



OPIPHOTONICS

HIGH POWER BLUE LASERS

200 W LASER DIODE SYSTEM



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Index

1 450nm, 200W LASER DIODE SYSTEM BB-450-200-200-xx 3

 1.1 Specifications 3

2 TECHNICAL DRAWINGS..... 4

3 CONTROL INTERFACE..... 5

4 ORDERING INFORMATION..... 6

5 SAFETY AND OPERATING PRECAUTIONS..... 7

 5.1 Electrostatic discharge (ESD)..... 7

 5.2 Operating instructions 7

 5.3 Laser safety 7

1 450nm, 200W LASER DIODE SYSTEM BB-450-200-200-xx
Applications

- Material processing
- Copper and gold welding

Features

- 200 W output power
- 200 μ m fiber
- CW, modulated and single pulse operation

1.1 Specifications

	Parameter	Unit	Minimum	Typical	Maximum
Electro-optical specifications (1)	CW output power	W	200		
	Central wavelength	nm		450	
	Beam NA (2)	-			0.2
	Wall plug efficiency	%	25	30	
	Power adjustment	%	10		100
	Power stability (3)	(+/-)%		2	
	Mode of operation	-	CW, Modulated, Single pulse		
	Modulation frequency	kHz	0		10
	Duty cycle	%	10		100
	Supply voltage	VAC/Hz	200-240/50-60		
Supply power	kW		1		
Cable specifications (4)	Fiber core diameter	μ m		200	
	Fiber cladding diameter	μ m		220	
	Fiber NA	-		0.22	
	Cable type	-	stainless steel armored cable		
	Cable length	m	1.5	2	2.5
	Cable termination	-	LD80 (5)		
Thermo-mechanical specification	Dimensions	-	19" rack ...		
	Cooling method	-	water and glycol (from 20% to 30%)		
	Input water temperature	$^{\circ}$ C	18		25
	Water flow rate	l/min	1		5
	Cooling capacity	W	800		
	Operating temperature	$^{\circ}$ C	15		45
	Relative humidity	%	35		60
	Storage temperature	$^{\circ}$ C	-20		85

Notes

- (1) Values at 20 $^{\circ}$ C water input temperature
- (2) 95% of beam power within specified NA
- (3) Over 2 hours, temperature +/-1 $^{\circ}$ C
- (4) Other options (length, jackets, termination) available upon request
- (5) AR coating available upon request



2 TECHNICAL DRAWINGS

All dimensions are in millimeters.

TBD

3 CONTROL INTERFACE

The Brightbox can be controlled through the rear panel DB-25 interface. Moreover external triggering can be provided through a rear panel BNC connector.

4 ORDERING INFORMATION

Model	-	Power	-	Fiber Core	-	Customization

5 SAFETY AND OPERATING PRECAUTIONS

5.1 *Electrostatic discharge (ESD)*

ESD is the primary cause of device sudden failure. Use good ESD practice (wrist straps, dissipative working surfaces, air ionizers etc...) whenever handling the device.

5.2 *Operating instructions*

Laser diodes may be damaged by excessive bias current or transient current spikes. Use proper electronics to drive the device.

Contact OPI Photonics for driving electronics recommendation and reference design solutions.

5.3 *Laser safety*

Extremely **dangerous visible laser radiation** is emitted by this laser diode when in operation. Laser radiation can be emitted by the laser only when connected to a power supply and current is flowing through the connecting pins.

Wear the proper protecting devices selected for the laser beam power and wavelength.

Apply all safety measures in the area where the device is operated (warning signals, controlled access, safety interlocks).

This device is not certified for 21CFR 1040.10 or IEC 60825-1:2014, since it is meant for system integration. Certification is to be performed at system level.