

RACKCHILLER REAR DOOR COOLER, PASSIVE



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 which is being pushed by the fans in the existing rack-mounted IT equipment through a large cooling coil before re-introducing back into the room. Heat dissipated by the rack equipment will be removed by the water circuit, adding no heat to the IT room.

FEATURES

- Fanless solution - no noise, minimal power load
- 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: 85 - 264 VAC

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
- Air Side Pressure Drop: <15 / 0.06 inH₂O
- Water Side Pressure Drop: <100 kPa / 14.5 psi

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

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 (Passive)

| 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.)* |
|----------------|------------------|----------------------|--------------|-----------------------|-------------------------------|----------------|------------------------|-------------------------|------------------|-------------------|------------------|-------------------|
| 21130800 | 2018 x 598 x 229 | 79.45 x 23.54 x 9.02 | 600 x 2000 | 32 | 2850 | 1676 | 7.0 | 1.8 | 72 | 158 | 79 | 174 |
| 21130801 | 2018 x 798 x 229 | 79.45 x 31.42 x 9.02 | 800 x 2000 | 48 | 4600 | 2706 | 8.8 | 2.3 | 83 | 183 | 92 | 203 |
| 21130802 | 2218 x 598 x 229 | 87.33 x 23.54 x 9.02 | 600 x 2200 | 37 | 3200 | 1882 | 7.8 | 2.1 | 76 | 168 | 84 | 185 |
| 21130803 | 2218 x 798 x 229 | 87.33 x 31.42 x 9.02 | 800 x 2200 | 54 | 5150 | 3029 | 9.8 | 2.6 | 88 | 195 | 98 | 216 |
| 21130804 | 2468 x 598 x 229 | 97.16 x 23.54 x 9.02 | 600 x 2450 | 37 | 3200 | 1882 | 7.8 | 2.1 | 80 | 177 | 88 | 194 |
| 21130805 | 2468 x 798 x 229 | 97.16 x 31.42 x 9.02 | 800 x 2450 | 54 | 5150 | 3029 | 9.8 | 2.6 | 93 | 206 | 103 | 227 |

* Weight values are within +/- 5%.



1. Mounting Frame
2. Control Unit (optional)
3. Heat Exchanger
4. Water Connection Cover
5. Water Supply Flange
6. Water Return Flange
7. Display (optional)
8. Water Connection Set (optional)
9. Control Valve with Servomotor (optional)
10. Water Control Package (optional)

Determining Cooling Capacity Under the Following Conditions

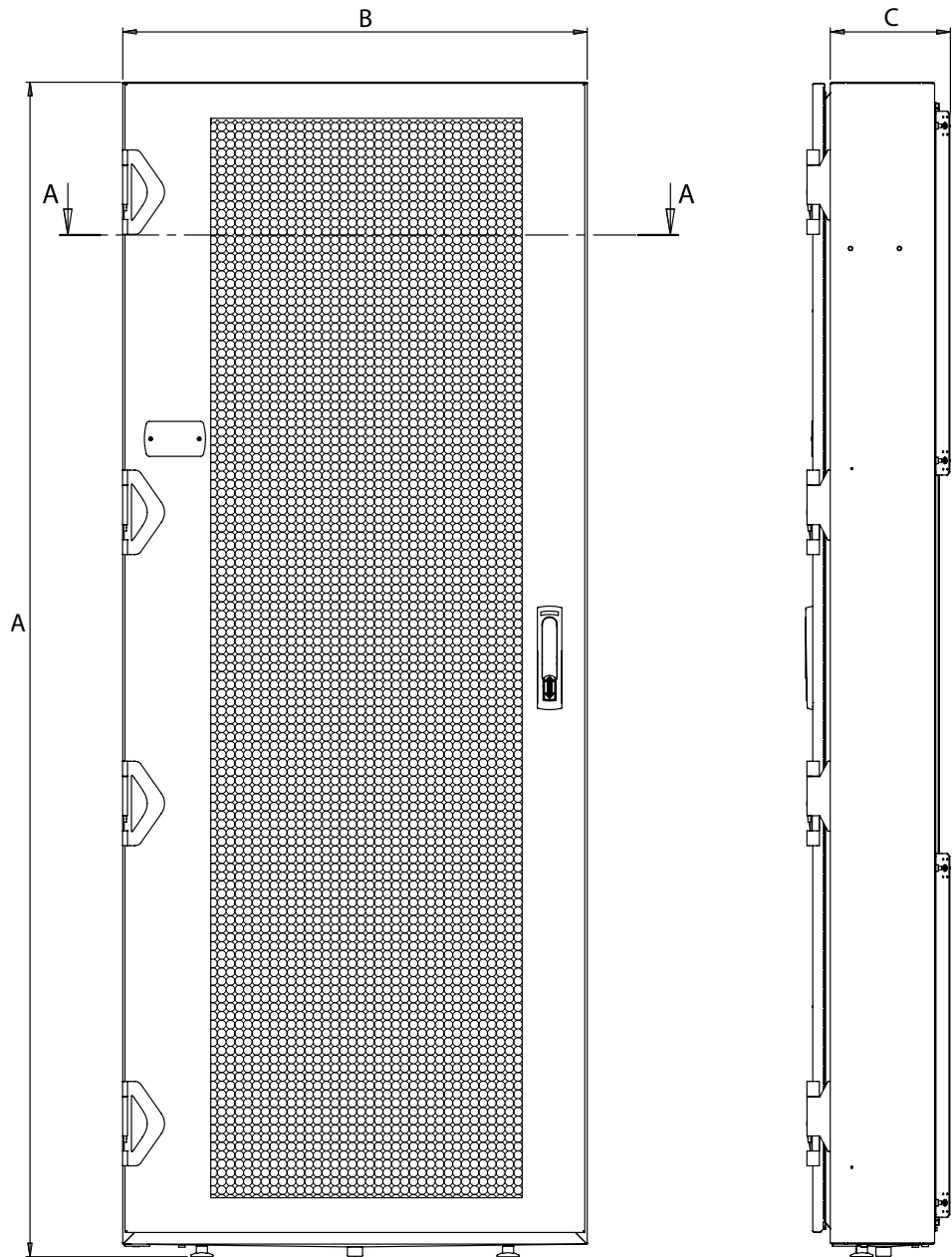
| Δp Water (kPA / inH2O) | Δp Air (Pa / psi) | Supply Water Temperature (C / F) | Output Air Temperature (C / F) | Water Flow (m ³ /h / gal/min) | Airflow |
|-----------------------------------|------------------------------|-------------------------------------|-----------------------------------|---|---|
| <100 / 14.5 | 15 / 0.06 | 12 / 53.6 | 24 / 75.2 | 4.8 / 21.1 | Depends on cooling module dimensions, see table |

Required Water Quality

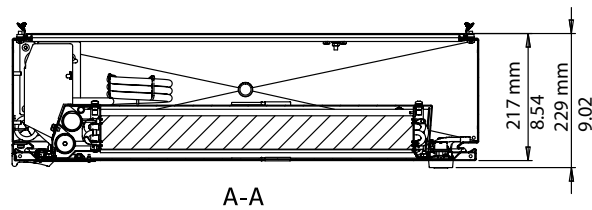
| Water Property | Water Property Value |
|-------------------------|-----------------------------|
| Electrical Conductivity | 25 mS/m - 220 mS/m @ 25 C |
| Hydrogen Concentration | 7.5 - 8.5 (ph-value) @ 20 C |
| Chloride | <200 g/m ³ |
| Total Hardness | >3°dH <8 °dH |
| Colony-forming units | <10,000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

Delivery Includes

| Quantity | Description |
|----------|--|
| 1 | Mounting frame, St, 2 mm; with integrated condensate tray, VA, 2 mm; Leveling feet mounted, stainless steel connecting piece VA 1.4571 (stainless steel) for condensate drainage; Mounting bracket for Varistar, Proline frame, St, 2 mm, including mounting hardware, installation instructions |
| 1 | Heat exchanger on door, St, 1.5 mm, perforated on the outside, flow-optimized perforation, 3 x 180° hinge, three-point lock, lever handle for optional DIN profile half cylinder; Connections heat exchanger external thread G1 1/4", integrated venting valve with hose |
| 1 | User manual is provided as a download |

