



nLIGHT's helix Pulsed Fiber Laser provides the industry's first cost-effective solution for high-precision micro-materials processing applications. Designed to meet the highest quality and reliability standards for maintenance-free 24/7 industrial operation, the air cooled system outputs a near diffraction limited high peak power, short pulsed beam at 1064nm. The small footprint of the laser head coupled with an intuitive user interface allows for ease of integration into any laser machine tool.

The helix Pulsed Fiber Laser platform integrates nLIGHT's industry-leading technologies to deliver a high-performance pulsed fiber laser solution:

- Builds upon high brightness fiber-coupled diodes coupling nLIGHT's high-brightness nXLT™ single emitters for efficient fiber coupling.
- Incorporates nLIGHT LIEKKI™ state-of-the-art, Chirally-Coupled Core (3C®) fiber technology. 3C® fiber provides unmatched beam quality and stability from a fiber capable of achieving multi-hundred kW peak power
- Proprietary seed technology that allows ultra-stable, configurable pulses with highly flexible parameters including burst mode, pulse duration and repetition rate
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The helix Pulsed Fiber Laser platform is designed and manufactured to meet the high-performance and high-reliability requirements for any and all Microfabrication applications.

Features

- Burst mode (up to 30 pulses, adjustable pulse to pulse spacing <10ns to 100ns)
- High peak power (300kW)
- Configurable pulse widths from 50ps to 400ps
- User selectable repetition rate from 50kHz to 10MHz
- Air-cooled
- Flexible modular design enables high user uptime
- Near diffraction-limited beam

Applications

- Glass processing
- Sapphire scribe
- Stealth dicing
- FPD processing
- Flex Circuit patterning
- Semiconductor processing
- Marking and engraving
- UV laser replacement

Proven Performance

Typical Device Specifications

Parameter		Specification			
Pulse Energy	uJ	15			
Output Peak Power	kW	300			
Output Average Power	W	1.5	3.75	7.5	11.25
Repetition Rate	kHz	100	250	500	750
Pulse Width	ps	50			
Center Wavelength	nm	1064 ± 2 nm			
Power Variation	%	≤ 2% rms			
Beam Diameter	mm	2			
Beam Divergence	mrad	5			
Beam Quality	M ²	1.2 typical			

Package Dimensions

