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## SK 3311.491 Liquid Cooling Unit

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FRIEDHELM LOH GROUP



# SK 3311.491 - Liquid Cooling Unit LCU DX, redundant

Refrigerant-based enclosure cooling in redundant version for VX IT or Micro Data Center without heating up the installation room. With two output categories 3 kW and 6.5 kW, the ideal cooling solution for smaller IT applications.

## Features

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model No.          | SK 3311.491                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Version            | LCU DX 3 kW redundant                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Benefits           | <p>Space-saving solution by installing the redundant internal unit in the VX IT server enclosure or the Micro Data Center</p> <p>Maximum energy efficiency due to EC fan technology and IT-based control</p> <p>Control of the server inlet temperature</p> <p>The inverter-controlled compressor matches the cooling output to the current level of heat loss in the enclosure</p> <p>Absorbed thermal energy is emitted directly into the ambient air at the location of the (inverter controlled) external unit , without heating up the installation room</p> |
| Applications       | Cooling unit for VX IT server enclosures and for Micro Data Centers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Function principle | <p>Within the internal unit, the redundant versions each have two cooling circuits and two controllers, plus two inverter-controlled external units. The fault and operating hours switchover mechanism ensures regular switching between the external units and a switchover in the event of a fault or a failure.</p> <p>The device supports "front to back" air routing typical of IT applications, and regulates the server inlet temperature to the set value</p>                                                                                            |
| Material           | Carbon steel, spray finished                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Color              | Internal unit: RAL 7035<br>External unit: white                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

# Features

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| Supply includes                     | <p>Internal unit (condenser)</p> <p>2 external units (inverter controlled)</p> <p>482.6 mm (19") mounting bracket cover with control and display elements</p> <p>Condensate hose</p>                                                                                                                                                                                                                                                                                         |
| Installation options in VX          | <p>19" profile rails, standard or dynamic, must be off-centered by 50 mm in regards to width</p> <p>The distance between the front of the 19" profile rails and the front edge of the VX frame must be at least 100 mm</p> <p>Two system chassis for the inner mounting level are required to fasten the internal unit</p> <p>Air baffle plates are required to separate the hot/cold zones within an enclosure</p> <p>A base/plinth is needed to route cables downwards</p> |
| Note                                | <p>If the cooling output falls below its minimum value, fluctuations in the air intake temperature may result</p> <p>The electrical connection is made to the external unit, the internal unit is supplied by the external unit</p> <p>A separate power supply is required for each external unit</p>                                                                                                                                                                        |
| Protection category IP to IEC 60529 | <p>Internal unit IP 20</p> <p>External unit IP X4</p>                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Modulation range                    | 1 - 3 kW                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Max. cooling output                 | <p>3 kW</p> <p>10,236 BTU/h</p>                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Type of connection (electrical)     | Connection clamp                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Duty cycle                          | 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Refrigerant/cooling medium          | Refrigerant: R410A                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Suitable for                        | <p>Enclosure type: VX IT</p> <p>Width: = 800 mm</p> <p>Height: ≥ 1,800 mm</p> <p>Depth: ≥ 1,000 mm</p> <p>Enclosure type: VX IT</p> <p>Width: = 31.5 "</p> <p>Height: ≥ 70.9 "</p> <p>Depth: ≥ 39.4 "</p>                                                                                                                                                                                                                                                                    |

# Features

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| Dimensions of the internal unit | Width: 105 mm<br>Height: 1,550 mm<br>Depth: 820 mm<br>Width: 4.13 "<br>Height: 61 "<br>Depth: 32.3 "                                                                                                   |
| Dimensions, external unit       | Width: 810 mm<br>Height: 558 mm<br>Depth: 310 mm<br>Width: 31.9 "<br>Height: 22 "<br>Depth: 12.2 "                                                                                                     |
| Rated operating voltage         | 230 V, 1~, 50 Hz                                                                                                                                                                                       |
| Pre-fuse                        | 16 A                                                                                                                                                                                                   |
| Rated current                   | 7 A                                                                                                                                                                                                    |
| Packaging unit                  | 1 pc(s).                                                                                                                                                                                               |
| Net weight                      | 129.2 kg                                                                                                                                                                                               |
| Gross weight                    | 136 kg                                                                                                                                                                                                 |
| Customs tariff number           | 84158200                                                                                                                                                                                               |
| ETIM 9                          | EC000855                                                                                                                                                                                               |
| ETIM 8                          | EC000855                                                                                                                                                                                               |
| ECLASS 8.0                      | 27180704                                                                                                                                                                                               |
| Product description             | SK LCU DX split cooling unit, 10236 BTU/h, refrigerant-based cooling of IT racks and Micro Data Centers, 2 x external units with inverter-controlled compressors, 1 x internal unit, redundant version |

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# Approvals

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| Explanations | Declaration of conformity |
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