAL 9004	18611600034	6.8 x 9.4 x 2.8
18182000043	152	Datawind PF33000 SL 115V RAL 9003	18611600035	9.3 x 11.9 x 3.3
18182000044	152	Datawind PF33000 SL 115V RAL 9004	18611600035	9.3 x 11.9 x 3.3
18182000045	152	Datawind PF33000 SL 230V RAL 9003	18611600035	9.3 x 11.9 x 3.3
18182000046	152	Datawind PF33000 SL 230V RAL 9004	18611600035	9.3 x 11.9 x 3.3
18182000047	560	Datawind PF67000 115V RAL 9003	18611600037	14.9 x 17.5 x 5.5
18182000048	560	Datawind PF67000 115V RAL 9004	18611600037	14.9 x 17.5 x 5.5
18182000049	560	Datawind PF67000 230V RAL 9003	18611600037	14.9 x 17.5 x 5.5
18182000050	560	Datawind PF67000 230V RAL 9004	18611600037	14.9 x 17.5 x 5.5



3R FILTERFANS®

Outdoor Series / NEMA 3R



Outdoor Weather Ready

Protection against ingress of falling dirt, and harmful effects on sensitive components against rain, sleet, snow and even external ice formation. (NEMA 3R rating)

Optimized Air Flow

Louvers design is optimized to provide maximal airflow while providing supreme ingress protection; combined with best in class fans produces improved air flow to prevent hotspot

Less Frequent Maintenance

The fluted filter-mat provides 3x longer service life, holding more dust before impeding airflow extending the mean time between maintenance (MTBM) for outdoor enclosure; especially, critical for those locate in remote area.

Low Initial Investment

Traditional outdoor solution requires installation of a metal hood (rainhood) over the filter fan. The Outdoor Rated Filterfan® (NEMA 3R) eliminates the component and labor cost, and the patented tool-free installation reduces up front investment.

Prolong Life

UV resistance plastic to prevent premature degradation from direct sunlight



PF Series Filterfans® 4.0 - Outdoor Rated (NEMA 3R)

Type	Voltage	Air Flow Rate		Physical Dimensions W x H x D (inches)	Cutout Dimension W x H inches (mm)	Part No.	
		CFM ² (Unimpeded - Filterfan assembly uninstalled)	CFM ³ (Installed with one FilterFan and one Exhaust Filter)			Black (RAL 9011)	Light Grey (RAL 7035)
PF 22000 R	115 VAC	38 cfm	28 cfm	5.71 x 5.71 x 2.76	4.92 x 4.92 (125 x 125)	11622153110	11622153115
PF 22000 R	230 VAC					11622103110	11622103115
PF 22000 R	24 VDC					11622803110	11622803115
PF 32000 R	115 VAC	65 cfm	38 cfm	7.95 x 7.95 x 3.66	6.97 x 6.97 (177 x 177)	11632153110	11632153115
PF 32000 R	230 VAC					11632103110	11632103115
PF 32000 R	24 VDC					11632803110	11632803115
PF 42500 R	115 VAC	94 cfm	74 cfm	9.92 x 9.92 x 4.05	8.78 x 8.78 (223 x 223)	11642153110	11642153115
PF 42500 R	230 VAC					11642103110	11642103115
PF 42500 R	24 VDC					11642803110	11642803115
PF 43000 R	115 VAC	155 cfm	122 cfm	9.92 x 9.92 x 4.69	8.78 x 8.78 (223 x 223)	11643153110	11643153115
PF 43000 R	230 VAC					11643103110	11643103115
PF 43000 R	24 VDC					11643803110	11643803115
PF 65000 R	115 VAC	297 cfm	224 cfm	12.6 x 12.6 x 6.18	11.49 x 11.49 (292 x 292)	11665153110	11665153115
PF 65000 R	230 VAC					11665103110	11665103115
PF 66000 R	115 VAC	462 cfm	295 cfm	12.6 x 12.6 x 6.18	11.49 x 11.49 (292 x 292)	11666153110	11666153115
PF 66000 R	230 VAC					11666103110	11666103115
PF 66000 R	460 VAC					11666023110	11666023115
PF 67000 R	115 VAC	560 cfm	368 cfm	12.6 x 12.6 x 6.18	11.49 x 11.49 (292 x 292)	11667153110	11667153115
PF 67000 R	230 VAC					11667103110	11667103115
PF 67000 R	460 VAC					11667023110	11667023115

PFA Series Exhaust Filters - Outdoor Rated (NEMA 3R)

PFA 20000 R	-	-	-	5.71 x 5.71 x 1.22	4.92 x 4.92 (125 x 125)	11720003110	11720003115
PFA 30000 R	-	-	-	7.95 x 7.95 x 1.57	6.97 x 6.97 (177 x 177)	11730003110	11730003115
PFA 40000 R	-	-	-	9.92 x 9.92 x 1.74	8.78 x 8.78 (223 x 223)	11740003110	11740003115
PFA 60000 R	-	-	-	12.6 x 12.6 x 1.8	11.49 x 11.49 (292 x 292)	11760003110	11760003115

PF/PFA EMC SERIES

EMC FILTERFANS 4.0™ / EXHAUST FILTERS

Protect your sensitive electronics from electromagnetic interference when cooling with Filterfans®. The use of a Filterfan® for thermal management requires an opening to be cut into the cabinet. These openings can allow electromagnetic radiation to pass in or out unhindered. **Pfannenbergs EMC Filterfans® offer the widest range of protection against electromagnetic interference.** We offer several combinations of EMC Filterfans® and exhaust filters for air flow rates from 17 to 560 CFM2. To better protect the environment, our EMC Filterfans® and exhaust filters do not use metalized plastics, because these are difficult to recycle.

EMC – Electromagnetic Compatibility

In standards, electromagnetic compatibility, or 'EMC' for short, is defined as the ability of a component, device or system to function satisfactorily under the influence of electromagnetic fields in its surroundings, without influencing its surroundings, to which other electrical equipment also belongs, in an impermissible way. We guarantee that our EMC shielded Filterfans® provide protection against electromagnetic interference by ensuring continuity between the shielding part of the fan and the metal structure of the cabinet based on the attenuation characteristics below:

Attenuation at 30 MHz approx. 71 dB

Attenuation at 400 MHz approx. 57 dB

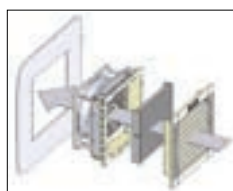
Measured in accordance with EN 50 147-1 (1996): absorber rooms, part 1, measurement of screening attenuation.

Type	Part Number	Replacement Filter Mat	Air Flow Rate CFM2 (Type 12 / IP 54)	Air Flow Rate CFM2 (Type 12 / IP 55)	Rated voltage	Cut-out dimensions (HxW) ³ inches (mm)	Approvals			
							UL	cUL	GOST	CE
PF Series EMC Filterfans 4.0™										
PF 11000 EMC	11811151055 115 V, LT. Grey	18611600029	17	-	115V, 230V, 24 VDC	3.66 x 3.66 (93 x 93)	●	●	●	●
PF 22000 EMC	11822153055 115 V, LT. Grey	18611600034	-	38		4.96 x 4.96 (126 x 126)	●	●	●	●
PF 32000 EMC	11832153055 115 V, LT. Grey	18611600035	-	65		7.01 x 7.01 (178 x 178)	●	●	●	●
PF 42500 EMC	11842153055 115 V, LT. Grey	18611600036	-	94		8.82 x 8.82 (224 x 224)	●	●	●	●
PF 43000 EMC	11843153055 115 V, LT. Grey	18611600036	-	155		8.82 x 8.82 (224 x 224)	●	●	●	●
PF 65000 EMC	11865153055 115 V, LT. Grey	18611600037	-	297	115V, 230V	11.50 x 11.50 (292 x 292)	●	●	●	●
PF 66000 EMC	11866153055 115 V, LT. Grey	18611600037	-	462		11.50 x 11.50 (292 x 292)	●	●	●	●
PF 67000 EMC	11867153055 115 V, LT. Grey	18611600037	-	560	115V, 230V, 400/460 V	11.50 x 11.50 (292 x 292)	●	●	●	●
PFA Series EMC Exhaust Filters										
PFA 10000 EMC	11910001055 (Lt. Grey)	18611600029	N/A	N/A	N/A	3.66 x 3.66 (93 x 93)	●	●	●	●
PFA 20000 EMC	11920003055 (Lt. Grey)	18611600034				4.96 x 4.96 (126 x 126)	●	●	●	●
PFA 30000 EMC	11930003055 (Lt. Grey)	18611600035				7.01 x 7.01 (178 x 178)	●	●	●	●
PFA 40000 EMC	11940003055 (Lt. Grey)	18611600036				8.82 x 8.82 (224 x 224)	●	●	●	●
PFA 60000 EMC	11960003055 (Lt. Grey)	18611600037				11.50 x 11.50 (292 x 292)	●	●	●	●



Superior metal shielding
Unequaled worldwide: contact surfaces without beryllium-copper seal!

Contact springs



No elaborate reworking of the cut-out

- No adhering of copper tape or similar aids
- No time-consuming scratching off of coatings in order to ensure a good contact
- Contact is made via the cut edge of the cut-out for the Filterfans® or exhaust filter

FILTERFAN® RAINHOODS

NEMA 3R/4/4X/IPx6 WASHDOWN RAINHOODS



SANITARY RAINHOOD

Pfannenberg offers a specialty 4X stainless steel rainhood to meet the FDA compatible requirements found in Food & Beverage Manufacturing Facilities.



Easy Installation

The mounting bracket can easily be installed to the enclosure around the existing cut-out.

Easy Maintenance

Easily remove the rain hood without tools for maintenance and filter mat replacement. (Optional tamper resistant fasteners available to eliminate unauthorized access)

Rugged Steel Construction

Powder coated or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.

FDA Compatible White Gasket Design

Our white gasket design is ideal for Rainhoods that are used on enclosures in Food & Beverage applications. This gasket allows for easy detection of any contamination and is free of potentially harmful color additives.

Maximized Airflow & Superior Overspray Protection

Direct spray barrier allows for superior protection from overspray entering the cabinet, **while only reducing airflow <7%**.

NEMA Type 3R/4/4X / IPx6 Design:

This mounting system was designed to ensure a proper NEMA Type rating and protection when used with Pfannenberg Filterfans® and exhaust filters.

Compatible with Existing Fan Cutouts

Rainhoods come in different sizes and are designed to be compatible with existing Pfannenberg Filterfans® and Exhaust Filters.

Robust Sealing Against Enclosure

A primary design element found within our rainhoods is the robust sealing of our gasket. Our gasket features multiple seal dams with a high compression ratio and dense closed cell material. This gasket is found in both our regular and sanitary designs.

Easy Washdown and Disinfection

With a smooth, clean and seamless design, Pfannenberg Rainhoods allow for easy washdown and disinfection. Direct spray barrier design allows for superior protection from overspray entering the cabinet while minimizing airflow loss.

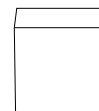
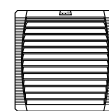
NEMA Type 3R/4/4X / IPx6 Series Rainhoods for Filterfans®

Model Numbers	Description	Compatibility	Part Number
PF-RH-20000-WD-LG	Rainhood, Lt Grey RAL 7035, NEMA Type 3R/4	PF 22000 Filterfans®	18182000010
PF-RH-20000-WD-GY	Rainhood, Grey ANSI 61, NEMA Type 3R/4		18182000009
PF-RH-20000-WD-SS	Rainhood, 304 SS NEMA Type 4/4X		18182000011
PF-SH-20000-WD-SS	Sanitary Hood SS NEMA Type 4/4X (White FDA Gasket)		18182000026
PF-RH-30000-WD-LG	Rainhood, Lt Grey RAL 7035, NEMA Type 3R/4	PF 3X000 Filterfans®	18182000013
PF-RH-30000-WD-GY	Rainhood, Grey ANSI 61, NEMA Type 3R/4		18182000012
PF-RH-30000-WD-SS	Rainhood, 304 SS NEMA Type 4/4X		18182000014
PF-SH-30000-WD-SS	Sanitary Hood SS NEMA Type 4/4X (White FDA Gasket)		18182000027
PF-RH-40000-WD-LG	Rainhood, Lt Grey RAL 7035, NEMA Type 3R/4	PF 4XX00 Filterfans®	18182000016
PF-RH-40000-WD-GY	Rainhood, Grey ANSI 61, NEMA Type 3R/4		18182000015
PF-RH-40000-WD-SS	Rainhood, 304 SS NEMA Type 4/4X		18182000017
PF-SH-40000-WD-SS	Sanitary Hood SS NEMA Type 4/4X (White FDA Gasket)		18182000028
PF-RH-60000-WD-LG	Rainhood, Lt Grey RAL 7035, NEMA Type 3R/4	PF 6XX00 Filterfans®	18182000019
PF-RH-60000-WD-GY	Rainhood, Grey ANSI 61, NEMA Type 3R/4		18182000018
PF-RH-60000-WD-SS	Rainhood, 304 SS NEMA Type 4/4X		18182000020
PF-SH-60000-WD-SS	Sanitary Hood SS NEMA Type 4/4X (White FDA Gasket)		18182000029

**NEMA Type 3R,
4, 4X Rated /
IPx6 Rating**



INDUSTRY'S FIRST UL LISTED RAINHOOD SOLUTION



**ENVIRONMENTALLY RATED
ENCLOSURE ACCESSORY
SOLUTION**
Based on FTTA E489500

This technique will not prevent hazardous gases or humidity from entering the cabinet.

Fluted Filtermats

Best in Class Filtration



Pfannenberg Fluted Filter Mats meet the highest standards of efficiency and economy. Our innovative folded structure provides a larger surface area, which allows higher airflow rates and increased resistance to moisture and water jets. Our filtermats protect electrical components and switchgear from harmful particulate, such as dust, lint, wood chips or moisture in the atmosphere.

Sensitive electronics need the best protection against harmful particulate. The quality of a filter is defined by how many particles of a certain size can pass through the filter medium. This is known as filter class. The highest achievable filter class by coarse dust filters is G4. G4 means that a filter prevents more than 90% of all particles smaller than 10 µm from passing through. At Pfannenberg, G4 is standard for all our filter mats, synthetic fiber and fluted versions.

Nema Type 12 Rated

The fluted filter mat's folded structure provides an unrivaled airflow guaranteeing Nema Type 12 protection. Dirt collects in the valleys of the fluted filter, allowing the air to flow through the ridges. The larger surface area on the filter mat allows for a high filtration level and maximum airflow.

G4 Rated

Offers filtration of particles smaller than 10 µm, the highest protection against dust and water droplets,

Moisture Resistant

The innovative folded structure provides resistance to moisture and water jets.

Lasts 300% Longer

Due to fluted filter, which has 3-1/2 times the surface area (when compared to conventional synthetic fiber filter mats). Saves time and money on maintenance.

Fleece vs Fluted Filter Comparison

Filter Media	Competitor Fleece Filter Media	Pfannenberg Fluted Filter Media
Filtration Class	max. G2-G3	G4++
Filtration Efficiency	65 - 90%	> 90%
Coarse Particles e.g. wood chips	X	X
Dust	X	X
Sand	X	X
Spray Mist e.g. paints	-	X
Very Fine Particles e.g. sawdust, cement	-	X
Longer Service Life up to 300%	-	X

Fluted Filter Part Numbers

Fits Filterfans	Pfannenberg Part # (5 pieces)
PF 22000	18611600034
PF 32000, 33000 SL	18611600035
PF 42500, 43000	18611600036
PF 65000, 65000 SL, 66000, 67000, 67000 SL	18611600037
PFA 20000	18611600034
PFA 30000	18611600035
PFA 40000	18611600036
PFA 60000	18611600037

*Pfannenberg uses G4 class filter materials in most of its products.



Filterfans® Trust in the Original



Indoor

The original Filterfan® was invented by Otto Pfannenber in 1958. The Filterfan 4.0™ is the trusted name in convective cooling with high airflow and NEMA 12 protection.



Outdoor

Outdoor Rated Filterfan® (NEMA 3R) is designed for outdoor weather where resistance against falling rain, snow, and UV degradation is important to ensure operation of electronics inside the enclosure.



Harsh Environments

Pfannenber Rainhoods (Patent Pending) feature a robust design rated to NEMA TYPE 3R/4/4x and IPx6 when used with Pfannenber Filterfans®. Options include painted galvanized steel, stainless steel and FDA compliant food and beverage grade versions.

Specialty



Top Mount Filterfan®

Top Mount Filterfan high airflow fan to efficiently cool densely packed cabinets.



EMC Filterfan®

EMC Filterfans® offer protection for sensitive electronics against electromagnetic interference.



Datawind Filterfan®

Externally mounted Datawind Filterfan® designed for the new IT space, the manufacturing floor.



PKS 313X, 320X, 330X, 336X Series Air/Air Heat Exchangers

Efficient Cooling with Ambient Air

The PKS 3000 Series Air/Air Heat Exchangers use Pfannenberger's Kinetic System™ next generation cooling to exchange and move the heat from an electrical enclosure to the outside environment. This is a perfect solution when concerned with the open loop Filterfan® designs that don't prevent corrosive gas or humidity from entering the enclosure. Designed for indoor cooling, outdoor or remote applications that require a closed loop system to protect electronics.

The PKS 3000 Series features an energy efficient, minimal maintenance and reduced footprint design that is a proven solution in harsh environments.

The PKS Mini series Air/Air Heat Exchangers are ideal for the replacement of a Filterfan® solution when the ambient air is too contaminated to enter the cabinet. These units offer a closed loop design to isolate external air from inside of the enclosure without the need to change the filter.



PKS 30X2

AIR/AIR HEAT EXCHANGERS

22 & 45 W/°C

The PKS Mini series Air/Air Heat Exchangers are ideal for the replacement of a Filterfan® solution when the ambient air is too contaminated to enter the cabinet. Available in 2 models; **PKS 3042**, **PKS 3092**

PFANNENBERG KINETIC SYSTEM™

Uses next generation cooling technology that out-performs conventional heat exchanger and/or heat pipe solutions.



Closed Loop Design

Designed to isolate the external ambient air from the internally conditioned air eliminating the risk of contaminants entering the cabinet.

Efficiency

High performance/cost ratios due to innovative use of advanced heat transfer and manufacturing technologies.

Space Saving Design

Thin profile with minimum intrusion into enclosure.

Easy Installation

Minimum number of penetrations by cover fasteners, mounting fasteners and external wires.

Rugged Design

Powder coated aluminum mounting plate with stainless steel covers.

Multiple Mounting Options

Aluminum mounting plate can be mounted on the top, side, front or back.

Multiple Electrical Configurations

115 VAC units arrive with 6 ft long 3-pronged plug. DC units arrive with bare lead wires. Other voltages available upon request.

Environment

Indoor or outdoor use.

Reduced Fan Maintenance

UL Listed 6.0" dual axial ball bearing fans for years of maintenance free operation (dry & wet locations).

NEMA Rating

Type 4 & 4X.

UL Listed & Recognized

The 115 VAC units are UL listed.

Warranty

One year warranty.



PKS Mini 30X2 (22 & 45 Watts/°C) Heatsink Air/Air Heat Exchangers

Model Number	Part Number	Voltage 60 Hz (VAC)	Specific Cooling Capacity		Cooling Capacity @ $\Delta T = 20^{\circ}\text{C}$ (BTU/hr)	Power Consumption (Watts)	Nominal Run Current (Amps)	Width (Inches)	Depth (Inches)	Height (Inches)	Weight (without packaging) (lbs)
			(W/°C)	(W/°F)							
PKS 3042	12480112009	115	22	12	1,400	82	0.72	12	7.89	12	17
PKS 3092	12480212009	115	45	25	3,000	163	1.44	12	7.89	22.75	35
IP Rating:		ONLY available as washdown (NEMA Type 4/4X) design									

Additional Data	PKS Mini 30X2
Ambient Temp. Range	-25°C to +55°C (-13°F to +131°F)
Control Range	N/A
Design	Mounting Plate: powder coated aluminum / Cover: 316 stainless steel

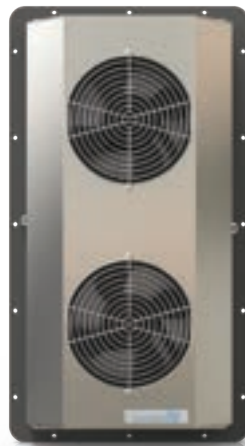
*115 VAC units are only 60 Hz rated.



For additional technical data,
drawings and templates.
www.pfannenbergusa.com

Subject to technical amendments and misprints.

Available Models:



PKS 3092



PKS 3042

PKS 320X

AIR/AIR HEAT EXCHANGERS

50-55 W/°C

The PKS 320X Series Air/Air Heat Exchangers use **Pfannenbergs Kinetic System™** next generation cooling to exchange and move heat from an electrical enclosure to the outside environment. This is a perfect solution when concerned with the open loop designs that don't prevent corrosive gas, humidity and dust from entering the enclosure. Designed for indoor cooling, outdoor or remote applications that require a closed loop system to protect electronics. Available in 3 models; **PKS 3201**, **PKS 3203**, **PKS 3204**.

PFANNENBERG KINETIC SYSTEM™

Uses next generation cooling technology that out-performs conventional heat exchanger and/or heat pipe solutions.



Energy Efficient

Utilizes lower temperature ambient air to cool warmer internal air without an active component such as a compressor which consumes high amounts of energy.

Reduced Maintenance

With only two mechanical components (fans), potential failure point is reduced to ensure continuous uptime of your processes.

Flexible Mounting Options

Unit can be installed vertically or horizontally, allowing the cool air to be focused where it is needed most.



Closed Loop Design

Designed to isolate external ambient air from internal air eliminating the risk of contaminants entering the cabinet. Compared to Filterfans® with Rainhoods, the PKS seals against gaseous substances, humidity and airborne particulates such as dust, keeping it away from sensitive components within the electrical enclosure.

Easy Installation

Our compact lightweight design means that the unit can be installed by just one person.

Self Protected from Harsh Environments

Our unit is uniquely designed to protect itself in NEMA 3R, 4, and 4X environments. An example of this is the location of our control electronics within our dry, cool interior circuit.

Eliminates Hotspots

High CFM fan for good air flow within the enclosure, ideal for removing hot spots.



**PATENT
PENDING**





PKS 320X (50-55 Watts/°C) Kinetic System Air/Air Heat Exchangers

Model Number	Part Number	Voltage 50/60 Hz (VAC)	Specific Cooling Capacity		Cooling Capacity @ $\Delta T = 20^{\circ}\text{C}$ (BTU/hr)	Power Consumption (Watts)	Nominal Run Current (Amps)	Mounting Dimensions* (Inches)			Weight (without packaging) (lbs)
			(W/°C)	(W/°F)				Width	Depth	Height	
PKS 3201 Indoor Rated (NEMA Type 12)	12580511005	115	55	31	3,700	75	0.86	12	11	35	44
	12580521005	230	55	31	3,700	75	0.42	12	11	35	44
	12580531005	400/460	55	31	3,700	75	0.21	12	11	35	47
PKS 3203 Outdoor Rated (NEMA Type 3R/4)	12580513005	115	50	28	3,400	75	0.86	12	11	35	50
	12580523005	230	50	28	3,400	75	0.42	12	11	35	50
	12580533005	400/460	50	28	3,400	75	0.21	12	11	35	53
PKS 3204 Washdown (NEMA Type 4/4x)	12580514008	115	50	28	3,400	75	0.86	12	11	35	50
	12580524008	230	50	28	3,400	75	0.42	12	11	35	50
	12580534008	400/460	50	28	3,400	75	0.21	12	11	35	53

Additional Data	PKS 320X
Ambient Temp. Range	Min: -25°C / -13°F . . . $+55^{\circ}\text{C}$ / $+131^{\circ}\text{F}$
Control Range	20°C to 60°C (68°F to 140°F); Factory Setting 35°C (95°F)
Design	Housing/Cover: Indoor/Outdoor - powder coated RAL 7035 (light gray); Washdown - 304 Stainless Steel

*Louver and rainhood dimensions not included on outdoor and washdown units.

For additional technical data, drawings and templates visit www.pfannenbergusa.com

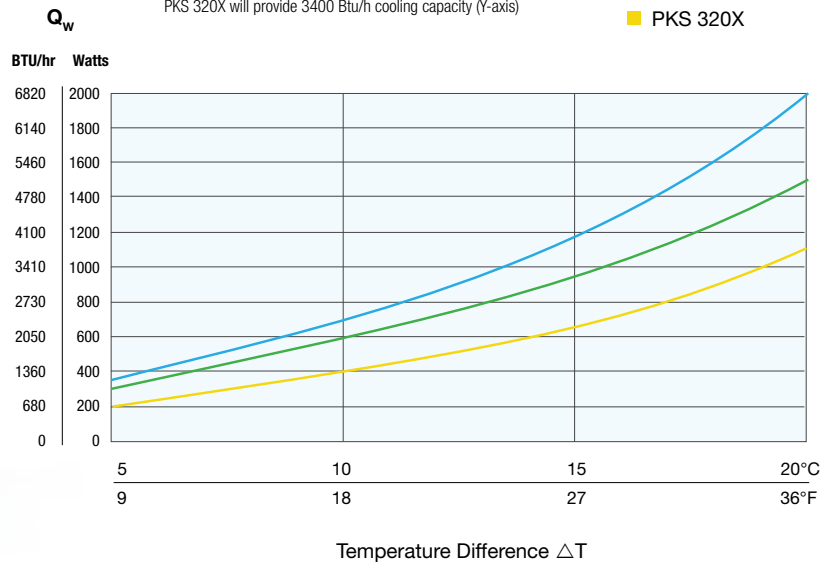
Subject to technical amendments and misprints.

Cooling Capacity Performance Curve

How to use this chart

Example: @ ΔT of 10°C (X-axis),
PKS 320X will provide 3400 Btu/h cooling capacity (Y-axis)

- PKS 336X
- PKS 330X
- PKS 320X



Up to 15% derating for units with louvers & rainhood.

Available Models:



PKS 3201
Indoor Rated

PKS 3203
Outdoor Rated

PKS 3204
Washdown

PKS 330X

AIR/AIR HEAT EXCHANGERS

75-85 W/°C

The PKS 330X Series Air/Air Heat Exchangers use **Pfannenbergs Kinetic System™** next generation cooling to exchange and move heat from an electrical enclosure to the outside environment. This is a perfect solution when concerned with the open loop designs that don't prevent corrosive gas, humidity and dust from entering the enclosure. Designed for indoor cooling, outdoor or remote applications that require a closed loop system to protect electronics. Available in 3 models; **PKS 3301**, **PKS 3303**, **PKS 3304**.

PFANNENBERG KINETIC SYSTEM™

Uses next generation cooling technology that out-performs conventional heat exchanger and/or heat pipe solutions.



Energy Efficient

Utilizes lower temperature ambient air to cool warmer internal air without an active component such as a compressor which consumes high amounts of energy.

Reduced Maintenance

With only two mechanical components (fans), potential failure point is reduced to ensure continuous uptime of your processes.

Flexible Mounting Options

Unit can be installed vertically or horizontally, allowing the cool air to be focused where it is needed most.

Closed Loop Design

Designed to isolate external ambient air from internal air eliminating the risk of contaminants entering the cabinet. Compared to Filterfans® with Rainhoods, the PKS seals against gaseous substances, humidity and airborne particulates such as dust, keeping it away from sensitive components within the electrical enclosure.

Easy Installation

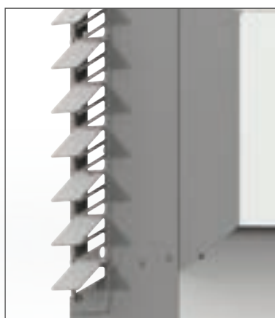
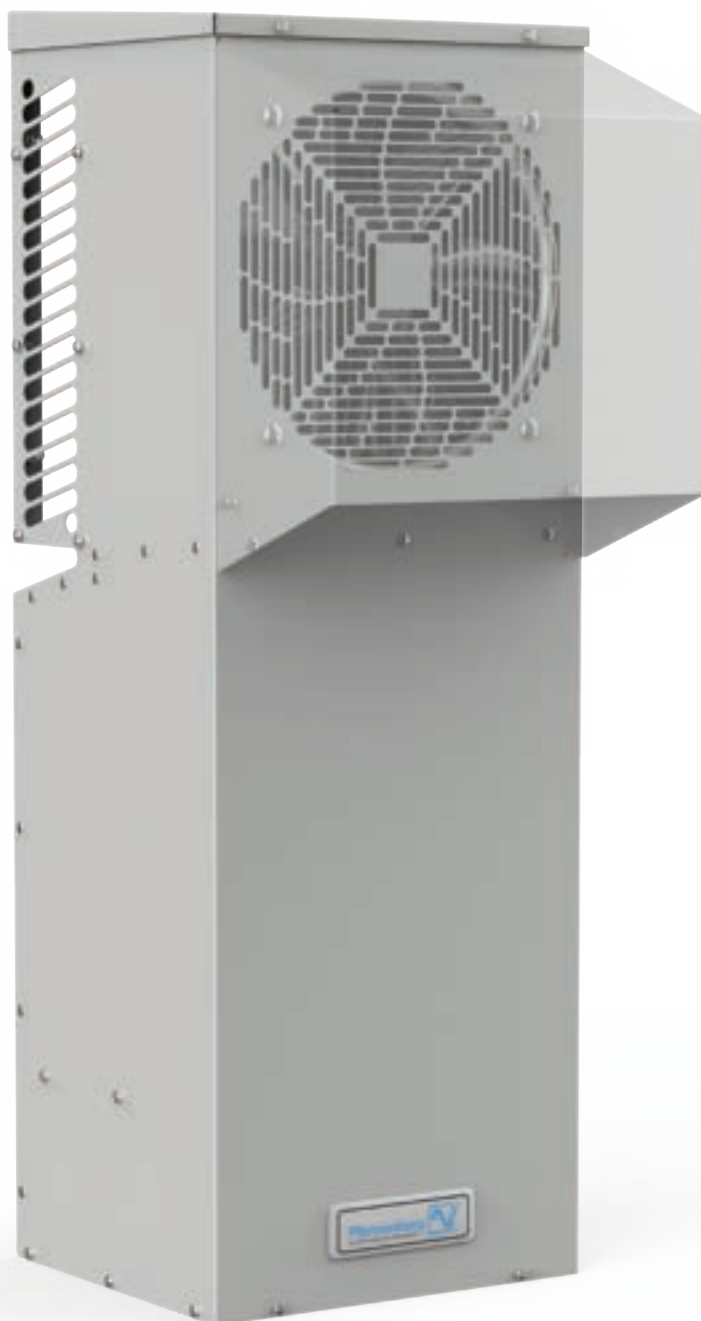
Our compact lightweight design means that the unit can be installed by just one person.

Self Protected from Harsh Environments

Our unit is uniquely designed to protect itself in NEMA 3R, 4, and 4X environments. An example of this is the location of our control electronics within our dry, cool interior circuit.

Eliminates Hotspots

High CFM fan for good air flow within the enclosure, ideal for removing hot spots.



**PATENT
PENDING**



PKS 330X (75-85 Watts/°C) Kinetic System Air/Air Heat Exchangers

Model Number	Part Number	Voltage 50/60 Hz (VAC)	Specific Cooling Capacity		Cooling Capacity @ $\Delta T = 20^{\circ}\text{C}$ (BTU/hr)	Power Consumption (Watts)	Nominal Run Current (Amps)	Mounting Dimensions* (Inches)			Weight (without packaging) (lbs)
			(W/°C)	(W/°F)				Width	Depth	Height	
PKS 3301 Indoor Rated (NEMA Type 12)	12580811005	115	85	47	5,800	353	2.84	12	11	35	54
	12580821005	230	85	47	5,800	245	1.40	12	11	35	54
	12580831005	400/460	85	47	5,800	245	0.70	12	11	35	64
PKS 3303 Outdoor Rated (NEMA Type 3R/4)	12580813005	115	75	42	5,100	345	2.84	12	11	35	60
	12580823005	230	75	42	5,100	245	1.40	12	11	35	60
	12580833005	400/460	75	42	5,100	245	0.70	12	11	35	70
PKS 3304 Washdown (NEMA Type 4/4x)	12580814008	115	75	42	5,100	345	2.84	12	11	35	60
	12580824008	230	75	42	5,100	245	1.40	12	11	35	60
	12580834008	400/460	75	42	5,100	245	0.70	12	11	35	70

Additional Data	PKS 330X
Ambient Temp. Range	Min: -25°C / -13°F . . . $+55^{\circ}\text{C}$ / $+131^{\circ}\text{F}$
Control Range	20°C to 60°C (68°F to 140°F); Factory Setting 35°C (95°F)
Design	Housing/Cover: Indoor/Outdoor - powder coated RAL 7035 (light gray); Washdown - 304 Stainless Steel

*Louver and rainhood dimensions not included on outdoor and washdown units.

For additional technical data, drawings and templates visit www.pfannenbergusa.com
Subject to technical amendments and misprints.

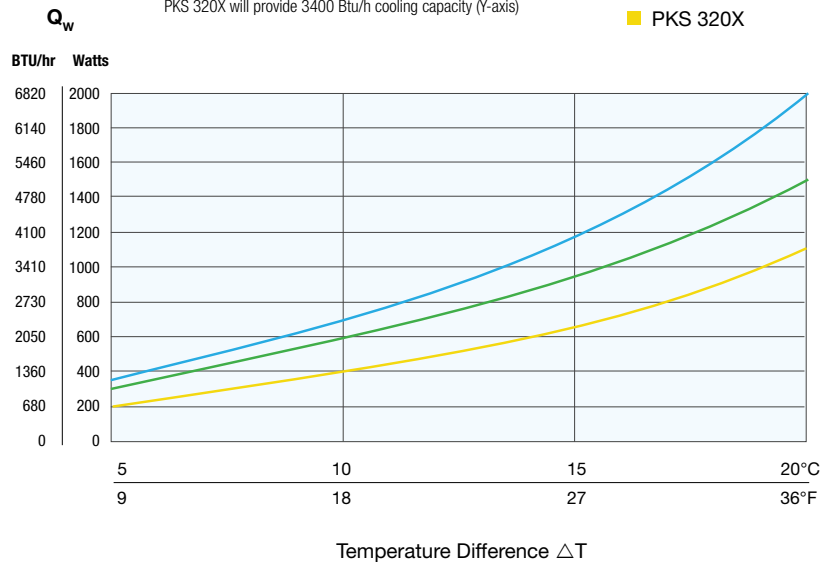
Cooling Capacity Performance Curve

Available Models:

How to use this chart

Example: @ ΔT of 10°C (X-axis),
PKS 320X will provide 3400 Btu/h cooling capacity (Y-axis)

- PKS 336X
- PKS 330X
- PKS 320X



Up to 15% derating for units with louvers & rainhood.



PKS 3301
Indoor Rated

PKS 3303
Outdoor Rated

PKS 3304
Washdown

PKS 336X

AIR/AIR HEAT EXCHANGERS

85-100 W/°C

The PKS 336X Series Air/Air Heat Exchangers use **Pfannenberg's Kinetic System™** next generation cooling to exchange and move heat from an electrical enclosure to the outside environment. This is a perfect solution when concerned with the open loop designs that don't prevent corrosive gas, humidity and dust from entering the enclosure. Designed for indoor cooling, outdoor or remote applications that require a closed loop system to protect electronics. Available in 3 models; **PKS 3361**, **PKS 3363**, **PKS 3364**.

PFANNENBERG KINETIC SYSTEM™

Uses next generation cooling technology that out-performs conventional heat exchanger and/or heat pipe solutions.



Energy Efficient

Utilizes lower temperature ambient air to cool warmer internal air without an active component such as a compressor which consumes high amounts of energy.

Reduced Maintenance

With only two mechanical components (fans), potential failure point is reduced to ensure continuous uptime of your processes.

Flexible Mounting Options

Unit can be installed vertically or horizontally, allowing the cool air to be focused where it is needed most.



Closed Loop Design

Designed to isolate external ambient air from internal air eliminating the risk of contaminants entering the cabinet. Compared to Filterfans® with Rainhoods, the PKS seals against gaseous substances, humidity and airborne particulates such as dust, keeping it away from sensitive components within the electrical enclosure.

Easy Installation

Our compact lightweight design means that the unit can be installed by just one person.

Self Protected from Harsh Environments

Our unit is uniquely designed to protect itself in NEMA 3R, 4, and 4X environments. An example of this is the location of our control electronics within our dry, cool interior circuit.

Eliminates Hotspots

High CFM fan for good air flow within the enclosure, ideal for removing hot spots.



PATENT
PENDING



PKS 336X (85-100 Watts/°C) Kinetic System Air/Air Heat Exchangers

Model Number	Part Number	Voltage 50/60 Hz (VAC)	Specific Cooling Capacity		Cooling Capacity @ ΔT = 20°C (BTU/hr)	Power Consumption (Watts)	Nominal Run Current (Amps)	Mounting Dimensions* (Inches)			Weight (without packaging) (lbs)
			(W/°C)	(W/°F)				Width	Depth	Height	
PKS 3361 Indoor Rated (NEMA Type 12)	12580911005	115	100	56	6,800	353	2.84	12	11	35	54
	12580921005	230	100	56	6,800	245	1.40	12	11	35	54
	12580931005	400/460	100	56	6,800	245	0.70	12	11	35	64
PKS 3363 Outdoor Rated (NEMA Type 3R/4)	12580913005	115	85	47	5,800	345	2.84	12	11	35	60
	12580923005	230	85	47	5,800	245	1.40	12	11	35	60
	12580933005	400/460	85	47	5,800	245	0.70	12	11	35	70
PKS 3364 Washdown (NEMA Type 4/4x)	12580914008	115	85	47	5,800	345	2.84	12	11	35	60
	12580924008	230	85	47	5,800	245	1.40	12	11	35	60
	12580934008	400/460	85	47	5,800	245	0.70	12	11	35	70

Additional Data	PKS 336X
Ambient Temp. Range	Min: -25°C / -13°F . . . +55°C / +131°F
Control Range	20°C to 60°C (68°F to 140°F); Factory Setting 35°C (95°F)
Design	Housing/Cover: Indoor/Outdoor - powder coated RAL 7035 (light gray); Washdown - 304 Stainless Steel

*Louver and rainhood dimensions not included on outdoor and washdown units.

For additional technical data, drawings and templates visit www.pfannenbergusa.com
Subject to technical amendments and misprints.

Cooling Capacity Performance Curve

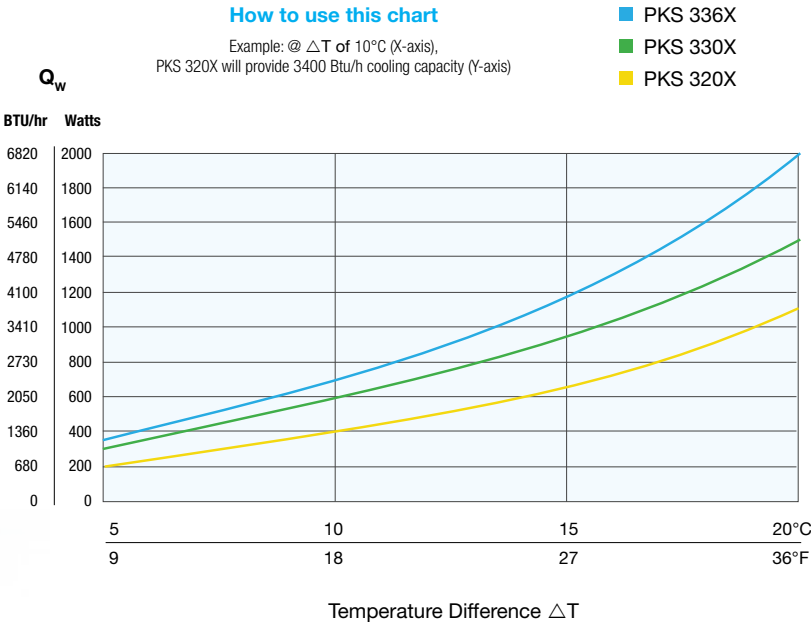
Available Models:



PKS 3361
Indoor Rated

PKS 3363
Outdoor Rated

PKS 3364
Washdown



Up to 15% derating for units with louvers & rainhood.





DTS 3000, DTT 6000 & DTI 6000 Series Cooling Units

Thermal Protection for Critical Electronics

Utilize closed loop cooling in tough industrial or outdoor applications with Pfannenberger's 'service-friendly' cooling units.

