



NuQ™ 10W Fiber Marking Laser

The NuQ™ fiber laser from Nufern is a pulsed marker delivering 0.5 mJ pulse energy with a fast turn-on time and higher peak power (up to 10 kW) over a wide range of repetition rates (variable from 20–100 kHz), which maximizes production throughput and marking capability. With its single-mode beam quality, the NuQ laser can produce ultra-fine, crisp marks every time. The system design ensures no bleed-through power when the gate signal is off, to prevent the appearance of ghost lines between marks, even on very sensitive materials. Complete with industry standard interfaces, the system is pumped by single-emitter diode lasers, which offer long lifetime and maintenance free operation.

Typical Applications

- Marking
- Engraving
- Micro-Machining
- Etching
- Trimming

Features and Benefits

- Fast turn-on time — Yields highest production throughput
- Single-mode beam quality — Ultra-fine, crisp marks
- Single emitter pump diodes — Long lifetime and maintenance free operation
- Gaussian pulse shape produces higher peak power — More marking per output watt

NUQA-1064-NA-0010-YZ

Optical Specifications

| | |
|---|------------------------------|
| Output Power | 10.0 W |
| Output Power Adjustment | 10 – 100% |
| Leakage Power in Off State | < 8.0 mW |
| Power Stability ¹ | ± 2.5% |
| Beam Quality (Nominal) | M ² < 1.5 |
| Beam Divergence _{No Beam Expander} | < 4.0 mrad |
| Beam Divergence _{With Beam Expander} | < 0.5 mrad |
| Output Beam Diameter _{No Beam Expander} ² | NA |
| | 1.0 ± 0.1 mm |
| Output Beam Diameter _{With Beam Expander} | 3.8 ± 0.8 mm |
| | NA |
| | 7.5 ± 1.0 mm |
| | 12.0 ± 1.5 mm |
| Visible Pointer | No Pointer |
| | Red Pointer |
| Output Type | Fiber to Free space isolator |
| Mode of Operation | Pulsed |
| Polarization | Random |
| Peak Power ³ | 5.0 kW |
| Pulse Energy ³ | 0.5 mJ |
| Pulse Width ⁴ | 100 ± 20 ns |
| Pulse Repetition Rate (PRR) | 20 – 100 kHz |

¹ Power fluctuation at full rated power for 5 hrs. ± (Max-Min)/(Max+Min).

² Beam diameter (1/e²), for options with no beam expander beam diameter is measured at distance of 20mm from output aperture.

³ At the lowest PRR and full rated power.

⁴ FWHM at lowest PRR and full rated power.

Naming Conventions:

NUQM-1064-NA-XXXX-Y Z

Other Options

0 = No Pointer

1 = Red Pointer

| Model | Output Power | Beam Diameter | Beam Expander | Divergence | Available with |
|---------------------------------|--------------|-------------------|---------------|------------|----------------|
| A = Advanced Optical Monitoring | 0010 = 10W | Z = .65 ± 0.1 mm* | NO | < 5.5 mrad | 50W |
| | 0020 = 20W | A = 1.0 ± 0.1 mm* | NO | < 4.0 mrad | 10,20, & 30W |
| | 0030 = 30W | C = 3.8 ± 0.8 mm | YES | < 0.5 mrad | 10,20,30 & 50W |
| | 0050 = 50W | E = 5.0 ± 0.8 mm | YES | < 0.5 mrad | 50W |
| | 0100 = 100W | F = 7.5 ± 1.0 mm | YES | < 0.5 mrad | All |
| | | L = 12.0 ± 1.5 mm | YES | < 0.5 mrad | 10,20, & 30W |

*Diameter is measured 20mm from the output



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Nufern products are manufactured under an ISO 9001:2008 certified quality management system.

Standard specifications and design parameters are listed above. Specifications are subject to change without notice.



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Optical Specifications

| | |
|---------------------------------|---------------------|
| Turn-on Time ⁵ | < 250 μ s |
| Turn-off Time ⁶ | < 2 μ s |
| Central Wavelength | 1064.0 \pm 2.0 nm |
| Emission Linewidth ⁴ | < 5.0 nm |

Mechanical Specifications

| | |
|----------------------------------|-------------------|
| Delivery Fiber Length | 3 m |
| Output Cable Minimum Bend Radius | 30 mm |
| Dimensions | 215 x 95 x 284 mm |
| Weight | 5.7 kg |

Electrical Specifications

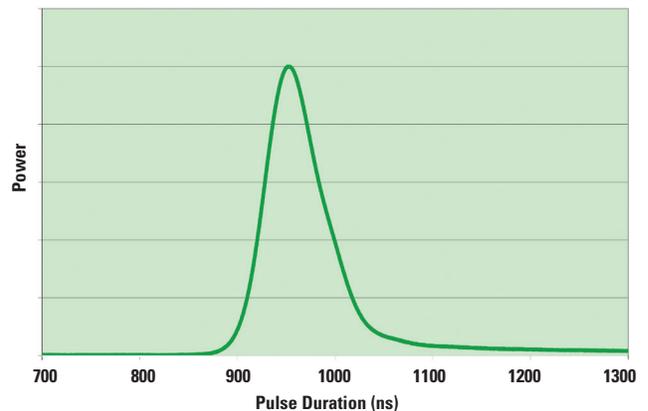
| | |
|----------------------------------|---------------|
| DC Supply Voltage | 23 - 25 VDC |
| Current Consumption (At 24V DC) | \leq 6.0 A |
| Digital Interfaces ⁷ | RS-232 & DB25 |
| Maximum Off Voltage ⁸ | 1.5 VDC |

Environmental Specifications

| | |
|--|----------------------------|
| Operating Ambient Temperature ⁹ | 0 to 42° C |
| Storage Temperature | -10 to 60° C |
| Operating Humidity | 0 to 85% RH non-condensing |
| Warm-up Time | 60 sec |
| Cooling ¹⁰ | Air cooled |

⁵ Typical rise time from 0 to 90% of max power at 80 kHz.
⁶ Typical fall time from 100% to 10% of max power at 80 kHz.
⁷ DB25 connector uses industry standard pin assignments.
⁸ Highest voltage allowable on the +24 VDC input when the power supply is intended to be off.
⁹ 36 to 42°C with less than 50% duty cycle.
¹⁰ Ensure 100 cfm (.047m³/s) of air flow provided for all units.

Pulse Shape at Rated Power



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