



ADVANCED COOLING TECHNOLOGIES

The Thermal Management Experts | www.1-ACT.com

SEALED ENCLOSURE COOLING



ABOVE-AMBIENT AND SUB-AMBIENT COOLING

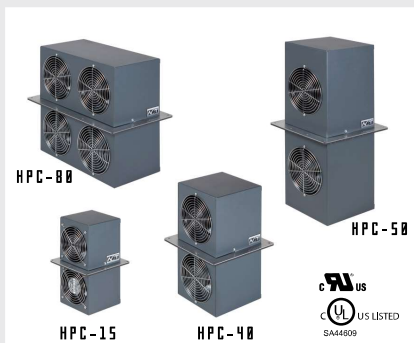


TABLE OF CONTENTS

HEAT SINK COOLER (ACT-HSC) HEAT EXCHANGER

PAGES 3 - 5

Above-Ambient Heat Exchanger
Economic
Excellent Price vs. Performance Ratio



HEAT PIPE COOLER (ACT-HPC) HEAT EXCHANGER

PAGES 6 - 8

Above-Ambient Heat Exchanger
Compact



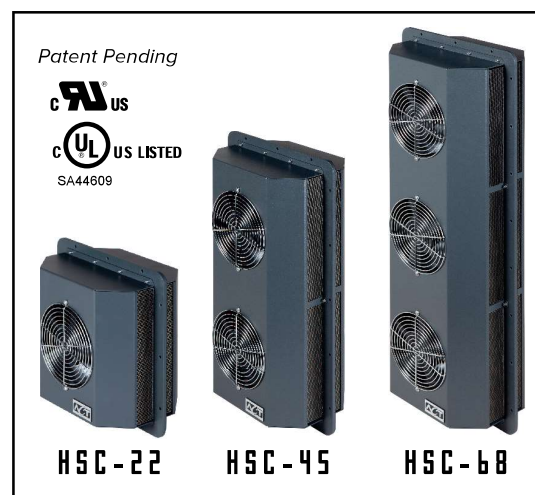
THERMOELECTRIC COOLER (ACT-TEC) AIR CONDITIONER/HEATER

PAGES 9 - 11

Sub-Ambient Cooling
Solid State Air Conditioner
Compact

ACT-HSC HEAT SINK COOLER SERIES

- Passive sealed enclosure coolers consisting of two high performance, aluminum finned heat sinks bonded to the opposite sides of a common mounting plate
- High performance/cost ratios due to the innovative use of advanced heat transfer and manufacturing technologies
- “Thin profile,” i.e., only 3.70” intrusion into the enclosure
- Minimum number of penetrations by cover fasteners, mounting fasteners and external fan wires
- Dual axial ball bearing fans for years of maintenance free operation
- Easy to install
- 1-Year Warranty (see ACT's Terms and Conditions)



Part Number	Thermal Conductance Watts/°C	Thermal Capacity Watts @ 20°C ΔT	Weight (lbs.)	H (in")	W (in")	D* (in")
ACT-HSC-22	22.0	440	17.0	12.00	12.00	7.88
ACT-HSC-45	45.0	900	35.0	22.75	12.00	7.88
ACT-HSC-68	68.0	1,360	51.0	31.38	12.00	7.88

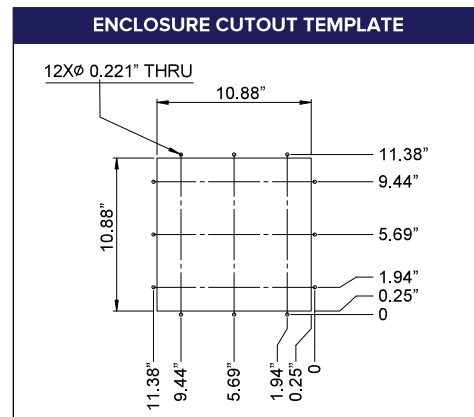
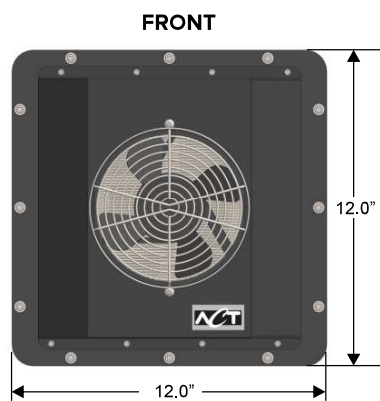
*Extends 3.70" into the cabinet

