

OxxiUS

Simply Light

Continuous and Modulated Lasers



2024

Super Resolution Imaging
Fluorescence Excitation
Confocal Microscopy
Flow Cytometry
DNA Sequencing
Optogenetics
Wavelength Combiner
Polymer Curing
Material Analysis
Laser Marking

LaserBoxx

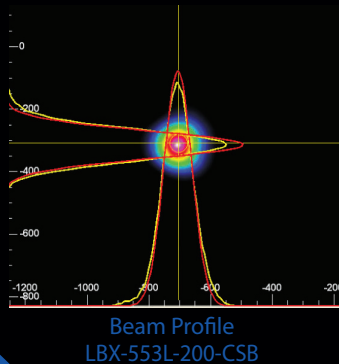
One platform for all colors

Monolithic DPSS lasers

- Up to 500 mW continuous wave
- Low profile laser head (32 mm)
- Lowest power consumption on the market
 - ≤ 12 W for LCX, any wavelength, less than 200 mW
 - ≤ 20 W for LPX-532 & LPX-640, 500 mW
 - ≤ 15 W for LPX-561, 300 mW

Laser Diode modules benefits

- Fast TTL and analog modulation
- Optional clean up filter



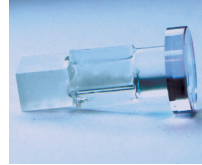
Common key features

- TEM₀₀ beam, up to 500 mW
- Ultra-low noise $\leq 0.2\%$ rms
- Industry standard footprint (100x40 mm, LBX and LCX)
- Integrated control electronics
- SM/PM/MM fiber coupling options
- USB and RS232 interfaces
- Dedicated control software
- External controller with power display (Plug&Play versions, CDRH-compliant)

Technology

DPSS lasers

The LCX and LPX LaserBoxx are diode-pumped solid-state (DPSS) laser sources. The unique feature of these models is a proprietary, Alignment-free Monolithic Resonator (AMR).



The elements of resonator are assembled into a single ultra-low-loss optical subsystem, using a proprietary crystal bonding technique.

Benefits of the AMR

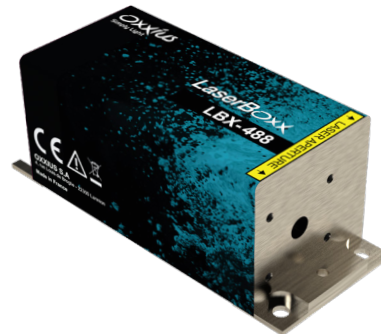
This technology yields to highly efficient pump schemes and also to the highest spectral quality on the market, as well as an important robustness over time. The LCX and LPX models are insensitive to temperature variations and to mechanical vibrations.

Diode lasers

The LBX LaserBoxx consists of a laser diode emitter with an integrated driver. It provides a low-noise optical output, and allows for fast modulation.

Benefits

The LBX LaserBoxx provides superior beam quality, excellent stability and fast modulation capabilities.

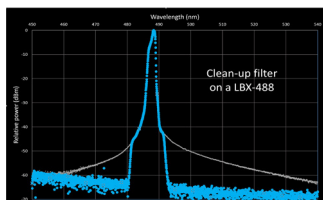


Electro-mechanical shutter



The ACX-SHTE is a compact and affordable electro-mechanical shutter. It is mounted directly on the LCX or LPX in place of the standard manual shutter. The fiber coupling and other options are fully compatible with the electro-mechanical shutter. The ACX-SHTE is actuated via the LCX/LPX embedded software or via a standard TTL signal.

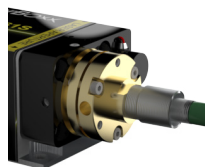
Clean-up filter



Fluorescence-based applications require to control the unwanted optical energy in order to improve the signal-to-noise ratio on the detection path.

Oxxius' emission clean-up filters are options that attenuate the background spontaneous emission (and other secondary peaks) 10nm or 20nm around the main emission peak.

Fiber coupling



These options inject the output beam into a single mode (SM) fiber, a polarization maintaining (PM) fiber, or a multimode (MM) fiber.