Pfannenberger's **DTS 3000 Series Cooling Units** are driven to meet the demands of our North American NEMA market. These units meet the needs of indoor NEMA Type 12 applications, NEMA Type 3R/4 outdoor applications and NEMA Type 4/4x stainless steel for washdown applications.

Pfannenberger's revolutionary designed **DTT Top Mount Cooling Units** offer unique protection through our innovative, patented condensate management system. These units can be safely installed above critical components with peace of mind.

The **DTI 6000 Series** allows for European-style recessed mounting on enclosure doors and/or side panels on modular systems. These "click & fit" units reduce installation times by more than 90%.



THE TECHNOLOGY OF COOLING

Cooling with Closed Loop Cooling Units

Pfannenberg cooling units operate on the principle of the Carnot cycle. This means that the cooling unit functions as a heat pump that “pumps” the thermal energy transferred from the electronic cabinet (heat dissipated from the components) up to a higher level of temperature (the ambient temperature can reach levels as high as + 55 °C). The air inside the enclosure is cooled down by the evaporator and at the same time dehumidified.

How do I know if a cooling unit is the right product for my application?

- If the ambient temperature is greater than the target internal temperature of the enclosure, active cooling is required.
- If a NEMA Type 12 to 4x rating is required - closed loop systems can maintain the NEMA Type rating of the cabinet.

Properly sizing a cooling unit

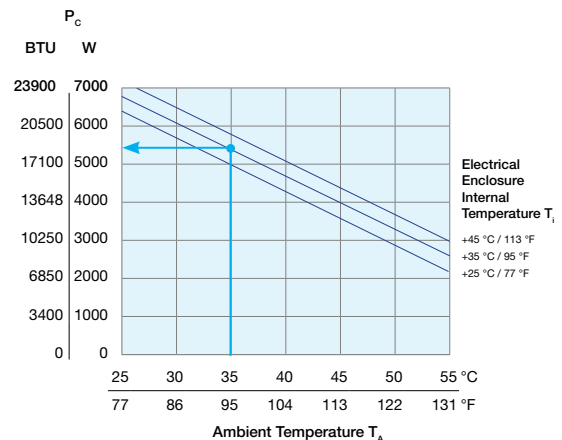
To properly size a cooling unit you must know the **required cooling capacity in Watts, mounting requirements (side, integrated or top mount)** and the **dimensions of the cooling unit and enclosure**.

$$\{P_C = P_D - P_R\} \quad \{P_R = C \times A \times \Delta T\}$$

- **P_C [Watt]:**
Refrigeration capacity of a cooling unit.
- **P_D [Watt]:**
Dissipation loss: Thermal power generated inside a cabinet by the dissipation loss of components.
- **P_R [Watt]:**
Radiant heat gain/loss: Heat transfer through the skin of the enclosure (insulation factor not included).
- **C [W/m²°C]:**
Coefficient of heat transmission.
- **A [m²]:**
Surface area of electronics cabinet.
- **ΔT [°C]:**
Difference in temperature between the ambient air and the air inside the electronics cabinet.

Utilizing performance curves to properly size cooling units:

Pfannenberg utilizes the DIN standard 35/35 °C when rating our cooling units. Many other companies use 50/50 °C, which provides a higher, non-usable value. Customers should use their own application temperatures to determine the proper cooling capacity of the system.



Note: Cooling capacity may vary between voltage and configurations.

Important information when utilizing cooling units:

- The refrigeration capacity should exceed the dissipation loss from the installed components by approximately 10%.
- The enclosure should be sealed to prevent the inflow of ambient air.
- Use the door contact switch to impede operation with open doors and consequent excessive accumulation of condensation.
- Use cooling units with maximum clearance between air inflow and air outflow to prevent poor circulation.
- Make sure that the air inflow and air outflow in the external circuit is not hindered, preventing proper heat exchanging at the condenser.
- When using top-mounted cooling units, make sure that components with their own fans do not expel the air directly into the cooling units cool air outflow.
- Make sure unit is level.
- Setting the temperature to the lowest setting is not the optimal solution due to the condensation issues. The value we have preset on the cooling unit is a sound compromise between cooling the inside of the enclosure and the accumulation of condensation.



COOLING UNITS QUICK SELECTION CHART

Type	Cooling Capacity Btu/h	Rated Voltage	Dimensions H x W x D Inches (mm)	Approvals				Page
				UL	cUL	UR	CE	
DTS Series Indoor Side Mount NEMA Type 12 Cooling Units								
DTS 3021	900 - 1300	115 V / 230 V	15.5 (393.7) x 7 (177.8) x 7.53 (191.4)	●	●		●	46
DTS 3041	2000 - 3000	115 V / 230 V / 460 V	20.15 (512) x 10 (254) x 10.8 (274)	●	●		●	48
DTS 3141	3000 - 4000	115 V / 230 V / 400/460 V	29.46 (748) x 15.55 (395) x 9.3 (237)	●	●		●	50
DTS 3141 SL	3000 - 5000	115 V / 230 V / 400/460 V	36 (914) x 12 (305) x 12 (304)	●	●		●	52
DTS 3145	5000 - 7000	115 V / 230 V / 400/460 V	36 (914) x 12 (305) x 12 (304)	●	●		●	54
DTS 3241	7000 - 8500	115 V / 230 V / 400/460 V	47.60 (1209) x 15.6 (395) x 10.6 (269)	●	●		●	56
DTS 3245	9000 - 12000	115 V / 230 V / 400/460 V	53 (1347) x 16 (406) x 11.9 (301)	●	●		●	58
DTS 3441C	15000 - 20000	230 V / 400/460 V	56.75 (1440) x 16 (406) x 16 (405)	●	●		●	60
DTS 3641C	20000 - 24000	230 V / 400/460 V	65.5 (1665) x 19 (485) x 20.5 (520)	●	●		●	62
DTS Series Outdoor Cooling Units - NEMA Type 3R/4								
DTS 3031	900 - 1300	115 V / 230 V	15.5 (393.7) x 7 (177.8) x 7.53 (191.4)	●	●		●	48
DTS 3061	2000 - 3000	115 V / 230 V / 460 V	20.15 (512) x 10 (254) x 10.8 (274)	●	●		●	48
DTS 3161	3000 - 4000	115 V / 230 V / 400/460 V	29.46 (748) x 15.55 (395) x 11.55 (294)	●	●		●	50
DTS 3161 SL	3000 - 5000	230 V / 400/460 V	36 (914) x 12 (305) x 14.4 (366.2)	●	●		●	52
DTS 3165	5000 - 7000	115 V / 230 V / 400/460 V	36 (914) x 12 (305) x 14.5 (368.3)	●	●		●	54
DTS 3261	7000 - 8500	115 V / 230 V / 400/460 V	47.1209 (1209) x 15.55 (395) x 12.83 (326)	●	●		●	56
DTS 3265	9000 - 12000	115 V / 230 V / 400/460 V	53 (1347) x 16.2 (411) x 14.4 (365.2)	●	●		●	58
DTS 3461C	15000 - 20000	230 V / 400/460 V	56.75 (1440) x 16 (406) x 16 (405)	●	●		●	60
DTS 3661C	20000 - 24000	230 V / 400/460 V	65.5 (1665) x 19 (485) x 24.5 (620)	●	●		●	62
DTS Series Washdown Cooling Units - NEMA Type 4/4X								
DTS 3031 SS	900 - 1300	115 V / 230 V	15.5 (393.7) x 7 (177.8) x 7.53 (191.4)	●	●		●	48
DTS 3081	2000 - 3000	115 V / 230 V / 460 V	20.15 (512) x 10 (254) x 10.8 (274)	●	●		●	48
DTS 3181	3000 - 4000	115 V / 230 V / 400/460 V	29.45 (748) x 15.55 (395) x 11.55 (294)	●	●		●	50
DTS 3181 SL	3000 - 5000	230 V / 400/460 V	36 (914) x 12 (305) x 14.4 (366.2)	●	●		●	52
DTS 3185	5000 - 7000	115 V / 230 V / 400/460 V	36 (914) x 12 (305) x 14.5 (368.3)	●	●		●	54
DTS 3281	7000 - 8500	115 V / 230 V / 400/460 V	47 (1209) x 15.55 (395) x 12.83 (326)	●	●		●	56
DTS 3285	9000 - 12000	115 V / 230 V / 400/460 V	53 (1347) x 16.2 (411) x 14.4 (365.2)	●	●		●	58
DTS 3481C	15000 - 20000	230 V / 400/460 V	56.75 (1440) x 16 (406) x 19 (484.5)	●	●		●	60
DTS 3681C	20000 - 24000	230 V / 400/460 V	65.5 (1665) x 19 (485) x 24.5 (620)	●	●		●	62
DTI Series Integrated/Recessed (European)								
DTI 6201 C	3000-4000	230 V / 400/460 V	37.87 (962) x 16.14 (410) x 9.57 (243)			●	●	66
DTI 6301 C	5000-6000	230 V / 400/460 V	37.87 (962) x 16.14 (410) x 9.57 (243)			●	●	66
DTI 6201	3000 - 4000	230 V / 400/460 V	60.47 (1536) x 19.09 (485) x 8.58 (218)			●	●	68
DTI 6301	5000 - 6000	230 V / 400/460 V	60.47 (1536) x 19.09 (485) x 8.58 (218)			●	●	68
DTI 6401	7000 - 8000	400/460 V	60.47 (1536) x 19.09 (485) x 10.94 (278)			●	●	70
DTI 6501	9000 - 11000	400/460 V	60.47 (1536) x 19.09 (485) x 10.94 (278)			●	●	70
DTI 6801	13000 - 16000	400/460 V	60.59 (1539) x 19.09 (485) x 14.64 (372)			●	●	72
DTT Series Top Mount NEMA 12 Cooling Units								
DTT 6101	1200 - 2000	115 V / 230 V	17.13 (435) x 23.43 (595) x 15.55 (395)			●	●	76
DTT 6201	2500 - 4000	115 V / 230 V / 400/460 V	17.13 (435) x 23.43 (595) x 15.55 (395)			●	●	76
DTT 6301	4000 - 5500	115 V / 230 V / 400/460 V	17.13 (435) x 23.43 (595) x 19.49 (495)			●	●	78
DTT 6401	5500 - 7000	115 V / 230 V / 400/460 V	17.13 (435) x 23.43 (595) x 19.49 (495)			●	●	78
DTT 6601	7000 - 10000	400/460 V	19.09 (485) x 31.30 (795) x 22.64 (575)			●	●	80
DTT 6801	12000 - 14000	400/460 V	19.09 (485) x 31.30 (795) x 22.64 (575)			●	●	80

● available

DTS 3021/31/SS | COOLING UNITS

900 - 1300 Btu/h

The DTS 3021/31/SS series cooling units are ideal for small enclosures and for the cooling of hot spots in larger control cabinets. These units are particularly suited for the food industry and outdoor applications. Available in 3 models; **DTS 3021 (NEMA Type 12)** for indoor use, **DTS 3031 (NEMA Type 3R/4)** designed for outdoor use, and the stainless steel **DTS 3031 SS (NEMA Type 4/4x)** designed for wash-down applications.

Closed Loop Design

Designed to isolate the external ambient air from the internally conditioned air eliminating the risk of contaminants entering the cabinet.

Thermal Overload Protection

Compressor and fan motors are outfitted with integral temperature switches to shut down the unit in the event of excessive temperature. This increases the operating life of the compressor by preventing thermal overload trips.

Thermal Expansion Valve

Regulates the flow of refrigerant based on thermal demand for efficient performance over the entire operating temperature range.

Hermetically Sealed Compressor

The absence of any refrigerant fill valves eliminates leak paths. Recharging is never needed. 100% cooling capacity efficiency is ensured.

Condensate Drain Port

Permits effective collection and drainage of condensation.

15.5 in. (393.7 mm)

7 in. (177.8 mm)

7.53 in. (191.4 mm)

ERP Efficiency Certified

As a component of the Kyoto Protocol to reduce carbon monoxide emissions, the European Energy Related Products (ERP) Directive includes an efficiency rating for fans. Pfannenberg proudly utilizes components which adhere to these requirements.

Rugged Design

Powder coated steel or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.

Environmentally Friendly

Utilizes HFC-free R134a refrigerant versus a blended refrigerant for easier service and minimized negative impact to the environment.

Highest in Class Capacity

The compact, 7 inch width is ideal for small enclosures with a relatively small heat load.





DTS 30X1 Series (900 - 1300 Btu/h) Side-Mount Cooling Units

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current* @ 35A/35A °C	Fuse (maximum)** Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTS 3021 Indoor Rated (NEMA Type 12)	13383144255	115	60	243	3.3	5A	<64	30 (13.6)
	13383141255	230	50/60	253	2	5A	<64	30 (13.6)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...251							
DTS 3031 Outdoor Rated (NEMA Type 3R/4)	13383144355	115	60	243	3.3	5A	<64	30 (13.6)
	13383141355	230	50/60	253	2	5A	<64	30 (13.6)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...351							
DTS 3031 SS Washdown (NEMA Type 4/4x)	13383144158	115	60	243	3.3	5A	<64	30 (13.6)
	13383141158	230	50/60	253	2	5A	<64	30 (13.6)
Design	Housing: stainless steel 304 Cover: stainless steel 304							

Additional Data		DTS 3021	DTS 3031	DTS 3031 SS	
Ambient Temperature Range		+ 46 ... + 114/ + 8 ... + 45			°F / °C
Control range (adjustable)	SC	+ 50 ... + 104 / + 10 ... + 40; factory setting + 95 / + 35			
Refrigerant	type	R134a			
	quantity	145 - 150			g
Condensate management		condensate drain			
Protection system according to NEMA Type	12	3R/4	4/4X	against enclosure when properly installed	
	NEMA 1 towards the surroundings when properly installed				
Accessories		For spare part kits and additional accessories visit pgs. 74-75 in this catalog			

* For the MCA (Maximum Current Ampacity) value per UL, please consult product technical datasheets available on our website.
** Suitable for Transformer Inrush Protection for the DTS 3000 units.



For additional technical data, drawings and templates.
www.pfannenberusa.com

Available Models:



DTS 3021
Indoor Rated
(NEMA Type 12)



DTS 3031
Outdoor Rated
(NEMA Type 3R/4)

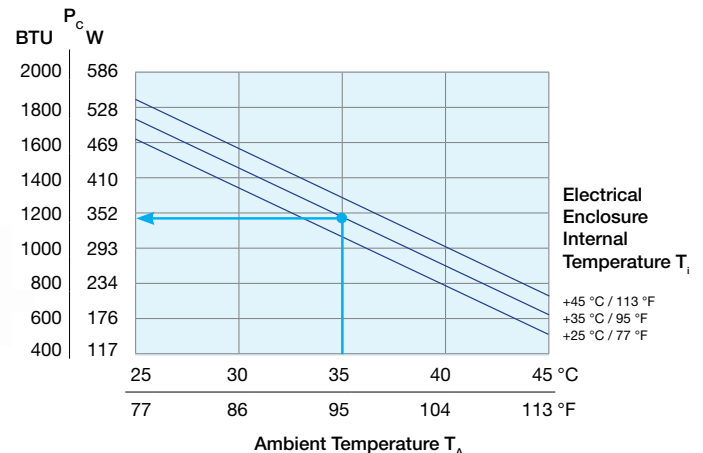


DTS 3031 SS
Washdown
(NEMA Type 4/4x)

Cooling Capacity Performance Curve

How to use this chart

Example: @ 95 °F (ambient, X-axis), @ 95 °F (internal, diagonal lines)
= 1194 Btu/h cooling capacity (Y-axis)



Note: Cooling capacity may vary between voltage and configurations.

DTS 30X1 | COOLING UNITS

2000 - 3000 Btu/h

The DTS 30X1 series cooling units are ideal for small enclosures and for the cooling of hot spots in larger control cabinets. These units are particularly suited for the food industry and outdoor applications. Available in 3 models; **DTS 3041 (NEMA Type 12)** for indoor use, **DTS 3061 (NEMA Type 3R/4)** designed for outdoor use, and the stainless steel **DTS 3081 (NEMA Type 4/4x)** designed for wash-down applications.

Closed Loop Design

Designed to isolate the external ambient air from the internally conditioned air eliminating the risk of contaminants entering the cabinet.

Thermal Overload Protection

Compressor and fan motors are outfitted with integral temperature switches to shut down the unit in the event of excessive temperature. This increases the operating life of the compressor by preventing thermal overload trips.

Pressure Overload Protection

High pressure cutout switch ensures safety by shutting off the compressor in the event of excessive pressure appearing in the refrigeration circuit.

Thermal Expansion Valve

Regulates the flow of refrigerant based on thermal demand for efficient performance over the entire operating temperature range.

Hermetically Sealed Compressor

The absence of any refrigerant fill valves eliminates leak paths. Recharging is never needed. 100% cooling capacity efficiency is ensured.

ERP Efficiency Certified

As a component of the Kyoto Protocol to reduce carbon monoxide emissions, the European Energy Related Products (ERP) Directive includes an efficiency rating for fans. Pfannenberg proudly utilizes components which adhere to these requirements.

Environmentally Friendly

Utilizes HFC-free R134a refrigerant versus a blended refrigerant for easier service and minimized negative impact to the environment.

High Airflow Backward Curve Impeller Fan

Provides high airflow in a long lasting, single bearing design. Outperforms typical two-bearing blowers with nearly twice the lifespan.

Highest in Class Capacity

The compact, 10 inch width is ideal for small enclosures with a relatively small heat load. The integral power cord helps simplify installation. An integral ingress filter is provided on type 12/3R/4 versions.

Corrosion Protection

Outdoor and washdown units have a special coating on pipes and coils on the ambient side of the unit to provide maximum protection from saltwater, sour gas, and other corrosive substances.

Optimized Condenser Designs

The wide fin spacing is less susceptible to clogging from dirt buildup which can cause the unit to work harder and hamper efficiency.

Rugged Design

Powder coated steel or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.

High Ambient Performance

The DTS 3000 Series Cooling Units were designed utilizing high temperature compressors and larger condensers. Both the indoor NEMA Type 12 units and outdoor units perform very well in environments that require cooling where the maximum ambient temperature is 131° F. High ambient options are also available to 140° F.

Easy to Maintain

Both the indoor and outdoor 30X1 cooling units include an integrated Pfannenberg PFA Exhaust Filter for simple replacement of the filter.





DTS 30X1 Series (2000 - 3000 Btu/h) Side-Mount Cooling Units

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current* @ 35A/35A °C	Fuse (maximum)** Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTS 3041 Indoor Rated (NEMA Type 12)	13382344255	115	60	690	3.12	10A	<64	51 (23)
	13382341255	230	50/60	663	1.52	5A	<64	51 (23)
	13382336255	400/460	50/60	870	0.76	5	<64	62 (28)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...251							
DTS 3061 Outdoor Rated (NEMA Type 3R/4)	13382344355	115	60	690	3.12	10A	<64	51 (23)
	13382341355	230	50/60	663	1.52	5A	<64	51 (23)
	13382336355	400/460	50/60	870	0.76	5	<64	62 (28)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...351							
DTS 3081 Washdown (NEMA Type 4/4x)	13382344300	115	60	690	3.12	10A	<64	55 (25)
	13382341300	230	50/60	663	1.52	5A	<64	55 (25)
	13382336158	400/460	50/60	870	0.76	5	<64	66 (30)
Design	Housing: stainless steel 304 Cover: stainless steel 304							

Additional Data		DTS 3041	DTS 3061	DTS 3081	
Ambient Temperature Range		+ 46 ... + 114 / + 8 ... + 45	+ 32 ... + 131 / 0 ... + 55		°F / °C
Control range (adjustable) SC		+ 50 ... + 104 / + 10 ... + 40; factory setting + 95 / + 35			
Refrigerant	type	R134a			
	quantity	400			g
Condensate management		condensate drain			
Protection system according to NEMA Type		12	3R/4	4/4X	against enclosure when properly installed
		NEMA 1 towards the surroundings when properly installed			
Accessories		For spare part kits and additional accessories visit pgs. 74-75 in this catalog			

* For the MCA (Maximum Current Ampacity) value per UL, please consult product technical datasheets available on our website.

** Suitable for Transformer Inrush Protection for the DTS 3000 units.



For additional technical data, drawings and templates.
www.pfannenbergusa.com

Available Models:



DTS 3041
Indoor Rated
(NEMA Type 12)

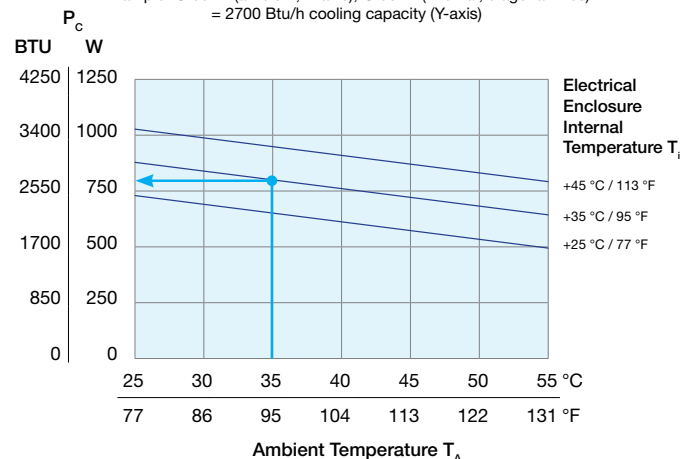
DTS 3061
Outdoor Rated
(NEMA Type 3R/4)

DTS 3081
Washdown
(NEMA Type 4/4x)

Cooling Capacity Performance Curve

How to use this chart

Example: @ 95 °F (ambient, X-axis), @ 95 °F (internal, diagonal lines)
= 2700 Btu/h cooling capacity (Y-axis)



Note: Cooling capacity may vary between voltage and configurations.

DTS 31X1 | COOLING UNITS

3000 - 4000 Btu/h

The DTS 31X1 series cooling units utilize a long internal air path to capture heat above the components and provide cool air below. Available in 3 models; **DTS 3141 (NEMA Type 12)** for indoor use, **DTS 3161 (NEMA Type 3R/4)** designed for outdoor use, and the stainless steel **DTS 3181 (NEMA Type 4/4x)** designed for washdown applications.

Closed Loop Design

Designed to isolate the external ambient air from the internally conditioned air eliminating the risk of contaminants entering the cabinet.

Thermal Overload Protection

Compressor and fan motors are outfitted with integral temperature switches to shut down the unit in the event of excessive temperature. This increases the operating life of the compressor by preventing thermal overload trips.

Environmentally Friendly

Utilizes HFC-free R134a refrigerant versus a blended refrigerant for easier service and minimized negative impact to the environment.

Pressure Overload Protection

High pressure cutout switch ensures safety by shutting off the compressor in the event of excessive pressure appearing in the refrigeration circuit.

Hermetically Sealed Compressor

The absence of any refrigerant fill valves eliminates leak paths. Recharging is never needed. 100% cooling capacity efficiency is ensured.

Corrosion Protection

Outdoor and washdown units have a special coating on pipes and coils on the ambient side of the unit to provide maximum protection from saltwater, sour gas, and other corrosive substances.

Thermal Expansion Valve

Regulates the flow of refrigerant based on thermal demand for efficient performance over the entire operating temperature range.

High Airflow Backward Curve Impeller Fan

Provides high airflow in a long lasting, single bearing design. Outperforms typical two-bearing blowers with nearly twice the lifespan.

ERP Efficiency Certified

As a component of the Kyoto Protocol to reduce carbon monoxide emissions, the European Energy Related Products (ERP) Directive includes an efficiency rating for fans. Pfannenberg proudly utilizes components which adhere to these requirements.

High Ambient Performance

The DTS 3000 Series Cooling Units were designed utilizing high temperature compressors and larger condensers. Both the indoor NEMA Type 12 units and outdoor units perform very well in environments that require cooling where the maximum ambient temperature is 131° F.

Rugged Design

Powder coated steel or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.

Self Protected from Harsh Environments

Our unit is uniquely designed to protect itself in NEMA 3R, 4, and 4X environments. An example of this is the location of our control electronics within our dry, cool interior circuit.

Maintenance Free, Filterless Design

The wide fin spacing is less susceptible to clogging from dirt buildup which can cause the unit to work harder and hamper efficiency.

Active Condensate Management

Condensation is a natural by-product of refrigeration. The heated condensate collection pan boils this off thereby eliminating the need for drain tubes and buckets. To conserve power, this heater only activates when necessary.





DTS 31X1 Series (3000 - 4000 Btu/h) Side-Mount Cooling Units

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current* @ 35A/35A °C	Fuse (maximum)** Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTS 3141 Indoor Rated (NEMA Type 12)	13385444255	115	60	845	7.51	12	<70	84 (38)
	13385441255	230	50/60	795	4.49	8	<70	84 (38)
	13385436255	400/460	50/60	1200	2.25	4	<70	88 (40)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...351							
DTS 3161 Outdoor Rated (NEMA Type 3R/4)	13385444355	115	60	845	7.51	12	<70	89 (40)
	13385441355	230	50/60	795	4.49	8	<70	89 (40)
	13385436355	400/460	50/60	1200	2.25	4	<70	92 (42)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...351							
DTS 3181 Washdown (NEMA Type 4/4x)	13385444158	115	60	845	7.51	12	<70	92 (42)
	13385441158	230	50/60	795	4.49	8	<70	92 (42)
	13385436158	400/460	50/60	1200	2.25	4	<70	97 (44)
Design	Housing: galvanized sheet steel Cover: stainless steel 304							

Additional Data		DTS 3141	DTS 3161	DTS 3181		
Ambient Temperature Range		+ 59 ... + 131 / + 15 ... + 55	+ 32 ... + 131 / + 0 ... + 55		°F / °C	
Control range (adjustable)	SC	+ 77 ... + 113 / + 25 ... + 45; factory setting + 95 / + 35				
Refrigerant	type	R134a			g	
	quantity	400				
Condensate management		active condensate evaporation system with safety overflow				
Protection system according to NEMA Type		12	3R/4	4/4X	against enclosure when properly installed	
		NEMA 1 towards the surroundings when properly installed				
Accessories		For spare part kits and additional accessories visit pgs. 74-75 in this catalog				

* For the MCA (Maximum Current Ampacity) value per UL, please consult product technical datasheets available on our website.
** Suitable for Transformer Inrush Protection for the DTS 3000 units.



For additional technical data, drawings and templates.
www.pfannenbergusa.com

Available Models:



DTS 3141
Indoor Rated
(NEMA Type 12)

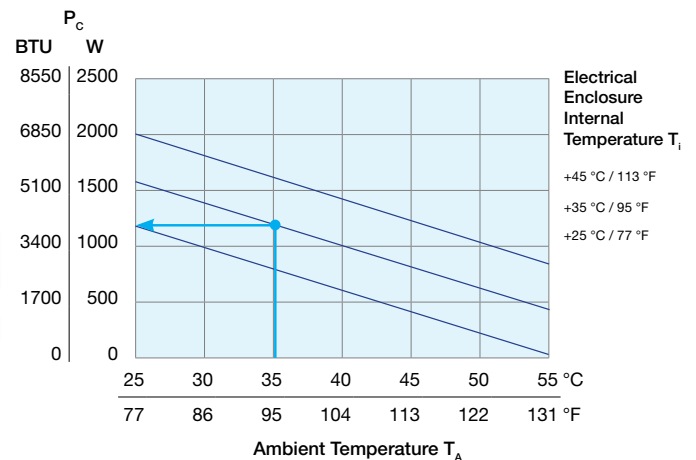
DTS 3161
Outdoor Rated
(NEMA Type 3R/4)

DTS 3181
Washdown
(NEMA Type 4/4x)

Cooling Capacity Performance Curve

How to use this chart

Example: @ 95 °F (ambient, X-axis), @ 95 °F (internal, diagonal lines)
= 4100 Btu/h cooling capacity (Y-axis)



Note: Cooling capacity may vary between voltage and configurations.

DTS 31X1SL | COOLING UNITS

3000 - 5000 Btu/h

The DTS 31X1SL series cooling units are designed to fit shallow enclosures vs 31X1 standard model. Available in 3 models; **DTS 3141 SL (NEMA Type 12)** for indoor use, **DTS 3161 SL (NEMA Type 3R/4)** designed for outdoor use, and the stainless steel **DTS 3181 SL (NEMA Type 4/4x)** designed for washdown applications.

Closed Loop Design

Designed to isolate the external ambient air from the internally conditioned air eliminating the risk of contaminants entering the cabinet.

High Ambient Performance

The DTS 3000 Series Cooling Units were designed utilizing high temperature compressors and larger condensers. Both the indoor NEMA Type 12 units and outdoor units perform very well in environments that require cooling where the maximum ambient temperature is 131° F.

Thermal Expansion Valve

Regulates the flow of refrigerant based on thermal demand for efficient performance over the entire operating temperature range.

Thermal Overload Protection

Compressor and fan motors are outfitted with integral temperature switches to shut down the unit in the event of excessive temperature. This increases the operating life of the compressor by preventing thermal overload trips.

Pressure Overload Protection

High pressure cutout switch ensures safety by shutting off the compressor in the event of excessive pressure appearing in the refrigeration circuit.

Active Condensate Management

Condensation is a natural by-product of refrigeration. The heated condensate collection pan boils this off thereby eliminating the need for drain tubes and buckets. To conserve power, this heater only activates when necessary.

Hermetically Sealed Compressor

The absence of any refrigerant fill valves eliminates leak paths. Recharging is never needed. 100% cooling capacity efficiency is ensured.

High Airflow Backward Curve Impeller Fan

Provides high airflow in a long lasting, single bearing design. Outperforms typical two-bearing blowers with nearly twice the lifespan.

ERP Efficiency Certified

As a component of the Kyoto Protocol to reduce carbon monoxide emissions, the European Energy Related Products (ERP) Directive includes an efficiency rating for fans. Pfannenberg proudly utilizes components which adhere to these requirements.

Rugged Design

Powder coated steel or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.

Maintenance Free, Filterless Design

The wide fin spacing is less susceptible to clogging from dirt buildup which can cause the unit to work harder and hamper efficiency.

Corrosion Protection

Outdoor and washdown units have a special coating on pipes and coils on the ambient side of the unit to provide maximum protection from saltwater, sour gas, and other corrosive substances.

Environmentally Friendly

Utilizes HFC-free R134a refrigerant versus a blended refrigerant for easier service and minimized negative impact to the environment.

Self Protected from Harsh Environments

Our unit is uniquely designed to protect itself in NEMA 3R, 4, and 4X environments. An example of this is the location of our control electronics within our dry, cool interior circuit.

36 in. (914 mm)

12 in. (305 mm)

12.1 in. (304 mm)





DTS 31X1 SL Series (3000 - 5000 Btu/h) Side-Mount Cooling Units

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current* @ 35A/35A °C	Fuse (maximum)** Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTS 3141 SL Indoor Rated (NEMA Type 12)	13383444255	115	60	917	7.51	15	<70	108 (49)
	13383441255	230	50/60	890	4.49	10	<70	108 (49)
	13383436255	400/460	50/60	751	2.25	10	<70	108 (49)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...251							
DTS 3161 SL Outdoor Rated (NEMA Type 3R/4)	13383441355	230	50/60	890	4.49	10	<70	108 (49)
	13383436355	400/460	50/60	751	2.25	10	<70	108 (49)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...351							
DTS 3181 SL Washdown (NEMA Type 4/4x)	13383441158	230	50/60	890	4.49	10	<70	108 (49)
	13383436158	400/460	50/60	751	2.25	10	<70	108 (49)
Design	Housing: galvanized sheet steel Cover: stainless steel 304							

Additional Data	DTS 3141 SL	DTS 3161 SL	DTS 3181 SL	
Ambient Temperature Range	115 VAC	+ 59 ... + 113 / + 15 ... + 45	N/A	N/A
	460/230 VAC	+ 59 ... + 131 / + 15 ... + 55	+ 32 ... + 131 / + 0 ... + 55	+ 32 ... + 131 / 0 ... + 55
Control range (adjustable)	SC	+ 77 ... + 113 / + 25 ... + 45; factory setting + 95 / + 35		
Refrigerant	type	R134a		
	quantity	900		
Condensate management	active condensate evaporation system with safety overflow			
Protection system according to NEMA Type	12	3R/4	4/4X	against enclosure when properly installed
	NEMA 1 towards the surroundings when properly installed			
Accessories	For spare part kits and additional accessories visit pgs. 74-75 in this catalog			

* For the MCA (Maximum Current Ampacity) value per UL, please consult product technical datasheets available on our website.

** Suitable for Transformer Inrush Protection for the DTS 3000 units.



For additional technical data, drawings and templates.
www.pfannenberusa.com

Available Models:

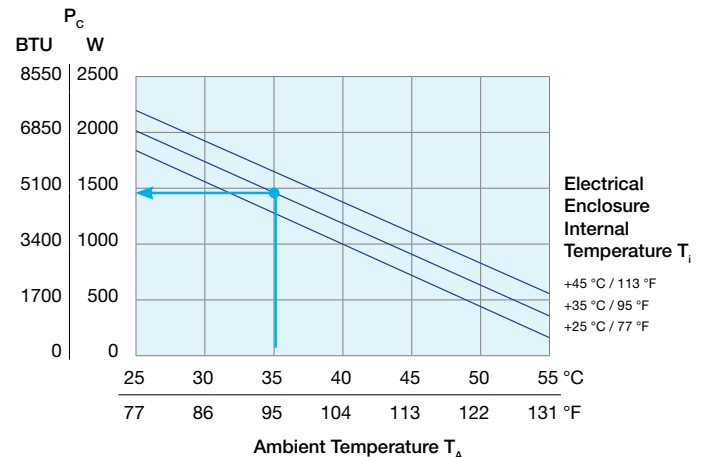


DTS 3141 SL Indoor Rated (NEMA Type 12)
DTS 3161 SL Outdoor Rated (NEMA Type 3R/4)
DTS 3181 SL Washdown (NEMA Type 4/4x)

Cooling Capacity Performance Curve

How to use this chart

Example: @ 95 °F (ambient, X-axis), @ 95 °F (internal, diagonal lines)
= 5097 Btu/h cooling capacity (Y-axis)



Note: Cooling capacity may vary between voltage and configurations.

DTS 31X5

COOLING UNITS

5000 - 7000 Btu/h

Our DTS 31X5 cooling units are an ideal solution for a wide variety of applications. These units are particularly suited for compact enclosures and are available in 3 models; **DTS 3145 (NEMA Type 12)** for indoor use, **DTS 3165 (NEMA Type 3R/4)** designed for outdoor use, and the stainless steel **DTS 3185 (NEMA Type 4/4x)** designed for washdown applications. Available options include a low ambient package and enclosure heater.

ERP Efficiency Certified

As a component of the Kyoto Protocol to reduce carbon monoxide emissions, the European Energy Related Products (ERP) Directive includes an efficiency rating for fans. Pfannenberg proudly utilizes components which adhere to these requirements.

Phase Protection

Three-phase 400/460 VAC powered units are protected from phase mis-wiring.

Pluggable power connection

Easily made without opening the chassis.

Easy Access Control Panel

Electrical controls are easily accessible with the flip down access panel.

Pressure Overload Protection

High pressure cutout switch ensures safety by shutting off the compressor in the event of excessive pressure appearing in the refrigeration circuit.

Thermal Expansion Valve

Regulates the flow of refrigerant based on thermal demand for efficient performance over the entire operating temperature range.

Thermal Overload Protection

Compressor and fan motors are outfitted with integral temperature switches to shut down the unit in the event of excessive temperature. This increases the operating life of the compressor by preventing thermal overload trips.

Environmentally Friendly

Utilizes HFC-free R134a refrigerant versus a blended refrigerant for easier service and minimized negative impact to the environment.

Active Condensate Management

Condensation is a natural by-product of refrigeration. The heated condensate collection pan boils this off thereby eliminating the need for drain tubes and buckets. To conserve power, this heater only activates when necessary.

High Airflow Backward Curve Impeller Fan

Provides high airflow in a long lasting, single bearing design. Outperforms typical two-bearing blowers with nearly twice the lifespan.

Lifting Lug Ports

Threaded holes accommodate the installation of lifting lugs to facilitate safe installation.

Self Protected from Harsh Environments

Our unit is uniquely designed to protect itself in NEMA 3R, 4, and 4X environments. An example of this is the location of our control electronics within our dry, cool interior circuit.

Rugged Design

Powder coated steel or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.

Corrosion Protection

Outdoor and washdown units have a special coating on pipes and coils on the ambient side of the unit to provide maximum protection from saltwater, sour gas, and other corrosive substances.

Maintenance Free, Filterless Design

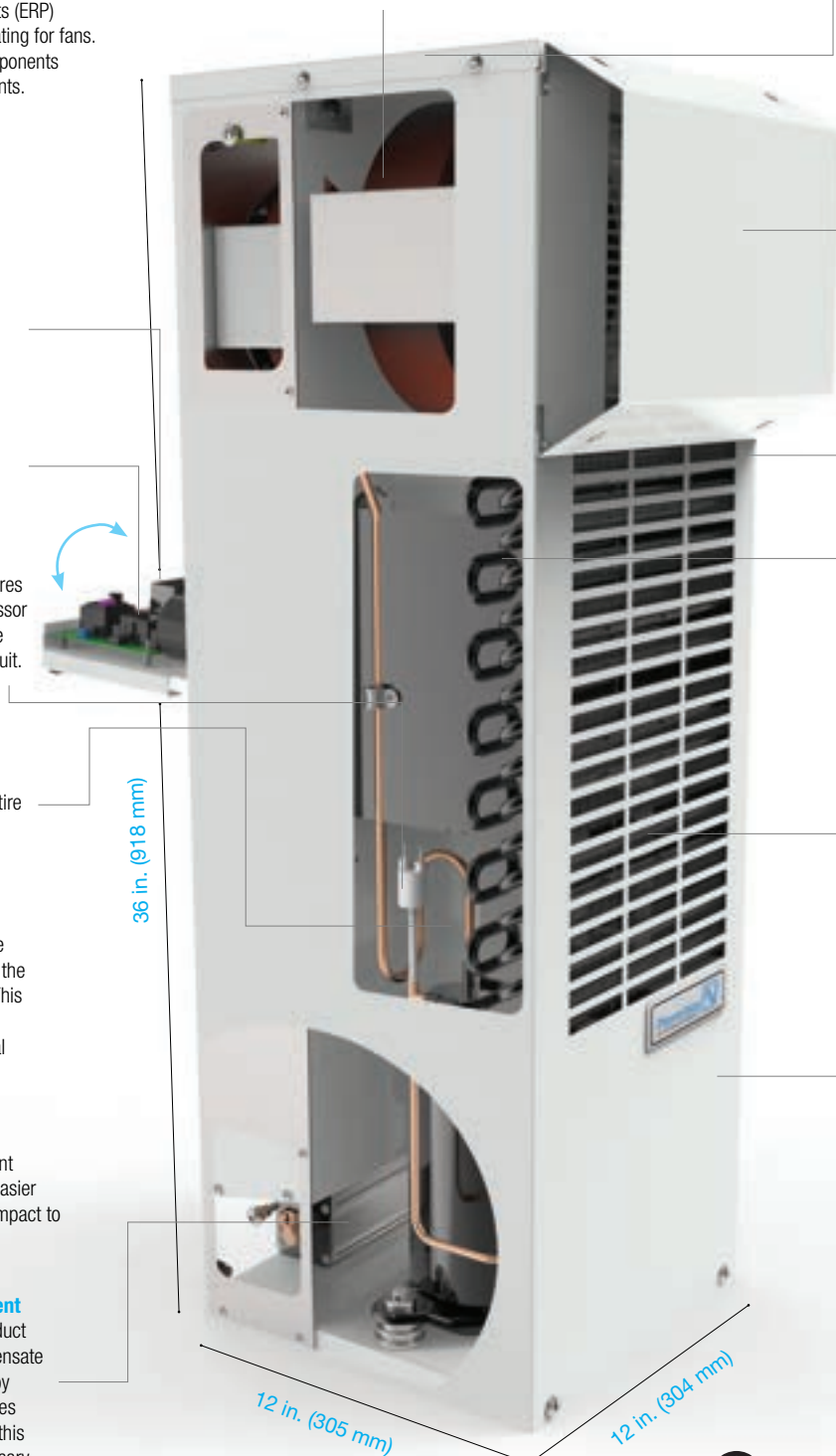
The wide fin spacing is less susceptible to clogging from dirt buildup which can cause the unit to work harder and hamper efficiency.

New Narrower Footprint

Compact design delivers high cooling capacity to enclosures as small as 12 inches (300mm) in width.

High Ambient Performance

The DTS 3000 Series Cooling Units were designed utilizing high temperature compressors and larger condensers. Both the indoor NEMA Type 12 units and outdoor units perform very well in environments that require cooling where the maximum ambient temperature is 131° F. High ambient options are also available to 140° F.