ACT-HSC SERIES FEATURES AND OPTIONS

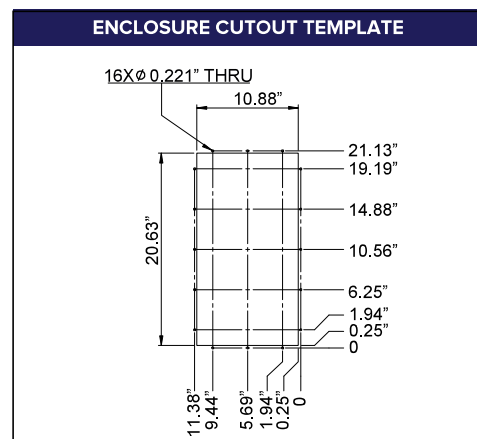
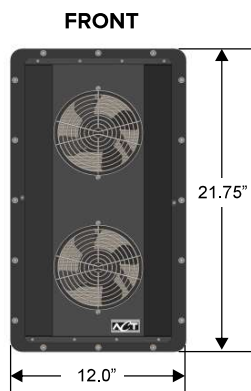
Environment	Indoor or Outdoor Use
Electrical Configuration	115VAC, 230VAC, 12VDC, 24VDC and 48VDC • AC units arrive with 6ft. long 3-pronged plug • DC units arrive with bare 6 ft. long lead wires
UL Listing & UL Recognition	The 115VAC units received a UL listing mark. All other versions (230VAC, 12VDC, 24VDC, and 48VDC) are UL Rated/UL Recognized.
NEMA Options	12, 3R, 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
HSC Housing	Powder coated aluminum, Optional: 316 stainless steel
Mounting Options	Top, side, front, or back
Operating Temperature	Range 14°F (-10°C) to 158°F (+70°C)
Expected Fan Life	>100,000 Hours at 77°F (+25°C)

ACT-HSC DIMENSIONS AND INSTALLATION

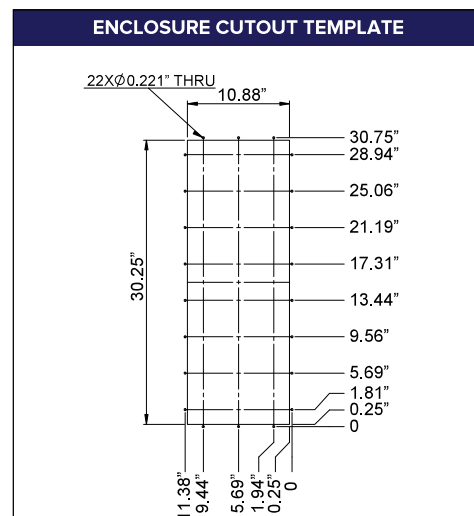
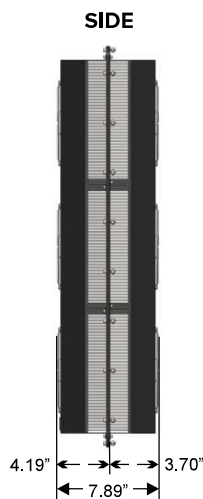
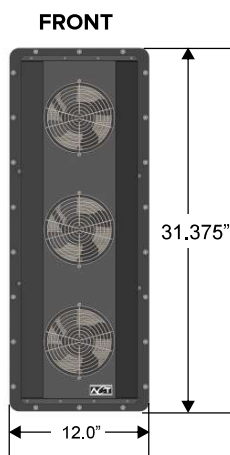
ACT-HSC-22



