

alta

High Power Fiber Lasers



nLIGHT alta™ is the first in a line of next generation high power fiber lasers. Designed to meet the performance and reliability requirements for industrial applications, nLIGHT alta™ incorporates several improvements over other commercially available fiber lasers:

- **Improved Cutting and Welding Performance:** nLIGHT alta™ is capable of delivering a modulation rate up to 100 kHz and rise and fall time of less than 5 μ s. Enabled by next generation electronics, these capabilities allow faster piercing, faster processing of fine features, and better processing quality through minimal heat affected zone.
- **Back Reflection Isolation:** nLIGHT's novel back reflection isolation technology allows uninterrupted full power processing of highly reflective materials.
- **Design-for-Service:** nLIGHT alta™ incorporates a unique, proprietary fiber laser architecture that enables tool integrators or end users to manage common field service events, which results in higher machine uptime, lower cost of ownership and an improved customer experience.

The nLIGHT alta™ fiber laser platform is designed and manufactured in the U.S., leveraging nLIGHT's vertically integrated high brightness laser diode and fiber technology, and is supported through a global network of sales and service staff. nLIGHT alta™ - the next generation of fiber lasers.

Features

- Advanced cutting and welding performance
- Failsafe processing of highly reflective materials
- Proprietary design for high uptime and easy service
- Durable to harsh environmental conditions
- Optional fiber-to-fiber coupler or beam switch
- Powers of 2 kW, 3 kW and 4 kW

Applications

- Cutting
- Welding
- Hardening / cladding
- Additive manufacturing

Typical Device Specifications

| Optical | Units | | | |
|----------------------------------|---------|--|------|------|
| Mode of operation | | CW/QCW | | |
| Polarization | | Random | | |
| Maximum average power (CW) | W | 2000 | 3000 | 4000 |
| Maximum peak power (Modulated) | W | 2000 | 3000 | 4000 |
| Power tunability | % | 5 – 100 | | |
| Power variation (8 hr) | % | ≤ 1 | | |
| Modulation frequency | kHz | ≤ 50 | | |
| Rise/fall times | µs | ≤ 10 | | |
| Beam quality (multimode options) | mm-mrad | ≤ 2 with 50 µm fiber ≤ 4 with 100 µm fiber ≤ 8 with 200 µm fiber | | |
| Wavelength | nm | 1080 ± 10 | | |
| Electrical | | | | |
| Operating voltage | VAC | 3-phase 380-420 | | |
| Operating voltage frequency | Hz | 50/60 | | |
| Control interface | | External hardware control/RS-232/Ethernet | | |
| Mechanical | | | | |
| Dimensions | mm | 815 w x 1000 h x 1275 d | | |
| Mass (maximum) | kg | 325 | | |
| Optical fiber | | 20 m, QBH connector standard | | |
| Cooling method | | Water | | |
| General condition | | | | |
| Operating temperature | °C | +10 to +40 | | |
| Storage temperature | °C | -10 to +60 | | |
| Relative humidity | % | 10 to 80 | | |

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.

