**FAHRENHEIT Technical Data



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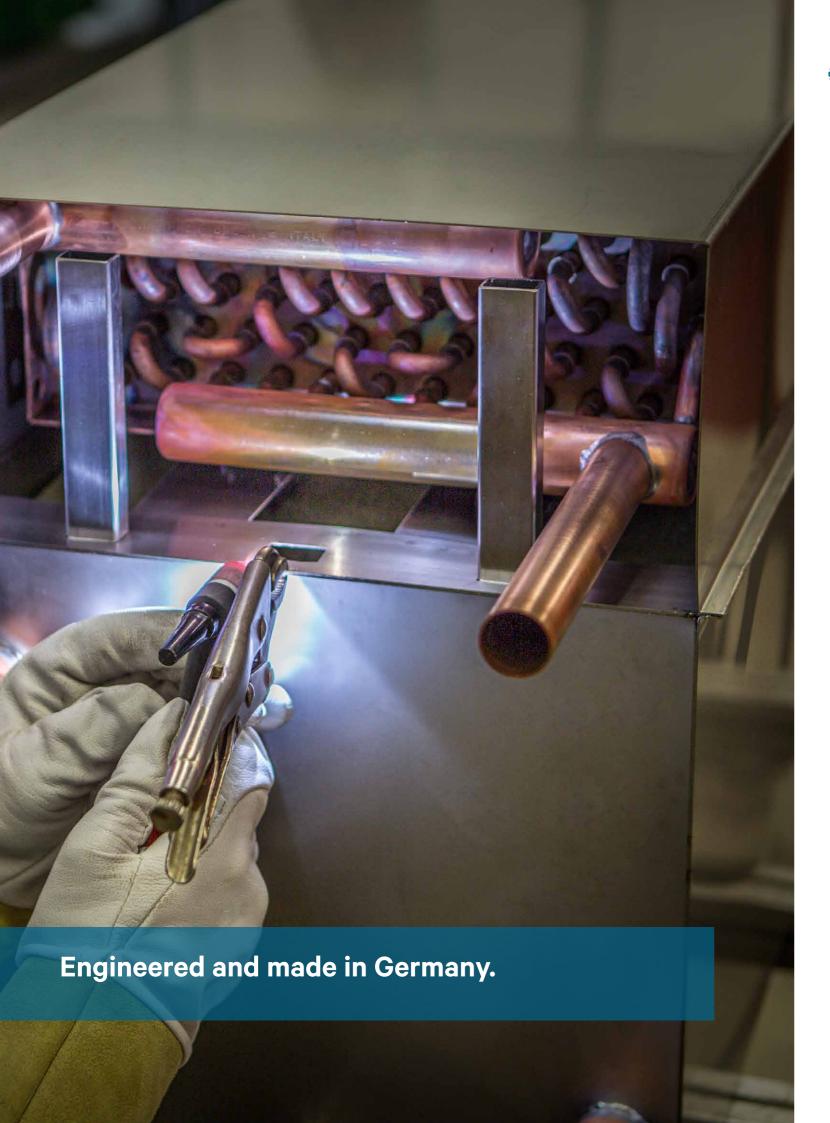
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**Adsorption chillers: Turning heat into cold.

FAHRENHEIT is a pioneer in adsorption technology. Based in Germany, we design and manufacture the most advanced adsorption cooling devices on the market. We apply innovative research to delivering energy efficient cooling solutions. Our products have made their way into hundreds of installations worldwide across a diverse range of industries and applications.

Adsorption chillers by FAHRENHEIT can be used wherever there is residual heat available. Our cooling technology reaches a new dimension of energy efficiency because it does not rely on electrical power for cooling. Our chillers and our adsorption modules are widely used in industrial manufacturing, for air conditioning, in data centers, in solar cooling and in various other applications. They are also ideally suited for combined heat and power plants – turning them into tri-generation units –, and they can save substantial amounts of energy and CO₂ emissions in mobile applications such as cars and transport cooling.

ADVANTAGES AT A GLANCE:

- » Up to 90% electricity savings
- » Pure water as coolant
- » Practically noise free
- » Chiller modules contain no moving parts
- » No replacement of coolant or adsorbent necessary
- » Robust and practically maintenance-free

WORKING PRINCIPLE:

Adsorption occurs when molecules of a liquid (in our case water) adhere to the surface of a solid (in our case zeolite crystals or silica gel). This causes the liquid to evaporate, generating cold. Once the solid material is saturated, heating it will cause it to release the adsorbed liquid, allowing the process to start again.





Helping the environment and your budget.

Our silica gel based chillers eCoo have proven themselves in hundreds of installations around the world. Whether in the moderate climates of Northern Europe, the scorching sun of the Arabic desert, or the tropical humidity of South East Asia, our established adsorption chillers work reliably day in and day out.

Driven by waste heat at temperatures from as low as 50°C up to 95°C, they are core to mission critical applications, including data centers and industrial manufacturing. eCoo is the result of all our experience with mechanical, ergonomic, and control technology optimization.

TECHNICAL FEATURES:

- » Adsorbent: Silica gel
- » Refrigerant: Water
- » Integrated, speed controlled, high efficiency pumps in all circuits
- » Customizable for all heat sources
- » Integrated communication services: BACnet IP, BACnet MS/TP, M-Bus, LON, Modbus RTU, and OPC
- » Integrated free cooling mode: no additional hydraulics or software required
- » Monitoring of storage temperatures
- » Cloud based visualization and remote programming

