

RACKCHILLER REAR DOOR COOLER, ACTIVE



INDUSTRY STANDARDS

UL Listed to 1995
 cUL Listed per CSA C22.2 No. 236-15
 Rear Door Cooler Adapter Kit: UL Listed to 508A

APPLICATION

RackChiller Rear Door Cooler (RDC) Water Heat Exchanger is designed for managing high heat load cooling requirements within high-density server, computing and storage racks. The entire system is integrated within an aesthetically framed perforated door with protective covers to isolate the liquid source and cooling loop from the rack-mounted equipment. The RDC installs on equipment racks as a separate rear door with an extra frame, enabling it to be retrofitted to existing racks.

RackChiller Rear Door cools the warm exhaust air from the IT equipment through a large cooling coil before re-introducing back into the room. Cooler fans support the IT equipment fans to overcome the cooling coil impedance. Heat dissipated by the rack equipment will be removed by the water circuit, adding no heat to the IT room.

FEATURES

- Optional local display
- Modbus TCP and SNMP v2c interface, integrated web interface
- Temperature sensors on air supply and return side
- Optional water flow, pressure and temperature sensors included with the water control package allow for water monitoring and regulation according to actual heat load
- Frame solution separates coil and condensate management from the rack-mounted equipment
- Rear space inside the cabinet is completely available for power distribution and cable management
- Easily adapts to nVent cabinets; contact nVent to request information for integrating with third party cabinets

SPECIFICATIONS

GENERAL

- Available in 600 mm (23.62") and 800 mm (31.50") widths and 2000 mm (78.74") 42U, 2200 mm (86.61") 47U and 2450 mm (96.46") 52U heights
- Input Voltage: 200 - 240 VAC
- Input current rated 2,3 A (230 V)
- Input current max. 8 A (200 V)
- Power consumption max. 530 W (Fan speed 100%)

OPTIMAL CONDITIONS

- Water supply Temperature: 12 C / 53.6 F
- Outlet Temperature: 24 C / 75.2 F
- Water Flow: 4.8 m³/h / 21.1 gal/min
- Water Side Pressure Drop: <100 kPa / 14.5 psi
- At 100% fan speed, sound pressure level 69dB (A)

PIPE CONNECTIONS

- Heat exchanger connections external thread BSPP 1-1/4" thread flat sealing, integrated venting valve with hose
- Water Connection Set (optional) – 2 x stainless steel corrugated hose 2.4 m (7.87 ft.), torsion-free connection BSPP 1-1/4" female thread flat sealing (to air water heat exchanger), union nut BSPP 1-1/4" internal thread flat sealing (to facility water or adapter control valve)
- Control Valve with Servomotor (optional) – BSPT 1" female thread with 2 x adapter fitting BSPT 1" to BSPP 1-1/4"

FINISH

- Black Gray, RAL 7021
- Fan cover, RAL 7001

NOTES

- For trouble-free operation, it is recommended to use the water connection set and the optional accessories
- Customer must order corresponding adapter kit for each rear door

Standard Product RackChiller Rear Door Coolers (Active)

Catalog Number	AxBxC mm	AxBxC in.	Fits Cabinet	Cooling Capacity (kW)	Air Flow (m ³ /hr)	Air Flow (CFM)	Water Content (Liters)	Water Content (Gallons)	Weight Dry (kg)*	Weight Dry (lb.)*	Weight Wet (kg)*	Weight Wet (lb.)*
21130806	2018 x 598 x 326	79.45 x 23.55 x 12.85	600 x 2000	30	5900	3500	7.0	1.8	107	235	114	251
21130807	2018 x 798 x 326	79.45 x 31.42 x 12.85	800 x 2000	45	6800	4000	8.8	2.3	123	271	132	291
21130808	2218 x 598 x 326	87.32 x 23.54 x 12.85	600 x 2200	34	6000	3550	7.8	2.1	112	247	120	264
21130809	2218 x 798 x 326	87.32 x 31.42 x 12.85	800 x 2200	50	7000	4100	9.8	2.6	130	287	140	309
21130810	2468 x 598 x 326	97.16 x 23.54 x 12.85	600 x 2450	34	6000	3550	7.8	2.1	118	260	126	277
21130811	2468 x 798 x 326	97.16 x 31.42 x 12.85	800 x 2450	50	7000	4100	9.8	2.6	137	302	147	324

* Weight values are within +/- 5%.



1. Differential Pressure Sensor
2. RackChiller Controller
3. Heat Exchanger
4. Temperature Sensor Warm Air (Top)
5. Water Supply Flange
6. Water Return Flange
7. Temperature Sensor Warm Air (Bottom)
8. Mounting Frame
9. Levelling Feet
10. Fan 1
11. Fan 2
12. Fan 3
13. Fan 4
14. Display (Optional)
15. Venting Valve
16. Control Valve with Servometer (Optional)
17. Water Connection Set (Optional)
18. Server Rack (Optional)