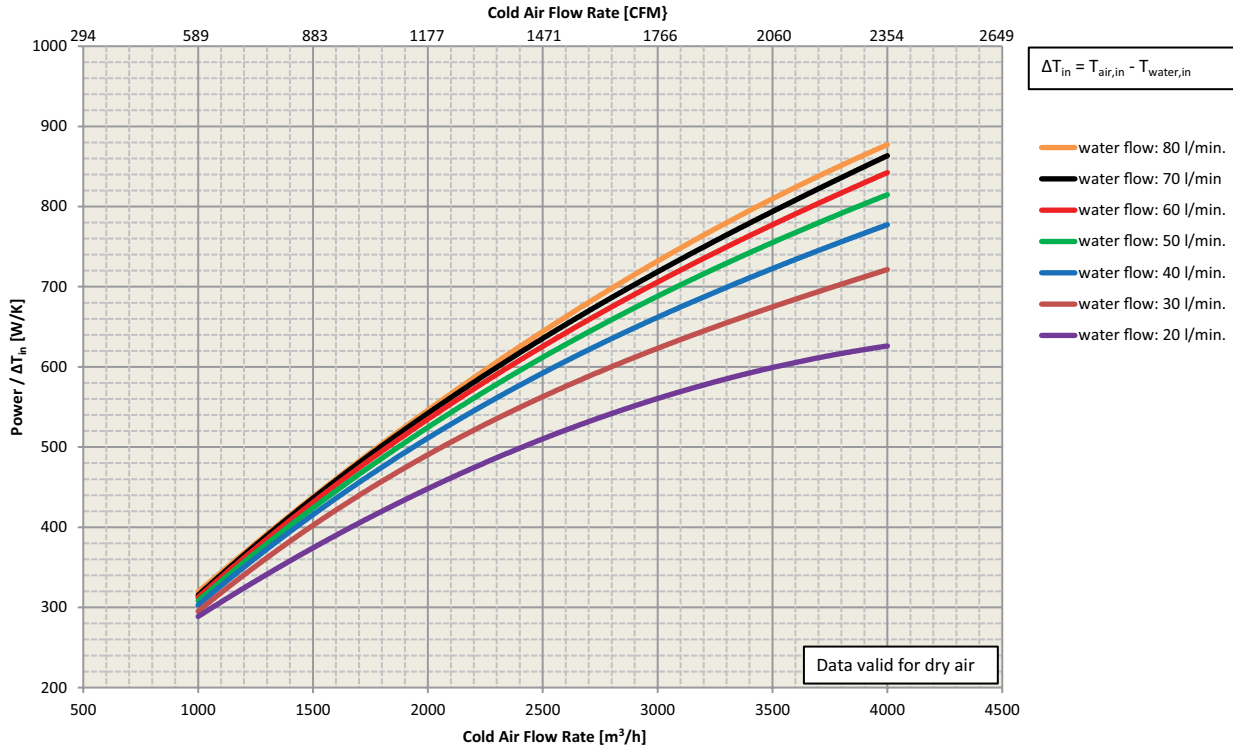


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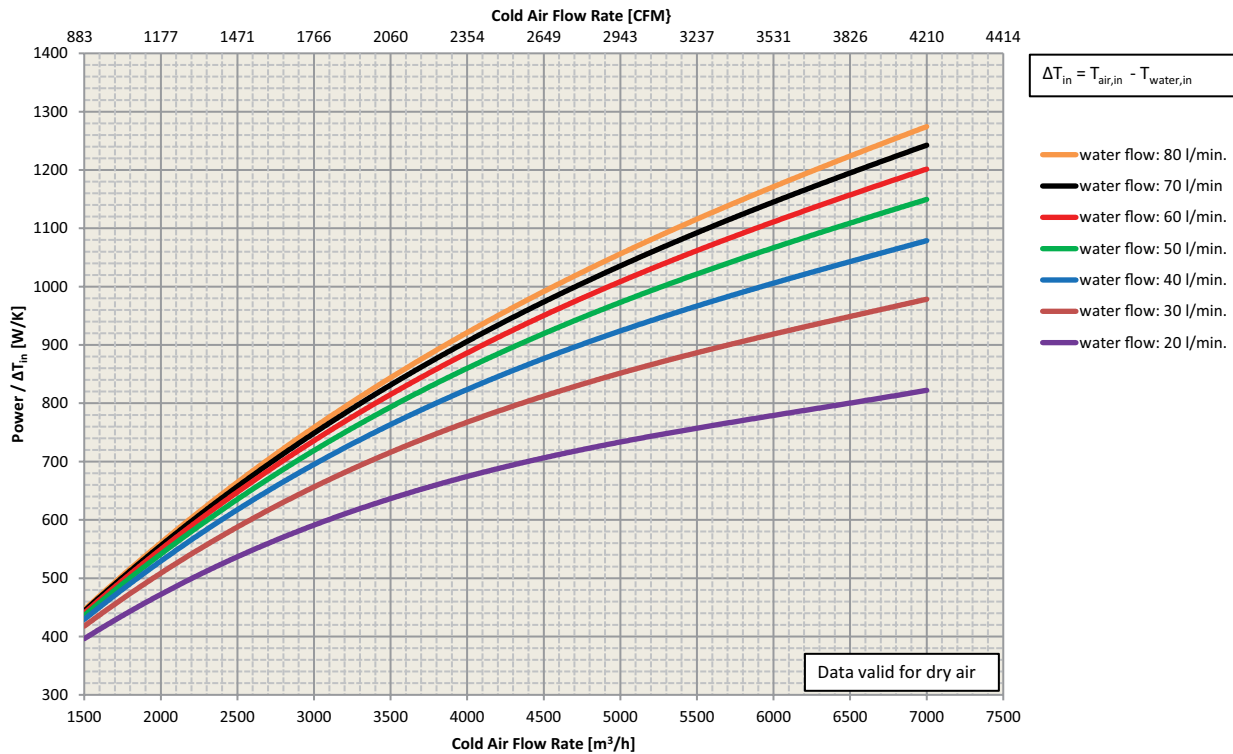