** eCoo: Technical data.















Model	eCoo 10	eCoo 10X	eCoo 20	eCoo 20X	eCoo 30	eCoo 30X	eCoo 40X
Article number	A700030 / A700045	A700040	A700031	A700046	A700033	A700042	A700043
Application range							
Hot water temperature	50 – 95 °C	50 - 95 °C	50 – 95 °C	50 – 95 °C	50 - 95 °C	50 - 95 °C	50 – 95 °C
Re-cooling water temperature	22 - 40 °C	22 - 40 °C	22 - 40 °C	22 - 40 °C	22 - 40 °C	22 - 40 °C	22 - 40 °C
Chilled water temperature	8 - 21 °C	8 - 21 °C	8 - 21 °C	8 - 21 °C	8 - 21 °C	8 - 21 °C	8 - 21 °C
Max. operating pressure	4 bar	4 bar	4 bar	4 bar	4 bar	4 bar	4 bar
Performance data							
Cooling capacity	up to 16.7 kW	up to 25 kW	up to 33.4 kW	up to 50 kW	up to 50 kW	up to 75 kW	up to 100 kW
COP thermal	up to 0.65	up to 0.65	up to 0.65	up to 0.65	up to 0.65	up to 0.65	up to 0.65
Dimensions / Weight							
WxDxH	875 x 765 x 2,004 mm	875 x 765 x 2,500 mm	875 x 1,465 x 2,004 mm	875 x 1,465 x 2,500 mm	875 x 1,864 x 2,004 mm	875 x 2,165 x 2,500 mm	875 x 2,930 x 2,500 mm
Footprint	0.67 m ²	0.67 m ²	1.28 m²	1.28 m²	1.63 m²	1.89 m²	2.56 m ²
Empty weight	ca. 370 kg	ca. 550 kg	ca. 785 kg	ca. 1,152 kg	ca. 1,238 kg	ca. 1,728 kg	ca. 2,300 kg
Electrical power consumption and s	upply						
At typical pressure drop *	260 W	511 W	520 W	1,022 W	984 W	1,543 W	2,064 W
At max. delivery head *	800 W	911 W	1,600 W	1,822 W	1,768 W	2,743 W	3,664 W
Power supply	230 V, 50/60 Hz	230 V, 50/60 Hz	230 V, 50/60 Hz	230 V, 50/60 Hz	230 V, 50/60 Hz	230 V, 50/60 Hz	(2x) 230 V, 50/60 Hz
Hot water circuit							
Volume flow rate	2.5 m³/h	3.75 m³/h	5 m³/h	7.50 m³/h	7.50 m³/h	11.25 m³/h	15.00 m³/h
Available delivery head	464 mbar	296 mbar	400 mbar	287 mbar	816 mbar	282 mbar	280 mbar
Connection	G 1 ¼" AG	G 2" AG	G 2" AG	DN 65	G 2" AG	DN 65	DN 65
Re-cooling water circuit							
Volume flow rate	5.1 m³/h	7.65 m³/h	10.2 m³/h	15.30 m³/h	15.30 m³/h	22.95 m³/h	30.60 m³/h
Available delivery head	690 mbar	309 mbar	640 mbar	282 mbar	590 mbar	278 mbar	271 mbar
Connection	G 1 ½" AG	G 2" AG	G 2" ½ AG	DN 80	G 2 ½" AG	DN 80	DN 80
Chilled water circuit							
Volume flow rate	2.9 m³/h	4.35 m³/h	5.8 m³/h	8.70 m³/h	8.70 m³/h	13.05 m³/h	17.40 m³/h
Available delivery head	630 mbar	492 mbar	520 mbar	481 mbar	271 mbar	476 mbar	472 mbar
Connection	G 1 ¼" AG	G 2" AG	G 2" AG	DN 65	G 2" AG	DN 65	DN 65
Components							
Controller	Resol DeltaSol® MX, or Siemens Climatix	Siemens Climatix	Siemens Climatix	Siemens Climatix	Siemens Climatix	Siemens Climatix	Siemens Climatix
Integrated circuit separation	Optional	Optional	Optional		Standard		
- '	•	•	•				

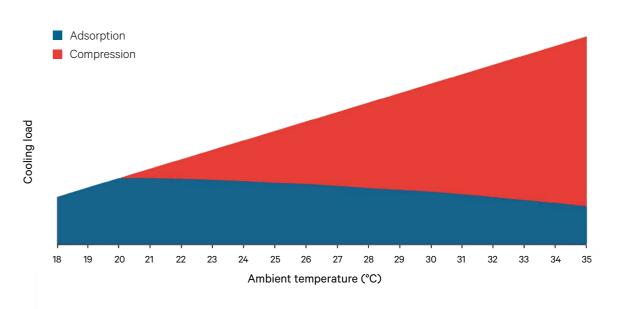
^{*}Power consumption of adsorption chillers varies with operating conditions



**HybridChiller: Cooling with adsorption and compression.

For the first time, adsorption and compression cooling technology are integrated into one unit: Introducing the HybridChiller.

- » The HybridChiller combines the energy efficiency of adsorption technology with the precision and power of compression cooling. The advantages include the ability to cover peak demands without investing in excess adsorption capacity, or to deal with fluctuations in available drive heat. The integrated controller optimally adjusts the operating parameters of the entire system under any combination of temperatures and loads.
- » The HybridChiller brings to bear the advantages of both technologies. This enables new applications, and new levels of efficiency: The efficiency is demonstrated by an outstanding ESEER value of 19.6.
- » The HybridChiller can be combined with all our adsorption chillers.



The HybridChiller provides the right refrigeration at all times for all load scenarios. According to the cooling requirements and available waste heat, the intelligent control system decides whether to use compression and adsorption in monovalent or bivalent mode depending on the situation. So even peak loads can be covered with extreme precision and without delay. The control system ensures that the unit can operate at maximum efficiency at all times.

** HybridChiller: The concept.

- » Adsorption and compression in a single machine
- » Precise control and synchronization of both parts
- » Obtainable for every Fahrenheit adsorption chiller
- » Compressor sizes ranging from 15 to 60 kW



COMPRESSION PART FEATURES:

- » Hermetic scroll compressors
- » Water cooled
- » Stainless-steel brazed heat exchangers as evaporator and condenser
- » Electronic expansion valve
- » R-134A or R-290 (Propane) as refrigerant