Determining Cooling Capacity Under the Following Conditions

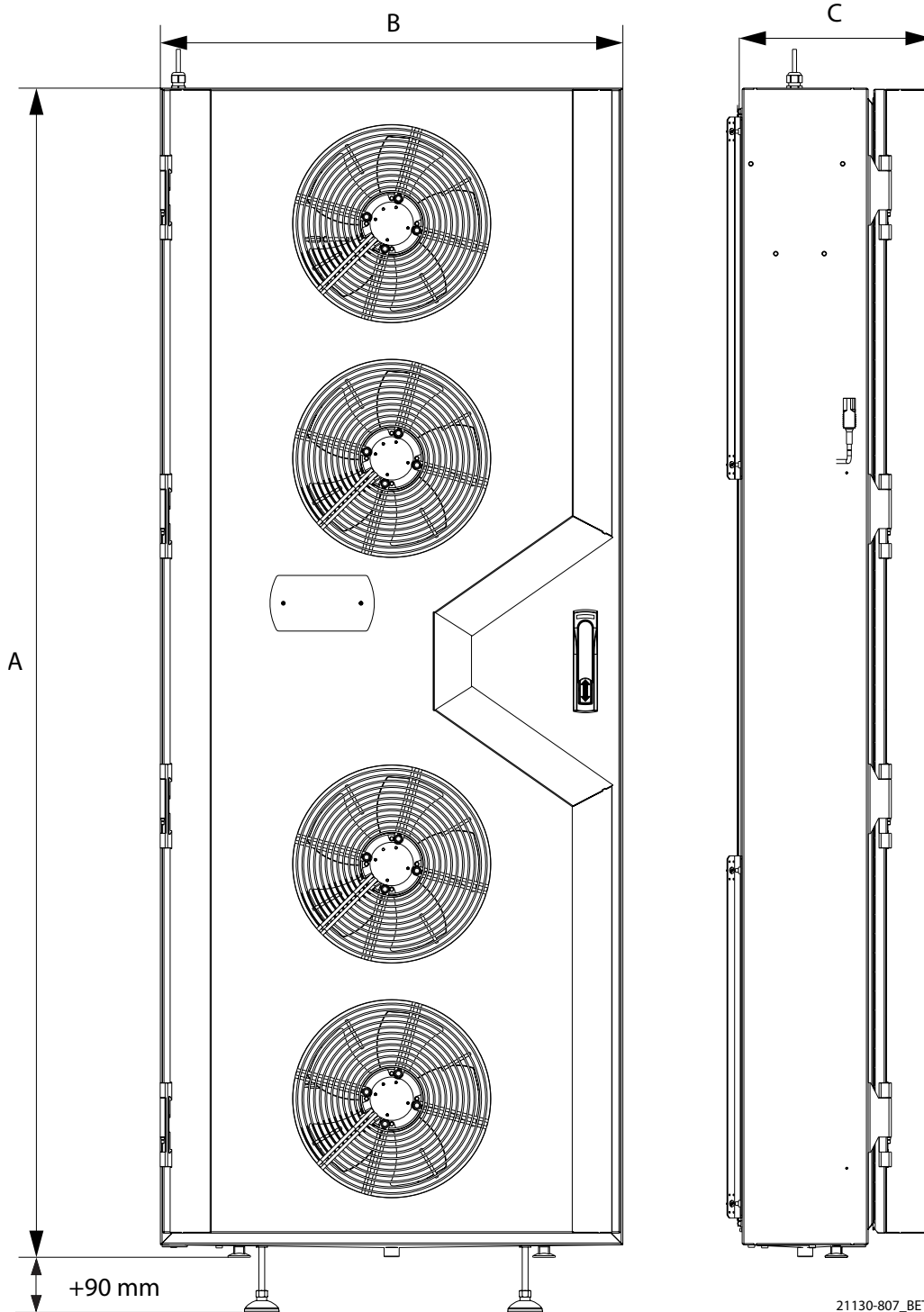
Δp Water (kPA / inH2O)	Output Air Temperature (C / F)	Water Flow (m ³ /h / gal/min)	Airflow
<100 / 14.5	24 / 75.2	4.8 / 21.1	Depends on cooling module dimensions, see table

Required Water Quality

Water Property	Water Property Value
Electrical Conductivity	25 mS/m - 220 mS/m @ 25 C
Hydrogen Concentration	7.5 - 8.5 (ph-value) @ 20 C
Chloride	<200 g/m ³
Total Hardness	>3° dH <8 °dH
Colony-forming units	<10,000 CFU/ml
Appearance	Clear
Color	Colorless

Delivery Includes

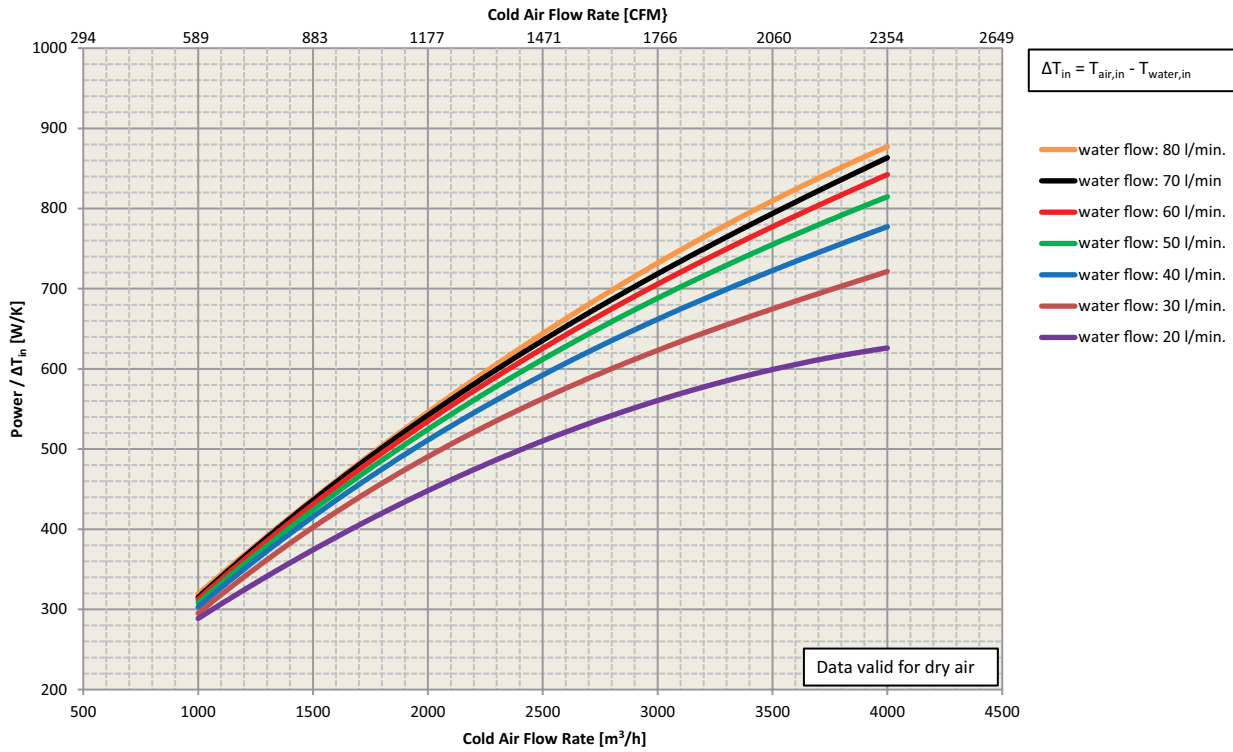
Quantity	Description
1	Mounting frame, St, 2 mm, RAL 7021; with integrated condensate tray, VA, 2 mm, powder coated RAL 7021; Leveling feet mounted, stainless steel connecting piece VA 1.4571 (stainless steel) for condensate drainage; Mounting bracket for Varistar, Proline frame, St, 2 mm, powder coated RAL 7021, including mounting hardware, installation instructions
1	Heat exchanger on door, St, 1.5 mm, powder-coated RAL 7021, perforated on the outside, flow-optimized perforation; 4 x radial fans, 300 mm cover panel in RAL 7001; 3 x 180° hinge, three-point lock, lever handle for optional DIN profile half cylinder; Connections heat exchanger external thread G1 ¼ in., integrated venting valve with hose
1	Control unit RDC, 1 x control unit AlZn 1.5 mm, hood St 1.0 mm, RAL 7021; 1 x RJ45 socket, SNMP and Modbus interface, for integration in higher-level management systems or direct Web GUI access; 1 x power connection 85 ... 260 VAC; 1 x power cable IEC C14 to SCHUKO
1	User manual is provided as a download



