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Product profile	
Part number	2016-0111
Article name	ColdPlate slim
Description	Automation friendly Heater-Cooler thermoblock. Designed to be integrated in liquid handling and automation platforms to process labware in chemical and biological laboratories.
Recommended use	Automation | Heating | Cooling | Tubes, Vials, Microplates
Scope of delivery	ColdPlate slim | External power supply | Power cords Europe & US | 2x screws to mount device (M3 x 22 | DIN 912) | Calibration certificate | Operation & Integration manual
Conforming use	System is operated by qualified and trained research and laboratory personnel. Applicable safety standards or rules need always be fulfilled.
Country of origin	DE
Customs tariff code	8419 89 98

Temperature control	
Temperature range*	-20 °C to 99,9 °C (-4.0 F to 211.82 F) up to 25 Kelvin under RT with 0.1 °C increment resolution
Temperature sensor accuracy	± 0.2 °C (max) from -10 °C - 85 °C | ± 0.25 °C (max) from -20°C - 100 °C (resolution 0.008 °C)
Temperature uniformity*	± 1.0 K at 4 °C | ± 0.5 K at 15 °C | ± 0.5 K at 40 °C | ± 1.0 K at 90 °C
Cooling / Heating speed above RT*	~ 12 K/min (6.5 min from 21 °C to 95 °C or from 95 °C to 21 °C)
Cooling / Heating speed below RT*	~ 6 - 12 K/min (4 - 5 min from 21 °C to 4 °C or from 4 °C to 21 °C)

** Value depends on the used thermo-adapter. Given value conditions: RT = 21 °C, Adapter = 2016-1041, 96-well PCR, adapter temperature*

Thermo-adapter plates for different labware	
Description	An adapter is required for optimal temperature transfer to and/or optimal fixation of labware and needs to be purchased separately. The adapter can be exchanged by the user.
Microplates	All microplates according ANSI-SLAS format 4-, 6-, 8-, 12-, 24-, 48-, 96-, 384-, and 1536-well microplates, deep well plates, PCR plates
Tubes and Vials	0.2, 0.5, 1.5, 2.0 ml standard tubes | 2.0, 4.0, 6.0, 8.0, 10.0 ml cylindrical shaped vials
Others	Custom made adapter on request

Device control	
Description	Required electronic for remote control is build in the device. No external controller required.
Operation control	Remote controlled as described in the Integration Manual
Peripheral interface	EIA-232 / RS-232 interface (2 m cable with RS-232 plug-in connector) optional: USB via USB-Serial Adapters (Rec. DIGITUS DA-70156) or USB via MOXA USB-to-Serial Hub
Status	LED in corner area (GREEN = ok | RED = error | BLUE = booting | YELLOW = no communication)

Electrical	
Operating voltages	24 V DC | Imax: 4.5 A | Peff: 85 Watt | Pmax: 108 Watt
Power supply	Input: 100 - 240 V AC | 50 - 60 Hz Output: 24 V DC | Imax: 5.0 A | Pmax: 120 Watt External power supply unit (CE/UL/CSA approved, 85-264 V AC, 47-63 Hz, IEC/EN60320-1 C14 | Degree of protection: IP20)
Power connection*	Prewired cable | length 2 m | barrel connector ID 2.5 mm x OD 5.5 mm

*Only use the device with the delivered power cord. If another power cord is used ensure the wire diameter is adequate.

Operating, transport and storage conditions	
Operating range	5 °C - 45 °C (41 - 113 F) | 10 - 80 % RH | up to 2000 m above sea level | non-condensing
Floor base requirements	stable (resonance free) | horizontal | dry | inside buildings | even | well ventilated and no direct exp. to sunlight
Transportation and storage	-10 °C - 60 °C (14 - 140 F) | 10 - 80 % RH | non-condensing

General properties	
Housing material	Aluminum anodized
Degree of protection	IP20 (Protected against solid objects up to 12 mm |No protection against water)
Pollution degree	1 (no contamination or only dry, non-conductive contamination, whereby the contamination has no influence)
Airborne sound emission	< 70 db (A)

Dimension and weight	
Dimensions	(W x D x H) 235 x 99 x 45.5 mm | 9.25 x 3.9 x 1.79 inch
Weight	1.4 kg | 3.09 lbs
Packaging size	(W x D x H) 495 x 260 x 100 mm | 19.49 x 10.24 x 3.94 inch | cardboard box
Packaging weight	3 kg | 6.61 lbs

Certifications	
Regulatory compliance	2014/30/EU, 2015/863/EU, 2011/65/EU, DIN EN 61010-1:2011-07, DIN EN 61010-2-010:2015-05, DIN EN 61326-1:2013-07, DIN EN 50581:2013-02 , DIN EN 61000-3-2:2015-03, DIN EN 61000-3-3:2014-03
Patents pending	WO2008135565, US8323588, EP2144716, WO2011113858, US9126162, EP2547431, WO2013113847, US10052598, EP2809436, WO2013113849, US9371889, EP2809435, WO2014207243, US20160368003, EP3013480, WO0020221288l4A1, WO0020221288l9A2 Please notify us or our designated agent, if you believe that a user has infringed our intellectual property rights.

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