



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Heat Exchangers

LIQUID TO AIR

ATS' 49 different options of tube to fin, liquid-to-air heat exchangers are made with the industry's highest density fins to maximize the heat transfer from the liquid to air. The heat exchangers fins and tubes are made of copper, allowing it to be suitable for a variety of fluids.

GENERAL FEATURES

- » Length: 5.8 to 21.9"
- » Width: 5.8 to 14"
- » Height: 1.8 to 2.6"
- » Tube diameter: 0.375 and 0.5"
- » Copper and tubes
- » Copper fins
- » High-efficiency and high density fin design
- » Silver-solder brazed joints
- » Internally cleaned and corrosion protected
- » Externally coated for corrosion protection
- » Can be customized for different fans
- » 100% pressure tested

HEAT EXCHANGER PRODUCTS



- » Heat transfer capacity up to 22W per $\Delta T = 1^{\circ}\text{C}$
- » 5.8 x 5.8 x 1.8" core size
- » ΔT = inlet liquid temperature - inlet air temperature
- » Weight: 1077g (2.4 lbs), Weight w/fan: 1411g (3.1 lbs)



APPLICATIONS

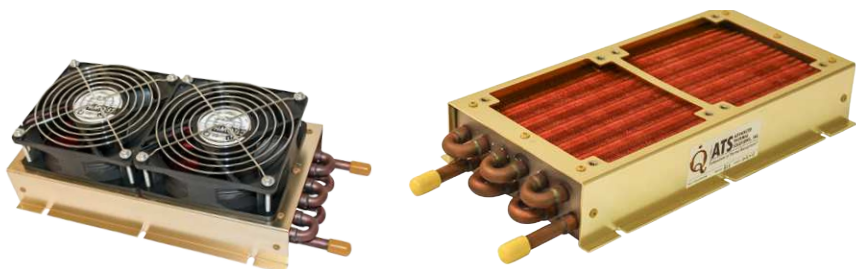
- » Automotive
- » Aerospace
- » Medical
- » Laser cooling
- » Electronics Cooling
- » Compressor Cooling
- » Semiconductor Processing
- » HVAC

For further information, please contact
Advanced Thermal Solutions, Inc. at
1-781-769-2800 or **www.qats.com**

ATS-HE20 SERIES		
MPN	FAN TYPE	# OF FANS
ATS-HE20-C1-R0	NO FAN	0
ATS-HE20-C2-R0	12V	1
ATS-HE20-C3-R0	12V PWM	1
ATS-HE20-C4-R0	24V	1
ATS-HE20-C5-R0	24V PWM	1
ATS-HE20-C6-R0	48V	1
ATS-HE20-C7-R0	48V PWM	1

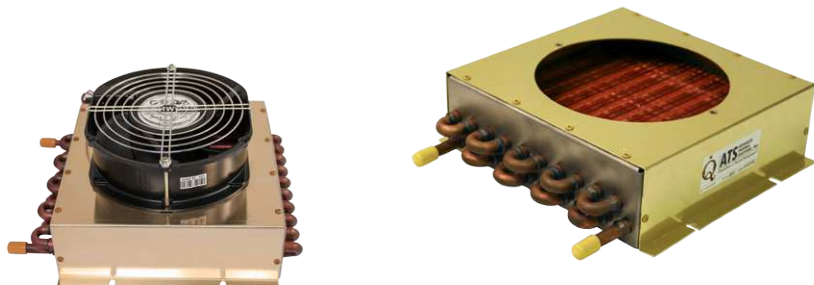


Heat Exchangers Product Line (cont'd)



