

# HG | CARBIDE

## Automated Harmonics Generators

### FEATURES

- 515 nm, 343 nm and 257 nm
- Output selection by software
- Mounted directly on a laser head and integrated into the system
- Rugged, industrial-grade mechanical design



Harmonics generator module attached to air-cooled CARBIDE-CB5

CARBIDE laser can be equipped with automated harmonics modules. Selection of fundamental (1030 nm), second (515 nm), third (343 nm) or fourth (257 nm) harmonics outputs

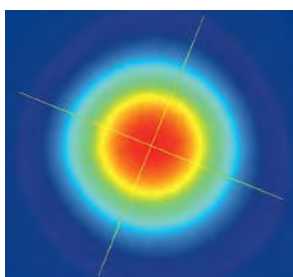
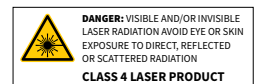
are available by software control. Harmonics generators are designed to be used in industrial applications where a single output wavelength is desired.

### SPECIFICATIONS

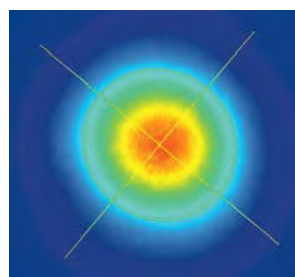
Model	2H	2H-3H	2H-4H
Output wavelength <sup>1)</sup> (automated selection)	1030 nm 515 nm	1030 nm 515 nm 343 nm	1030 nm 515 nm 257 nm
Input pulse energy	20 – 800 μJ	50 – 800 μJ	20 – 800 μJ
Pump pulse duration	< 300 fs		
Conversion efficiency	> 50 % (2H)	> 50 % (2H) > 25 % (3H)	> 50 % (2H) > 10% (4H) <sup>2)</sup>
Beam quality (M <sup>2</sup> ) ≤ 400 μJ pump	< 1.3 (2H), typical < 1.15	< 1.3 (2H), typical < 1.15 < 1.4 (3H), typical < 1.2	< 1.3 (2H), typical < 1.15 n/a (4H)
Beam quality (M <sup>2</sup> ) > 400 μJ pump	< 1.4 (2H)	< 1.4 (2H) < 1.5 (3H)	< 1.4 (2H) n/a (4H)

<sup>1)</sup> Depends on pump laser model.

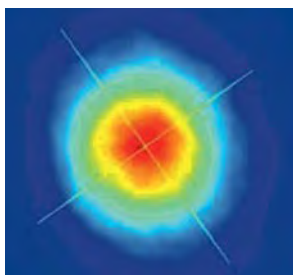
<sup>2)</sup> Maximum output power 1 W.



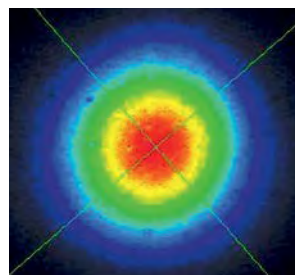
Typical 1H beam profile of CARBIDE-CB5, 60 kHz, 5 W



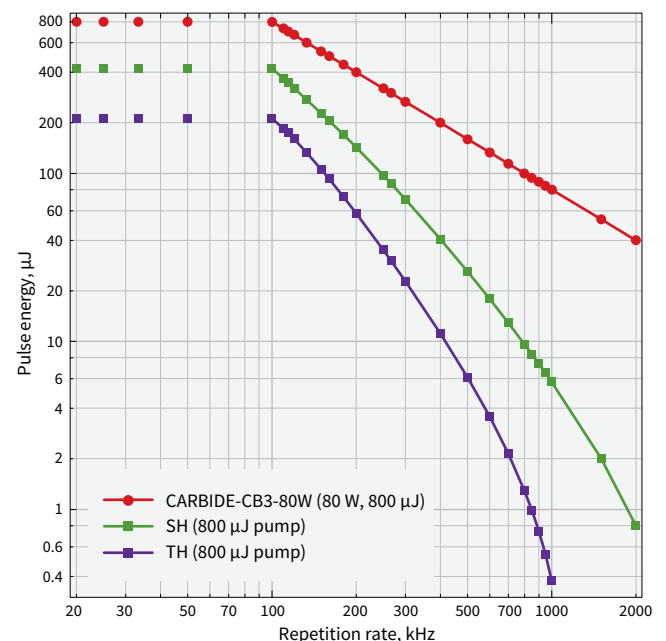
Typical 2H beam profile of CARBIDE-CB5, 100 kHz, 3.4 W



Typical 3H beam profile of CARBIDE-CB5, 100 kHz, 2.2 W



Typical 4H beam profile of CARBIDE-CB5, 100 kHz, 100 mW



Harmonics energy vs pulse repetition rate for CARBIDE-CB3-80W