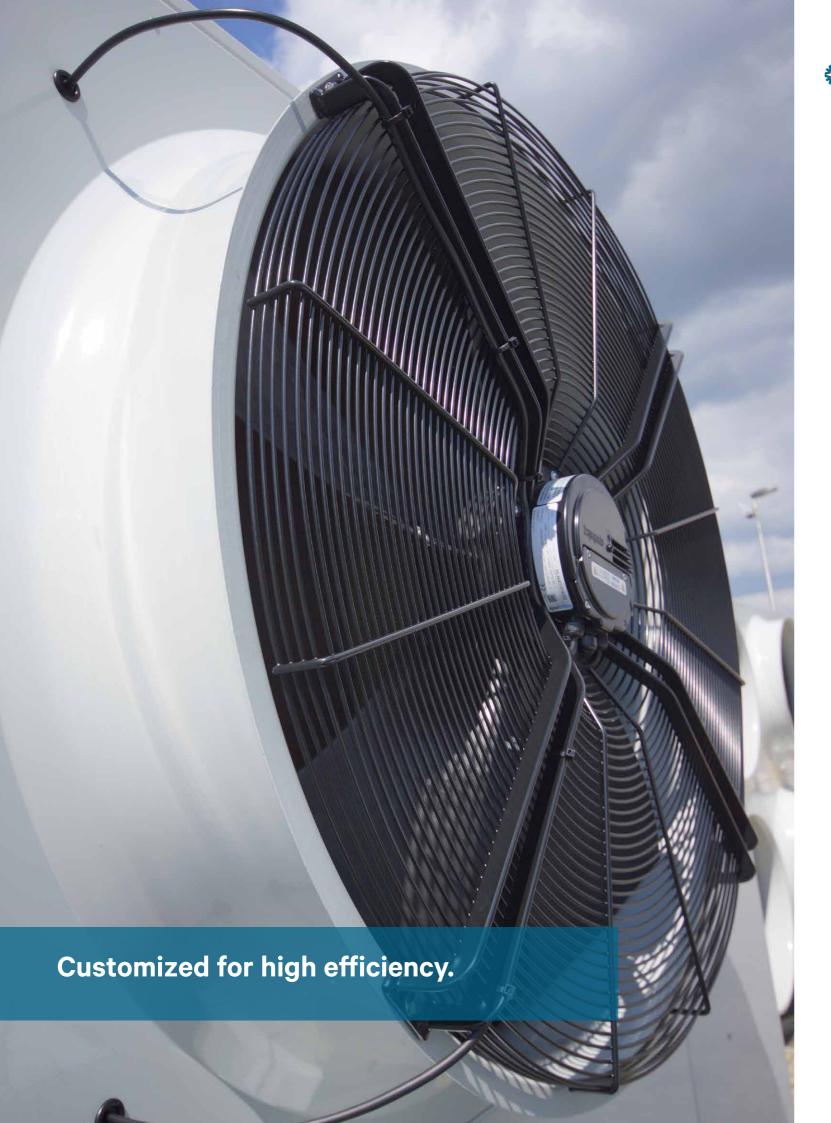






Model	eCoo 10 HC 30	eCoo 20 HC 60
Article number	A700220	A700223
Performance data		
Total cooling capacity	up to 46.7 kW	up to 91.4 kW
Adsorption cooling capacity	up to 16.7 kW	up to 33.4 kW
Compression cooling capacity	up to 30 kW	up to 58 kW
COP therm.	up to 0.65	up to 0.65
Adsorption application range		
Hot water temperature	50 – 95 °C	50 − 95 °C
Re-cooling water temperature	22 - 40 °C	22 - 40 °C
Chilled water temperature	8 - 21 °C	8 - 21 °C
Max. operation pressure	4 bar	4 bar
Dimensions / Weight		
WxDxH	874 x 1,465 x 2,004 mm	875 x 1,864 x 2,400 mm
Footprint	1.32 m²	1.63 m ²
Empty weight	ca. 840 kg	ca. 1,680 kg
Power supply and consumption		
Power supply	400 V, 3 Ph, 50/60 Hz	400 V, 3 Ph, 50/60 Hz
Max. current consumption	30 A	90 A
Hot water circuit		
Volume flow rate	2.5 m³/h	5 m³/h
Available delivery head	350 mbar	320 mbar
Connection	G 1 ¼" AG	G 2" AG
Re-cooling circuit		
Volume flow rate	6.50 m³/h	13 m³/h
Available delivery head	710 mbar	640 mbar
Connection	G 1 ½" AG	G 2 ½" AG
Chilled water circuit		
Volume flow rate	7.40 m³/h	14.80 m³/h
Available delivery head	171 mbar	150 mbar
Connection	G1½" AG	G 2 ½" AG
Components		
Controller Integrated circuit separation	Siemens Climatix Standard	Siemens Climatix Standard

Example variants – contact us for additional models



Re-cooler: Optimized heat rejection for your system.

Optimal control

- » Continuously variable fan speed via standard signal (0-10 V).
- » Temperature driven adjustment via control cabinet.
- » Fully assembled and with all electrical connections.

Low vibration

» Customized metal vibration dampers reduce noise and vibration

Small footprint

» A vertical arrangement - thanks to specialized spraying mechanism - reduces the footprint and enables directional sound adjustment

Cost efficient

» Energy saving EC technology

Optional

- » Spraying system for temporary spraying of the re-cooler fins with water
- Partially assembled (spraying rod is packaged separately), incl. pressure reducer, solenoid valve, and drain valve.

Two variants

- » eRec for highest efficiency at 2 K temperature difference
- » eRis for most economical setup and smaller footprint



Recommendations for eCoo 10

Re-cooler eRec without spray system

Model	eRec 10 29	eRec 10 40
Article number	700341	700232
Performance data		
Re-cooler capacity	up to 29 kW	up to 40 kW
Heat transfer medium	Ethylene glycol water	Ethylene glycol water
	(34%)	(34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	5.9 m³/h	5.9 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption		
Air temperature (inlet / outlet)	22.7 / 26.4 °C	23.0 / 26.3 °C
Air flow	24,000 m³/h	36,000 m³/h
Pressure loss at nominal volume flow	290 mbar	220 mbar
Ventilators		
Ventilators	2 x EC Ventilators	3 x EC Ventilators
Sound pressure level (in 10 m)	34 dB(A)	36 dB(A)
Dimensions / Weight		
WxDxH	4,230 x 1,170 x 1,510 mm	6,130 x 1,170 x 1,510 mm
Empty weight	438 kg	612 kg
Footprint	4.95 m ²	7.17m²
Tubing content	46.11	53.5 l
Electrical power consumption and supply		
Power consumption	0.54 kW	0.72 kW
Power supply	230 V, 50 Hz	230 V, 50 Hz

