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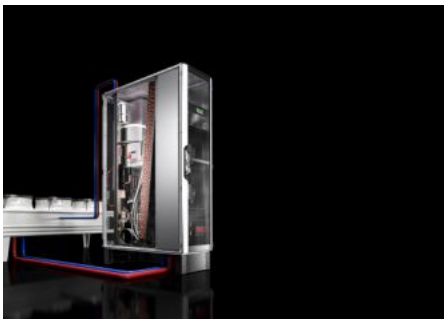


SK 3313.460
Liquid Cooling Package

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SK 3313.460 - Liquid Cooling Package

Ideal for cooling of small and medium-sized IT applications.







Features

Model No.	SK 3313.460
Design	DX/FC
Benefits	Maximum energy efficiency due to EC fan technology and IT-based control Minimal pressure loss at the air end, which in turn minimises the power consumption of the fans Temperature monitoring and control With redundant temperature sensor integrated at the air end as standard Thanks to the speed-regulated compressor, the cooling output is ideally adapted to actual requirements Specific maintenance of the LCP DX due to separation of cooling and server racks Using LCP DX/FC variants in combination with indirect free cooling helps to save operating costs
Applications	Ideal for IT cooling of small and medium-sized locations One or two racks can be cooled separately

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Features

Function principle	The LCP is designed for siting within a bayed enclosure suite. Hot air is drawn in from the aisle at the rear of the device, cooled by the high-capacity compact impellers, and blown back into the room or cold aisle after cooling. The LCP DX/FC variants include both a refrigerant and a water/ glycol heat exchanger. There is an additional free cooler integrated into the external condenser. Absorbed thermal energy is emitted to the ambient air at the external condenser location, without heating up the installation room
Material	Sheet steel, spray-finished
Colour	RAL 7035
Options	Dehumidification and reheater Air filter
Design	Suite cooling
Monitoring	Direct connection of the unit via SNMP over Ethernet Integration into RiZone
Total cooling output/Number of fan modules	35 kW/3
Total cooling output	35 kW
Modulation range	8 - 35 kW
Air throughput (unimpeded air flow)	At 50 Hz: 9,900 m³/h
Dimensions	Width: 600 mm Height: 2,000 mm Depth: 1,000 mm
To fit enclosure type	VX IT
Installation in bayed enclosure suite	Flush
Rated operating voltage	380 V - 480 V, 3~, 50 Hz/60 Hz
Rated current max.	At 50 Hz: 31.6 A
Max. cooling output	35 kW

Features

Type of electrical connection	Connection clamp
Duty cycle	100 %
Cooling medium	Refrigerant
EC fan	Yes
SNMP card	Yes
Fans may be exchanged with the system operational	Yes
Temperature control	Linear fan control Inverter-controlled compressor
Pre-fuse	Miniature circuit-breaker/fuse: 50 A
Operating temperature range	5 °C...35 °C
Noise level	At 50 Hz: 68 dB(A)
Protection category to IEC 60 529	IP 20
Packs of	1 pc(s).
Net weight	398 kg
Gross weight	415 kg
CRA risk class	Default (Low Risk)
Customs tariff number	84186900
ETIM 9	EC002515
ETIM 8	EC002515
ECLASS 8.0	27180712
Product description	LCP Inline DX / FC, 35 kW, flush, RAL 7035, WHD: 600 x 2000 x 1000 mm, 380 – 480 V/3~/50 – 60 Hz

Approvals

Explanations	Declaration of conformity

Tender text

LCP Inline DX/FC 35kW,
3313.460 WHD (mm) 600x2000x1000mm

IT-optimised design, providing ideal support for "front-to-back" air routing for the 482.6 mm (19") installations.

The unit is a combination of direct evaporation (DX) and air/water heat exchanger (FC) system for usage of free cooling.
Because of that, a DX heat exchanger is installed after the FC one, in order to exploit as much as possible free-cooling capacity before activating the DX system.
Due to measurement values, the internal controller is able to control between efficient FC-, Mix- or DX operation.