DTS 31X5 Series (5000 - 7000 Btu/h) Side-Mount Cooling Units

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current* @ 35A/35A °C	Fuse (maximum)** Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTS 3145 Indoor Rated (NEMA Type 12)	13383644255	115	60	1000	8.57	30	<70	108 (49)
	13383639255	230	50/60	1020	5.58	10	<70	108 (49)
	13383636255	400/460	50/60	1283	2.72	5	<70	108 (49)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...251							
DTS 3165 Outdoor Rated (NEMA Type 3R/4)	13383644355	115	60	1000	8.57	30	<70	108 (49)
	13383639355	230	50/60	1020	5.58	10	<70	108 (49)
	13383636355	400/460	50/60	1283	2.72	5	<70	108 (49)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...351							
DTS 3185 Washdown (NEMA Type 4/4x)	13383644158	115	60	1000	8.57	30	<70	108 (49)
	13383639158	230	50/60	1020	5.58	10	<70	108 (49)
	13383636158	400/460	50/60	1283	2.72	5	<70	108 (49)
Design	Housing: galvanized sheet steel Cover: stainless steel 304							

Additional Data		DTS 3145	DTS 3165	DTS 3185	
Ambient Temperature Range		+ 59 ... + 131 / + 15 ... + 55	+ 32 ... + 131 / + 0 ... + 55		°F / °C
Control range (adjustable) SC		+ 77 ... + 113 / + 25 ... + 45; factory setting + 95 / + 35			
Refrigerant	type	R134a			
	quantity	750			g
Condensate management		active condensate evaporation system with safety overflow			
Protection system according to NEMA Type		12	3R/4	4/4X	against enclosure when properly installed
		NEMA 1 towards the surroundings when properly installed			
Accessories		For spare part kits and additional accessories visit pgs. 74-75 in this catalog			

* For the MCA (Maximum Current Ampacity) value per UL, please consult product technical datasheets available on our website.

** Suitable for Transformer Inrush Protection for the DTS 3000 units.



For additional technical data, drawings and templates.
www.pfannenbergusa.com

Available Models:



DTS 3145
Indoor Rated
(NEMA Type 12)



DTS 3165
Outdoor Rated
(NEMA Type 3R/4)

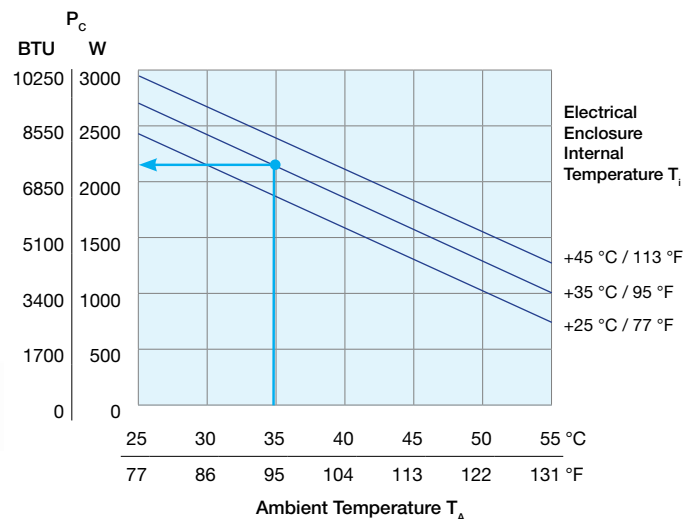


DTS 3185
Washdown
(NEMA Type 4/4x)

Cooling Capacity Performance Curve

How to use this chart

Example: @ 95 °F (ambient, X-axis), @ 95 °F (internal, diagonal lines)
= 6995 Btu/h cooling capacity (Y-axis)



Note: Cooling capacity may vary between voltage and configurations.

DTS 32X1 | COOLING UNITS

7000 - 8500 Btu/h

The DTS 32X1 series cooling units utilize a long internal air path to capture heat above the components and provide cool air below. Available in 3 models; **DTS 3241 (NEMA Type 12)** for indoor use, **DTS 3261 (NEMA Type 3R/4)** designed for outdoor use, and the stainless steel **DTS 3281 (NEMA Type 4/4x)** ideal for washdown applications.

Closed Loop Design

Designed to isolate the external ambient air from the internally conditioned air eliminating the risk of contaminants entering the cabinet.

Thermal Overload Protection

Compressor and fan motors are outfitted with integral temperature switches to shut down the unit in the event of excessive temperature. This increases the operating life of the compressor by preventing thermal overload trips.

High Ambient Performance

The DTS 3000 Series Cooling Units were designed utilizing high temperature compressors and larger condensers. Both the indoor NEMA Type 12 units and outdoor units perform very well in environments that require cooling where the maximum ambient temperature is 131° F.

Hermetically Sealed Compressor

The absence of any refrigerant fill valves eliminates leak paths. Recharging is never needed. 100% cooling capacity efficiency is ensured.

Pressure Overload Protection

High pressure cutout switch ensures safety by shutting off the compressor in the event of excessive pressure appearing in the refrigeration circuit.

Thermal Expansion Valve

Regulates the flow of refrigerant based on thermal demand for efficient performance over the entire operating temperature range.

Active Condensate Management

Condensation is a natural by-product of refrigeration. The heated condensate collection pan boils this off thereby eliminating the need for drain tubes and buckets. To conserve power, this heater only activates when necessary.

High Airflow Backward Curve Impeller Fan

Provides high airflow in a long lasting, single bearing design. Outperforms typical two-bearing blowers with nearly twice the lifespan.

ERP Efficiency Certified

As a component of the Kyoto Protocol to reduce carbon monoxide emissions, the European Energy Related Products (ERP) Directive includes an efficiency rating for fans. Pfannenberg proudly utilizes components which adhere to these requirements.

Environmentally Friendly

Utilizes HFC-free R134a refrigerant versus a blended refrigerant for easier service and minimized negative impact to the environment.

Self Protected from Harsh Environments

Our unit is uniquely designed to protect itself in NEMA 3R, 4, and 4X environments. An example of this is the location of our control electronics within our dry, cool interior circuit.

Rugged Design

Powder coated steel or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.

Maintenance Free, Filterless Design

The wide fin spacing is less susceptible to clogging from dirt buildup which can cause the unit to work harder and hamper efficiency.

Corrosion Protection

Outdoor and washdown units have a special coating on pipes and coils on the ambient side of the unit to provide maximum protection from saltwater, sour gas, and other corrosive substances.

Quiet Operation

Achieved with waste heat exhausted through the bottom.

47.6 in. (1209 mm)

10.6 in. (269 mm)

15.6 in. (395 mm)





DTS 32X1 Series (7000 - 8500 Btu/h) Side-Mount Cooling Units

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current* @ 35A/35A °C	Fuse (maximum)** Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTS 3241 Indoor Rated (NEMA Type 12)	13385744255	115	60	1680	11.6	30	<73	119 (54)
	13385741255	230	50/60	1425	5.6	10	<73	119 (54)
	13385736255	400/460	50/60	1400	2.6	6A	<73	135.5 (61)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...251							
DTS 3261 Outdoor Rated (NEMA Type 3R/4)	13385744355	115	60	1680	11.6	30	<73	123.5 (56)
	13385741355	230	50/60	1425	5.6	10	<73	123.5 (56)
	13385736355	400/460	50/60	1400	2.6	6A	<73	139 (63)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...351							
DTS 3281 Washdown (NEMA Type 4/4x)	13385744158	115	60	1680	11.6	30	<73	132 (60)
	13385741158	230	50/60	1425	5.6	10	<73	132 (60)
	13385736158	400/460	50/60	1400	2.6	6A	<73	148 (67)
Design	Housing: galvanized sheet steel Cover: stainless steel 304							

Additional Data		DTS 3241	DTS 3261	DTS 3281	
Ambient Temperature Range		+ 59 ... + 131 / + 15 ... + 55	+ 32 ... + 131 / + 0 ... + 55		°F / °C
Control range (adjustable)		+ 77 ... + 113 / + 25 ... + 45; factory setting + 95 / + 35			
Refrigerant	type	R134a			
	quantity	700			g
Condensate management		active condensate evaporation system with safety overflow			
Protection system according to NEMA Type		12	3R/4	4/4X	against enclosure when properly installed
		NEMA 1 towards the surroundings when properly installed			
Accessories		For spare part kits and additional accessories visit pgs. 74-75 in this catalog			

* For the MCA (Maximum Current Ampacity) value per UL, please consult product technical datasheets available on our website.

** Suitable for Transformer Inrush Protection for the DTS 3000 units.



For additional technical data, drawings and templates.
www.pfannenberusa.com

Available Models:



DTS 3241
Indoor Rated
(NEMA Type 12)



DTS 3261
Outdoor Rated
(NEMA Type 3R/4)

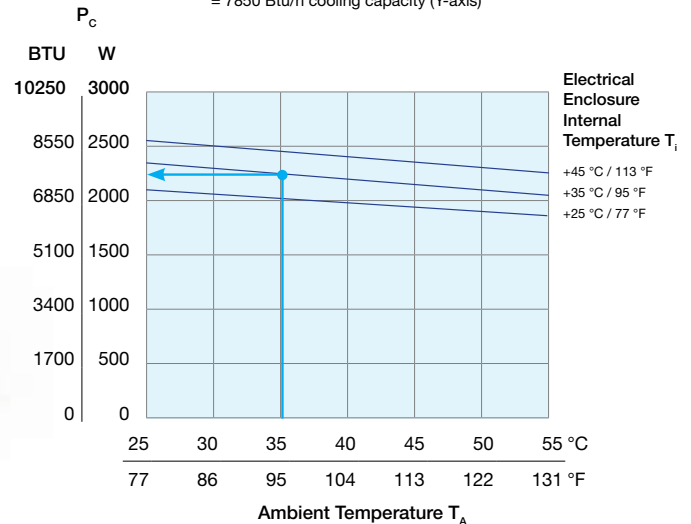


DTS 3281
Washdown
(NEMA Type 4/4x)

Cooling Capacity Performance Curve

How to use this chart

Example: @ 95 °F (ambient, X-axis), @ 95 °F (internal, diagonal lines)
= 7850 Btu/h cooling capacity (Y-axis)



Note: Cooling capacity may vary between voltage and configurations.

DTS 32X5 | COOLING UNITS

10000 - 13000 Btu/h

The DTS 32X5 series cooling units are one of our most popular and versatile cooling units. Cutout footprint is compatible with our older 12,000 Btu/h cooling units, allowing for easy upgrade or replacement. Available in 3 models; **DTS 3245 (NEMA Type 12)** for indoor use, **DTS 3265 (NEMA Type 3R/4)** designed for outdoor use, and the stainless steel **DTS 3285 (NEMA Type 4/4x)** designed for washdown applications.

Closed Loop Design

Designed to isolate the external ambient air from the internally conditioned air eliminating the risk of contaminants entering the cabinet.

Thermal Overload Protection

Compressor and fan motors are outfitted with integral temperature switches to shut down the unit in the event of excessive temperature. This increases the operating life of the compressor by preventing thermal overload trips.

High Airflow Backward Curve Impeller Fan

Provides high airflow in a long lasting, single bearing design. Outperforms typical two-bearing blowers with nearly twice the lifespan.

Pluggable power connection

Easily made without opening the chassis.

Easy Access Control Panel

Electrical controls are easily accessible with the flip down access panel.

Corrosion Protection

Outdoor and washdown units have a special coating on pipes and coils on the ambient side of the unit to provide maximum protection from saltwater, sour gas, and other corrosive substances.

Thermal Expansion Valve

Regulates the flow of refrigerant based on thermal demand for efficient performance over the entire operating temperature range.

Pressure Overload Protection

High pressure cutout switch ensures safety by shutting off the compressor in the event of excessive pressure appearing in the refrigeration circuit.

High Ambient Performance

The DTS 3000 Series Cooling Units were designed utilizing high temperature compressors and larger condensers. Both the indoor NEMA Type 12 units and outdoor units perform very well in environments that require cooling where the maximum ambient temperature is 131° F. High ambient options are also available to 140° F.

Lifting Lug Ports

Threaded holes accommodate the installation of lifting lugs to facilitate safe installation.

Environmentally Friendly

Utilizes HFC-free R134a refrigerant versus a blended refrigerant for easier service and minimized negative impact to the environment.

Extra Protection from Water

The rain hood is a standard feature for NEMA 3R, 4, and 4X units. This hood provides protection from falling water and direct water sprays.

Rugged Design

Powder coated steel or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.

ERP Efficiency Certified

As a component of the Kyoto Protocol to reduce carbon monoxide emissions, the European Energy Related Products (ERP) Directive includes an efficiency rating for fans. Pfannenberger proudly utilizes components which adhere to these requirements.

Hermetically Sealed Compressor

The absence of any refrigerant fill valves eliminates leak paths. Recharging is never needed. 100% cooling capacity efficiency is ensured.

Active Condensate Management

Condensation is a natural by-product of refrigeration. The heated condensate collection pan boils this off thereby eliminating the need for drain tubes and buckets. To conserve power, this heater only activates when necessary.





DTS 32X5 Series (10000 - 13000 Btu/h) Side-Mount Cooling Units

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current* @ 35A/35A °C	Fuse (maximum)** Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTS 3245 Indoor Rated (NEMA Type 12)	13383844255	115	60	1600	13.6	35A	<73	150 (68)
	13383839255	230	50/60	1600	7.03	15A	<73	150 (68)
	13383836255	400/460	50/60	1700	3.14	5	<73	150 (68)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...251							
DTS 3265 Outdoor Rated (NEMA Type 3R/4)	13383844355	115	60	1600	13.6	35A	<73	150 (68)
	13383839355	230	50/60	1600	7.03	15A	<73	150 (68)
	13383836355	400/460	50/60	1700	3.14	5	<73	150 (68)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...351							
DTS 3285 Washdown (NEMA Type 4/4x)	13383844158	115	60	1600	13.6	35A	<73	150 (68)
	13383839158	230	50/60	1600	7.03	15A	<73	150 (68)
	13383836158	400/460	50/60	1700	3.14	5	<73	150 (68)
Design	Housing: galvanized sheet steel Cover: stainless steel 304							

Additional Data		DTS 3245	DTS 3265	DTS 3285	
Ambient Temperature Range		+ 59 ... + 131 / + 15 ... + 55	+ 32 ... + 131 / 0 ... + 55		°F / °C
Control range (adjustable)		+ 77 ... + 113 / + 25 ... + 45; factory setting + 95 / + 35			
Refrigerant	type	R134a			
	quantity	1200			g
Condensate management		active condensate evaporation system with safety overflow			
Protection system according to NEMA Type		12	3R/4	4/4X	against enclosure when properly installed
		NEMA 1 towards the surroundings when properly installed			
Accessories		For spare part kits and additional accessories visit pgs. 74-75 in this catalog			

* For the MCA (Maximum Current Ampacity) value per UL, please consult product technical datasheets available on our website.

** Suitable for Transformer Inrush Protection for the DTS 3000 units.



For additional technical data, drawings and templates.
www.pfannenbergsusa.com

Available Models:



DTS 3245
Indoor Rated
(NEMA Type 12)



DTS 3265
Outdoor Rated
(NEMA Type 3R/4)

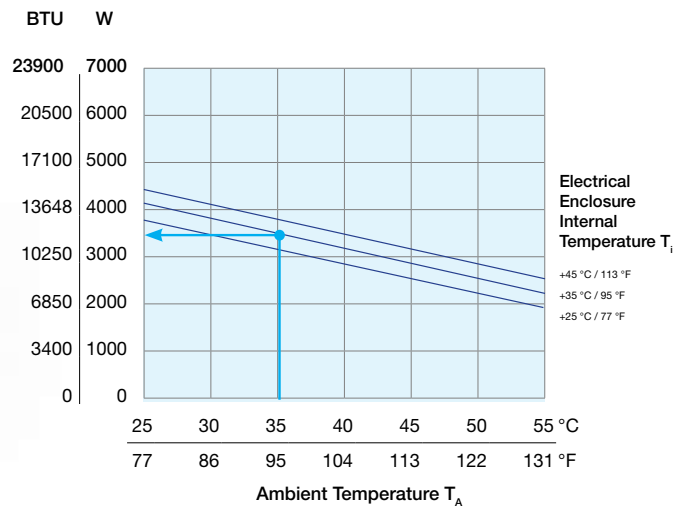


DTS 3285
Washdown
(NEMA Type 4/4x)

Cooling Capacity Performance Curve

How to use this chart

Example: @ 95 °F (ambient, X-axis), @ 95 °F (internal, diagonal lines)
= 11500 Btu/h cooling capacity (Y-axis)



Note: Cooling capacity may vary between voltage and configurations.

DTS 34X1C | COOLING UNITS

15000 - 21000 Btu/h

The DTS 34X1C and 36X1C series provides the highest cooling capacity in the smallest footprint possible. DTS 34X1C provides 1.5ton and DTS 36X1C provides 2ton of cooling capacity both in the same small footprint. Available for indoor use (Type 12), outdoor environment (Type 3R/4), and Stainless Steel Washdown application (Type 4/4x)

Closed Loop Design

Designed to isolate the external ambient air from the internally conditioned air eliminating the risk of contaminants entering the cabinet.

Service Friendly Electric Panel

Flip down hinged design to allow easy access to electrical controls. Plug-n-play power connection for easy wiring (Female connector provided).

OPTIONAL: Modbus Connectivity

Optional Modbus RTU option provides read/write access to the cooling unit allowing remote monitoring, controlling and configuring of the temperature and alarm functions.

OPTIONAL: Low Ambient Package

The optional low ambient package allows the cooling unit to operate safely in temperatures as low as -40° C (-40° F). The package includes a built-in enclosure heater to prevent condensation build-up inside the enclosure.

Hermetically Sealed Reciprocating Compressor

The absence of any refrigerant fill valves eliminates leak paths. Recharging is never needed. Reciprocating Compressor eliminate phase mis-wiring.

Active Condensate Management

Condensation is a natural byproduct of refrigeration. The heated condensate collection pan boils this off thereby eliminating the need for drain tubes and buckets. To conserve power, this heater only activates when necessary.

High Airflow Backward Curve Impeller Fan

Provides high airflow preventing hotspot especially in populated or multiple bay enclosures. Best in Class fan providing long service life.

Rugged Design for All Environment

Powder coated or stainless-steel cover designed for harsh manufacturing environments. Additional rainhood cover for Outdoor (Type 3R/4) and Washdown (Type 4/4X) design

Efficient and Extended Life Design

Zinc coated micro-channel design provides up to 40% increased in heat rejection boosting the overall cooling performance. The coating provides additional protection towards corrosive environment prolonging the service life

Pressure and Thermal Overload Protection

High pressure cutout and thermal switches ensures safety by shutting off the compressor and fans in unforeseen event of excessive pressure or heat to protect unit from costly repair

Easy to see status light

Highly visible status indicator light provides easy visual indication on the running status of the cooling unit. Alerting maintenance team of any error when happened.

57.2 in. (1452 mm)

19.7 in. (500 mm)

15.8 in. (400 mm)





DTS 34X1C Series (15000-21000 Btu/h) Side-Mount Cooling Units

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current* @ 35A/35A °C	Fuse (maximum)** Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTS 3441C <i>Indoor Rated</i> (NEMA Type 12)	13384139255	230	60	2674	11.82	20	81	201.5 (91.4)
	13384136255	460	50/60	2316	4.06	7	81	201.5 (91.4)
Design Options	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...251 Option 1: Modbus RTU Connectivity (Contact Pfannenberg for part number)							
DTS 3461C <i>Outdoor Rated</i> (NEMA Type 3R/4)	13384139355	230	60	2450	11.82	20	81	210.1 (95.3)
	13384136355	460	50/60	2431	4.06	7	81	210.1 (95.3)
Design Options	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...351 Option 1: Modbus RTU Connectivity Option 2: Low Ambient Package (Contact Pfannenberg for part number)							
DTS 3481C <i>Washdown</i> (NEMA Type 4/4x)	13384139158	230	60	2450	11.82	20	81	210.1 (95.3)
	13384136158	460	50/60	2431	4.06	7	81	210.1 (95.3)
Design Options	Housing: sheet steel Cover: stainless steel 304 Option 1: Modbus RTU Connectivity Option 2: Low Ambient Package (Contact Pfannenberg for part number)							

Additional Data		DTS 3441C	DTS 3461C	DTS 3481C	
Ambient Temperature Range		+ 46 ... + 131 / + 8 ... + 55	+ 25 ... + 131 / - 4 ... + 55 Low Ambient Option: - 40 ... + 131 / - 40 ... + 55		°F / °C
Control range (adjustable)	SC	+ 77 ... + 113 / + 25 ... + 45; factory setting + 95 / + 35			
Refrigerant	type	R134a			
	quantity	650			g
Condensate management		integrated condensate management system with condensate drain			
Protection system according to NEMA Type		12	3R/4	4/4X	against enclosure when properly installed
		NEMA 1 towards the surroundings when properly installed			
Accessories		For spare part kits and additional accessories visit pgs. 74-75 in this catalog			

* For the MCA (Maximum Current Ampacity) value per UL, please consult product technical datasheets available on our website.
 ** Class CC 600V Time Delay, Suitable for Transformer Inrush Protection.
 ** Same cutout as old DTS 34X1.



For additional technical data, drawings and templates.
www.pfannenbergusa.com

Available Models:

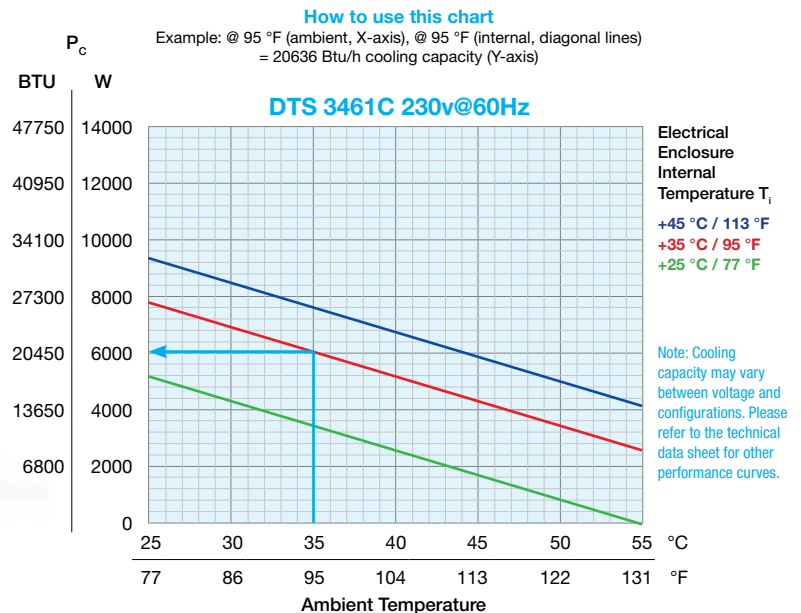


DTS 3441C
Indoor Rated
(NEMA Type 12)

DTS 3461C
Outdoor Rated
(NEMA Type 3R/4)

DTS 3481C
Washdown
(NEMA Type 4/4x)

Cooling Capacity Performance Curve



DTS 36X1C | COOLING UNITS

21000 - 29000 Btu/h

The DTS 34X1C and 36X1C series provides the highest cooling capacity in the smallest footprint possible. DTS 34X1C provides 1.5ton and DTS 36X1C provides 2ton of cooling capacity both in the same small footprint. Available for indoor use (Type 12), outdoor environment (Type 3R/4), and Stainless Steel Washdown application (Type 4/4x)

Closed Loop Design

Designed to isolate the external ambient air from the internally conditioned air eliminating the risk of contaminants entering the cabinet.

Service Friendly Electric Panel

Flip down hinged design to allow easy access to electrical controls. Plug-n-play power connection for easy wiring (Female connector provided).

OPTIONAL: Modbus Connectivity

Optional Modbus RTU option provides read/write access to the cooling unit allowing remote monitoring, controlling and configuring of the temperature and alarm functions.

OPTIONAL: Low Ambient Package

The optional low ambient package allows the cooling unit to operate safely in temperatures as low as -40° C (-40° F). The package includes a built-in enclosure heater to prevent condensation build-up inside the enclosure.

Hermetically Sealed Reciprocating Compressor

The absence of any refrigerant fill valves eliminates leak paths. Recharging is never needed. Reciprocating Compressor eliminate phase mis-wiring.

Active Condensate Management

Condensation is a natural byproduct of refrigeration. The heated condensate collection pan boils this off thereby eliminating the need for drain tubes and buckets. To conserve power, this heater only activates when necessary.

High Airflow Backward Curve Impeller Fan

Provides high airflow preventing hotspot especially in populated or multiple bay enclosures. Best in Class fan providing long service life.

Rugged Design for All Environment

Powder coated or stainless-steel cover designed for harsh manufacturing environments. Additional rainhood cover for Outdoor (Type 3R/4) and Washdown (Type 4/4X) design

Efficient and Extended Life Design

Zinc coated micro-channel design provides up to 40% increased in heat rejection boosting the overall cooling performance. The coating provides additional protection towards corrosive environment prolonging the service life

Pressure and Thermal Overload Protection

High pressure cutout and thermal switches ensures safety by shutting off the compressor and fans in unforeseen event of excessive pressure or heat to protect unit from costly repair

Easy to see status light

Highly visible status indicator light provides easy visual indication on the running status of the cooling unit. Alerting maintenance team of any error when happened.





DTS 36X1C Series (21000-29000 Btu/h) Side-Mount Cooling Units

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current* @ 35A/35A °C	Fuse (maximum)** Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTS 3641C Indoor Rated (NEMA Type 12)	13384039255	230	60	3205	16.06	30	81	226.2 (102.6)
	13384036255	460	50/60	3843	5.18	10	81	226.2 (102.6)
Design Options	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...251 Option 1: Modbus RTU Connectivity (Contact Pfannenber for part number)							
DTS 3661C Outdoor Rated (NEMA Type 3R/4)	13384036355	230	60	3678	16.06	30	81	234.8 (106.5)
	13384036355	460	50/60	1769	5.18	10	81	234.8 (106.5)
Design Options	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...351 Option 1: Modbus RTU Connectivity Option 2: Low Ambient Package (Contact Pfannenber for part number)							
DTS 3681C Washdown (NEMA Type 4/4x)	13384039158	230	60	3678	16.06	30	81	234.8 (106.5)
	13384036158	460	50/60	1769	5.18	10	81	234.8 (106.5)
Design Options	Housing: galvanized sheet steel Cover: stainless steel 304 Option 1: Modbus RTU Connectivity Option 2: Low Ambient Package (Contact Pfannenber for part number)							
Additional Data		DTS 3641C		DTS 3661C		DTS 3681C		
Ambient Temperature Range		+ 46 ... + 131 / + 8 ... + 55		+ 25 ... + 131 / - 4 ... + 55 Low Ambient Option: - 40 ... + 131 / - 40 ... + 55				°F / °C
Control range (adjustable)		SC		+ 77 ... + 113 / + 25 ... + 45; factory setting + 95 / + 35				
Refrigerant	type			R134a				
	quantity			450				g
Condensate management				active condensate management system w/ safety overflow				
Protection system according to NEMA Type		12		3R/4		4/4X		against enclosure when properly installed
				NEMA 1 towards the surroundings when properly installed				
Accessories				For spare part kits and additional accessories visit pgs. 74-75 in this catalog				

* For the MCA (Maximum Current Ampacity) value per UL, please consult product technical datasheets available on our website.

** Class CC 600V Time Delay, Suitable for Transformer Inrush Protection.

*** Adapter plate to convert from old DTS 36X1 available. Contact Pfannenber for part number.



For additional technical data, drawings and templates.
www.pfannenbergusa.com

Available Models:



DTS 3641C
Indoor Rated
(NEMA Type 12)

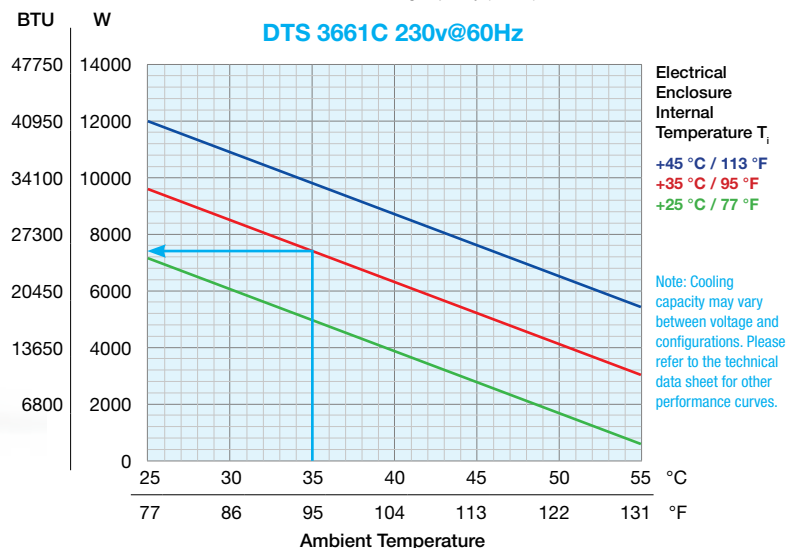
DTS 3661C
Outdoor Rated
(NEMA Type 3R/4)

DTS 3681C
Washdown
(NEMA Type 4/4x)

Cooling Capacity Performance Curve

How to use this chart

Example: @ 95 °F (ambient, X-axis), @ 95 °F (internal, diagonal lines)
= 25327 Btu/h cooling capacity (Y-axis)



GREEN SERIES COOLING UNITS

OEMs know: Looking towards the future, engineering processes will demand improved uses of technology. Optimization is needed – with solutions that combine top performance, environmental friendliness and maximum cost efficiency. Our **Green Series** technology meets the demand.



Green Series: Our most efficient solution.

Raising productivity, reducing CO2 emissions, lowering power consumption and cutting costs – Pfannenberg is aware of the challenges companies are facing today. We offer a solution: our **Green Series** technology. Developed with the aim of maximum cost efficiency coupled with maximum performance, our **Green Series** technology represents a standard for cost and energy savings in the thermal management of electrical enclosures. The result: **it enables annual savings of up to 11% in energy costs.**



Energy Efficient



Climate Friendly



Space Saving Design



Ease of Installation



Service Friendly



UL Listed

Green Series Service-friendly design, which supports simple installation, ease of accessibility and maintenance, reduces costs.

- Large condenser fin spacing allows for longer maintenance periods, even without an additional Nano coating.
- One mounting cut-out for all 5 capacities, 1,000 - 4,000 Watt (3,400 - 13,650 Btu/hr).
- Simple accessibility to all the relevant components.
- Patented tool-free mounting for quick and efficient installation.
- Requires only one person to mount.
- Largest possible cut-out compatibility for easy unit replacement.
- Integration in established network possible.
- Integrated condensate evaporation system.

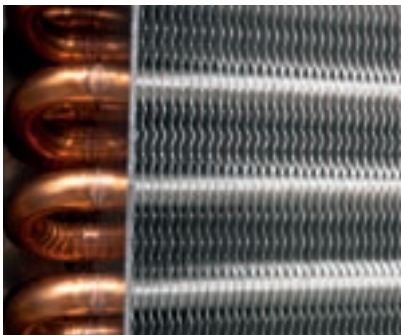


Advantages of the **Green Series** Cooling Units.



Filter Adapter:

- Optional adapter for multiple use and all filter inserts.
- Fluted filter inserts.
- Fluted filter mats extend the service intervals by 300%.
- Tool-less installation and tool-less filter replacement.
- Filter replacement in less than one minute.
- Filter adapter available in several colors.
- Aluminium filter available for oily or greasy environments.



Large fin spacing



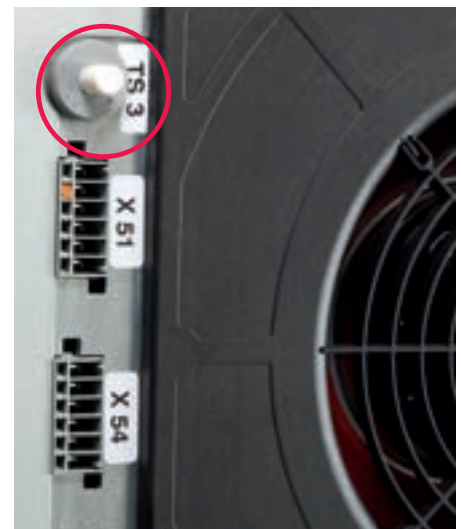
Simple installation



Condensate evaporate system

Controlled Energy Efficiency:

- The Green Series comes standard with a "Multi Controller" (MC) with an energy savings mode (ESM).
- The ESM turns the fan off when not required extending the fan's length of life.
- When there is no temperature increase detected, the internal fan switches off and the condensate evaporator deactivates.
- Cooling mode starts automatically when the required cabinet temperature is exceeded.
- Additional temperature probe for precise measurement of the internal cabinet temperature and to ensure correct operation of the energy savings mode.
- Intermediate start-up of the internal fan is not necessary for the monitoring of the cabinet temperature.



DTI 6201- 6301 | RECESSED COOLING UNITS

3000 - 6000 Btu/h Green Series

The DTI 6201 - 6301 series cooling units utilize a long internal air path to capture heat above the components and provide cool air below. These cooling units are ideal for mounting on a cabinet door and are partially recessed for space restricted installations.

Partially Recessed

For space restricted installations, ideal for door mounting. One cutout size for models of different capacities.

Easy Installation and Maintenance

Tool-free spring plate design keeps the unit safely in place and allows mounting by 1 person in less than 3 minutes with 55% lower mounting costs. Direct access to the PCB and the fans means 80% shorter repair times.

Thermal Overload Protection

Compressor and fan motors are outfitted with integral temperature switches to shut down the unit in the event of excessive temperature.

Pressure Overload Protection

High pressure cutout switch ensures safety by shutting off the compressor in the event of excessive pressure appearing in the refrigeration circuit.

Closed Loop Design

Designed to isolate the external ambient air from the internally conditioned air eliminating the risk of contaminants entering the cabinet.

Thermal Expansion Valve

Regulates the flow of refrigerant based on thermal demand for efficient performance over the entire operating temperature range.

Efficient Circulation

Large distance between intake and exhaust vents for efficient air circulation and elimination of hot spots.

Environmentally Friendly

The redesigned refrigeration circuit uses up to 58% less refrigerant (R134a) reducing the risk of greenhouse gas emissions.

Energy Savings Mode

When cooling isn't necessary due to equipment shutdown or cold weather conditions, the unit conserves energy by turning fans off - except for periodic cycling for circulating air within the enclosure.

UL Listed

Listed to the new UL 60335 certification with enhanced safety standards.

Improved Energy Efficiency

The redesigned system achieves energy consumption reductions of up to 11%.

Maintenance Free, Filterless Design

The wide fin spacing is less susceptible to clogging from dirt buildup which can cause the unit to work harder and hamper efficiency.

External Display

For visual temperature monitoring.

High Airflow Backward Curve Impeller Fan

Provides high airflow in a long lasting, single bearing design. Outperforms typical two-bearing blowers with nearly twice the lifespan.

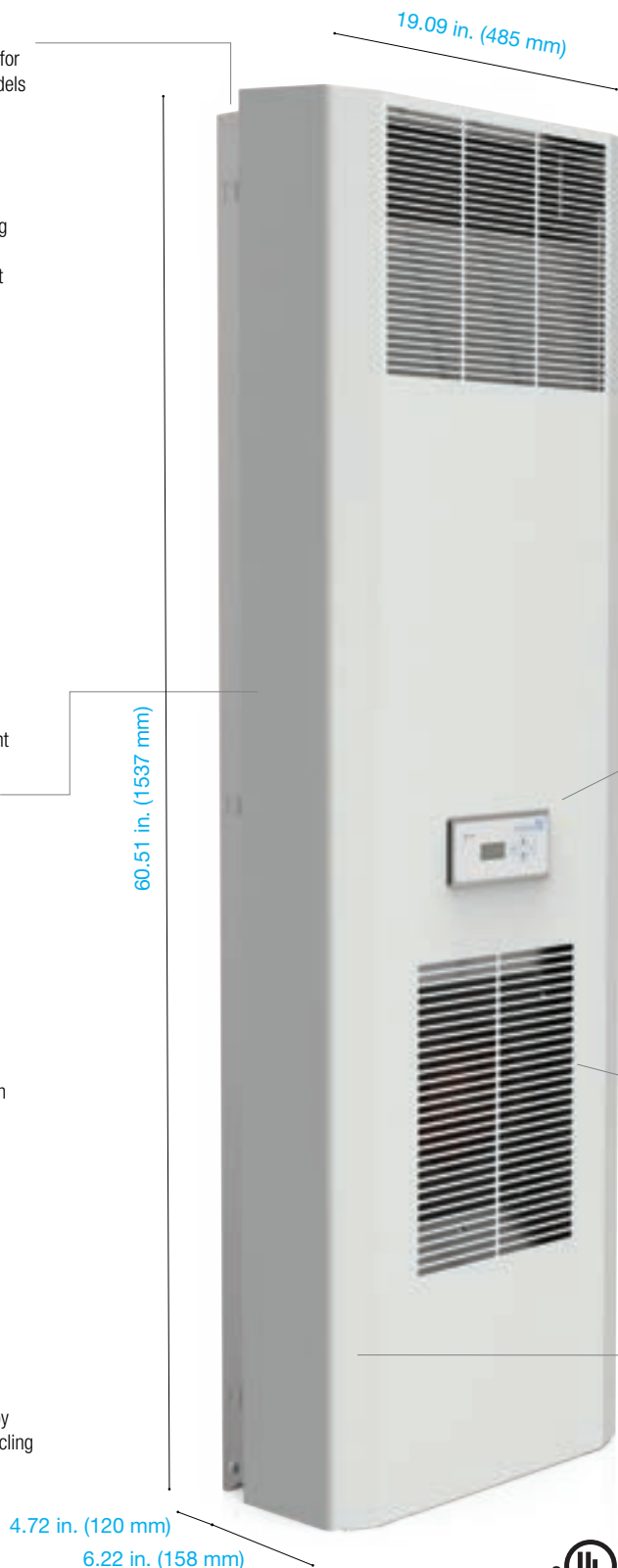
Hermetically Sealed Compressor

The absence of any refrigerant fill valves eliminates leak paths. Recharging is never needed. 100% cooling capacity efficiency is ensured.

Active Condensate Management

Condensation is a natural by-product of refrigeration. The heated condensate collection pan boils this off thereby eliminating the need for drain tubes and buckets.

To conserve power, this heater only activates when necessary.





DTI 6201 - 6301 Series (3000 - 6000 Btu/h) Recessed Cooling Units

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Starting Current @ 35A/35A °C	Fuse (maximum) Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTI 6201	13899221055	230	50/60	500 / 631	9.1	8	<62	112 (55)
	13899229055	400/460	50/60	532 / 653	5.5	4	<62	128 (58)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey);							
DTI 6301	13899321055	230	60	721 / 845	19.7	10	<62	121 (55)
	13899329055	400/460	50/60	778 / 874	12	6	<62	130 (54)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey);							

Additional Data		DTI 6201		DTI 6301		
Ambient Temperature Range		+50 ... + 131 / + 10 ... + 55				°F / °C
Control range (adjustable)		SC	+ 77 ... + 113 / + 25 ... + 45; factory setting + 95 / + 35			
Refrigerant	type	R134a				
	quantity	400		350		g
Condensate management		integrated condensate evaporation system with safety overflow				
Protection system according to EN 60529	IP55	towards the electrical enclosure if used as intended by the manufacturer				
	IP34	towards the surroundings if used as intended by the manufacturer				
Accessories		Consult Factory				



For additional technical data,
drawings and templates.
www.pfannenbergusa.com

Available Models:



DTI 6201
Indoor Rated

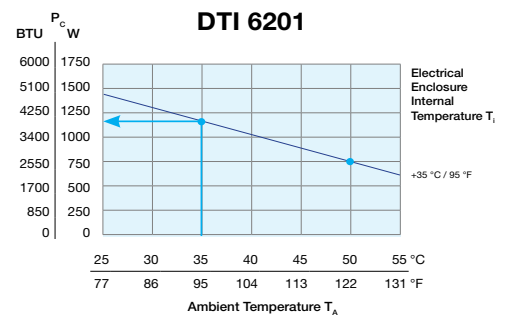


DTI 6301
Indoor Rated

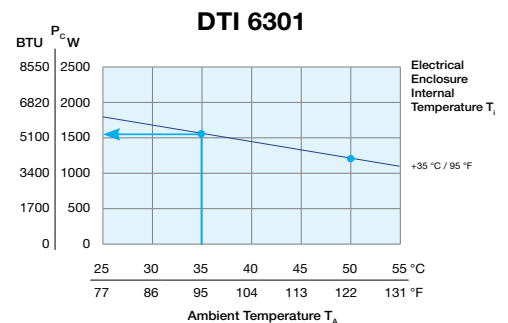
Cooling Capacity Performance Curves

How to use these charts

Example: @ 95 °F (ambient, X-axis),
@ 95 °F (internal, diagonal lines)
DTI 6201 = 3920 Btu/h cooling capacity (Y-axis)
DTI 6301 = 5280 Btu/h cooling capacity (Y-axis)



Note: Cooling capacity may vary between voltage and configurations.