	SM and PM Fiber	MM Fiber (50 μm , 0.22 NA)
Coupling Efficiency	$\geq 70\%$, 80% typical	$\geq 80\%$, 90% typical
Power Stability over 8 hours, ± 1.5 K	$\pm 2\%$	$\pm 2\%$
Polarization extinction ratio (PMF only)	100:1	n/a
Available optical connectors	FC-APC FC-PC, FCP8	AR-coated SMA FC-APC
Fiber length	2.0 m	2.0 m

*Polarization ratio is not specified on LBX-638-180 and LBX-785-250/350

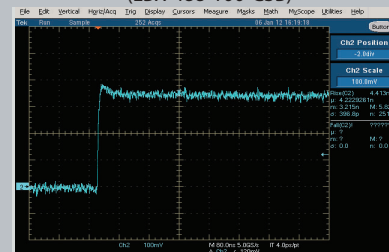
Customization and other options

- Specific wavelength selection
- Wavelength stabilization (infrared LBX)
- Wavelength combiners (L4Cc, L6Cc)
- Specific beam diameter or beam shaping
- Optical isolator
- Extended operational temperature range

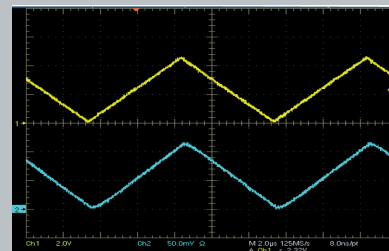


Performances

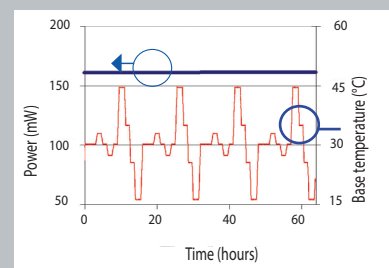
Digital Modulation Rise/Fall times ≤ 2 ns
(LBX-488-100-CSB)



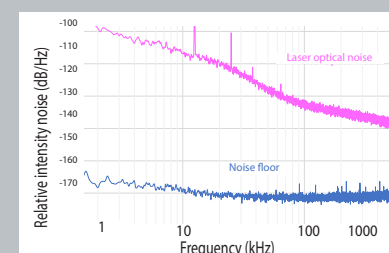
Analog Modulation up to 3 MHz
(LBX-405-100-CSB)



Power stability
(LCX-561L-power vs temperature)