Rear Door Cooler Performance Data Curves

600x2000mm



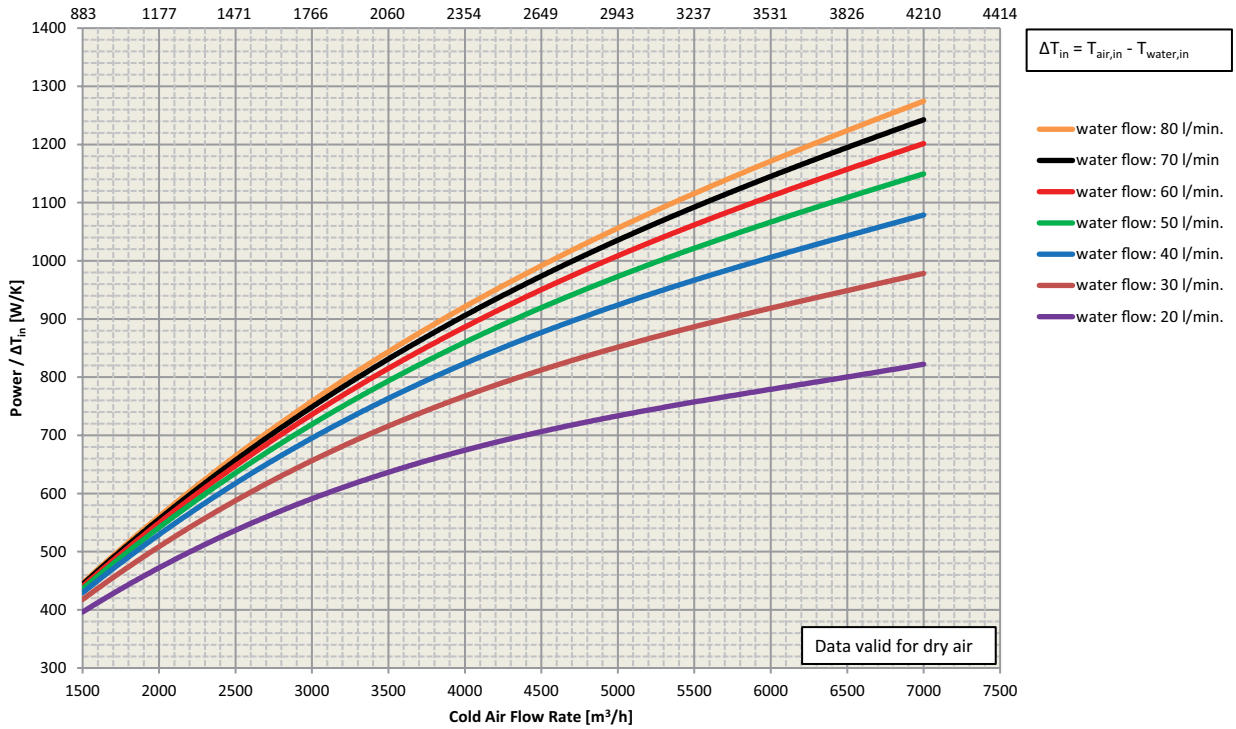
600x2200mm



Rear Door Cooler Performance Data Curves

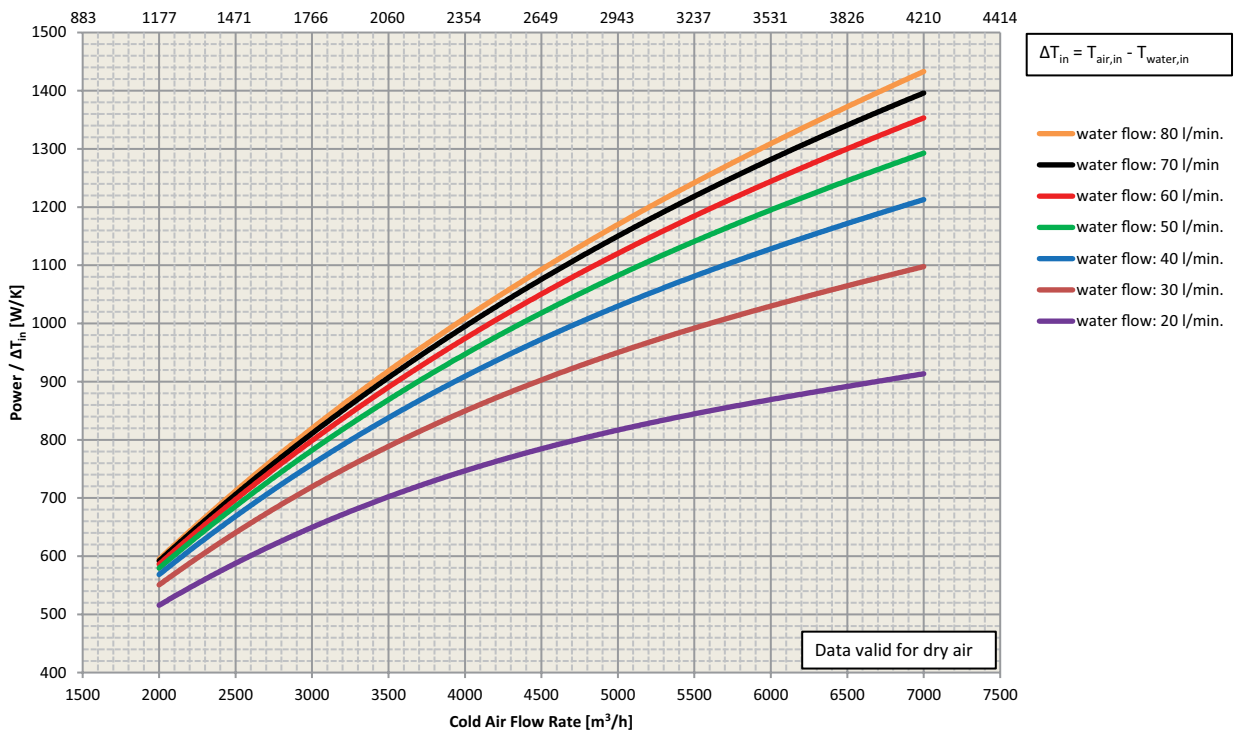
600x2450mm

Cold Air Flow Rate [CFM]

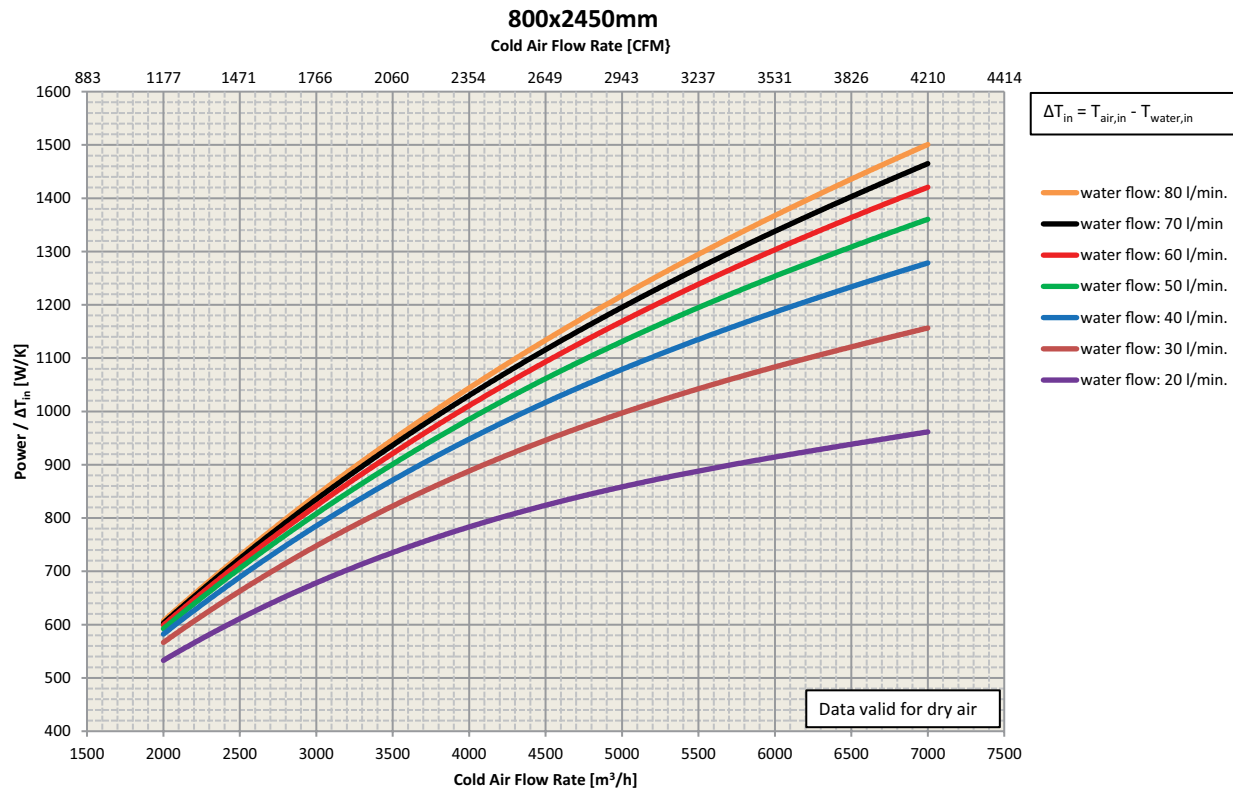
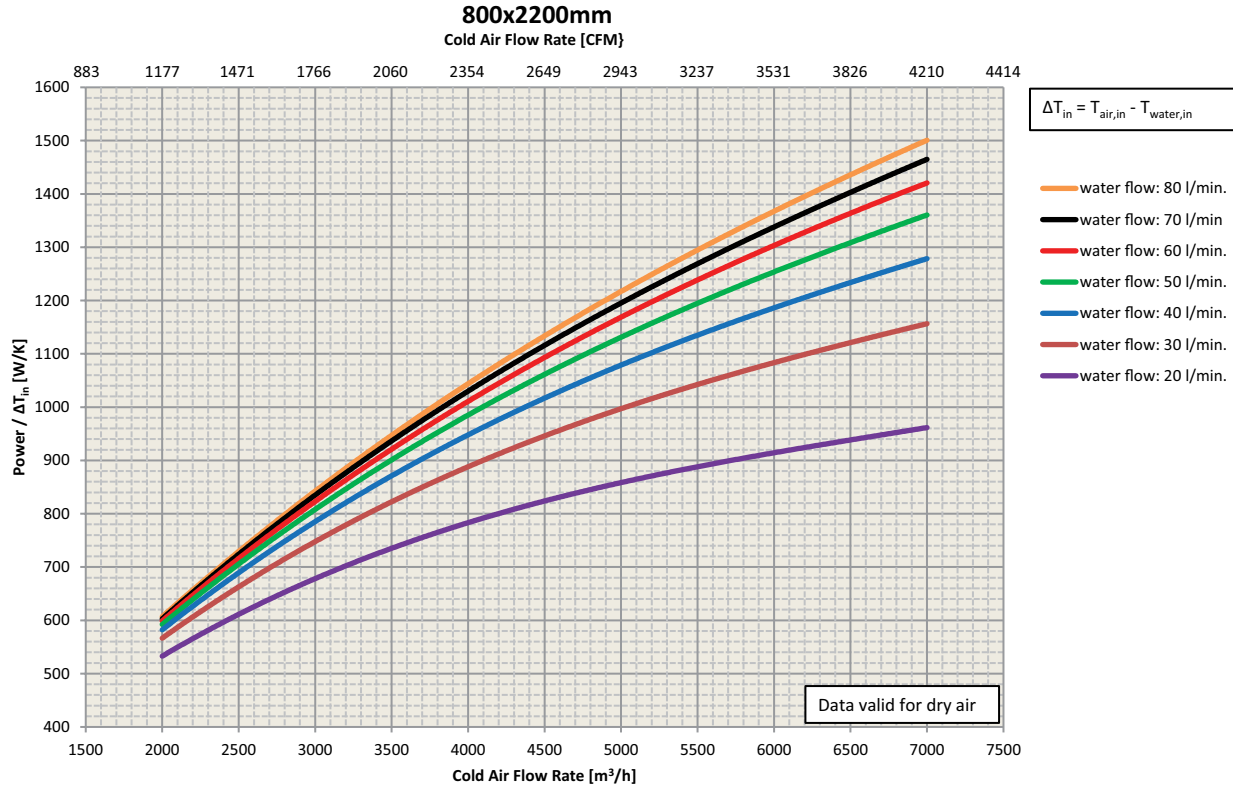