Note: Cooling capacity may vary between voltage and configurations.

DTI 6401- 6501 | RECESSED COOLING UNITS

7000 - 11000 Btu/h

Green Series

The DTI 6401 - 6501 series cooling units have about 2x greater cooling capacity than the DTI 6201/6301. These cooling units also utilize a long internal air path to capture heat above the components and provide cool air below. These units are ideal for mounting on a cabinet door and are partially recessed for space restricted installations.

Partially Recessed

For space restricted installations, ideal for door mounting. One cutout size for models of different capacities.

Easy Installation and Maintenance

Tool-free spring plate design keeps the unit safely in place and allows mounting by 1 person in less than 3 minutes with 55% lower mounting costs. Direct access to the PCB and the fans means 80% shorter repair times.

Thermal Overload Protection

Compressor and fan motors are outfitted with integral temperature switches to shut down the unit in the event of excessive temperature.

Pressure Overload Protection

High pressure cutout switch ensures safety by shutting off the compressor in the event of excessive pressure appearing in the refrigeration circuit.

Closed Loop Design

Designed to isolate the external ambient air from the internally conditioned air eliminating the risk of contaminants entering the cabinet.

Thermal Expansion Valve

Regulates the flow of refrigerant based on thermal demand for efficient performance over the entire operating temperature range.

Efficient Circulation

Large distance between intake and exhaust vents for efficient air circulation and elimination of hot spots.

Environmentally Friendly

The redesigned refrigeration circuit uses up to 58% less refrigerant (R134a) reducing the risk of greenhouse gas emissions.

Energy Savings Mode

When cooling isn't necessary due to equipment shutdown or cold weather conditions, the unit conserves energy by turning fans off - except for periodic cycling for circulating air within the enclosure.

UL Listed

Listed to the new UL 60335 certification with enhanced safety standards.

Improved Energy Efficiency

The redesigned system achieves energy consumption reductions of up to 11%.

Maintenance Free, Filterless Design

The wide fin spacing is less susceptible to clogging from dirt buildup which can cause the unit to work harder and hamper efficiency.

External Display

For visual temperature monitoring.

High Airflow Backward Curve Impeller Fan

Provides high airflow in a long lasting, single bearing design. Outperforms typical two-bearing blowers with nearly twice the lifespan.

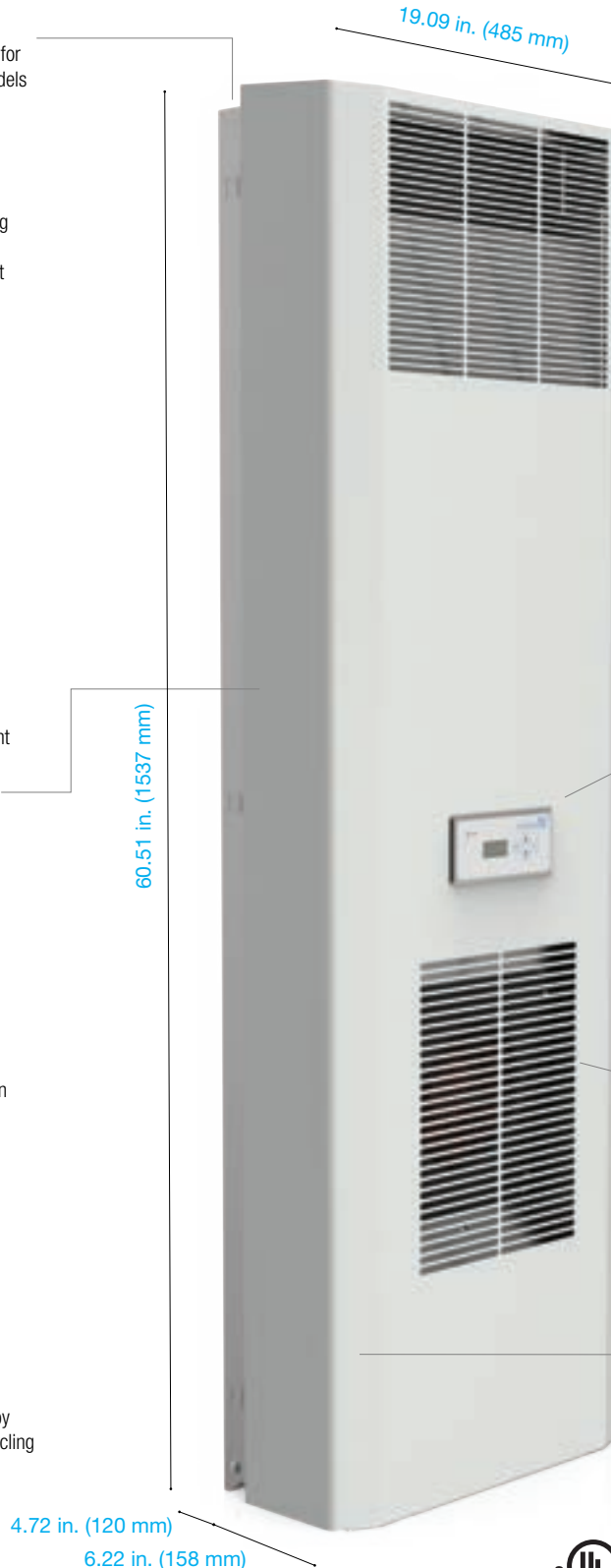
Hermetically Sealed Compressor

The absence of any refrigerant fill valves eliminates leak paths. Recharging is never needed. 100% cooling capacity efficiency is ensured.

Active Condensate Management

Condensation is a natural by-product of refrigeration. The heated condensate collection pan boils this off thereby eliminating the need for drain tubes and buckets.

To conserve power, this heater only activates when necessary.



DTI 6401 - 6501 Series (7000 - 11000 Btu/h) Recessed Cooling Units								
Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Starting Current @ 35A/35A °C	Fuse (maximum) Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTI 6401	13899422055	400/460	50/60	727 / 911	7.7	4	<65	139 (63)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey);							
DTI 6501	13899522055	400/460	50/60	926 / 1140	12	4	<65	148 (67)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey);							
Additional Data		DTI 6401			DTI 6501			
Ambient Temperature Range		+ 50 ... + 131 / + 10 ... + 55						°F / °C
Control range (adjustable) SC		+ 77 ... + 113 / + 25 ... + 45; factory setting + 95 / + 35						
Refrigerant	type	R134a						
	quantity	500			700			g
Condensate management		integrated condensate evaporation system with safety overflow						
Protection system according to EN 60529	IP55	towards the electrical enclosure if used as intended by the manufacturer						
	IP34	towards the surroundings if used as intended by the manufacturer						
Accessories		Consult Factory						



For additional technical data, drawings and templates.
www.pfannenbergusa.com

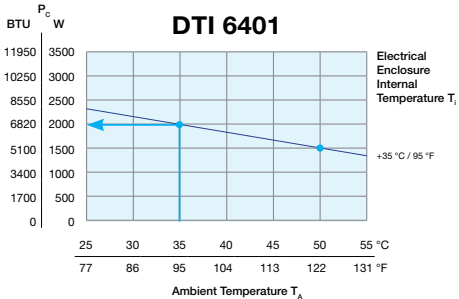
Available Models:



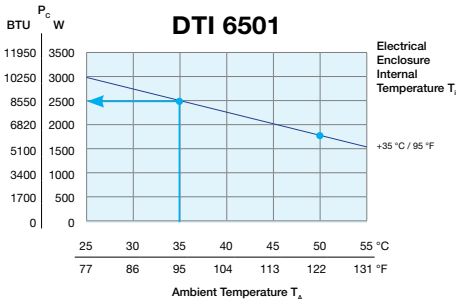
Cooling Capacity Performance Curves

How to use these charts

Example: @ 95 °F (ambient, X-axis),
@ 95 °F (internal, diagonal lines)
DTI 6401 = 6820 Btu/h cooling capacity (Y-axis)
DTI 6501 = 8550 Btu/h cooling capacity (Y-axis)



Note: Cooling capacity may vary between voltage and configurations.



DTI 6801 | RECESSED COOLING UNITS

13000 - 16000 Btu/h Green Series

The DTI 6801 series cooling units offer the greatest cooling capacity of our DTI Series Recessed Cooling Units. These cooling units also utilize a long internal air path to capture heat above the components and provide cool air below. These units are Ideal for mounting on a cabinet door and are partially recessed for space restricted installations.

Partially Recessed

For space restricted installations, ideal for door mounting. One cutout size for models of different capacities.

Easy Installation and Maintenance

Tool-free spring plate design keeps the unit safely in place and allows mounting by 1 person in less than 3 minutes with 55% lower mounting costs. Direct access to the PCB and the fans means 80% shorter repair times.

Thermal Overload Protection

Compressor and fan motors are outfitted with integral temperature switches to shut down the unit in the event of excessive temperature.

Pressure Overload Protection

High pressure cutout switch ensures safety by shutting off the compressor in the event of excessive pressure appearing in the refrigeration circuit.

Closed Loop Design

Designed to isolate the external ambient air from the internally conditioned air eliminating the risk of contaminants entering the cabinet.

Thermal Expansion Valve

Regulates the flow of refrigerant based on thermal demand for efficient performance over the entire operating temperature range.

Efficient Circulation

Large distance between intake and exhaust vents for efficient air circulation and elimination of hot spots.

Environmentally Friendly

The redesigned refrigeration circuit uses up to 58% less refrigerant (R134a) reducing the risk of greenhouse gas emissions.

Energy Savings Mode

When cooling isn't necessary due to equipment shutdown or cold weather conditions, the unit conserves energy by turning fans off - except for periodic cycling for circulating air within the enclosure.

19.09 in. (485 mm)

60.51 in. (1537 mm)

4.72 in. (120 mm)

9.92 in. (252 mm)

UL Listed

Listed to the new UL 60335 certification with enhanced safety standards.

Improved Energy Efficiency

The redesigned system achieves energy consumption reductions of up to 11%.

Maintenance Free, Filterless Design

The wide fin spacing is less susceptible to clogging from dirt buildup which can cause the unit to work harder and hamper efficiency.

External Display

For visual temperature monitoring.

High Airflow Backward Curve Impeller Fan

Provides high airflow in a long lasting, single bearing design. Outperforms typical two-bearing blowers with nearly twice the lifespan.

Hermetically Sealed Compressor

The absence of any refrigerant fill valves eliminates leak paths. Recharging is never needed. 100% cooling capacity efficiency is ensured.

Active Condensate Management

Condensation is a natural by-product of refrigeration. The heated condensate collection pan boils this off thereby eliminating the need for drain tubes and buckets.

To conserve power, this heater only activates when necessary.





DTI 6801 (13000 - 16000 Btu/h) Recessed Cooling Units

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Starting Current @ 35A/35A °C	Fuse (maximum) Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTI 6801	13899822055	400/460	50 / 60	1800 / 2416	16	8	<70	202 (92)

Design **Housing:** galvanized sheet steel **Cover:** electrostatically powder coated RAL 7035 (light grey);

Additional Data		DTI 6801	
Ambient Temperature Range		+ 50 ... + 131 / + 10 ... + 55	°F / °C
Control range (adjustable)	SC	+ 77 ... + 113 / + 25 ... + 45; factory setting + 95 / + 35	
Refrigerant	type	R134a	
	quantity	1200	g
Condensate management		integrated condensate evaporation system with safety overflow	
Protection system according to EN 60529	IP55	towards the electrical enclosure if used as intended by the manufacturer	
	IP34	towards the surroundings if used as intended by the manufacturer	
Accessories		Consult Factory	



For additional technical data, drawings and templates.
www.pfannenbergsusa.com

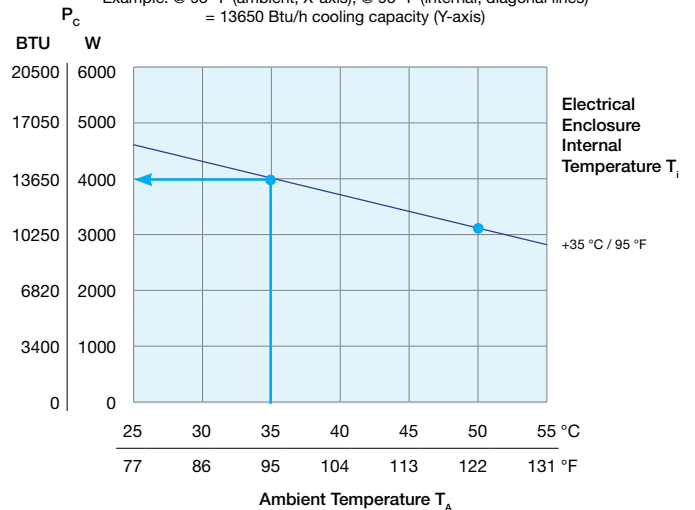
Available Models:



Cooling Capacity Performance Curve

How to use this chart

Example: @ 95 °F (ambient, X-axis), @ 95 °F (internal, diagonal lines)
= 13650 Btu/h cooling capacity (Y-axis)



Note: Cooling capacity may vary between voltage and configurations.

DTI 6000 C | RECESSED COOLING UNITS

3000 - 6000 Btu/h

The New DTI 6000C series compact cooling units are easily serviceable and easy to install. These units also feature the best energy efficiency on the market when compared against similar product. These cooling units are ideal for mounting on a cabinet door and are partially recessed for space restricted installations.

Partially Recessed

For space restricted installations, ideal for door mount.

Thermal Overload Protection

Compressor and fan motors are outfitted with integral temperature switches to shut down the unit in the event of excessive temperature.

Pressure Overload Protection

High pressure cutout switch ensures safety by shutting off the compressor in the event of excessive pressure appearing in the refrigeration circuit.

Closed Loop Design

Designed to isolate the external ambient air from the internally conditioned air eliminating the risk of contaminants entering the cabinet.

Thermal Expansion Valve

Regulates the flow of refrigerant based on thermal demand for efficient performance over the entire operating temperature range.

Efficient Circulation

Large distance between intake and exhaust vents for efficient air circulation and elimination of hot spots.

Environmentally Friendly

Utilizes HFC-free R134a refrigerant versus a blended refrigerant for easier service and minimized negative impact to the environment.

Energy Efficient Hibernation Mode

When cooling isn't necessary due to equipment shutdown or cold weather conditions, the unit conserves energy by turning fans off - except for periodic cycling for circulating air within the enclosure.

High Airflow Backward Curve Impeller Fan

Provides high airflow in a long lasting, single bearing design. Outperforms typical two-bearing blowers with nearly twice the lifespan.

Phase Protection

Three-phase 400/460 VAC powered units are protected from phase mis-wiring.

ERP Efficiency Certified

As a component of the Kyoto Protocol to reduce carbon monoxide emissions, the European Energy Related Products (ERP) Directive includes an efficiency rating for fans. Pfannenberg proudly utilizes components which adhere to these requirements for up to 43% energy savings and operating costs reduction.

Maintenance Free, Filterless Design

The wide fin spacing is less susceptible to clogging from dirt buildup which can cause the unit to work harder and hamper efficiency.

External Display

For visual temperature monitoring.

Easy Installation and Maintenance

Tool-free spring plate design keeps the unit safely in place and allows mounting by 1 person in less than 3 minutes with 55% lower mounting costs. Direct access to the PCB and the fans means 80% shorter repair times.

Hermetically Sealed Compressor

The absence of any refrigerant fill valves eliminates leak paths. Recharging is never needed. 100% cooling capacity efficiency is ensured.

Active Condensate Management

Condensation is a natural by-product of refrigeration. The heated condensate collection pan boils this off thereby eliminating the need for drain tubes and buckets. To conserve power, this heater only activates when necessary.





DTI 6000 C Series (3000 - 6000 Btu/h) Recessed Cooling Units

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current @ 35A/35A °C	Fuse (maximum) Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTI 6201C	13895221055	230	50/60	445 / 560	2.4 / 2.9	6	<62	88 (40)
	13895229055	400/460	50/60	480 / 570	1.8 / 2.1	10	<62	99 (45)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey);							
DTI 6301C	13895321055	230	60	705 / 820	5 / 5.2	6	<62	88 (40)
	13895329055	400/460	50/60	770 / 820	3.5 / 3.3	10	<62	99 (45)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey);							
Additional Data		DTI 6201C			DTI 6301C			
Ambient Temperature Range		+ 59 ... + 131 / + 15 ... + 55						°F / °C
Control range (adjustable)		SC	+ 77 ... + 113 / + 25 ... + 45; factory setting + 95 / + 35					
Refrigerant	type	R134a						
	quantity	500						g
Condensate management		integrated condensate evaporation system with safety overflow						
Protection system according to EN 60529	IP54	towards the electrical enclosure if used as intended by the manufacturer						
	IP34	towards the surroundings if used as intended by the manufacturer						
Accessories		Consult Factory						



For additional technical data, drawings and templates.
www.pfannenbergsusa.com

Available Models:



DTI 6201C
Indoor Rated

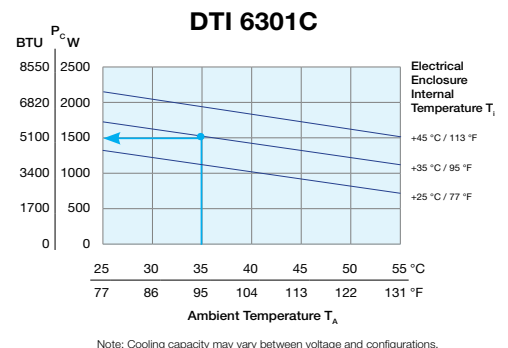
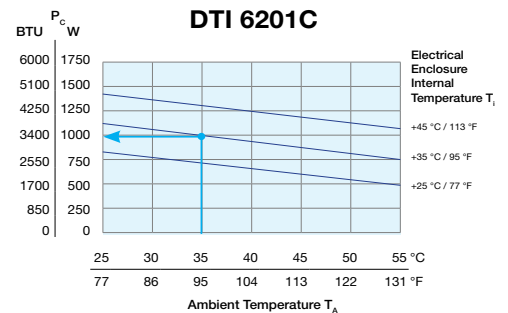


DTI 6301C
Indoor Rated

Cooling Capacity Performance Curves

How to use these charts

Example: @ 95 °F (ambient, X-axis),
@ 95 °F (internal, diagonal lines)
DTI 6201C = 3400 Btu/h cooling capacity (Y-axis)
DTI 6301C = 5100 Btu/h cooling capacity (Y-axis)



DTI 6XxE | RECESSED COOLING UNITS

3000 - 13500 Btu/h

Our DTI 6XxE series cooling units utilize inverter technology for precise cooling to provide energy efficient cabinet cooling. These cooling units are ideal for mounting on a cabinet door and are partially recessed for space restricted installations.

6X2E SHOWN HERE

Inverter Technology

Utilizing inverter technology, each unit covers a wide range of cooling capacity making each unit highly versatile.

Efficient Speed Control

Variable speed compressor adjusts according to the application requirement using less energy compared to fix speed compressor.

Energy Efficiency

Optimized control algorithm leads to significant energy savings for customers.

Connectivity Ready

Comes standard with RS485 interface to enable communication via Modbus RTU protocol.

Precise Cooling

Designed for precision cooling with accuracy of ± 0.1 K (0.2degF).

Multiple Mounting Styles

Available in both recessed mount and side mount to save floor space. One cut out size for models of different capacities.

Easy Installation and Maintenance

Tool-free spring plate design keeps the unit safely in place and allows mounting by 1 person in less than 3 minutes with 55% lower mounting costs. Direct access to the PCB and the fans means 80% shorter repair times.

Thermal Overload Protection

Compressor and fan motors are outfitted with integral temperature switches to shut down the unit in the event of excessive temperature.

Pressure Overload Protection

High pressure cutout switch ensures safety by shutting off the compressor in the event of excessive pressure appearing in the refrigeration circuit.

Closed Loop Design

Designed to isolate the external ambient air from the internally conditioned air eliminating the risk of contaminants entering the cabinet.

Thermal Expansion Valve

Regulates the flow of refrigerant based on thermal demand for efficient performance over the entire operating temperature range.

Efficient Circulation

Large distance between intake and exhaust vents for efficient air circulation and elimination of hot spots.

Optional Filter Design

In high particulate environments, optional filters could be ordered for easy retrofitting without needing tools.

External Display

For visual temperature monitoring.

High Airflow Backward Curve Impeller Fan

Provides high airflow in a long lasting, single bearing design. Outperforms typical two-bearing blowers with nearly twice the lifespan.

Hermetically Sealed Compressor

The absence of any refrigerant fill valves eliminates leak paths. Recharging is never needed. 100% cooling capacity efficiency is ensured.

Active Condensate Management

Condensation is a natural byproduct of refrigeration. The heated condensate collection pan boils this off thereby eliminating the need for drain tubes and buckets. To conserve power, this heater only activates when necessary.

60.55 in. (1538 mm)

A

B

19.09 in. (485 mm)

DTI INTRUSION/PROTRUSION DEPTHS

Unit	Intrusion (A)	Protrusion (B)
DTI 6X1E	2.36 in. (60 mm)	10.95 in. (278 mm)
DTI 6X2E	4.72 in. (120 mm)	14.65 in. (372 mm)



For additional technical data, drawings and templates. www.pflannenbergerusa.com



DTI 6XxE Series (3000-13500 Btu/h) Recessed Cooling Units

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current* @ 35A/35A °C	Fuse (maximum)** Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTI 6X1E Indoor Rated (NEMA Type 12)	13897332555	400/460	50/60	240 - 1300	3.6	6A	≤66	70
Design Options	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey)							
DTI 6X2E Indoor Rated (NEMA Type 12)	13897832555	400/460	50/60	240 - 2020	4.6	10A	≤73	84
Design Options	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey)							

Additional Data		DTI 6X1E	DTI 6X2E	
Ambient Temperature Range		+15 ... +55 +59 ... +131		°C / °F
Control range (adjustable)	SC	+25 ... +45 +77 ... +113; factory setting +35 +95		
Refrigerant	type	R134a		
	quantity	1100	1950	g
Condensate management		Integrated condensate evaporation system with safety overflow		
Protection system according to NEMA Type	NEMA Type 12		NEMA Type 12	against enclosure when properly installed
	NEMA 1 towards the surroundings when properly installed			
Accessories		For spare part kits and additional accessories visit pgs. 74-75 in this catalog		

* For the MCA (Maximum Current Ampacity) value per UL, please consult product technical datasheets available on our website.
** Class CC 600V Time Delay, Suitable for Transformer Inrush Protection.

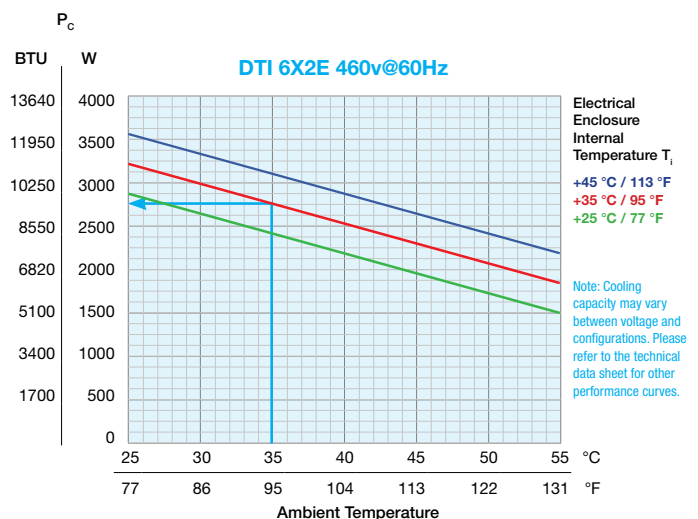
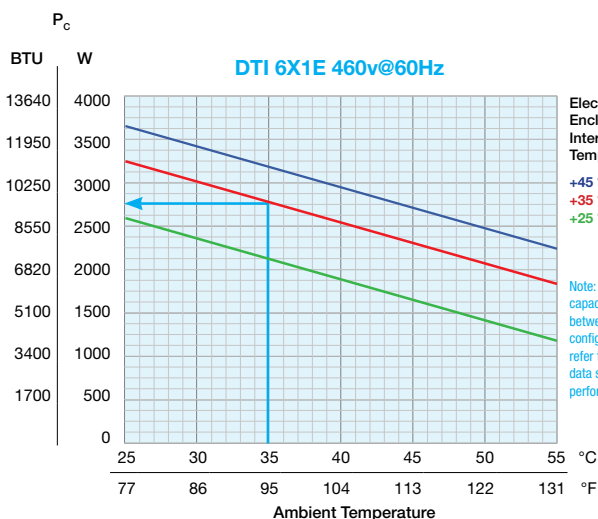


For additional technical data,
drawings and templates.
www.pfannenbergsa.com

Cooling Capacity Performance Curve

How to use this chart

Example: @ 95 °F (ambient, X-axis), @ 95 °F (internal, diagonal lines)
= 25327 Btu/h cooling capacity (Y-axis)



DTS 6XxE | SIDE MOUNTED COOLING UNITS

3000 - 13500 Btu/h

Our DTS 6XxE series cooling units utilize inverter technology for precise cooling to provide energy efficient cabinet cooling. These cooling units are designed for mounting on the side of an enclosure.

6X2E SHOWN HERE

Inverter Technology

Utilizing inverter technology, each unit covers a wide range of cooling capacity making each unit highly versatile.

Efficient Speed Control

Variable speed compressor adjusts according to the application requirement using less energy compared to fix speed compressor.

Energy Efficiency

Optimized control algorithm leads to significant energy savings for customers.

Connectivity Ready

Comes standard with RS485 interface to enable communication via Modbus RTU protocol.

Precise Cooling

Designed for precision cooling with accuracy of ± 0.1 K (0.2degF).

Multiple Mounting Styles

Available in both recessed mount and side mount to save floor space. One cut out size for models of different capacities.

Thermal Overload Protection

Compressor and fan motors are outfitted with integral temperature switches to shut down the unit in the event of excessive temperature.

Pressure Overload Protection

High pressure cutout switch ensures safety by shutting off the compressor in the event of excessive pressure appearing in the refrigeration circuit.

Closed Loop Design

Designed to isolate the external ambient air from the internally conditioned air eliminating the risk of contaminants entering the cabinet.

Thermal Expansion Valve

Regulates the flow of refrigerant based on thermal demand for efficient performance over the entire operating temperature range.

Efficient Circulation

Large distance between intake and exhaust vents for efficient air circulation and elimination of hot spots.

Optional Filter Design

In high particulate environments, optional filters could be ordered for easy retrofitting without needing tools.

External Display

For visual temperature monitoring.

High Airflow Backward Curve Impeller Fan

Provides high airflow in a long lasting, single bearing design. Outperforms typical two-bearing blowers with nearly twice the lifespan.

Hermetically Sealed Compressor

The absence of any refrigerant fill valves eliminates leak paths. Recharging is never needed. 100% cooling capacity efficiency is ensured.

Active Condensate Management

Condensation is a natural byproduct of refrigeration. The heated condensate collection pan boils this off thereby eliminating the need for drain tubes and buckets. To conserve power, this heater only activates when necessary.

60.55 in. (1538 mm)

14.65 in. (372 mm)

19.09 in. (485 mm)





DTS 6XxE Series (3000-13500 Btu/h) Side-Mount Cooling Units

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current* @ 35A/35A °C	Fuse (maximum)** Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTS 6X1E Indoor Rated (NEMA Type 12)	13887332555	400/460	50/60	240 - 1300	3.6	6A	≤66	75
Design Options	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey);							
DTS 6X2E Indoor Rated (NEMA Type 12)	13887832555	400/460	50/60	240 - 2020	4.6	10A	≤73	87
Design Options	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey);							

Additional Data		DTS 6X1E	DTS 6X2E	
Ambient Temperature Range		+15 ... +55 +59 ... +131		°C / °F
Control range (adjustable)	SC	+25 ... +45 +77 ... +113; factory setting +35 +95		
Refrigerant	type	R134a		
	quantity	1100	1950	g
Condensate management		Integrated condensate evaporation system with safety overflow		
Protection system according to NEMA Type	NEMA Type 12		NEMA Type 12	against enclosure when properly installed
	NEMA 1 towards the surroundings when properly installed			
Accessories		For spare part kits and additional accessories visit pgs. 74-75 in this catalog		

* For the MCA (Maximum Current Ampacity) value per UL, please consult product technical datasheets available on our website.
** Class CC 600V Time Delay, Suitable for Transformer Inrush Protection.

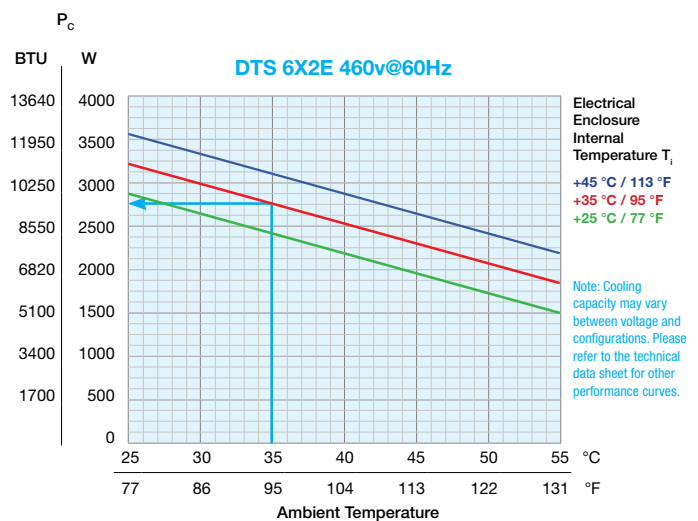
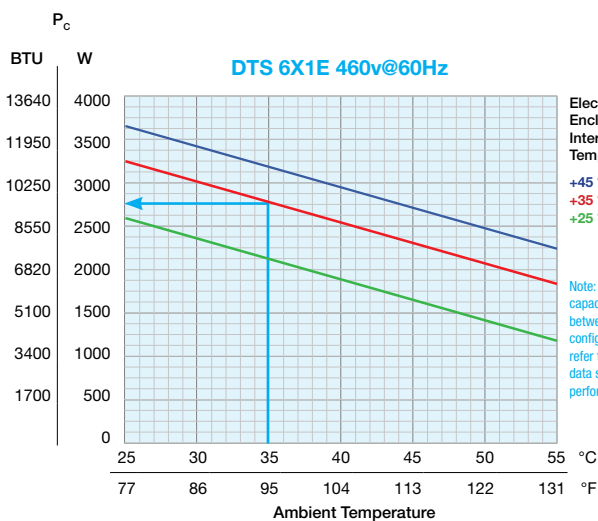


For additional technical data,
drawings and templates.
www.pfannenbergusa.com

Cooling Capacity Performance Curve

How to use this chart

Example: @ 95 °F (ambient, X-axis), @ 95 °F (internal, diagonal lines)
= 25327 Btu/h cooling capacity (Y-axis)



HYBRID-SERIES: TWO TECHNOLOGIES TOGETHER

To Maximize Cooling and Minimize Energy Use

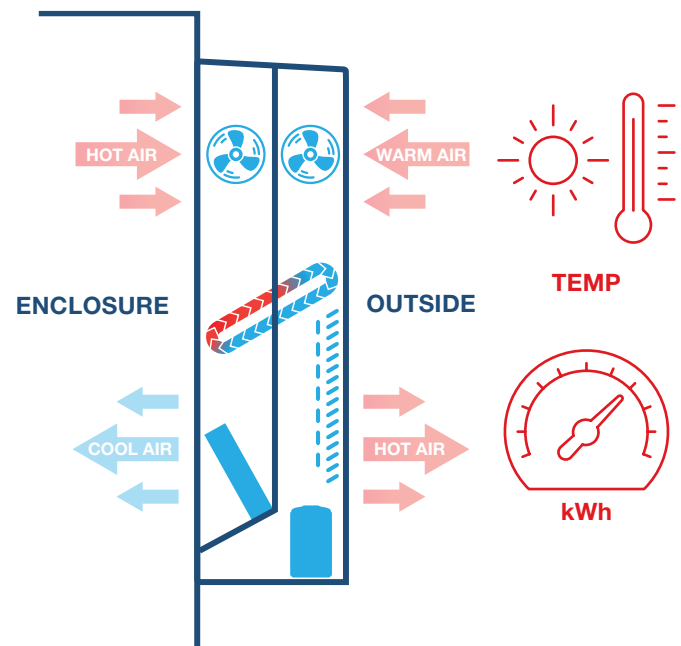
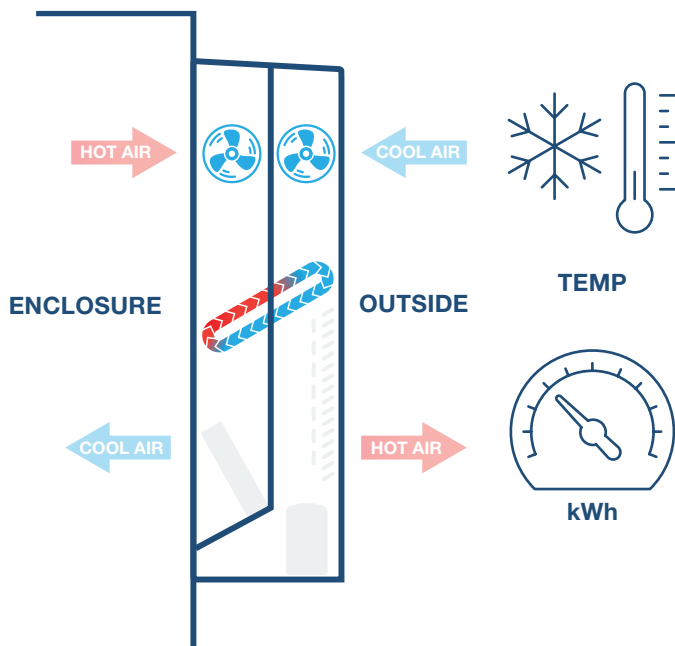
FREE COOLING

Air to air technology that cools using the cooler air outside the enclosure to remove heat from inside the enclosure with minimal energy use.



ACTIVE COOLING

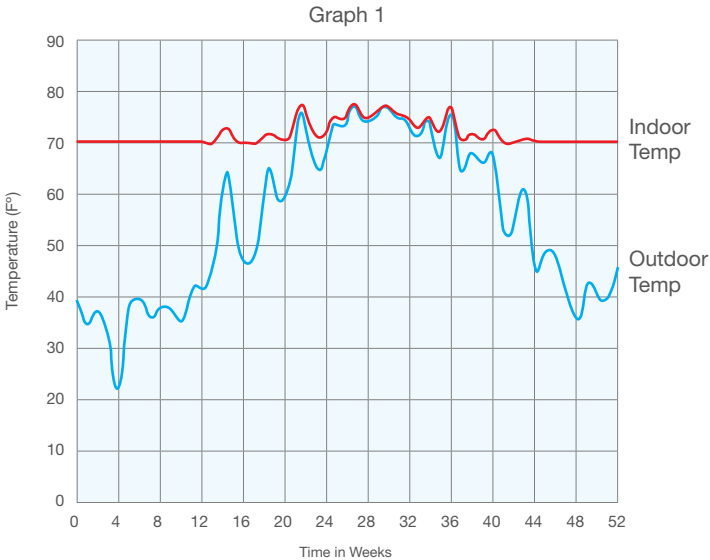
Compressor driven cooling utilized only when the air around the enclosure exceeds the desired internal temperature of the enclosure.



- Comes standard with R513a refrigerant to meet more stringent Greenhouse gases regulations
- Dual system saves energy use and reduces cost
- And provides redundancy
- Meets UL 60335 standard
- Comes pre-gasketed
- Use Anywhere – available for indoor or outdoor use. Type 12, 3R, and Washdown 4/4X
- Closed-loop system protects critical electronics inside the enclosure
- Easy to Read Status Display
- Fits All Full Sized Enclosures

USE CASE SCENARIO

- Non-climate controlled production facility in Detroit, MI.
- Production area is heated to keep facility at 70 °F during the cold months.
- In warmer months, fans are used to circulate fresh outside air for worker's comfort.
- The graph 1 shows the temperature inside and outside the facility over the course of a full year.
- The graph 2 captures the power consumption of a traditional single speed cooling unit, dark blue, and the new Hybrid Series cooling unit, light blue, used to cool the VFD cabinet inside the building based on the seasonal ambient temperature.

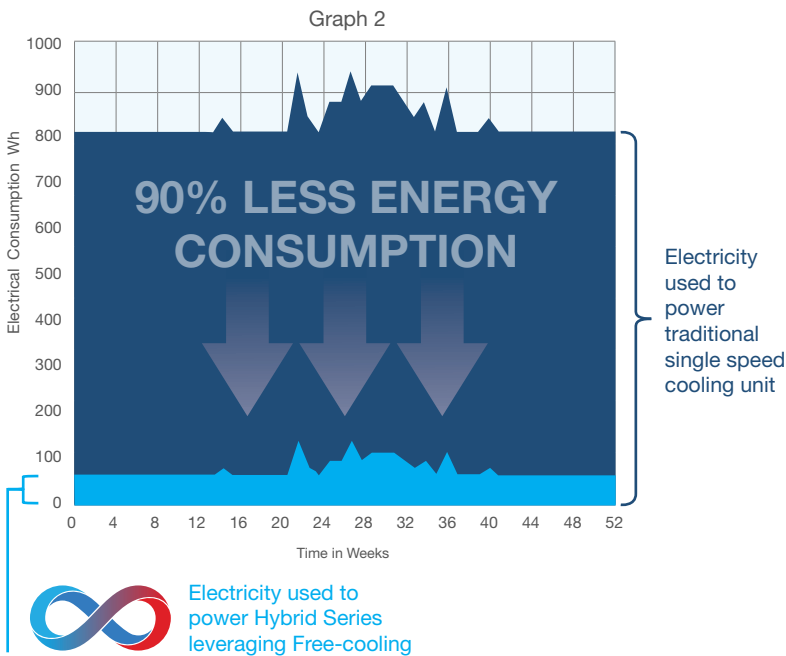


SAVINGS USING HYBRID-SERIES

- 90% less energy used.
- Estimated \$13,000 annual savings in electricity cost.*
- Calculated CO2 emission reduced by 1,680 lbs/unit.**

*Assumes 14 cents/kWh energy cost with a total of 50 operating cooling units.

**0.86 lbs of CO₂ emissions per kWh. (eia.gov)



IDEAL APPLICATIONS

Locations with lower ambient temperatures, climate controlled facilities, and operations that run at partial capacity for periods of the day.



DHS
3441

AUTOMOTIVE



DHS
3441

WAREHOUSE
AUTOMATION



DHS
3461

OUTDOOR



DHS
3481

FOOD & BEVERAGE

DHS 34x1

5000 - 7000 Btu/h

SIDE MOUNTED
COOLING UNITS



The DHS 34x1 Hybrid cooling units dual cooling system to maximize the cooling while minimize energy use. The Free cooling and active refrigerant system provides a dual threat to enclosure heat. Available in 3 models; DHS 3441 (NEMA Type 12) for indoor use, DHS 3461 (NEMA Type 3R/4) designed for outdoor use, and the stainless steel DTS 3481 (NEMA Type 4/4x) ideal for washdown applications.

Closed Loop Design

Designed to isolate the external ambient air from the internally conditioned air eliminating the risk of contaminants entering the cabinet.

Efficient Circulation

Large distance between intake and exhaust vents for efficient air circulation and elimination of hot spots.

Free Cooling

Air to air technology that cools using the cooler air outside the enclosure to remove heat from inside the enclosure with minimal energy use.

Dual Cooling System

Free cooling and active cooling provides cooling redundancy in highly unlikely events when one system fails.

Active Cooling

Compressor driven cooling utilized only when the air around the enclosure exceeds the desired internal temperature of the enclosure.

Active Condensate Management

Condensation is a natural byproduct of refrigeration. The heated condensate collection pan boils this off thereby eliminating the need for drain tubes and buckets. To conserve power, this heater only activates when necessary.