Re-cooler eRec with spray system

Model	eRec 10 29 WV	eRec 10 40 WV	
Article number	700342	700240	
Performance data			
Re-cooler capacity	up to 29 kW	up to 40 kW	
Heat transfer medium	Ethylene glycol water (34%)	Ethylene glycol water (34%)	
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C	
Nominal volume flow	5.9 m³/h	5.9 m³/h	
Max. operating pressure	4 bar	4 bar	
Water consumption	max. 6 m³ / year	max. 6 m³ / year	
Air temperature (inlet / outlet)	22.7 / 26.4 °C	23.0 / 26.2 °C	
Air flow	24,000 m³/h	37,000 m³/h	
Pressure loss at nominal volume flow	290 mbar	220 mbar	
Ventilators			
Ventilators	2 x EC Ventilators	3 x EC Ventilators	
Sound pressure level (in 10 m)	34 dB(A)	36 dB(A)	
Dimensions / Weight			
WxDxH	4,230 x 1,050 x 1,260 mm	6,130 x 1,050 x 1,260 mm	
Empty weight	438 kg	612 kg	
Footprint	4.23 m²	7.17m²	
Tubing content	46.1	53.5 I	
Electrical power consumption and supply			
Power consumption	0.54 kW	0.78 kW	
Power supply	230 V, 50 Hz	230 V, 50 Hz	

Recommendations for eCoo 10

Re-cooler eRis without spray system

Model	eRis 10 29	eRis 10 40
Article number	700362	700244
Performance data		
Re-cooler capacity	up to 29 kW	up to 40 kW
Heat transfer medium	Ethylene glycol water	Ethylene glycol water
	(34%)	(34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	5.9 m³/h	5.9 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption		
Air temperature (inlet / outlet)	21.1 / 27.2 °C	21.5 / 27.0 °C
Air flow	14,000 m³/h	22,000 m³/h
Pressure loss at nominal volume flow	420 mbar	250 mbar
Ventilators		
Ventilators	1 x EC Ventilators	2 x EC Ventilators
Sound pressure level (in 10 m)	35 dB(A)	35 dB(A)
Dimensions / Weight		
WxDxH	2,330 x 1,490 x 1,510 mm	3,630 x 1,170 x 1,510 mm
Empty weight	340 kg	440 kg
Footprint	3.47 m ²	7.17m²
Tubing content	46.11	53.5 l
Electrical power consumption and supply		
Power consumption	0.41 kW	0.56 kW
Power supply	230 V, 50 Hz	230 V, 50 Hz

Re-cooler eRis with spray system

Article number Performance data	700363	700252
Performance data		
Re-cooler capacity	up to 29 kW	up to 40 kW
Heat transfer medium	Ethylene glycol water (34%)	Ethylene glycol water (34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	5.9 m³/h	5.9 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption	max. 6 m³ / year	max. 6 m³ / year
Air temperature (inlet / outlet)	21.5 / 26.7 °C	23.0 / 26.2 °C
Air flow	17,000 m³/h	26,000 m³/h
Pressure loss at nominal volume flow	490 mbar	210 mbar
Ventilators		
Ventilators	1 x EC Ventilators	2 x EC Ventilators
Sound pressure level (in 10 m)	37 dB(A)	36 dB(A)
Dimensions / Weight		
WxDxH	2,730 x 1,050 x 1,580 mm	5,030 x 1,050 x 1,260 mm
Empty weight	355 kg	425 kg
Footprint	2.87 m ²	5.28 m ²
Tubing content	36.5 l	42.7
Electrical power consumption and supply		
Power consumption	0.58 kW	0.50 kW
Power supply	230 V, 50 Hz	230 V, 50 Hz



Recommendations for eCoo 10X and eCoo 20

Re-cooler eRec without spray system

Model	eRec 20 58	eRec 20 80
Article number	700343	700233
Performance data		
Re-cooler capacity	up to 58 kW	up to 80 kW
Heat transfer medium	Ethylene glycol water	Ethylene glycol water
	(34%)	(34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	11.8 m³/h	11.8 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption		
Air temperature (inlet / outlet)	22.7 / 26.4 °C	23.0 / 28.1 °C
Air flow	47,000 m³/h	47,000 m³/h
Pressure loss at nominal volume flow	280 mbar	230 mbar
Ventilators		
Ventilators	4 x EC Ventilators	4 x EC Ventilators
Sound pressure level (in 10 m)	37 dB(A)	37 dB(A)
Dimensions / Weight		
WxDxH	4,230 x 2,290 x 1,510 mm	5,030 x 2,290 x 1,510 mm
Empty weight	791 kg	841 kg
Footprint	9.69 m²	11.52 m²
Tubing content	94.7	86.5 l
Electrical power consumption and supply		
Power consumption	1.08 kW	1.0 kW
Power supply	230 V, 50 Hz	230 V, 50 Hz

Re-cooler eRec with spray system

Model	eRec 20 58 WV	eRec 20 80 WV
Article number	700344	700241
Performance data		
Re-cooler capacity	up to 58 kW	up to 80 kW
Heat transfer medium	Ethylene glycol water (34%)	Ethylene glycol water (34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	11.8 m³/h	11.8 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption	max. 9 m³ / year	max. 9 m³ / year
Air temperature (inlet / outlet)	22.7 / 26.4 °C	23.0 / 28.0 °C
Air flow	48,000 m³/h	48,000 m³/h
Pressure loss at nominal volume flow	280 mbar	230 mbar
Ventilators		
Ventilators	4 x EC Ventilators	4 x EC Ventilators
Sound pressure level (in 10 m)	37 dB(A)	37 dB(A)
Dimensions / Weight		
WxDxH	4,230 x 1,050 x 2,380 mm	5,030 x 1,050 x 2,380 mm
Empty weight	791 kg	841 kg
Footprint	2.87 m²	5.28 m²
Tubing content	94.7	86.5 l
Electrical power consumption and supply		
Power consumption	1.08 kW	1.04 kW
Power supply	230 V, 50 Hz	230 V, 50 Hz



Recommendations for eCoo 10X and eCoo 20

Re-cooler eRis without spray system

Model	eRis 20 58	eRis 20 80
Article number	700364	700245
Performance data		
Re-cooler capacity	up to 58 kW	up to 80 kW
Heat transfer medium	Ethylene glycol water	Ethylene glycol water
	(34%)	(34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	11.8 m³/h	11.8 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption		
Air temperature (inlet / outlet)	21.5 / 26.6 °C	21.5 / 27.0 °C
Air flow	33,000 m³/h	44,000 m³/h
Pressure loss at nominal volume flow	370 mbar	240 mbar
Ventilators		
Ventilators	3 x EC Ventilators	4 x EC Ventilators
Sound pressure level (in 10 m)	37 dB(A)	38 dB(A)
Dimensions / Weight		
WxDxH	5,230 x 1,170 x 1,510 mm	3,630 x 2,290 x 1,510 mm
Empty weight	620 kg	770 kg
Footprint	6.12 m ²	8.31 m ²
Tubing content	60.2 I	80.6 I
Electrical power consumption and supply		
Power consumption	0.9 kW	1.12 kW
Power supply	230 V, 50 Hz	230 V, 50 Hz