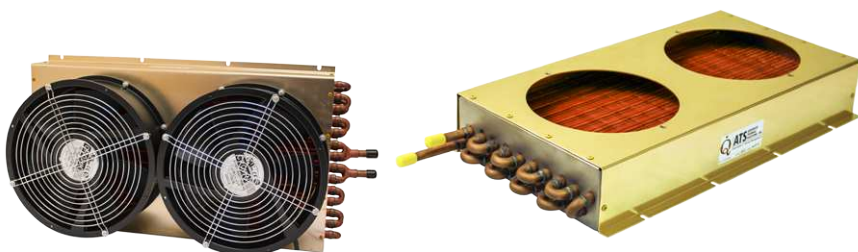
- » Heat transfer capacity up to 46W per $\Delta T = 1^\circ C$
- » 10.5 x 5.8 x 1.8" core size
- » ΔT = inlet liquid temperature - inlet air temperature
- » Weight: 1759g (3.9 lbs)
- » Weight w/fan: 2405g (5.3 lbs)

ATS-HE21 SERIES		
MPN	FAN TYPE	# OF FANS
ATS-HE21-C1-R0	NO FAN	0
ATS-HE21-C2-R0	12V	2
ATS-HE21-C3-R0	12V PWM	2
ATS-HE21-C4-R0	24V	2
ATS-HE21-C5-R0	24V PWM	2
ATS-HE21-C6-R0	48V	2
ATS-HE21-C7-R0	48V PWM	2



- » Heat transfer capacity up to 64W per $\Delta T = 1^\circ C$
- » 9.5 x 9.0 x 2.5" core size
- » ΔT = inlet liquid temperature - inlet air temperature
- » Weight: 2211g (4.9 lbs)
- » Weight w/fan: 2854g (6.23 lbs)

ATS-HE22 SERIES		
MPN	FAN TYPE	# OF FANS
ATS-HE22-C1-R0	NO FAN	0
ATS-HE22-C2-R0	12V	1
ATS-HE22-C3-R0	12V PWM	1
ATS-HE22-C4-R0	24V	1
ATS-HE22-C5-R0	24V PWM	1
ATS-HE22-C6-R0	48V	1
ATS-HE22-C7-R0	48V PWM	1

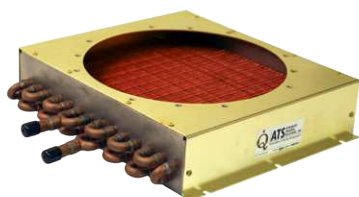
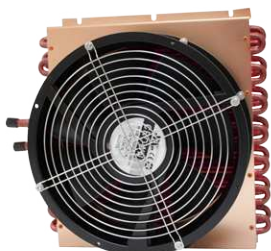


- » Heat transfer capacity up to 117W per $\Delta T = 1^\circ C$
- » 17.5 x 9.0 x 2.5" core size
- » ΔT = inlet liquid temperature - inlet air temperature
- » Weight: 7000g (15.4 lbs)
- » Weight w/fan: 7600g (16.8 lbs)

ATS-HE23 SERIES		
MPN	FAN TYPE	# OF FANS
ATS-HE23-C1-R0	NO FAN	0
ATS-HE23-C2-R0	12V	2
ATS-HE23-C3-R0	12V PWM	2
ATS-HE23-C4-R0	24V	2
ATS-HE23-C5-R0	24V PWM	2
ATS-HE23-C6-R0	48V	2
ATS-HE23-C7-R0	48V PWM	2



Heat Exchangers Product Line (cont'd)



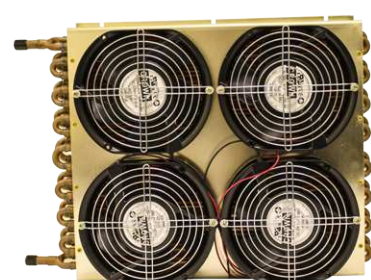
- » Heat transfer capacity up to 97W per $\Delta T = 1^{\circ}\text{C}$
- » 11.5 x 12.0 x 2.1" core size
- » ΔT = inlet liquid temperature - inlet air temperature
- » Weight: 4018g (8.9 lbs)
- » Weight w/fan: 5791g (12.8 lbs)

