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SK 3311.910

Liquid Cooling Package

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FRIEDHELM LOH GROUP

SK 3311.910 - Liquid Cooling Package LCP Hybrid CW

Large-scale, high-capacity air/water heat exchanger, designed as the rear door of the server enclosure, ensures that heated waste air from the servers is cooled down to server intake air level.

Features

Model No.	SK 3311.910
Benefits	Mounted on the rear of the server rack so that the thermal load of the server rack does not have to be dissipated by the ventilation system The heat pipe ensures even heat distribution in the heat exchanger, so that the heat exchanger always has a balanced heat load A door opening angle of 135° allows rear access to the server enclosure and makes assembly and configuration inside an enclosure easier Optimum energy efficiency, as there is no electrical power consumption whatsoever
Applications	Air-water heat exchanger for retrofitting to TS IT racks while operational
Function principle	The stand-alone unit replaces the rear door The waste air is cooled down to room temperature. The heat energy absorbed by the water is transported to the external cold water supply, where it is cooled back down to the required inlet temperature. The heat exchanger uses the airflow from the IT equipment and does not require any additional fans for cooling Minimal upstream and downstream pressure losses, despite the very compact design Water connection from below only
Colour	RAL 7035
Design	Rack cooling

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Features

Note	The air throughput (heated waste air) from the active 482.6 mm (19") components installed in the enclosure must be sufficient to overcome the pressure loss from the perforated heat exchanger rear door The total cooling output refers to an outlet temperature of 24 °C
Dimensions	Width: 800 mm Height: 2,200 mm Depth: 105 mm
Max. cooling output	10 kW
Usable height	47 U
Cooling medium	Water (see Internet for specifications)
Rated volumetric flow – air volume	2,700 m³/h
Water connections	DN 25 (G 1" external thread)
Permissible operating pressure (p. max.)	6 bar
Water inlet temperature	15 °C
Packs of	1 pc(s).
Gross weight	81
EAN	4028177717060
ETIM 9	EC002515
ETIM 8	EC002515
ECLASS 8.0	27180712

Approvals

Approvals	UL + C-UL (listed)
Explanations	Declaration of conformity

Tender text

LCP Hybrid CW (10 kW)
3311.910
WxHxD 800x2200x105 mm
The unit takes up the heat losses from IT components installed in an IT rack and thus prevents dissipation of this heat at the place of installation. The temperature of the room air is maintained at the server air inlet temperature. The integrated air/water hybrid heat exchanger with heat pipe guarantees a cooling output of up to 10 kW. Heat pipes ensure even heat distribution over the exchanger in case of inhomogeneous component installations in the rack; the IT rack is to be fitted with the air baffle plates which are available as accessories so as to form a "funnel" towards the rear and in this way to guarantee 100% heat transfer via the heat pipe, even distribution of the heat losses and thus full exploitation of the heat exchanger surface. The unit is mounted at the rear on 800 mm wide IT racks with fixings on one side.
The unit is pressure-tested and ready to install and can be directly mounted on the IT rack without any further assembly work. With its external frame construction, the heat exchanger does not occupy space in the rack - the full server rack is thus available for the IT equipment. Thanks to the high-performance heat exchanger and its special corrugated membrane structure with hydrophilic coating, the exhaust air flow from the servers is not impaired. The unit can be swung away from the rack in the same way as a ventilated rear door. The opening angle of the unit is 130°, also in combinations with several units in a suite. The IT components installed in the IT rack use their own fans to route the warm air flow to the air/water hybrid heat exchanger. The heat from the warm exhaust air flow from the IT components is dissipated by way of the air/water hybrid heat exchanger. No additional fans are required on the unit for the cooling of the IT components. The air/water

hybrid heat exchanger results in a minimal pressure loss over the IT components. To further reduce the pressure loss on the air side, additional air baffle plates may be installed in the roof and floor areas in the 800 mm wide IT rack (not included in the scope of supply). The air baffle plates do not hinder the accessibility for cabling and mounting of the IT components. The cold water connection of the LCP Hybrid is to be found in the side door frame. The connection point for the feed and return lines (DN 25, 1" internal thread) is fixed on the unit and is not turned when opening and closing. Optionally, the cold water supply to the unit can be realised by way of an external connection hose DN 25 / PN 16, length 1 m (not included in the scope of supply).
Technical data, nominal cooling output:
Sensible cooling output: 10 kW (sensible cooling only)
Room temperature (server inlet): 24°C
Delta temp.air: 12 K
Air flow rate: up to 2700 m3/h [Delta p approx. 12 Pa](produced by the IT components)
Inlet temperature: 15°C
Medium: Water
Water flow rate: 30 l/min [Delta p 0.3 bar]
Pressure loss, water: 0.3 bar
Pressure loss, air: approx. 12 Pa
Refrigerant, heat pipe: R 134 A

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