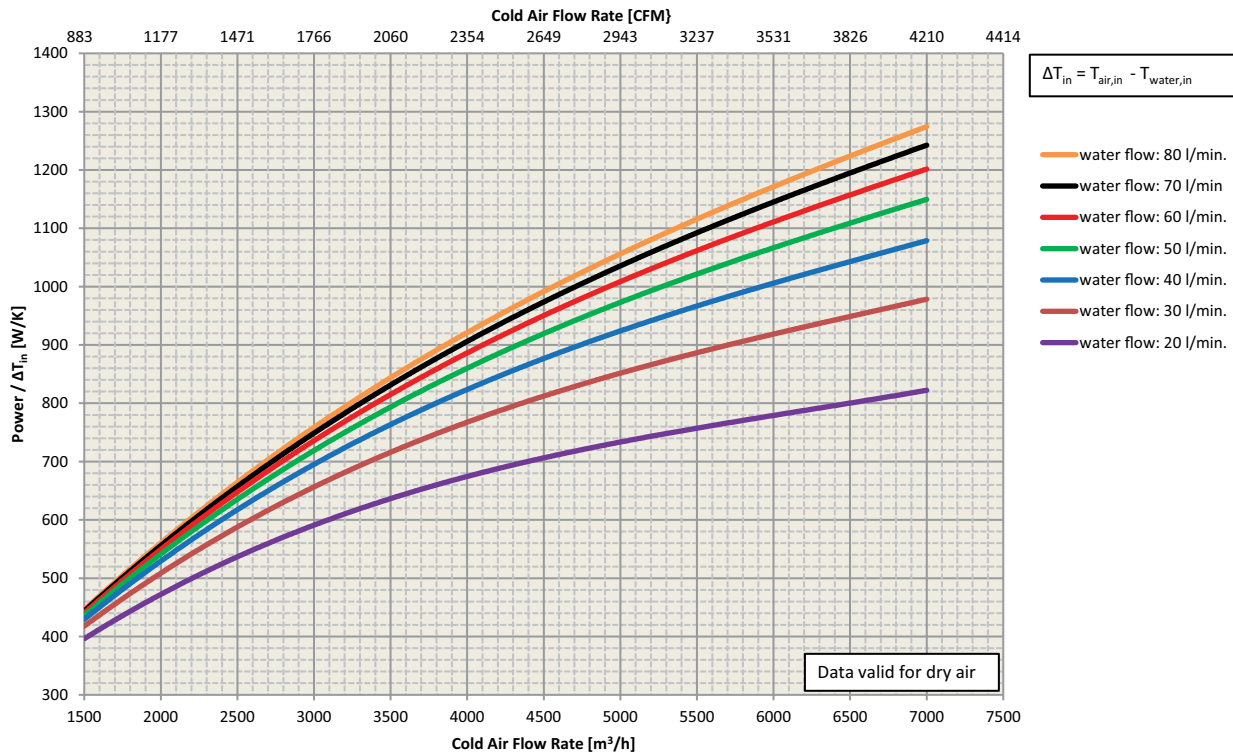
21130-807_BET

Rear Door Cooler Performance Data Curves

600x2000mm



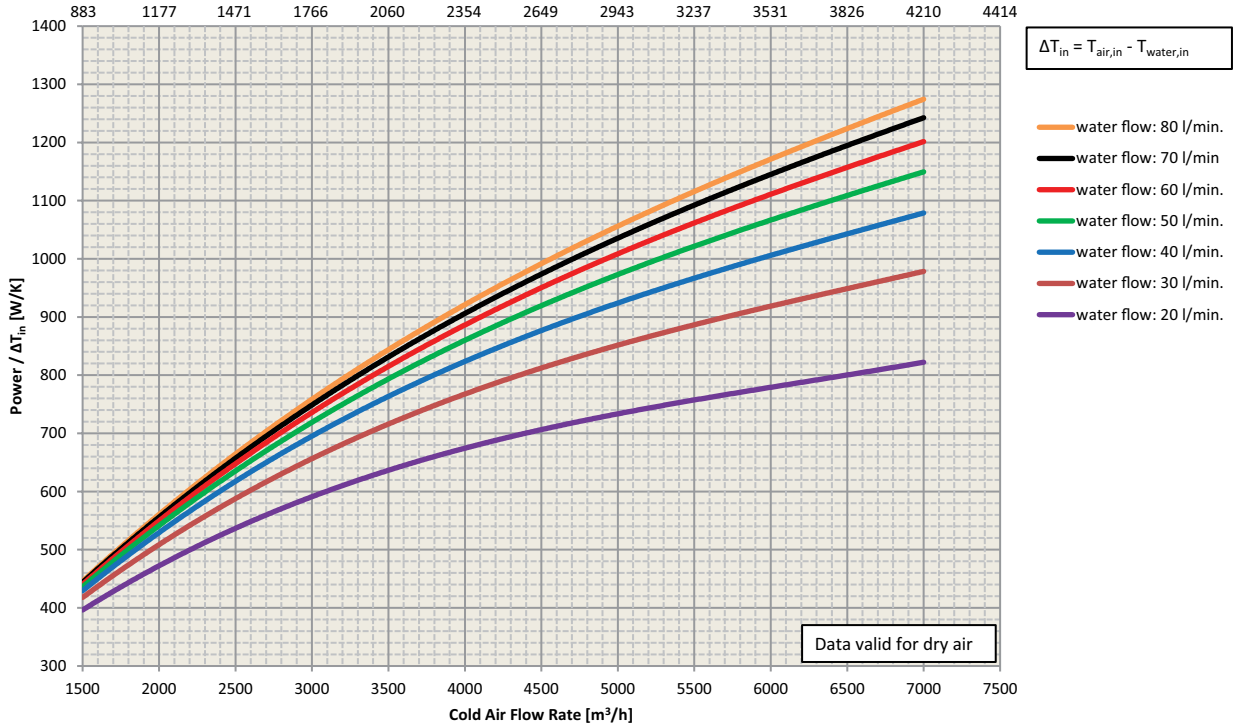
600x2200mm



