

4000W-9000W Variable Beam Profile Single-mode Fiber Lasers

Everfoton's VBP (Variable Beam Profile) fiber lasers provide output power of up to 9kW and adjust the output beam mode parameters automatically. Using fibers and combiners by Everfoton, VBP lasers achieve Gaussian beam, ring beam, mixed beam, etc. The lasers realize the adjust the output beam mode independently, and can realize the combination of high-energy and high-brightness small center beam and larger ring beam according to the processing requirements to meet customers' wider material thickness range. The lasers have better piercing and cutting speed and quality, optimized welding performance, and improved processing quality and efficiency.



Applications

- Power battery package
- Hair-pin
- Car manufacturer

Characteristics

- Single-mode output and high beam quality
- Instant adjustable beam profiles
- Independently tunable power levels in the central and ring regions
- Customized core and ring dimensions are available
- Intelligent process optimization tools
- Cost-effective solution for variety of metal process applications

Specifications

Optical Parameters

Product Code	FFSC-2000SM/2000-VBP	FFSC-2000SM/4000-VBP	FFSC-3000SM/6000-VBP
Operating Mode	CW / Modulated		
Output Power (W)	4000	6000	9000
Core Output Power (W)	2000	2000	3000
Ring Output Power (W)	2000	4000	6000
Output Power Tunability (%)	10 - 100		
Core Beam Quality M ²	< 1.2		< 1.3
Ring Beam Quality BPP (mm x mrad)	< 4.0		< 5.0
Output Power Instability 25°C (%)	< 2 (2 hours)		
Emission Wavelength (nm)	1080 ± 5		
Spectrum Width FWHM (nm)	< 6		
Modulation Frequency (kHz)	5		
Red Laser Power (μW)	> 200		

Fiber Delivery Cable Parameters

Output Type	QBH		
Length (m)	5		10
Central Core Diameter (μm)	14		20
Ring Core Diameter (μm)	100		120
Minimum Bending Radius (mm)	200		

Electrical Characteristics

Operating Voltage (VAC)	340 - 420, 3P5W 50 / 60Hz		
Max Power Consumption (kW)	12	18	27
Control Mode	AD		

Other Characteristics

Operating Temperature(°C)	10 - 40		
Humidity (%)	10 - 80		
Cooling Method	Water Cooled		
Water-cooling Temperature (°C)	25 ± 1		
Water-cooling Flow (L/min)	> 70 (Laser), 1.5 - 2.5 (QBH)		> 100 (Laser), 1.5 - 2.5 (QBH)
Water-cooling Pressure (Bar)	3 - 5		
Joint Diameter (mm)	25		
Min Cooled Capacity (kW)	7		10
Dimension (mm)	W600 x D750 x H650 (Not Include Lights)	W735 x D750 x H650 (Not Include Lights)	
Weight (kg)	180 ± 10	230 ± 10	250 ± 10