

**Product profile**

Part number	2016-0025
Article name	BioShake D30 elm
Description	Automation friendly Shaker with Edge Locking Mechanism. Designed to be integrated in liquid handling and automation platforms to process labware in chemical and biological laboratories.
Recommended use	Automation   Shaking   Microplates, DW plates, Extraction protocol
Scope of delivery	BioShake D30 elm   External power supply   Power cords Europe & US   2x screws to mount device (M3 x 18   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	8479 82 00

**Mixing**

Mixing frequency range*	200 to 2000 rpm with 1 rpm increment resolution
Mixing orbit	constant 3.0 mm diameter
Mixing regulation accuracy	± 25 rpm
Accel. / Decel. range	1 - 30 seconds
Accel. / Decel. resolution	1 second increments
Zero position	Locked zero position with ± 0.1 mm accuracy

\* Feasible frequency heavily depends on load weight and height

**ELM positioning**

Description	Patented Edge Locking Mechanism (elm) for repeatable and accurate positioning of micro-plates on a liquid handling or automation platform
Unlocked	Plate locking open, ready for labware exchange manually or with gripper/roboter
Locked	Plate locking closed, strong diagonal centered fixation
ELM position accuracy	± 0.1 mm

**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 front (GREEN = ok   RED = error)

**Electrical**

Operating voltages	24 V DC   I <sub>max</sub> : 3.1 A   P <sub>eff</sub> : 15 Watt   P <sub>max</sub> : 75 Watt
Power supply	Input: 100 - 240 V AC   50 - 60 Hz Output: 24 V DC   I <sub>max</sub> : 5.0 A   P <sub>max</sub> : 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
Transportation and storage	-10 °C - 60 °C (14 - 140 F)   10 - 80 % RH   non-condensing

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**General properties**

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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)

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**Dimension and weight**

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Dimensions	(W x D x H) 142 x 99 x 55.35 mm   5.59 x 3.9 x 2.18 inch
Weight	1.6 kg   3.53 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

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**Certifications**

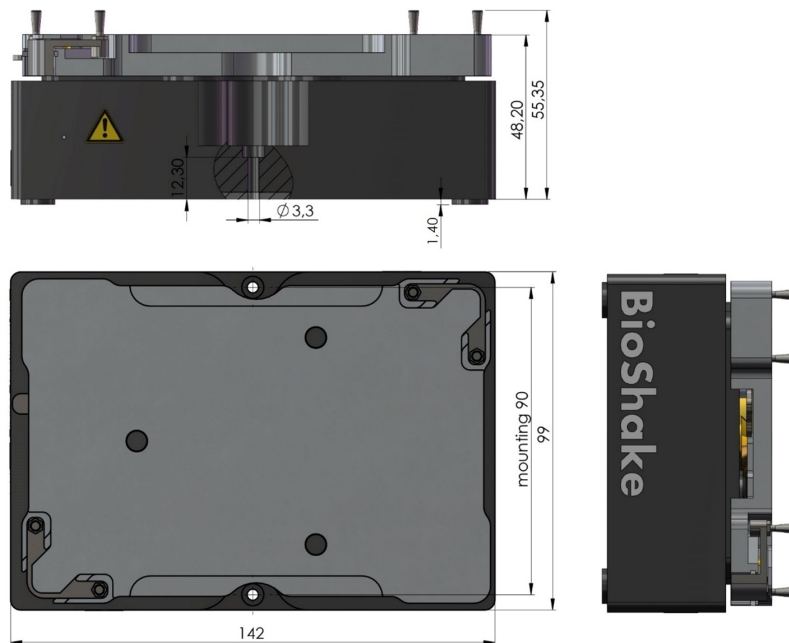
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Regulatory compliance	2014/30/EU, 2015/863/EU, 2011/65/EU, DIN EN 61010-1:2011-07, DIN EN 61010-2-051:2016-02, DIN EN 61326-1:2013-07, DIN EN 55011:2017-03, DIN EN 50581:2013-02
Patents pending	WO2008135565, US8323588, EP2144716, WO2011113858, US9126162, EP2547431, WO2013113847, US10052598, EP2809436, WO2013113849, US9371889, EP2809435, WO2014207243, US20160368003, EP3013480, WO002022128814A1, WO002022128809A2 Please notify us or our designated agent, if you believe that a user has infringed our intellectual property rights.

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**Drawing**

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