Optional Filter Design

In high particulate environments, optional filters could be ordered for easy retrofitting without needing tools.

Energy Efficient Fan

Equipped with energy efficient EC type fan with proprietary algorithm to optimize fan speed to achieve balance between delivering performance and energy efficiency.

External Display

For visual temperature monitoring and error code display. Easy access to temperature adjustment with password protection capability.

Lower GWP Refrigerant

Unit comes standard with R513a refrigerant with a GWP of 630 to meet more stringent Greenhouse gases regulations.

Self-Protected from Harsh Environments

Our unit is uniquely designed to protect itself from dirt and liquid from harsh environments. It includes a sump heater to prevent cold starts, prolonging the life of components.

Convenient Handle

Additional handle to ease installation or removal of the covers.

56.82 in. (1443 mm)

13.75 in. (349 mm)

15.59 in. (396 mm)



HYBRID-SERIES - HYBRID COOLING UNIT

Model Number	Part Number	Voltage Single Phase (VAC)	Frequency (Hz)	Power Consumption @A50°C/A40°C	Nominal (Run) Current A35/A35°C	Time Delay Fuse Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) (lb)
DHS 3441 Indoor Rated (NEMA Type 12)	13482042105	115	60	1200	10.4A	17.5A	<80	150
	13482012105	230	50/60		5.3A	10A	<80	143
	13482022105	400/460	50/60		2.1A	4.5A	<80	152
Design	Housing: G90 galvanized steel Cover: powder coated. RAL 7035 (light grey); ANSI 61 grey use part no. ending in ...01.							
DHS 3461 Outdoor Rated (NEMA Type 3R/4)	13482042205	115	60	1200	10.4A	17.5A	<80	150
	13482012205	230	50/60		5.3A	10A	<80	143
	13482022205	400/460	50/60		2.1A	4.5A	<80	152
Design	Housing: G90 galvanized steel Cover: powder coated. RAL 7035 (light grey); ANSI 61 grey use part no. ending in ...01.							
DHS 3481 Washdown (NEMA Type 4/4x)	13482042308	115	60	1200	10.4A	17.5A	<80	150
	13482012308	230	50/60		5.3A	10A	<80	143
	13482022308	400/460	50/60		2.1A	4.5A	<80	152
Design	Housing: G90 galvanized steel Cover: Stainless steel 304.							

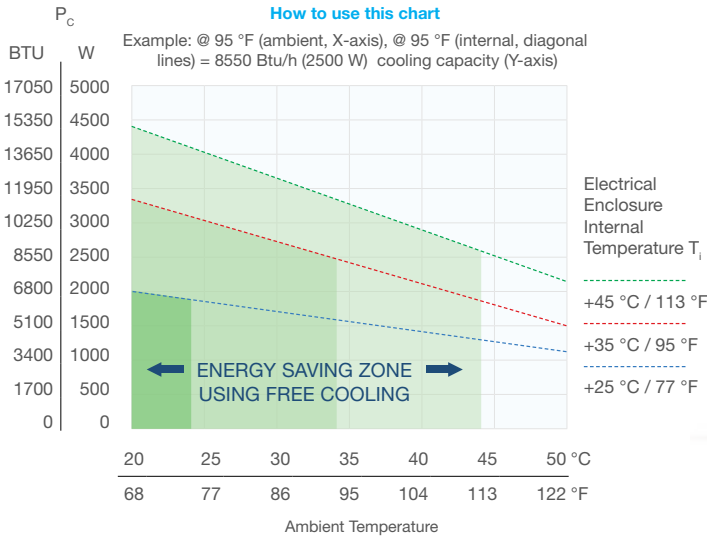
Additional Data		DHS 3441	DHS 3461	DHS 3481	
Ambient Temperature Range		- 13 ... + 120 - 25 ... + 50			°F °C
Control Range		+77 ... +113 +25 ... +45; factory setting +95 + 35			
Refrigerant	type	R513a			
	quantity	Active Cooling System 650 Passive Cooling Coil 450			g
Condensate Management		active condensate evaporation system with safety overflow			
Internal Air Circulation Maximum		424 721			CFM m²/h Against enclosure when properly installed
External Air Circulation Maximum					
System of protection according to EN 60529 / UL 50e		IP 54 / NEMA Type 12	IP 56 / NEMA Type 3R/4	IP 56 / NEMA Type 4/4x	
Height x Width		56.82 (1443) x 15.59 (396)			INCHES (mm)
Depth		13.75 (349)	16.29 (414)		



Performance Curve

How to use this chart

Example: @ 95 °F (ambient, X-axis), @ 95 °F (internal, diagonal lines) = 8550 Btu/h (2500 W) cooling capacity (Y-axis)



THE DTT & COOL SERIES COOLING UNITS

For Top Mounted Applications

Pfannenberg's DTT Series top mounted cooling units are 100% condensate safe. These units are ideal for space-saving installation on the top of the control cabinet. One of the main features of the DTT's innovative condensate management design is the repositioning of the cooling circuits. Moving the cold area up prevents condensation from forming in the cabinet where the cooling unit meets the enclosure. A widened airflow in the evaporator stops the formation of condensate buildup. Finally return air channels are engineered to increase the speed of the air leaving the cooling unit, ensuring cool air is effectively distributed moisture-free within the enclosure.

Advantages of DTT Cooling Units:

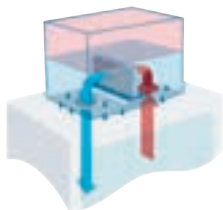
- Space-saving installation on top of the control cabinet:
 - Keep emergency exit routes and logistic paths clear.
 - Free up space on the production floor.
- Protected placement above the production floor. Unit is out of reach from fork lift trucks and other vehicles.
- DTT cooling units fit on all manufacturers' cabinets.
- 100 % protection against condensate due to patented seamless molded condensate tray.



DTT – Guaranteed 4-fold condensate protection:

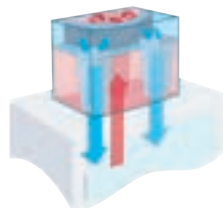
1. Repositioned cooling circuit prevents "cold bridge" formation on the ceiling of the electrical enclosure.
2. One piece leak-proof molded tub.
3. Managed water droplet control.
4. Eliminate the need for duct work inside the cabinet.

Cold Bridge



The challenge:

The lower, cold area of the cooling unit has direct contact with the ceiling of the warm electrical enclosure. As a result of this "cold bridge" effect, condensate can form on the inside ceiling of the electrical enclosure and drip into the inside.

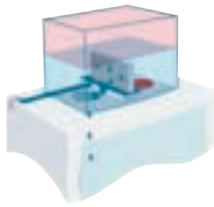


The Pfannenberg solution:

The position of the air-conditioning circuits was changed. When the cold area of the cooling unit is at the top and the warm area is at the bottom, a "cold bridge" cannot form on the inside ceiling eliminating the risk of condensate dripping inside the electrical enclosure.

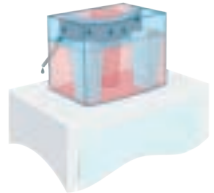


Overflow of Condensate



The challenge:

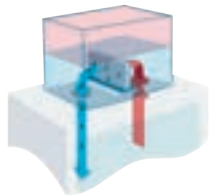
The horizontal condensate discharge which runs along the unit's floor makes the condensate drainage more difficult. Part of the condensate water that has accumulated in the cooling unit can overflow into the electrical enclosure via the air outlet opening.



The Pfannenberg solution:

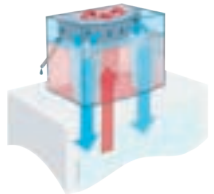
Vertical drainage of the condensate. The positioning of the evaporator in the top part of the cooling unit allows for problem-free drainage of the condensate water without contact to the electrical enclosure.

Condensate Build-up



The challenge:

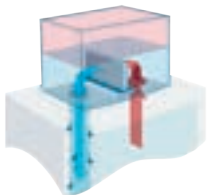
Concentrated warm air hits the evaporator. Parts of the condensate water formed there can be carried away by the airflow and can get into the electrical enclosure with the cold air.



The Pfannenberg solution:

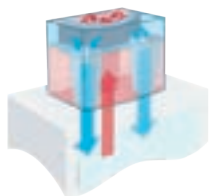
The warm air is spread out over a large evaporator. The reduced air speed at the evaporator reduces the risk of water being carried through the air, guaranteeing a condensate-free airflow in the direction of the electrical enclosure.

Air Hoses



The challenge:

The hoses conducting the cold air are surrounded by warm air from the electrical enclosure. As a result, condensate can form on the surface of the hose.



The Pfannenberg solution:

Integrated nozzles instead of air hoses. Air outlet nozzles are positioned on both sides of the cooling unit which accelerate the cold air and conduct it condensate-free down to the bottom of the electrical enclosure.

DTT 6101- 6201 | COOLING UNITS

1200 - 4000 Btu/h



The DTT 6101 - 6201 cooling units use our 100% patented condensate safety design. These cooling units are designed to be placed on top of the enclosure when there is a space shortage or aisles need to be kept clear.



Zero Sweat Guarantee

Condensate will not form in the cabinet where the cooling unit meets the enclosure.

Managed Water Droplet Control

As the airflow passes through the evaporator, any condensate generated on the evaporator will not be carried into the enclosure.

Eliminate the need for Duct Work

Return air channels are engineered to increase the speed of the air leaving the cooling unit, ensuring cool air is effectively distributed moisture-free within the enclosure.

One Piece Leak-Proof Molded Tub

Industry's only seamless molded condensate tray located at the top of the unit eliminates the ability for water to drip into the cabinet.

Active Condensate Management

Condensate evaporator uses heat to eliminate condensate even when the system is not actively cooling.

23.43 in. (595 mm)

Energy Efficient

Our optional multi controller connected to a sensor, automatically turns off the fan when it is not needed.

17.13 in. (435 mm)

15.55 in. (395 mm)

Durable and Reliable Components

High quality compressor, fans and heat exchangers provide dependable cooling of electrical enclosure components. The micro-channel design provides a condenser coil that is harder to damage. Fin combing is not necessary to maintain proper airflow channels.

Fast and Easy Maintenance

Removable cover allows for easy access to the front facing control components. In addition the micro-channel condenser design allows for an air path that clogs less and is significantly easier to clean during general maintenance.

Reduced Maintenance Costs

Have a dirty environment? Use our optional tool-free quick release filter mat mounting frame and a standard Pfannenberg filter to extend the life of the unit and reduce maintenance costs.

Rugged Design

Powder coated steel or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.





DTT 6101 - 6201 Series (1200 - 4000 Btu/h) Cooling Units

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current @ 35A/35A °C	Fuse (maximum) Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTT 6101 Indoor Rated (NEMA Type 12)	13256144055	115	60	569	5.6	20	<62	73 (33)
	13256141055	230	50/60	458 / 532	2.36 / 3	10	<62	73 (33)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey);							
DTT 6201 Indoor Rated (NEMA Type 12)	13256244055	115	60	877	10	20	<62	77 (35)
	13256241055	230	50/60	663 / 805	3.98 / 4.5	10	<62	77 (35)
	13256249055	400/460	50/60	706 / 845	2.82 / 2.5	6	<62	90 (41)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey);							

Additional Data		DTT 6101	DTT 6201	
Ambient Temperature Range		+ 59 ... + 131 / + 15 ... + 55		°F / °C
Control range (adjustable) SC		+ 77 ... + 113 / + 25 ... + 45; factory setting + 95 / + 35		
Refrigerant	type	R134a		
	quantity	400		g
Condensate management		active condensate evaporation system with safety overflow		
Protection system according to NEMA Type		NEMA 12 against enclosure when properly installed		
		NEMA 1 towards the surroundings when properly installed		



For additional technical data, drawings and templates.
www.pfannenbergsusa.com

Available Models:

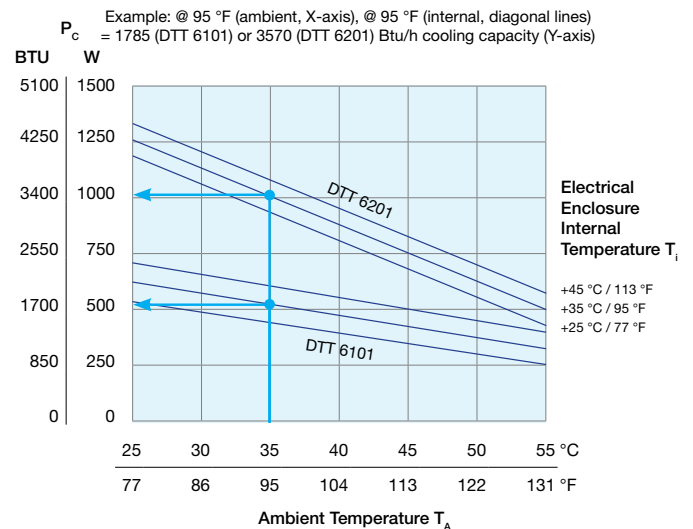


DTT 6101

DTT 6201

Cooling Capacity Performance Curve

How to use this chart



Note: Cooling capacity may vary between voltage and configurations.

DTT 6301- 6401 | COOLING UNITS

4000 - 7000 Btu/h



The DTT 6301 - 6401 cooling units use our 100% patented condensate safety design. These cooling units are designed to be placed on top of the enclosure when there is a space shortage or aisles need to be kept clear.



Zero Sweat Guarantee

Condensate will not form in the cabinet where the cooling unit meets the enclosure.

Managed Water Droplet Control

As the airflow passes through the evaporator, any condensate generated on the evaporator will not be carried into the enclosure.

Eliminate the need for Duct Work

Return air channels are engineered to increase the speed of the air leaving the cooling unit, ensuring cool air is effectively distributed moisture-free within the enclosure.

One Piece Leak-Proof Molded Tub

Industry's only seamless molded condensate tray located at the top of the unit eliminates the ability for water to drip into the cabinet.

Active Condensate Management

Condensate evaporator uses heat to eliminate condensate even when the system is not actively cooling.



Energy Efficient

Our optional multi controller connected to a sensor, automatically turns off the fan when it is not needed.

Durable and Reliable Components

High quality compressor, fans and heat exchangers provide dependable cooling of electrical enclosure components. The micro-channel design provides a condenser coil that is harder to damage. Fin combing is not necessary to maintain proper airflow channels.

Fast and Easy Maintenance

Removable cover allows for easy access to the front facing control components. In addition the micro-channel condenser design allows for an air path that clogs less and is significantly easier to clean during general maintenance.

Reduced Maintenance Costs

Have a dirty environment? Use our optional tool-free quick release filter mat mounting frame and a standard Pfannenberg filter to extend the life of the unit and reduce maintenance costs.

Rugged Design

Powder coated steel or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.





DTT 6301 - 6401 Series (4000 - 7000 Btu/h) Cooling Units

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current @ 35A/35A °C	Fuse (maximum) Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTT 6301 Indoor Rated (NEMA Type 12)	13256344055	115	60	1027	15	20	<62	88 (40)
	13256341055	230	50/60	980 / 1140	5.73 / 7	10	<62	99 (45)
	13256349055	400/460	50/60	962 / 1150	3.75 / 3.6	6	<62	116.8 (53)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey);							
DTT 6401 Indoor Rated (NEMA Type 12)	13256444055	115	60	1894	20	20	<62	97 (44)
	13256441055	230	50/60	1049 / 1275	6.2 / 7	10	<62	101 (46)
	13256432055	400/460	50/60	1300 / 1598	3.35 / 3.3	6	<62	112 (51)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey);							

Additional Data		DTT 6301		DTT 6401		
Ambient Temperature Range		+ 59 ... + 131 / + 15 ... + 55				°F / °C
Control range (adjustable)		SC	+ 77 ... + 113 / + 25 ... + 45; factory setting + 95 / + 35			
Refrigerant	type	R134a				
	quantity	725		750		g
Condensate management		active condensate evaporation system with safety overflow				
Protection system according to NEMA Type		NEMA 12 against enclosure when properly installed				
		NEMA 1 towards the surroundings when properly installed				



For additional technical data, drawings and templates.
www.pfannenbergsa.com

Available Models:

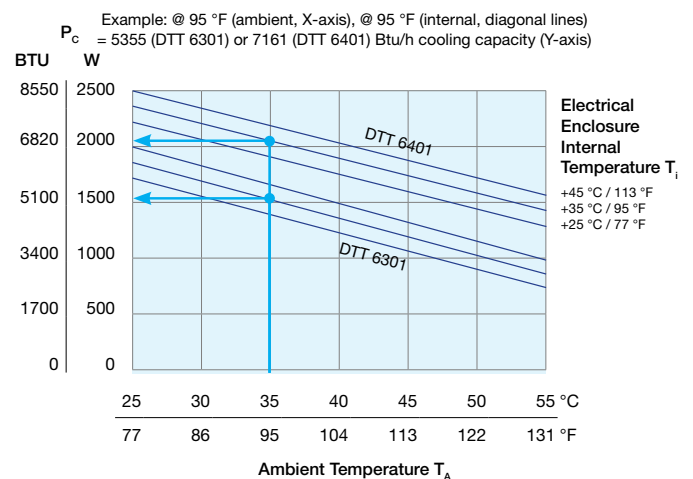


DTT 6301

DTT 6401

Cooling Capacity Performance Curve

How to use this chart



Note: Cooling capacity may vary between voltage and configurations.

DTT 6601- 6801 | COOLING UNITS

7000 - 14000 Btu/h



The DTT 6601 - 6801 cooling units use our 100% patented condensate safety design. These cooling units are designed to be placed on top of the enclosure when there is a space shortage or aisles need to be kept clear.



Zero Sweat Guarantee

Condensate will not form in the cabinet where the cooling unit meets the enclosure.

Managed Water Droplet Control

As the airflow passes through the evaporator, any condensate generated on the evaporator will not be carried into the enclosure.

Eliminate the need for Duct Work

Return air channels are engineered to increase the speed of the air leaving the cooling unit, ensuring cool air is effectively distributed moisture-free within the enclosure.

One Piece Leak-Proof Molded Tub

Industry's only seamless molded condensate tray located at the top of the unit eliminates the ability for water to drip into the cabinet.

Active Condensate Management

Condensate evaporator uses heat to eliminate condensate even when the system is not actively cooling.

31.30 in. (795 mm)

Energy Efficient

Our optional multi controller connected to a sensor, automatically turns off the fan when it is not needed.

19.09 in. (485 mm)

22.64 in. (575 mm)

Durable and Reliable Components

High quality compressor, fans and heat exchangers provide dependable cooling of electrical enclosure components. The micro-channel design provides a condenser coil that is harder to damage. Fin combing is not necessary to maintain proper airflow channels.

Fast and Easy Maintenance

Removable cover allows for easy access to the front facing control components. In addition the micro-channel condenser design allows for an air path that clogs less and is significantly easier to clean during general maintenance.

Reduced Maintenance Costs

Have a dirty environment? Use our optional tool-free quick release filter mat mounting frame and a standard Pfannenberg filter to extend the life of the unit and reduce maintenance costs.

Rugged Design

Powder coated steel or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.





DTT 6601 - 6801 Series (7000 - 14000 Btu/h) Cooling Units

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current @ 35A/35A °C	Fuse (maximum) Class CC	Noise Level (according to EN ISO 3741) dB(A)	Weight (without packaging) lb (kg)
DTT 6601 Indoor Rated (NEMA Type 12)	13256632055	400/460	50/60	1700 / 2100	3.16 / 4.5	10	<62	165 (75)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey);							
DTT 6801 Indoor Rated (NEMA Type 12)	13256832055	400/460	50/60	1601 / 1989	4.6 / 4.5	10	<62	170 (77)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey);							

Additional Data		DTT 6601	DTT 6801	
Ambient Temperature Range		+ 59 ... + 131 / + 15 ... + 55		°F / °C
Control range (adjustable) SC		+ 77 ... + 113 / + 25 ... + 45; factory setting + 95 / + 35		
Refrigerant	type	R134a		g
	quantity	1250		
Condensate management		active condensate evaporation system with safety overflow		
Protection system according to NEMA Type		NEMA 12 against enclosure when properly installed		
		NEMA 1 towards the surroundings when properly installed		



For additional technical data, drawings and templates.
www.pfannenbergsusa.com

Available Models:

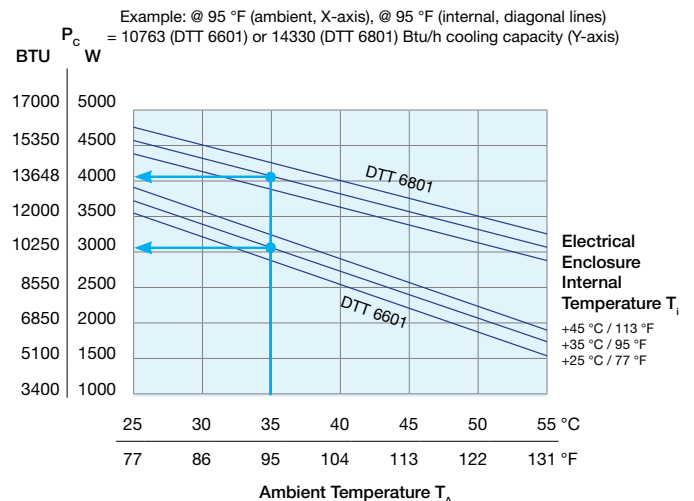


DTT 6601

DTT 6801

Cooling Capacity Performance Curve

How to use this chart



Note: Cooling capacity may vary between voltage and configurations.

SPARE PART KITS

Original Parts - Only from Pfannenberg

In the event of a cooling unit failure, original Pfannenberg spare parts are always in stock. Specific spare part kits are also available for each DTS range of Cooling Units to ensure the best reliability of your unit. By using our original spare parts, downtime is reduced to a minimum or longer downtimes are prevented. Individual spare parts are also available, please consult factory for details.

Why choose Pfannenberg's original parts:

Developed with each device, our parts are a perfect fit every time. They automatically benefit from every factory product improvement and upgrade, as well as from over 50 years of thermal management experience.

A long service life and a fair price make our original parts particularly economical.

Only with original parts from Pfannenberg can you be sure that ...

- They are the right parts.
- They fit.
- They are in stock.
- They can be delivered quickly.
- You don't lose any valuable time.
- The proper functionality is guaranteed.
- The guarantee for your whole unit remains intact.



We have bundled the most frequently requested spare parts and wearing parts into two kits: an electronics kit and a refrigeration kit. We ensure quick and global delivery with these, and help you to keep possible downtime to a minimum.

Model Number	Voltage	Part number
Electric Kit - Includes Fans & Electronics Components.		
Electric Kit DTS 36x1	460 V	18886000000
	230 V	18886000001
Electric Kit DTS 34x1	460 V	18886000002
Electric Kit DTS 32x5	460 V	18886000003
	230 V	18886000004
	115 V	18886000005
Electric Kit DTS 32x1	460 V	18886000006
	230 V	18886000007
	115 V	18886000008
Electric Kit DTS 31x5	460 V	18886000009
	230 V	18886000010
	115 V	18886000011
Electric Kit DTS 31x1	460 V	18886000012
	230 V	18886000013
	115 V	18886000014
Electric Kit DTS 3061/3081	230 V	18886000015
	115 V	18886000016
Electric Kit DTS 3031	230 V	18886000017
	115 V	18886000018
Electric E-Box Kit		
Electric E-Box Kit DTS 31x1	-	18886000019
Electric E-Box Kit DTS 32x5	-	18886000020

Model Number	Voltage	Part number
Refrigeration Kit - Includes Compressor, Expansion Valve, Pressure Switch.		
Refrig. Kit DTS 36x1	460 V	18886100000
	230 V	18886100001
Refrig. Kit DTS 34x1	460 V	18886100002
Refrig. Kit DTS 32x5	460 V	18886100003
	230 V	18886100004
	115 V	18886100005
Refrig. Kit DTS 32x1	460 V	18886100006
	230 V	18886100007
	115 V	18886100008
Refrig. Kit DTS 31x5	460 V	18886100009
	230 V	18886100010
	115 V	18886100011
Refrig. Kit DTS 31x1	230 V	18886100012
	460 V	18886100013
	115 V	18886100014
Refrig. Kit DTS 3061/3081	230 V	18886100015
	115 V	18886100016



FILTER KITS

For harsh, dirty environments

Pfannenberger
ELECTRO-TECHNOLOGY FOR INDUSTRY



DTS, DTI, PKS, & DTT Filters

PQF Premium Quick Filters

Part Number	Description	Units
18881500018	PQF 200	Any Air Inlet*
18881500019	PQF 300	Any Air Inlet*
18881500020	PQF 400	Any Air Inlet*

Standard Filter Mats

Part Number	Description	Units
18300000147	Filter mat	DTS 34x1 / 34x1C / 36x1C, DTS/I 6000 series & DTT 6000 series**
18611600006	Filter mat	DTS 3041 / 3061

Washable Aluminum Filters

Part Number	Description	Units
18881500008	Aluminum mesh	DTS 3021 / 31 / 31 SS***
18881500005	Aluminum mesh	DTS 3041 / 61
18881500009	Aluminum mesh	DTS 31x1
18881500006	Aluminum mesh	DTS 31x1 SL & 31x5 before S1527***
18380000025	Aluminum mesh	DTS 31x5 after S1527...***
18881500001	Aluminum mesh	DTS 32x1
18881500007	Aluminum mesh	DTS 32x5***
18300000149	Aluminum mesh	DTS 34x1 / 34x1C / 36x1C, DTS/I 6000 series & DTT 6000 series**
18881500004	Aluminum mesh	DTS 36x1
18082000003	Aluminum mesh	PKS 313x / 320x / 330x / 336x

External Filter Bracket

Part Number	Description	Units
18881500015	External filter kit DTS 3021/31	DTS 3021 / 31 / 31 SS
18881500017	External filter kit DTS 3141 SL	DTS 3141 SL***
18881500016	External filter kit DTS 3145	DTS 3145***
18881500014	External filter kit DTS 3245	DTS 3245***
18881500010	DTS/I & DTT filter kit	DTS 34x1 / 34x1C / 36x1C, DTS/I 6000 series & DTT 6000 series**

* The Premium Quick Filter (PQF) uses magnets to attach and can be used on any magnetic surface.

For prefiltering PQF does not provide IP or NEMA Type Rating.

** Requires the housing from PN 18881500010 to utilize filter.

*** Can be mounted externally with a mounting bracket.

ACCESSORIES

To add more flexibility to your unit

Condensate Bottle

External container for collecting the accumulating condensed water.

Compatible with	Part number
All units	18314000100



External Condensate Evaporation System-KV PTC

External condensate evaporator for the accumulated condensed water.

Compatible with	Part number
115 - 230 V 50 / 60 Hz	18314000001







PWS 3000 Series Air / Water Heat Exchangers

Efficient Cooling when Ambient Conditions are at their Worst

The use of Pfannenberger Air/Water Heat Exchangers is particularly suitable where ambient temperatures are high or the atmosphere proves to be particularly oily or aggressive.

Ideal areas of use for air/water heat exchangers are wherever machines or production processes are cooled by tempered water and water is thus already provided.

With cooling capacities ranging from 2,218 BTU (650 W) to 34,121 BTU (10,000 W) these units are specifically engineered to allow safe, efficient use of liquid coolant to cool enclosure electronics.

Additionally our sloped horizontal cover surfaces and optional NEMA Type 4X stainless steel type rating make the PWS 3000 series perfect for wash-down applications.



THE TECHNOLOGY OF COOLING

Cooling with Closed Loop Air to Water Heat Exchangers

Pfannenberg Air to Water Heat Exchangers use a supplied water source to remove the heat from the electrical cabinet. The heat from the enclosure is transferred to fluid and the heated fluid is then piped away adding no heat to the ambient environment. Because there is no heat transfer to the ambient environment, there is no need to de-rate the unit's performance in high ambient conditions.

How do I know if a Air to Water Heat Exchanger is the right product for my application?

- If there is a chilled water supply readily available at the enclosure.
- If the environment has extreme conditions like extremely high ambients, extremely dirty or caustic, that make other systems not applicable.

Properly sizing a Air to Water Heat Exchanger

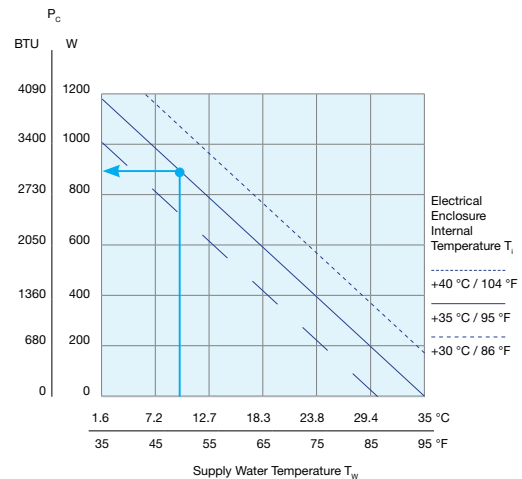
To properly size an Air to Water Heat Exchanger you must know the **required cooling capacity in Watts, available water temperature and the dimensions of the unit and enclosure.**

$$\{P_C = P_D - P_R\} \quad \{P_R = C \times A \times \Delta T\}$$

- **P_C [Watt]:**
Refrigeration capacity of a cooling unit.
- **P_D [Watt]:**
Dissipation loss: Thermal power generated inside a cabinet by the dissipation loss of components.
- **P_R [Watt]:**
Radiant heat gain/loss: Heat transfer through the skin of the enclosure (insulation factor not included).
- **C [W/m²°C]:**
Coefficient of heat transmission.
- **A [m²]:**
Surface area of electronics cabinet.
- **ΔT [°C]:**
Difference in temperature between the ambient air and the air inside the electronics cabinet.

Utilizing performance curves to properly size cooling units:

Pfannenberg utilizes the DIN standard 35/35 °C when rating our cooling units. Many other companies use 50/50 °C, which provides a higher, non-usable value. Customers should use their own application temperatures to determine the proper cooling capacity of the system.



Important information when utilizing Air to Water Heat Exchangers:

- The performance of an Air to water Heat Exchanger is directly related to the difference in the water temperature and the air temperature inside the enclosure.
- To manage condensation, an external condensation evaporator (KVDTX) can be used.
- The enclosure should be sealed to prevent the inflow of ambient air.
- Use the door contact switch to impede operation with open doors and consequent excessive accumulation of condensation.
- Make sure unit is level.
- Setting the temperature to the lowest setting is not the optimal solution due to the condensation issues. The value we have preset on the cooling unit is a sound compromise between cooling the inside of the enclosure and the accumulation of condensation.



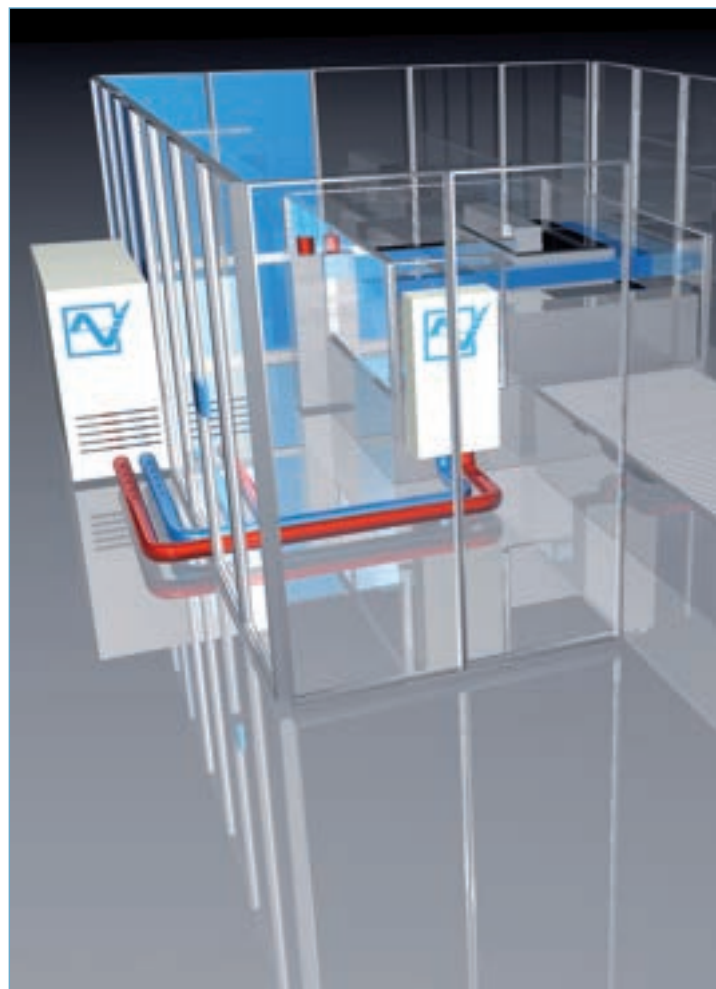


AIR/WATER HEAT EXCHANGERS QUICK SELECTION CHART

Type	Cooling capacity Btu/h / W*	Rated voltage	Dimensions W x H x D Inches (mm)	Approvals			Page
				UL	cUL	CE	
PWS 3062	2218 / 650	115 V / 230 V	10.13 (257) x 24.14 (613) x 5.62 (142.8)	●	●	●	86
PWS 3082	2900 / 900	115 V / 230 V	10.13 (257) x 24.14 (613) x 5.62 (142.8)	●	●	●	86
PWS 3102	3753 / 1100	115 V / 230 V	15.80 (401) x 32.05 (814) x 6.28 (159)	●	●	●	88
PWS 3152	5800 / 1700	115 V / 230 V	11.78 (299) x 36.65 (931) x 8.11 (206)	●	●	●	90
PWS 3202	7165 / 2100	115 V / 230 V	15.76 (400) x 51.89 (1318) x 9.07 (230)	●	●	●	92
PWS 3302	12283 / 3600	115 V / 230 V	15.76 (400) x 51.89 (1318) x 9.07 (230)	●	●	●	94
PWS 3502	21496 / 6300	115 V / 230 V	15.76 (400) x 57.09 (1450) x 8.60 (218)	●	●	●	96
PWS 31002	34121 / 10000	230V / 460 V	19.74 (501) x 65.52 (1664) x 12.10 (307)	●	●	●	98
PWS 7102	3242 / 950	115 V / 230 V	7.87 (200) x 19.98 (500) x 5.91 (150)	●	●	●	100
PWS 7332	10748 / 3150	115 V / 230 V	15.75 (400) x 37.40 (950) x 7.48 (190)	●	●	●	100

The PWS 3000 Advantage Series has been engineered to provide enhanced performance features:

- Mounting templates that are compatible with those of the DTS 3000 cooling units provides interchangeability allowing the best Pfannenberg solution to be used for any application.
- Isolation of the water circuit components and enhanced air baffling provide the best protection of the control enclosure from water carry-over.
- An electronic thermostat with digital LED display allows easy performance verification and temperature programming.
- Free-draining heat exchanger coil design, plus manual operation of the water solenoid valve allows easy winterization for seasonal, outdoor applications.
- Sloped horizontal cover surfaces and optional NEMA Type 4X SS type rating make the PWS 3000 Advantage Series perfect for wash-down applications.



PWS 30X2 | AIR/WATER HEAT EXCHANGERS

2218 - 2900 Btu/h

The PWS 30X2 Advantage Series Air/Water Heat Exchangers is our smallest air/water heat exchanger. These units are ideal for harsh ambient conditions, requiring a cool liquid source and power. Available with either powder coated or stainless steel covers and 2 different capacities. [Need a cool liquid source?](#) Pair this unit with one of our packaged chillers.

Washdown Roof Design

Metal covers are designed with a sloped top which sheds water away from the electrical enclosure as well as eliminates potential water pooling, corrosion and ice buildup.

Rugged Design

Powder coated steel or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.

Long Airflow Path

Heat exchangers are designed to draw hot air from the top of the enclosure and deliver cool air below the components.

Closed Loop Design

Designed to isolate the external ambient air from the internal air circuit eliminating the risk of contaminants entering the cabinet.

Push to Connect Fittings

Hydronic connectors that supports quick connection to 1/2 inch O.D. hose or 1/2 inch I.D. hose with included adapter. Unlike other units that have rigid permanent connections.

Optimized Internal Design

Smart engineered solution, easy to service and maintain.

Intelligent Control of Water Flow

The adjustable electronic thermostat permits precise control of the electrical enclosure temperature by regulating the coolant flow which is activated by a solenoid valve. This regulates the coolant flow to minimize coolant waste and increase energy-efficiency.

Condensation Management

Physical barriers allow for condensation to be collected and drained from the system with zero intrusion into the cabinet.

24.14 in. (513 mm)

10.13 in. (257 mm)

5.62 in. (142.8 mm)





PWS 3062 Series 2218 Btu/h (650 W) Air to Water Heat Exchangers

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current (A)	Fuse (maximum)	Fluid Connection	Noise Level (according to EN ISO 3741) dB(A)	Dry Weight (without packaging) lb (kg)
PWS 3062 Indoor/Outdoor Rated (NEMA Type 12/3R/4)	12358010045	115	60	28.9	.33	6	1/2"push in fitting	<51	22 (10)
	12358020045	230	50/60	30.4	.15	6	1/2"push in fitting	<51	22 (10)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...251								
PWS 3062 SS Indoor/Outdoor Rated (NEMA Type 12/3R/4/4x)	12358010048	115	60	28.9	.33	6	1/2"push in fitting	<51	22 (10)
	12358020048	230	50/60	30.4	.15	6	1/2"push in fitting	<51	22 (10)
Design	Housing: stainless steel 304 Cover: stainless steel 304								

PWS 3082 Series 2900 Btu/h (900 W) Air to Water Heat Exchangers

PWS 3082 Indoor/Outdoor Rated (NEMA Type 12/3R/4)	12358110045	115	60	21.3	0.235	6	1/2"push in fitting	<51	22 (10)
	12358120045	230	50/60	18.7	.126	6	1/2"push in fitting	<51	22 (10)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...251								
PWS 3082 SS Indoor/Outdoor Rated (NEMA Type 12/3R/4/4x)	12358110048	115	60	21.3	0.235	6	1/2"push in fitting	<51	22 (10)
	12358120048	230	50/60	18.7	.126	6	1/2"push in fitting	<51	22 (10)
Design	Housing: stainless steel 304 Cover: stainless steel 304								

Additional Data	PWS 3062	PWS 3062 SS	PWS 3082	PWS 3082 SS	
Control range (adjustable)	SC + 50 ... + 104 / + 10 ... + 40; factory setting + 95 / + 35				°F / °C
Rated flow rate	2 (450)				gpm (L/H)
Maximum water pressure	145 (10)				PSIG (BAR)
NEMA Type rating	12/3R/4/4x				Against enclosure when properly installed

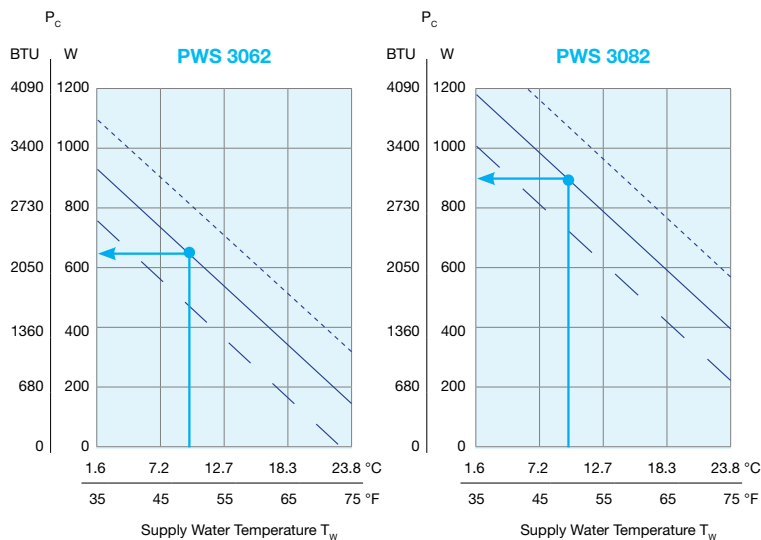


For additional technical data, drawings and manuals.
www.pfannenbergsusa.com

Cooling Capacity Performance Curve

How to Use this chart

Example: @ 95 °F (ambient, X-axis), @ 95 °F (internal, diagonal lines)
= PWS 3082: 2900 Btu/h cooling capacity (Y-axis), PWS 3062: 2218 Btu/h cooling capacity (Y-axis)



Electrical Enclosure Internal Temperature T_t

+40 °C / 104 °F

+35 °C / 95 °F

+30 °C / 86 °F

Note: For supply water temperature above 23.8 °C / 75 °F visit pfannenbergsusa.com

Available Models:



Light Grey

Indoor/Outdoor Rated
(NEMA Type 12/3R/4/4x)



Stainless Steel

Indoor/Outdoor Rated
(NEMA Type 12/3R/4/4x)

PWS 3102

AIR/WATER HEAT EXCHANGERS

3753 Btu/h

The PWS 3102 Advantage Series Air/Water Heat Exchangers offer over 3700 Btu/h cooling capacity and are ideal for harsh ambient conditions. Requiring only a cool liquid source and power. Available with either powder coated or stainless steel covers. [Need a cool liquid source?](#) Pair this unit with one of our packaged chillers.

