



Designed to meet the high-performance and high-reliability requirements for industrial materials processing, nLIGHT alta™ incorporates several improvements over other commercially available fiber lasers.

To enable worry free processing of highly reflective materials, alta™ includes an integrated back-reflection isolation technology. These next generation fiber lasers are designed for maximum uptime. In addition they include an innovative fiber architecture that allows system integrators and end users to manage common field service activities. The laser has been designed to operate in harsh industrial environments.

The nLIGHT alta™ fiber laser products provide leading QCW operation, with a repetition rate of up to 50 kHz and rise/fall times of 10 μ s. The lasers are uniquely capable of meeting the fine materials processing requirements of additive manufacturing, medical device, and other micro-manufacturing applications.

Advantages

- Easy process set-up
- Back-reflection isolation
- Industry-leading beam quality
- Powers of 500 W and 700 W
- > 30% electrical-to-optical efficiency
- $M^2 \leq 1.3$ (single mode) and tailored BPP (multimode) options
- 50 kHz modulation with 10 μ s rise/fall times

Applications

- Cutting
- Welding
- Drilling
- Additive Manufacturing
- Medical Device Production
- Brittle Materials Processing

Typical Device Performance

Optical		
Mode of Operation		CW/QCW
Polarization		Random
Maximum Average Power (CW)	W	500
Maximum Peak Power (Modulated)	W	500
Output Power Range	%	5 – 100
Output Power Stability (8 hrs)	%	≤ 1
Modulation Frequency	kHz	≤ 50
Rise/Fall Times	μs	≤ 10
Beam Quality (Single Mode Option)	M ²	≤ 1.3
Beam Quality (Multimode Options)	mm-mrad	Tailored to customer need: ≤ 2.5 with 50 μm fiber ≤ 5.0 with 100 μm fiber ≤ 10 with 200 μm fiber
Wavelength	nm	1080 ± 10
Electrical		
Operating Voltage	VAC	200-240, single-phase
Operating Voltage Frequency	Hz	50/60
Control Interface		External hardware control/RS-232/Ethernet
Mechanical		
Dimensions (mm)		480 w x 177 h x 840 d
Optical Fiber		5 m, 10 m, 20 m, QBH connector standard, other options available
Cooling Method		Water
General condition		
Operating Temperature*	°C	+10 to +40
Storage Temperature	°C	-10 to +60
Relative Humidity*	%	10 to 80

**Non-condensing

Laser Safety

This laser product does NOT comply with IEC 60825-1 or 21CFR1040.10/21CFR1040.11 and is solely intended to be integrated into a laser product certified by the Purchaser. The Purchaser acknowledges that their product must comply with the applicable regulations before it can be sold to an end user.

Notice

nLIGHT continually improves its products to provide our customers with outstanding quality and reliability. nLIGHT may make changes to specifications and product descriptions at any time, without notice. In addition, nLIGHT offers a limited warranty to ensure customer satisfaction. For complete details, please contact your nLIGHT sales representative.