Relative Intensity Noise
LCX-561L-200



Diode Lasers

DPSS Lasers

Optical Specifications

Diode Lasers

DPSS Lasers

Diode Lasers

	Emission wavelength (typ.)	Linewidth (FWHM)	Output power continuous wave	Power stability over 8h and $\pm 3K$	Optical noise	Beam waist diameter (typ.)	Beam quality factor (M^2)	Polarization extinction ratio**	Digital modulation Rise/fall time	Analog modulation Bandwidth (-3 dB)		
LBX-375	375 nm (± 5 nm)	≤ 1.5 nm	70 mW	$\pm 0.5\%$ APC and ACC	$\leq 0.2\%$	0.7 mm	≤ 1.3	100:1	≤ 2 ns	≥ 3 MHz		
LBX-395	395 nm (± 5 nm)		120 mW			0.8 mm	≤ 1.25		≤ 4 ns	≥ 2.5 MHz		
LBX-405	405 nm (± 5 nm)		50/100/ 180/300 mW			0.7 mm	≤ 1.25		≤ 2 ns	≥ 3 MHz		
LBX-415	415 nm (± 5 nm)		120 mW			0.7 mm						
LBX-445	445 nm (± 5 nm)		100/500 mW			0.7 mm						
LBX-450	450 nm (± 5 nm)		100 mW			0.7 mm						
LBX-473	473 nm (± 5 nm)	100/300 mW	0.8 mm									
LBX-488	488 nm (± 5 nm)	40/60/100/ 200/300 mW	0.7 mm									
LBX-505	505 nm (± 5 nm)	70 mW	0.7 mm									
LBX-515	515 nm (± 2 nm)	150 mW	0.8 mm									
LBX-522	522 nm (± 2 nm)	70/100 mW	0.8 mm									
LCX-532L	532.3 nm (± 0.3 nm)	≤ 0.1 nm	50/100/150/ 200/300 mW	$\pm 1\%$ APC	$\leq 0.2\%$	0.7 mm	≤ 1.1	1000:1	Optional L1C-AOM DC-3MHz			
LPX-532L			500 mW								$\leq 0.5\%$	
LCX-553L			553 nm (± 0.4 nm)								50/100/200 mW	
LCX-561L			561.4 nm (± 0.4 nm)								50/100/ 150/200 mW	
LPX-561L			300 mW								$\leq 0.5\%$	
LPX-607L	607.5 nm (± 1 nm)	100/200 mW	$\leq 2\%$									
LBX-633	633 nm (± 3 nm)	≤ 1.2 nm	100 mW	$\pm 0.5\%$ APC and ACC	$\leq 0.2\%$	0.8 mm	≤ 1.25	100:1	≤ 15 ns	≥ 3 MHz		
LBX-638	638 nm (-6/+4 nm)		100/150/ 180 mW			0.9 mm	100:1*	≤ 2 ns				
LBX-642	642 nm (-7/+5 nm)		140 mW			1 mm	100:1					
LPX-640L	639.7 nm (± 1 nm)	≤ 0.3 nm	300/500 mW	$\pm 1\%$ APC	$\leq 2\%$	0.7 mm	≤ 1.1	100:1	Optional L1C-AOM DC-3MHz			
LBX-647	647 nm (-1/+4 nm)	≤ 1.2 nm	140 mW	$\pm 0.5\%$ APC and ACC	$\leq 0.2\%$	1 mm	≤ 1.25	1000:1	≤ 2 ns	≥ 3 MHz		
LBX-660	660 nm (-8/+5 nm)		100 mW			1 mm		100:1	≤ 4 ns	≥ 2.4 MHz		
LBX-690	690 nm (± 5 nm)		180 mW			1 mm						
LBX-730	730 nm (± 10 nm)		40 mW			$\leq 1\%$		0.8 mm	100:1*	≤ 2 ns	≥ 3 MHz	
LBX-785	785 nm (± 10 nm)		100 mW 250/350 mW			$\pm 1\%$ ACC		$\leq 0.2\%$				0.7 mm 0.5 mm
LBX-808	808 nm (± 10 nm)		200 mW					$\leq 0.2\%$				0.7 mm
LBX-830	830 nm (± 10 nm)	100 mW	$\leq 0.2\%$	0.9 mm								
LBX-980	980 nm (± 10 nm)	200 mW	$\pm 2\%$ ACC	$\leq 0.8\%$	0.9 mm	50:1						
LBX-1064	1064 nm (± 10 nm)	200 mW			0.9 mm							

Optical noise : $\leq 0.2\%$

LPX-640L $\leq 1.5\%$; LBX-730 $\leq 1\%$; LBX-980/1064 $\leq 0.8\%$

*Polarization ratio is not specified on LBX-638-180 and LBX-785-250/350 models

** The Polarization state is linear, vertical ($\pm 5^\circ$)

Power adjustment range

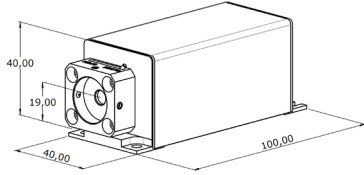
Diode lasers : 0 - 100 %

DPSS lasers : 0 to 100% when mounted in a L1C-MPA platform.