ACT-HSC-45



ACT-HSC-68

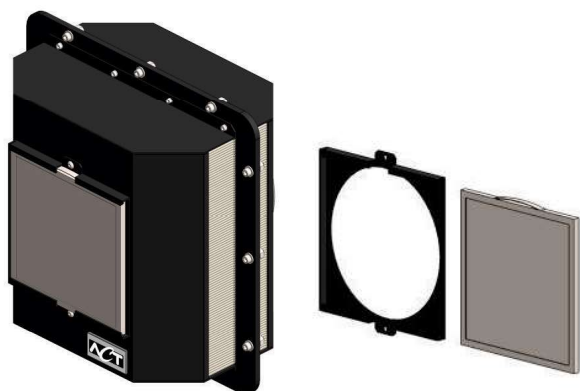


ACT-HSC HEAT SINK COOLER SERIES

MAXIMUM CURRENT DRAW BY MODEL

	Model	ACT-HSC-22	ACT-HSC-45	ACT-HSC-68
NEMA Rating	Voltage	Maximum Operation Current (Amps)	Maximum Operation Current (Amps)	Maximum Operation Current (Amps)
(4, 4X, 3R)	12VDC	3.60	7.20	10.80
12	12VDC	3.90	7.80	11.70
(4, 4X, 3R)	24VDC	1.64	3.28	4.92
12	24VDC	1.66	3.32	4.98
(4, 4X, 3R)	48VDC	0.88	1.76	2.64
12	48VDC	0.92	1.84	2.76
(4, 4X, 3R, 12)	115VAC	0.72	1.44	2.16
(4, 4X, 3R, 12)	230VAC	0.38	0.76	1.14

ACT-HSC HEAT SINK COOLER OPTIONS



Filter Kit Options for Added Reliability



Full Range of HSC Replacement Fans



NEMA 3R Rain Hood Option

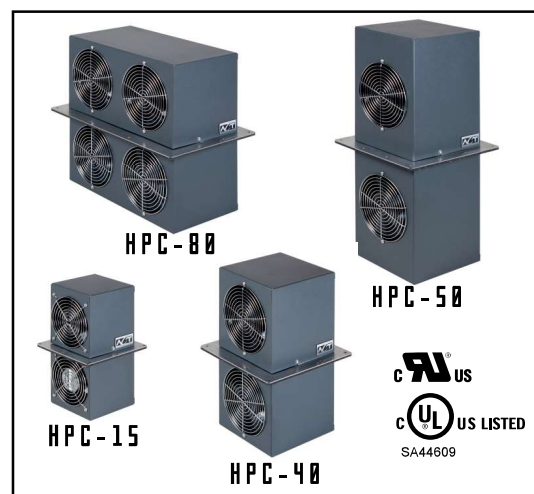


NEMA 3R Rain Hood Version

Available for all ACT-HSC versions

ACT-HPC HEAT PIPE COOLER SERIES

- Passive sealed enclosure coolers consisting of a heat pipe heat exchanger core with advanced fin features for enhanced heat transfer performance
- Optimized for high performance/volume ratios. Best performance when installed vertically through the top wall (roof) of the enclosure
- Performance may decrease slightly when installed horizontally through a side wall of the enclosure (Contact ACT for details)
- Smaller opening footprint on the enclosure wall than the HSC-series
- Dual axial ball bearing fans for years of maintenance free operation
- Easy to install
- 1-Year Warranty (See ACT's Terms and Conditions)



