BiBurst | OPTION

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

PHAROS and **CARBIDE-CB3** lasers offer an option for tunable GHz and MHz burst with burst-in-burst capability, known as BiBurst.

In standard mode, a single pulse is emitted at a fixed frequency. In burst mode, the output consists of pulse packets rather than single pulses. Each packet comprises a certain number of equally spaced pulses. MHz-Burst contains N pulses with a nanosecond period, while GHz-Burst contains P pulses with a picosecond period. When both GHz and MHz burst modes are used simultaneously, the equally spaced pulse packets contain sub-packets of pulses, known as burst-in-burst or 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
- functional surface structuring

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 [3]	1 – 25
MHz Burst	Intra burst pulse period	≈ 15 ns	
	Number of pulses, N	1 – 10	1 – 9 (7 with FEC [4])

[1] *Custom spacing is available upon request.*
[2] *The maximum number of pulses in a burst depends on the laser repetition rate and energy.*
[3] *A custom number of pulses (up to 400) is available upon request.*
[4] *Fast energy control option. Enables the formation of any pulse envelope at the laser pulse repetition rate.*