800x2000mm

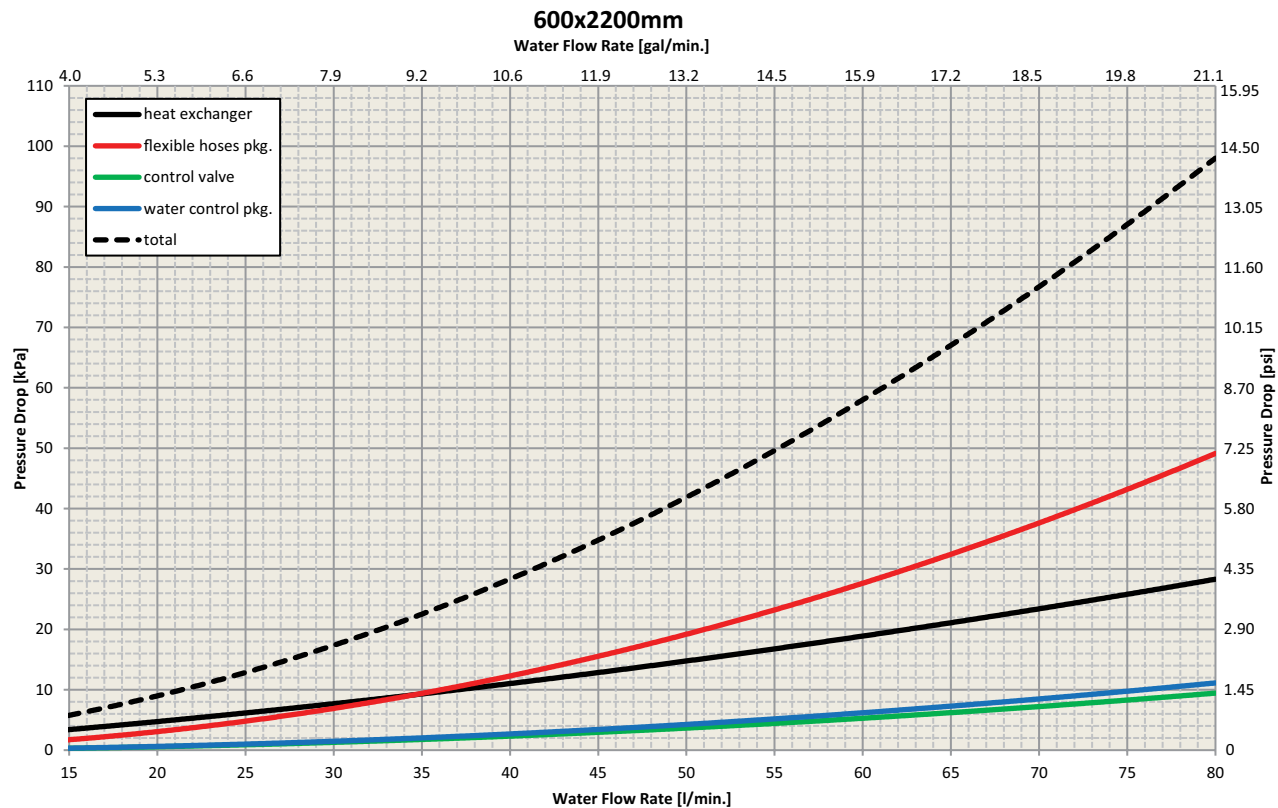
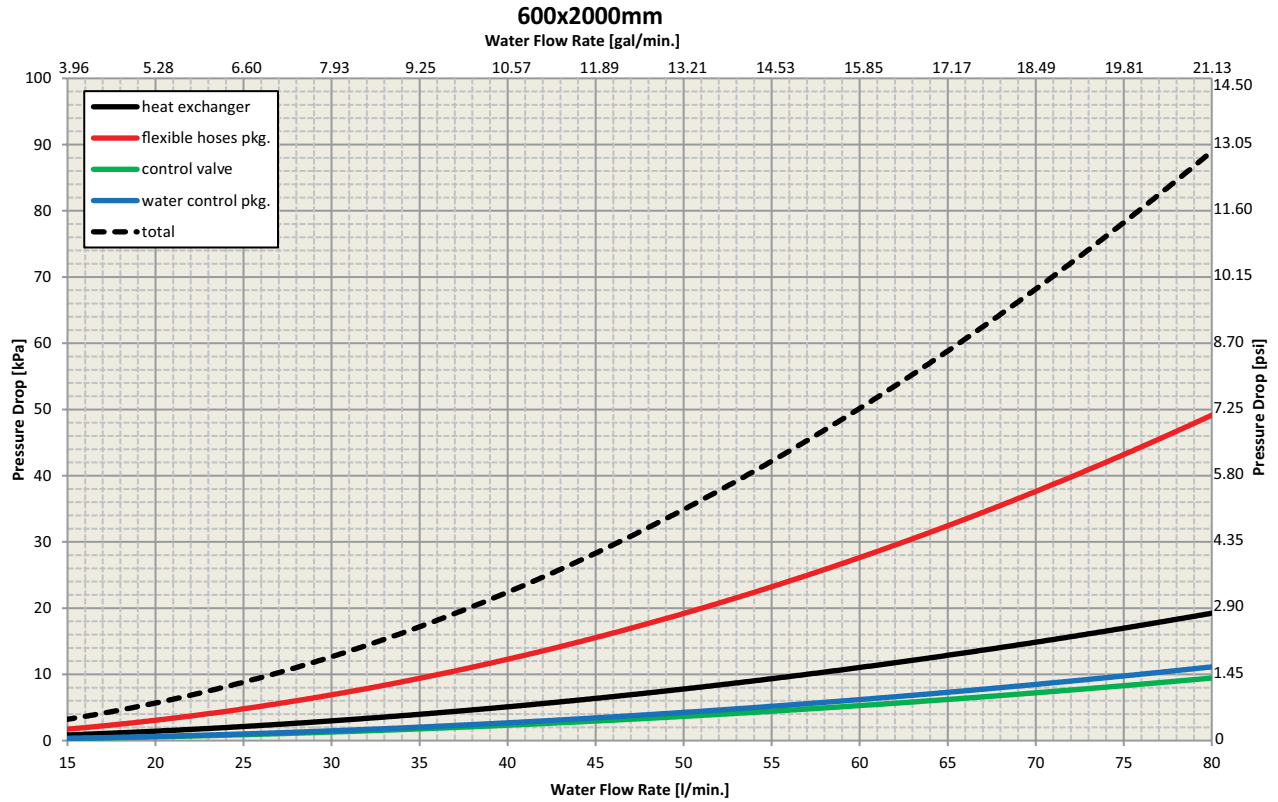
Cold Air Flow Rate [CFM]



