ADVANCED COOLING TECHNOLOGIES

The Thermal Management Experts






SEALED ENCLOSURE COOLING

solutions@1-act.com | www.1-act.com

COMPANY OVERVIEW

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ACT's Sealed Enclosure Coolers are purpose-built to protect your valuable electronics by efficiently removing heat from sealed electrical enclosures—without exposing them to dust, dirt, or debris. As one of the only truly sealed solutions on the market, our NEMA-rated, UL-certified units maintain enclosure integrity while delivering reliable performance in indoor, outdoor, and harsh industrial environments.

From Industrial Automation and Food Processing to Petrochemical, Wastewater, and Telecom, industries trust ACT to deliver durable thermal protection where failure is not an option.

With advanced selection tools, convenient online ordering, and expert support from our in-house engineers and regional reps, ACT empowers OEMs and system integrators to cool smarter, faster, and with complete confidence.

HEAT SINK COOLER HEAT EXCHANGER (HSC SERIES)

Part Number	Thermal Capacity Watts @ 20°C ΔT
ACT-HSC-22:	440
ACT-HSC-45:	900
ACT-HSC-68:	1360

- High-performance, corrosion-resistant, nickel-plated fins
- Few penetrations by cover fasteners, mounting fasteners, and external fan wires create an optimal seal
- Rugged, high-quality construction

CLICK TO VIEW HEAT SINK COOLERS >

HEAT PIPE COOLER HEAT EXCHANGER (HPC SERIES)

Part Number	Thermal Capacity Watts @ 20°C ΔT
ACT-HPC-15:	300
ACT-HPC-40:	800
ACT-HPC-50:	1000
ACT-HPC-80:	1600

- Optimized for high performance/volume ratios
- Smaller opening footprint on the enclosure wall than the HSC-series
- Dual axial ball bearing fans for years of maintenance-free operation

CLICK TO VIEW HEAT PIPE COOLERS >

THERMOELECTRIC COOLER (TEC SERIES)

Part Number	Thermal Capacity Watts @ 20°C ΔT
ACT-TEC-90:	90
ACT-TEC-300:	300

- No compressors, refrigerants, or circulating liquids
- Great for wash-down/spray-down applications
- Built-in temperature control with an adjustable thermostat

CLICK TO VIEW THERMOELECTRIC COOLERS >

VAPOR COMPRESSION COOLER (VCC SERIES)

Part Number	Thermal Capacity Watts @ 20°C ΔT
ACT-VCC-1000-DC:	1000
ACT-VCC-2000-AC:	2000
ACT-VCC-3000-DC:	3000
ACT-VCC-5000-AC:	5000

- Harsh Environment Capability (IP55 seal)
- The closed-loop cooling system protects equipment from harsh environments with an adjustable cabinet air temperature

CLICK TO VIEW VAPOR COMPRESSION COOLERS >

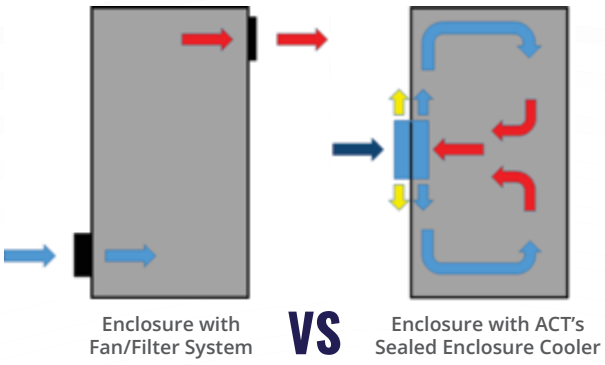
NEMA AND IP RATINGS

CLICK TO VIEW NEMA RATINGS >

The National Electrical Manufacturers Association (NEMA) sets the standards that govern the design and performance of electrical enclosures in the U.S., ensuring they can withstand environmental conditions such as dust, moisture, and corrosion.

Internationally, the IEC 60529 standard—commonly known as the Ingress Protection (IP) Code—classifies the level of protection enclosures provide against solids (like dust) and liquids (like water). These ratings help customers compare enclosures globally based on their resistance to environmental intrusion.

ACT's sealed enclosure coolers are tested to UL 508A and UL 50E standards, ensuring they meet or exceed the NEMA ratings required for your application. Designed to maintain the integrity of the enclosure, they provide reliable thermal protection without compromise.



NEMA Rating	IP Rating	Description
12	52	Indoor, dust tight, drip tight
4	65-66	Indoor/outdoor, hose directed water tight
4X	65-66	Same as above, with corrosion resistant materials

Note: NEMA ratings may cover additional factors like corrosion resistance, construction practices, and gasket integrity that IP ratings do not.

IDEAL APPLICATIONS

- Agriculture
- Hydroelectric Facilities
- Solar Energy
- Manufacturing Facilities
- e-Mobility
- Oil & Gas Industry

CLICK TO VIEW THE ONLINE SELECTION TOOL >

Select the optimal cooler with confidence. Our user-friendly tool makes finding the right solution quick and easy.

CLICK TO ORDER ONLINE >

Explore our full product line and order directly through our e-commerce store — fast, easy, and always open.

HEAT SINK COOLERS

CLICK TO VIEW
HEAT SINK COOLERS >

Exceptional Cooling. Minimal Intrusion. Maximum Value.

The Heat Sink Cooler (HSC) features a cutting-edge design with dual, high-performance aluminum finned heat sinks bonded to a common mounting plate. This innovative setup **maximizes heat dissipation** while keeping enclosure intrusion to a minimal 3.70". By combining advanced heat transfer technologies with precision manufacturing, the HSC line delivers superior performance at an exceptional value, offering an unmatched **performance-to-cost ratio**.

- **Streamlined, mirrored design** for easy installation and consistent performance
- **Rugged dual-axial ball bearing fans** designed for durability and long-lasting reliability
- **Optimized for forced convection** to maximize heat dissipation efficiency
- **Integral gasket** ensures a fully sealed enclosure, protecting against contaminants
- **Multiple conductance options** to meet diverse cooling requirements
- **Thin profile** (just 3.70") for minimal enclosure intrusion and compact installation
- **Exceptional performance-to-cost ratio** for superior value without compromise
- **Quick and easy installation** for seamless integration into your systems
- **1-year warranty**

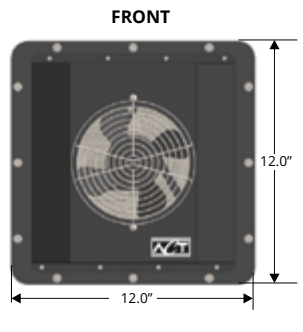
PART NUMBER	THERMAL CONDUCTANCE WATTS/°C	THERMAL CAPACITY WATTS @ 20°C ΔT	WEIGHT*** LBS (KG)	HEIGHT	WIDTH	DEPTH
ACT-HSC-22**	22.0	440	17 (7.7)	12.00" 304.8mm	12.00" 304.8mm	7.88" 200.1mm
ACT-HSC-45	45.0	900	35 (15.8)	21.75" 552.5mm	12.00" 304.8mm	7.88" 200.1mm
ACT-HSC-68	68.0	1,360	51 (23.1)	31.38" 796.9mm	12.00" 304.8mm	7.88" 200.1mm

* Depth is total depth; insertion depth = 3.70" into the cabinet. See solid model for full dimension details.
** Shows dimensions for DC model NEMA 4, 4X versions; check the solid model for other variants.
*** Approximate weight for powder-coated aluminum shown, contact ACT for NEMA 4X weight.

