Knürr CoolTherm® 4–35 KW

Energy-efficient Server Cabinet Technology With Outstanding Benefits, To Minimize Energy Costs In The Data Center And Help Reduce Carbon Dioxide Emmisions

knürr
environments for electronics

EMERSON
Network Power

Setting benchmarks. Being the standard!

IT as the basis for business processes is subject to constant change. With it, however, the requirements of infrastructures also continually change.
The rising cost-relevant pressures on companies therefore demand flexible, and more importantly, expandable solutions that make it possible to react to the respective current requirements.

The objective here is to reduce investment costs to a "no more than necessary" level, with the precondition, however, of also being able to integrate the investments made into future concepts.

Knürr provides the perfect platform for setting up a scalable solution of this kind. Knürr is one of the first global manufacturer to offer an integrated solution concept for heat loads from 1kW to 35kW per rack.

This enables financial IT investments in accordance with current requirements, and further expansions for future challenges are also possible at the same time. Intelligent power distribution systems, unique cable management and parallel expanding and adaptable fire protection solutions complete a tailormade scalable solution.
Servers, storage and other IT components are constantly becoming more efficient and at the same time more compact in their construction, and increasingly require less space.
A data center's infrastructure requirements change considerably, especially in tackling technical and physical heat load issues and in providing the thermal management required to overcome these.

Knürr has been dedicated for over 10 years now to developing individual solutions that are necessitated by the complexity of high availability data centers and IT rooms.

Essential here is the awareness that this is not achieved just by developing and producing proven-in practice racks, but rather by focussing on an all-encompassing view on the scalability of the individual heat loads, supported by innovative and equally future-oriented components, preferably from the Knürr product portfolio.

CoolTherm® has set a benchmark that is now widely-used and recognised in the industry, and as a result has ma-tured to become the standard.

CoolTherm® therefore ranks as one of the best performing components of a perfected complete IT solution.

... Up To 35kW Cooling Capacity

Blade Server Optimized!

Features

Cooling concept for IT applications with high dissipated heat losses – for blade and rack servers.

- V35 high performance air-to-water-heat exchanger
- Channelled airflow in the entire rack
- Heat loss discharge 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 servers (optional)
- User-friendly and service-optimised

Advantages

- Autonomous server rack; independent from environmental conditions
- Secure and reliable cooling capacity of up to 35kW per CoolTherm® (blade servers)
- Highest packing density for high-performance servers, consequently, up to 80% surface space saving in data centers
- 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 security with freely selectable scalability
- Significant Total Cost of Ownership (TCO) reduction

High-performance power supply

Front

effective cooling capacity	Width	Height	Depth	Useable height	Useable depth	Weight	Water content	Electrical data
4kW	800 mm 800 mm 800 mm	2000 mm 2200 mm 2400 mm	1200 mm	39 HU 43 HU 47 HU	840 mm		2,9 kg	207 – 243 VAC 50/60 Hz 190 Watt
8kW	800 mm 800 mm 800 mm	2000 mm 2200 mm 2400 mm	1200 mm	36 HU 40 HU 47 HU	840 mm		2x 2,9 kg	207 – 243 VAC 50/60 Hz 380 Watt
12kW	700 mm 700 mm 700 mm	1800 mm 2000 mm 2200 mm	1200/1300 mm	29 HU 33 HU 38 HU	740/840 mm	290 kg	5.9 kg	200 – 264V 50/60 Hz 550W
17kW	800 mm 800 mm 800 mm 800 mm	1800 mm 2000 mm 2200 mm 2400 mm	1200/1300 mm	31 HU 35 HU 40 HU 44 HU	740/840 mm	310 kg	7.9 kg	200 – 264V 50/60 Hz 850W
25kW	800 mm 800 mm	2200 mm 2400 mm	1200/1300 mm	37 HU 42 HU	740/840 mm	340 kg	9.9 kg	200 – 264V 50/60 Hz 1150W
35kW*	800 mm 800 mm	2200 mm 2400 mm	1200/1300 mm	37 HU 42 HU	740/840 mm	340 kg	9.9 kg	200 – 264V 50/60 Hz 1150W