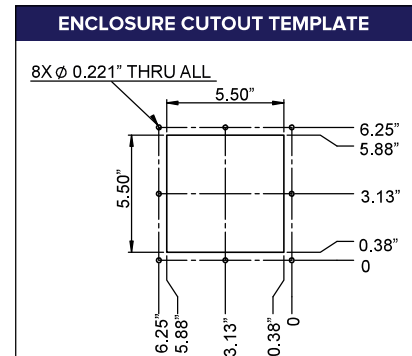
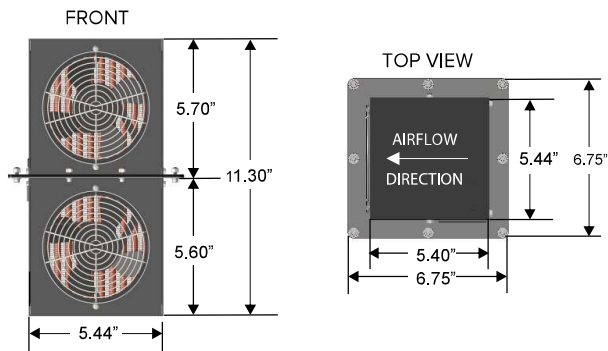
Part Number	Thermal Conductance Watts/°C	Thermal Capacity Watts @ 20°C ΔT	Weight (lbs.)	H (in")	W (in")	D (in")	Insertion Depth (in")	Mounting Plate (in")
ACT-HPC-15	15.0	300	7.0	11.30	5.145	5.0	5.60	6.75 x 6.75
ACT-HPC-40	40.0	800	17.0	15.00	7.645	7.5	7.40	10.0 x 10.0
ACT-HPC-50	50.0	1,000	27.0	22.00	7.650	7.5	10.90	10.0 x 10.0
ACT-HPC-80	80.0	1,600	37.0	15.00	15.150	7.5	7.40	10.0 x 17.5

ACT-HPC SERIES FEATURES AND OPTIONS

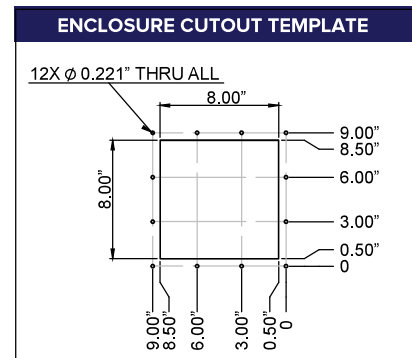
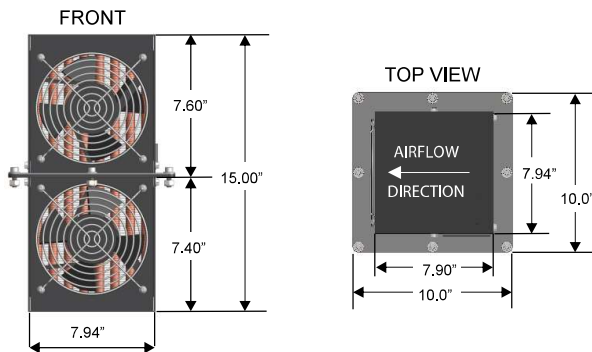
Environment	Indoor or Outdoor Use
Electrical Configuration	115VAC, 230VAC, 12VDC, 24VDC and 48VDC • AC units arrive with 6ft. long 3-pronged plug • DC units arrive with bare 6 ft. long lead wires
UL Listing & UL Recognition	The 115VAC units received a UL listing mark All other versions (230VAC, 12VDC, 24VDC, and 48VDC) are UL Rated/UL Recognized.
NEMA Options	12, 3R, 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
HPC Housing	Powder coated aluminum, Optional: 316 stainless steel
Mounting Options	Top (best performance); side, front or back (derated performance)
Operating Temperature	Range 14°F (-10°C) to 150°F (+70°C)
Expected Fan Life	>100,000 Hours at 77°F (+25°C)

ACT-HPC DIMENSIONS AND INSTALLATION

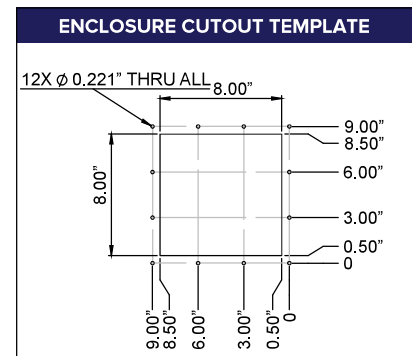
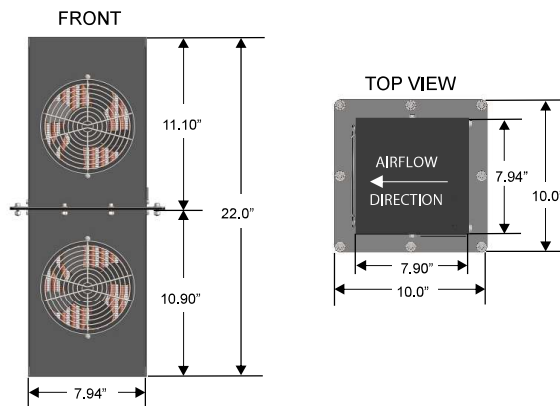
ACT-HPC-15