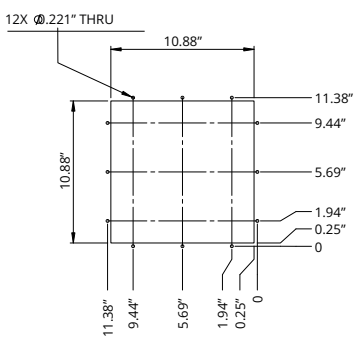
FEATURES AND OPTIONS	
ENVIRONMENT	Indoor or outdoor use
ELECTRICAL CONFIGURATION	115 VAC, 230VAC, 12VDC, 24VDC, and 48VDC • AC units arrive with 6ft long, pronged plug • DC units arrive with bare 6ft long lead wires
UL LISTING & REGULATION CE MARKING	The 115VAC units received a UL Listing mark All other voltage options are UL Rated/Recognized All units are CE Marked
NEMA RATING	12, 4, and 4X, UL50E Certified
FANS	UL listed 6.0" dual ball bearing type axial fans (dry & wet locations)
MOUNTING PLATE	Aircraft quality 6061 aluminum
MOUNTING OPTIONS	Top, side, front, or back
OPERATING TEMPERATURE	Range: 14°F to 150°F (-10°C to +70°C)
EXPECTED FAN LIFE	>100,000 hours at 77°F (25°C)

ACT-HSC DIMENSIONS & INSTALLATION

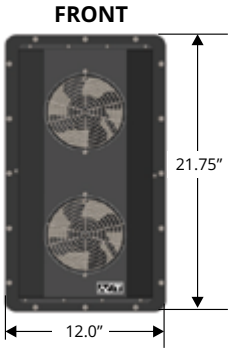
ACT-HSC-22



CUTOUT TEMPLATE



ACT-HSC-45



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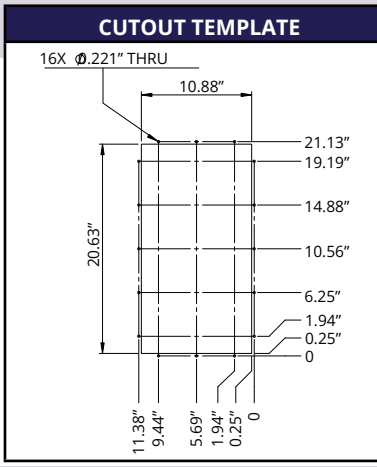
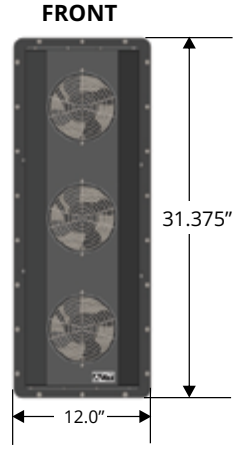
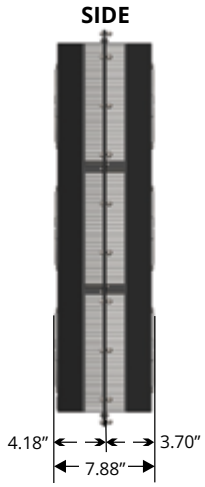


ACT-HSC-68





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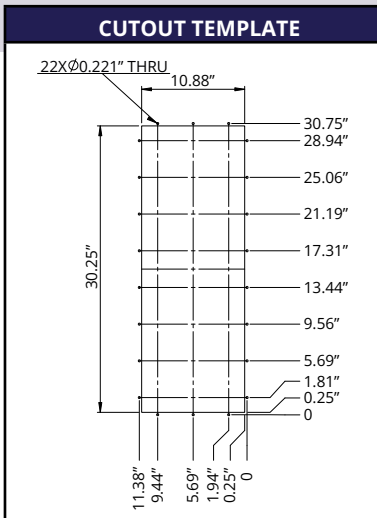
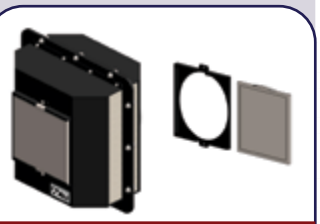


OPTIONAL ACCESSORIES



Replacement Filter Kit

Replacement Fans

NEMA Rated Rainhood

Customize your cooling solution with optional rain guards & removable filters, perfect for environments with high dust & debris.

MAXIMUM CURRENT DRAW BY MODEL

		MODEL		
		ACT-HSC-22	ACT-HSC-45	ACT-HSC-68
NEMA RATING	VOLTAGE	MAXIMUM OPERATION CURRENT IN AMPS		
4X, 4, (12)	12VDC	3.60 (3.90)	7.20 (7.80)	10.80 (11.70)
4X, 4, (12)	24VDC	3.44 (1.66)	3.28 (3.32)	4.92 (4.98)
4X, (12)	48VDC	0.88 (0.92)	1.76 (1.84)	2.64 (2.76)
4X, 4, 12	115VAC	0.72	1.44	2.16
4X, 4, 12	230VAC	0.38	0.76	1.14

HEAT PIPE COOLERS

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HEAT PIPE COOLERS >

The Heat Pipe Cooler (HPC) features an advanced heat pipe exchanger core that transfers heat up to **1,000 times faster** than traditional metals. With its **compact design** and **rapid cooling capabilities**, it's the ideal solution for top-mounting applications where both space and performance are critical.

- **Optimized for superior performance-to-volume ratios,** delivering efficient cooling in compact spaces
- **Best performance when mounted vertically** through the top (roof) wall of the enclosure
- **Quick and easy installation** with minimal enclosure modifications
- **Smaller opening footprint** compared to the HSC Series for streamlined installations
- **Durable, maintenance-free operation** with dual axial ball bearing fans
- **1-year warranty**

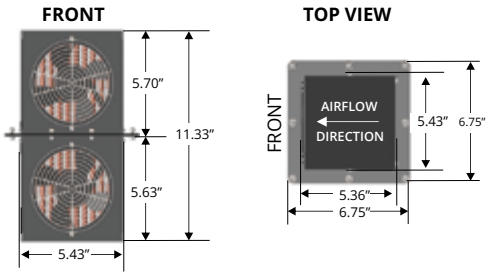
PART NUMBER	THERMAL CONDUCTANCE WATTS/°C	THERMAL CAPACITY WATTS @ 20°C ΔT	WEIGHT* LBS (KG)	HEIGHT	WIDTH	DEPTH	INSERTION DEPTH	MOUNTING PLATE
ACT-HPC-15	15.0	300	7 (3.2)	11.30" 287.0mm	5.43" 137.9mm	5.36" 143.0mm	5.63" 143.0mm	6.75" x 6.75" 171.5mm x 171.5mm
ACT-HPC-40	40.0	800	17 (7.72)	15.00" 381.00mm	7.93" 201.4mm	7.90" 200.7mm	7.47" 189.7mm	10.0" x 10.0" 254.0mm x 254.0mm
ACT-HPC-50	50.0	1,000	27 (12.2)	22.00" 558.8mm	7.93" 201.4mm	7.90" 200.7mm	10.97" 278.6mm	10.0" x 10.0" 254.0mm x 254.0mm
ACT-HPC-80	80.0	1,600	37 (16.8)	15.00" 381.00mm	15.43" 381.0mm	7.90" 200.7mm	7.47" 189.7mm	10.0" x 17.5" 254.0mm x 444.5mm

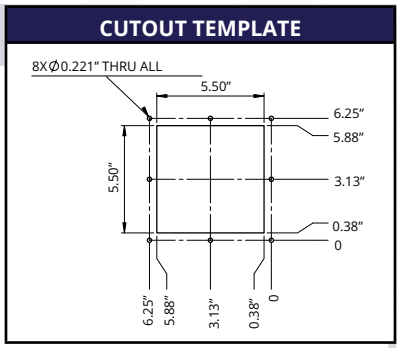
* Approximate weight for powder-coated aluminum shown, contact ACT for NEMA 4X weights.

