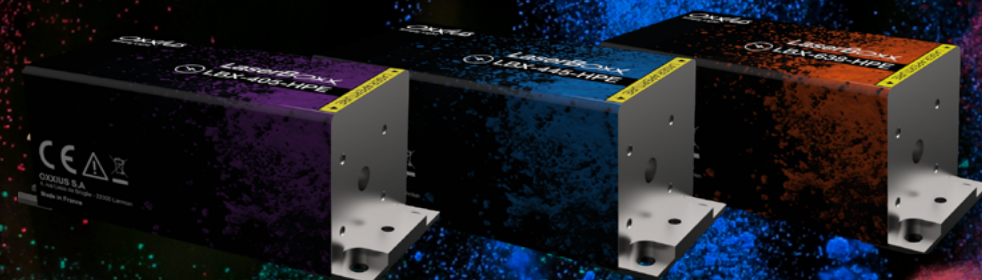


## High Power Lasers



**2022**

Microscopy  
Optogenetics  
Illumination  
High-throughput inspection

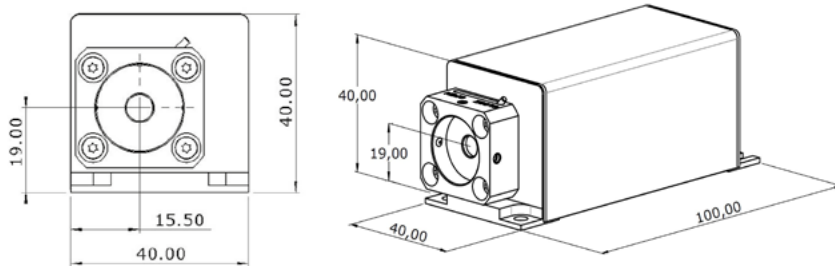
Polymer curing  
Laser pumping  
Lithography  
Additive manufacturing

# Specifications

|         | Emission wavelength (typ.) | Linewidth              | Power stability over 8h and ±3K                                               | Output power continous wave | Beam dimensions (typ.) at 1/e², at laser aperture | Analog modulation function 0-5V input voltage |                               | Multimode fiber coupling option |                     | Supply voltage |
|---------|----------------------------|------------------------|-------------------------------------------------------------------------------|-----------------------------|---------------------------------------------------|-----------------------------------------------|-------------------------------|---------------------------------|---------------------|----------------|
|         |                            |                        |                                                                               |                             |                                                   | Bandwidth 3dB cut-off frequency, ACC          | Rise / Fall time 10 -90%, ACC | Delivered power                 | Fiber core diameter |                |
| LBX-375 | 375 nm (±5 nm)             | ≤ 5 nm<br>2 nm typical | ± 1% <b>APC</b>                                                               | 200, 400 mW                 | 3.0 x 1.4 mm                                      | DC-1 MHz                                      | ≤ 300 ns                      | 160, 320 mW                     | 50 μm or larger     | 5 - 12 VDC     |
| LBX-405 | 405 nm (±5 nm)             |                        | ± 1%<br><br>Automatic power control (APC) and Automatic current control (ACC) | 900, 1200 mW                | 2.6 x 1.2 mm                                      |                                               | ≤ 200 ns                      | 720, 960 mW                     |                     | 9 - 12 VDC     |
| LBX-450 | 450 nm (±10 nm)            |                        |                                                                               | 650, 1200 mW                | 2.6 x 0.7 mm                                      |                                               |                               | 500, 950 mW                     |                     |                |
| LBX-473 | 473 nm (±5 nm)             |                        |                                                                               | 1000 mW                     | 2.6 x 1.2 mm                                      |                                               |                               | 800 mW                          |                     |                |
| LBX-488 | 488 nm (±5 nm)             |                        |                                                                               | 1000 mW                     | 2.2 x 1.2 mm                                      |                                               |                               | 800 mW                          |                     |                |
| LBX-520 | 520 nm (±10 nm)            |                        |                                                                               | 800 mW                      | 2.7 x 0.8 mm                                      |                                               |                               | 600 mW                          |                     |                |
| LBX-638 | 638 nm (±10 nm)            |                        |                                                                               | 1100 mW                     | 4.5 x 4.5 mm                                      |                                               |                               | ≤ 500 ns                        | 750 mW              |                |
| LBX-750 | 750 nm (±5 nm)             |                        | ± 1% <b>ACC</b>                                                               | 1200 mW                     | 1.9 x 3.8 mm                                      |                                               | 950 mW                        |                                 |                     |                |
| LBX-785 | 785 nm (±5 nm)             |                        |                                                                               | 800 mW                      | 3.8 x 1.9 mm                                      |                                               | 640 mW                        |                                 |                     |                |
| LBX-830 | 830 nm (±5 nm)             |                        |                                                                               | 1200 mW                     | 5.2 x 2.6 mm                                      |                                               | 960 mW                        |                                 |                     |                |
| LBX-940 | 940 nm (±10 nm)            |                        |                                                                               | 600 mW                      | 1.9 x 3.8 mm                                      |                                               | 450 mW                        |                                 |                     |                |
| LBX-980 | 980 nm (±10 nm)            |                        |                                                                               | 1000 mW                     | 3.5 x 1.5 mm                                      |                                               | 800 mW                        |                                 |                     |                |