Rear Door Cooler Performance Data Curves

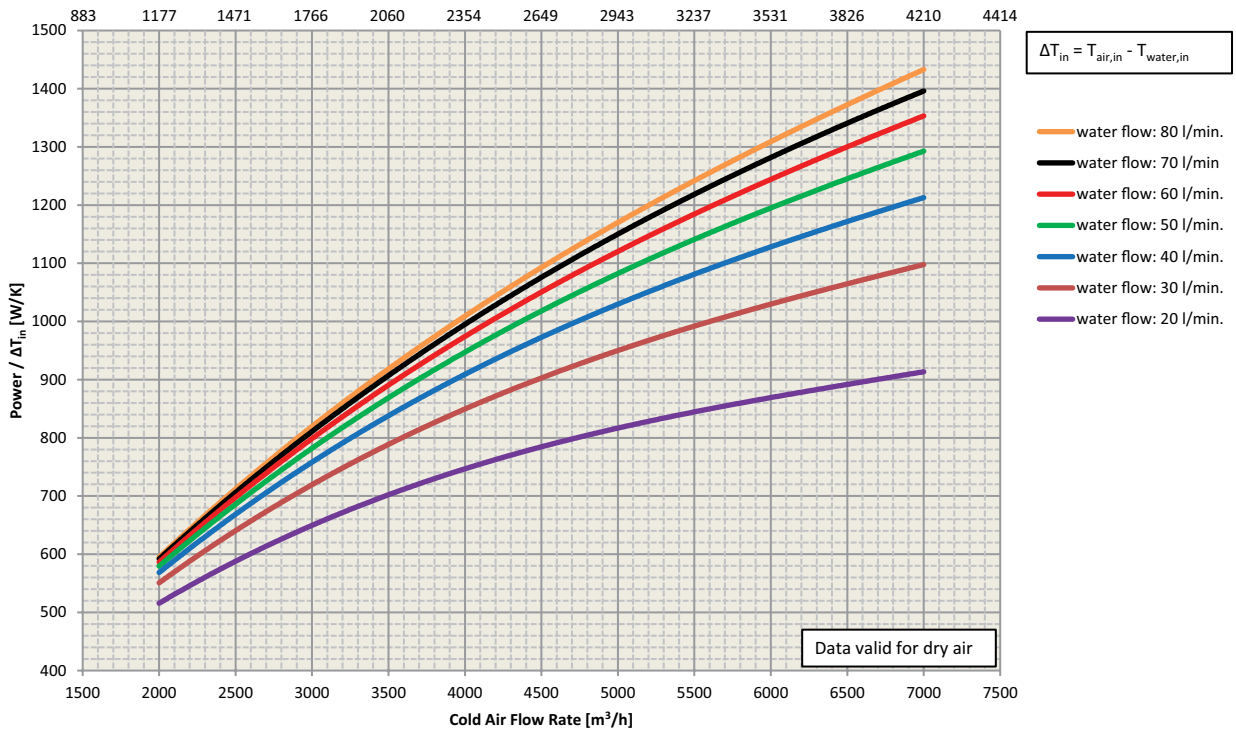
600x2450mm

Cold Air Flow Rate [CFM]

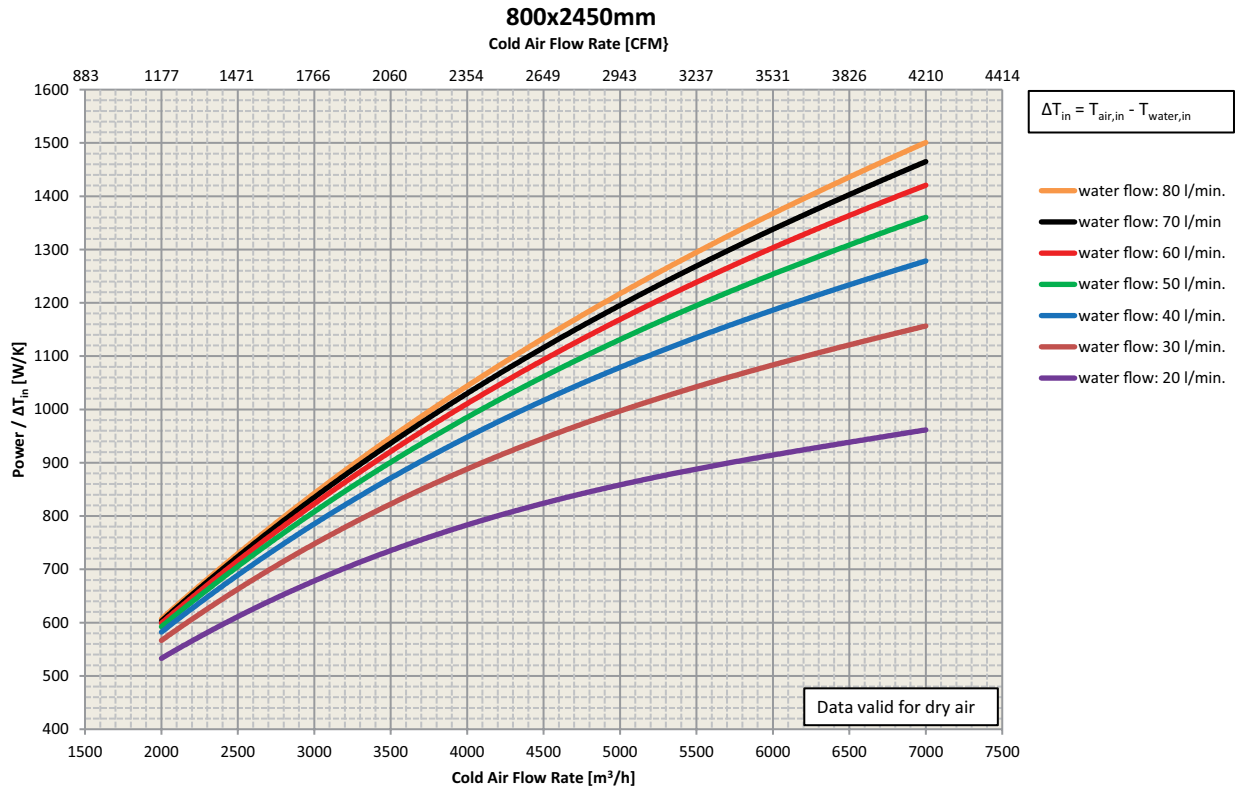
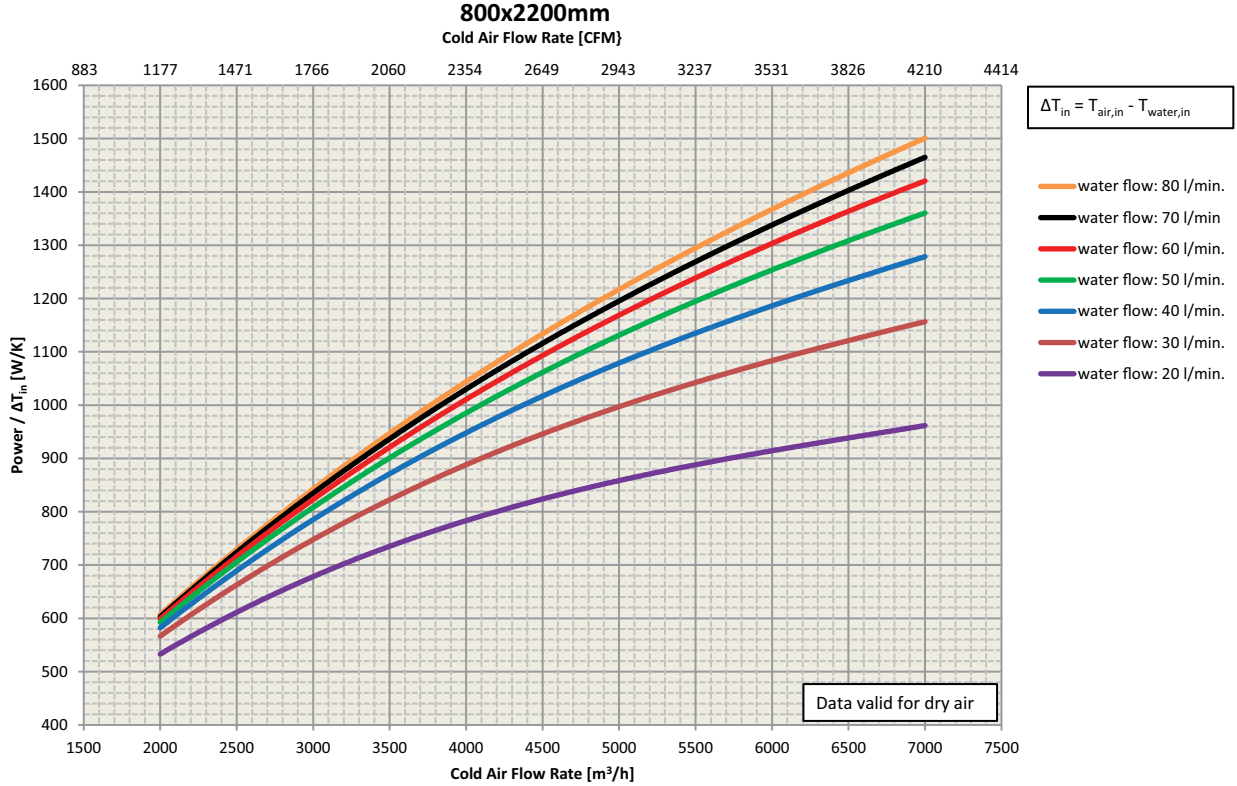


