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SK 3314.548
Liquid Cooling Package

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SK 3314.548 - Liquid Cooling Package LCP Inline CW/ CWG

Bayed climate control designed for siting within a bayed enclosure suite. The hot air is extracted at the rear of the unit, cooled and then expelled forwards to the cold aisle.



Features

Model No.	SK 3314.548
Version	Row Cooling CW

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Features

Benefits	Maximum energy efficiency due to EC fan technology and IT-based control Minimal pressure loss at the air end, which in turn minimizes the power consumption of the fans Control of the server supply air temperature or optionally according to differential pressure Redundant temperature sensor integrated at the air end Optimum adaptability due to dynamic, continuous control of the cold water volume flow By using high water inlet temperatures, the proportion of indirect free cooling is increased, which in turn reduces operating costs Cooling capacity tailored to requirements thanks to modular fan units (fans can be replaced without tools and during operation) Fan modules configurable as n+1 redundancy. Standard 3-phase connection for electrical redundancy The UL version has a 1- or 2-phase fixed connection with additional cover as standard. The separation of cooling and enclosure prevents water from entering the server enclosure A maximum floor area of 0.36 m² for all cooling services Improved heat recovery due to high water return temperatures when using the LCP CW glycol variants, for example in conjunction with a heat pump Optimum access for maintenance and service from the front and the rear
Function principle	The hot air is drawn in from the room or hot aisle at the rear of the device and expelled at the front into the cold aisle after cooling. With this product, a raised floor is not necessary
Material	Housing: Carbon steel Front door: Aluminum, anodized/spray-finished Carbon steel, spray finished
Surface finish	RAL 9005, fine structure matt
Color	Housing: RAL 7035 Front door: Vertical sections, silver colored and horizontal sections, RAL 9005 RAL 9005

Features

Options	Automatic server enclosure door opening Direct connection of an additional 16 CMC III sensors is possible Racks in height 2200 mm, special color Condensate management kit including baffle plate separator and temperature and humidity sensor Display
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 device via SNMP and via Ethernet (2 Ethernet interfaces, thus simplified cascading of up to 16 LCPs) Integration in RiZone OT Suite (Extended measurement and management functions, values can be transferred and visualized)
Total cooling output/number of fan modules	30 kW/4 102,364 BTU/h
Total cooling output	30 kW 102,364 BTU/h
Air throughput (unimpeded air flow)	At 60 Hz: 5,200 m³/h At 60 Hz: 3,060.6 cfm
Number of fan modules in supplied state	4
Dimensions	Width: 300 mm Height: 2,000 mm Depth: 1,200 mm Width: 11.8 ″ Height: 78.7 ″ Depth: 47.2 ″
Suitable for enclosure type	VX IT TS IT
Installation in bayed enclosure suite	Flush
Rated operating voltage	200 V - 240 V, 1~, 50 Hz/60 Hz
Max. cooling output	30 kW 102,364 BTU/h
Type of connection (electrical)	Fixed connection with cover

Features

Duty cycle	100 %
Cooling medium	Water
Cooling medium note	Water quality according to unit specifications.
EC fan	Yes
Fans may be exchanged with the system operational	Yes
Temperature control	Infinitely variable fan control 2-way control ball valve
Water connections	DN 40 (G 1½" external thread)
Permissible operating pressure (p. max.)	10 bar 145 PSI
Water inlet temperature	15 °C 59 °F
Protection category IP to EN 60 529	IP 20
Options	Automatic server enclosure door opening Direct connection of an additional 16 CMC III sensors is possible Racks in height 2200 mm, special color Condensate management kit including baffle plate separator and temperature and humidity sensor Display
Packaging unit	1 pc(s).
Net weight	208 kg
Gross weight	218 kg
CRA risk class	Default (Low Risk)
Customs tariff number	84186900
Product description	SK LCP Inline CW flush, 30 kW, UL, W x H x D: 300 x 2000 x 1200 mm, RAL 9005, fine structure matt

Approvals

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

Tender text

 LCP InLine CW Flush – 30kW (Open Loop), 3314.548

 LCP InLine Flush CW, 3314.538: WHD - 300mm/12”x 2000mm/79”x 1200mm/48”
 Regulatory Model No.: LCP N 8A1I43SC9D000

 The design of the row based cooling unit is optimized for use in data centers. The integrated air/water heat exchanger guarantees a sensible cooling output of 30 kW (Maximum) compatible with standard IT Equipment (ITE) server enclosure dimensions, the lowest possible weight and comprehensive system performance monitoring.