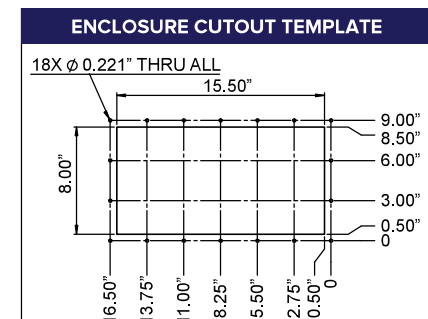
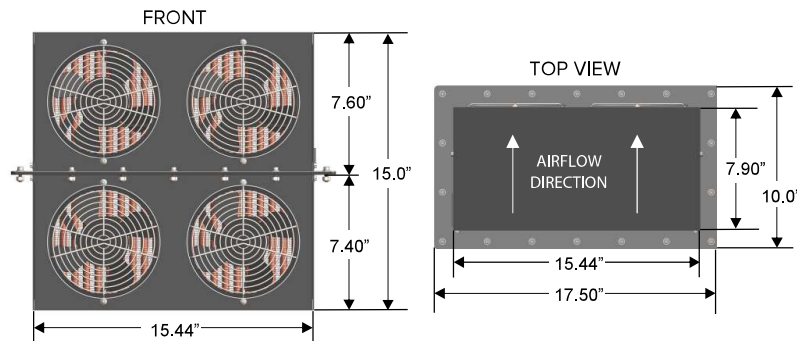
ACT-HPC-40



ACT-HPC-50



ACT-HPC-80

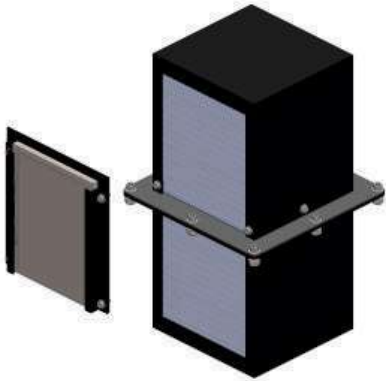


ACT-HPC HEAT PIPE COOLER SERIES

MAXIMUM CURRENT DRAW BY MODEL

	Model	ACT-HPC-15	ACT-HPC-40	ACT-HPC-50	ACT-HPC-80
NEMA Rating	Voltage	Maximum Operation Current (Amps)	Maximum Operation Current (Amps)	Maximum Operation Current (Amps)	Maximum Operation Current (Amps)
(4, 4X, 3R)	12VDC	1.80	3.60	3.60	7.20
12	12VDC	1.80	3.90	3.90	7.80
(4, 4X, 3R)	24VDC	0.92	1.64	1.64	3.28
12	24VDC	0.92	1.66	1.66	3.32
(4, 4X, 3R)	48VDC	0.52	0.88	0.88	1.76
12	48VDC	0.52	0.92	0.92	1.84
(4, 4X, 3R, 12)	115VAC	0.60	0.72	0.72	1.44
(4, 4X, 3R, 12)	230VAC	0.28	0.38	0.38	0.76