800x2000mm

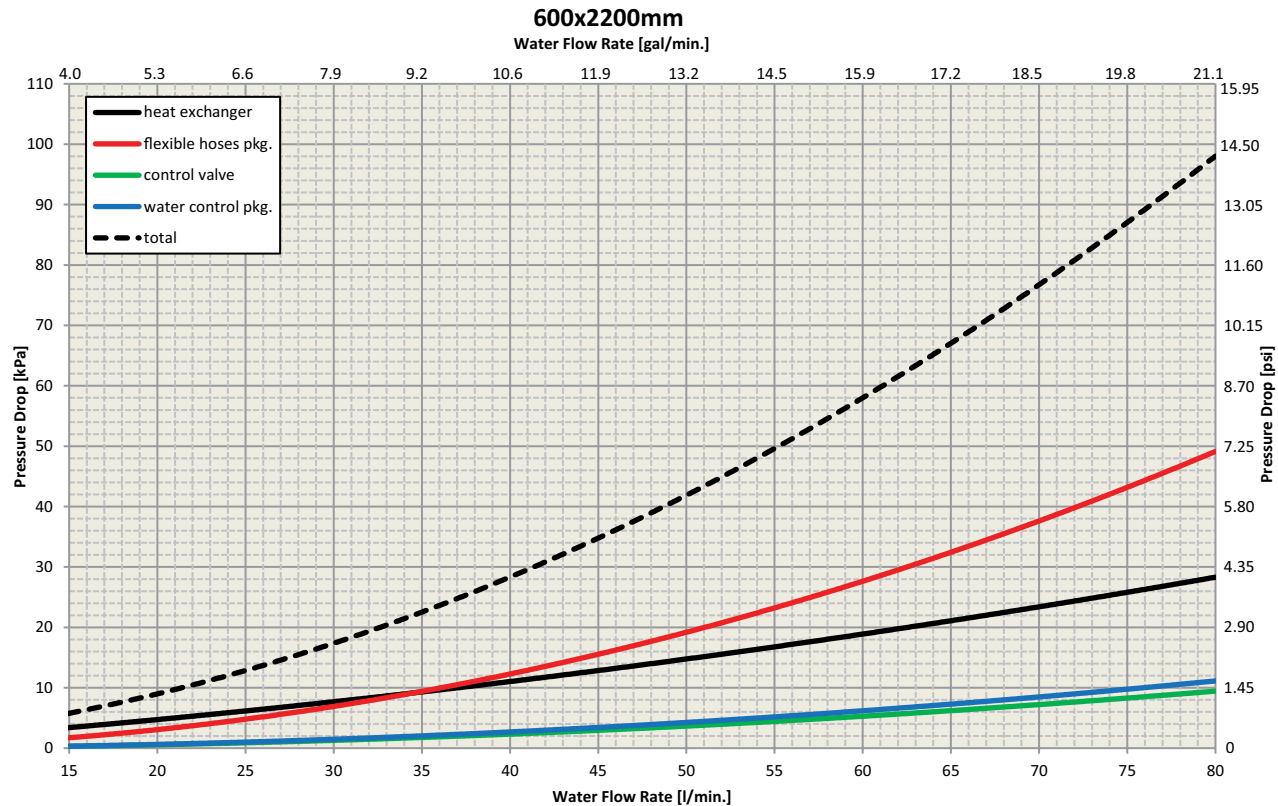
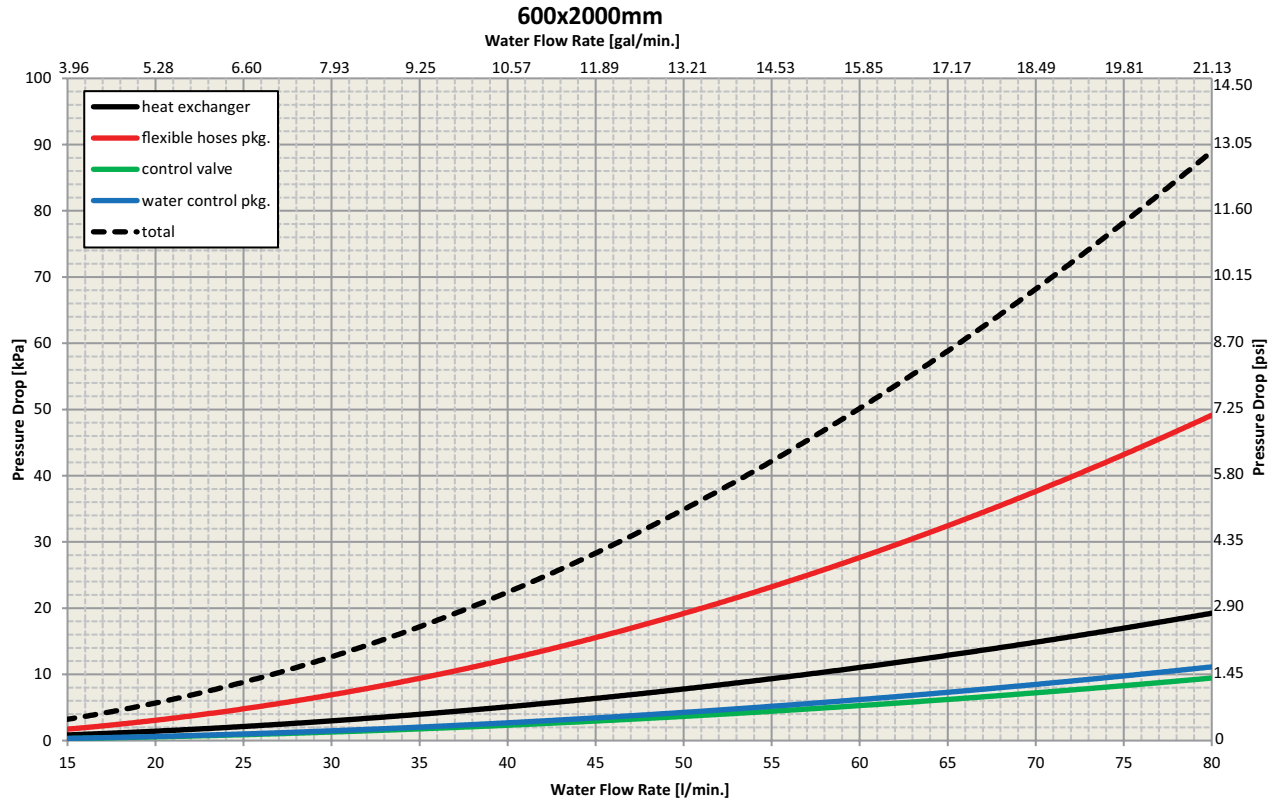
Cold Air Flow Rate [CFM]



