

# High Power Laser Diode Modules



## LaserBoxx HPE series

UV to IR  
Laser Diode Modules

The LaserBoxx HPE series is a high power laser diode module offering excellent performance and reliability in a compact driver integrated laser head. It comes in free space multimode elliptical beam or with removable MM fiber coupling.

Microscopy  
Medical  
Illumination  
High-Throughput inspection  
Polymer curing  
Laser pumping  
Sensor

Laser head with integrated drivers  
Elliptical Collimated beam  
Multimode fiber coupling option  
Analog modulation  
USB, RS232 and Analog interfaces  
Industry standard compact package

375

405

450

473

488

520

525

638

750

785

830

940

# Specifications

	LBX-375 HPE	LBX-405 HPE	LBX-450 HPE	LBX-473 HPE	LBX-488 HPE	LBX-520 HPE	LBX-638 HPE	LBX-750 HPE	LBX-785 HPE	LBX-940 HPE
Technology	Multimode laser diode									
<b>Optical characteristics</b>										
Emission wavelength (typ.)	375 nm	405 nm	450 nm	473 nm	488 nm	520 nm	638 nm	750 nm	785 nm	940 nm
Wavelength range	± 5 nm	± 5 nm	± 10 nm	± 5 nm	± 5 nm	± 10 nm	± 10 nm	± 5 nm	± 5 nm	± 10 nm
Linewidth	≤ 5 nm; 2 nm typical									
Output power, continuous wave	200, 400 mW	900, 1200* mW	650, 1200* mW	1000 mW	1000 mW	800 mW	1100 mW	1200 mW	800 mW	800 mW
Control mode(s)	Automatic power control (APC), Automatic current control (ACC)						Automatic current control (ACC)			
Power stability over 8 hours and within ±3°K	± 1 %									
<b>Transverse multimode free-space beam (1)</b>										
Beam dimensions (typ.) at 1/e <sup>2</sup> , at laser aperture	3.0 x 1.4 mm	2.6 x 1.2 mm	2.6 x 0.7 mm	2.6 x 1.2 mm	2.2 x 1.2 mm	2.0 x 0.5 mm	1.3 x 4.5 mm	3.8 x 1.9 mm	3.8 x 1.9 mm	3.8 x 1.9 mm
Beam divergence (typ.) at 1/e <sup>2</sup> , full angle, in far field	1.4 x 2.2 mrad	0.2 x 2.6 mrad	0.2 x 4.0 mrad	0.2 x 2.6 mrad	0.2 x 2.6 mrad	0.2 x 2.6 mrad	7 x 0.2 mrad	0.3 x 15 mrad	0.3 x 15 mrad	0.3 x 15 mrad
<b>Modulation functions</b>										
Analog modulation	0-5V input voltage									
Bandwidth 3dB cut-off frequency, ACC mode	DC-1 MHz									
Rise / fall time 10%-90%, ACC mode	≤ 300 ns			≤ 200 ns			≤ 500 ns		≤ 200 ns	
<b>MM fiber coupling option (1)</b>										
Output power	160, 320 mW	720, 960 mW	950 mW	800 mW	800mW	600 mW	750 mW	950 mW	640 mW	600 mW
Fiber core diameter	≥ 50 μm	≥ 50 μm	≥ 50 μm	≥ 50 μm	≥ 50 μm	≥ 50 μm	≥ 50 μm	≥ 100 μm	≥ 200 μm	≥ 100 μm
Supply Voltage OEM version	5 - 12 VDC			9 - 12 VDC			5 - 12 VDC			

Other available wavelengths: 525nm/1000mW, 830nm/1200mW

(1) Specifications at nominal power

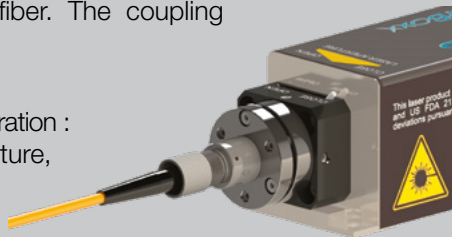
\* preliminary

## Multimode fiber coupling option

The ACX-FCMM option offers a cost-effective and compact way to couple the LaserBoxx beam into a multimode fiber. The coupling efficiency exceeds 80%.

Standard patchcord configuration :

- 0.22 numerical aperture,
- SMA connector,
- 2 m fiber length.



Other configurations are available on demand.

## Custom capabilities:

- L6Cc-HPE wavelength combiner
- Wavelength selection
- Electro-mechanical shutter
- External modulator
- Specific beam shaping

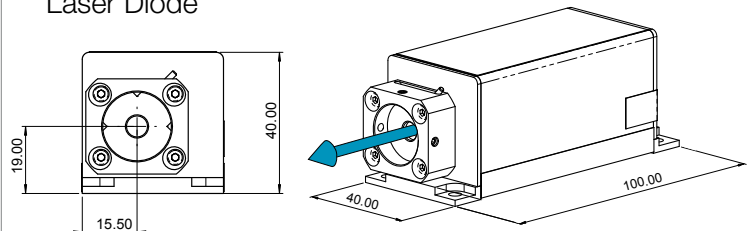
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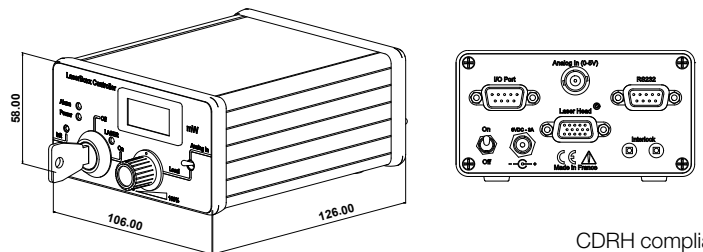
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## LBX series, Plug & Play Laser Diode



The heatsink is optional

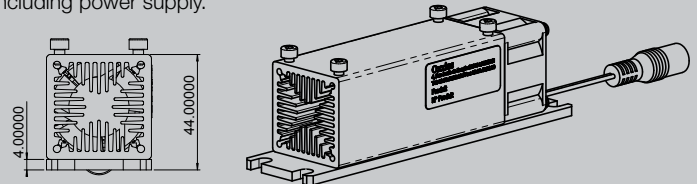
## P&P ControlBoxx



CDRH compliant

## Optional heatsink for LCX series & LBX series

Optional air-forced heat sink for maximum ambient temperature of 38°C. Including power supply.



VISIBLE AND INVISIBLE LASER RADIATION  
AVOID EXPOSURE TO BEAM  
CLASS 3B LASER PRODUCT  
Power up to 500 mW

VISIBLE AND INVISIBLE LASER RADIATION  
AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION  
CLASS 4 LASER PRODUCT