FEATURES AND OPTIONS	
ENVIRONMENT	Indoor or outdoor use
ELECTRICAL CONFIGURATION	115 VAC, 230VAC, 12VDC, 24VDC, and 48VDC • AC units arrive with 6ft long, pronged plug • DC units arrive with bare 6ft long lead wires
UL LISTING & REGULATION CE MARKING	The 115VAC units received a UL Listing mark All other voltage options are UL Rated/Recognized All units are CE Marked
NEMA RATING	12, 4, and 4X, UL50E Certified
FANS	UL listed 4.0" and 6.0" dual ball bearing type axial fans (dry & wet locations)
MOUNTING PLATE	304 stainless steel
MOUNTING OPTIONS	Top (best performance), side, front or back (derated performance)
OPERATING TEMPERATURE	Range: 14°F to 150°F (-10°C to +70°C)
EXPECTED FAN LIFE	>100,000 hours at 77°F (+25°C)

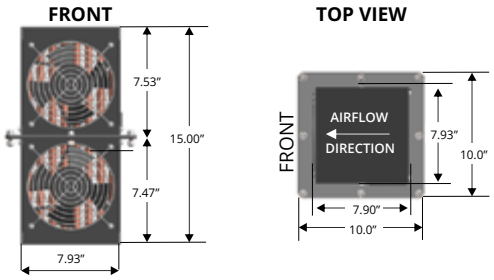
ACT-HPC DIMENSIONS & INSTALLATION

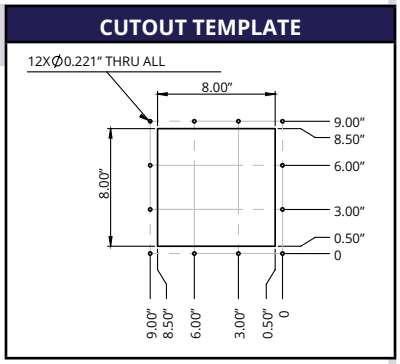
ACT-HSC-22



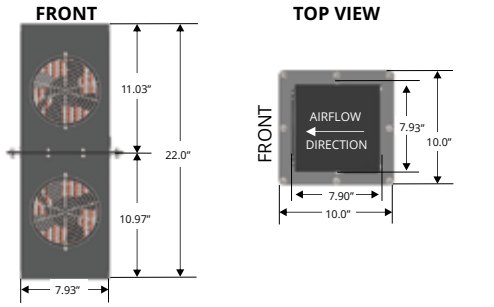


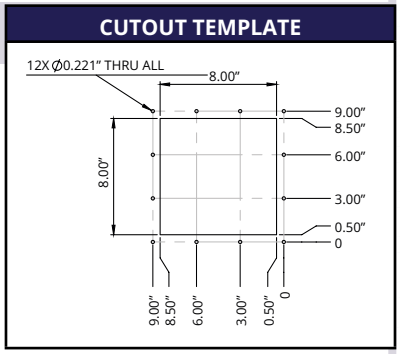
ACT-HSC-45



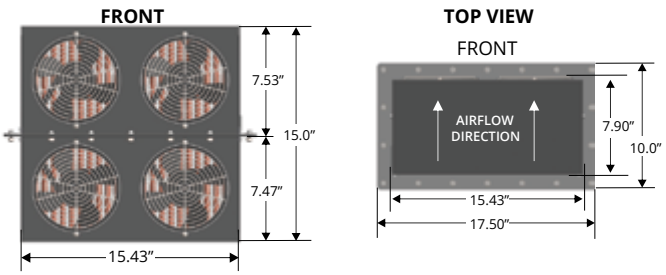


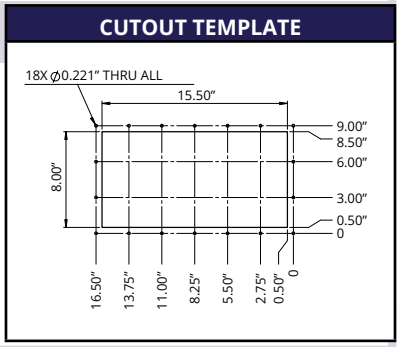
ACT-HSC-68



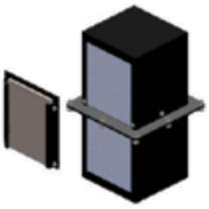


ACT-HSC-68





OPTIONAL ACCESSORIES



Replacement Filter Kit

Replacement Fans

NEMA Rated Rainhood

Wedge for Tilt

Customize your cooling solution with optional rain guards & removable filters, perfect for environments with high dust & debris.

MAXIMUM CURRENT DRAW BY MODEL

		MODEL			
		ACT-HPC-15	ACT-HPC-40	ACT-HPC-50	ACT-HPC-80
NEMA RATING	VOLTAGE	MAXIMUM OPERATION CURRENT IN AMPS			
4X, 4, (12)	12VDC	1.80	3.60 (3.90)	3.60 (3.90)	7.20 (7.80)
4X, 4, (12)	24VDC	0.92	1.64 (1.66)	1.64 (1.66)	3.28 (3.32)
4X, 4, (12)	48VDC	0.52	0.88 (0.92)	0.88 (0.92)	1.76 (1.84)
4X, 4, 12	115VAC	0.60	0.72	0.72	1.44
4X, 4, 12	230VAC	0.28	0.38	0.38	0.76

THERMOELECTRIC COOLERS

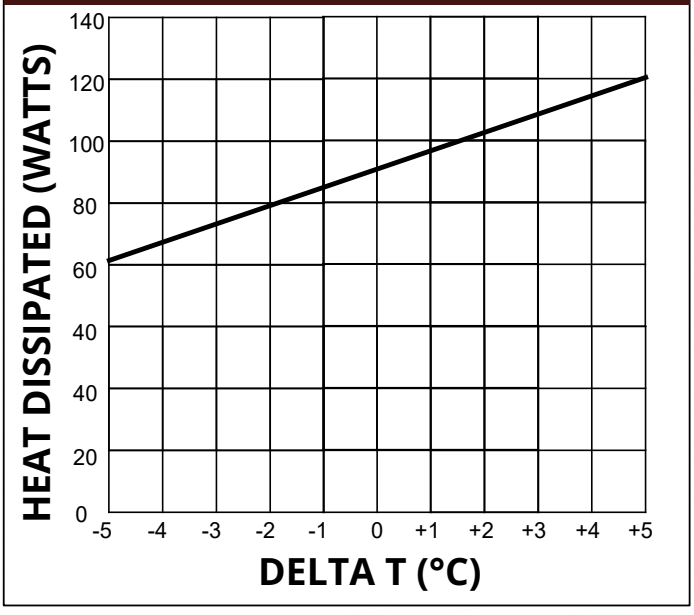
CLICK TO VIEW THERMOELECTRIC COOLERS >

Experience precise, **24/7 cooling** with our Thermoelectric Sealed Enclosure Coolers (TEC). Powered by advanced Peltier technology, these units create a reliable temperature differential, efficiently removing heat from your enclosures. Unlike traditional cooling systems, our TEC units **eliminate compressors, refrigerants, and circulating liquids,** offering a clean, maintenance-free solution for even the most demanding environments.