ACT-HPC HEAT PIPE COOLER OPTIONS



Filter Kit Options for Added Reliability



Full Range of HPC Replacement Fans



NEMA 3R Rain Hoods

Available for all ACT-HPC versions



Wedge to Provide Tilt

ACT-TEC THERMOELECTRIC COOLER SERIES

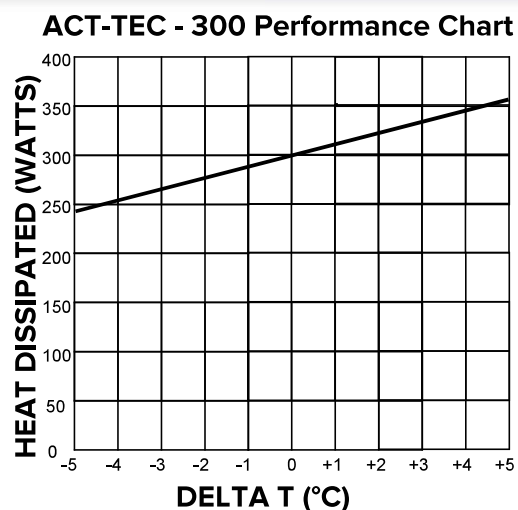
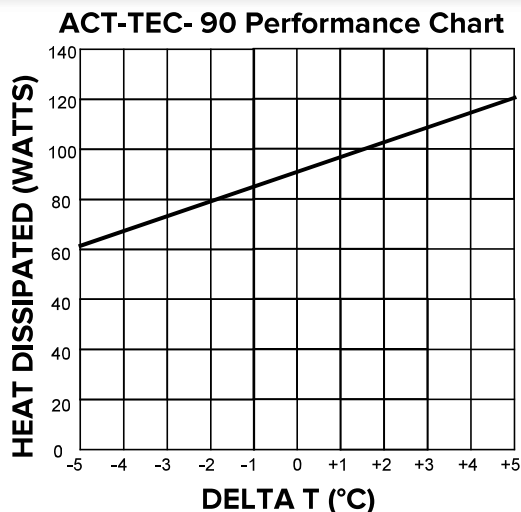
- Solid state Peltier cooling, no compressors or refrigerants
- Powder coated aluminum construction. 316 Stainless Steel NEMA 4x option
- Precise temperature control with built-in adjustable thermostat
- Low vibration, long life dual ball bearing fans
- Operating voltages of 24VDC, 115VAC, and 230VAC
- Optional condensate drip pan
- Optional heating mode
- 1-Year Warranty (see ACT's Terms and Conditions)



The ACT-TEC Thermoelectric Cooler series are compact solid state air conditioners. They cool the internal enclosure space with highly reliable Peltier cooling. The Peltier cooling cycle involves no moving parts, compressors, CFC refrigerants or circulating liquid. They feature a very long life as they are not vulnerable to refrigeration leaks. They exceeded the rugged industrial requirements of operating two four hours per day, seven days per week. In addition,

ACT has chosen the industry's most durable fans with over 100,000 hours of continuous operation. ACT-TEC units can be used in wash-down spray-down applications or mounted directly to outdoor cabinets to operate flawlessly year around. Standard stock units are available in under a week. Dual mode operation of cooling and heating are available, as well as corrosion resistant NEMA 4X, 316 stainless steel versions.

Part Number	Cooling Capacity Watts/BTU's At 0°C ΔT	Operating Voltage Ranges	NEMA Ratings	W (in")	D (in")	Insertion Depth (in")	Mounting Plate (in")
ACT-TEC-90	90/300	24VDC, 115VAC, 230VAC	12, 3R, 4, 4X	4.88	7.0	3.10	13.0 x 6.0
ACT-TEC-300	300/1,000	24VDC, 115VAC, 230VAC	12, 3R, 4, 4X	12.50	8.0	3.25	20.0 x 13.75



Note: Delta T is the temperature difference between the inside enclosure temperature to the outside enclosure temperature

ACT-TEC THERMOELECTRIC COOLER SERIES

ACT-TEC SERIES FEATURES AND OPTIONS

Operating Voltages	24VDC, 115VAC and 230VAC @ 50/60Hz
Operating Temperature Range	-10°C to 50°C, higher/ranges available on request
NEMA Options	NEMA 12, 3R, 4 and 4X applications
Fans	UL Listed 4.0" and 6.0" ball bearing type axial fans
Mounting Plate	Aluminum 6061 powder coated
TEC Housing	Powder coated aluminum 6061, Optional: 316 stainless steel on 4X versions
Mounting Options	Side mounted standard, flush mounting optional
Weight	ACT-TEC-90 = 13 lbs. and ACT-TEC-300 = 50 lbs.