Washdown Roof Design

Metal covers are designed with a sloped top which sheds water away from the electrical enclosure as well as eliminates potential water pooling, corrosion and ice buildup.

Rugged Design

Powder coated steel or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.

Long Airflow Path

Heat exchangers are designed to draw hot air from the top of the enclosure and deliver cool air below the components.

Closed Loop Design

Designed to isolate the external ambient air from the internal air circuit eliminating the risk of contaminants entering the cabinet.

Push to Connect Fittings

Hydronic connectors that supports quick connection to 1/2 inch O.D. hose or 1/2 inch I.D. hose with included adapter. Unlike other units that have rigid permanent connections.

Optimized Internal Design

Smart engineered solution, easy to service and maintain.

Intelligent Control of Water Flow

The adjustable electronic thermostat permits precise control of the electrical enclosure temperature by regulating the coolant flow which is activated by a solenoid valve. This regulates the coolant flow to minimize coolant waste and increase energy-efficiency.

Condensation Management

Physical barriers allow for condensation to be collected and drained from the system with zero intrusion into the cabinet.

32.05 in. (814 mm)

15.80 in. (401 mm)

6.28 in. (159 mm)





PWS 3102 Series 3753 Btu/h (1100 W) Air to Water Heat Exchangers

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current (A)	Fuse (maximum)	Fluid Connection	Noise Level (according to EN ISO 3741) dB(A)	Dry Weight (without packaging) lb (kg)
PWS 3102 Indoor/Outdoor Rated (NEMA Type 12/3R/4)	12358210045	115	60	52.9	0.571	6	1/2" push in fitting	<59	33 (15)
	12358220045	230	50/60	58	0.29	6	1/2" push in fitting	<59	33 (15)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...251								
PWS 3102 SS Indoor/Outdoor Rated (NEMA Type 12/3R/4/4x)	12358210048	115	60	52.9	0.571	6	1/2" push in fitting	<59	33 (15)
	12358220048	230	50/60	58	0.29	6	1/2" push in fitting	<59	33 (15)
Design	Housing: stainless steel 304 Cover: stainless steel 304								
Additional Data		PWS 3102				PWS 3102 SS			
Control range (adjustable)	SC	+ 50 ... + 104 / + 10 ... + 45; factory setting + 95 / + 35							°F / °C
Rated flow rate		2 (450)							gpm (L/H)
Maximum water pressure	PSIG	145 (10)							PSIG (BAR)
NEMA Type rating		12/3R/4/4x							against enclosure when properly installed



For additional technical data, drawings and manuals.
www.pfannenbergusa.com

Available Models:



Light Grey
Indoor/Outdoor Rated
(NEMA Type 12/3R/4/4x)

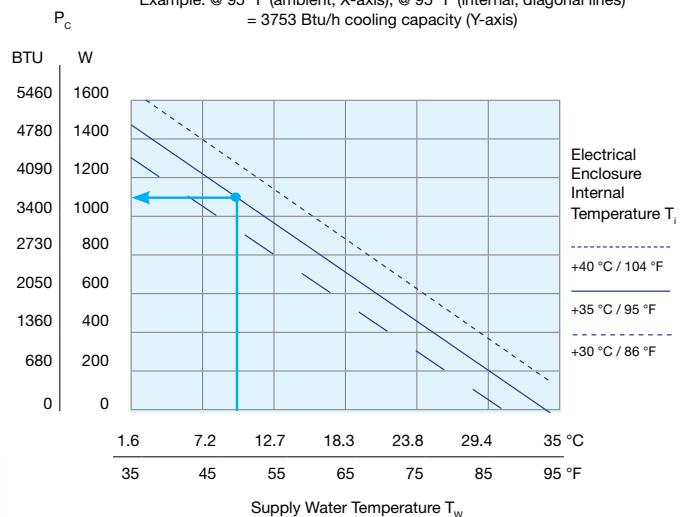


Stainless Steel
Indoor/Outdoor Rated
(NEMA Type 12/3R/4/4x)

Cooling Capacity Performance Curve

How to use this chart

Example: @ 95 °F (ambient, X-axis), @ 95 °F (internal, diagonal lines)
= 3753 Btu/h cooling capacity (Y-axis)



PWS 3152 | AIR/WATER HEAT EXCHANGERS

5800 Btu/h

The PWS 3152 Advantage Series Air/Water Heat Exchangers offer over 5000 Btu/h cooling capacity and are ideal for harsh ambient conditions. Requiring only a cool liquid source and power. Available with either powder coated or stainless steel covers. [Need a cool liquid source?](#) Pair this unit with one of our packaged chillers.

Washdown Roof Design

Metal covers are designed with a sloped top which sheds water away from the electrical enclosure as well as eliminates potential water pooling, corrosion and ice buildup.

Rugged Design

Powder coated steel or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.

Long Airflow Path

Heat exchangers are designed to draw hot air from the top of the enclosure and deliver cool air below the components.

Closed Loop Design

Designed to isolate the external ambient air from the internal air circuit eliminating the risk of contaminants entering the cabinet.

Push to Connect Fittings

Hydronic connectors that supports quick connection to 1/2 inch O.D. hose or 1/2 inch I.D. hose with included adapter. Unlike other units that have rigid permanent connections.

Optimized Internal Design

Smart engineered solution, easy to service and maintain.

Intelligent Control of Water Flow

The adjustable electronic thermostat permits precise control of the electrical enclosure temperature by regulating the coolant flow which is activated by a solenoid valve. This regulates the coolant flow to minimize coolant waste and increase energy-efficiency.

Condensation Management

Physical barriers allow for condensation to be collected and drained from the system with zero intrusion into the cabinet.

36.65 in. (931 mm)

11.78 in. (299 mm)

8.11 in. (206 mm)





PWS 3152 Series 5800 Btu/h (1700 W) Air to Water Heat Exchangers

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current (A)	Fuse (maximum)	Fluid Connection	Noise Level (according to EN ISO 3741) dB(A)	Dry Weight (without packaging) lb (kg)
PWS 3152 Indoor/Outdoor Rated (NEMA Type 12/3R/4)	12358610005	115	60	55.7	0.56	6	1/2" push in fitting	<60	34 (15.5)
	12358620005	230	50/60	58	0.29	6	1/2" push in fitting	<60	34 (15.5)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...251								
PWS 3152 SS Indoor/Outdoor Rated (NEMA Type 12/3R/4/4x)	12358610008	115	60	55.7	0.56	6	1/2" push in fitting	<60	34 (15.5)
	12358620008	230	50/60	58	0.29	6	1/2" push in fitting	<60	34 (15.5)
Design	Housing: stainless steel 304 Cover: stainless steel 304								
Additional Data		PWS 3152				PWS 3152 SS			
Control range (adjustable)	SC	+ 50 ... + 104 / + 10 ... + 45; factory setting + 95 / + 35							°F / °C
Rated flow rate		2 (450)							gpm (L/H)
Maximum water pressure	PSIG	145 (10)							PSIG (BAR)
NEMA Type rating		12/3R/4/4x							against enclosure when properly installed



For additional technical data, drawings and manuals.
www.pfannenbergsusa.com

Available Models:



Light Grey
Indoor/Outdoor Rated
(NEMA Type 12/3R/4/4x)

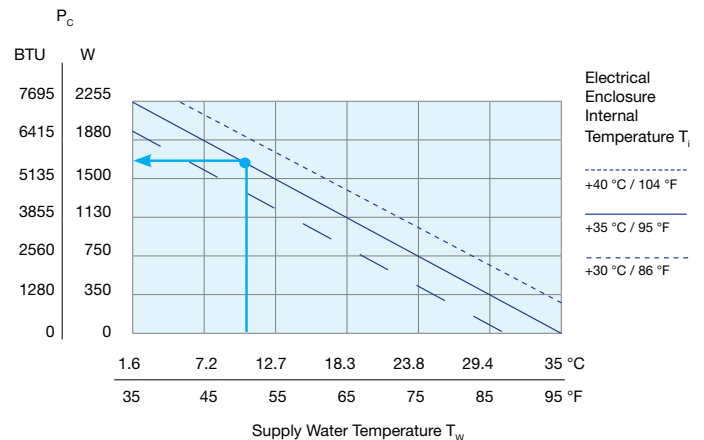


Stainless Steel
Indoor/Outdoor Rated
(NEMA Type 12/3R/4/4x)

Cooling Capacity Performance Curve

How to use this chart

Example: @ 95 °F (ambient, X-axis), @ 95 °F (internal, diagonal lines)
= 5800 Btu/h cooling capacity (Y-axis)



PWS 3202 | AIR/WATER HEAT EXCHANGERS

7165 Btu/h

The PWS 3202 Advantage Series Air/Water Heat Exchangers offer over 7000 Btu/h cooling capacity and are ideal for harsh ambient conditions. Requiring only a cool liquid source and power. Available with either powder coated or stainless steel covers. [Need a cool liquid source?](#) Pair this unit with one of our packaged chillers.

Washdown Roof Design

Metal covers are designed with a sloped top which sheds water away from the electrical enclosure as well as eliminates potential water pooling, corrosion and ice buildup.

Optimized Internal Design

Smart engineered solution, easy to service and maintain.

Rugged Design

Powder coated steel or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.

Long Airflow Path

Heat exchangers are designed to draw hot air from the top of the enclosure and deliver cool air below the components.

Closed Loop Design

Designed to isolate the external ambient air from the internal air circuit eliminating the risk of contaminants entering the cabinet.

Push to Connect Fittings

Hydronic connectors that supports quick connection to 1/2 inch O.D. hose or 1/2 inch I.D. hose with included adapter. Unlike other units that have rigid permanent connections.

Lifting Handles

Handles are mounted on the cover for easy handling and installation.

Intelligent Control of Water Flow

The adjustable electronic thermostat permits precise control of the electrical enclosure temperature by regulating the coolant flow which is activated by a solenoid valve. This regulates the coolant flow to minimize coolant waste and increase energy-efficiency.

Condensation Management

Physical barriers allow for condensation to be collected and drained from the system with zero intrusion into the cabinet.

51.89 in. (1318 mm)

15.76 in. (400 mm)

9.07 in. (230 mm)





PWS 3202 Series 7165 Btu/h (2100 W) Air to Water Heat Exchangers

Model Number	Part Number RAL 7035 (Light Grey)	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current (A)	Fuse (maximum)	Fluid Connection	Noise Level (according to EN ISO 3741) dB(A)	Dry Weight (without packaging) lb (kg)
PWS 3202 Indoor/Outdoor Rated (NEMA Type 12/3R/4)	12358310045	115	60	77.6	0.694	6	1/2" push in fitting	<62	62 (28)
	12358320045	230	50/60	66.2	0.312	6	1/2" push in fitting	<62	62 (28)
Design	Housing: galvanized sheet steel Cover: galvanized/electrostatically powder coated (200 °C)								
PWS 3202 SS Indoor/Outdoor Rated (NEMA Type 12/3R/4/4x)	12358310048	115	60	77.6	0.694	6	1/2" push in fitting	<62	62 (28)
	12358320048	230	50/60	66.2	0.312	6	1/2" push in fitting	<62	62 (28)
Design	Housing: stainless steel 304 Cover: stainless steel 304								
Additional Data		PWS 3202				PWS 3202 SS			
Control range (adjustable)	SC	+ 50 ... + 104 / + 10 ... + 45; factory setting + 95 / + 35							°F / °C
Rated flow rate		2 (450)							gpm (L/H)
Maximum water pressure	PSIG	145 (10)							PSIG (BAR)
NEMA Type rating		12/3R/4/4x							against enclosure when properly installed



For additional technical data,
drawings and manuals.
www.pfannenbergusa.com

Available Models:



Light Grey
Indoor/Outdoor Rated
(NEMA Type 12/3R/4/4x)

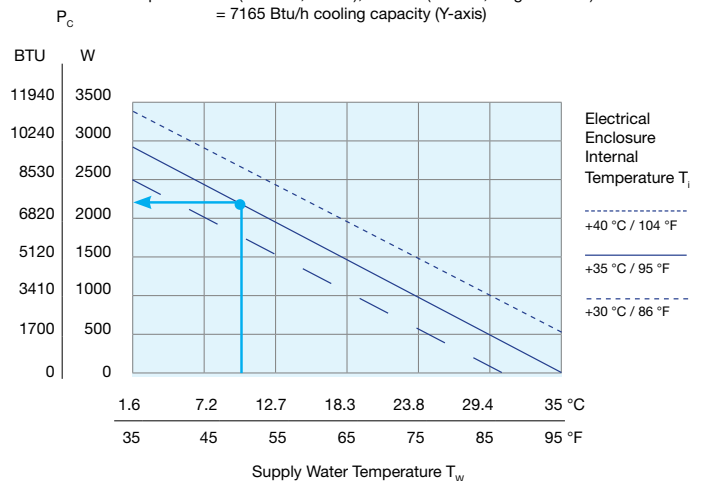


Stainless Steel
Indoor/Outdoor Rated
(NEMA Type 12/3R/4/4x)

Cooling Capacity Performance Curve

How to use this chart

Example: @ 95 °F (ambient, X-axis), @ 95 °F (internal, diagonal lines)
= 7165 Btu/h cooling capacity (Y-axis)



PWS 3302 | AIR/WATER HEAT EXCHANGERS

12283 Btu/h

The PWS 3302 Advantage Series Air/Water Heat Exchangers offer over 12000 Btu/h cooling capacity and are ideal for harsh ambient conditions. Requiring only a cool liquid source and power. Available with either powder coated or stainless steel covers. [Need a cool liquid source?](#) Pair this unit with one of our packaged chillers.

Washdown Roof Design

Metal covers are designed with a sloped top which sheds water away from the electrical enclosure as well as eliminates potential water pooling, corrosion and ice buildup.

Optimized Internal Design

Smart engineered solution, easy to service and maintain.

Rugged Design

Powder coated steel or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.

Long Airflow Path

Heat exchangers are designed to draw hot air from the top of the enclosure and deliver cool air below the components.

Closed Loop Design

Designed to isolate the external ambient air from the internal air circuit eliminating the risk of contaminants entering the cabinet.

Push to Connect Fittings

Hydronic connectors that supports quick connection to 1/2 inch O.D. hose or 1/2 inch I.D. hose with included adapter. Unlike other units that have rigid permanent connections.

Lifting Handles

Handles are mounted on the cover for easy handling and installation.

Intelligent Control of Water Flow

The adjustable electronic thermostat permits precise control of the electrical enclosure temperature by regulating the coolant flow which is activated by a solenoid valve. This regulates the coolant flow to minimize coolant waste and increase energy-efficiency.

Condensation Management

Physical barriers allow for condensation to be collected and drained from the system with zero intrusion into the cabinet.

51.89 in. (1318 mm)

15.76 in. (400 mm)

9.07 in. (230 mm)





PWS 3302 Series 12283 Btu/h (3600 W) Air to Water Heat Exchangers

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current (A)	Fuse (maximum)	Fluid Connection	Noise Level (according to EN ISO 3741) dB(A)	Dry Weight (without packaging) lb (kg)
PWS 3302 Indoor/Outdoor Rated (NEMA Type 12/3R/4)	12358410045	115	60	77.9	0.698	6	1/2" push in fitting	<62	66 (30)
	12358420045	230	50/60	59	0.311	6	1/2" push in fitting	<62	66 (30)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...251								
PWS 3302 SS Indoor/Outdoor Rated (NEMA Type 12/3R/4/4x)	12358410048	115	60	77.9	0.698	6	1/2" push in fitting	<62	66 (30)
	12358420048	230	50/60	59	0.311	6	1/2" push in fitting	<62	66 (30)
Design	Housing: stainless steel 304 Cover: stainless steel 304								

Additional Data		PWS 3302	PWS 3302 SS
Control range (adjustable)	SC	+ 50 ... + 104 / + 10 ... + 45; factory setting + 95 / + 35	
Rated flow rate		2 (450)	
Maximum water pressure	PSIG	145 (10)	
NEMA Type rating		12/3R/4/4x	



For additional technical data, drawings and manuals.
www.pfannenbergusa.com

Available Models:



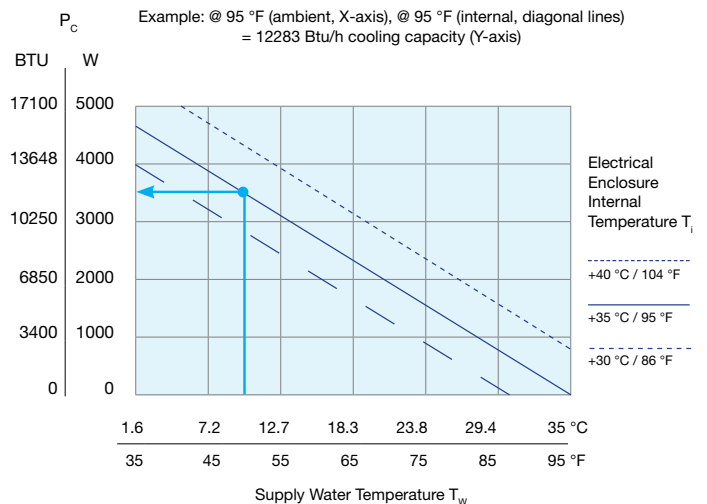
Light Grey
Indoor/Outdoor Rated
(NEMA Type 12/3R/4/4x)



Stainless Steel
Indoor/Outdoor Rated
(NEMA Type 12/3R/4/4x)

Cooling Capacity Performance Curve

How to use this chart



PWS 3502

AIR/WATER HEAT EXCHANGERS

21496 Btu/h

The PWS 3502 Advantage Series Air/Water Heat Exchangers offer over 20000 Btu/h cooling capacity and are ideal for harsh ambient conditions. Requiring only a cool liquid source and power. Available with either powder coated or stainless steel covers. [Need a cool liquid source?](#) Pair this unit with one of our packaged chillers.

Washdown Roof Design

Metal covers are designed with a sloped top which sheds water away from the electrical enclosure as well as eliminates potential water pooling, corrosion and ice buildup.

Optimized Internal Design

Smart engineered solution, easy to service and maintain.

Rugged Design

Powder coated steel or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.

Long Airflow Path

Heat exchangers are designed to draw hot air from the top of the enclosure and deliver cool air below the components.

Closed Loop Design

Designed to isolate the external ambient air from the internal air circuit eliminating the risk of contaminants entering the cabinet.

Push to Connect Fittings

Hydronic connectors that supports quick connection to 1/2 inch O.D. hose or 1/2 inch I.D. hose with included adapter. Unlike other units that have rigid permanent connections.

Lifting Handles

Handles are mounted on the cover for easy handling and installation.

Intelligent Control of Water Flow

The adjustable electronic thermostat permits precise control of the electrical enclosure temperature by regulating the coolant flow which is activated by a solenoid valve. This regulates the coolant flow to minimize coolant waste and increase energy-efficiency.

Condensation Management

Physical barriers allow for condensation to be collected and drained from the system with zero intrusion into the cabinet.

57.09 in. (1450 mm)

15.76 in. (400 mm)

8.60 in. (218 mm)





PWS 3502 Series 21496 Btu/h (6300 W) Air to Water Heat Exchangers

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current (A)	Fuse (maximum)	Fluid Connection	Noise Level (according to EN ISO 3741) dB(A)	Dry Weight (without packaging) lb (kg)
PWS 3502 Indoor/Outdoor Rated (NEMA Type 12/3R/4)	12358510045	115	60	215.6	1.89	6	1/2"push in fitting	<64	73 (33)
	12358520045	230	50/60	192.5	.982	6	1/2"push in fitting	<64	73 (33)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...251								
PWS 3502 SS Indoor/Outdoor Rated (NEMA Type 12/3R/4/4x)	12358510048	115	60	215.6	1.89	6	1/2"push in fitting	<64	73 (33)
	12358520048	230	50/60	192.5	.982	6	1/2"push in fitting	<64	73 (33)
Design	Housing: stainless steel 304 Cover: stainless steel 304								
Additional Data		PWS 3502				PWS 3502 SS			
Control range (adjustable)	SC	+ 50 ... + 104 / + 10 ... + 40; factory setting + 95 / + 35							°F / °C
Rated flow rate		2 (450)							gpm (L/H)
Maximum water pressure	PSIG	145 (10)							PSIG (BAR)
NEMA Type rating		12/3R/4/4x							against enclosure when properly installed



For additional technical data, drawings and manuals.
www.pfannenbergusa.com

Available Models:

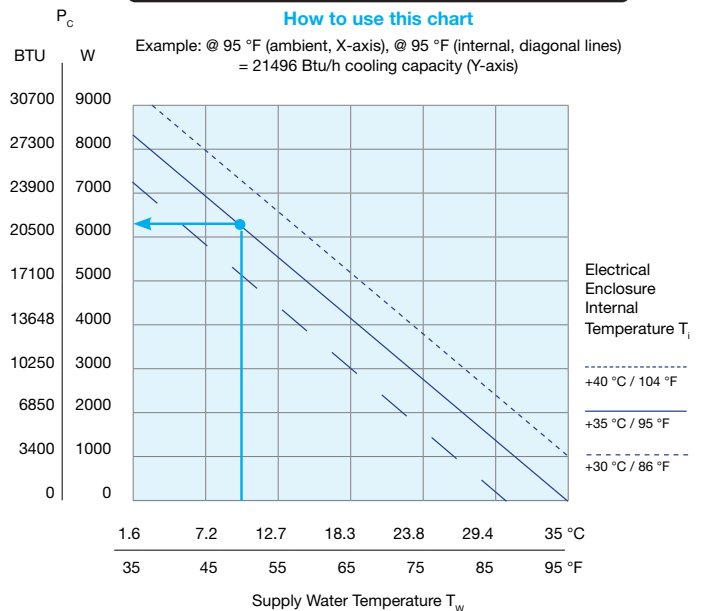


Light Grey
Indoor/Outdoor Rated
(NEMA Type 12/3R/4/4x)



Stainless Steel
Indoor/Outdoor Rated
(NEMA Type 12/3R/4/4x)

Cooling Capacity Performance Curve



PWS 31002 | AIR/WATER HEAT EXCHANGERS

34121 Btu/h

The PWS 31002 Advantage Series Air/Water Heat Exchangers are our largest units offering over 34000 Btu/h cooling capacity and are ideal for harsh ambient conditions. Requiring only a cool liquid source and power. Available with either powder coated or stainless steel covers. [Need a cool liquid source?](#) Pair this unit with one of our packaged chillers.

Washdown Roof Design

Metal covers are designed with a sloped top which sheds water away from the electrical enclosure as well as eliminates potential water pooling, corrosion and ice buildup.

Optimized Internal Design

Smart engineered solution, easy to service and maintain.

Rugged Design

Powder coated steel or stainless steel cover designed for manufacturing environments. Easily painted to match enclosure or machine.

Long Airflow Path

Heat exchangers are designed to draw hot air from the top of the enclosure and deliver cool air below the components.

Closed Loop Design

Designed to isolate the external ambient air from the internal air circuit eliminating the risk of contaminants entering the cabinet.

Push to Connect Fittings

Hydronic connectors that supports quick connection to 1/2 inch O.D. hose or 1/2 inch I.D. hose with included adapter. Unlike other units that have rigid permanent connections.

Lifting Handles

Handles are mounted on the cover for easy handling and installation.

Intelligent Control of Water Flow

The adjustable electronic thermostat permits precise control of the electrical enclosure temperature by regulating the coolant flow which is activated by a solenoid valve. This regulates the coolant flow to minimize coolant waste and increase energy-efficiency.

Condensation Management

Physical barriers allow for condensation to be collected and drained from the system with zero intrusion into the cabinet.

65.52 in. (1664 mm)

12.10 in. (307 mm)

19.75 in. (501 mm)





PWS 31002 Series 34121 Btu/h (10000 W) Air to Water Heat Exchangers

Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current (A)	Fuse (maximum)	Fluid Connection	Noise Level (according to EN ISO 3741) dB(A)	Dry Weight (without packaging) lb (kg)
PWS 31002 Indoor/Outdoor Rated (NEMA Type 12/3R/4)	12358720045	230	50/60	163	.71	6	1/2" push in fitting	<66	117 (53)
	12358730045	460	50/60	150	.67	6	1/2" push in fitting	<66	126 (57)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...251								
PWS 31002 SS Indoor/Outdoor Rated (NEMA Type 12/3R/4/4x)	12358720048	230	50/60	163	.71	6	1/2" push in fitting	<66	117 (53)
	12358730048	460	50/60	150	.67	6	1/2" push in fitting	<66	126 (57)
Design	Housing: stainless steel 304 Cover: stainless steel 304								

Additional Data		PWS 31002	PWS 31002 SS
Control range (adjustable)	SC	+ 50 ... + 104 / + 10 ... + 40; factory setting + 95 / + 35	
Rated flow rate		5 (1150)	
Maximum water pressure	PSIG	145 (10)	
NEMA Type rating		12/3R/4/4x	



For additional technical data, drawings and manuals.
www.pfannenbergusa.com

Available Models:



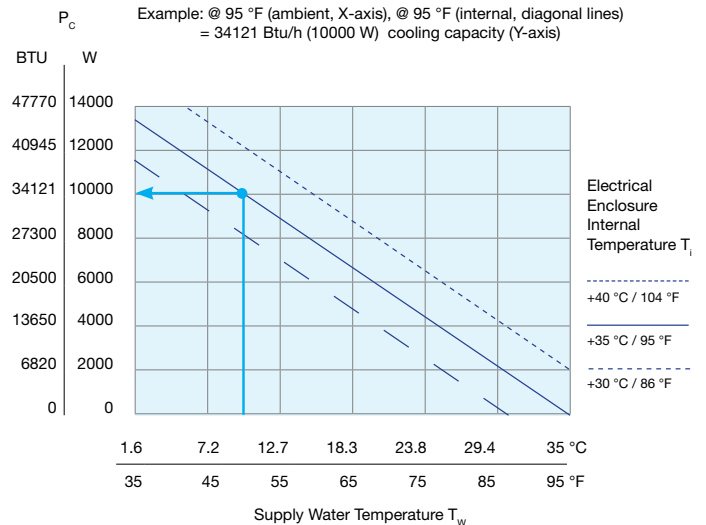
Light Grey
Indoor/Outdoor Rated
(NEMA Type 12/3R/4/4x)



Stainless Steel
Indoor/Outdoor Rated
(NEMA Type 12/3R/4/4x)

Cooling Capacity Performance Curve

How to use this chart



PWS 7102 | AIR/WATER HEAT EXCHANGERS

3242 Btu/h

The PWS 7000 Series Air/Water Heat Exchangers are our legacy models. The 7102 model offers the narrowest footprint of any of our air/water heat exchangers. [Need a cool liquid source?](#) Pair this unit with one of our packaged chillers.



PWS 7102 (3242 Btu/h) Air to Water Heat Exchangers									
Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current (A)	Fuse (maximum)	Fluid Connection	Noise Level (according to EN ISO 3741) dB(A)	Dry Weight (without packaging) lb (kg)
PWS 7102 Indoor/Outdoor Rated (NEMA Type 12/3R/4)	12351010005	115	60	95	0.80	4	1/2"OD Hose Barb	<48	16.5 (7.5)
	12351020005	230	50/60	84	.52	4	1/2"OD Hose Barb	<48	16.5 (7.5)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...251								
PWS 7102 SS Indoor/Outdoor Rated (NEMA Type 12/3R/4/4x)	12351010008	115	60	95	0.80	4	1/2"OD Hose Barb	<48	16.5 (7.5)
	12351020008	230	50/60	84	.52	4	1/2"OD Hose Barb	<48	16.5 (7.5)
Design	Housing: stainless steel 304 Cover: stainless steel 304								

PWS 7332 | AIR/WATER HEAT EXCHANGERS

10748 Btu/h

The PWS 7332 is compatible with existing popular PWS 7000 series units still in the field. Installation is service friendly requiring no elaborate reworking of the mounting cutout. [Need a cool liquid source?](#) Pair this unit with one of our packaged chillers.



PWS 7332 Series (10748 Btu/h) Air to Water Heat Exchangers									
Model Number	Part Number	Voltage (VAC)	Frequency (Hz)	Power Consumption (W)	Nominal (Run) Current (A)	Fuse (maximum)	Fluid Connection	Noise Level (according to EN ISO 3741) dB(A)	Dry Weight (without packaging) lb (kg)
PWS 7332 Indoor/Outdoor Rated (NEMA Type 12/3R/4)	12353010005	115	60	453	3.8	16	1/2"OD Hose Barb	54	51 (23)
	12353020005	230	50/60	295/385	1.3/1.95	6	1/2"OD Hose Barb	54	51 (23)
Design	Housing: galvanized sheet steel Cover: electrostatically powder coated RAL 7035 (light grey); for ANSI 61 grey use part no. ending in ...251								
PWS 7332 SS Indoor/Outdoor Rated (NEMA Type 12/3R/4/4x)	12353010008	115	60	453	3.8	16	1/2"OD Hose Barb	54	51 (23)
	12353020008	230	50/60	295/385	1.3/1.95	6	1/2"OD Hose Barb	54	51 (23)
Design	Housing: stainless steel 304 Cover: stainless steel 304								

ACCESSORIES

External Condensate Evaporation System-KV PTC

External condensate evaporator for the accumulated condensed water.

Suitable for ...	Part number
115 - 230 V 50 / 60 Hz	18314000001





THE BEST LIQUID-COOLED SOLUTION: Combined Chillers and PWS Air/Water Heat Exchangers

Combining Pfannenber Chillers and PWS Air/Water heat exchangers is the best solution for recirculating water cooling systems for control enclosures when a liquid cooling source is not available on site. Dedicated to harsh environments, this solution is the perfect match to save energy, reduce maintenance and prevent downtime.



Pfannenber Water-Cooled Solutions.

Our water-cooled solutions are designed with durable components to ensure the effectiveness and longevity of the critical cooling process at hand. Our chillers, in combination with our air/water heat exchangers, offer decisive advantages:

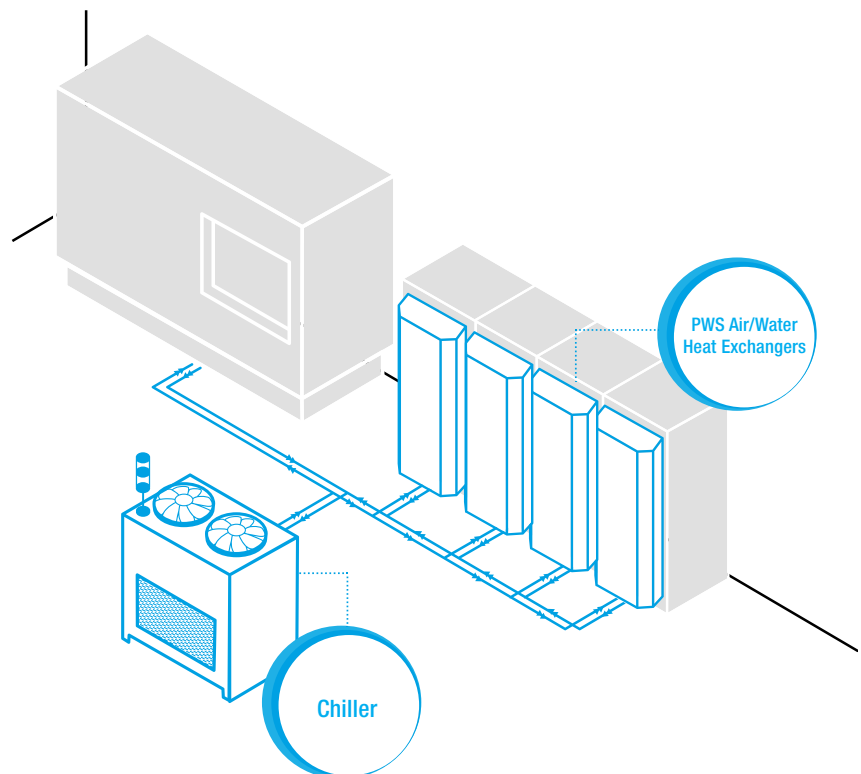
- In applications where power losses must not enter the surrounding space.
- If aggressive ambient air restricts the use of conventional cooling units.
- If a very high IP system is required (up to IP 65).
- If maintenance-free cooling units are necessary.

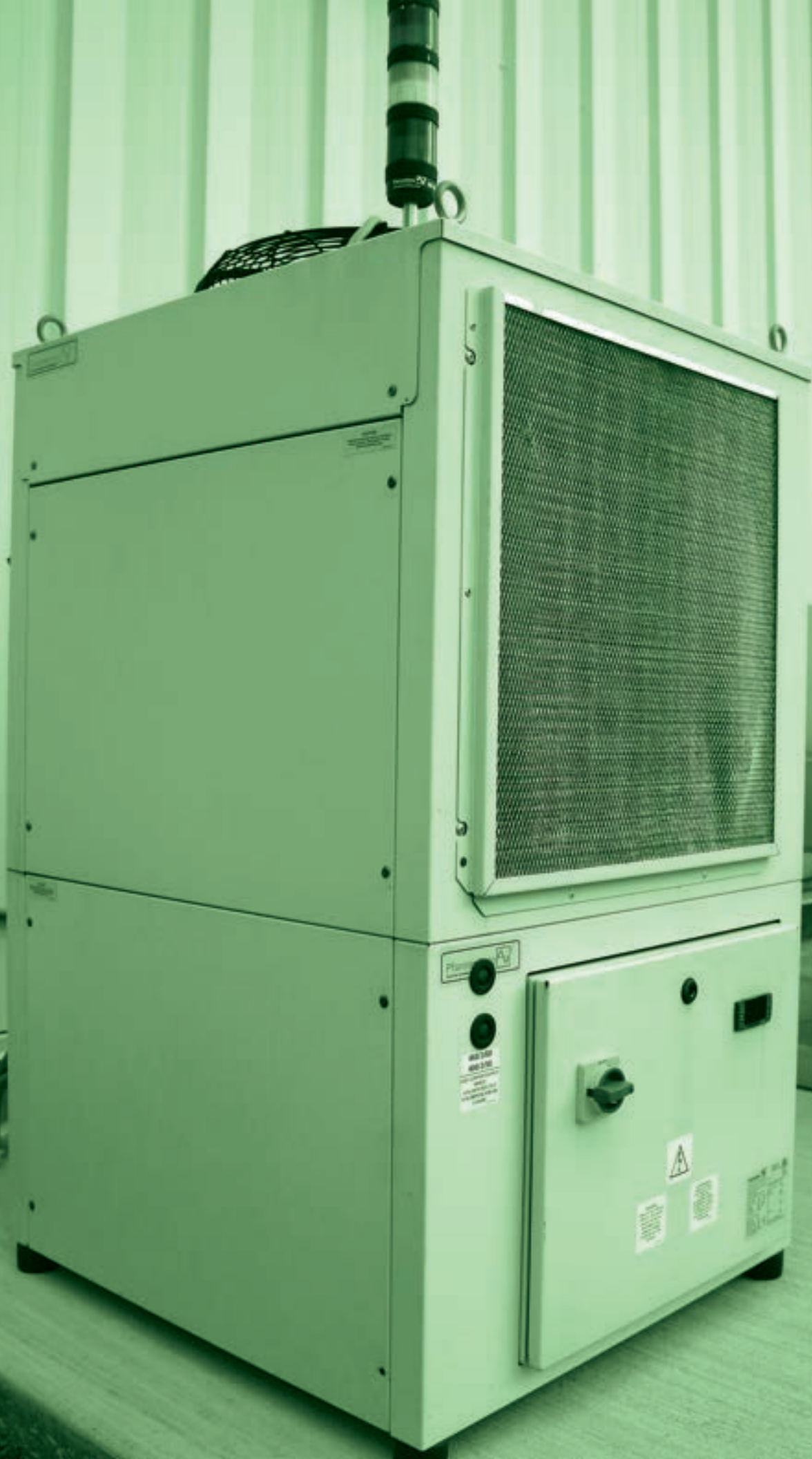
Water-cooled solutions provide the most efficient enclosure cooling when ambient conditions are at their worst.

The Advantages of Closed-Loop Liquid Cooling

With Manufacturing space at a premium, machine packages have become smaller and liquid cooling has emerged as the most efficient and economical means of removing process heat.

Liquid cooling is especially well adapted to hot, dirty environments, where it provides a method of removing the heat from the machine and not contributing additional heat back into the environment.







CCE and EB Series Packaged Chillers

Closing the Loop for Industrial Fluid Cooling Applications

Pfannenberger offers a versatile range of packaged chillers, ranging in sizes from less than ½ Ton to 30 Tons insuring the proper capacity available for most applications. These packaged chillers are ready to use requiring only piping and power to install as part of your solution for process cooling applications - we'll even provide the coolant. Ethylene & Propylene Glycol coolants, with proper corrosion inhibitors are available in a variety of packaging options – both full strength and pre-mixed.

Each chiller model includes the pump, tank, refrigeration system and controls required for simple installation and reliable, efficient operation.

Our knowledgeable applications staff is always on hand to discuss the application and to make sure that a proper selection is made. **With our many available equipment options we can easily customize our standard chillers to meet specific application requirements.**

These chillers are a perfect match for Pfannenberger Series PWS Air/Water Heat Exchangers when a local source of cooling is not available.



PRODUCT EXPERTISE

Service Friendliness

We are committed to minimum MTTR (Mean Time To Repair) and the shortest time needed to replace units. Our service-friendly accessibility, standardized parts and a carefully thought out plug-and-play concept minimizing your repair costs and downtime make this possible.



Energy Efficiency

Our chillers achieve top grades in energy consumption. They can be centralized, using a single chiller that serves multiple cooling needs, or decentralized where each application or machine has its own chiller. Each approach has its advantages. It is also possible to have a combination of both centralized and decentralized chillers, especially if the cooling requirements are the same for some applications or points of use.



Reliability

Our customers demand performance that offers dependability and reliability they can count on. We are committed to the highest level of design and manufacturing accuracy to make sure your chiller performs as expected. More than 20 years of experience in the field of re-cooling and the use of high-quality components ensure optimum long-term stability and top MTBF (Mean Time Between Failures).



Design

Whether our products are cooling oil or water, Pfannenberg has well-developed global expertise in the design and manufacture of packaged refrigeration products for industrial environments. Pfannenberg's process chillers optimize three basic areas to perform as one: the refrigeration circuit, the hydraulic circuit and controls.

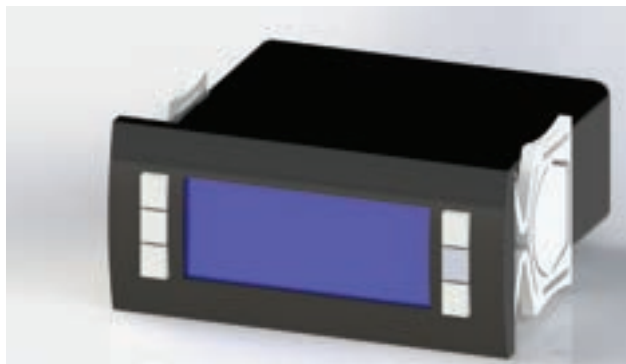


Refrigeration System

Since the natural tendency of heat is to move from a higher temperature medium to one with a lower temperature, the chiller's mechanical refrigeration system is needed to maintain cool fluid temperatures. This assures a constant cooling circuit. Pfannenberg's engineers carefully select the components of this system to maximize performance, efficiency & serviceability. Industrial compressors & fans, extended surface evaporators & condensers, along with the right refrigerant for the application, are seamlessly integrated to achieve the optimum result.

Hydraulic System

Circulating and storing the chilled fluid is the function of the hydraulic circuit. Our standard chillers include high-quality hydraulic components that are selected to support a wide range of applications. Pumps provide flexibility in terms of both flow rate and pressure capabilities. The use of non-ferrous materials for wetted parts promotes longer pump life, avoiding premature failure.



Control System

Simple & effective controls allow the mechanical components to work together to meet various operating requirements. Digital controllers are connected to sensors that measure temperature, and switches that confirm pressure, flow and level. This provides the continuous logical instructions needed to deliver reliable liquid cooling & circulation. **Options are also available to provide remote monitoring and/or control.**

Whatever the application

Heat is a single common by-product of today's manufacturing machines that include the advanced automation technology required for both high speed operation and high precision. Components such as spindle motors, variable frequency drives, laser and x-ray sources all require cooling to operate properly and reliably – most often in very adverse manufacturing environments.