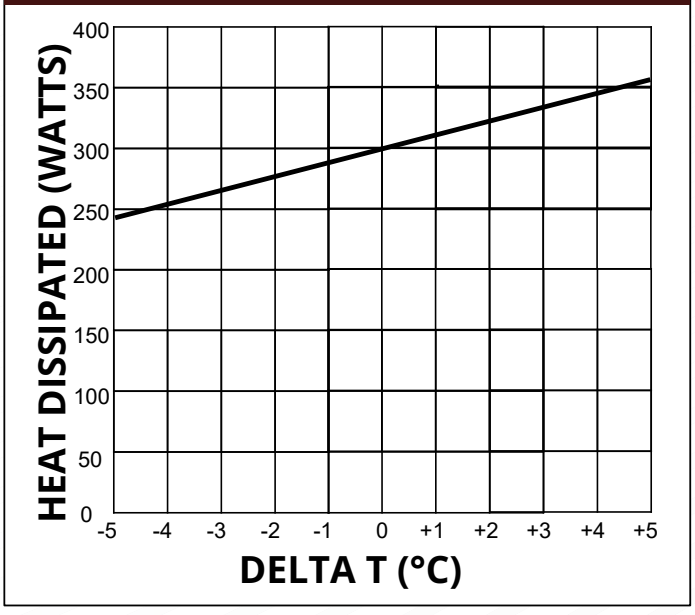
- **No compressors, refrigerants, or circulating liquids** for a simple, environmentally friendly solution.
- **Perfect for wash-down and spray-down applications,** offering dependable protection in tough environments.
- **Built-in temperature control** with adjustable thermostat for precise cooling
- **Low vibration, long-life dual ball bearing fans**, providing over 100,000 hours of continuous operation
- **Direct mounting capability** on outdoor cabinets for versatile installation
- **1-year warranty**

PART NUMBER	COOLING CAPACITY WATTS/BTUs @ 0°C ΔT	WEIGHT* LBS (KG)	HEIGHT	WIDTH	DEPTH	INSERTION DEPTH	MOUNTING PLATE
ACT-TEC-90	90/300	13 (5.9)	11.88" 301.8mm	4.88" 124.0mm	7.00" 177.8mm	3.10" 78.7mm	13.00" x 6.00" 330.2mm x 152.4mm
ACT-TEC-300	300/1,000	50 (22.7)	18.88" 479.6mm	12.50" 317.5mm	8.11" 203.2mm	3.25" 82.6mm	20.00" x 13.75" 508.0mm x 349.3mm

ACT-TEC-90 PERFORMANCE CHART



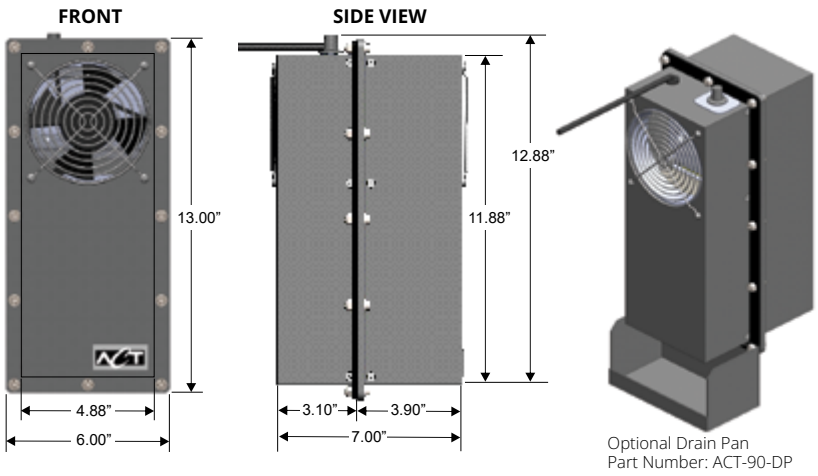
ACT-TEC-300 PERFORMANCE CHART



Note: Delta T (**ΔT) is the temperature difference between the inside enclosure temperature to the outside enclosure temperature.**

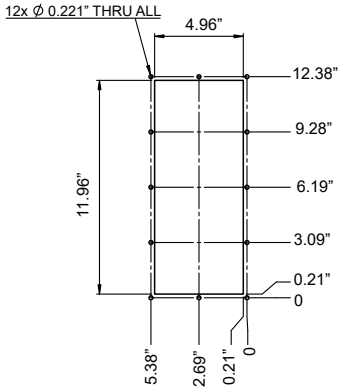
ACT-TEC DIMENSIONS & INSTALLATION

ACT-TEC-90

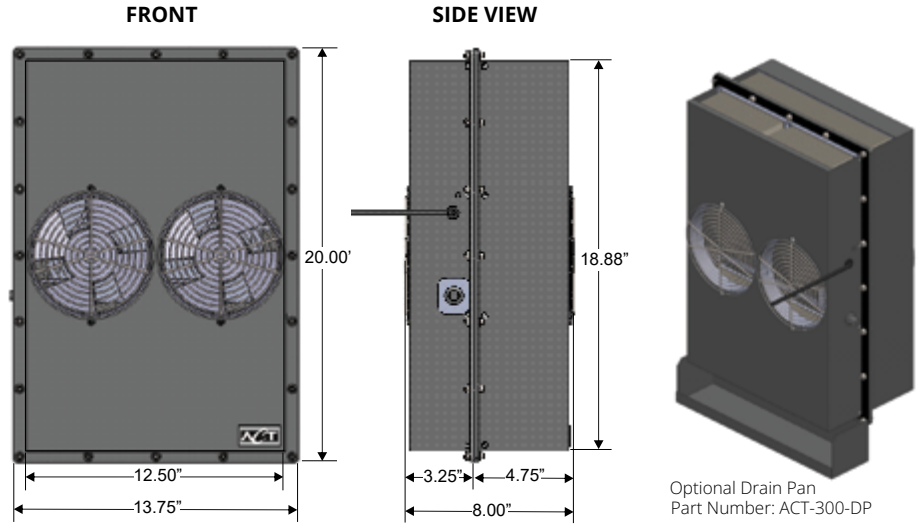


Optional Drain Pan
Part Number: ACT-90-DP

CUTOUT TEMPLATE

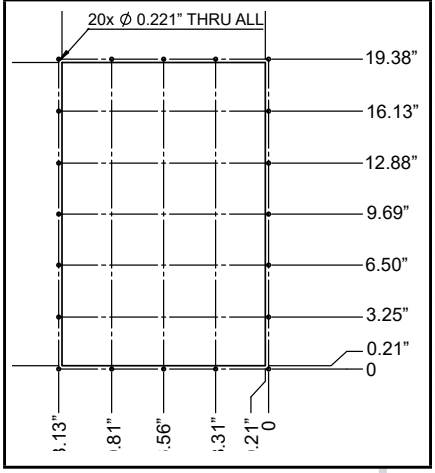


ACT-TEC-300



Optional Drain Pan
Part Number: ACT-300-DP

CUTOUT TEMPLATE



FEATURES AND OPTIONS	
ENVIRONMENT	Indoor or outdoor use
OPERATING TEMPERATURE RANGE	-10°C TO 50°C, higher ranges available on request
NEMA RATING	NEMA 4
MOUNTING PLATE	Powder coated aluminum: RAL 7043
TEC HOUSING	Powder coated aluminum: RAL 7043
MOUNTING OPTIONS	Side mounted standard, flush mounting optional
WEIGHT	ACT-TEC-90 = 13lbs, ACT-TEC-300 = 50lbs
ACCESSORIES	Optional condensate drip pan

Note: ACT-TEC standard units are configured for cooling mode. An additional heating mode and other operating temperatures or voltages are available upon request.