Note: ACT-TEC standard units are configured for cooling mode and are offered in three operating voltages of 24VDC, 115VAC, or 230VAC. An additional heating mode and other operating temperatures or voltages are available upon request.

ENCLOSURE COOLING ONLINE SELECTION TOOL

1-ACT.COM/ENCLOSURE-COOLING/SELECTION-TOOLS

This program will assist the Enclosure Cooler design engineer in the proper selection of an enclosure cooler. The tool will select the best Enclosure Cooler products based on user inputs, allowing for easy online purchase.

SELECT UNIT BY
 Model:
 Power: Watts
 Air Flow: CFM
 Air Pressure: in. Hg

SELECT COOLING METHOD
 Method:
 Air Flow: CFM
 Air Pressure: in. Hg

ENCLOSURE CONDITIONS
 Maximum enclosure temperature: °C
 Maximum ambient air temperature: °C
 Maximum air flow: CFM
 Maximum air pressure: in. Hg

ENVIRONMENTAL CONDITIONS
 Humidity: %
 Altitude: ft
 Vibration: g
 Shock: g

Calculate Selection

Model	Power (Watts)	Air Flow (CFM)	Air Pressure (in. Hg)	Unit Price
ACT-HSC-22 Heat Sink Cooler (22Watts/°C)	22.0	100.0	1.007	\$591.00
ACT-HSC-40 Heat Sink Cooler (40Watts/°C)	40.0	100.0	1.007	\$825.00

ENCLOSURE COOLING ONLINE ORDERING

1-ACT.COM/ENCLOSURE-COOLING/ORDER-ONLINE

ACT offers online ordering for its line of Enclosure Cooling product. Choose your product and preferred options and conveniently pay online.

ACT-HSC-22 HEAT SINK COOLER (22Watts/°C)
 \$495.00 - \$680.00

NEMA Selection:

Voltage Selection:

Quantity:

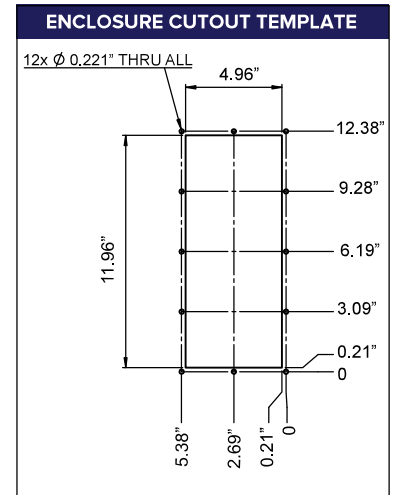
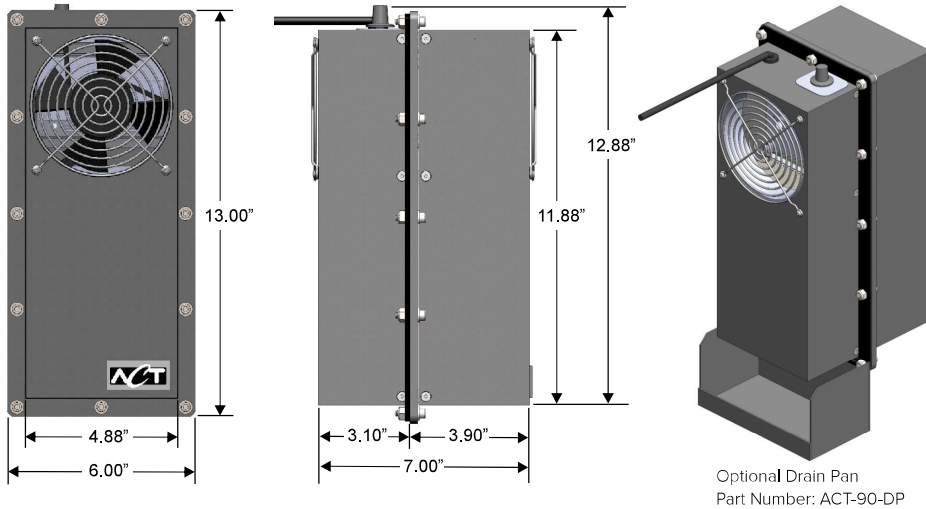
\$591.00