Rear Door Cooler Performance Data Curves

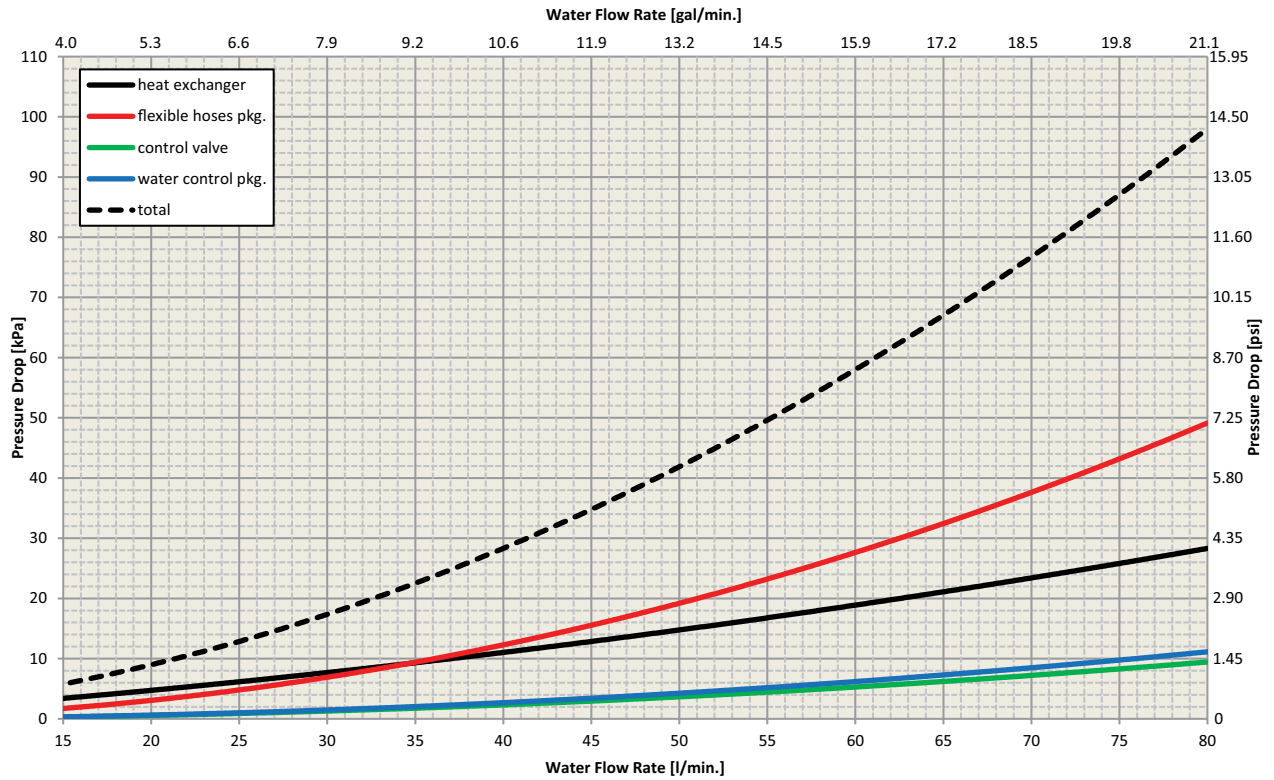


Rear Door Cooler Water Side Pressure Drop Curves

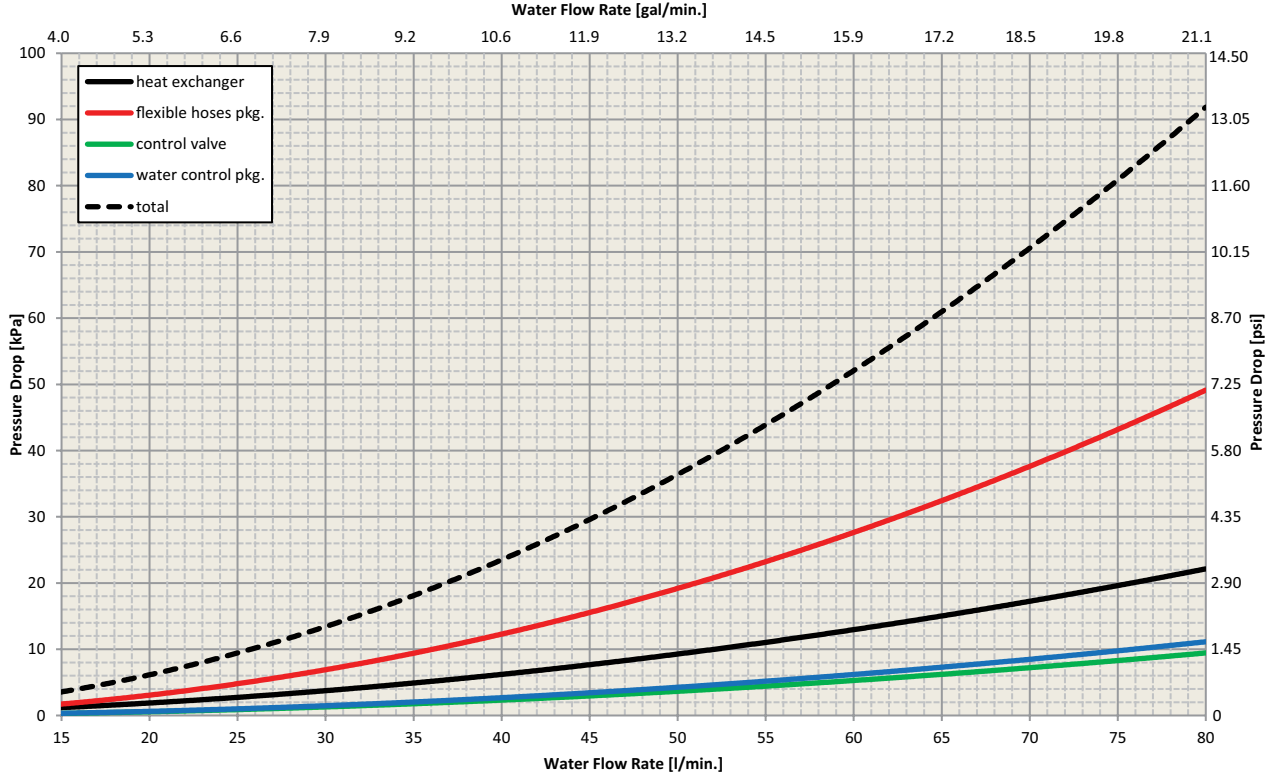