 The air/water heat exchanger is mounted to the side of the IT equipment (ITE) enclosure (Sidecar). The LCP Inline extracts the hot air from rear of installed rackmount servers via vented rear doors on the ITE Enclosure and LCP.
 Cooled air is discharged into the `Cold Aisle ’ for intake into 19” equipment through vented front doors of the ITE Enclosure and LCP from the left and right.
 Maximum efficiency is achieved by using 4 built-in EC fan modules (cooling capacity up to 30 kW, 102364 BTU/h).

 The unit is prepared for the incorporation of up to four EC fan modules. Configuration with the maximum number of fans can thus also serve to achieve redundancy or to minimise electrical power consumption.

 The air/water heat exchanger and server rack are incorporated into a single bayed suite, but nevertheless remain separate from each other. This eliminates the risk of water penetrating into the server rack and simplifies installation and service.
 There is no access to the adjacent IT rack via the LCP.
 Leakage monitoring is integrated. If a sensor installed in the condensate tray detects a leakage, the main controller issues an alarm message and/or interrupts the supply of cooling medium to the unit.
 All components which may come into contact with condensate are made from stainless steel in order to avoid corrosion.

 The unit was developed for the exclusive purpose of providing a 100%

sensible cooling output.
 An accessory kit enables top or bottom feed water connections (G 1½" external thread). A separate Coupling Kit (9977379) is provided to connect from BSPP threaded connections at the LCP (Supply and return) to NPT fittings from facility water piping.
 An air bleed valve at the top rear of the heat exchanger provides rapid and simple air bleeding.
 Hot-swappable fans can be quickly replaced, without the need for tools or specially qualified personnel, also during continued operation.

 An advanced software concept enabling network integration for the monitoring/setting of all technical parameters is implemented as a standard feature.
 An integrated fail-safe operating mode maintains reliable cooling in case of a controller failure.
 Up to 16 CMC III sensors (temperature/humidity etc.) can be connected to the CAN bus.

NEW-PAGE
 Technical Data: Sensitive cooling output with 4 fans: 30 kW (102364 BTU/h)
 Operating temperature range, ambient: 50-122 °F/10 - 50 °C
 Operating temperature range, cooling medium: 50-86 °F/10 – 30 °C (non-condensing)
 Lower inlet temperatures possible after consultation with the manufacturer.

 Installed fans: 4 (max. 6 possible)
 Air throughput: 3060 cfm/5200 m³/h (4 fans)
 Cooling output (4 fans): 30 kW (102364 BTU/h)
 Air intake temperature (EAT): 75 °F/24 °C
 Water inlet temperature (EWT): 59 °F/15 °C
 NOTE: Thermal capacity determined by EAT and EWT setpoints. Capacity can vary based on operating conditions
 Medium: Water (or water/glycol mixture) (NOTE: Glycol mix will reduce capacity)
 Cooling medium throughput (0-26 GPM/0-100 LPM): approx. 16 GPM/60 LPM (pure water)
 Pressure loss: approx. 9.0 psi/0.6 bar
 Water connection: G 1½" external thread
 Voltage: 1 ~ 200-240V, AC 50/60Hz, L1, (L2/N), PE
 Max. connected load (4 fan modules): 2150 W

 Server supply air temperature control via flow rate control and continuously variable speed EC fans
 Noise level at a distance of 1 m: max. 88 dB(A)
 Color: Enclosure frame, roof panel, side panels and rear door: RAL 9005 Black, fine structure matte
 Dimensions: WxHxD: 12”/300mm x 79”/2000mm x 48”/1200mm
 Configuration: Perforated Doors Front & Rear, Solid roof with adjustable panel for hose, power, network connections
 Weight as delivered: 485 Lbs/220 kg