ADD TO CART

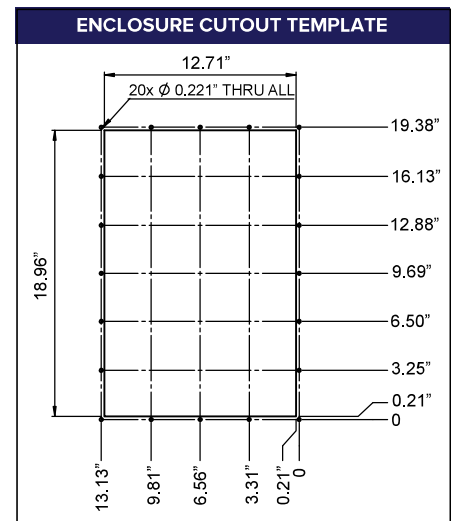
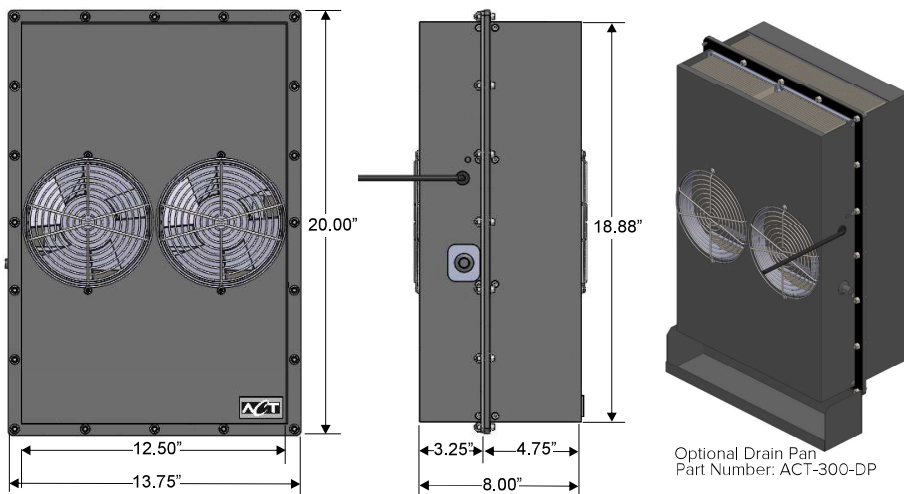
SKU: ACT-HSC-22-48-4
 Category: ACT-HSC Enclosure Coolers - Heat Sink Coolers

ACT-TEC DIMENSIONS AND INSTALLATION

ACT-TEC-90



ACT-TEC-300





ADVANCED COOLING TECHNOLOGIES

1046 New Holland Avenue
Lancaster, PA 17601, USA

Phone: 717.295.6061
Email: Solutions@1-ACT.com

ISO 9001 & AS9100 Certified
ITAR Registered

www.1-ACT.com

MARKETS

Avionics/Aircraft
Electronics Cooling
Enclosure Cooling
Energy
HVAC Energy Recovery
Materials Process
Medical Industry
Military
Photonics
Power Electronics
Spacecraft Thermal Control
Temperature Calibration & Control
Transportation

PRODUCTS

Heat Pipes for Thermal Management
HVAC Heat Pipe Heat Exchangers
ICE-Lok™ (Isothermal Card Edge wedgelock)
Isothermal Furnace Liners (IFLs)
Liquid Cold Plates
Loop Thermosyphon
Pumped Two-Phase Cooling (P2P)
Phase Change Material (PCM) Heat Sinks
Spacecraft Thermal Control
Sealed Enclosure Coolers

RESEARCH & DEVELOPMENT

THERMAL TECHNICAL SERVICES