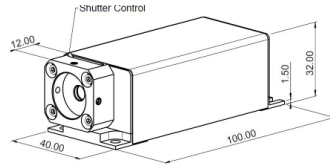
System Specifications

Plug and Play, CDRH-compliant versions

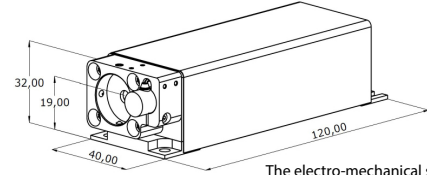
LBX series Laser diode



LCX series DPSS Laser



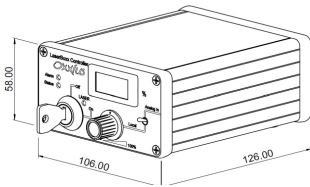
LPX series DPSS Laser



The electro-mechanical shutter is standard on LPX

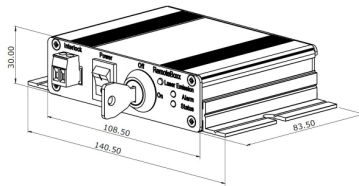
Power-adjustable versions (PPA)

PPA - ControlBoxx



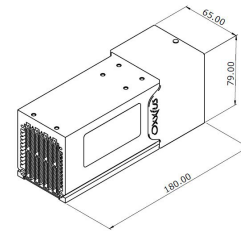
Fixed power versions (PPF)

PPF - RemoteBoxx



For improved stabilization

Heat sink



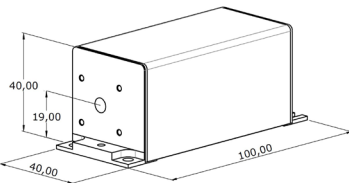
Compliance	CE and FDA 21 CFR 1040.10 / 1040.11
Operating temperature	10 to 38 °C (ambient air)
Power consumption	≤ 25 W
Storage temperature	0 to 60 °C

Supply voltage	100 to 240 VAC external power supply
Warm-up time	LCX, LPX : ≤ 10 minutes LBX, LSX : ≤ 2 minutes
Communication interfaces	USB, RS-232, dedicated interface

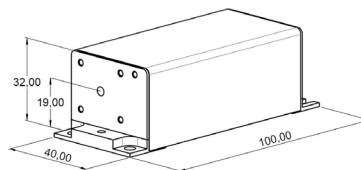
OEM - dedicated versions

Control electronics is integrated into the laser head

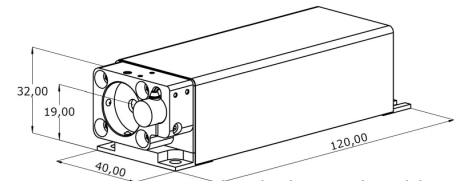
LBX series Laser diode



LCX series DPSS Laser



LPX series DPSS Laser



The electro-mechanical shutter is standard on LPX

	LCX and LPX	LBX
Compliance	FDA 21 CFR 1040.10 / 1040.11	
Operating temperature	10 to 50 °C (baseplate)	
Power consumption	≤ 25 W	≤ 10 W
Storage temperature	0 to 60 °C	
Supply voltage	5 to 12 VDC	
Warm-up time	≤ 10 minutes	≤ 2 minutes
Communication interfaces	USB, RS-232, dedicated electronic interface	



Contact us

OXXIUS SA
4 rue Louis de Broglie
22300, Lannion, France
sales@oxxius.com
or by phone
+33 296 48 70 28

Distributors

AUSTRALIA

Lastek Pty Ltd
Thebarton campus, University of Adelaide
10 Reid Street Thebarton SA 5031
Phone: (+61) 8 8443 8668
Fax: (+61) 8 8443 8427
E-mail: jessica@lastek.com.au
Web: www.lastek.com.au>Lastek Pty Ltd

INDIA

Dynotech Instruments pvc ltd
803-804, Vishwasadan, Distt Center
Janakpuri, New Delhi-110058
E-mail: sales@dynotechmail.in
Web: www.dynotech.in

KOREA

L2K Co., Ltd.
A-305, 289-1 Daehwa-dong
Daedeok-gu Daejeon 306-754
Phone: (+82) 42 670 7744
Fax: (+82) 42 670 7741
E-mail: sales@l2k.kr
Web: www.l2k.kr

SPAIN & PORTUGAL

IberOptics Sistemas Ópticos, S.L
C/ Camino de Hormigueras, 124-4, 3º I
E-28031 Madrid
Phone: (+34) 91 3854 395
Fax: (+34)
E-mail: info@iberoptics.com
Web: www.iberoptics.com