Re-cooler eRis with spray system

Model	eRis 20 58 WV	eRis 20 80 WV	
Article number	700361	700253	
Performance data			
Re-cooler capacity	up to 58 kW	up to 80 kW	
Heat transfer medium	Ethylene glycol water (34%)	Ethylene glycol water (34%)	
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C	
Nominal volume flow	11.8 m³/h	11.8 m³/h	
Max. operating pressure	4 bar	4 bar	
Water consumption	max. 9 m³ / year	max. 9 m³ / year	
Air temperature (inlet / outlet)	21.3 / 26.3 °C	21.5 / 27.0 °C	
Air flow	35,000 m³/h	44,000 m³/h	
Pressure loss at nominal volume flow	440 mbar	280 mbar	
Ventilators			
Ventilators	3 x EC Ventilators	4 x EC Ventilators	
Sound pressure level (in 10 m)	36 dB(A)	36 dB(A)	
Dimensions / Weight			
WxDxH	6,139 x 1,050 x 1,260 mm	4,230 x 1,050 x 2,380 mm	
Empty weight	630 kg	771 kg	
Footprint	6.44 m²	4.44 m²	
Tubing content	71.3 l	94.7	
Electrical power consumption and supply			
Power consumption	0.93 kW	0.88 kW	
Power supply	230 V, 50 Hz	230 V, 50 Hz	



Recommendations for eCoo 30 and eCoo 20X

Re-cooler eRec without spray system

Model	eRec 30 87	eRec 30 120
Article number	700345	700234
Performance data		
Re-cooler capacity	up to 87 kW	up to 120 kW
Heat transfer medium	Ethylene glycol water	Ethylene glycol water
	(34%)	(34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	17.7 m³/h	17.7 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption		
Air temperature (inlet / outlet)	22.6 / 25.9 °C	23.0 / 27.2 °C
Air flow	78,000 m³/h	86,000 m³/h
Pressure loss at nominal volume flow	230 mbar	180 mbar
Ventilators		
Ventilators	6 x EC Ventilators	6 x EC Ventilators
Sound pressure level (in 10 m)	43 dB(A)	45 dB(A)
Dimensions / Weight		
WxDxH	5,230 x 2,290 x 1,510 mm	6,130 x 2,290 x 1,510 mm
Empty weight	1,095 kg	1,150 kg
Footprint	11.98 m²	14.04 m ²
Tubing content	120.3 I	178.3 l
Electrical power consumption and supply		
Power consumption	2.4 kW	3.06 kW
Power supply	400 V, 50 Hz	400 V, 50 Hz

Re-cooler eRec with spray system

Model	eRec 30 87 WV	eRec 30 120 WV
Article number	700234	700242
Performance data		
Re-cooler capacity	up to 87 kW	up to 120 kW
Heat transfer medium	Ethylene glycol water (34%)	Ethylene glycol water (34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	17.7 m³/h	17.7 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption	max. 12 m³ / year	max. 12 m³ / year
Air temperature (inlet / outlet)	22.6 / 25.9 °C	23.0 / 27.1 °C
Air flow	80,000 m³/h	89,000 m³/h
Pressure loss at nominal volume flow	230 mbar	180 mbar
Ventilators		
Ventilators	6 x EC Ventilators	6 x EC Ventilators
Sound pressure level (in 10 m)	43 dB(A)	45 dB(A)
Dimensions / Weight		
WxDxH	5,230 x 1,050 x 2,380 mm	6,130 x 1,050 x 2,380 mm
Empty weight	1,095 kg	1,150 kg
Footprint	5.49 m ²	6.43 m ²
Tubing content	120.3 I	178.3 l
Electrical power consumption and supply		
Power consumption	2.52 kW	3.24 kW
Power supply	400 V, 50 Hz	400 V, 50 Hz



Recommendations for eCoo 30 and eCoo 20X

Re-cooler eRis without spray system

Model	eRis 30 87	eRis 30 120
Article number	700365	700246
Performance data		
Re-cooler capacity	up to 87 kW	up to 120 kW
Heat transfer medium	Ethylene glycol water	Ethylene glycol water
	(34%)	(34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	17.7 m³/h	17.7 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption		
Air temperature (inlet / outlet)	21.3/ 25.8 °C	21.5 / 26.9 °C
Air flow	58,000 m³/h	64,000 m³/h
Pressure loss at nominal volume flow	470 mbar	220 mbar
Ventilators		
Ventilators	4 x EC Ventilators	4 x EC Ventilators
Sound pressure level (in 10 m)	44 dB(A)	44 dB(A)
Dimensions / Weight		
WxDxH	3,630 x 2,290 x 1,510 mm	5,030 x 2,290 x 1,510 mm
Empty weight	700 kg	1,000 kg
Footprint	8.31 m ²	11.52 m²
Tubing content	60.2 I	80.6 I
Electrical power consumption and supply		
Power consumption	2.36 kW	2.08 kW
Power supply	400 V, 50 Hz	400 V, 50 Hz

Re-cooler eRis with spray system

Model	eRis 30 87 WV	eRis 30 120 WV
Article number	700366	700254
Performance data		
Re-cooler capacity	up to 87 kW	up to 120 kW
Heat transfer medium	Ethylene glycol water (34%)	Ethylene glycol water (34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	17.7 m³/h	17.7 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption	max. 12 m³ / year	max. 12 m³ / year
Air temperature (inlet / outlet)	21.4 / 25.4 °C	21.5 / 26.3 °C
Air flow	67,000 m³/h	74,000 m ³ /h
Pressure loss at nominal volume flow	360 mbar	230 mbar
Ventilators		
Ventilators	4 x EC Ventilators	6 x EC Ventilators
Sound pressure level (in 10 m)	45 dB(A)	43 dB(A)
Dimensions / Weight		
WxDxH	5,030 x 1,050 x 2,380 mm	5,230 x 1,050 x 2,380 mm
Empty weight	841 kg	980 kg
Footprint	5.28 m ²	5.49 m²
Tubing content	86.5 I	120.3 l
Electrical power consumption and supply		
Power consumption	1.96 kW	2.34 kW
Power supply	400 V, 50 Hz	400 V, 50 Hz