VAPOR COMPRESSION COOLERS

CLICK TO VIEW VAPOR COMPRESSION COOLERS >

The Vapor Compression Cooler (VCC) offers an industry-leading combination of performance and efficiency. Featuring **indoor air temperature control** and an IP55 seal, these air conditioners are built to thrive in harsh environments while **maintaining a clean and cool operating space** for your electronics. With their **plug-and-play design** and readily available inventory, you can quickly and easily integrate ACT's air conditioners into your electronics cabinet, ensuring reliable, efficient cooling.

- **Harsh Environment Capability** with IP55 seal, ensuring protection in tough conditions
- **Closed-loop cooling system** that safeguards equipment from harsh environments, with adjustable cabinet air temperature setpoint ranging from 20°C to 40°C
- **Flanged design** for convenient through-wall or cabinet door mounting, ensuring easy installation and efficient integration
- **Plug-and-play capability**, ensuring fast and effective setup with minimal effort
- **1-year warranty**

Custom color match available with additional lead time

PART NUMBER	COOLING CAPACITY @35°C/35°C	VOLTAGE (TYPE)	WEIGHT LBS (KG)	HEIGHT	WIDTH	DEPTH
ACT-VCC-1000-DC	1000W	48V (DC)	46 (21)	31.22" 793mm	15.00" 381mm	6.89" 175mm
ACT-VCC-2000-AC	2000W	220-240V (AC)	71 (32)	29.33" 745mm	17.52" 445mm	7.87" 200mm
ACT-VCC-3000-DC	3000W	48V (DC)	104 (47)	45.30" 1150mm	19.09" 485mm	8.86" 225mm
ACT-VCC-5000-AC	5000W	220-240V (AC)	154 (70)	51.18" 1300mm	23.62" 600mm	11.81 300mm

*Insertion depth: all models extend 1.77" (45mm) into the enclosure

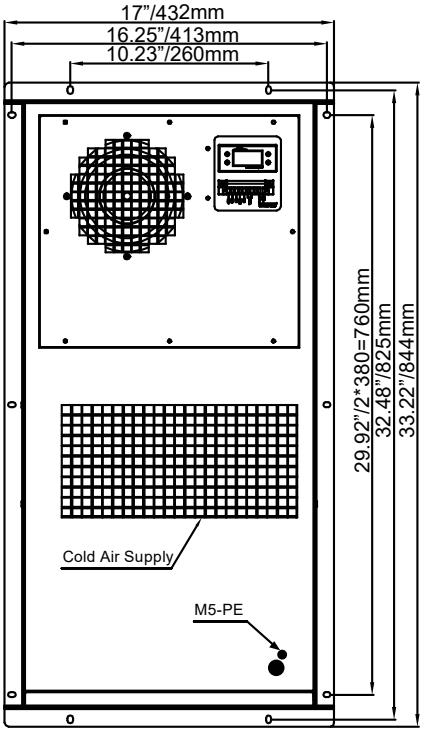
FEATURES AND OPTIONS	
ENVIRONMENT	Indoor or outdoor
ELECTRICAL CONFIGURATION	220-240VAC and -48VDC (all units arrive with bare lead wires)
SEAL RATING	IP55
VCC HOUSING	Powder coated aluminum: Dark Grey 6061
MOUNTING OPTIONS	Designed for door mounting, can mount to side or back walls if accessible
OPERATING RANGE	5°F to 131°F (-15°C to +55°C)
DISPLAY	LED
REFRIGERANT	R134a