ATS-HE24 SERIES		
MPN	FAN TYPE	# OF FANS
ATS-HE24-C1-R0	NO FAN	0
ATS-HE24-C2-R0	12V	1
ATS-HE24-C3-R0	12V PWM	1
ATS-HE24-C4-R0	24V	1
ATS-HE24-C5-R0	24V PWM	1
ATS-HE24-C6-R0	48V	1
ATS-HE24-C7-R0	48V PWM	1



- » Heat transfer capacity up to 177W per $\Delta T = 1^{\circ}\text{C}$
- » 21.58 x 12.0 x 2.1" core size
- » ΔT = inlet liquid temperature - inlet air temperature
- » Weight: 7422g (16.4 lbs)
- » Weight w/fan: 11012g (24.23 lbs)

ATS-HE25 SERIES		
MPN	FAN TYPE	# OF FANS
ATS-HE25-C1-R0	NO FAN	0
ATS-HE25-C2-R0	12V	2
ATS-HE25-C3-R0	12V PWM	2
ATS-HE25-C4-R0	24V	2
ATS-HE25-C5-R0	24V PWM	2
ATS-HE25-C6-R0	48V	2
ATS-HE25-C7-R0	48V PWM	2



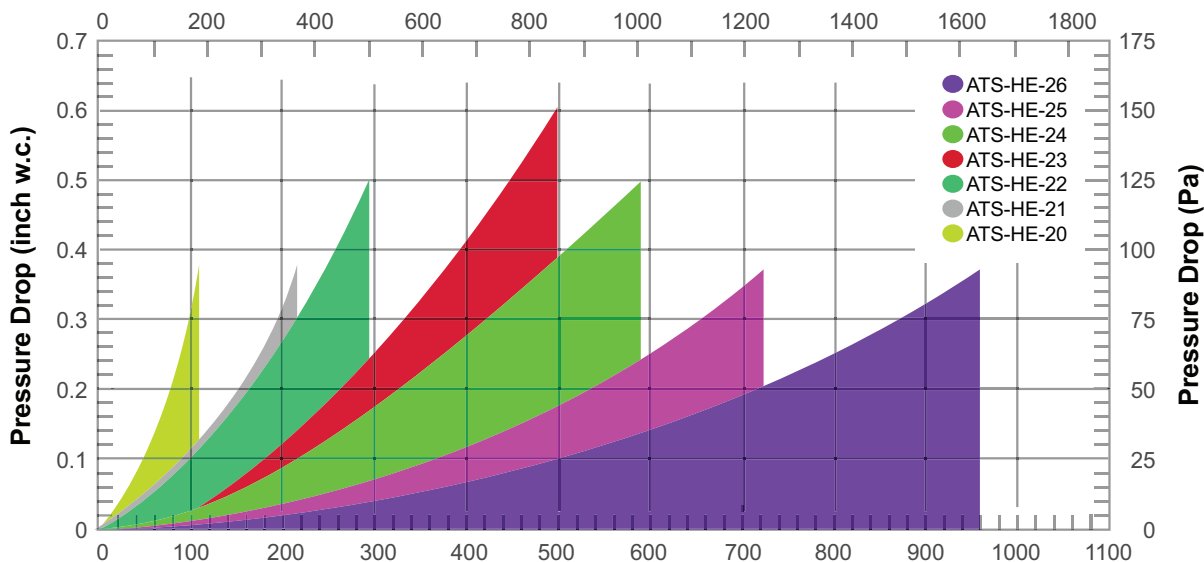
- » Heat transfer capacity up to 250W per $\Delta T = 1^{\circ}\text{C}$
- » 17.52 x 14.0 x 2.6" core size
- » ΔT = inlet liquid temperature - inlet air temperature
- » Weight: 6750g (14.9 lbs)
- » Weight w/fan: 9358g (20.6 lbs)