Rear Door Cooler Performance Data Curves



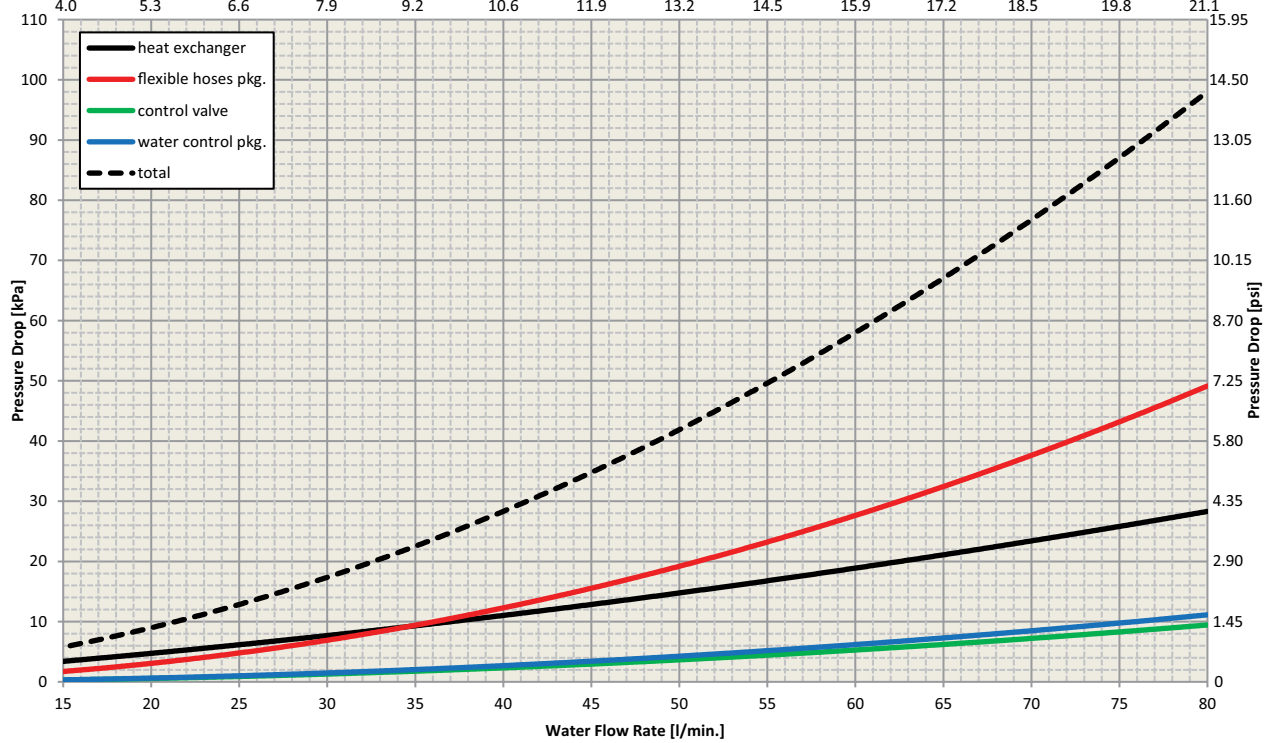
Rear Door Cooler Water Side Pressure Drop Curves



Rear Door Cooler Water Side Pressure Drop Curves

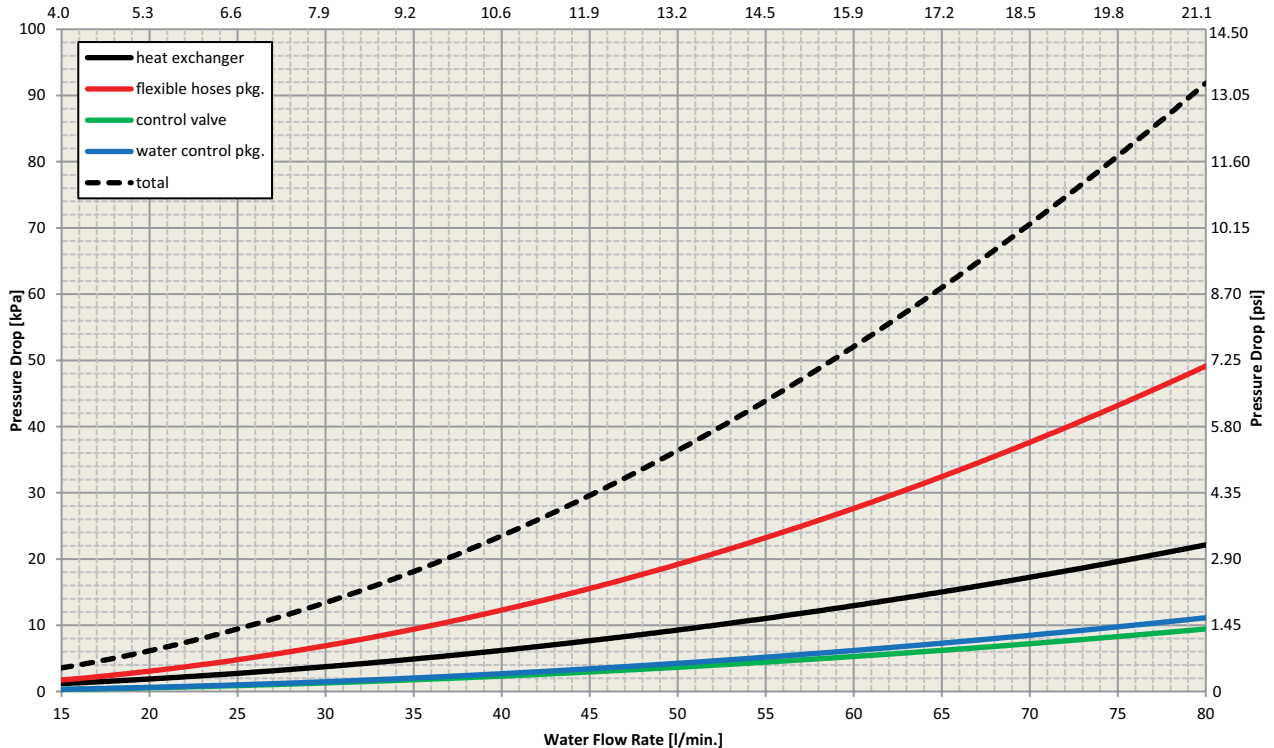
600x2450mm

Water Flow Rate [gal./min.]