With manufacturing space at a premium, machine packages have become smaller and liquid cooling has emerged as the most efficient and economical means of removing process heat. Liquid cooling is especially well adapted to hot, dirty environments, where it provides a method of removing the heat from the machine and not contributing additional heat back into the environment.



...the perfect solution

Pfannenbergs's extensive background providing cooling for a wide variety of machines including machining centers, printing presses, wood working machines, welding systems, packaging machines and food processing machines to name a few, allows us to apply proven cooling technology to new applications.

Our application engineering team works to match our standard products with as many applications as possible and also works closely with our product engineers to offer custom solutions when required. This continuous interaction allows continuous product development that is always in keeping with the needs of the market.



Why Choose a Packaged Chiller System?

Pfannenber's packaged chillers are versatile and ideal for applications that have cooling requirements from less than a half a ton up to 30 tons. All chillers are shipped as factory packaged systems requiring only field power and piping to provide recirculated chilled coolant to virtually any process.

CCE & EB 2.0 Series Packaged Air Cooled Chillers

Packaged and ready to use, Pfannenber chillers require only piping & power to install a solution for process cooling applications – we'll even provide the coolant.

- Each chiller model includes the pump, tank, refrigeration system and controls required for simple installation and reliable, efficient operation.
- Model sizes ranging from a ½ Ton up to 30 Tons insure that the proper capacity is available for most applications.
- Ethylene & propylene glycol coolants with proper corrosion inhibitors are available in a variety of packaging options – both full strength and pre-mixed.
- Equipment options are available to easily customize standard chillers to meet specific application requirements.
- Our knowledgeable applications staff is always on hand to discuss the application and to make sure that a proper selection is made.
- These chillers are a perfect match for Pfannenber Series PWS Air/Water Heat Exchangers when a local source of cooling is not available.



Selecting the Correct Pfannenberg Chiller

Use the chart below to help you select the proper chiller for your application. For questions please consult with the factory or visit our website for the latest charts, diagrams, drawings and sizing materials.



STEP 1

WHAT IS THE HEAT LOAD?

Determine the heat load. There are several ways to determine the heat load depending on the application. Understanding the process is essential to calculating an accurate heat load.



Determine the coolant, its target temperature and the flow rate that the chiller must provide to the process. This is determined by the method from which the heat is transferred from the process to the coolant and the type of coolant being used. For example, water has different characteristics than oil.

STEP 2

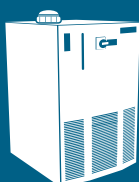
COOLANT TYPE,
TEMPERATURE
& FLOW RATE



STEP 3

IDENTIFY
INSTALLATION
ENVIRONMENT

In what environment will the chiller be installed? Indoor applications for example can see high temperatures and dirty atmospheres, while outdoor installations can experience both low and high ambient temperatures. This can effect chiller sizing and require accessories such as air filters, sump heaters, etc.



Now use the chiller performance curves available* to select a chiller model that meets or exceeds the required capacity based on the chilled water supply temperature and the highest expected ambient air temperature. Consideration should be given to the safety margin of the application with respect to available frame sizes to maximize the value of the chiller selection.

STEP 4

USE CHILLER
PERFORMANCE
CURVES



STEP 5

CHECK PUMP
PERFORMANCE CURVES

Check the pump performance curves available* to ensure that the pump will provide enough pressure at the design flow rate to satisfy the application. Some liquid cooled systems have small coolant flow paths or longer distances that can have higher than average pressure losses.



Finally, consider that the remaining application requirements such as power characteristics, control options, footprint, agency listing, color, etc. are met by the selected standard Pfannenberg chiller. Choosing a standard chiller will bring you greater reliability, easier service with common spare parts and global support.

STEP 6

FINAL SELECTION



CHILLER QUICK SELECTION CHART

Type	Cooling Capacity Btu/h	Rated Voltage	Dimensions W x D x H Inches (mm)	Approvals					Page
				UL 508A	CSA	EAC	CE	ETL	
CCE 6301	8,200	230 1~	19.4 x 23.62 x 22.5 (493 x 600 x 572)	●			●		110
CCE 6401	120,00	400 3~/460 3~	26.61 x 23.62 x 26.27 (610 x 483 x 711)	●			●		110
CCE 6601	22,000	400 3~/460 3~	26.61 x 23.62 x 26.27 (610 x 483 x 711)	●			●		110
EB 2.0 80 WT	27,000	400 3~/460 3~	23.62 x 29.94 x 54.17 (600 x 760 x 1376)	●	●	●	●		112
EB 2.0 95 WT	32,500	400 3~/460 3~	23.62 x 29.94 x 54.17 (600 x 760 x 1376)	●	●	●	●		112
EB 2.0 140 WT	47,750	400 3~/460 3~	29.96 x 33.68 x 60.40 (761 x 855 x 1534)	●	●	●	●		112
EB 2.0 160 WT	54,500	400 3~/460 3~	29.96 x 33.68 x 60.40 (761 x 855 x 1534)	●	●	●	●		112
EB 260 WT	89,053	400 3~/460 3~	30 x 49.6 x 55.5 (762 x 1259 x 1409)	●	●		●	●	114
EB 310 WT	106,454	400 3~/460 3~	31 x 65.7 x 55.7 (787 x 1668 x 1414)	●	●		●	●	114
EB 440 WT	151,492	400 3~/460 3~	31 x 65.7 x 55.7 (787 x 1668 x 1414)	●	●		●	●	114

● available

Application Example



DID YOU KNOW?

In addition to water and Glycol coolants, Pfannenber chillers can also be used to chill oil for various applications such as cutting machines, drill presses and hydraulic circuits.

Contact Pfannenber today to discuss the requirements of your specific project.

PC 2500 CHILLERS

PC 2500

8,530 BTU/hr

Pfannenberger's PC 2500 (NEMA Type 12) compact, powerful and efficient chillers offer reliable and versatile liquid cooling. Multiple configurations ensure the PC 2500 meets the requirements of broad range of applications. The efficient design with low GWP refrigerant delivers an environmentally friendly operation. Design: powder coated RAL 7021 (black grey)



Compact & Ready to Use

Fully assembled air-cooled chiller designed for quick installation and seamless integration into your setup.

Powerful Cooling Performance

Delivers a reliable 2.5 kW cooling capacity, ensuring stable temperatures even under demanding conditions.

Energy Efficient

Equipped with a modern micro-channel condenser and low refrigerant volume with low GWP R513A for environmentally friendly, cost-effective operation.

Quiet & Reliable Operation

Engineered with a low-noise pump and robust components, making it ideal for both industrial and indoor environments.

Simplified Maintenance

The controller supports both Modbus RTU and Modbus TCP, enabling remote monitoring and integration with your Battery Management System.

Built for Versatility

Designed to perform in ambient temperatures up to +122 °F, making it a perfect fit for a wide range of applications.

Configuration:

Hydraulic Protection(H)

Ensures pump and system safety with built-in flow monitoring, dry-run protection, and hydraulic bypass to prevent pressure overloads.

Hydraulic + Smart Cooling (HS)

Adds intelligent temperature control, early fault detection, and service-friendly diagnostics for improved performance and uptime.

Hydraulic + Smart + Precision Cooling (HSP)

Delivers maximum stability with ± 1 K temperature accuracy, hot gas bypass control, and optimized fan regulation for sensitive applications.



PC 2500 CHILLERS (8,530 BTU/hr)

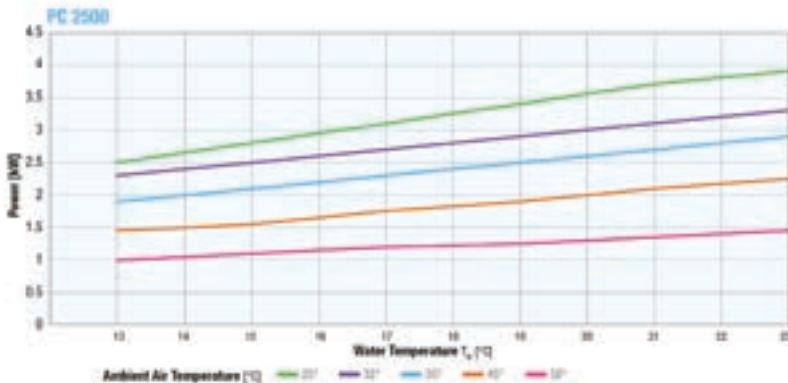
Model Number	Rated Voltage AC 50 / 60 (V ±10 %)	Cooling Capacity W64 / A90 (with pump) 60 Hz			Flow Rate of Pump		Pump Pressure		Tank Volume		Connections (medium) IG (BSP)	Dry Weight	
		(BTU/hr)	(kW)	(Ton)	(GPM)	(LPM)	(psi)	(bar)	(gal)	(l)		(lbs)	(kgs)
PC 2500	230 1~50/60	8,530	2.5	0.7	2	7.5	43	3	2.6	10	3/8"	144	65

Additional Data	PC 2500		
Configuration	H	HS	HSP
Part Number	42160253003	42160253004	42160253005
Ambient temp. range	Min: 10°C / 45°F . . . Max: 50°C / 122°F		
Medium	Water / Glycol – 80% / 20%		
Medium temperature (outlet)	+55°F .. +86°F (+13°C ... +30°F) Factory Set Point 64°F (18°C)		
Target value tolerance (°K)	±2 K		±1 K
Refrigerant type	R513A		
Air volume flow (m ³ /h)	1290		
Max Power Consumption (kW)	1.6		
Max Current Consumption (A)	7.5		
Max noise level @ 60 Hz (EN ISO 3741)	65 dB		
Application environment	Indoor		
Dimensions (X x Y x Z) in./mm (with damper feet)	27.9 x 18.6 x 25.8 708 x 473 x 654		
Color	RAL 7021		

For additional technical data, drawings and templates visit www.pfannenbergsusa.com

Subject to technical amendments and misprints.

Cooling Capacity Performance Curve



CCE CHILLERS

CCE 6301 / CCE 6401
CCE 6601

8,000 - 22,000 BTU/hr

FEATURES

Programmable smart controller • Non-ferrous hydraulic circuit • R134a environmental friendly refrigerant • Micro-channel condenser • Compact size and easy installation • Suitable for water or water/glycol mix • System alarms for accurate maintenance



Smart Controller

- Sets min/max water temperature with alarm.
- Equipped with a programmable control for precise $\pm 2^\circ\text{F}$ temperature regulation of the cooling medium.

Fluid Flow Protection

- Flow switch will trigger alarm if flow is too low, protecting the equipment being cooled.
- Electric tank level switch connected to controller protects pump from damage caused by running dry.

System Protection

- Cooled with water or water/glycol mixtures.
- Internal hydraulic bypass protects pump by ensuring minimum flow and protects the application by limiting the system pressure.
- Filter alarm on chiller detects decrease of performance due to air contamination.

Ease of Installation

- Can be mounted on top of the enclosure.
- Crane lifting ready for moving with eye-bolts.

Easy Fluid Access

- Reliable, easy to read level indication.
- Open-loop design for easy fluid monitoring.
- Top-up access in the front with gauge level on top.
- Manometer to read fluid loop pressure.

Non-Ferrous Design

- Non-Ferrous tank and piping reduces corrosion.
- Stand-alone chiller has steel housing with thick powder coating.
- Robust industry standard with eyebolts.

**Integration of project-specific additional components is available on request.

Note: The size listed on this page is for the CCE 6401 - 6601 Models.
Please see the chart on the opposite page for dimensions of our CCE 6301 Model.



CCE 6301 - 6601 Series Packaged Compact Chillers (8,000 - 22,000 Btu/h)

Model Number	Part Number RAL 7035 (Light Grey)	Voltage (V/Ph/Hz)	Capacity (Btu/h) (kW) (Tons)			Nominal Current (A)	Tank Volume (gal)	Coolant Connections (NPT-F)	Width in (mm)	Depth in (mm)	Height in (mm)	Dry Weight lb (kg)
CCE 6301 Indoor Rated	42130245011	230 / 1 / 50-60	8,200	2.4	.68	8	3	1/2"	19.4 (493)	23.62 (600)	22.5 (572)	158 (72)
CCE 6401 Indoor Rated	42130355012	460 / 3 / 50-60	12,000	3.5	1	7	7	3/4"	24 (610)	19 (483)	28 (711)	240 (109)
CCE 6601 Indoor Rated	42130655011	460 / 3 / 50-60	22,000	6.5	1.8	10	7	3/4"	24 (610)	19 (483)	28 (711)	251 (114)

Additional Data	CCE 6301	CCE 6401	CCE 6601
Ambient temp. range	Min: 15°C / 59°F . . . Max: 45°C / 113°F		
Recommended Medium	Water / Glycol – 80% / 20%		
Medium temperature (outlet)	55°F to 95°F (13°C to 35°C); Factory Setting 64°F (18°C)		
Target value tolerance (°F)	±2		
Refrigerant type	R134A		
Max power consumption (kW)	1.5 / 1.7	2.5 / 3.1	4.1 / 5
Max current consumption (A)	7.5 / 8	6.5 / 7	9.5 / 10
Max Noise level @ 50 Hz (EN ISO 3741)	62 dB (A)		
Protection system according to EN 60529	Indoor use only (IP 54)		
Design	Housing/Cover: powder coated RAL 7035 (light gray)		

* Water @ 64°F CWS / 90°F Ambient / 60Hz

For additional technical data, drawings and templates visit www.pfannenbergsusa.com

Subject to technical amendments and misprints.



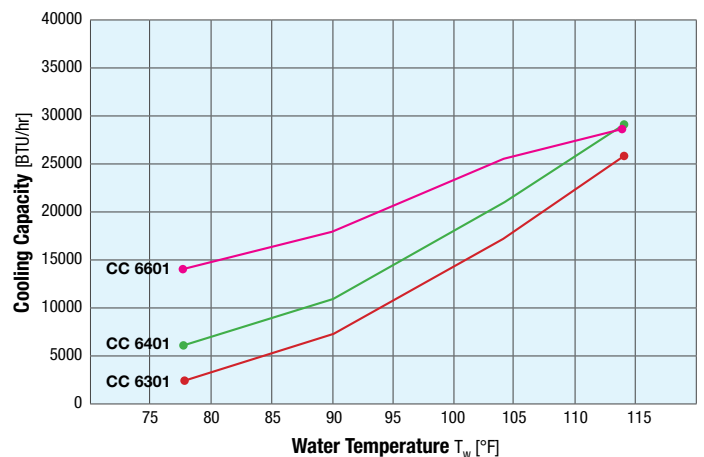
1 Ton = 12,000 Btu/h = 3517 Watts



CCE 6401 - 6601
Indoor Rated

CCE 6301
Indoor Rated

Cooling Capacity Performance Curve



CCE 6301
— 60Hz Tamb 77°F

CCE 6401
— 60Hz Tamb 77°F

CCE 6601
— 60Hz Tamb 77°F

EB CHILLERS

EB 80 WT / EB 95 WT /
EB 140 WT / EB 160 WT

27,000 - 54,500 BTU/hr

- Precision fluid temperature control up to $\pm 2^{\circ}\text{F}$ for accurate process cooling through smart controller, and custom designed refrigerant system protects the compressor and extends service life.
- Early alarm and auto shut-off protects process equipment from low/no fluid flow through integrated electric tank level switch and flow switch connected to smart controller.
- Open loop design with non-ferrous component prevents corrosion.
- Suitable for use with water or water/glycol mixture with easy level monitoring.
- Compact size and easy installation with optional accessories to meet application needs.

Standard Features

- Hot gas by-pass refrigerant circuit
- Programmable smart controller
- Internal hydraulic bypass circuit
- Electrical tank level switch
- Coolant flow switch
- Non-ferrous hydraulic circuit
- Wired remote control on/off ready
- R410a environmental friendly refrigerant
- Micro-channel condenser

Fluid Flow Protection

- Recirculates fluid during low demand periods through built-in hydraulic bypass valve.
- Electric tank level switch connected to controller prevents pump from running dry.
- Flow switch will trigger alarm if flow is too low, protecting the equipment being cooled.

Temperature Accuracy and Cooling Load Management

- Hot gas bypass design with on/off fan controls temperature to within $\pm 2^{\circ}\text{F}$.
- Manages load and protects compressor from over-working, which extends service life.

Ease of Installation

- Comes standard with plinth to elevate chiller if installed on damp/wet area.
- Fork truck ready for moving with eye-bolt.



Smart Controller

- Sets min/max water temperature with alarm.
- Temperature differential control with external sensor.
- Error message display with quick reference.

Easy Fluid Access

- Open-loop design for easy fluid monitoring.
- Top-up access in the front with gauge level.
- Manometer to read fluid loop pressure.

Non-Ferrous Design

Non-Ferrous tank and piping reduces corrosion.

Note: The size listed on this page is for the EB 80/95 models.

Please see the chart on the opposite page for dimensions of our EB 140/160 models.



For additional technical data, drawings and manuals. www.pfannenbergusa.com

EB 80/95/140/160 WT Series Packaged Chillers (27,000 - 54,500 Btu/h)

Model Number	Part Number RAL 7035 (Light Grey)	Voltage (V/Ø/Hz)	Capacity*			Nominal Current (A)	Tank Volume (gal)	Coolant Connections (NPT-F)	Width in (mm)	Depth in (mm)	Height in (mm)	Dry Weight lb (kg)
			(Btu/h)	(kW)	(Tons)							
EB 80 WT Indoor Rated	42030805015	460 / 3 / 50-60	27,000	8	2.25	8.3	13	3/4"	23.62 (600)	29.94 (760)	54.17 (1376)	330 (150)
EB 95 WT Indoor Rated	42030955030	460 / 3 / 50-60	32,500	9.5	2.7	9.7	13	3/4"	23.62 (600)	29.94 (760)	54.17 (1376)	352 (160)
EB 140 WT Indoor Rated	42031405022	460 / 3 / 50-60	47,750	14	4	11.9	19	1"	29.96 (761)	33.68 (855)	60.40 (1534)	396 (180)
EB 160 WT Indoor Rated	42031605026	460 / 3 / 50-60	54,500	16	4.5	15.1	19	1"	29.96 (761)	33.68 (855)	60.40 (1534)	418 (190)

Additional Data	EB 80	EB 95	EB 140	EB 160
Ambient temp. range	Min: -5°C / 23°F . . . Max: 45°C / 113°F			
Medium	Water / Glycol – 80% / 20%			
Medium temperature (outlet)	55°F to 95°F (13°C to 35°C); Factory Setting 64°F (18°C)			
Target value tolerance (°F)	±2			
Refrigerant type	R410A			
Max power consumption (kW)	3.3 / 4.6	3.8 / 4.6	5.3 / 11.3	7.1 / 14.1
Max current consumption (A)	7.6 / 8.3	8.5 / 9.7	6.8 / 11.9	18.9 / 15.1
Max Noise level @ 60 Hz (EN ISO 3741)	72 dB (A)			
Protection system according to EN 60529	Indoor use only (IP 54)			
Design	Housing/Cover: powder coated RAL 7035 (light gray)			

* Water @ 64°F CWS / 90°F Ambient / 60Hz

For additional technical data, drawings and templates visit www.pfannenbergusa.com

Subject to technical amendments and misprints.

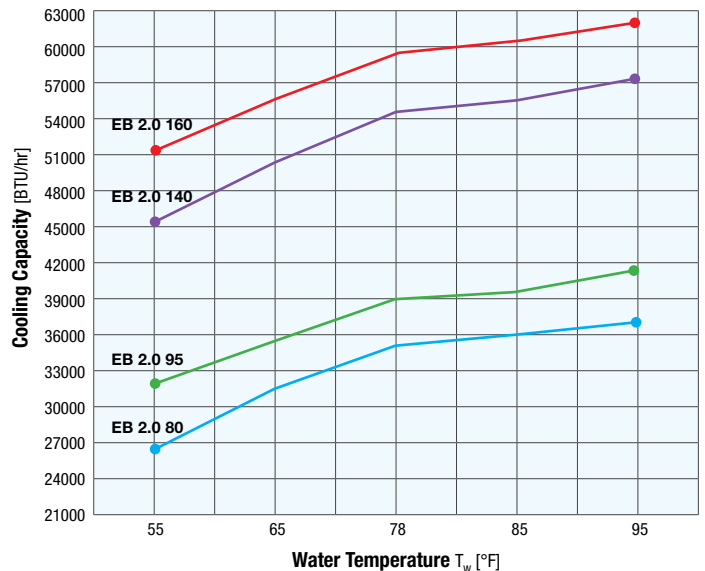
 1 Ton = 12,000 Btu/h = 3517 Watts



EB 80-95 WT
Indoor Rated

EB 140-160 WT
Indoor Rated

Cooling Capacity Performance Curve



EB 2.0 80

— 60Hz Tamb 77°F

EB 2.0 95

— 60Hz Tamb 77°F

EB 2.0 140

— 60Hz Tamb 77°F

EB 2.0 160

— 60Hz Tamb 77°F

EB 2.0 ECO CHILLERS

EB 65 ECO
EB 95 ECO
EB 140 ECO

20,473 - 47,770 BTU/hr

Pfannenberg's EB 2.0 ECO chillers take advantage of the inverter technology to ensure a direct response to cooling demand. This keeps both energy consumption and operating cost to a minimum, while the range of cooling capacity and durability of the units is increased significantly. Designed for indoor/outdoor use, they are perfectly suited for heat dissipation in combination with passive indoor cooling systems (PWS/PWW).

Standard Features

- Hot gas by-pass refrigerant circuit
- Programmable smart controller
- Internal hydraulic bypass circuit
- Electrical tank level switch
- Coolant flow switch
- Non-ferrous hydraulic circuit
- Wired remote control on/off ready
- R410a environmental friendly refrigerant
- Micro-channel condenser

Indoor/Outdoor Unit

Designed to work in ambient conditions from -4°F to 113°F (-20°C to 45°C). Pfannenberg EB 2.0 Eco Chillers can be used for outdoor applications or to simply remove the heat from your factory: combined with a PWS/PWW heat exchanger, the EB 2.0 Eco Chiller can provide the right cooling in any harsh production environment.

Higher Temperature Precision

Rapid and accurate adjustment of cooling capacity to the actual load leads to a significant higher stability of the medium temperature. ($\pm 0,1$ K).

Conformity to Current Regulations

ErP Directive and F-gas regulation are important boundary conditions for your decision. For more information visit our website: www.pfannenberg.com/f-gas



Silent Operation

The EC fans ensure the optimum airflow any time avoiding constantly high noise emissions.

Energy and Cost-Saving

Variable speed technology (compressor and fan) combined with efficient refrigerant R410A ensure a reduced energy consumption. The inverter compressor increases operating flexibility (50-100%) while reducing the electrical consumption by up to 65%.

Maximum Efficiency in Partial-Load Operation

The chiller automatically adapts to your application so you always have the right dimensioning and high efficiency at any workload.

Success on the Field

Our product design is based on customized units that have proven their performance in industrial applications all over the world.

Note: The size listed on this page is for the EB 80/95 models.

Please see the chart on the opposite page for dimensions of our EB 140/160 models.



For additional technical data, drawings and manuals. www.pfannenbergusa.com

EB 65/95/140 ECO CHILLERS (20,473 - 47,770 BTU/hr)

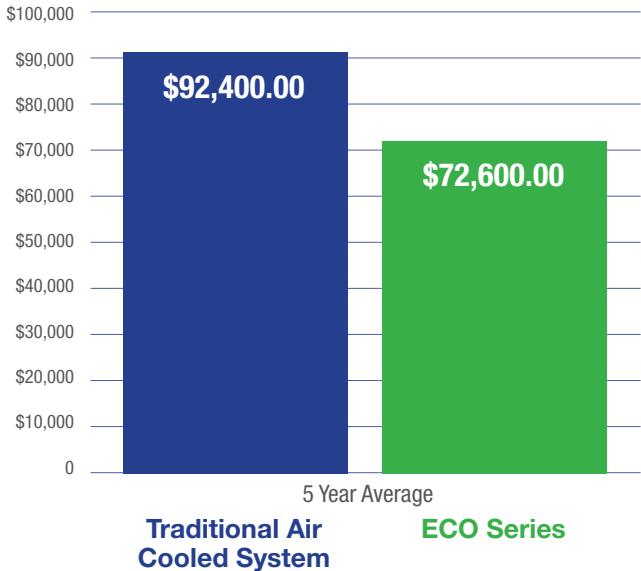
Model Number	Part Number RAL 7035 (Light Grey)	Rated Voltage AC 50 / 60 (V ±10 %)	Cooling Capacity W64 / A90 (with pump) 60 Hz			Flow Rate of Pump (GPM)	Pump Pressure (psig)	Tank Volume (gal)	Connections (medium) IG (BSP)	Width in (mm)	Depth in (mm)	Height in (mm)	Dry Weight lb (kg)
			(BTU/hr)	(kW)	(Ton)								
EB 65 ECO Indoor/Outdoor	42030655006	400 3~ / 460 3~	20,473	6.5	1.8	5	44	19	1"	23.81 (605)	30 (762)	65.98 (1676)	330 (150)
EB 95 ECO Indoor/Outdoor	42030955006	400 3~ / 460 3~	32,414	9.5	2.7	7	44	19	1"	23.81 (605)	30 (762)	65.98 (1676)	374 (170)
EB 140 ECO Indoor/Outdoor	42031405010	400 3~ / 460 3~	47,770	14	4	10	44	19	1"	23.81 (605)	30 (762)	71.49 (1816)	396 (180)

Additional Data	EB 65 ECO	EB 95 ECO	EB 140 ECO
Ambient temp. range	Min: -20°C / -4°F . . . Max: 45°C / 113°F		
Medium	Water / Glycol – 80% / 20%		
Medium temperature (outlet)	55°F to 95°F (13°C to 35°C); Factory Setting 64°F (18°C)		
Target value tolerance (°k)	±0.1k		
Refrigerant type	R410A		
Max noise level @ 60 Hz (EN ISO 3741)	78 dB		
Application environment	Indoor / Outdoor		
Design	Housing/Cover: powder coated RAL 7035 (light gray)		

For additional technical data, drawings and templates visit www.pfannenbergusa.com

Subject to technical amendments and misprints.

CUMULATIVE COST OVER 5 YEARS



	TRADITIONAL AIR COOLED SYSTEM	ECO SERIES
KW/HR Cost	.12	.12
Operational Hrs/Yr	5500	5500
KW-Power Consumption of System	28	22
Cost of Standard System Annually	\$18,480	\$14,520
5 Year Cost	\$92,400	\$72,600

EB 2.0 L CHILLERS

EB 260 / EB 310
EB 440

75,000 - 153,000 BTU/hr

Specifically developed to meet the demanding requirements of today's industrial applications, the EB 2.0 L chillers allow higher cooling capacities in the smallest possible footprint. With a long list of standard features and many available options, Pfannenberg's EB series provides the best choice for cooling of machinery of any kind.

Standard Features

- Aluminum air filter
- Mod-bus communication RTU RS485
- 5 bar pump
- Flowswitch
- Hot gas bypass with stability +/-1K (50-100% load)
- Differential thermostat probe +/-0.5K
- Item number description of accessories (separate items)
- Harting connector for outdoor electrical application
- Outdoor installation down to -10°C (14F)
- UL508A e-box for outdoor applications

Powerful basic equipment

High-quality controllers enable numerous additional functions and error detection.

Numerous options

Many optional features including advanced sensors, communication and industrial connectors.

Flexible power supply

Possible use in different voltages.
E.g. 400 V 50 Hz and 460 V 60 Hz.

Environmentally friendly

Thanks to microchannel technology the content of refrigerants is kept to a minimum in the refrigeration circuit.

CE and UL certification

Certified to CE and UL508a as a standard.

Cooling medium

Water | water/glycol mixtures.

High performance fans

Huge airflow to guarantee operation even at high ambient conditions.

Robust industry standard

Steel housing with thick powder coating.



Note: The size listed on this page is for the EB 310/440 model.
Please see the chart on the opposite page for dimensions of our EB 260 model.



For additional technical data, drawings and manuals. www.pfannenbergusa.com



EB 260 / 310 / 440 WT-UL-CUS Chillers (89,053 - 151,492 Btu/h)

Model Number	Part Number RAL 7035 (Light Grey)	Rated Voltage AC 50 / 60	Cooling Capacity W64 / A90 (with pump) 60 Hz			Flow Rate (pump)	Pump Pressure	Tank Volume	Coolant Connections (medium) IG	Dry Weight (without packaging)
		V ±10 %	Btu/h	kW	Tons	GPM	psig	gal	BSP	lbs
EB 260 WT-UL-CUS Indoor/Outdoor Rated	42032605003	400 / 460 3~	89,053	26.1	7.4	22	72	18.492	1-1/4"	888.463
EB 310 WT-UL-CUS Indoor/Outdoor Rated	42033105002	400 / 460 3~	106,454	31.2	8.8	36		52.8344	1-1/2"	956.806
EB 440 WT-UL-CUS Indoor/Outdoor Rated	42034405005	400 / 460 3~	151,492	44.4	12.6	48		52.8344	1-1/2"	1102.31

Additional Data	EB 260	EB 310	EB 440
Ambient temp. range	Min: -10°C / 14°F . . . Max: 45°C / 113°F		
Medium	Water / Glycol – 80% / 20%		
Medium temperature (outlet)	50°F to 95°F (10°C to 35°C); Factory Setting 64°F (18°C)		
Target value tolerance (°K)	±1K (±0.5K optional)		
Refrigerant type	R407C		
Max power consumption (kW)	12.1 / 14.2	17.4 / 22.2	19.1 / 23
Max current consumption (A)	22 / 22.5	31 / 33	34.5 / 35
Max Noise level @ 60 Hz (EN ISO 3741)	82 dB		
Application Environment	Indoor/Outdoor Use		
Design	Housing/Cover: powder coated RAL 7035 (light gray)		

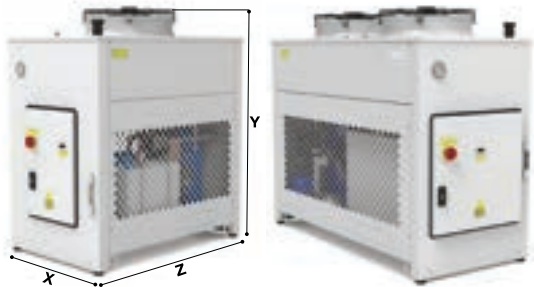
For additional technical data, drawings and templates visit

www.pfannenbergusa.com

Subject to technical amendments and misprints.

EB 260 WT-UL-CUS

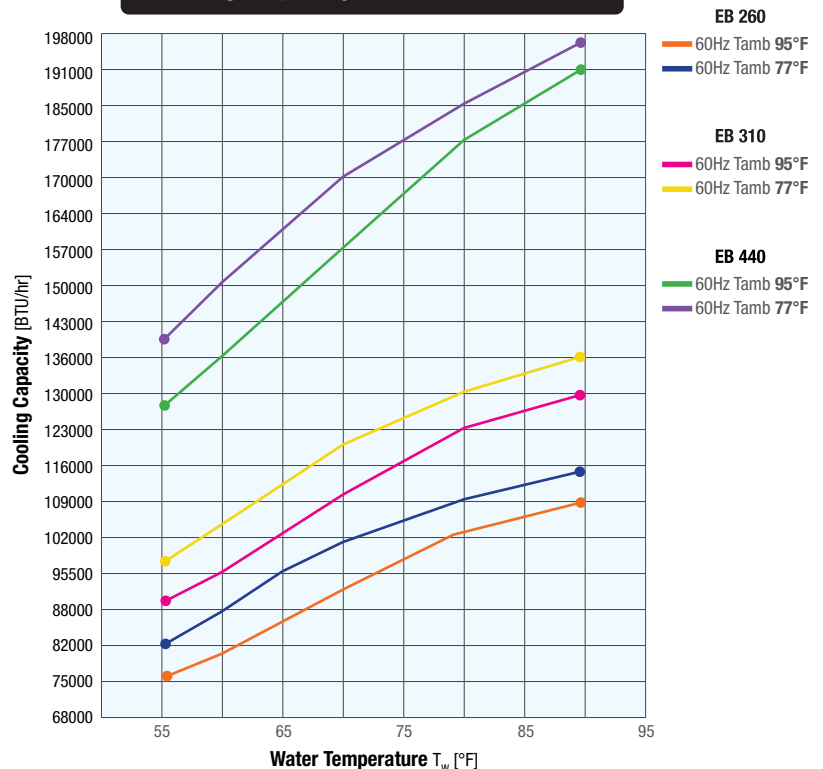
EB 310 / 440 WT-UL-CUS



Dimensions (inches)

inches	EB 260 WT-UL-CUS	EB 310 / 440 WT-UL-CUS
X	30	31
Y	55.5	55.7
Z	49.6	65.7

Cooling Capacity Performance Curve



VLV 4 & 12 CHILLERS

VLV 4 & 12

14,330 - 39,580 BTU/hr

Pfannenberg's innovative VLV 4 & 12 compact chiller, designed for off-grid, stand-alone battery energy storage systems (BESS), delivers precise liquid cooling in a space-saving design that can be installed inside the container or cabinet. The VLV comes standard with a power supply from 570 up to 800 V DC to directly connect with the battery system – no need for power conversion ensuring efficient and sustainable operation of portable BESS power stations. This supports the replacement of diesel generators in various settings.



Direct Power Connect

Directly connect the power supply from 570 up to 800 V DC with the battery system with no need for power conversion leading to greater efficiency, fewer components, and a simplified system design.

Preserves Battery Life

An integrated internal heater preserves battery life in cold ambient temperatures by maintaining a stable minimum temperature.

Intentional Design

Stand-alone unit that can be mounted inside the cabinet or container due to a slim profile and a structural notch to fit against the cabinet structure.

Variable Frequency Drive (VFD)

Variable Frequency Drive (VFD) technology optimizes cooling during charge and discharge cycles—working with EC brushless fans and a micro-channel condenser to maximize energy efficiency and ensure reliable performance.

Integrated Communication

Error/warning and status communication for integration with your Battery Management System via Modbus RTU/Modbus TCP.

Made for All Climates

The VLV safely operates in cold and hot conditions between -13 and +113 °F.

Certifications

Certified to CE





VLV 4-12 CHILLERS (00,000-00,000 BTU/hr)

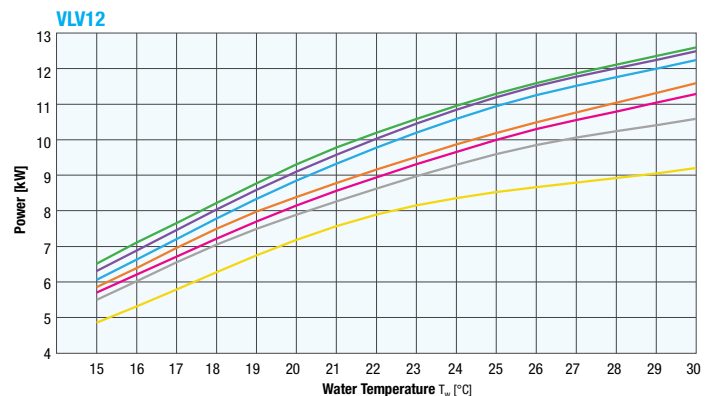
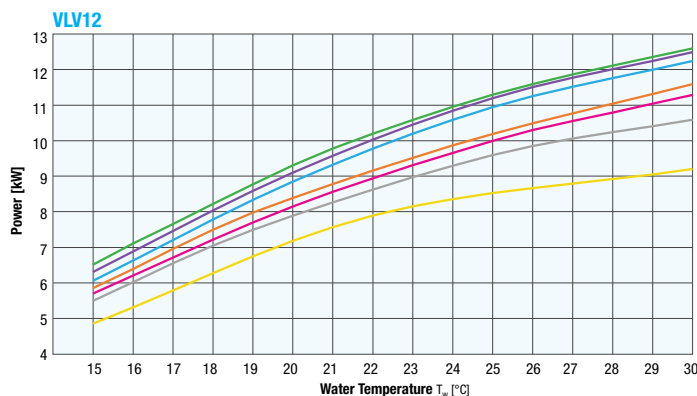
Model Number	Part Number RAL 7035 (Light Grey)	Rated Voltage AC 50 / 60 (V ±10 %)	Cooling Capacity W64 / A90 (with pump) 60 Hz			Flow Rate of Pump		Pump Pressure		Tank Volume		Connections (medium) IG (BSP)	Dry Weight	
			(BTU/hr)	(kW)	(Ton)	(GPM)	(LPM)	(psi)	(bar)	(gal)	(l)		(lbs)	(kgs)
VLV 4	44070405001	570/800	14330 [10240]	4.2 [3]	1.2 [0.9]	9.5	36	29	2	1.3	5	1"	287	130
VLV 12	44071205001	570/800	39580 [10240]	11.6 [3]	3.3 [0.9]	15.9	60	29	2	1.3	5	1"	353	160

Additional Data	VLV 4	VLV 12
Ambient temp. range	Min: -25°C / -13°F ... Max: 45°C / 113°F	
Medium	Water / Glycol – 50% / 50%	
Medium temperature (outlet)	+59°F .. +86°F (+15°C ... +30°F)	
Target value tolerance (°K)	±2 K	
Refrigerant type	R513A	
Air volume flow (m³/h)	2000	3000
Max Power Consumption (kW)	2.6	5.6
Max Current Consumption (A)	7.5	11.5
Max noise level @ 60 Hz (EN ISO 3741)	66.2 dB	
Application environment	Stand-alone unit, to be mounted inside the cabinet or container	
Dimensions (X x Y x Z) in./mm (with damper feet)	34.11 x 35.87 (36.91) x 17.60 866.5 x 911 (937.5) x 447	
Design	RAL 7035	

For additional technical data, drawings and templates visit www.pfannenbergerusa.com

Subject to technical amendments and misprints.

Cooling Capacity Performance Curve



Ambient Air Temperature [°C] 20° 25° 30° 32° 35° 40° 45°

DMC 8.0 CHILLERS

DMC 8.0

27,300 BTU/hr

Pfannenberger's door-mounted DMC 8.0 chiller is designed for Battery Energy Storage Systems (BESS) with a compact, semi-recessed installation that saves valuable container space. Built for extreme environments, it operates reliably from -4°F to +122°F. The DMC 8.0 also ensures low-noise performance for sensitive installations.



Energy Efficient Compressor

Inverter driven compressor for energy efficiency designed for charging and discharging phase battery cycles.

Temperature Precision

The DMC 8.0 delivers high temperature precision, automatically adjusting cooling capacity to match demand. This results in exceptional thermal stability — within ± 1 K, even at loads as low as 30%.

Heater for Optimal Battery Operation

Integrated heater for optimal battery operation at low ambient temperatures to increase battery life even in cold climates by maintaining the required temperature in stand-by mode.

Efficient Fan

Variable speed, high-efficiency EC fans deliver powerful airflow with low energy consumption and minimal noise — ideal for noise-sensitive or urban installation sites.

Integrated Communication

The controller supports both Modbus RTU and Modbus TCP, enabling remote monitoring and integration with your Battery Management System.

Installation Flexibility

The DMC can be side mounted or partially recessed mounting with hydraulic and electrical connections on the top side. -13 and +113 °F.

Optimized Service Routine

Allowing for easy maintenance from the front of the unit. Technicians can access critical components quickly, reducing downtime and simplifying service routines.