ATS-HE26 SERIES		
MPN	FAN TYPE	# OF FANS
ATS-HE26-C1-R0	NO FAN	0
ATS-HE26-C2-R0	12V	4
ATS-HE26-C3-R0	12V PWM	4
ATS-HE26-C4-R0	24V	4
ATS-HE26-C5-R0	24V PWM	4
ATS-HE26-C6-R0	48V	4
ATS-HE26-C7-R0	48V PWM	4

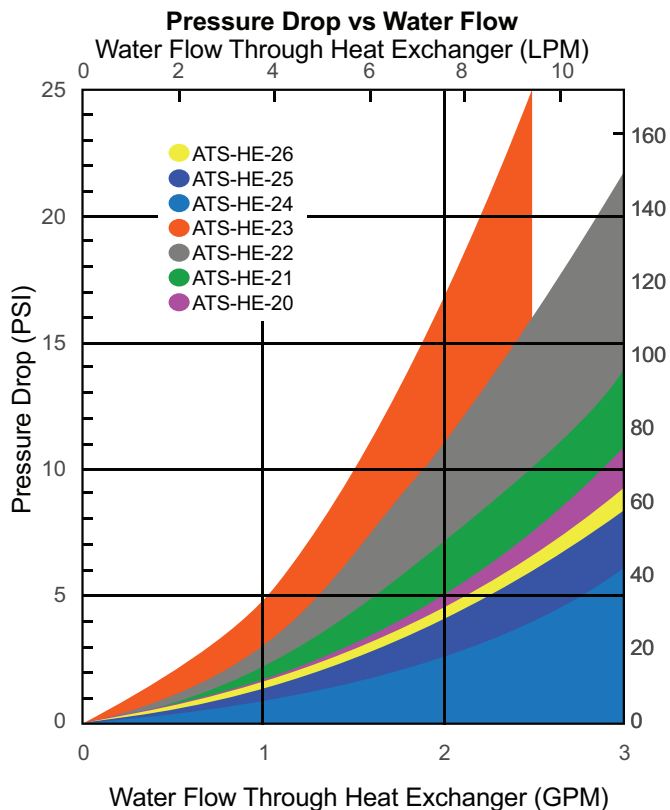


Heat Exchangers (cont'd)

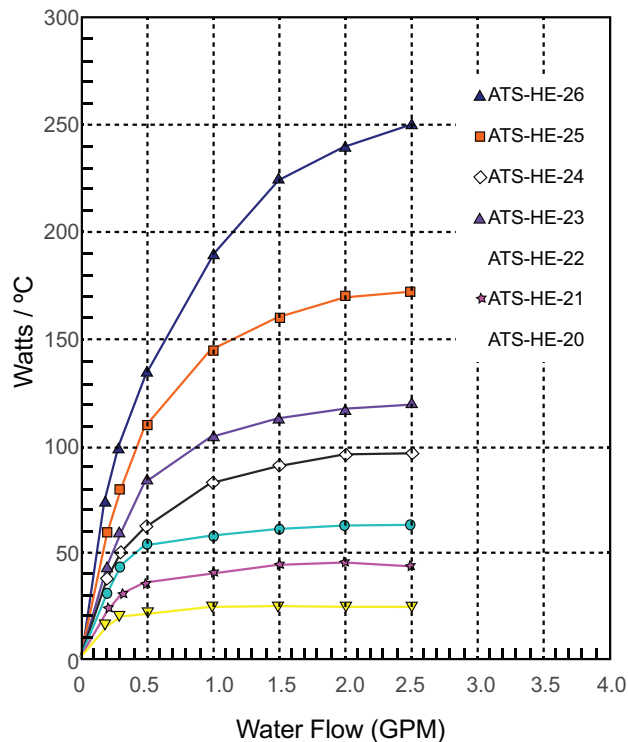
Air Flow Through Heat Exchanger (CMH)



Air Flow Through Heat Exchanger (CFM)



ATS Heat Exchanger Family Performance
Water & Air (Standard Fans)



Note: Performance curves are per $\Delta T = 1^\circ C$ | $\Delta T = \text{inlet liquid temperature} - \text{inlet air temperature}$