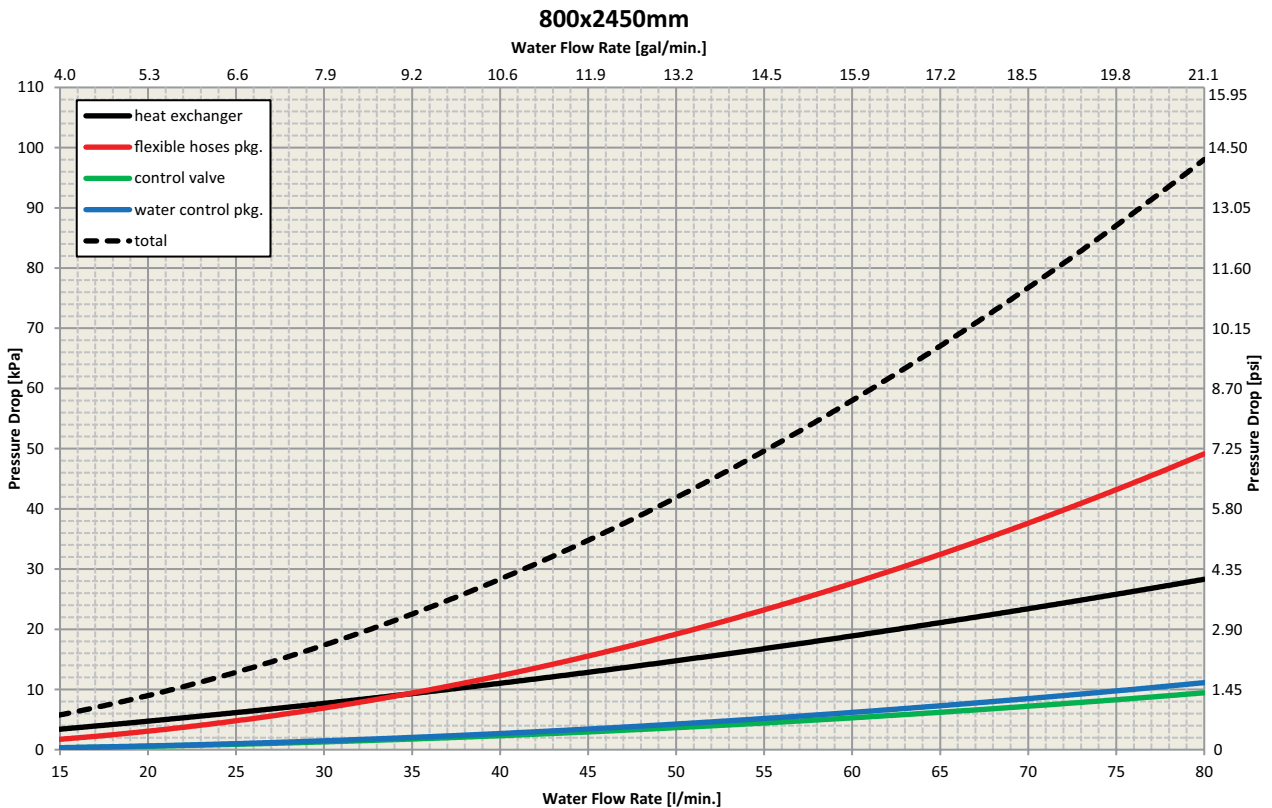
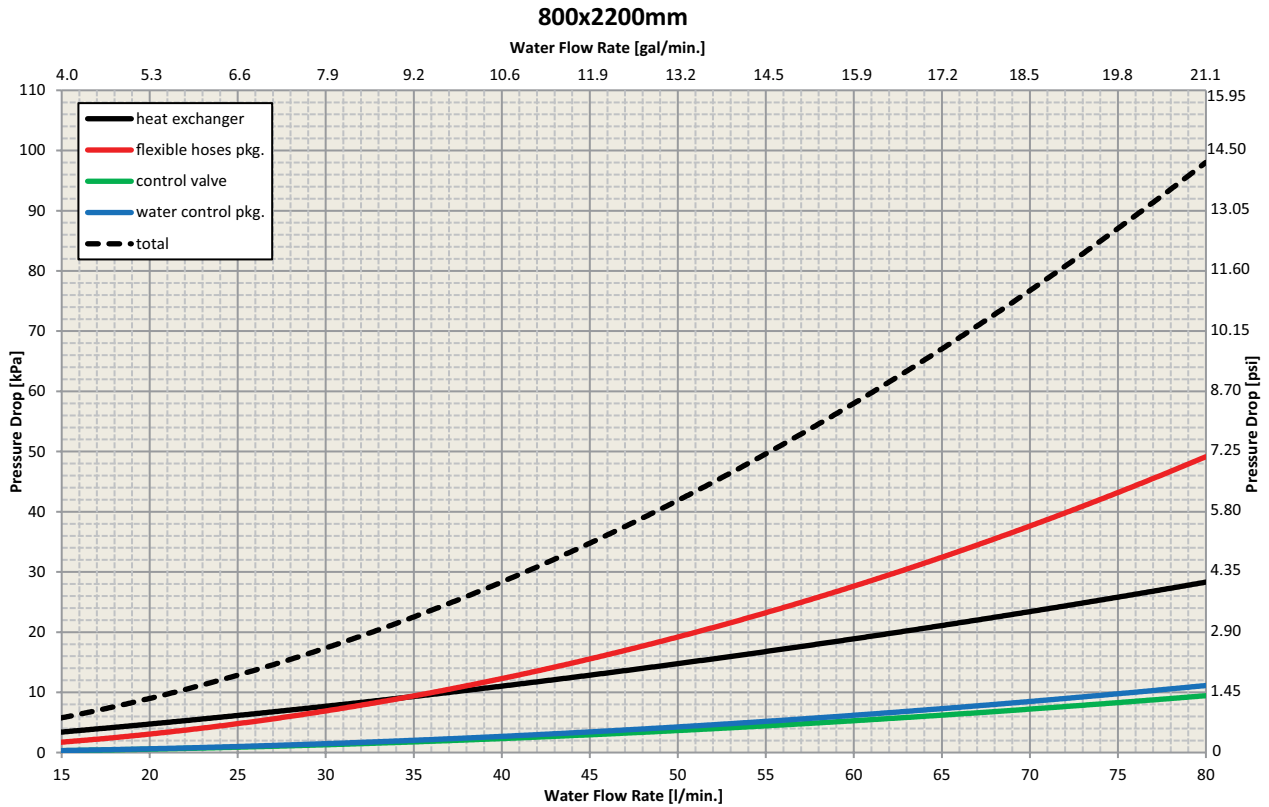


800x2000mm

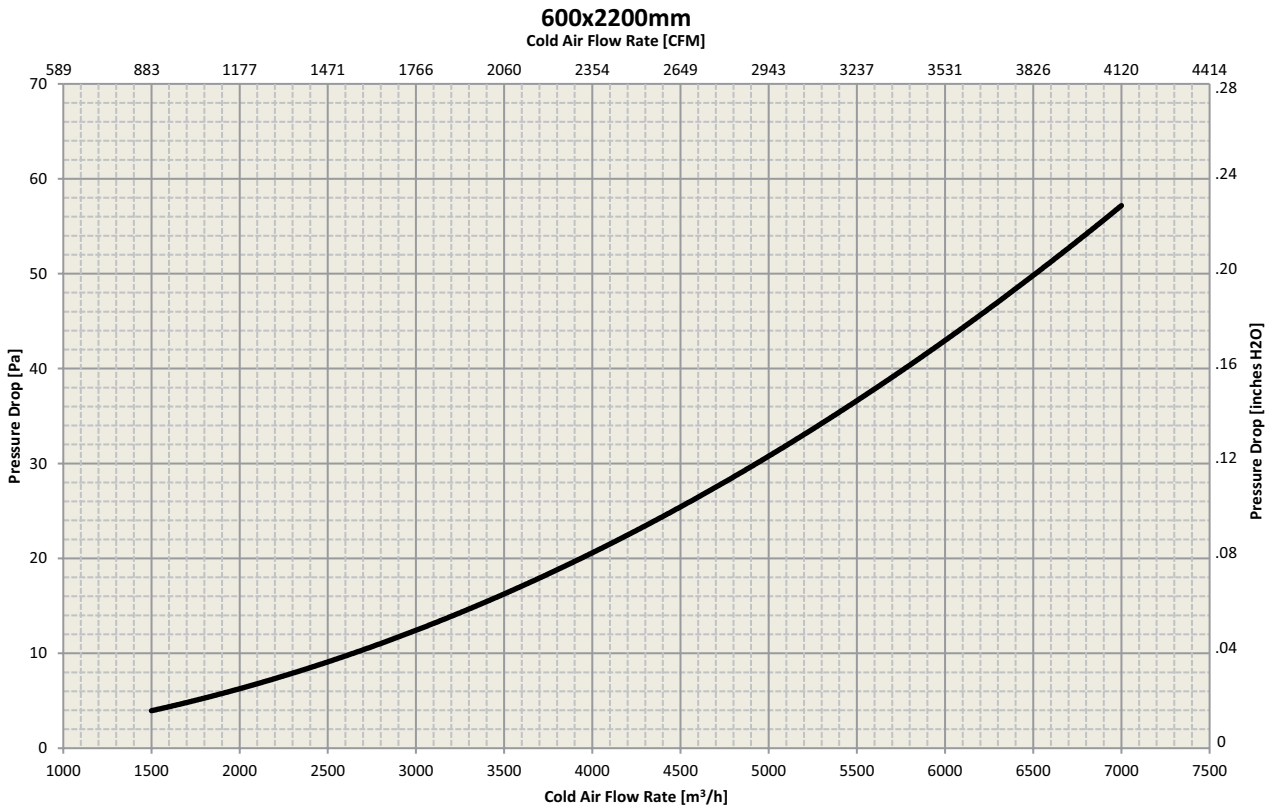
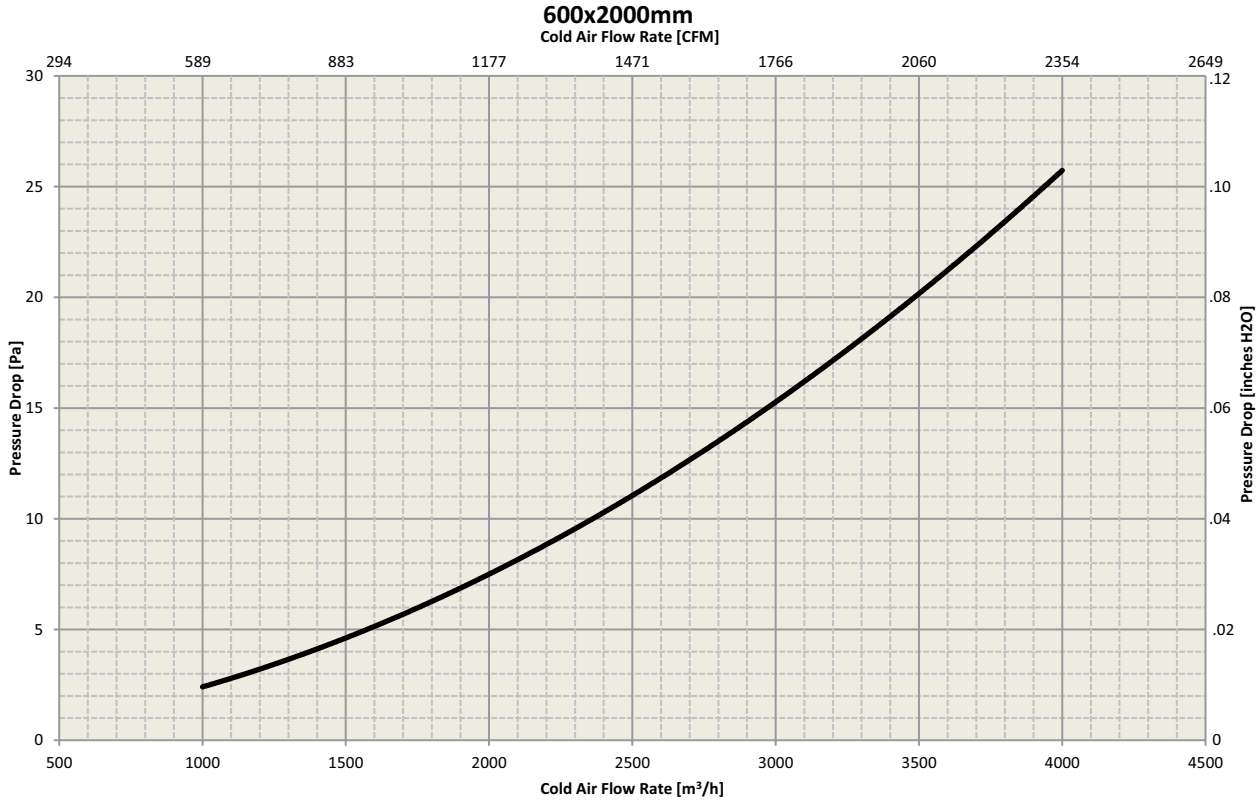
Water Flow Rate [gal./min.]