Rear Door Cooler Water Side Pressure Drop Curves

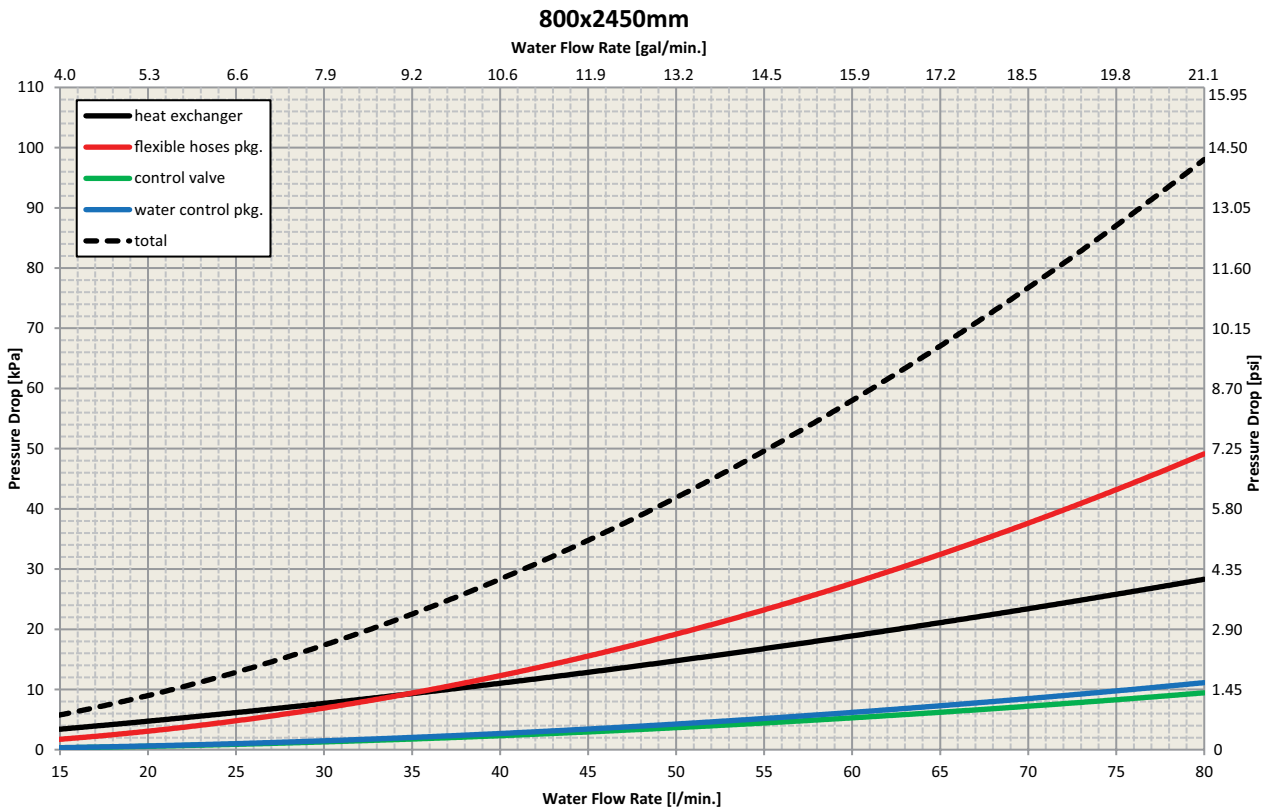
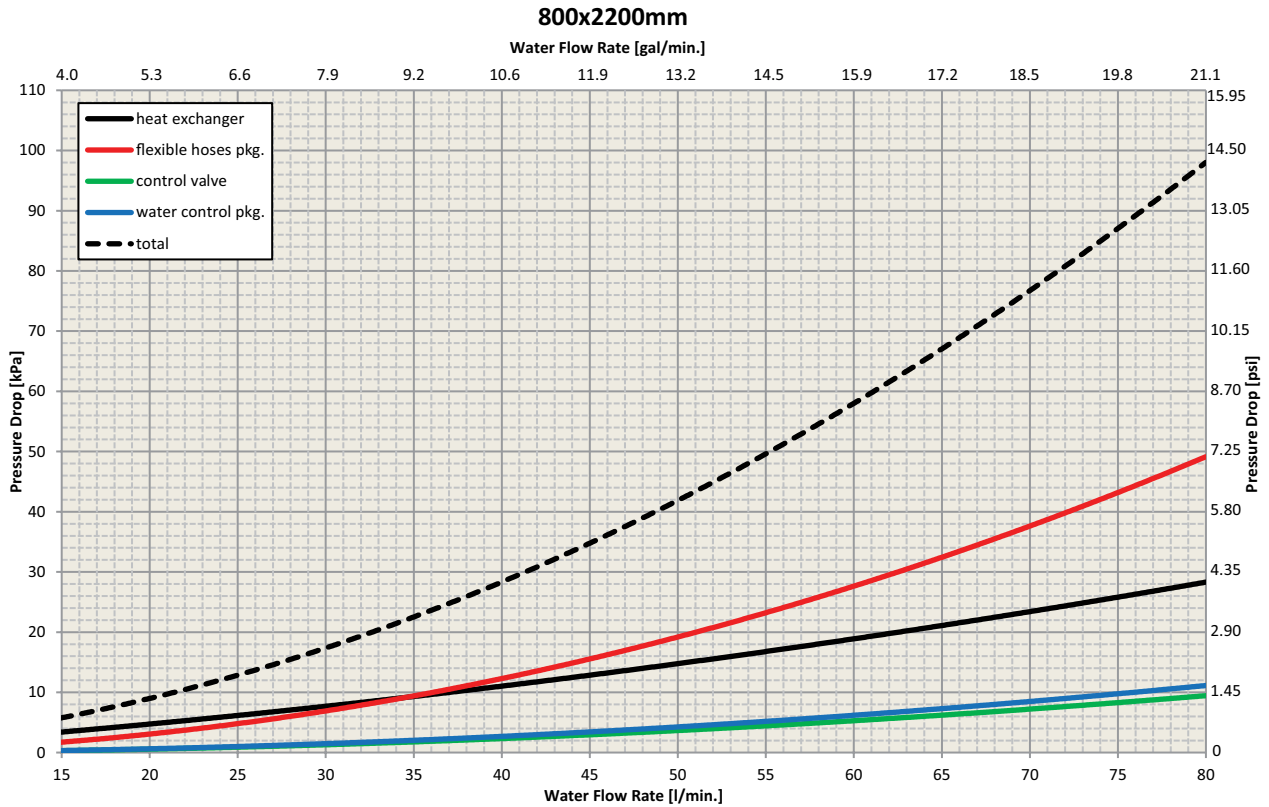
600x2450mm