 Controller/interfaces:
 Front and Rear network interfaces at the customer connection panel: 2 pcs. (RJ 45) switched, each 10/100/1000 MBit/s (16 IP addresses)
 Front USB interfaces: USB 2.0 type C for serial configuration. Power supply for basic configurations, USB 2.0 type A for storage media, status LED, set and reset button
 Rear CAN bus interface RJ 45: For connection of up to 16 CMC III sensors
 Rear alarm relay output: changeover contact (NO/NC) (48V DC, 1A, 250 VAC, 2 A)
 Digital Input: 1 x (male)
 Analog inputs: 2 x (4-20 mA connector)
 RS232 for display connection
 Supported protocols: IPv4 / IPv6<(>,<)>
 integrated web server, HTTP, HTTPS, SSL, SSH<(>,<)>
 NTP, Telnet, TCP/IP v4 and v6, DHCP, DNS, NTP<(>,<)>
 Syslog, SNMP v1, v2c and v3, Traps<(>,<)>
 OPC-UA, Modbus/TCP<(>,<)>
 FTPS, SFTP (update / file transfer)<(>,<)>
 e-mail dispatch (SMTP)
 User management incl. rights management: Yes
 LDAP(S) / Radius connection: Yes
 USB port for firmware update / data logging function: Yes
 Initial commissioning / mass configuration: Yes, via predefined CSV file

 Software:
 Control according to server supply air temperature or optionally according to differential pressure
 Automatic or manual control selectable
 Remote control via SNMP, Modbus/TCP or OPC-UA possible
 Setpoint setting by external temperature sensor selectable

 Optional water-side delta T control for efficient chiller operation
 Programming of logical links (tasks) for automation of specific processes possible
 Measurements: Thermal and electrical power are measured continuously. Determination and display of current EER, ∑ fan operating hours, ∑ valve cycles and ∑ flow rate [l].

 Touch Screen Display, Color, (Installed):
 The front door mount LCD screen displays all relevant operating parameters directly on the LCP.
 Individual icons display operational parameters and LCP status at a glance and, if necessary, the user can react as quickly as possible and change parameters.

 The following parameters can be read and changed at various levels:

 - Display of the cold air temperature supplied to the 19“ equipment
 - Display of the hot air temperature discharged from the 19” equipment
 - Display of the control mode (automatic, manual, remote)
 - Configuration menu: Air Circuit, Coolant circuit, Condensate Management, Fan Registry
 - Cooling water flow temperature/return temperature
 - Cooling water flow
 - Control valve position
 - Display of pPUE, EER and Cap (cooling capacity)
 - Overview of all parameters and the option to change them (protected with PIN)
 - Display of alarm and warning messages
 - Overview page with IP address of the device, software version and contact person etc. (can be entered individually)

 Touchscreen display, packaging unit consisting of:
 - Color touch screen display, incl. mounting accessories
 - 4.3" display, 480 x 272 pixels
 - Resistive touch
 - Brightness 200 cd/m²
 - Storage temperature: : -4 – 158°F/-20 - +70°C
 - Ground cable

 Special Features:
 Easy maintenance of the device from the front and rear. Cable routing, power distribution and aisle containment can be installed above the LCP.

2 Ethernet interfaces, simplifying the cascading of up to 16 LCPs
(saving on ports and switches)
 Tool-free replacement of the fans during operation. Optional
differential pressure control.
 Integrated software with water-side delta T control for efficient
chiller operation
 A droplet separator with patented condensate management is recommended
for operation with water supply temperatures (EWT) below the dew point.
This option must be requested in advance.
 Available expansion height to match adjacent taller (86”/2200mm –
47RU) ITE enclosures (79”/2000mm LCP standard: 42 U)

 Accessories:
 North America Coupling Kit (BSPP to NPT): 9977379
 Connection hose: Contact Rittal North America
 Fan module for power extension: 3313.016
 Condensate pump: 3314.012
 Side panel mounting: 3313.089
 CMC III temperature sensor: 7030.110
 CMC III differential pressure sensor: 7030.150
 SK baying set LCP CW VX to TS IT: 3311.089
 Add-on LCP Flush to VX IT: 5301.310
 Add-on LCP Flush to TS IT: 5301.312
 Integrated droplet separator on request