



Knürr CoolTherm®

Water-cooled server rack technology,
up to 35 kW* 1.60 to 1.62



Knürr CoolTherm® Strong points

Features

Future-oriented cooling concept for IT applications with high thermal loads – for **blade** and **rack equipment**.

- V35 high performance air-to-water heat exchanger
- Channeled airflow in the entire rack
- Heat dissipation via cooling water
- Fans with temperature-dependent speed regulation
- Three-way valve for regulating the cooling water flow (optional)
- Fans, n+1 redundant
- Alarm management
- Redundant high-performance power distribution for supplying server (optional)
- User-friendly and service-optimized
 - Automatic door opening (optional)
 - Mobile plinth (optional)

Benefits

Autonomous server rack; independent from environmental conditions

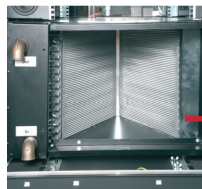
- Secure and reliable cooling capacity of up to 35 kW per CoolTherm® (blade servers)
- Highest packing density for high-performance servers; up to 80% surface space saving in the data center
 - Low operating costs with optimized pressure losses
- Reduced room and building requirements (thermal management, raised floors, room heights)
- Highest possible leakage safety with strict separation of heat exchangers and server installations
- Up to 30 % improved cooling system energy efficiency.
- Highest planning reliability with unrestricted scalability
- Significant reduction in TCO (Total Cost of Ownership)



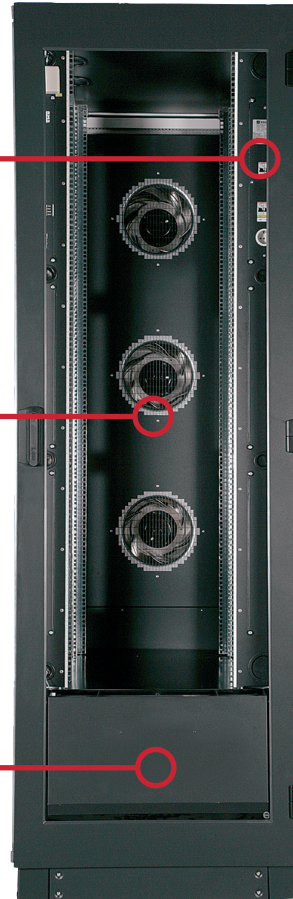
High-performance power supply



Temperature-dependent and speed-controlled



V35® high performance air-to-water heat exchanger



Heat volume to be dissipated: CoolTherm® 25 kW nominal as an example

- Water-side prerun temperature: 12° C (preferred)
Postrun temp.: 18° C (preferred)
Max. pressure loss: 0.5 bar volume flow, 3.58 m³/h
Ventilation valve
- Up to 5,500 m³/h (dep. on equipment)
Air outlet: 20° C to 25° C



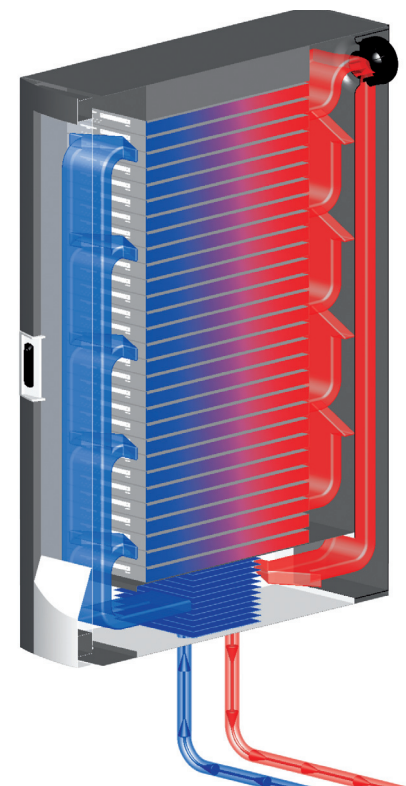
Easy fan swap-out with closed door



The impressive **CoolTherm®** technical concept:

Closed air circulation with V35 air/ water heat exchanger. Therefore the dissipated heat is not given off as an additional load on the IT room (as is usual). Connection is made installation-friendly to a building or rack-own cold water system. Operation and service are performed with no difficulty whatsoever.

(Smaller cross-section shown)





MIR20287

Knürr CoolTherm®

- With fixed 19" installation on the front and rear for components in accordance with IEC297-3
- Installation of chassis runners and 19" shelves possible
- Flexible installation of components with mounting hole extrusions
- Cable entry via top cover and bottom cover
- Unused space closed off with blanking panels

■ CoolTherm® 12 kW

- 2 EC radial fans, with temperature-dependent stepless speed regulation, installed above one another, n+1 redundant with approx. 3K temperature increase
- V-form high performance heat exchanger

■ CoolTherm® 12 to 17 kW

- 3 EC radial fans, with temperature-dependent stepless speed regulation, installed above one another, n+1 redundant with approx. 4 K temperature increase
- V-form high performance heat exchanger

■ CoolTherm® 17 to 25 (35) kW

- 3 EC radial fans, with temperature-dependent stepless speed regulation, installed above one another, n+1 redundant with approx. 4 K temperature increase
- V-form high performance heat exchanger

