

Technical Data



APPLICATION

The nVent SCHROFF LHX+ 45 In-Rack chilled water cooler is designed to manage the cooling requirements of mission critical equipment. The cooling system is integrated into a Varistar CP mobile frame for ideal side by side connection to Varistar CP racks.

The cooler comes with an integrated front and rear plenum for cold and hot air respectively. This allows creation of self-contained rows of IP55 protected racks.

The integrated fans move the warm exhaust air from the servers through an air to water heat exchanger and the heat is transferred to a water circuit. The air is then provided into the front plenum towards the equipment.

The units can be scaled optimally to suit individual packaging density and redundancy requirements.

FEATURES

- Frame and panels with IP55 gaskets towards ambient, IP10 towards attached racks
- Fans, power supplies, controller and control valve all are hot-swappable
- 7" high resolution touch screen interface
- Integrated casters and levelling feet for simple reconfiguration of rows
- Hydraulic connection and cabling through top or bottom panel
- Automatic fan speed and valve opening control
- Standard Dimensions: 300 W / 2000 H. Version in 1000D and 1200D available; other dimensions upon request
- EMC protection available upon request
- Highly stable temperature control down to 0.1 K p.p. available upon request

BENEFITS

- Ideal for edge computing and physics applications
- Maximum availability and quick repair
- Designed for efficient operation at increased facility water temperatures
- Combination with direct to chip liquid cooling
- Modular standard - easy to adapt to individual requirements
- Minimal planning outlay / short setup time
- Minimum changes between In-Row and LHX (In-Rack) design - simplifies planning, layout and specification

INDUSTRY STANDARDS

Mechanical Specification		Mechanical Specification	
Width without side panels [mm]	296	Power Input	195 - 277V AC, 1~, 50/60 Hz
Width with side panels [mm]	300	Power Connector	3 × C20
Fits to rack height [mm]	42	Power Consumption	max 1800 W
Total height incl. castors [mm]	2035	Power Supplies	Up to 3

Mechanical Specification	
Performance (14 °C water sup., 24 °C air sup.)	44 kW
Performance (20 °C water sup., 24 °C air sup.)	21 kW
Performance (24 °C water sup., 28 °C air sup.)	18 kW
Max. Air Flow	6500 m³/h / 3824 cfm
Max Coolant Flow	6 m³/h / 26.4 gpm US
Coolant Flow @ 1 bar / 14.5 psi dp 42U x 300 mm (including pair of flexible hoses 4 m)	4.7 m³/h / 20.6 gpm US
Coolant Type *	Purified water with up to 35% glycol
Min. Coolant Temperature	6 °C / 42 °F

Part No.	Size	Depth	Weight (dry)	Weight (filled)	Packaged Weight
10630-102	42U x 300 mm	1000 mm	200 kg	213 kg	TBD
10630-103	42U x 300 mm	1200 mm	230 kg	243 kg	TBD

* Water quality requirements must be maintained to avoid problems during operation. Usage of appropriate anti corrosion and frost protection agents is recommended.

