

CARBIDE | CB3-UV

NEW

High-Power UV Femtosecond Lasers

FEATURES

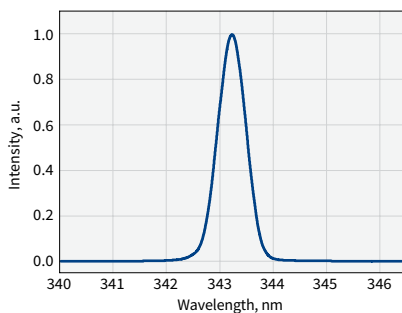
- Maximum output of 50 W
- 500 fs pulse duration
- Up to MHz repetition rate
- High beam quality and stability
- Compact industrial-grade design



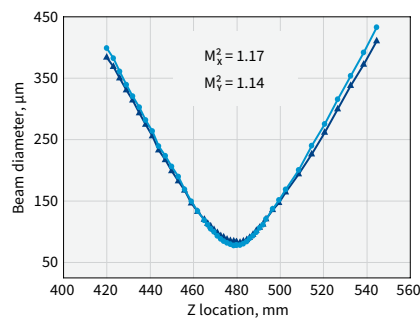
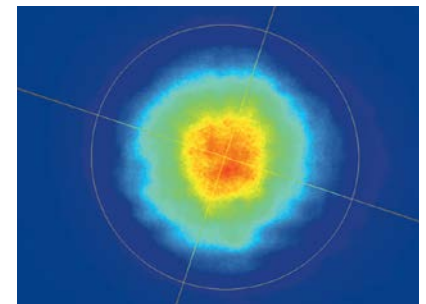
CARBIDE-CB3-UV

CARBIDE-CB3-UV is a series of femtosecond lasers for high-power ultraviolet (UV) applications. As indicated by its name, the CARBIDE-CB3-UV laser is based on a market-proven industrial-grade CARBIDE laser platform. It emits 500 fs pulses at a 343 nm wavelength and fits into the footprint of $84 \times 35 \text{ cm}^2$, making it the most compact 50 W UV femtosecond laser currently available in the market.

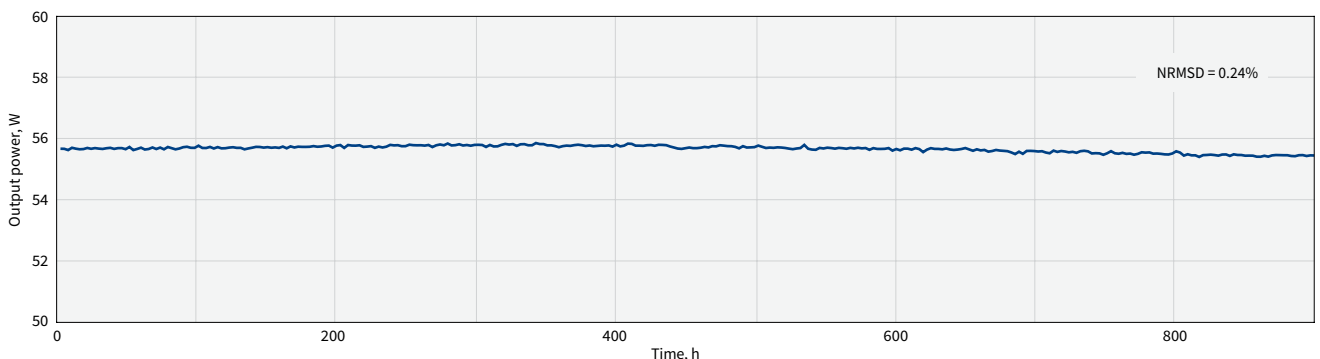
The CARBIDE-CB3-UV ensures long-term performance without the need for user intervention. The high power comes with the advantage of splitting the beam into multiple parts, thereby parallelizing the micromachining processes and subsequently increasing throughput. The CARBIDE platform ensures simple integration into industrial 24/7 workstations.



Typical spectrum of CARBIDE-CB3-UV

Typical M^2 measurement data of CARBIDE-CB3-UV

Beam profile of CARBIDE-CB3-UV-50W



Long-term power stability of CARBIDE-CB3-UV-50W

SPECIFICATIONS

NEW

Model	CB3-UV-30W	CB3-UV-50W
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OUTPUT CHARACTERISTICS

Cooling method	Water-cooled	
Center wavelength	343 ± 3 nm	
Maximum output power	> 30 W	> 50 W
Pulse duration ¹⁾	≈ 500 fs	
Output pulse energy	35 – 150 μJ	
Repetition rate	200 – 800 kHz	300 – 1200 kHz
Polarization	Linear, vertical; 1 : 200	
Beam quality, M ²	< 1.3	
Beam diameter ²⁾	2.5 – 5 mm	
Long-term power stability, 12 h ³⁾	< 0.5%	
Lifetime	10000 h	

MAIN OPTIONS

Optional amplifier outputs	1030 nm, 515 nm
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PHYSICAL DIMENSIONS

Laser head (L × W × H)	832 × 350 × 174 mm
Chiller (L × W × H)	680 × 484 × 307 mm
24 V DC power supply (L × W × H)	320 × 200 × 75 mm

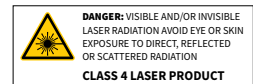
ENVIRONMENTAL AND UTILITY REQUIREMENTS

Operating temperature	15 – 30 °C	
Relative humidity	< 80% (non-condensing)	
Electrical requirements	Laser	100 V AC, 12 A – 240 V AC, 5 A
	Chiller	200 – 230 V AC; 50 – 60 Hz
Rated power	Laser	1000 W
	Chiller	2000 W
Power consumption	Laser	900 W
	Chiller	1300 W

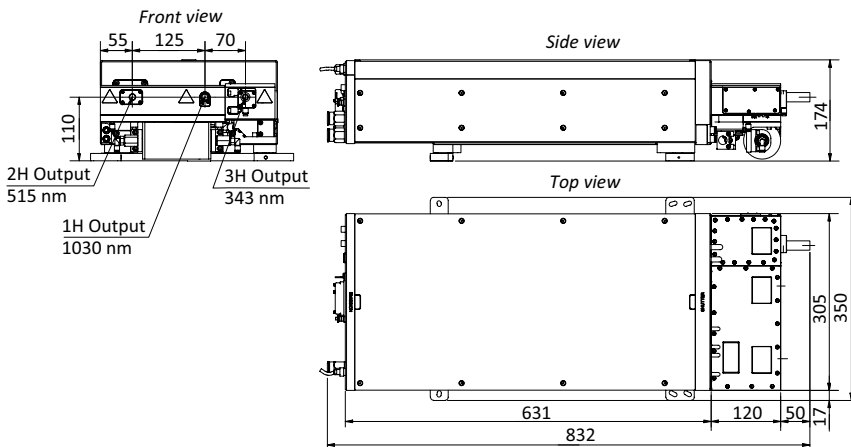
¹⁾ Assuming Gaussian pulse shape.

²⁾ FW 1/e², using maximum pulse energy.

³⁾ Under stable environmental conditions. Expressed as NRMSD (normalized root mean squared deviation).



DRAWINGS



Drawing of CARBIDE-CB3-UV