Recommendations for eCoo 30X

Re-cooler eRec without spray system

Model	eRec 40 116	eRec 40 160
Article number	700347	700235
Performance data		
Re-cooler capacity	up to 116 kW	up to 160 kW
Heat transfer medium	Ethylene glycol water	Ethylene glycol water
	(34%)	(34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	23.6 m³/h	23.6 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption		
Air temperature (inlet / outlet)	22.6 / 26.5 °C	23.0 / 27.4 °C
Air flow	89,000 m³/h	110,000 m³/h
Pressure loss at nominal volume flow	300 mbar	180 mbar
Ventilators		
Ventilators	6 x EC Ventilators	8 x EC Ventilators
Sound pressure level (in 10 m)	45 dB(A)	45 dB(A)
Dimensions / Weight		
WxDxH	6,130 x 2,290 x 1,510 mm	9,630 x 2,290 x 1,510 mm
Empty weight	1,166 kg	1,760 kg
Footprint	14.04 m²	22.05 m ²
Tubing content	178.3 l	403.7 l
Electrical power consumption and supply		
Power consumption	3.24kW	3.2 kW
Power supply	400 V, 50 Hz	400 V, 50 Hz

Re-cooler eRec with spray system

Model	eRec 40 116 WV	eRec 40 160 WV
Article number	700348	700243
Performance data		
Re-cooler capacity	up to 116 kW	up to 160 kW
Heat transfer medium	Ethylene glycol water (34%)	Ethylene glycol water (34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	23.6 m³/h	23.6 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption	max. 15 m³ / year	max. 15 m³ / year
Air temperature (inlet / outlet)	22.6 / 26.5 °C	23.0 / 27.2 °C
Air flow	88,000 m³/h	115,000 m³/h
Pressure loss at nominal volume flow	300 mbar	180 mbar
Ventilators		
Ventilators	6 x EC Ventilators	8 x EC Ventilators
Sound pressure level (in 10 m)	45 dB(A)	45 dB(A)
Dimensions / Weight		
WxDxH	6,130 x 1,050 x 2,380 mm	9,630 x 1,050 x 2,380 mm
Empty weight	1,166 kg	1,760 kg
Footprint	6.13 m ²	10.11 m ²
Tubing content	178.3 I	403.7 l
Electrical power consumption and supply		
Power consumption	3.24 kW	3.68 kW
Power supply	400 V, 50 Hz	400 V, 50 Hz

Recommendations for eCoo 30X

Re-cooler eRis without spray system

Model	eRis 40 116	eRis 40 160
Article number	700367	700247
Performance data		
Re-cooler capacity	up to 116 kW	up to 160 kW
Heat transfer medium	Ethylene glycol water (34%)	Ethylene glycol water (34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	23.6 m³/h	23.6 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption		
Air temperature (inlet / outlet) Air flow	21.1 / 26.5 °C 65,000 m³/h	21.5 / 26.5 °C 96,000 m³/h
Pressure loss at nominal volume flow	360 mbar	220 mbar
Ventilators		
Ventilators	4 x EC Ventilators	6 x EC Ventilators
Sound pressure level (in 10 m)	44 dB(A)	45 dB(A)
Dimensions / Weight		
WxDxH	5,030 x 2,290 x 1,510 mm	7,330 x 2,290 x 1,510 mm
Empty weight	1.000 kg	1.325 kg
Footprint	11.52 m ²	16.79 m²
Tubing content	90.3	227.6 l
Electrical power consumption and supply		
Power consumption	2.04 kW	3.12 kW
Power supply	400 V, 50 Hz	400 V, 50 Hz

Re-cooler eRis with spray system

Model	eRis 40 116 WV	eRis 40 160 WV
Article number	700368	700255
Performance data		
Re-cooler capacity	up to 116 kW	up to 160 kW
Heat transfer medium	Ethylene glycol water (34%)	Ethylene glycol water (34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	23.6 m³/h	23.6 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption	max. 15 m³ / year	max. 15 m³ / year
Air temperature (inlet / outlet)	21.1 / 26.6 °C	21.5 / 27.0 °C
Air flow	63,000 m³/h	88,000 m³/h
Pressure loss at nominal volume flow	360 mbar	140 mbar
Ventilators		
Ventilators	4 x EC Ventilators	6 x EC Ventilators
Sound pressure level (in 10 m)	44 dB(A)	45 dB(A)
Dimensions / Weight		
WxDxH	5,030 x 1,050 x 2,380 mm	7,330 x 1,050 x 2,380 mm
Empty weight	1.030 kg	1.076 kg
Footprint	5.28 m ²	7.70 m ²
Tubing content	90.3 I	303.5 I
Electrical power consumption and supply		
Power consumption	2.12 kW	2.82 kW
Power supply	400 V, 50 Hz	400 V, 50 Hz

Recommendations for eCoo 30X

Re-cooler eRec without spray system

Model	eRec 50 145	eRec 50 200
Article number	700349	700236
Performance data		
Re-cooler capacity	up to 145 kW	up to 200 kW
Heat transfer medium	Ethylene glycol water	Ethylene glycol water
	(34%)	(34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	29.5 m³/h	29.5 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption		
Air temperature (inlet / outlet)	22.7 / 27.0 °C	23.0 / 27.2 °C
Air flow	102,000 m³/h	144,000 m³/h
Pressure loss at nominal volume flow	490 mbar	270 mbar
Ventilators		
Ventilators	8 x EC Ventilators	10 x EC Ventilators
Sound pressure level (in 10 m)	47 dB(A)	47 dB(A)
Dimensions / Weight		
WxDxH	6,830 x 2,290 x 1,510 mm	9,630 x 2,290 x 1,510 mm
Empty weight	1,565 kg	1,880 kg
Footprint	15.64 m²	22.05 m ²
Tubing content	199.9 l	416.8 l
Electrical power consumption and supply		
Power consumption	4.08 kW	5.5 kW
Power supply	400 V, 50 Hz	400 V, 50 Hz

