



NuQ™ 20W, 30W, 50W & 100W Fiber Marking Lasers

The NuQ™ fiber laser from Nufern is a pulsed marker delivering 1 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 20–200 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-0020-YZ	NUQA-1064-NA-0030-YZ	NUQA-1064-NA-0050-YZ	NUQA-1064-NA-0100-YZ
Optical Specifications				
Output Power	20.0 W	30.0 W	50.0 W	100.0 W
Output Power Adjustment	10 – 100%	10 – 100%	10 – 100%	10 – 100%
Leakage Power in Off State	< 8.0 mW	< 8.0 mW	< 15.0 mW	< 15.0 mW
Power Stability ¹	± 2.5%	± 2.5%	± 2.5%	± 2.5%
Beam Quality (Nominal)	M ² < 1.5	M ² < 1.5	M ² < 1.5	M ² < 1.5
Beam Divergence _{No Beam Expander}	< 4.0 mrad	< 4.0 mrad	< 5.5 mrad	< 5.5 mrad
Beam Divergence _{With Beam Expander}	< 0.5 mrad	< 0.5 mrad	< 0.5 mrad	< 0.5 mrad
Output Beam Diameter _{No Beam Expander} ²	NA	NA	0.65 ± 0.1 mm	NA
	1.0 ± 0.1 mm	1.0 ± 0.1 mm	NA	NA
Output Beam Diameter _{With Beam Expander}	3.8 ± 0.8 mm	3.8 ± 0.8 mm	3.8 ± 0.8 mm	NA
	NA	NA	5.0 ± 0.8 mm	NA
	7.5 ± 1.0 mm	7.5 ± 1.0 mm	7.5 ± 1.0 mm	7.5 ± 1.0 mm
	12.0 ± 1.5 mm	12.0 ± 1.5 mm	NA	NA
Visible Pointer	No Pointer	No Pointer	No Pointer	No Pointer
	Red Pointer	Red Pointer	Red Pointer	Red Pointer
Output Type	Fiber to Free space isolator	Fiber to Free space isolator	Fiber to Free space isolator	Fiber to Free space isolator
Mode of Operation	Pulsed	Pulsed	Pulsed	Pulsed
Polarization	Random	Random	Random	Random
Peak Power ³	10.0 kW	10.0 kW	8.5 kW	8.5 kW
Pulse Energy ³	1.0 mJ	1.0 mJ	1.0 mJ	1.0 mJ
Pulse Width ⁴	100 ± 20 ns	100 ± 20 ns	120 ± 20 ns	120 ± 20 ns
Pulse Repetition Rate (PRR)	20 – 100 kHz	30 – 100 kHz	50 – 200 kHz	100 – 200 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-YZ

Other Options

0 = No Pointer

1 = Red Pointer

Model

A = Advanced Optical Monitoring

Output Power

0010 = 10W
0020 = 20W
0030 = 30W
0050 = 50W
0100 = 100W

Output with Isolator

Beam Diameter	Beam Expander	Divergence	Available with
Z = .65 ± 0.1 mm*	NO	< 5.5 mrad	50W
A = 1.0 ± 0.1 mm*	NO	< 4.0 mrad	10,20, & 30W
C = 3.8 ± 0.8 mm	YES	< 0.5 mrad	10,20,30 & 50W
E = 5.0 ± 0.8 mm	YES	< 0.5 mrad	50W
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	< 250 μ s	< 250 μ s	< 250 μ s
Turn-off Time ⁶	< 2 μ s	< 2 μ s	< 2 μ s	< 2 μ s
Central Wavelength	1064.0 \pm 2.0 nm	1064.0 \pm 2.0 nm	1064.0 \pm 2.0 nm	1064.0 \pm 2.0 nm
Emission Linewidth ⁴	< 5.0 nm	< 5.0 nm	< 5.0 nm	< 5.0 nm
Mechanical Specifications				
Delivery Fiber Length	3 m	3 m	3 m	3 m
Output Cable Minimum Bend Radius	30 mm	30 mm	30 mm	30 mm
Dimensions	215 x 95 x 284 mm	215 x 95 x 284 mm	215 x 95 x 284 mm	215 x 136 x 284 mm
Weight	5.7 kg	5.7 kg	10.0 kg	12.0 kg
Electrical Specifications				
DC Supply Voltage	23 - 25 VDC	23 - 25 VDC	23 - 25 VDC	23 - 25 VDC
Current Consumption (At 24V DC)	\leq 8.0 A	\leq 10.0 A	\leq 15.0 A	\leq 20.0 A
Digital Interfaces ⁷	RS-232 & DB25	RS-232 & DB25	RS-232 & DB25	RS-232 & DB25
Maximum Off Voltage ⁸	1.5 VDC	1.5 VDC	1.5 VDC	1.5 VDC
Environmental Specifications				
Operating Ambient Temperature ⁹	0 to 42° C	0 to 42° C	0 to 42° C	0 to 42° C
Storage Temperature	-10 to 60° C	-10 to 60° C	-10 to 60° C	-10 to 60° C
Operating Humidity	0 to 85% RH non-condensing	0 to 85% RH non-condensing	0 to 85% RH non-condensing	0 to 85% RH non-condensing
Warm-up Time	60 sec	60 sec	60 sec	60 sec
Cooling ¹⁰	Air cooled	Air cooled	Air cooled	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.

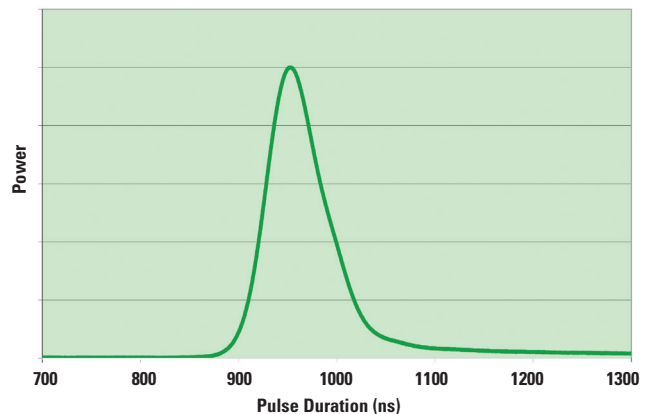
⁷ DB25 connector uses industry standard pin assignments.


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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