## Plug and Play, CDRH-compliant versions

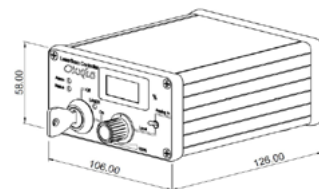
### Laser head



|                       | Plug and Play version                            | OEM version                  |
|-----------------------|--------------------------------------------------|------------------------------|
| Compliance            | CE<br>FDA 21 CFR 10s40.10/1040.1                 | FDA 21 CFR 1040.10 / 1040.11 |
| Operating temperature | 10 - 38°C ambient air with optional heat sink    | 10 - 50°C baseplate          |
| Power consumption     | $\leq 25$ W                                      |                              |
| Storage temperature   | 0 to 60°C                                        |                              |
| Supply voltage        | 100 to 240 VAC<br>external power supply included | see table hereabove          |
| Warm-up time          | $\leq 2$ minutes                                 |                              |
| Interfaces            | USB, RS-232, dedicated electronic interface      |                              |

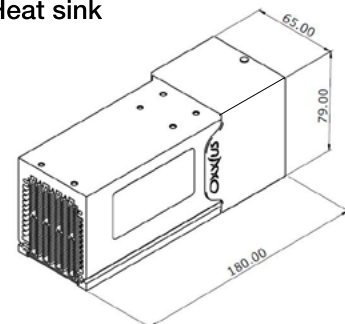
## Power-adjustable versions (PPA)

### ControlBoxx controller



## For improved stabilization (ACX-HTSK)

### Heat sink





## Description

The LaserBoxx HPE series are high power laser sources offering excellent performance and reliability in a compact, driver-integrated laser head.

The optical output is a multimode elliptical beam, either propagating in free space, or injected into an optical fiber.

## Key features

- Laser head with integrated driver
- Elliptical collimated beam
- Multimode fiber coupling option
- Analog modulation function
- USB, RS232 and analog interfaces
- Industry standard compact package

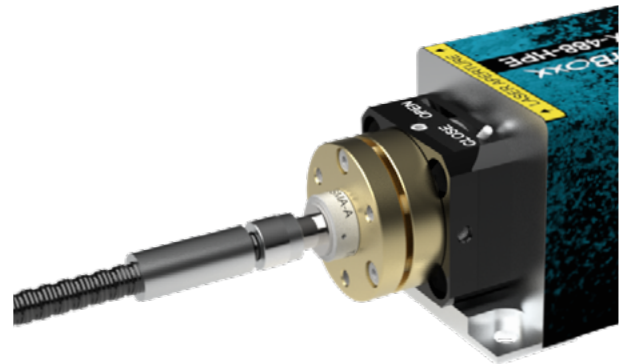
## Multimode fiber coupling option

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%.

The standard option features :

- round-core 50,100 or 200  $\mu\text{m}$  core diameter
- FC/APC or SMA delivery connector
- 0.22 numerical aperture
- 2 meter fiber length



LBX-488 with multimode fiber output

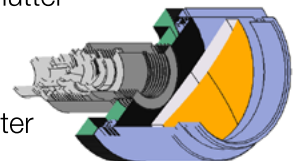
Other configurations are available on request.



