



HIGH BRIGHTNESS, FIBER DELIVERED BLUE LASERS FOR METALS PROCESSING



The **NUBURU BL-F** series are high brightness, blue lasers that process metals better and more efficiently than IR or green lasers and integrate with standard scanning systems. This enables them to service a wide range of welding, additive manufacturing, and other materials processing applications in batteries, e-mobility and consumer electronics.

The high brightness of the **NUBURU BL-F** series, combined with scan head delivery, offers an ideal laser for metal processing due to the high absorption of blue light by metals: including 13x for copper and 3x for aluminum. Reducing the excess heat input compared to infrared lasers enables spatter-free and defect free welds with the highest possible mechanical and electrical performance.

With available output powers from 125W to 1kW, these blue lasers can power mass production solutions for <1mm copper and aluminum welds which require a large process window and demand extremely high yields.

Key Benefits

- Compatible with standard scanners
- All semiconductor laser reliability and lifetime
- Lower cost of ownership than fiber and solid-state lasers
- Spatter and defect free conduction mode welds
- Higher weld joint densification

Applications

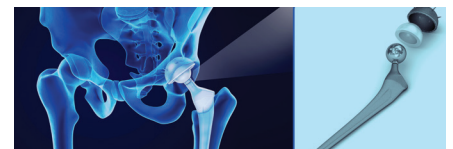
- Batteries and energy storage
- E-mobility
- Consumer electronics
- Interconnects
- Electronics packaging
- 3D metal printing (powder bed fusion and wire feed)



eMobility/Energy Storage



Consumer Electronics



Healthcare



3D Printing

FIBER DELIVERY BL SERIES

Optical	Units	BL-125-F	BL-250-F	BL-500-F	BL-1000-F
Wavelength	nm	~444		~444	
Bandwidth	nm	±15		±15	
Output Power	W	125	250	500	1000
Power Adjustment	%	20-100		20-100	
Power Stability (8 hours)	%	±1.5 at full power		±1.5 at full power	
Fiber Diameter (Core)	micron	100		200	
Fiber Numerical Aperture	N/A	0.22		0.22	
Beam Parameter Product (10-90% enclosed power)	mm.mrad	5		15	
Standard Fiber Length (Connector Type)	m	5 (QBH). Options for 10 and (QD)		5 (QBH). Options for 10 and (QD)	
Electrical					
Operating Current	A	<18		<8 per phase	
Operating Voltage	V	180/264 (47-63Hz) 1ph 3 wires		208-240 (50/16Hz, 3ph 4 wires)	
External Control Inputs					
Laser Enable (High on)	V	+5/+24		+5/+24	
CW Analog Control	V	0-10		0-10	
Modulation	kHz	5		5	
Communications		Ethernet		Ethernet	
Safety Interlocks					
Interlock Voltage (Laser Enable)	V	24		24	
Open Circuit (Laser Shut-down)	V	0		0	
Mechanical		Driver (19" Rack)		Driver (Stand Alone)	
Height, Width, Depth	mm	178 × 443 × 635		641 × 671 × 1183	
Weight	Kg	21		~160	
IP Rating		IP20/NEMA 1		IP52/NEMA 12	
Operating Conditions					
Temperature	Deg C	15-25		15-25	
Relative Humidity (non-condensing)	%	0-90		0-90	
Storage and Transport					
Temperature	Deg C	0-40		0-40	
Cooling					
Heat Load	kW/Rton	3/0.85		4/1.2	
Min Flow Rate	Lpm/gpm	6/1.5		16.5/4.3	
Supply Temperature	Deg C	15-25		20-24	
Max Pressure	bar/psi	5.5/80		5.5/80	

Authorized Distributor

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NUBURU
The Blue Laser Company™