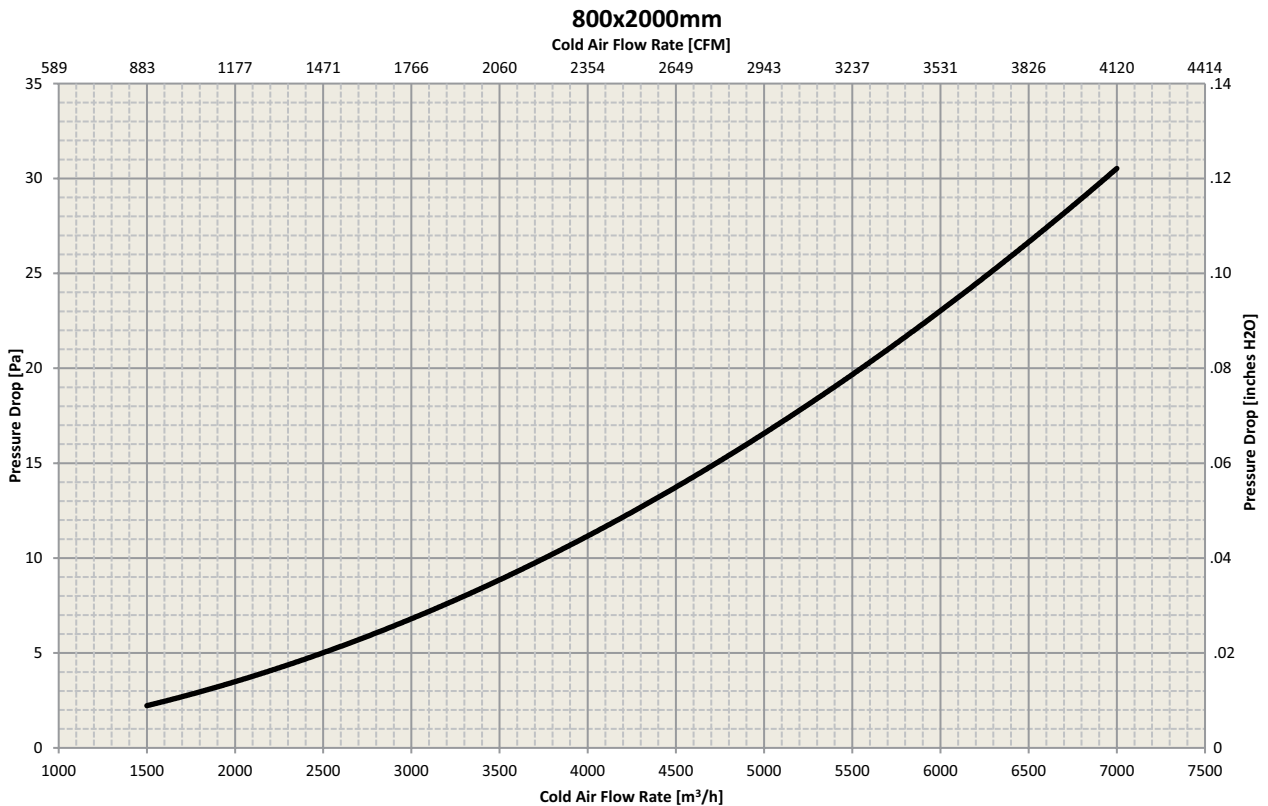
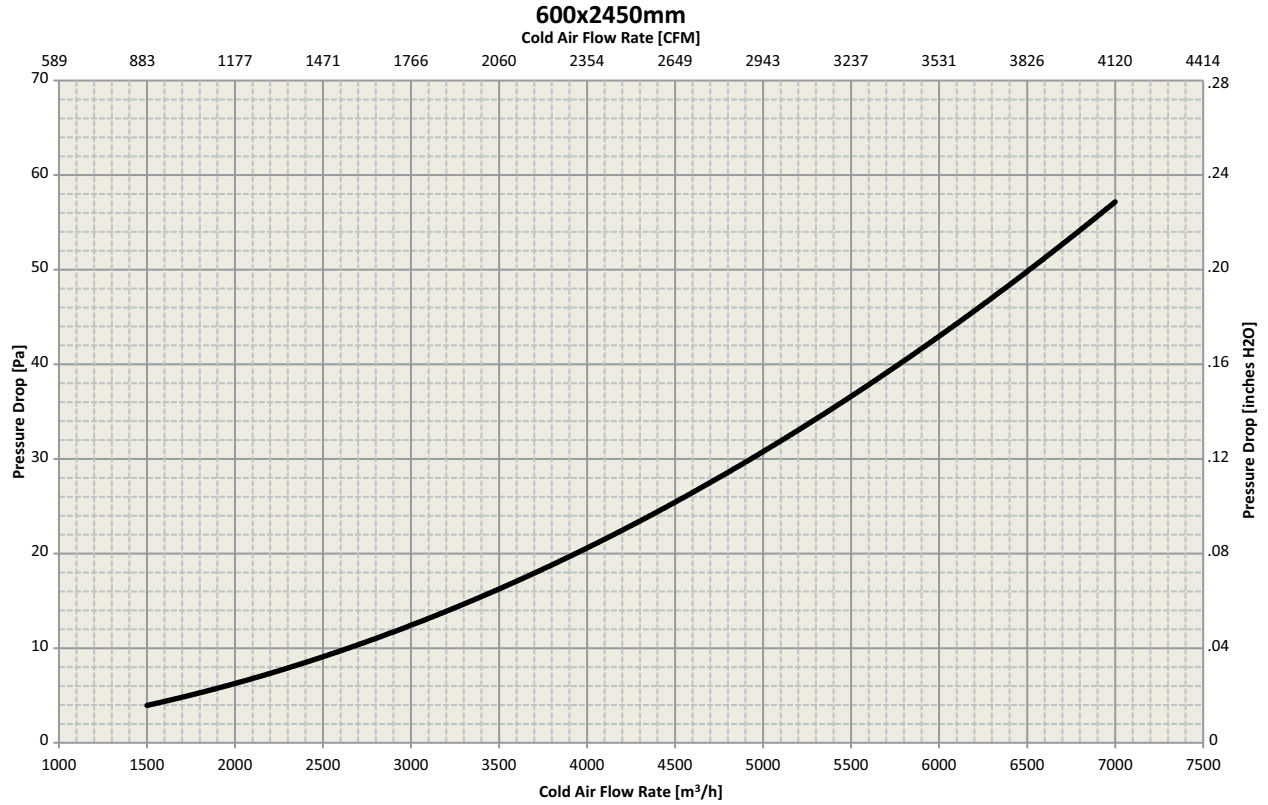
Rear Door Cooler Water Side Pressure Drop Curves