L6Cc-HPE combiner with fiber delivery

## Custom capabilities

- LaserBoxx HPE sources combined into a L4Cc or L6Cc wavelength combiner
- Speckle reducer option
- Square or hexagonal-shaped delivery fiber core
- Liquid light guide fiber
- Electro-mechanical shutter
- Beam-shaping optics

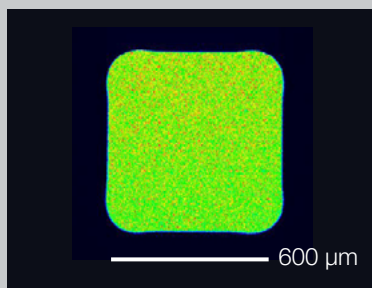


- liquid light guides with mm core diameter

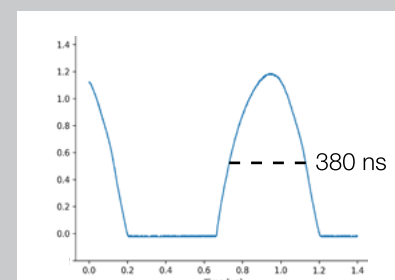
Example of collimator

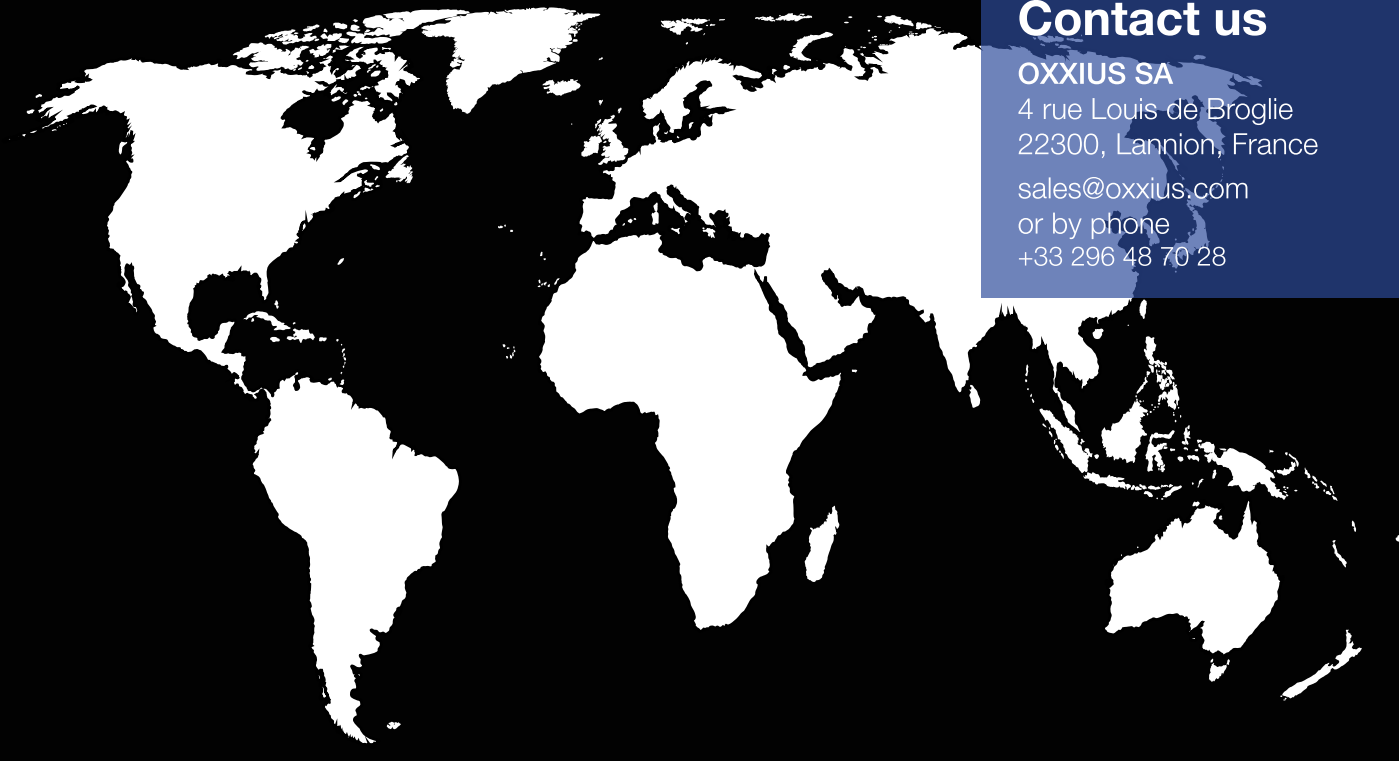
## Performances

Power distribution out of a square-core fiber (LBX-488-1000-HPE)



LBX-520-800-HPE modulated output: 380ns FWHM pulses, 1MHz repetition rate





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