800x2000mm



Rear Door Cooler Water Side Pressure Drop Curves



WATER CONNECTION SET



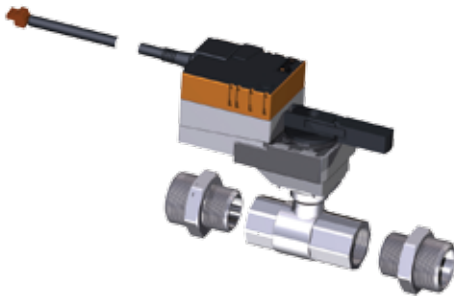
Connects the Rear Door Cooler with the facility cooling system.

Includes:
 2 - Stainless steel corrugated hose 2.4 m (7.87 ft.), torsion-free connection BSPP 1 1/4" female thread flat sealing (to air water heat exchanger), union nut BSPP 1-1/4" internal thread flat sealing (to facility water or adapter control valve), insulation, black, foam FEF (Flexible Elastomeric Foam), Halogen free
 1 - Assembly instruction

NOTE: for trouble-free operation it is recommended to use the water connection set and the optional accessories.

Catalog Number	Description
23130593	Water Connection Set

CONTROL VALVE WITH SERVOMOTOR



Enables water flow control based on temperature set point.

Includes:
 1 - Actuator 24 VDC, maximum water pressure 16 bar, 2-way ball valve, BSPT 1" female thread with 2 x adapter fitting BSPT 1" to BSPP 1-1/4"
 1 - Assembly instructions

NOTE: for trouble-free operation it is recommended to use the water connection set and the optional accessories.

Catalog Number	Description
23130607	Control Valve with Servomotor

WATER CONTROL PACKAGE



Water flow, pressure and temperature sensors included with the Water Control Package allow for water monitoring and regulation according to actual heat load.

Includes:
 1 - Water pressure and temperature sensor mounted on measuring section for installation in water supply, stainless steel casting
 1 - Water flow and temperature sensor mounted on measuring section, stainless steel casting
 2 - Connecting cable to the control unit, flat gaskets and adapter socket suitable for mounting with water connection set 23130593 and control valve 23130607
 1 - Assembly instruction

NOTE: for trouble-free operation it is recommended to use the water connection set and the optional accessories.

Catalog Number	Description
23130608	Water control package (sensor water flow, pressure and temperature)

DISPLAY FOR CONTROL UNIT



- Access terminal for RackChiller Rear Door Cooler

Includes:
 1 - 132 x 64-pixel display and 6 buttons, dimensions of the viewing area: 72 x 36 mm (2.83" x 1.42"); power supply via control unit; operating languages: English, German, French
 1 - Assembly Instructions

Catalog Number	Use With
23130599	RackChiller Rear Door Cooler, Passive
23130621	RackChiller Rear Door Cooler, Active

ADAPTER KIT, RACKCHILLER REAR DOOR TO PROLINE



The Adaptor Kit joins a RackChiller Rear Door Cooler with ProLine Server Cabinets and Networking Racks. The kits have been designed for ease of installation while maintaining sealing between cooler and rack.

CATALOG NUMBER	Fits Enclosure Size
23130700	2000 x 600
23130701	2000 x 800
23130702	2150 x 600
23130703	2150 x 800
20714020	2300 x 600
20714021	2300 x 800
23130704	2400 x 600
23130705	2400 x 800

Notes