The unit is able to guarantee a cooling output of up to 35 kW with standard server enclosure dimensions, the lowest possible weight, and comprehensive possibilities for monitoring.
The LCP Inline DX/FC is mounted on the side of the rack.
The warm server air is drawn in through a perforated rear door and the cooled air is blown back via a perforated door in front of the perforated doors of the server rack and is thus made available to the 482.6 mm (19") equipment once more.
The LCP Inline DX/FC is closed up to the server rack at the front and rear and there forms a flush joint with the rack.

The unit is equipped with three EC fans, for maximum efficiency and minimum power consumption.
The flow characteristics of the heat exchanger are optimised for the lowest possible pressure losses on the air side. This minimises the energy consumption of the fans.

An integrated inverter with corresponding controller serves to regulate the speed of the installed compressor.
An inverter pump is controlling the necessary flow in FC- or Mix-mode.
The presence of inverter compressor, inverter pump and a continuous control of the external unit fans permit to achieve a stepless adaptation of the cooling output, also in partial-load operation and in all 3 working modes of the system, thus granting high precision of the airflow temperature to the servers.

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Moreover they guarantee elevated energy consumption reduction with consequent reduction in operating costs.
Furthermore, being the 2 systems (DX and FC) fully independent, in case of failure of one of the 2, the other can partially or fully cover the cooling capacity required, thanks to the advanced software control

Alongside the compressor, the refrigerant circuit of the LCP Inline DX/FC comprises a liquid receiver, electronic expansion valve, refrigerant sight glass, optimised heat exchanger, high and low-pressure sensors, Schrader valves, filter dryer, non-return valve, high/low-pressure switch and shut-off devices.
The refrigerant connections and the electrical power connection to the unit can be realised from above or below.

The liquid circuit (FC) is including the heat exchanger, expansion vessel, safety valve, filling device and inverter pump.
The LCP Inline DX/FC and the server rack remain separate from each other. This simplifies assembly and service work and excludes the need for unwanted access to the server rack for maintenance purposes.
Maintenance and service for all relevant components can be realised quickly and simply from front or rear, thanks to the optimised layout.
The fans can be exchanged quickly and at any time, even while the system is operational (hot swapping).
The fans are installed in the cold air section, which increases their service life.
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Condensate management is integrated into the unit. Any condensate is collected in a collecting tray in the base and from there discharged to the outside via a hose.

Thanks to the integrated controller, the LCP Inline DX/FC operates fully autonomously.
The setpoint is the server intake air temperature, which is automatically held constant at the set value.
Two sensors are present in each case for detection of the cold and warm air temperatures, providing for the appropriate redundancy.

Monitoring and alarm management for all physical parameters is realised via SNMP and Ethernet.
SNMP interface is directly integrated.

A display with operating keys is integrated on the front of the unit to

display and set the physical parameters.

The external hybrid condenser is needed to operate the LCP Inline DX/FC and has to be ordered separately.
Inside the hybrid condenser, the refrigerant condenser and additional free cooling heat exchanger are included: after the installation, the DX system has to be filled in with refrigerant R410A while the CW system with water with the right percentage of glycol
Wall- or roof mounting are possible

Installation and commissioning on site, laying of the refrigerant pipes, and evacuation and filling of the system with refrigerant are not included in the scope of supply and must be realised by correspondingly qualified persons.

Technical specifications:
Useful cooling output:„
35 kW at 35 °C ambient temperature at place of installation of the condenser
Installed fans: 3
Air throughput: max.9000 m³/h
Intake temperature, set: 22 °C
Connection, liquid side: 16 mm
Connection, gas discharge side: 16 mm
Connection, liquid inlet (water/glycol): 1 ½" diameter external thread
Connection, liquid outlet (water/glycol): 1 ½" diameter external thread
Power supply:„400 V, 3~, N, PE, 50/ 60 Hz (voltage range 380-480 V)
Prefuse: 50A
Max. connected load: 14,60kW
Refrigerant: R410A
Connection length, max.: 60 m
Max. delivery height, inverter pump: 3bar
Height difference (condenser higher/lower), max: 20/3 m
Dimensions (WxHxD): 600x2000x1000mm
Colour: RAL 7035
Integrated SNMP card for network connection

Option on application:
Dehumidification + heater
Air filter (G3) with monitoring

Needed accessories:
3311.380,,
Air cooled hybrid condenser for 3313.460 (-20°C to +45°C)