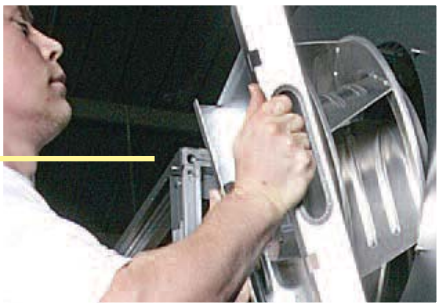
State: 02/2008

Spread chilled water:	12/18°C *12/22°C	Pressure loss (heat exchanger):	0.5bar
Air temperature to server:	22°C *25°C	max. operation pressure heat exchanger:	10bar
Air temperature return from server:	35°C *50°C	max. absolute humidity on site:	8g/kg
Connection heat exchanger:	1“ female threat	Standard colours:	RAL 7021 (black grey)
Connection condensate tray:	5/8“ water hose connection		RAL 7035 (light grey)

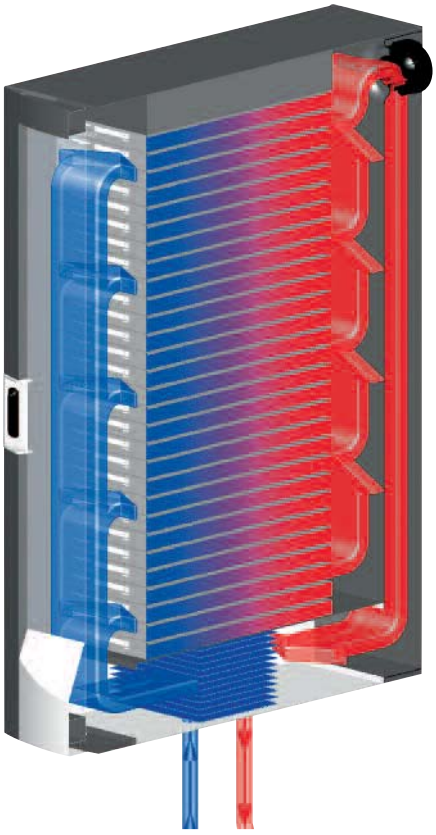
Electrical data as operating power input

Back

Optimum ventilation, temperature-dependent and speed-controlled



Easy fan exchange while doors remain closed



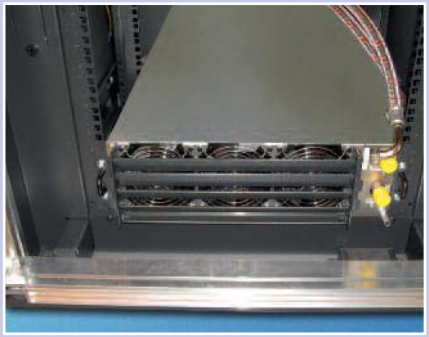
The impressive Knürr **CoolTherm**® technical concept:
Closed air circulation with V35 air/water heat exchanger. The dissipated heat is therefore not given off as an additional load on the IT room (as is usual).
Connection is made installation-friendly to a building or rack-own cold water system.
Operation and service are performed with no difficulty whatsoever.
(Smaller cross-section shown)

V35® high performance air-to-water heat exchanger

V35® air-to-water heat exchanger

Heat volume to be dissipated:
CoolTherm® 22kW nominal as an example

- Water-side
  Prerun temperature: 12°C (preferred)
  Postrun temperature: 18°C (preferred)
  Max. pressure loss: 0.5bar
  Volume flow: 0.9 l/s
  Ventilation valve
- Air-side
  Up to 5500 m³/h
  Air outlet: 20°C to 25°C



CoolTherm® 4-8 kW
for low heat loads

Knürr CoolTherm® 4-8 kW

is based upon the Knürr Miracel[PLUS]® server rack combined with one or two Knürr CoolServe® chassis (3HU), operating at 4 kW each.

- Strict separation of heat and cold for effective cooling
- The CoolServe® chassis can be exchanged at any stage. Upgrade to 8 kW possible by adding another Knürr CoolServe® chassis.

We recommend a service contract be concluded. The service telephone number is: +49 (0) 800 000 62 95.

Knürr Is An Expert Solution Provider For Adaptive Infrastructures In Data Centers

The Knürr **CoolTherm**® defines standards that will continue to apply long into the future.