*DC units are wired for Negative 48 Volt connection

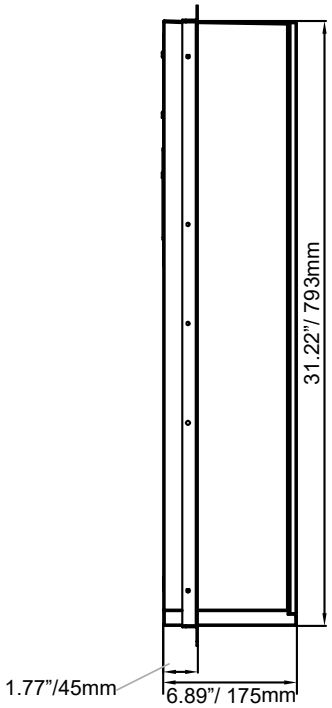
ACT-VCC DIMENSIONS & INSTALLATION

ACT-VCC-1000

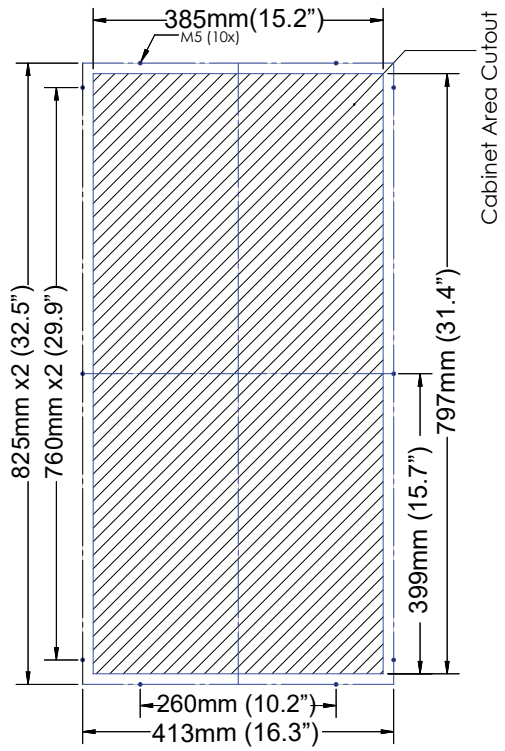
INNER SIDE



SIDE VIEW

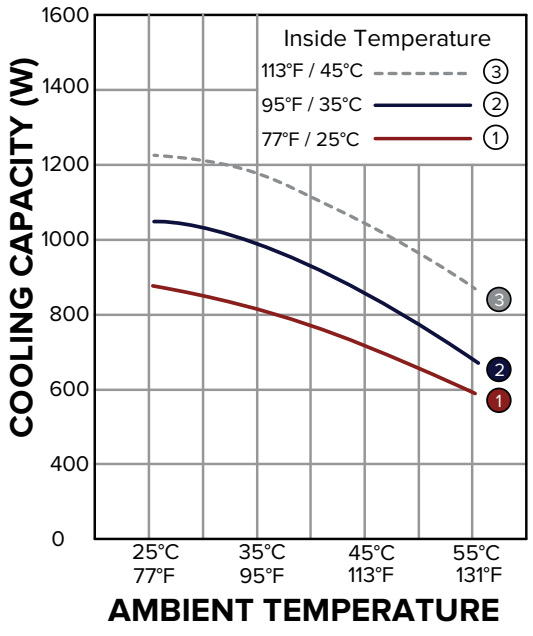


CUTOUT TEMPLATE



ACT-VCC-1000-DC
3,400 BTU/hr

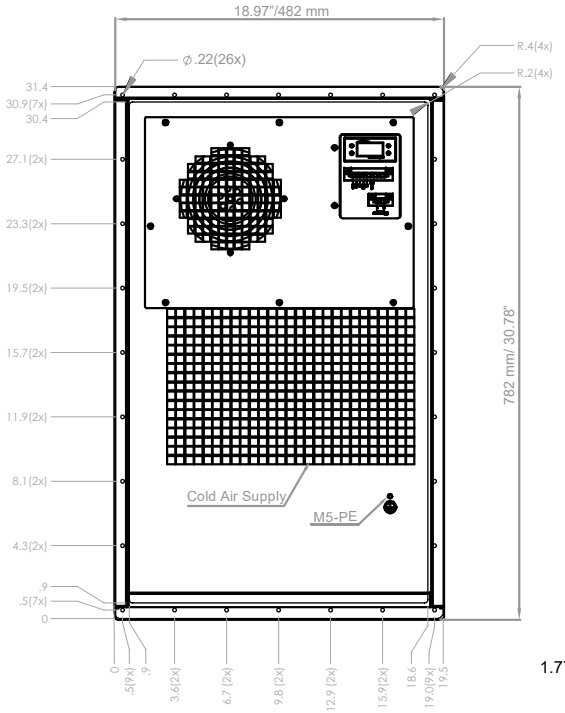
ACT-VCC-1000-DC



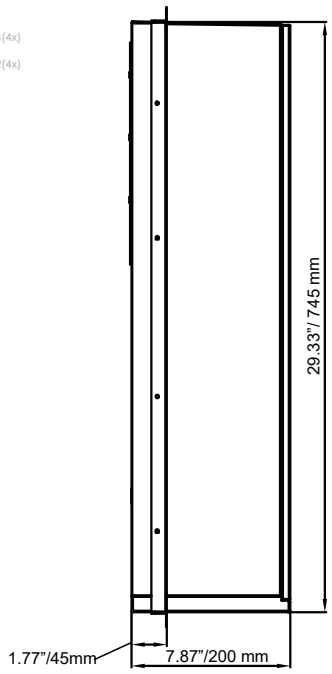
ACT-VCC DIMENSIONS & INSTALLATION

ACT-VCC-2000

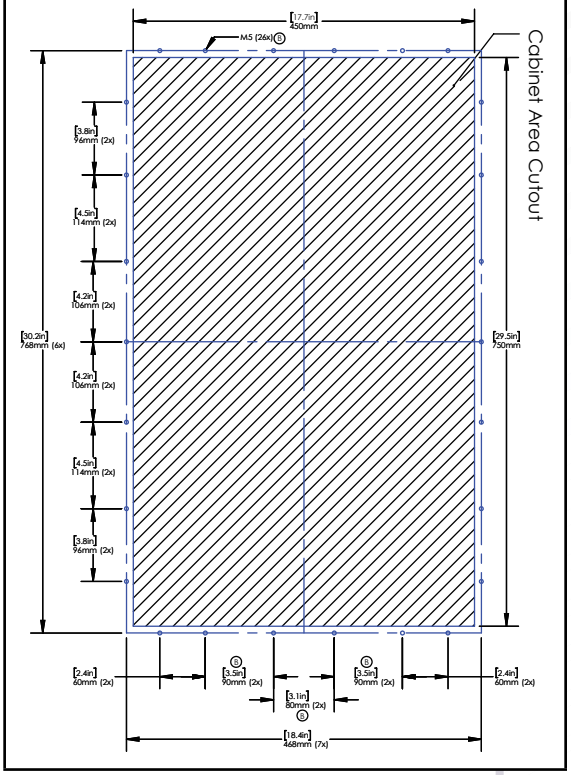
INNER SIDE



SIDE VIEW

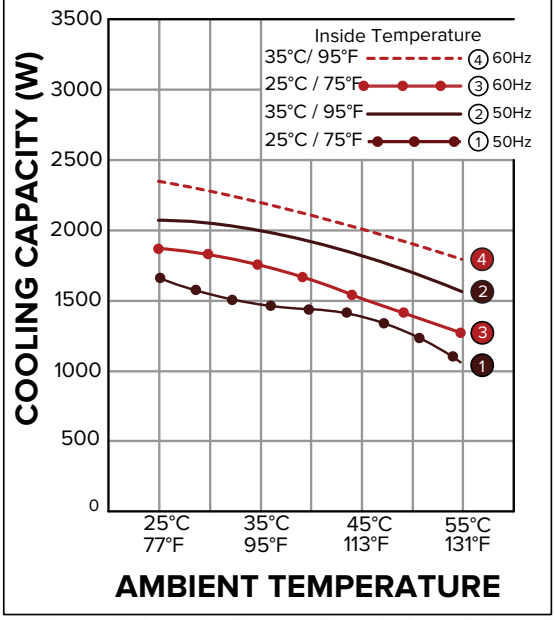


CUTOUT TEMPLATE



ACT-VCC-2000-AC
6,800 BTU/hr

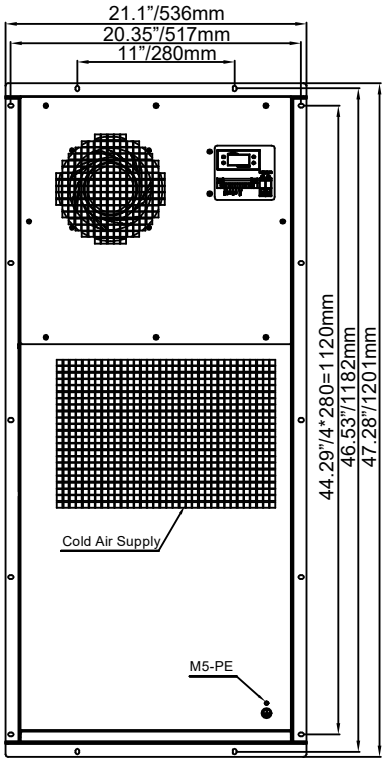
ACT-VCC-2000-AC



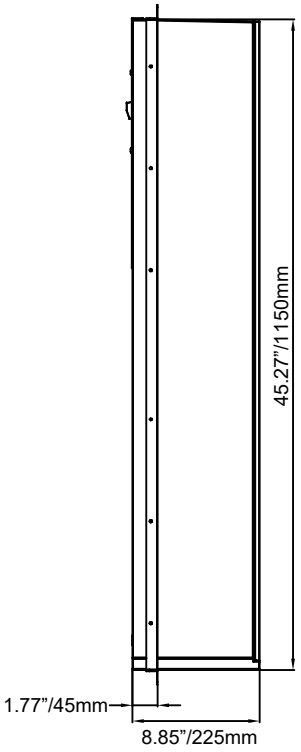
ACT-VCC DIMENSIONS & INSTALLATION

ACT-VCC-3000

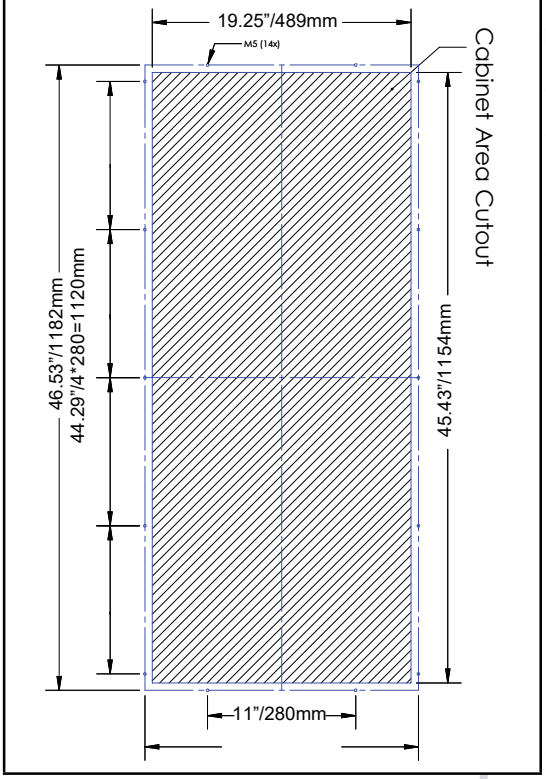
INNER SIDE



SIDE VIEW

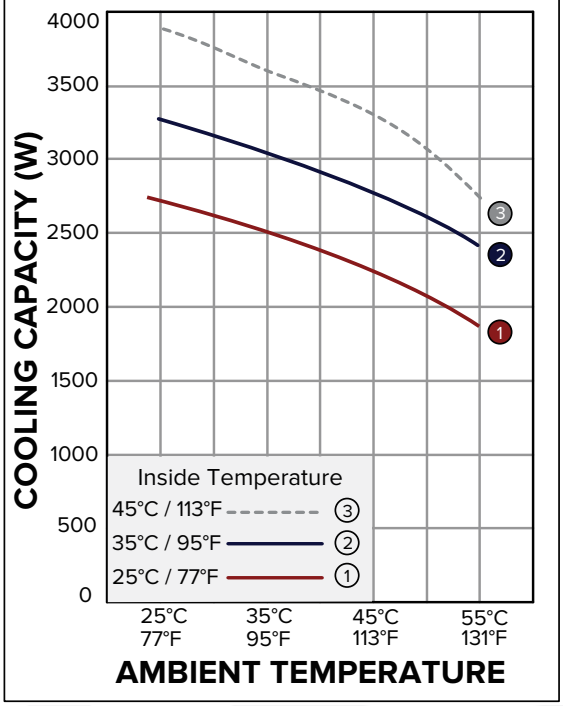


CUTOUT TEMPLATE



ACT-VCC-3000-DC
10,230 BTU/hr

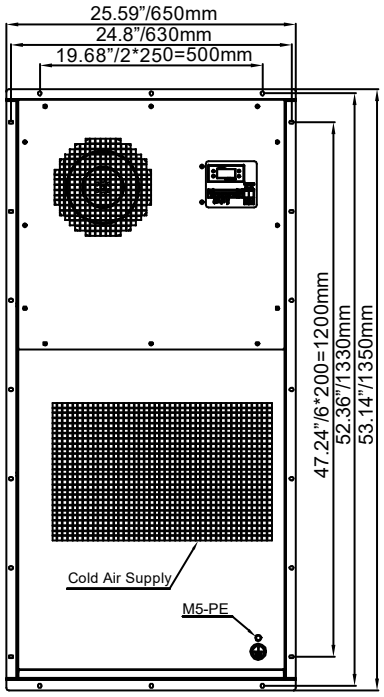