USA

RPMC Lasers, Inc.
203 Joseph Street
O'Fallon, MO-63366
Phone: (636) 272 7227
Fax: (636) 272 3909
E-mail: rpmc@rpmclasers.com
Web: www.rpmclasers.com

BENELUX

Oxxius S.A.
4, rue Louis de Broglie
22300 Lannion
Phone : (+33) 2 96 48 70 28
Mobile : (+33) 6 43 86 18 01
E-mail : dassous@oxxius.com

ISRAEL

Rosh Electroptics
P.O.B 2667 Netanya 4212601
Phone: (+972) (0)9-8627401
Fax: (+972) (0)9-8616185
E-mail: info@roshelop.co.il
Web: www.roshelop.co.il

POLAND

Scitec Instruments Polska
Malinowskiego 1/12
PL 02-776 Warszawa
Phone: (+48) 22 406 8127
Fax: (+48) 22 406 8127
E-mail: sales@scitecinstruments.pl
Web: www.scitecinstruments.pl

SINGAPORE

Acexon Technologies Pte Ltd
21 Bukit Batok Crescent
#20-83 WCEGA Tower, Singapore
Phone: 65-65657300
Fax: 65-65657005
E-mail: sales@acexon.com
Web: www.acexontech.com

VIETNAM

Atek Vietnam Co., Ltd
6th Floor, Viet Asia Building,
9 Duy Tan Street,
Dich Vong Hau Ward,
Cau Giay District, Hanoi City
Phone: (+84) – 4 – 2120.3666
Fax : (+84) – 4 – 3224.2402
E-mail : thanh.nt@atekvietnam.com
Web : www.atekvietnam.com

CHINA

Aunion Tech Co., Ltd
Room 905, F building, Everbright
convention and exhibition centre,
No. 86 CaoBao road, ShangHai 200235
Phone: (+86) 21 5108 3793
Fax: (+86) 21 3424 1962
E-mail: info@auniontech.com
Web: www.auniontech.com

ITALY

OPTOPRIM s.r.l
-Via Rota, 37,20900 Monza (MB)
Phone: (+39) 039 834977
- Via Monte Giberto, 15, 00138 Roma
Phone: (+39) 06 87657838
E-mail: info@optoprim.it
Web: www.optoprim.it

SCANDINAVIA

Laser 2000 GmbH
Strandbergsgatan 61
S-112 51 Stockholm, Sweden
Phone: (+33) 632 85 89 24
E-mail: froume@oxxius.com

TAIWAN

Bio Accord
No. 142-2 Jiu-Kwang Rd
Panchiao, Taipei county (220)
Phone: (+886) 2 2250 5019
Fax: (+886) 2 2362 3176
E-mail: biotical@ms37.hinet.net
Web: www.bioaccord.com.tw

GERMANY

Laser 2000 GmbH
Argelsrieder Feld 14
D-82234 Wessling
Phone: (+49) (0) 8153 4050
Fax: (+49) (0) 8153 40533
E-mail: contact@laser2000.de
Web: www.laser2000.de

JAPAN

Autex
Shinjuku Takasago Bldg.
4F, 16-5 Tomihisa-Cho,
Shinjuku-Ku, Tokyo 162-0067
Phone: (+81) 3 322 66321
Fax: (+81) 3 322 66290
E-mail: sales32@autex-inc.co.jp
Web: www.autex-inc.co.jp

SWITZERLAND

Oxxius S.A.
4, rue Louis de Broglie
22300 Lannion
Phone: (+33) 2 96 48 70 28
Mobile: (+33) 6 43 861 801
E-mail: dassous@oxxius.com

UNITED KINGDOM

Photonic Solutions Ltd
Unit 2.2 Quantum Court
Heriot-Watt University Research Park
Edinburgh, EH14 4AP
Phone: (+44) (0)131 664 8122
Fax: (+44) (0)131 449 7301
E-mail: sales@photonicsolutions.co.uk
Web: www.photonicsolutions.co.uk