With highly developed innovative systems (based on the highest possible quality) and the enhanced thermal management presented by **High Density Cooling Solutions**, Knürr CoolTherm® sets the benchmarks when it comes to economic efficiency (TCO).

See for yourself what the benefits of this revolutionary efficiency and the already tried, tested and proven safety in everyday operations in IT rooms and data centers mean to your company.

Knürr CoolTherm® Server Rack Comes In Different Varieties, Equipped With Customer-specific Options

Uninterruptible Power Supply (UPS)
Liebert UPS systems to protect against power failure, power fluctuations and for maintenance work. It provides high availability, modular power supply systems for the most diverse processes and applications – for individual server racks, ranging from small IT rooms through to complex data centers.

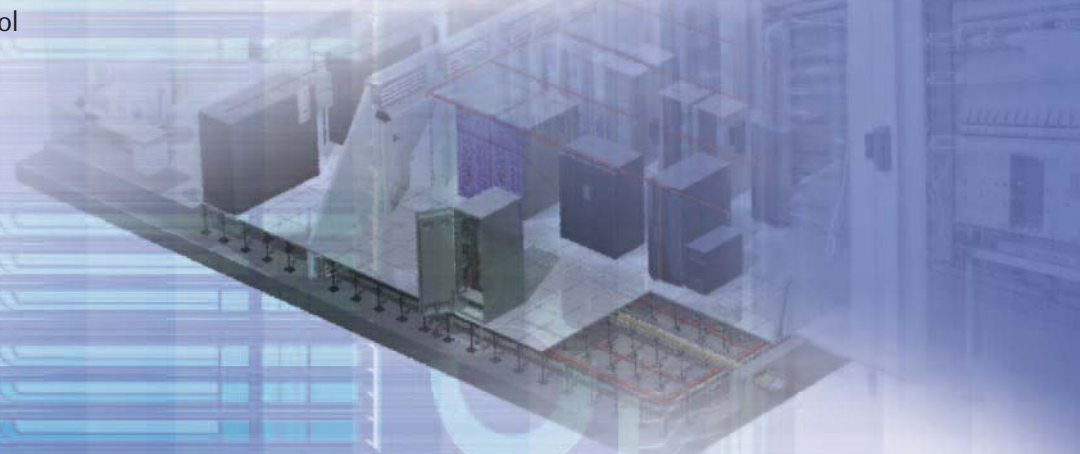
Automatic door opener
Automatic front and rear door opening in case of overheating in the rack and fire extinguishing at room level. Effective intervention options in emergency situations.

Remote Monitoring System (RMS)
All procedures can be constantly monitored:
- Temperature development/control
- Fire detection
- Humidity detection
- Leakage detection
- Fan operation
- Door functions
- Vibrations

Fire detection and extinguishing
Independent and highly-effective extinguisher systems at rack and rack suite level.

Floor stand for IT rooms without raised floors
Where a raised floor is not available, racks can be equipped with a floor stand that enables power and water supply from below.

A/B cooling water feed
Redundant cooling water feed for connection to two independent cooling water supply points.



Emerson Network Power is a consistent global technology leader and recognised expert that helps to secure business-critical processes, and by doing so contributes to a “business-critical continuity”.
A series of the most diverse applications, including the tried, tested and proven Knürr rack system solutions and the thermal management connected with them, ensure the required network stability with the highest technological adaptability at the same time.

Knürr system solutions in the world of information and network technology are part of an adaptive Emerson Network Power architecture, which flexibly adjusts to all changes concerning security/safety, high-density and all associated capacities. Companies profit in a sustainable and long-term way from the high IT availability, operative flexibility and impressive reduction in investment and operating costs.

Knürr AG is recognised around the world as one of the leading developers, manufacturers and distributors of rack and enclosure platforms in the indoor and outdoor area, including all relevant active/passive components of 19” structures and the technologies connected with them.

Knürr is certified in accordance with EN ISO 9001 and the EN ISO 14001 standard. Knürr’s quality management continuously guarantees the highest level of quality in all areas of the company.

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Emerson Network Power
The global leader in enabling business-critical continuity

EmersonNetworkPower.com

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- Precision Cooling
- Services
- Site Monitoring
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- Rack & Enclosure Systems

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