ACT-VCC-3000-DC



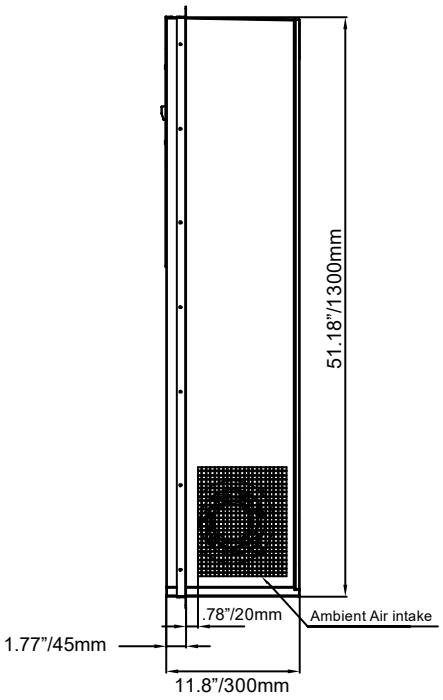
ACT-VCC DIMENSIONS & INSTALLATION

ACT-VCC-2000

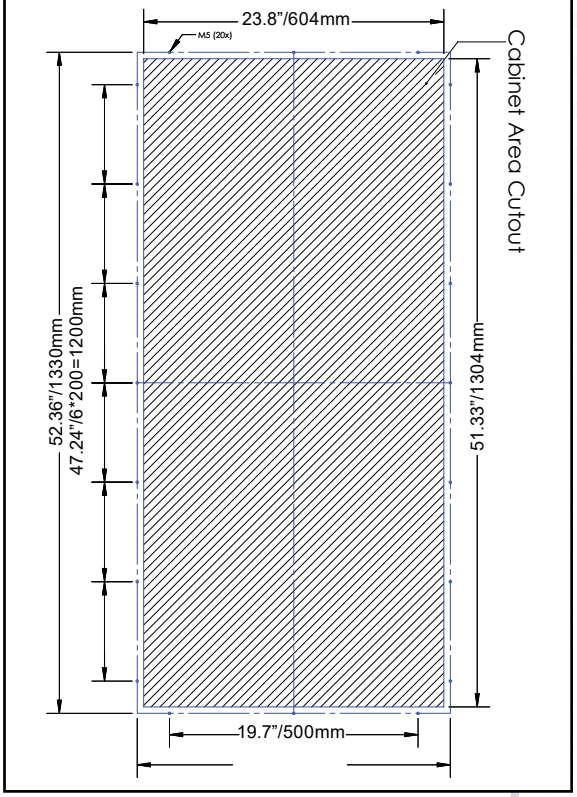
INNER SIDE



SIDE VIEW

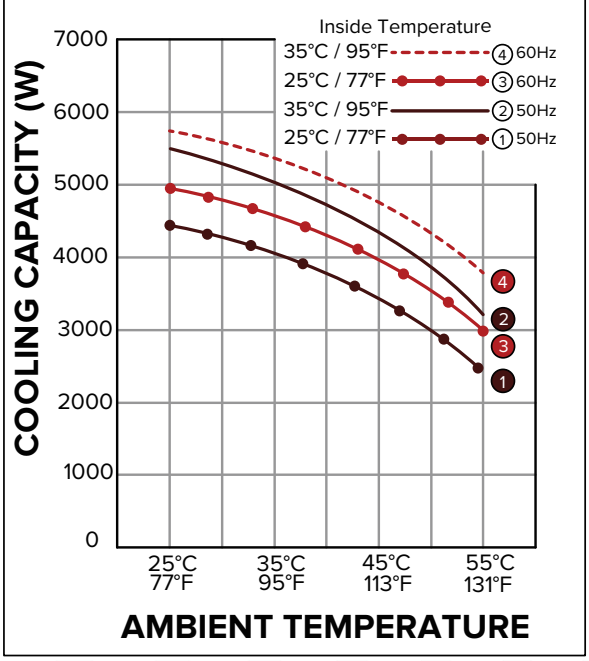


CUTOUT TEMPLATE



ACT-VCC-5000-AC
17,000 BTU/hr

ACT-VCC-5000-AC



ACT-VCC ADDITIONAL INFORMATION

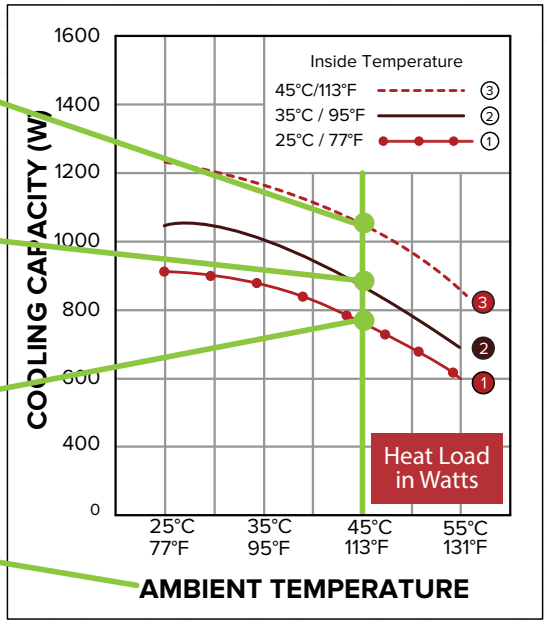
HOW TO READ THE PERFORMANCE CHART

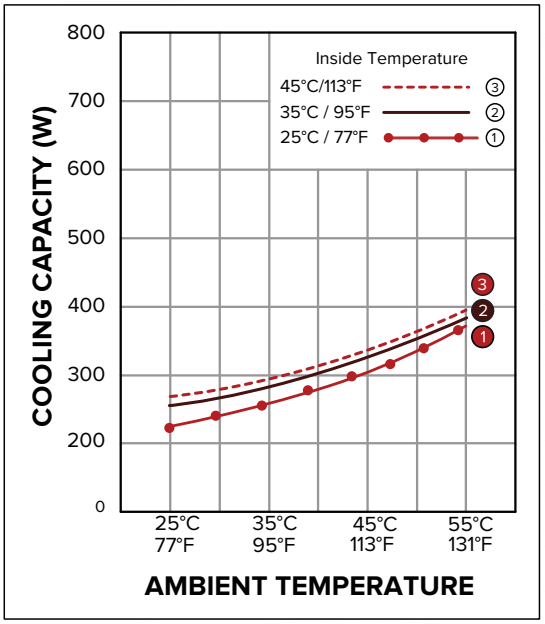
Maintaining Inside Cabinet Temperature @ 113°F with a heat load of 1,150W

Maintaining Inside Cabinet Temperature @ 95°F with a heat load of 950W

Maintaining Inside Cabinet Temperature @ 77°F with a heat load of 780W

Outside of Cabinet Ambient Temperature

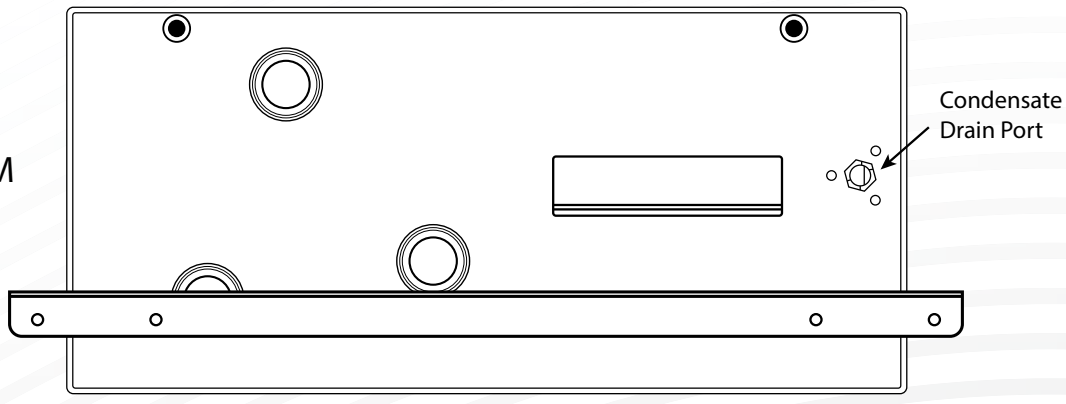




CONDENSATE CONSIDERATIONS

- During normal operation in a humid environment, the unit may produce condensate on the evaporator coil inside of the casing
- A condensate drain port is provided on the bottom of the unit