** Below 14°C / 5°F there is an increased risk of condensation. A condensate management package is recommended.

TECHNICAL DATA

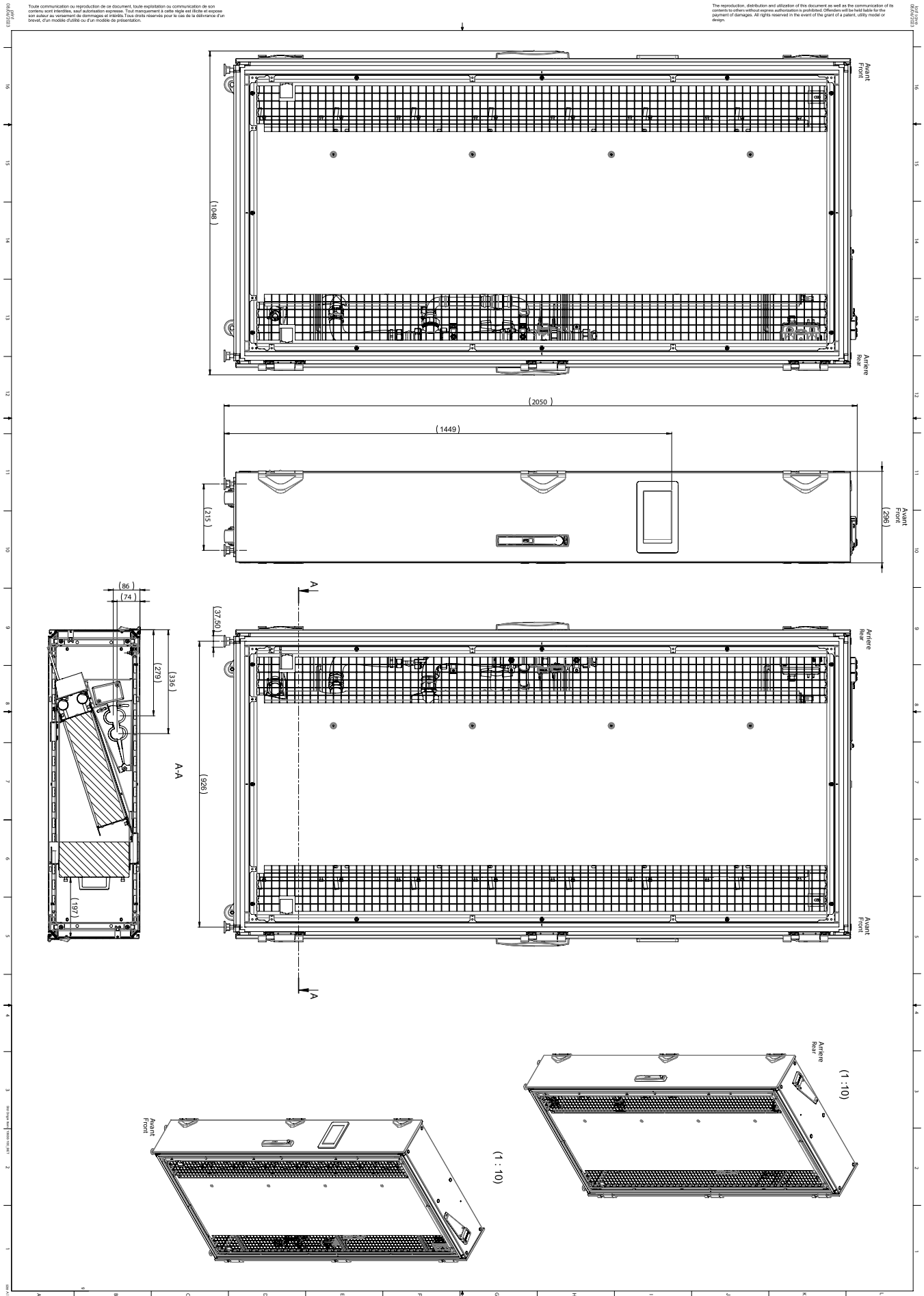
Technical Data	
Standard Color	RAL 7021
Fan Modules	7 smart fan modules with integrated sensors and fall back control, hot swappable without tools , access from cold aisle
Fan Speed Control	Manual or automatic
Controller	Smart controller, hot swappable without tools, access from cold aisle
Power Supplies	Up to 3 wide range PSUs, hot swappable without tools, access from cold aisle
Coolant	Feed Egress for flexible hoses through cutouts at top or bottom panel
Control Valve	3-way ball valve with additional bypass closure valve
Valve Control	Manual or automatic
Coolant Flange at Device	Male BSPP 1" flat gasket (ISO 228 1) threaded flange
Operating Temperature	5-50 °C / 41 122 °F
Transport and Storage Temperature	-40 - 85 °C / -40 - 185 °F
Normal Operating Pressure	5 bar / 74 psi
Minimum Burst Pressure	20 bar / 290 psi
Communication Interfaces	RS485, Ethernet, 2 digital inputs, 3 relay outputs
Communication Protocols	Modbus RTU, Modbus TCP, SNMP, Redfish, Onboard Web Browser
Onboard Sensors	1x Supply Air Temperature + 1x Relative Humidity in Each Fan Module 2x Return Air Temperature 1x Air Differential Pressure 1x Temperature + 1x Pressure Coolant Supply) 1x Temperature + 1x Flow Coolant Return) 1x Condensate Level Switch
Optional Sensors	Leak Detection , P/N 24630 168 External Air Temperature Sensor, P/N 21070 102