Certifications

CE Listed UL Pending



For additional technical data, drawings and manuals. www.pfannenbergsusa.com



DMC 8.0 CHILLERS (00,000-00,000 BTU/hr)

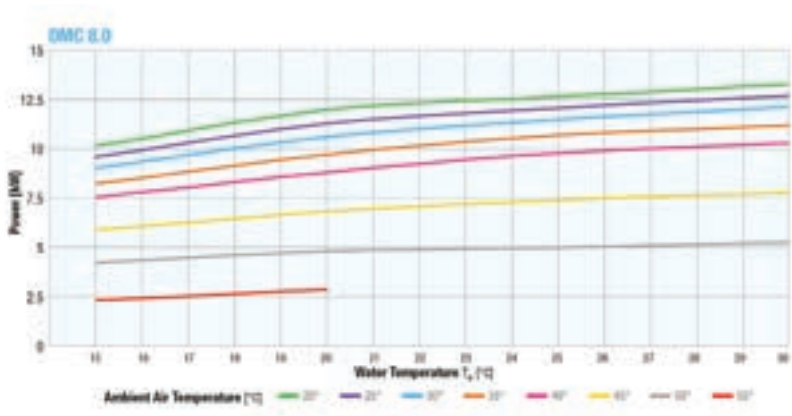
Model Number	Part Number RAL 7035 (Light Grey)	Rated Voltage AC 50 / 60 (V ±10 %)	Cooling Capacity W64 / A90 (with pump) 60 Hz			Flow Rate of Pump		Pump Pressure		Tank Volume		Connections (medium) IG (BSP)	Dry Weight	
			(BTU/hr)	(kW)	(Ton)	(GPM)	(LPM)	(psi)	(bar)	(gal)	(l)		(lbs)	(kgs)
DMC 8.0 Recessed/ Flush Mount	4218080XXXX	230 1~	27300	8	2.3	15.9	60	14.5	1	2.6	10	3/4"	375	170

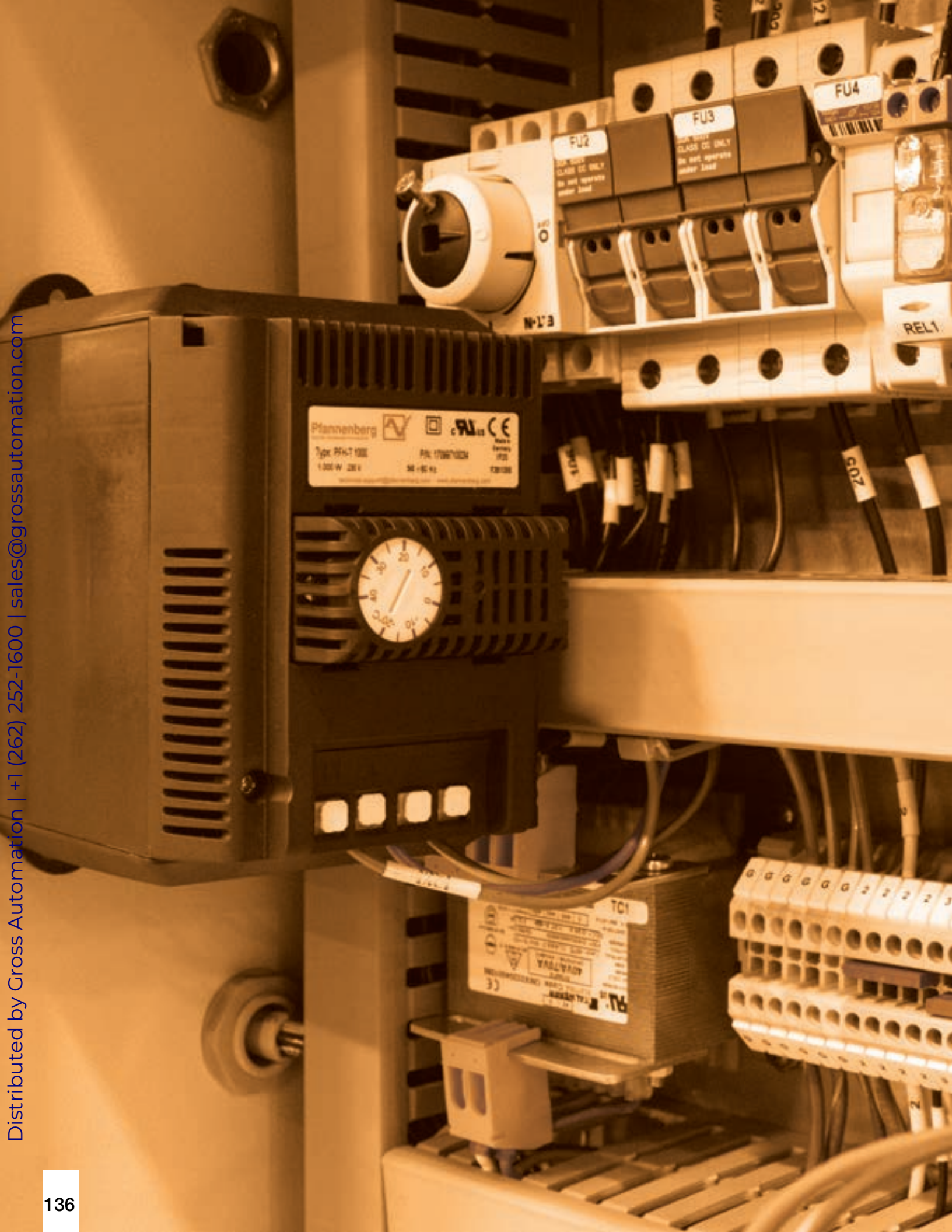
Additional Data	DMC 8.0
Ambient temp. range	Min: -20°C / -4°F . . . Max: 50°C / 122°F
Medium	Water / Glycol – 50% / 50%
Medium temperature (outlet)	+59°F .. +86°F (+15°C ... +30°F)
Target value tolerance (°K)	±2 K
Refrigerant type	R410A
Air volume flow (m³/h)	1700
Max Power Consumption (kW)	4.5
Max Current Consumption (A)	17.5
Max noise level @ 60 Hz (EN ISO 3741)	65 dB
Application environment	Outdoor, IP 54 when fully mounted
Dimensions (X x Y x Z) in./mm (with damper feet)	34.65 x 47.32 x 12.60 880 x 1202 x 320
Design	RAL 7035

For additional technical data, drawings and templates visit www.pfannenbergusa.com

Subject to technical amendments and misprints.

Cooling Capacity Performance Curve





Heaters, Thermostats and Hygrostats

Additional Protection for Your Electronics

The formation of condensation is one of the biggest dangers for electrical enclosures. As long as they are working under load, their own warmth prevents water from condensing. If the process is switched off, the electronics cool down. This is where our control cabinet heaters (radiant heaters and fan heaters) provide additional protection for your electronics.

We offer a wide variety of performance class control cabinet heaters which are complemented by thermostats and hygrostats. Combined as a solution, they ensure that the temperature inside the control cabinet is always correct and that the formation of condensation is prevented.

The control of Filterfans® by the FLZ 530 Thermostat represents an intelligent solution for control of the fan, preventing excessive energy usage and reducing the maintenance cost associated with the frequency of replacing filters.

Additionally using a thermostat or hygrostat results in greater reliability of your production process:

- Pinpoint distribution and constant temperature in the control cabinet.
- Reduced energy consumption and optimization of the efficiency of the heaters.
- Additional savings on energy, materials and time.

Pfannenberger's heaters, thermostats and hygrostats expand Pfannenberger's protection to additional outdoor applications such as ATMs, Kiosks, Ticket Machines etc.



THERMAL MANAGEMENT OF ENCLOSURES

Monitoring Temperature, Heating & Controlling Condensate

Pfannenberger's Heaters, Thermostats and Hygrostats detect and keep ambient conditions above dew point to avoid the harmful effects of condensation on your electronics. They can be used as a standalone product or in partnership with our Filterfan® and Cooling Unit product lines.



FLH Heaters

This type of heating is ideal for use in larger electrical enclosures. They have an integrated fan that assists the natural convection and provides fast and even distribution of the heat in the electrical enclosure.

The fan heaters are used in combination with a thermostat or hygrostat, for the avoidance of excessively low temperatures or excessively high humidity in the electrical enclosure and also help to avoid the formation of corrosion.



PFH-T Fan Heaters with Thermostat

The PFH-T fan heater with thermostat is designed to protect electronics from the effects of low temperatures such as corrosion, freezing or condensation, which can damage critical components within a control enclosure.

FLZ Thermostats

Thermostats are used as temperature controllers and, therefore, for the control of Filterfans® or electrical enclosure heaters. They are available with N.C. (normally closed) / N.O. (normally open) and changeover contacts. In combination with control cabinet heaters you can ensure, besides temperature control, that the control cabinet is 'artificially' dehumidified, in particular in outdoor applications. That means that the temperature is kept above the dew point so that no water condenses out of the air, which could lead to short circuits due to the formation of condensation.



Hygrostats

Hygrostats switch on electrical enclosure heaters or Filterfans® when a preset relative humidity is exceeded. The relative humidity is kept above the dew point and the condensation of water on electrical components and the corrosion of unprotected sheet metal is prevented. A new electronic combination device unites thermostat and hygrostat in one housing.

HEATERS AND THERMOSTATS QUICK SELECTION CHART

Type	Heater Power W	Rated voltage	Dimensions WxLxH inches (mm)	Approvals				Page
				UR	cUR	CSA	CE	
PFH-T Series Compact Fan Heaters								
PFH-T 200	200	115, 230 VAC	3.46 (88) x 5.47 (139) x 5.59 (142)	●	●	●	●	124
PFH-T 400	400	115, 230 VAC	3.46 (88) x 5.47 (139) x 5.59 (142)	●	●	●	●	124
PFH-T 650	650	115, 230 VAC	3.46 (88) x 5.47 (139) x 5.59 (142)	●	●	●	●	124
PFH-T 800	800	115, 230 VAC	3.46 (88) x 5.47 (139) x 5.59 (142)	●	●	●	●	124
PFH-T 1000	1000	115, 230 VAC	3.46 (88) x 5.47 (139) x 5.59 (142)	●	●	●	●	124
PFH-T 1200	1200	230 VAC	3.46 (88) x 5.47 (139) x 5.59 (142))	●	●	●	●	124
FLH-TF Series Fan Heaters with Thermostat								
FLH-TF 125	125	115 VAC, 230 VAC	5 x 4.1875 x 5.5 (127 x 106 x 140)	●			●	124
FLH-TF 200	200	115 VAC, 230 VAC	5 x 4.1875 x 5.5 (127 x 106 x 140)	●			●	124
FLH-TF 400	400	115 VAC, 230 VAC	7 x 6.1875 x 7.5 (178 x 157 x 191)	●			●	124
FLH-TF 800	800	115 VAC, 230 VAC	7 x 6.1875 x 7.5 (178 x 157 x 191)	●			●	124
PRH-M Series Mini-Radiant Heaters								
PRH 010-M	10	100 - 250 VAC	1.77 (45) x 2.95 (75) x 1.16 (29.5)	●	●		●	126
PRH 020-M	20	100 - 250 VAC	1.77 (45) x 2.95 (75) x 1.16 (29.5)	●	●		●	126
PRH 030-M	30	100 - 250 VAC	1.77 (45) x 2.95 (75) x 1.16 (29.5)	●	●		●	126
FLH Series Mini Radiant & Fan Heaters								
FLH 030W	30	100 - 250 VAC / VDC	3.94 (100) x 2.76 (70) x 1.97 (50)	●	●		●	126
FLH 045W	45	100 - 250 VAC / VDC	3.94 (100) x 2.76 (70) x 1.97 (50)	●	●		●	126
FLH 060W	60	100 - 250 VAC / VDC	6.89 (175) x 2.76 (70) x 1.97 (50)	●	●		●	126
FLH 075W	75	100 - 250 VAC / VDC	6.89 (175) x 2.76 (70) x 1.97 (50)	●	●		●	126
FLH 100W	100	100 - 250 VAC / VDC	6.89 (175) x 2.76 (70) x 1.97 (50)	●	●		●	126
FLH 150W	150	100 - 250 VAC / VDC	9.84 (250) x 2.76 (70) x 1.97 (50)	●	●		●	126
FLH 250	250	115, 230 VAC	7.34 (186.5) x 3.34 (85) x 4.09 (104)	●	●		●	126
FLH 400	400	115, 230 VAC	8.92 (226.5) x 3.34 (85) x 4.09 (104)	●	●		●	126
FLZ Series Thermostats								
FLZ 510	-	100 - 250 VAC / Max. 30 W DC	2.52 x 1.46 x 1.81 (64 x 37 x 46)	●	●		●	128
FLZ 520	-	100 - 250 VAC / Max. 30 W DC	2.83 x 1.57 x 1.42 (72 x 40 x 36)	●	●	●	●	128
FLZ 530	-	100 - 250 VAC / Max. 30 W DC	2.83 x 1.57 x 1.42 (72 x 40 x 36)	●	●	●	●	128
FLZ Series Twin Thermostats								
FLZ 541	-	100 - 250 VAC / Max. 30 W DC	3.17 x 2.32 x 1.5 (80.5 x 59 x 38)	●	●		●	130
FLZ 542	-	100 - 250 VAC / Max. 30 W DC	3.17 x 2.32 x 1.5 (80.5 x 59 x 38)	●	●		●	130
FLZ 543	-	100 - 250 VAC / Max. 30 W DC	3.17 x 2.32 x 1.5 (80.5 x 59 x 38)	●	●		●	130
FLZ Series Hygrostats								
FLZ 600	-	115, 230 VAC / Max. 30 W DC	2.52 x 1.46 x 1.81(64 x 37 x 46)	●	●		●	132
FLZ 610	-	115, 230 VAC / Max. 30 W DC*	3.17 x 2.32 x 1.5 (80.5 x 59 x 38)	●	●		●	132

* See p.129 for more information

● available

PFH-T | COMPACT FAN HEATER WITH THERMOSTAT

200 W - 1200 W

NEW



UL US CE

Flexible Mounting Options

Unit can be direct mounted or connected to a standard DIN rail **without tools** using the included snap fastener.

Touch-Safe Outer Housing

Well insulated ABS high-temperature resistant plastic housing material ensures that unit remains cool and safe to touch during operation.

Precise Temperature Control

Built in thermostat allows our heater to be set to the precise temperature required for your application.

Reduced Installation Time

Save time and money when installing or moving the unit with our UL listed quick connects.

Compact Design

Wide range for heat options from 200W to 1200W all housed in the same compact housing.

Integrated Fan

Compact fan moves air across the heater elements to provide quick and efficient heating of the enclosure.

UL Certified

Heaters are UL Recognized to NITW2 and NITW8 standards allowing for easy integration into UL 508A panels.

PTC Heater Technology

Uses a self regulating heating element designed to prevent overheating and safe operation within your application.

FLH-TF | FAN HEATER WITH THERMOSTAT

125 W - 800 W



UL

The **FLH-TF Series Fan Heaters with thermostat** follow a traditional design proven to provide heat to enclosures. These heaters are designed to protect electronics from low temperatures and moisture caused by high humidity or rapid temperature changes. **Available in 4 models.**

Surface Mountable

Unit can be direct mounted within the enclosure without the need for DIN rails.

Precise Temperature Control

Easy to read built in thermostat allows our heater to be set without tools to the precise temperature required.

Integrated Fan Switch

Allows circulating fan to run continuous or only when the unit is actively heating.

Best Temperature Guaranteed

Used predominantly for the avoidance of excessively low temperatures or excessively high humidity in the control cabinet.

Standard Performances

Standard performance ratings from 125 to 800 Watts ensure that the units will be compatible with common heater requirements.

UL Certified

Heaters are UL Recognized to NITW2 and NITW8 standards allowing for easy integration into UL 508A panels.



PFH-T Series (200 - 1200 W) Compact Fan Heaters

Model Number	Part Number	Voltage (VAC)	Heating performance (W)*	Frequency (Hz)	Power Consumption (W)	Airflow Volume CFM (m3/h)	Starting Current (A)	Width in (mm)	Depth in (mm)	Height in (mm)	Weight (kg)
PFH-T 200	17020715034	115	200	60	215	30 (50)	9	3.46 (88)	5.47 (139)	5.59 (142)	1.68 (.76)
	17020710034	230	200	50/60	215	30 (50)	9	3.46 (88)	5.47 (139)	5.59 (142)	1.68 (.76)
PFH-T 400	17040715034	115	400	60	415	30 (50)	15	3.46 (88)	5.47 (139)	5.59 (142)	1.68 (.76)
	17040710034	230	400	50/60	415	30 (50)	15	3.46 (88)	5.47 (139)	5.59 (142)	1.68 (.76)
PFH-T 650	17065715034	115	650	60	665	30 (50)	20	3.46 (88)	5.47 (139)	5.59 (142)	1.68 (.76)
	17065710034	230	650	50/60	665	30 (50)	20	3.46 (88)	5.47 (139)	5.59 (142)	1.68 (.76)
PFH-T 800	17080715034	115	800	60	815	30 (50)	31	3.46 (88)	5.47 (139)	5.59 (142)	1.68 (.76)
	17080710034	230	800	50/60	815	30 (50)	31	3.46 (88)	5.47 (139)	5.59 (142)	1.68 (.76)
PFH-T 1000	17099715034	115	1000	60	1015	47 (80)	25	3.46 (88)	5.47 (139)	5.59 (142)	1.68 (.76)
	17099710034	230	1000	50/60	1015	47 (80)	25	3.46 (88)	5.47 (139)	5.59 (142)	1.68 (.76)
PFH-T 1200	17099810034	230	1200	50/60	1215	47 (80)	31	3.46 (88)	5.47 (139)	5.59 (142)	1.68 (.76)
Design	Housing: ABS high temperature plastic										

FLH-TF Series (125 - 800 W) Fan Heaters with Thermostat

FLH-TF 125	17012515407	115	125	60	140	16 (27)	3	4 (102)	5.375 (137)	5.5 (140)	2.2 (1.0)
FLH-TF 200	17020015407	115	200	60	230	16 (27)	4.5	4 (102)	5.375 (137)	5.5 (140)	2.2 (1.0)
FLH-TF 400	17040015407	115	400	60	440	26 (44)	9	4 (102)	5.375 (137)	7.5 (191)	3.0 (1.4)
FLH-TF 800	17080015407	115	800	60	860	26 (44)	14	4 (102)	5.375 (137)	7.5 (191)	3.0 (1.4)
Design	Housing: aluminum metal										

*Heating performance (Ta = +68 °F/+20 °C)

Approvals (see the Quick Selection Chart found at the beginning of this section)



For additional technical data,
drawings and manuals.
www.pfannenbergsusa.com

Available Models:

PFH-T
Compact Design
(NITW2, NITW8)



FLH-TF
Traditional Design
(NITW2, NITW8)



PRH-M | MINI RADIANT HEATERS

10 W - 30 W

NEW



The **PRH-M Mini-Radiant Heaters** are available in 3 models ranging from 10 W - 30 W. These small heaters are ideal for small outdoor enclosures, preventing condensate formation.

Easy Mounting Options

Unit can be connected to a standard DIN rail **without tools** using the included snap fastener.

Multiple Performance Ratings

The PRH-M is available in 3 different heating performance based models from 10 W to 30 W. Choose the total heat to be distributed based on your calculated requirements.

Ultra Compact Design

At just slightly over 1" wide and under 3" tall, this compact design easily installs into areas that have a limited installation space.

Durable Long-Lasting

With its rugged design, solid construction and no moving parts you can count on the PRH-M Heater to perform consistently over a long period of time.

Reduced Installation Time

The PRH-M Heater supports multiple voltage and includes a hard wired 12" (300 mm) electronic cord to easily install within the electrical enclosure.

UL Certified

Heaters are UL Recognized to NITW2 standards allowing for easy integration into UL 508A panels.

FLH | RADIANT & FAN HEATERS

30 W - 400 W



The **FLH Heaters** are available as a radiant heater or as a forced air heater for larger wattages. These heaters are designed to protect electronics from low temperatures and moisture caused by high humidity or rapid temperature changes.

Easy Mounting Options

Unit can be connected to a standard DIN rail **without tools** using the included snap fastener.

Heat Distribution

Our larger FLH 250 and FLH 400 Heaters include a fan to help circulate the heat in larger enclosures, ensuring quick and even distribution.

Durable Long-Lasting

With its rugged design and solid construction you can count on the FLH Heaters to perform consistently over a long period of time.

Reduced Installation Time

Save time and money when installing or moving the unit with our UL listed quick connects.

UL Certified

Heaters are UL Recognized allowing for integration into UL 508A panels.



PRH-M Series (10 - 30 W) Mini Radiant (PTC) Heaters

Model Number	Part Number	Voltage (VAC)	Heating performance (W)*	Frequency (Hz)	Power Consumption (W)	Starting Current (A)	Width in (mm)	Depth in (mm)	Height in (mm)	Weight lb (kg)
PRH 010-M	17000105317	110-250	10	50/60	10	1.0	1.16 (29.5)	1.77 (45)	2.95 (75)	.19 (.09)
PRH 020-M	17000205317	110-250	20	50/60	20	1.1	1.16 (29.5)	1.77 (45)	2.95 (75)	.26 (.12)
PRH 030-M	17000305317	110-250	30	50/60	30	1.2	1.16 (29.5)	1.77 (45)	2.95 (75)	.26 (12)

Design Black anodized Aluminum

FLH Series (30 - 150 W) Radiant Heaters - With extruded aluminum body

Model Number	Part Number	Voltage (VAC/VDC)	Heating performance	Frequency (Hz)	Power Consumption (W)	Starting Current (A)	Width in (mm)	Depth in (mm)	Height in (mm)	Weight lb (kg)
FLH 030W	17003005007	110-250	30	50/60	30	1.2	2.76 (70)	1.97 (50)	3.94 (100)	.55 (.25)
FLH 045W	17004505007	110-250	45	50/60	45	1.8	2.76 (70)	1.97 (50)	3.94 (100)	.55 (.25)
FLH 060W	17006005007	110-250	60	50/60	60	2.5	2.76 (70)	1.97 (50)	6.89 (175)	.99 (.45)
FLH 075W	17007505007	110-250	75	50/60	75	4.5	2.76 (70)	1.97 (50)	6.89 (175)	1.12 (.51)
FLH 100W	17010005007	110-250	100	50/60	100	5.0	2.76 (70)	1.97 (50)	6.89 (175)	1.12 (.51)
FLH 150W	17015005007	110-250	150	50/60	150	7.5	2.76 (70)	1.97 (50)	9.84 (250)	1.7 (.77)

FLH Series (250 - 400 W) Fan Heaters - With extruded aluminum body

Model Number	Part Number	Voltage (VAC)	Heating performance	Frequency (Hz)	Power Consumption	Starting Current	Width in (mm)	Depth in (mm)	Height in (mm)	Weight lb (kg)
FLH 250	17025015007	115	250	60	260	2.2	3.35 (85)	4.09 (104)	7.34 (186.5)	2.29 (1.04)
	17025010007	230	250	50/60	260	1.1	3.35 (85)	4.09 (104)	7.34 (186.5)	2.29 (1.04)
FLH 400	17040015007	115	400	60	410	3.6	3.35 (85)	4.09 (104)	8.92 (226.5)	2.65 (1.20)
	17040010007	230	400	50/60	410	1.8	3.35 (85)	4.09 (104)	8.92 (226.5)	2.65 (1.20)

Design Aluminum profile, brightly anodized

*Heating performance (Ta = +68 °F/+20 °C)

Approvals (see the Quick Selection Chart found at the beginning of this section)



For additional technical data, drawings and manuals.

www.pfannenbergsusa.com

Available Models:

PRH-M
Ultra Compact Design
(Integrated Cord)



FLH
Compact & Large Designs
(Quick Connects)



FLZ 510-530 | THERMOSTATS

The FLZ 510-530 Series Thermostats are available in 3 different models. The FLZ 510 comes with a change over contact, the FLZ 520 comes with a N.C contact and the FLZ 530 comes with a N.O. contact. These are designed to work with cabinet heaters and Filterfans® to control the internal cabinet temperature.

Ultra Compact Design

At just slightly over 1.5" wide and under 3" tall, this compact design easily installs into areas that have a limited installation space.

Durable Long-Lasting

With its rugged design and solid construction you can count on the FLZ Thermostat to perform consistently over a long period of time.

Easy Mounting Options

Unit can be connected to a standard DIN rail **without tools** using the included snap fastener.



Unique Temperature Control

In combination with control cabinet heaters, they control temperature inside the control cabinet.

Models come color coded, blue dial for cooling and red dial for heating control.

Energy Savings Solution

In combination with Filterfans® the FLZ Thermostat can control the operation of the fan, turning it off and on based on a set temperature. This provides an environmental balance through energy reduction.

UL Certified for 508A Panels

Thermostats are UL Recognized allowing for integration into UL 508A panels.



*Note: The size listed on this page is for the FLZ 510. Please see the chart on the opposite page for dimensions of our FLZ 520/530 Models.



FLZ 510-530 Series Thermostat

Model Number	Part Number RAL 7035 (Light Grey)	Setting Range °F / °C	Voltage (VAC) (DC)		Type of contact	Switching Temperature difference (K)	Switching point tolerance (K)	Width in (mm)	Depth in (mm)	Height in (mm)	Weight lb (kg)	
FLZ 510	17103000000	0-60 °C	100- 250	max. 30 W	changeover with spring contact	1 ² / 3	± 3	1.46 (37)	1.87 (47.5)	2.34 (59.5)	.16 (.07)	
	17103000010	32-140 °F	100- 250	max. 30 W	changeover with spring contact	1 ² / 3	± 3	1.46 (37)	1.87 (47.5)	2.34 (59.5)	.16 (.07)	
FLZ 520	17111000000	0-60 °C	100- 250	max. 30 W	N.C. with spring contact ¹	<7	± 4	1.57 (40)	1.42 (36)	2.83 (72)	.11 (.05)	
	17111000010	32-140 °F	100- 250	max. 30 W	N.C. with spring contact ¹	<7	± 4	1.57 (40)	1.42 (36)	2.83 (72)	.11 (.05)	
FLZ 530	17121000000	0-60 °C	100- 250	max. 30 W	N.O. with spring contact ¹	<7	± 4	1.57 (40)	1.42 (36)	2.83 (72)	.11 (.05)	
	17121000010	32-140 °F	100- 250	max. 30 W	N.O. with spring contact ¹	<7	± 4	1.57 (40)	1.42 (36)	2.83 (72)	.11 (.05)	
Additional Data			FLZ 510			FLZ 520		FLZ 530				
Operating temperature range			-40 ... +176 (-40 ... +80)									°F (°C)
Connection			screw terminal for cable cross-section 0.5 to 2.5 mm ²									
Suitable for the operation of :			fan and heater			heater		fan				
Type of mounting			snap fastening for 35mm profile bars according to EN 60715									

¹N.C. = normally closed / N.O. = normally open

²For 230 V AC operation only

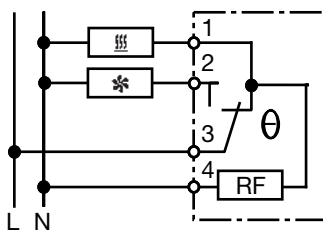
Approvals (see the Quick Selection Chart found at the beginning of this section)



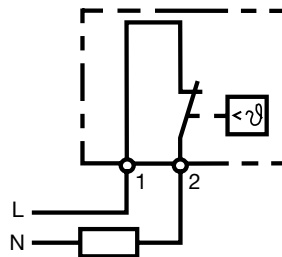
For additional technical data,
drawings and templates.
www.pfannenbergusa.com

Schematics

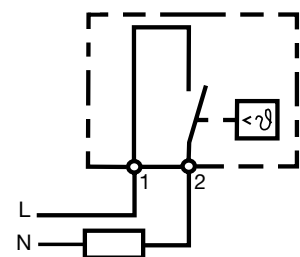
FLZ 510 1K



FLZ 520 N.C.



FLZ 530 N.O.



Available Models:

FLZ 510-530

Thermostats

(0-60 °C or 32-140 °F)



FLZ 541-543 | TWIN THERMOSTATS

The FLZ 541-543 Series Twin Thermostats are available in 3 different models. The FLZ 541 comes with N.C./N.O. contacts, the FLZ 542 comes with N.C./N.C. contacts and the FLZ 543 comes with N.O./N.O. contacts. Unlike a single thermostat with changeover contacts, connected devices can be switched to different temperature ranges to manage the internal cabinet temperature.

Ultra Compact Design

At slightly over 2" wide and just over 3" tall, this compact design easily installs into areas that have a limited installation space.

Durable Long-Lasting

With its rugged design and solid construction you can count on the FLZ Thermostat to perform consistently over a long period of time.

Easy Mounting Options

Unit can be connected to a standard DIN rail **without tools** using the included snap fastener.

3.17 in. (80.5 mm)



Independent Controls

Control dials are color coded based on the model. The FLZ 541 comes with a red dial for controlling the heater and a blue dial for controlling the fan. The FLZ 542 comes with 2 red dials for controlling 2 heaters or a heater and alarm. The FLZ 543 comes with 2 blue dials for controlling 2 fans or a fan and alarm.

Energy Savings Solution

One unit can control two separate devices. When controlling a Filterfan® the FLZ Twin Thermostat can control the operation of the fan, turning it off and on based on a set temperature.

When also controlling a heater, the FLZ Twin Thermostat can turn the heater on and off based on enclosure temperature. This provides an environmental balance through energy reduction.

UL Certified for 508A Panels

Thermostats are UL Recognized allowing for integration into UL 508A panels.



Visit website for additional Thermostats and Hygrostats.



FLZ 541-543 Series Twin Thermostats

Model Number	Part Number RAL 7035 (Light Grey)	Setting Range °F / °C	Switching contact Voltage (VAC) (DC)		Type of contact	Switching Temperature difference (K)	Switching point tolerance (K)	Weight lb (kg)
FLZ 541	17141000000	0-60 °C	100-250	max. 30 W	N.C. / N.O. with spring contact¹	<7	± 4	.21 (.09)
	17141000010	32-140 °F	100-250	max. 30 W	N.C. / N.O with spring contact¹	<7	± 4	.21 (.09)
FLZ 542	17142000000	0-60 °C	100-250	max. 30 W	N.C. / N.C. with spring contact¹	<7	± 4	.21 (.09)
	17142000010	32-140 °F	100-250	max. 30 W	N.C. / N.C. with spring contact	<7	± 4	.21 (.09)
FLZ 543	17143000000	0-60 °C	100-250	max. 30 W	N.O. / N.O. with spring contact	<7	± 4	.21 (.09)
	17143000010	32-140 °F	100-250	max. 30 W	N.O. / N.O. with spring contact	<7	± 4	.21 (.09)
Additional Data		FLZ 541		FLZ 542		FLZ 543		
Operating temperature range		-40 ... +176 (-40 ... +80)						°F (°C)
Connection		screw terminal for cable cross-section 0.5 to 2.5 mm²						
Suitable for the operation of :		fan and heater		heater/alarm		fan/alarm		
Type of mounting		snap fastening for 35mm profile bars according to EN 60715						

¹N.C. = normally closed / N.O. = normally open

²For 230 V AC operation only

Approvals (see the Quick Selection Chart found at the beginning of this section)



For additional technical data,
drawings and manuals.
www.pfannenbergsusa.com

Schematics

FLZ 541	FLZ 542	FLZ 543

Available Models:

FLZ 541-543

Twin Thermostats

(0-60 °C or 32-140 °F)



FLZ 600 - 610 | HYGROSTATS

The FLZ 600-610 Series Hygrostat and combined Hygrostat/Thermostat models are ideal for controlling cabinet heaters and Filterfans® when a relative humidity is exceeded. Hygrostats help to keep the relative humidity within an enclosure above the dew point, preventing the condensation of water on electrical components and the corrosion of unprotected sheet metal.

Ultra Compact Design

At just slightly over 1.5" wide and under 3" tall, this compact design easily installs into areas that have a limited installation space.

Durable Long-Lasting

With its rugged design and solid construction you can count on the FLZ Hygrostats to perform consistently over a long period of time.

Easy Mounting Options

Unit can be connected to a standard DIN rail **without tools** using the included snap fastener.

2.36 in. (60 mm)



1.85 in. (47 mm)

Energy Savings Solution

The FLZ 600 Hygrostat can control the operation of a Filterfan® or heater, turning it on when a preset relative humidity is exceeded. This provides an environmental balance through energy reduction.

The FLZ 610 includes an additional control for operation of a Filterfan® or heater, turning it off and on based on a set temperature.

UL Certified for 508A Panels

Thermostats are UL Recognized allowing for integration into UL 508A panels.



*Note: The size listed on this page is for the FLZ 600. Please see the chart on the opposite page for dimensions of our FLZ 610 Model.

FLZ 600-610 Series Hygrostats / Hygrostats-Thermostats

Model Number	Part Number RAL 7035 (Light Grey)	Setting Range RH	Input voltage (VAC)	Max switching power (A)			Type of contact	Switching Temperature difference	Switching point tolerance (K)	Width in (mm)	Depth in (mm)	Height in (mm)	Weight lb (kg)
				115 VAC	230 VAC	DC							
FLZ 600	17207000000	40-90% R.H.	N/A	5 (.2) ²	2 (.2) ²	30 W	Mechanical hygrostat, changeover with spring contact	approx. 5%	± 4	1.46 (37)	1.85 (47)	2.36 (60)	.12 (.05)
FLZ 610	17218151000	40-90% R.H. / 32° - 140° F (0°C to + 60°C)	115	8 (.3) ²	8 (.3) ²	4 A	Electronic hygrostat-ther- mostat combo device, changeover/ relay	approx. 2 K ± 1 K / approx. 4% R.H. ± 1%	± 4	2.32 (59)	1.5 (38)	3.17 (80.5)	.18 (.08)
	17218100000	40-90% R.H. / 32° - 140° F (0°C to + 60°C)	230	8 (.3) ²	8 (.3) ²	4 A	Electronic hygrostat-ther- mostat combo device, changeover/ relay	approx. 2 K ± 1 K / approx. 4% R.H. ± 1%	± 4	2.32 (59)	1.5 (38)	3.17 (80.5)	.18 (.08)
Additional Data			FLZ 600					FLZ 610					
Operating temperature range			+30 ... +140 (0 ... +60)					-4 ... +140 (-20 ... +60)					°F (°C)
Connection			screw terminal for cable cross-section 0.5 to 2.5 mm ²										
Suitable for the operation of :			fan and heater										
Type of mounting			snap fastening for 35mm profile bars according to EN 60715										

¹N.C. = normally closed / N.O. = normally open

²Max. switching power value in brackets (): inductive load at cos ϕ = 0.6

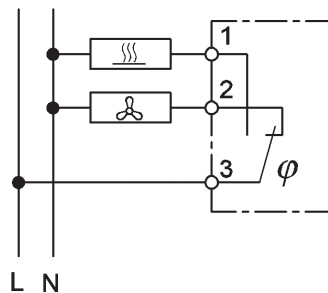
Approvals (see the Quick Selection Chart found at the beginning of this section)



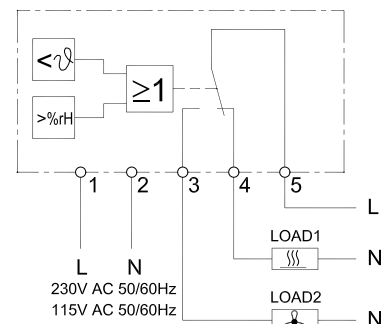
For additional technical data,
drawings and manuals.
www.pfannenbergsusa.com

Schematics

FLZ 600



FLZ 610



Available Models:

FLZ 600

Mechanical Hygrostat
(0-60 °C or 32-140 °F)



FLZ 610

Electronic Hygrostat/
Thermostat Combo
(0-60 °C or 32-140 °F)



Pfannenbergl Signaling Technologies

Visual and Audible Alarms for Industrial Safety



INDUSTRY LEADING



Pfannenbergl specializes in heavy duty and versatile signaling devices that satisfy numerous alarm, warning and indication requirements, including: machinery operating status, process monitoring, system startup, and building or area evacuation due to fire, toxic gas leak, chemical spill, or intruder alert. With the ability to withstand severe environments (industrial, marine, mining, building, energy, transportation), Pfannenbergl's signaling solutions are the only choice for improved safety and efficiency.

Pfannenbergl's 10-year Warranty is our proof of delivering a reliable and durable product that can perform effectively in harsh environments for a long life. All units in the DS, PATROL, PYRA and Quadro product family's carry a factory-backed 10 year warranty".

Discover Our New

Intensely Bright
**BR50
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new

**Custom Stacklight
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<https://www.pfannenberglusa.com/signaling-technologies/signal-towers/>





Pfannenber's SERVICE PROGRAM

Designed to Keep You
Up and Running 24/7



Our comprehensive service team is available wherever and whenever you need it, worldwide. Pfannenber's innovation has made it one of the world's leading manufacturers of Thermal Management and Process Cooling Equipment.

24 Hour Spare Parts List

Fans / Caps / Transformers / Contactors / Phase Monitors etc. - Lead Time 1 Day

Part Number	Description	Part Number	Description	Part Number	Description
18784000000	Capacitor, 14uF 400V	18881100002	Fan R4E280-AD-08-22	18883000025	Contactors 3 Pole - 230V
18810000009	PCBA Stand.-Contr. 115V AC	18881100003	Fan R4E310-AP-11-16	18883000027	Kit - Contactors 4 Pole 16A 230V
18810000011	PCBA SC 230/460V AC	18881200102	Starter Pack CS14K6E-PFV comp	18883000033	Kit - Operation LED DTS 34-36x1
18810000012	PCBA SC 230/400AC Temp. Sensor	18881200103	Starter Pack CS20K6E-PFV Comp	18883000034	Kit - Condensate Evap. 220mm
18810000024	Temp. Sensor 300mm	18881300025	Contactors 3 Pole 12A 230V	18883000035	Contactors 300-C16N-22-XN
18811000001	Fan 170 x 150 230V AC	18881300026	Condensate Evaporator 125mm	18883000036	Contactors 300-C16N-31
18811000003	External Fan 170X150 115V AC	18881300027	Valve Exp. BBIJ-1/2-CP60	18883000037	Crankcase Heater DTS 34/36x1C
18811100007	Cooling Unit Fan 180; 115V AC	18881300028	Contactors 3 Pole 12A 115V	18884000003	Capacitor 3.5uF 450VAC UL
18811100009	Cooling Unit Fan 180; 230V AC	18881300029	Capacitor 14uF 250 VAC	18884000004	Capacitor 1.5uF 250 VAC UL
18811100010	Cooling Unit Fan 190; 115V AC, CUP	18881400007	Kit - Condenser Coil DTS 34x1	18884000005	Kit - Capacitor DTS 36x1
18811100011	Cooling Unit Fan 190; 230V AC	18881500010	DTS 34XX Filter Kit	18884000007	Kit - Capacitor DTS 30x1 115V
18811100018	Cooling Unit Fan 225; 115V AC, CUP	18882000011	Kit - Access. Bag DTS34/36x1C	18884000008	Kit - Capacitor DTS 36 Evap./34-36 Cond.
18811100020	Cooling Unit Fan 225; 230V AC	18883000001	Replacement T-Stat Kit	18885000000	Filter/Dryer CU-80 ALCO
18813000017	Contactors 230V w/ Aux Cont.	18883000005	Transformer 1150VA 400-460/230	18885000001	Filter/Dryer DML 053
18814000001	Capacitor Foil 6.0uF J400vac	18883000011	Contactors 115V 3RT1015-1AK62	18885000002	Filter/Dryer C-033-S
18814000003	Capacitor Foil 1.5mF 450V	18883000012	Power Supply 48V DC	18885000003	Ther. Expan. Valve FBJE-1
18814000004	Capacitor Foil 2uF 450V	18883000013	Relay 115V DPDT	18885000004	Ther. Expan. Valve FBJE 1-1/2
18814000005	Capacitor Foil 2.5uF 450V	18883000014	Relay 230V DPDT	18885000005	Pressure Switch 34,5 Bar
18814000006	Capacitor Foil 4uF 450V	18883000015	Relay 460V 3 Phase Monitor	18885000008	Pressure Switch 7-10 Bar
18815000006	Expansion Valve	18883000016	Condensate Evap. 125mm Kit	18885000010	Kit - Filter/Dryer DTS 3021/31
18815000011	Expansion Valve TLK 1,0	18883000017	Condensate Evap. 220mm Kit	18885000011	Low Pressure Switch, 0.3 Bar
18815000023	Pressure Switch 21-28 Bar	18883000018	Transformer 250VA 400-460V	18886000021	Fan Kit - DTS 36x1 Cond. Side
18830670122	Spare Part Contactors XTMCA01B	18883000019	Contactors 230V-3 Pole	18886000022	Fan Kit - DTS 36x1 Evap. Side
18830700013	Transformer 115/230 1150VA	18883000020	High Pressure Switch w/Conn.	18886000027	Fan Kit - DTS 36 Evap./DTS 34/36 Cond.
18881000000	Axial Fan 200mm 230V	18883000021	Low Pressure Switch w/Conn.	18886000028	Fan Kit - DTS 34x1 Evap.
18881100001	Cooling Unit Fan 119 48V DC	18883000022	Fuse 4A 600V Class CC 10 Pack		

ONE-STOP-SHOP
**SOLUTIONS
PROVIDER**

We have flexibility and can work with you to find the combination of programs and services we provide to best suit your needs.

**INSTALLATION AND COMMISSIONING / IN-HOUSE AND ON-SITE REPAIRS
PREVENTATIVE MAINTENANCE / SPARE PARTS / EXTENDED WARRANTY**

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