  - Condensate will naturally flow out of this port under normal operating conditions; if it is not permissible for certain applications for water to drain directly out of this port, a fitting is provided for connection of an appropriately sized drain tube to relocate condensate to an available drain
  - Most applications will produce less than 150mL/hr or 5oz/hr of condensate, tubes should be sized accordingly

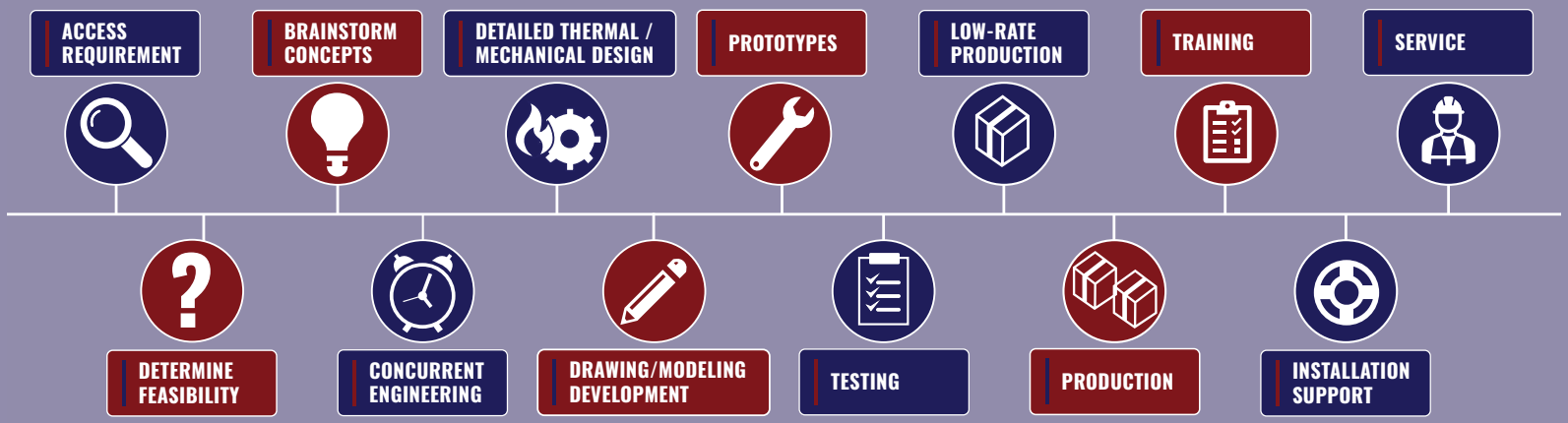
BOTTOM VIEW



COLLABORATION & PARTNERSHIP

Customer care is at the heart of our approach. We collaborate closely with our corporate partners, offering expert guidance and tailored solutions throughout every stage of product development. Our comprehensive support covers the entire product lifecycle, ensuring your success from initial concept to final production.

PARTNERING WITH YOU AT ANY POINT IN YOUR PROJECT



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