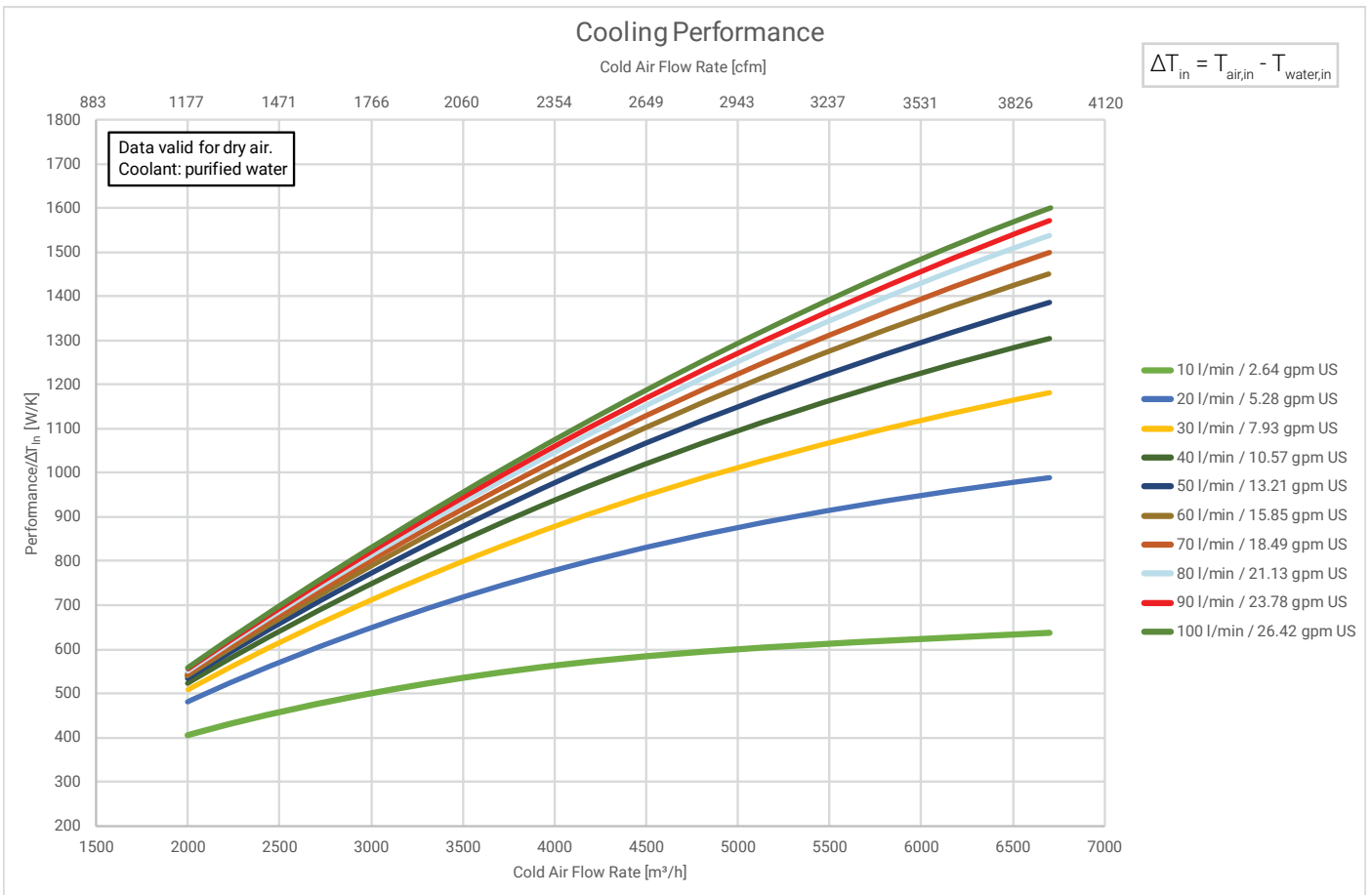
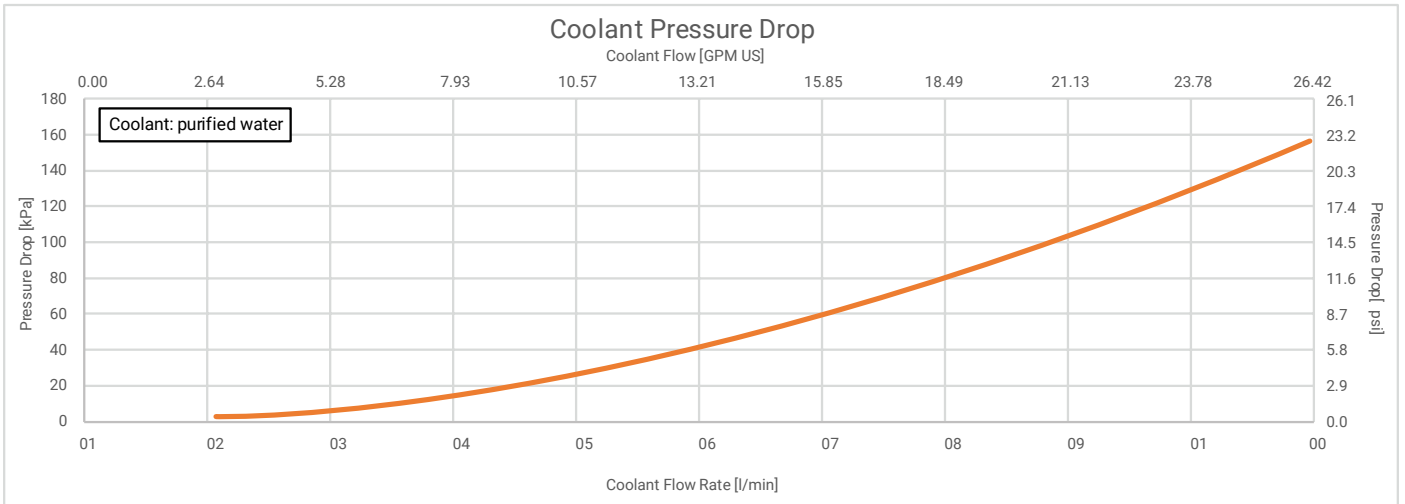
Coolant Requirements	
pH	7 to 9
Corrosion inhibitor(s)	Required
Biocide	--
Sulfides	< 10 ppm
Sulfate	< 100 ppm
Chloride	< 50 ppm
Bacteria	< 1000 CFU/mL
Total hardness (as CaCO3)	< 200 ppm
Conductivity	--
Total Suspended Solids	--
Residue after evaporation	< 500 ppm
Turbidity	< 20 NTU (nephelometric)
Glycol (Propylene Glycol) Concentration	Up to 35%
Communication Interfaces	RS485, Ethernet, 2 digital inputs, 3 relay outputs

