

alta prime

Additive Manufacturing



nLIGHT alta™ additive is specifically designed to provide superior process control and performance in next generation advanced manufacturing systems:

- **Power Stability:** nLIGHT's alta™ additive fiber lasers are designed for extreme power stability to ensure process control over long build times and over a wide operating range. This allows for superior performance in the manufacturing of fine features as well as larger components.
 - **Back Reflection:** With advanced optical designs, nLIGHT's alta™ additive fiber lasers are immune to back reflected light and allow for highly stable operation and high reliability over all types of metals.
 - **High-Speed Electronics:** With rise/fall times $<5 \mu\text{s}$, nLIGHT alta™ additive fiber lasers enable power-
- on-the-fly adjustments to be coordinated with all motion control systems and ensures high process uniformity over entire fabrication area.
- **Real-Time Processing Monitoring:** Sensors embedded in the laser provide tool integrators with convenient access to critical signals for closed-loop process monitoring and real-time quality control.
 - **Programmable Pulse Shaping:** With modulation capability from CW to 100 kHz nLIGHT alta™ additive provides the most advanced control over heat deposition. Customized pulse shapes offer optimization of heating and cooling rates to enable greater process control. This limits stress and strain during the build process and improve yield.



Typical Device Performance

Optical		Units				
Mode of operation		CW/QCW				
Polarization		Random				
Maximum average power (CW/QCW)	W	500	700	800	1000	1200
Power tunability	%	5 – 100				
Power variation (8 hr)	%	≤ 1				
Maximum modulation frequency	kHz	≤ 100				
Rise/fall time	µs	≤ 4				
Beam quality (single mode)	M ²	≤ 1.1				
Beam quality (multi-mode options)	mm-mrad	Tailored to customer need: ≤ 2 with 50 µm fiber ≤ 4 with 100 µm fiber ≤ 8 with 200 µm fiber				
Wavelength	nm	1080 ± 10				
Mechanical						
Dimensions	mm	480 w x 177 h x 840 d				
Fiber delivery cable lengths	m	5, 10, 20, standard				
Fiber connector		Water				
Cooling water	°C	22-30				
Relative humidity	%	5 – 90% (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.