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# SK 3312.250

## Liquid Cooling Package

State: 05/07/2025 (Source: [rittal.com/gr-en](https://www.rittal.com/gr-en))

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FRIEDHELM LOH GROUP



# SK 3312.250 - Liquid Cooling Package LCP Rack CW, LCP Rack CWG

Cooling via high-performance compact impellers. The LCP draws in the air at the sides at the rear of the server enclosures and blows the cooled air back into the front part of the server enclosure at the sides.

## Features

Model No.	SK 3312.250
Benefits	<p>Maximum energy efficiency due to EC fan technology and IT-based control</p> <p>Minimal pressure loss at the air end, which in turn minimises the power consumption of the fans</p> <p>Control of the server inlet temperature</p> <p>With redundant temperature sensor integrated at the air end as standard</p> <p>Optimum adaptability due to dynamic, continuous control of the cold water volume flow</p> <p>By using high water inlet temperatures, the proportion of indirect free cooling is increased, which in turn reduces operating costs</p> <p>Targeted cooling output due to modular fan units</p> <p>Fan modules configurable as n+1 redundancy</p> <p>Standard 3-phase connection for electrical redundancy</p> <p>The separation of cooling and enclosure prevents the ingress of water into the server enclosure</p> <p>A footprint of max. 0.36 m<sup>2</sup> for all cooling services</p> <p>Improved heat recovery, thanks to high water return temperatures when using LCP CW glycol variants, for example in combination with a heat pump</p> <p>Optimum access for maintenance and servicing from the front and rear</p> <p>Tool-free replacement of the fan modules</p>
Function principle	<p>The LCP draws in the air at the sides at the rear of the server enclosures, cools it using high-performance compact impellers, and blows the cooled air back into the front part of the server enclosure at the sides</p>
Material	Sheet steel, spray-finished

# Features

Colour	RAL 7035
Options	Fully integrated fire detection and extinguisher system Automatic server enclosure door opening Direct connection of additional CMC III sensors is supported Racks 2200 mm high
Design	Rack cooling
Monitoring	Monitoring of all system-relevant parameters such as server air intake temperature, server waste air temperature, water inlet/return temperature, water flow, cooling output, fan speed, leakage Direct connection of the unit via SNMP over Ethernet Integration into RiZone
Total cooling output/Number of fan modules	30 kW/4 32 kW/5 35 kW/6
Air throughput (unimpeded air flow)	At 50 Hz: 4,800 m³/h
Number of fan modules in supplied state	4
Dimensions	Width: 300 mm Height: 2,000 mm Depth: 1,200 mm
To fit enclosure type	TS IT
Installation in bayed enclosure suite	Flush
Rated operating voltage	230 V, 1~, 50 Hz/60 Hz 400 V, 3~, 50 Hz/60 Hz
Max. cooling output	35 kW
Type of electrical connection	Connector
Duty cycle	100 %
EC fan	Yes
Fans may be exchanged with the system operational	Yes

## Features

Temperature control	Linear fan control Two-way control valve
Water connections	DN 40 (G 1½" external thread)
Permissible operating pressure (p. max.)	10 bar
Water inlet temperature	15 °C
Protection category to IEC 60 529	IP 20
Optimized condensate management even at low water flow temperatures	Yes
Options	Fully integrated fire detection and extinguisher system Automatic server enclosure door opening Direct connection of additional CMC III sensors is supported Racks 2200 mm high
Packs of	1 pc(s).
Net weight	242.5
Gross weight	252.5
Customs tariff number	84186900
EAN	4028177811638
ETIM 9	EC002515
ETIM 8	EC002515
ECLASS 8.0	27180712

## Approvals

Certificates	EAC
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## Tender text

LCP Rack CW, 3312.250 WHD (mm) 300 x 2000 x 1200

LCP Rack CW, 3312.250:

Construction of the device optimised for data centres.

The integrated air/water heat exchanger ensures a cooling output of up to 30 kW and has been specially designed for a high cooling output during operation with a water/glycol mixture.