Delivery Includes	
1	Cooler with perforated front and rear door, flow optimized perforation and door handles; top panel with cutouts; stainless bottom panel with cutouts and integrated condensate tray; levelling feet and castors; sensors; control valve; 7 fan modules; controller; touch panel; 1 power supply unit;
1	User manual is provided as a download

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TECHNICAL DATA

POWER SUPPLY UNIT



Additional or replacement power supply unit for power redundancy or A/B feed applications

Includes:

- Power Supply Unit 48VDC / 1800W

Part No.	Description
11098-757-SP	Power Supply Flatpack S 48/1800 HE

FRONT BLANKING FOR LEVELLING FEET



Varistar CP Front Blanking 300W The kit seals the space between the floor and the Varistar CP Rack to minimize air leakage or recirculation. This optimizes the air path and cooling efficiency.

Includes:

- Blanking Panel with Halogen-Free Foam Seal, 300mm
- Fixing material

Part No.	Description
24630-187	Front Blanking Kit

LEAK DETECTION PACKAGE



Wire rope leak detection to be installed at the boundary of the condensate tray, alarms major leaks inside the cooler

Includes:

- 1 leak detection module
- 1 preassembled leak detection rope including interface cable and termination resistor

Part No.	Description
24630-168	Leak Detection Package

CONDENSATE DRAIN, TOP FEED

Enables condensate drain for top feed installations with a condensate pump

Includes:

- 1 condensate pump, max. head 8m
- 1 installation bracket and screws
- 1 flexible hose 3/8"

Part No.	Description
24630-170	Condensate Drain, Top Feed

CONDENSATE DRAIN, BOTTOM FEED



Replaces the condensate drain cover in the condensate drain with a hose nipple and flexible hose.

Includes:

- 1 hose nipple

- 1 flat seal
- 1 threaded nut
- 1 transparent hose, inner diameter: Ø10mm, length : 3m
- 1 spring band clamp

Part No.	Description
24630-178	Condensate Drain, Bottom Feed

TECHNICAL DATA

FLEXIBLE HOSES



Flexible hoses to connect the cooler with facility coolant. Facility connection female BSPP 1" flat gasket. Cooler connection female BSPP 1" flat gasket or Danfoss FD83 quick disconnect couplers.

For NPT facility installations, a BSP male to NPT male adapter is required.

Includes:

- 2 Flexible hose assemblies

Part No.	Description
24630-173	Flexible Hoses 4m, BSP / BSP
24630-174	Flexible Hoses 4m, QD / BSP
24630-175	Flexible Hoses 6m, BSP / BSP
24630-176	Flexible Hoses 6m, QD / BSP
24630-177	Fitting Kit MM BSP1" / NPT1" (x2)

SIDE PANELS IP55



Esthetic side panels for usage on coolers at the end of a row or with 3rd party racks, replace the pre installed separation panels

Includes:

- 2 side panels, steel, powder coated RAL 7021

Part No.	Description
21630-241	Side Panels IP55 2000H 1000D RAL7021
21630-243	Side Panels IP55 2000H 1200D RAL7021

PLINTH 100mm



Stationary plinth, height 100mm, with blanking panels for front and rear. Please order side blankings separately as part of Varistar CP accessories

Includes:

- Base with built in feet, 300 W, powder coated RAL 7021
- 1 Installation material

Part No.	Description
24630-149	Stationary Plinth H=100mm RAL7021

FILTERED REAR DOOR

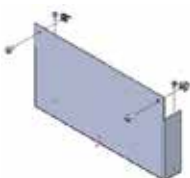
Rear door with dust filter class F4, replaces standard unfiltered door

Includes:

- 1 Rear door with filter, hinge left side, powder coated RAL 7021

Part No.	Description
24630-188	Filtered Door for RackChiller In-Row 45

HEIGHT EXTENSION



Adapts height of the cooler to aisle containments with racks > 42U

Includes:

- 1 Top blanking panel, St, 1 mm, powder coated RAL 7021
- 1 Installation material

Part No.	Description
24630-189	Extension Panel for 47U
24630-190	Extension Panel for 52U



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