Re-cooler eRis without spray system

Model	eRis 50 145	eRis 50 200
Article number	700369	700248
Performance data		
Re-cooler capacity	up to 145 kW	up to 200 kW
Heat transfer medium	Ethylene glycol water (34%)	Ethylene glycol water (34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	29.5 m³/h	29.5 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption		
Air temperature (inlet / outlet)	21.2 / 26.5 °C	21.5 / 26.0 °C
Air flow	82,000 m³/h	134,000 m³/h
Pressure loss at nominal volume flow	370 mbar	250 mbar
Ventilators		
Ventilators	6 x EC Ventilators	8 x EC Ventilators
Sound pressure level (in 10 m)	46 dB(A)	45 dB(A)
Dimensions / Weight		
WxDxH	5,230 x 2,290 x 1,510 mm	9,630 x 2,290 x 1,510 mm
Empty weight	1,067 kg	1,630 kg
Footprint	11.97 m²	22.05 m²
Tubing content	178.3 l	403.7 l
Electrical power consumption and supply		
Power consumption	3.66 kW	4.32 kW
Power supply	400 V, 50 Hz	400 V, 50 Hz

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Recommendations for eCoo 40X

Re-cooler eRec without spray system

Model	eRec 60 174	eRec 60 240
Article number	700350	700237
Performance data		
Re-cooler capacity	up to 174 kW	up to 240 kW
Heat transfer medium	Ethylene glycol water	Ethylene glycol water
	(34%)	(34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	35.4 m³/h	35.4 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption		
Air temperature (inlet / outlet)	22.9 / 26.6 °C	23.0 / 26.9 °C
Air flow	145,000 m³/h	183,000 m³/h
Pressure loss at nominal volume flow	450 mbar	260 mbar
Ventilators		
Ventilators	10 x EC Ventilators	12 x EC Ventilators
Sound pressure level (in 10 m)	47 dB(A)	46 dB(A)
Dimensions / Weight		
WxDxH	9,930 x 2,290 x 1,510 mm	11,830 x 2,290 x 1,510 mm
Empty weight	1,953 kg	2,240 kg
Footprint	22.74 m²	27.09 m ²
Tubing content	232.3	283.7 l
Electrical power consumption and supply		
Power consumption	4.9 kW	6.36 kW
Power supply	400 V, 50 Hz	400 V, 50 Hz

Re-cooler eRis without spray system

Model	eRis 60 174	eRis 60 240
Article number	700370	700249
Performance data		
Re-cooler capacity	up to 174 kW	up to 240 kW
Heat transfer medium	Ethylene glycol water (34%)	Ethylene glycol water (34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	35.4 m³/h	35.4 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption		
Air temperature (inlet / outlet)	21.5 / 25.5 °C	21.5 / 27.1 °C
Air flow	130,000 m³/h	129,000 m³/h
Pressure loss at nominal volume flow	590 mbar	210 mbar
Ventilators		
Ventilators	8 x EC Ventilators	8 x EC Ventilators
Sound pressure level (in 10 m)	47 dB(A)	46 dB(A)
Dimensions / Weight		
WxDxH	8,030 x 2,290 x 1,510 mm	9,630 x 2,290 x 1,510 mm
Empty weight	1,388 kg	1,589 kg
Footprint	18.39 m²	22.05 m ²
Tubing content	139.6 l	229.2
Electrical power consumption and supply		
Power consumption	4.4 kW	4.16 kW
Power supply	400 V, 50 Hz	400 V, 50 Hz

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Recommendations for large systems

