

BiBurst option

Tunable GHz and MHz Burst with Burst-in-Burst Capability

PHAROS and CARBIDE-CB3 lasers have an option for tunable GHz and MHz burst with burst-in-burst capability – called BiBurst.

In standard mode, a single pulse is emitted at some fixed frequency. In burst mode, the output consists of pulse packets instead of single pulses. Each packet consists of a certain number of equally separated pulses. MHz-Burst contains N pulses with a nanosecond period, GHz-Burst contains P pulses with a picosecond period. If both bursts are used, the equally separated pulse packets contain sub-packets of pulses (burst-in-burst, BiBurst).

PHAROS and CARBIDE lasers with the BiBurst option bring new capabilities to high-tech manufacturing industries such as consumer electronics, integrated photonic chip manufacturing, future display manufacturing, and quantum technologies. The applications include:

- brittle material drilling and cutting
- deep engraving
- selective ablation
- volume modification of transparent materials
- hidden marking
- surface polishing
- surface functionalization

SPECIFICATIONS

Model		CARBIDE-CB3	PHAROS
GHz Burst	Intra burst pulse period ¹⁾	440 ± 40 ps	200 ± 40 ps
	Number of pulses, P ²⁾	1 – 10	1 – 25
MHz Burst	Intra burst pulse period	≈ 15 ns	
	Number of pulses, N	1 – 10	1 – 9 (7 with FEC ³⁾)

¹⁾ Custom spacing is available on request.

²⁾ Maximum number of pulses in a burst depends on the laser repetition rate and the energy. Custom number of pulses is available on request.

³⁾ Fast energy control option. Enables formation of any pulse envelope at laser pulse repetition rate.