■ Technical data

- Cooling water spread: 12 / 18°C (configuration conditions)
- Intake air temperature to the server: 22°C
- Heat exchanger max. operating pressure: 10 bar
- Max. absolute humidity in room: 8g/kg
- Heat exchanger connection: 1" female thread
- Condensation tray connection: 5/8" tube connection

■ Load rating

Static load, 1000 kg (10,000 N)

■ Air density

In acc. with RAL 652

■ Tests

- Earthing in acc. with VDE 0100 T 540
- Vibration test in acc. with MIL-STD 810 E

■ Color

Final digit of order number .1:

- Visible surface of the covers, RAL 7035 light gray

Final digit of order number .8:


- Visible surface of covers, RAL 7021 dark gray

■ How supplied

Fully assembled

Cooling power (kW)	U	W (mm)	H (mm)	D (mm)	d (mm)	Weight (kg)	Water amount (l)	Flow volume (m³/h)	Pressure loss: rack (bar)	Pressure loss: conn. Set (bar)	Amb. air volume (m³/h)	Conn. data Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Order no.	UP
12	29	700	1800	1200	740	290	5.9	1.72	0.38	0.05	2000	200-264	50, 60	7	1000	08.006.001.x	1 unit
12	33	700	2000	1200	740	290	5.9	1.72	0.38	0.05	2000	200-264	50, 60	7	1000	08.006.002.x	1 unit
12	38	700	2200	1200	740	290	5.9	1.72	0.38	0.05	2000	200-264	50, 60	7	1000	08.006.003.x	1 unit
12	29	700	1800	1300	840	295	5.9	1.72	0.38	0.05	2000	200-264	50, 60	7	1000	08.006.006.x	1 unit
12	33	700	2000	1300	840	295	5.9	1.72	0.38	0.05	2000	200-264	50, 60	7	1000	08.006.007.x	1 unit
12	38	700	2200	1300	840	295	5.9	1.72	0.38	0.05	2000	200-264	50, 60	7	1000	08.006.008.x	1 unit
17	35	800	2000	1200	740	310	7.9	2.44	0.57	0.09	3100	200-264	50, 60	8	1400	08.006.012.x	1 unit
17	40	800	2200	1200	740	310	7.9	2.44	0.57	0.09	3100	200-264	50, 60	8	1400	08.006.013.x	1 unit
17	44	800	2400	1200	740	310	7.9	2.44	0.57	0.09	3100	200-264	50, 60	8	1400	08.006.014.x	1 unit
17	35	800	2000	1300	840	320	7.9	2.44	0.57	0.09	3100	200-264	50, 60	8	1400	08.006.022.x	1 unit
17	40	800	2200	1300	840	320	7.9	2.44	0.57	0.09	3100	200-264	50, 60	8	1400	08.006.023.x	1 unit
17	45	800	2400	1300	840	320	7.9	2.44	0.57	0.09	3100	200-264	50, 60	8	1400	08.006.024.x	1 unit
25	37	800	2200	1200	740	340	9.9	3.58	0.54	0.18	4500	200-264	50, 60	8	1800	08.006.033.x	1 unit
25	42	800	2400	1200	740	340	9.9	3.58	0.54	0.18	4500	200-264	50, 60	8	1800	08.006.034.x	1 unit
25	37	800	2200	1300	840	350	9.9	3.58	0.54	0.18	4500	200-264	50, 60	8	1800	08.006.043.x	1 unit
25	42	800	2400	1300	840	350	9.9	3.58	0.54	0.18	4500	200-264	50, 60	8	1800	08.006.044.x	1 unit

Dimensions in mm: W = Width
H = Height
D = Depth
h = installation height
d = useful depth
L = length

U = standard height unit
1 U = 44.45 mm
UP = unit of packaging
kg = weight
 = Express item

Conversion: 1 mm = 0.03937 inch

1 kg = 2.2046 pound

Knürr CoolTherm® Options / Accessories



2 MIR20398

■ A/B switching

The outputs on the plug-in units can be flexibly configured according to customer requirements via various plug connections, type CEE and GST 18.

(e.g. BladePower® or PizzaPower®, DI-STRIP® TriplePower®, and flexible distribution with the GST18i5 distributor block, 3-phase).

■ 2 Rack Monitoring System

Monitoring, forwarding and visualizing parameters, issuing alarms and enabling the introduction of automatic safety/security measures.

- Possible sensors/monitoring:
Smoke, temperature, humidity, leaks, door monitoring

■ 3 Bypass control

The influence of the cooling water flow on energy saving prevents insufficient temperatures with partial loads and stresses.

Version as three-way valve; also optionally with two-way function

■ 4 Automatic door opening

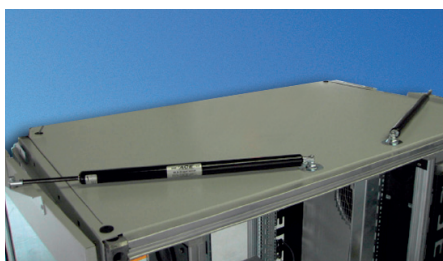
Automatic front and rear door opening to prevent overheating with sub-system failure (e.g. cooling water provision).

■ 5 Cooling water connection set

Consists of two flexible high grade steel-coated hoses, ball cock with ventilation, regulating valve and blocking valve, DN 25, hose length, 1,500 mm and 2,500 mm



3 MIR20395



4 MIR20392



5 MIR20393