Due to the design of the heat exchanger, the unit is ideal for the downstream operation of a heat pump for heat recovery.

The heat exchanger is mounted laterally on the rack.

The LCP Rack CW offers an enclosure-based and room air-independent cooling system that also reduces the noise level.

The device is able to cool either one or two server racks.

Maximum efficiency is achieved and the consumption of electrical energy is minimised by using four

built-in EC fan modules (cooling output up to 30 kW).

The maximum cooling output of 35 kW is achieved by installing two additional fan modules (accessories).

This provides investment security if the full cooling output does not need to be used at the beginning of the installation.

The device is ready to take a maximum of six EC fan modules. A full fan configuration is therefore possible for reasons of redundancy or to minimise electrical power consumption.

The air/water heat exchanger and server rack are arranged in rows though access is separate in each case. This prevents water penetrating into the server rack and makes installation and service easier.

Access to the adjacent IT rack via the LCP is not possible.

A leak detection feature is integrated. A sensor installed in the condensate tray detects leaks, the main controller then issues an alarm message and/or interrupts the supply of cooling medium into the device.

A completely new and patented condensate management system means that it is also possible to operate the device with water flow temperatures below the dew point.

All the components in the condensate section are made of stainless steel to prevent corrosion.

The water connection can be made optionally downwards or upwards by means of an accessory kit (1 1/2" external thread).

Short device commissioning time, thanks to simple and fast venting.

The fans can be replaced extremely quickly at any time.

A highly developed network-integration software concept for monitoring/setting all the technical parameters is integrated as default.

Should the controller fail, an integrated fail-safe operation mode ensures reliable cooling.

Up to eight additional sensors (temperature, humidity, etc.) can be connected.

#### Technical details:

Sensitive cooling output with four/five/six fans: 30/32/35 kW

Installed fans: 4 (max. 6 possible)

Volumetric air flow: max. 4,800 m<sup>3</sup>/h (4 fans)

Cooling output (three fans): 30 kW

Max. air inlet temperature 24°C

Inlet temperature: 15°C

Medium: Water/glycol (67/33)

Cooling medium throughput: approx. 50 l/min

Pressure loss: approx. 0,8 bar

Water connection: 1 ½" external thread

Voltage: 230 V, 1~, 50/60 Hz, 400 V, 3~, N, 50/60 Hz

Max. connected electrical load: (four fan modules): 2.000W

Server air inlet temperature control via flow rate control and EC fan fitted with linear speed controller

Colour: RAL 7035

Dimensions: W x H x D: 300 x 2000 x 1200 mm

Weight as delivered: approx. 280 kg

#### Controllers/interfaces:

Network interface (RJ 45) Ethernet as per IEEE 802.3 via 10/100BaseT with PoE

Front USB interface: Mini USB for system setting

Rear USB interface: for USB stick, for data recording up to 32 GB

Front SD-HC slot: 1x up to 32 GB, for data recording

Alarm relay output: change-over contact for safety extra-low voltage (24 V DC, 1 A)

Digital inputs: 2x (terminal)

Protocols, Ethernet:

TCP/IPv4, TCP/IPv6, SNMPv1, SNMPv2c, SNMPv3, Telnet, SSH, (S)FTP, HTTP (S), NTP, DHCP, DNS, SMTP (S), Syslog

Eight additional sensors (temperature, humidity, etc.) can be connected.

## Software

Control based on server inlet temperature

Automatic or manual control can be selected

Remote control via SNMP is possible

Water-side delta-T control for efficient chiller operation can be selected

The programming of logical links (tasks) to automate specific processes is possible

## Special features:

Simple maintenance of the device from the front and rear, so that cable routes and aisle containments can be laid above the unit.

The fans can be replaced without using any tools

Integrated software with water-side delta-T control for efficient chiller operation

## Optional:

Fan module for cooling power expansion: 3312.016

Touchscreen display, colour: 3311.030

Connection hose, bottom/top: 3311.040

Condensate pump 3312.012