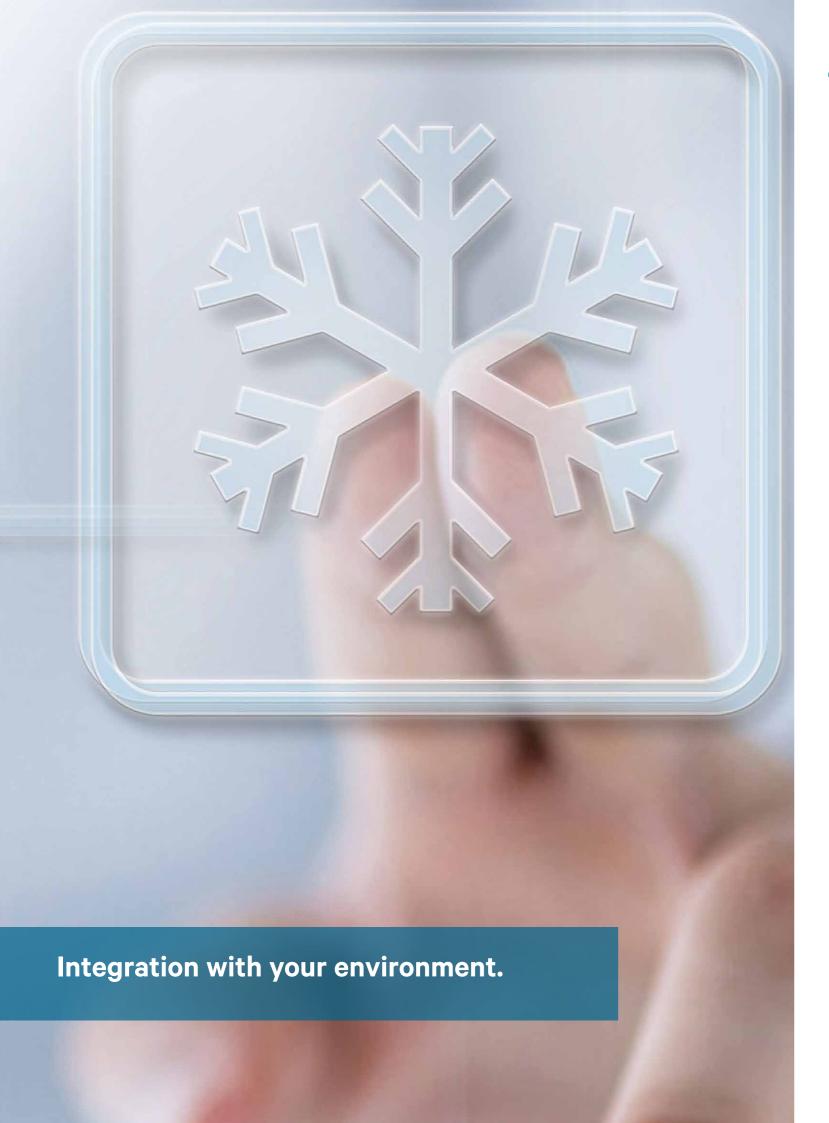
Re-cooler eRec without spray system

Model	eRec 80 232	eRec 80 320
Article number	700352	700239
Performance data		
Re-cooler capacity	up to 232 kW	up to 320 kW
Heat transfer medium	Ethylene glycol water	Ethylene glycol water
	(34%)	(34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	47.2 m³/h	47.2 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption		
Air temperature (inlet / outlet)	22.6 / 26.4 °C	23.0 / 26.8 °C
Air flow	183,000 m³/h	252,000 m³/h
Pressure loss at nominal volume flow	430 mbar	170 mbar
Ventilators		
Ventilators	12 x EC Ventilators	16 x EC Ventilators
Sound pressure level (in 10 m)	48 dB(A)	49 dB(A)
Dimensions / Weight		
WxDxH	11,830 x 2,290 x 1,510 mm	10,095 x 2,370 x 2,300 mm
Empty weight	2,318 kg	3,260 kg
Footprint	27.09 m²	23.93 m²
Tubing content	283.7	416.1 l
Electrical power consumption and supply		
Power consumption	6.36 kW	9.12 kW
Power supply	400 V, 50 Hz	400 V, 50 Hz

Re-cooler eRis without spray system

Model	eRis 80 232	eRis 80 320
Article number	700372	700251
Performance data		
Re-cooler capacity	up to 232 kW	up to 320 kW
Heat transfer medium	Ethylene glycol water (34%)	Ethylene glycol water (34%)
Water temperature (inlet / outlet)	29.6 / 25 °C	31.3 / 25 °C
Nominal volume flow	47.2 m³/h	47.2 m³/h
Max. operating pressure	4 bar	4 bar
Water consumption		
Air temperature (inlet / outlet)	21.5 / 26.0 °C	21.5 / 27.5 °C
Air flow	155,000 m³/h	159,000 m³/h
Pressure loss at nominal volume flow	360 mbar	250 mbar
Ventilators		
Ventilators	10 x EC Ventilators	12 x EC Ventilators
Sound pressure level (in 10 m)	47 dB(A)	49 dB(A)
Dimensions / Weight		
WxDxH	9,930 x 2,290 x 1,510 mm	10,030 x 2,290 x 1,510 mm
Empty weight	1,725 kg	2,339 kg
Footprint	22.74 m²	22.97 m ²
Tubing content	186.2 l	179.3 l
Electrical power consumption and supply		
Power consumption	5.7 kW	6.96 kW
Power supply	400 V, 50 Hz	400 V, 50 Hz

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***** Circuit separation

Our highly efficient circuit separation units are used to separate the closed re-cooling circuit entering our machines from the external circuit connected to the re-cooler/heat sink.

Whether frost protection is required, or an open cycle cooling tower/heat sink is installed, our system separations can effectively protect the adsorption chiller with minimal energy and pressure loss.

Our circuit separations consist of highly efficient brazed plate heat exchangers that are specially built for our adsorption chillers, with a wide range of sizes available for every FAHRENHEIT adsorption chiller. They are extremely compact compared with other technologies, with a footprint as little as one tenth that of a shell & tube heat exchanger or half that of a gasket plate heat exchanger.

The robust construction requires no gaskets, eliminating any risk of leaking. This means stable thermal and hydraulic performance, with minimal maintenance and operational downtime.

With no need for gaskets or supporting equipment, about 95% of the material is utilized for heat transfer.

The highly turbulent flow also allows to use small temperature differences efficiently.



** Circuit separation: Technical data.

Model	ST-10	ST-10X	ST-20	ST-20X	ST-30X	ST-40X
Article number	A600026	A600020		A600025	A600024	A600022
General data						
Capacity	40 kW	60 kW	80 kW	111.6 kW	180 kW	242 kW
Connections	2" gland, soldering 42 mm	2" gland, soldering 42 mm	2" gland, soldering 42 mm	Compact Flange DN 65, 2 ½" IG	Compact Flange DN 80, 2 ½" IG	Compact Flange DN 80, 2 ½" IG
Heat transfer medium (internal side)	Water	Water	Water	Water	Water	Water
Heat transfer medium (external side)	Ethylene glycol - water (34%)	Ethylene glycol - water (34%)	Ethylene glycol - water (34%)	Ethylene glycol - water (34%)	Ethylene glycol - water (34%)	Ethylene glycol - water (34%)
Heat exchanger surface	7.66 m ²	11.4 m²	15.6 m ²	19.6 m ²	37.8 m ²	54.7 m ²
Dimensions						
WxDxH	243 x 151 x 525 mm	243 x 220 x 525	243 x 289 x 525	243 x 331 x 525 mm	304 x 421 x 694	304 x 600 x 694
Footprint	0.037 m ²	0.054 m²	0.07 m ²	0.094 m²	0.13 m ²	0.184 m ²
Weight						
Empty weight	35.4 kg	47.5 kg	59.6 kg	77.2 kg	135 kg	185 kg
Filled weight	49.9 kg	69.4 kg	88.9 kg	108 kg	207 kg	289 kg
Pressure drop						
Internal side	56.4 mbar	63.9 mbar	75.7 mbar	82.1 mbar	87.2 mbar	104 mbar
External side	89.7 mbar	102.0 mbar	119.0 mbar	126.0 mbar	104 mbar	105 mbar
Filling volume						
Internal side	6.99 liter	10.6 liter	14.2 liter	15.2 liter	35.1 liter	50.8 liter
External side	7.23 liter	10.8 liter	14.5 liter	15.0 liter	35.5 liter	51.2 liter

** Planning & support: A complete service package.

Our engineers work together with project planners and architects to design energy efficient customized cooling solutions that meet the requirements of profitability, efficiency, and environmental friendliness. We support our customers on every step of the project, from planning to commissioning to after sales services. Our team provides optimal solutions for the layout and integration of our adsorption cooling systems in every cooling application.









OUR ENGINEERING SERVICES INCLUDE:

- » Determining the most efficient and profitable design of your new cooling system
- » Calculating detailed business case with our proprietary calculation tool
- » Providing information and assistance regarding government subsidies
- Providing piping and instrumentation diagrams and electrical plans
- » Generating 3D animations in CAD



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