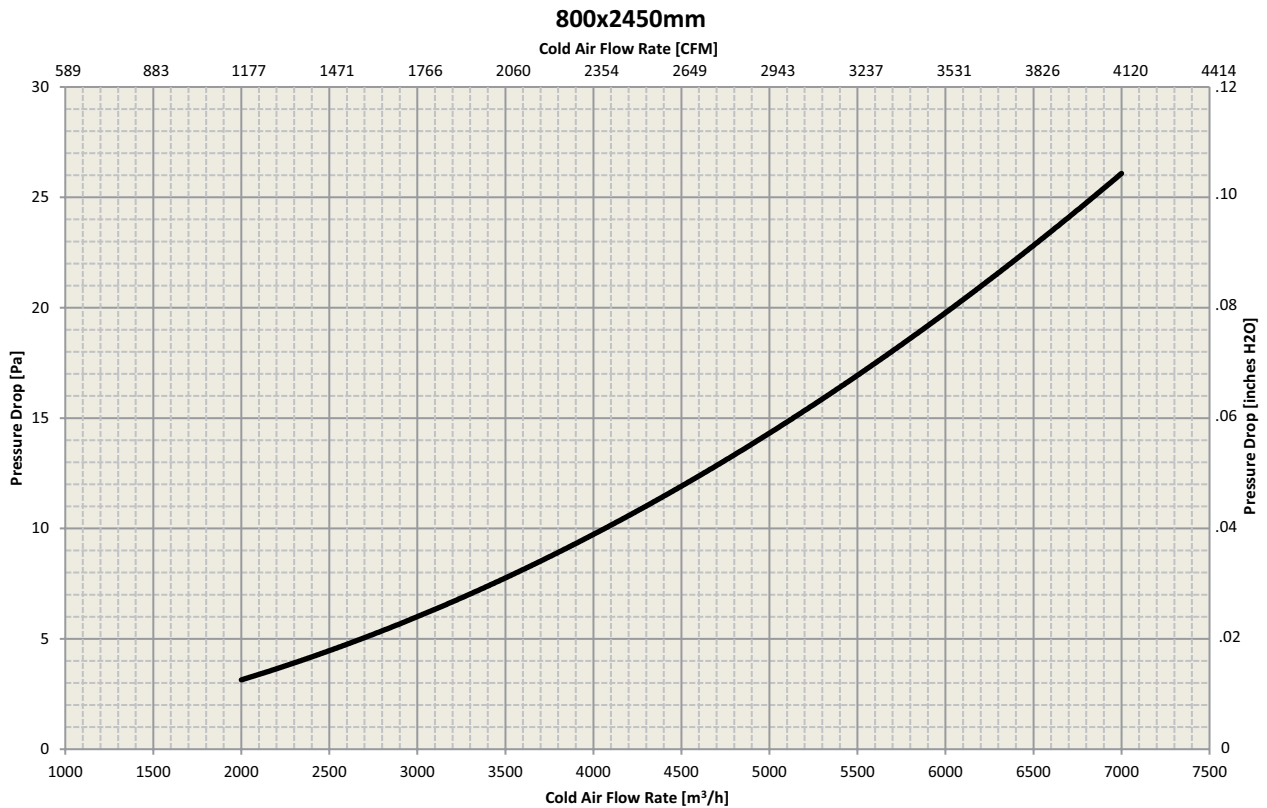
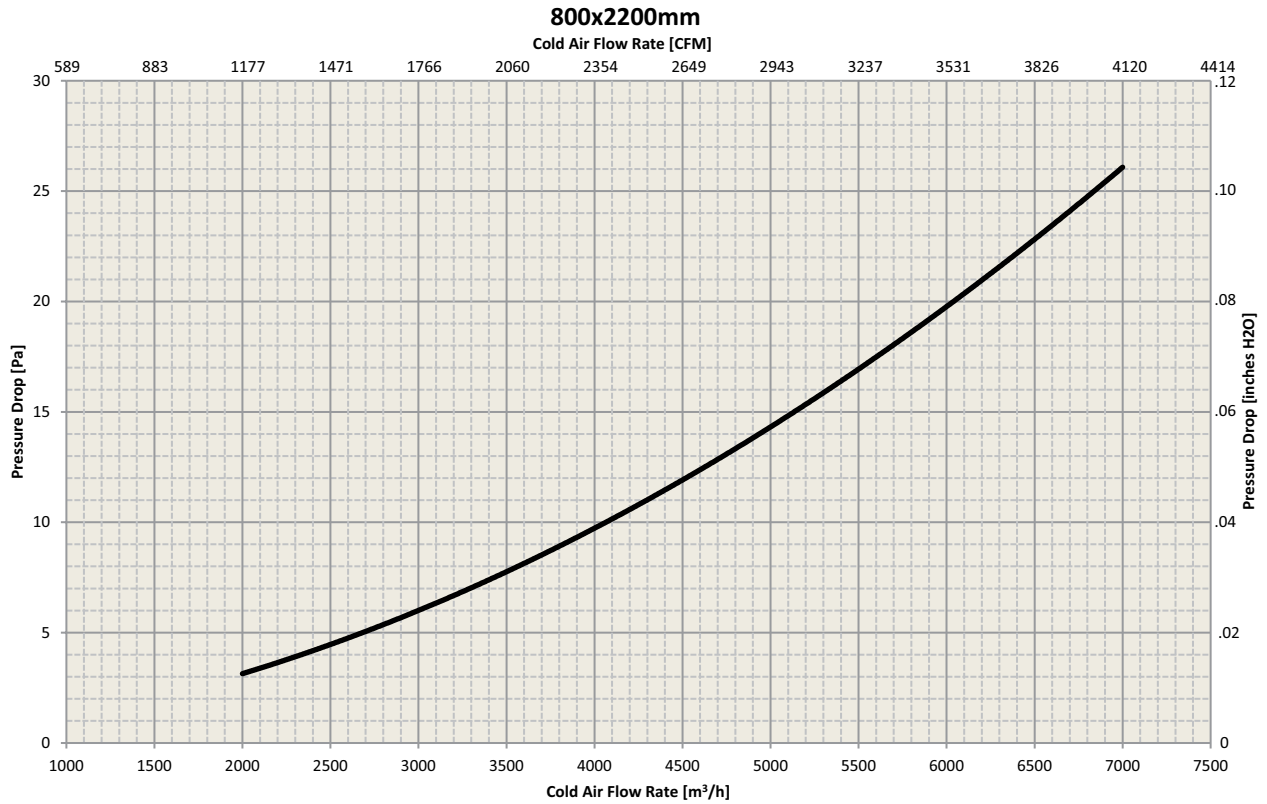
Rear Door Cooler Air Side Pressure Drop Curves



Rear Door Cooler Air Side Pressure Drop Curves



Rear Door Cooler Air Side Pressure Drop Curves



WATER CONNECTION SET



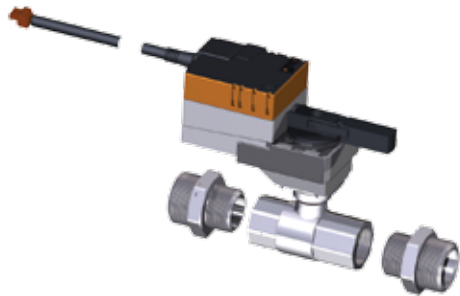
Connects the Rear Door Cooler with the facility cooling system.

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) |

CONTROL UNIT RDC



- Control unit RDC for RackChiller Rear Door Cooler
- Color black gray, RAL 7021

Includes:

- 1 - Control unit AlZn 1.5 mm (.06”), hood St 1.0 mm (.04”)
- 1 - RJ45 socket, SNMP and Modbus interface, for integration in higher-level management systems or direct Web GUI access
- 1 - Power connection 85-260 VAC
- 1 - Power cable IEC C13/14
- 1 - Assembly instruction

| Catalog Number | Description |
|----------------|------------------|
| 23130594 | Control Unit RDC |

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 |
| 23130704 | 2400 x 600 |
| 23130705 | 2400 x 800 |