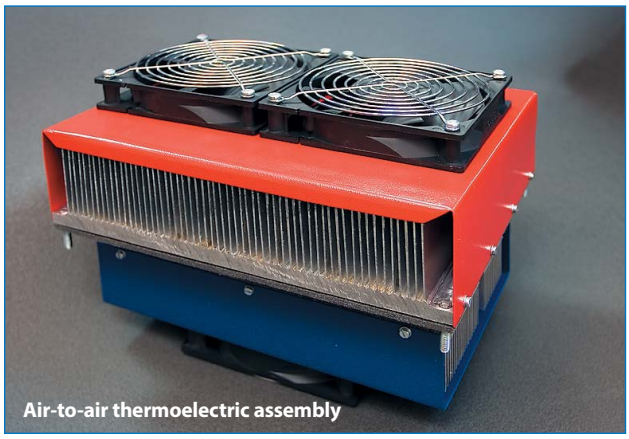
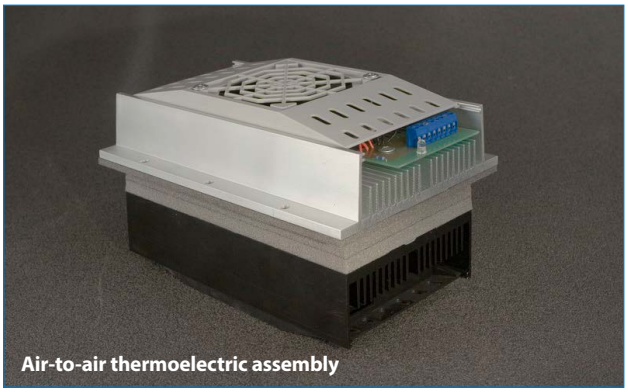
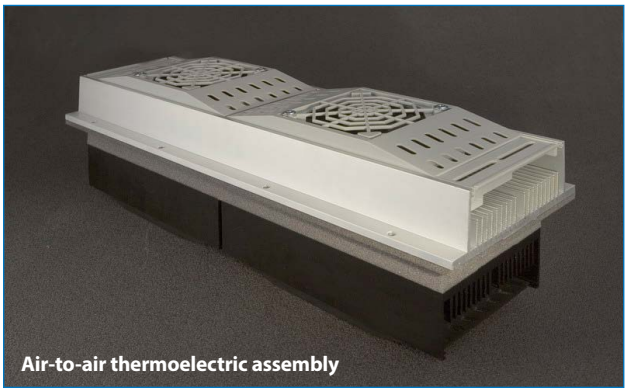
Thermoelectric cooling assemblies

Thermoelectric assemblies (TEAs) are cooling and heating devices, consisting of several high-density heat-exchangers bolted together with high efficient thermoelectric coolers (TEC) between them. Their application allows the creation of temperature control systems with operating temperatures equal or less than ambient temperatures with maximum coefficient of performance (COP). Usage of assemblies does not require special knowledge in the field of thermoelectric cooling design and is able to provide precise temperature control of the object. Assemblies are optimized for 12, 24 and 48 V of on-board supply voltage. Because no refrigerant fluid (CFC) is used TEAs are environmentally friendly. Depending on the method of heat distribution from the object to the environment the assemblies could be of air-to-air, liquid-to-liquid, air-to-surface, liquid-to-air or air-to-liquid type.

KRYOTHERM offers a wide range of TEAs with different cooling power in standard and customized performances.


Air-to-air thermoelectric assembly


Air-to-air thermoelectric assembly


Air-to-air thermoelectric assembly

Air-to-air TEAs

Air-to-air thermoelectric assemblies allow pumping out of extra heat from inside small, hermetically closed equipment like telecom and remote control cabinets. They also allow cooling down a limited area to a temperature below ambient (air conditioning). For more efficiency heat-exchangers are equipped with fans. Changing of polarity of power supply allows fast changing of high efficient cooling to high efficient heating, when to outside energy internal Joule heating would be added (efficiency >1). In this case fans should be connected separately. All TEAs are ready for installation by screws. Optionally assemblies could be supplied with a temperature sensor installed for precise temperature control as well as with a temperature controller and a power supply unit.

Applications:

— industrial and analytical instrument temperature stabilization;
— equipment for electronic devices testing in temperature range;
— air conditioning for automobile, railroad and water transport;
— food and beverage cooling.

Air-to-air thermoelectric assemblies

Name	I, Amps	U, Volts	Qc at Tamb=27°C, Watts	Dimensions, mm			Weight, kg
				Length	Width	Height	
60-24-AA	2,8	24,0	40,0	240,0	150,2	155,0	2,8
60-12-AA	9	12,0	46,0	240,0	150,2	155,0	2,8
120-24-AA	5,3	24,0	60,0	320,0	150,2	155,0	3,7
120-12-AA	15,2	12,0	60,0	320,0	150,2	155,0	3,7
180-24-AA	5,8	24,0	125,0	480,0	150,2	155,0	5,7
180-12-AA	19,4	12,0	127,0	480,0	150,2	155,0	5,7
380-24-AA	10,4	24,0	210,0	252,0	200,0	210,0	6,4
380-48-AA	5,7	48,0	210,0	252,0	200,0	236,0	6,4

Specifications apply to ambient temperature Tamb=27°C and nominal voltage tolerance ±10%.
U - nominal voltage; I - operating current consumption; Qc - cooling power at ΔT=0°C, Tamb=27°C

Detailed specifications are available at the company website www.kryothermtec.com