

NL640

SERIES

Nanosecond Q-switched Diode Pumped Nd:YVO₄ Laser

FEATURES

- Up to **6 W** output power at **40 kHz**
- Up to **0.5 mJ** pulse energy at **5 kHz**
- **6–14 ns** pulse duration
- **532 nm, 355 nm, 266 nm** wavelengths as standard option
- **M² <1.5**
- **Internal/external** triggering
- **Electro-optical** Q-switching
- **Air cooled**
- **Sealed** cavity
- Extremely **compact** size
- Processor control via **USB/CAN and RS232**
- **Remote** control via keypad

APPLICATIONS

- Marking
- Engraving
- Micromachining
- Ablation
- Drilling
- Cutting
- Structuring
- Trimming
- Mask repair
- Cleaning
- Your application is welcome...



A diode pumped solid state Q-switched Nd:YVO₄ laser offers up to 6 W output power and high 40 kHz repetition rate. End-pumped design ensures compact size of the laser cavity. Down to 6 ns pulse duration is achieved due to

an attractive tool for wide range of material processing applications. Featuring compact size and turn-key operation NL640 series laser is ideal for integrating into micromachining or marking systems with limited space

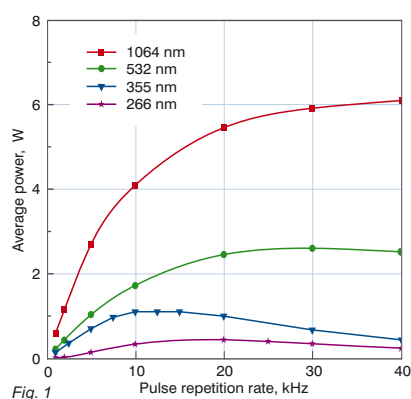


Fig. 1

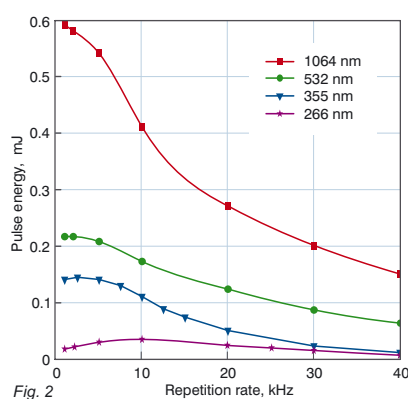


Fig. 2

NL640 typical performance data

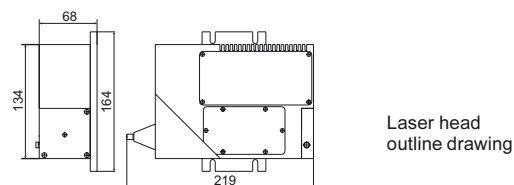
the innovative Q-switching. Short pulse duration, high repetition rate and compact design make this laser

availability and tough weight requirements. Sealed cavity as well as rugged body ensures reliable 24/7 operation.

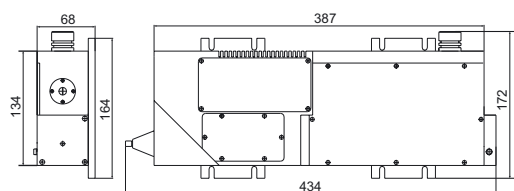
SPECIFICATIONS

MODEL	NL640
Max. output power, W ¹⁾	
at 1064 nm	6
at 532 nm	2.5
at 355 nm	1
at 266 nm	0.4
Pulse energy at 5 kHz, mJ	
at 1064 nm	0.5
at 532 nm	0.25
at 355 nm	0.1
at 266 nm	0.04
Pulse duration, ns ²⁾	6–14, depends on rep. rate
Pulse energy stability at 1064 nm, % ³⁾	1.0
Repetition rate, kHz ⁴⁾	single shot – 40
Beam diameter, mm	0.7
Beam profile	TEM ₀₀
M ²	< 1.5
Polarization	linear, horizontal > 100:1
Optical jitter, ns ³⁾	< 0.5
Beam divergence, mrad ⁵⁾	< 2.5
PHYSICAL CHARACTERISTICS	
Laser head size (W×H×L), mm	134×68×219
Power supply/pump diode unit (W×H×L), mm	365×289×365
Umbilical length, m ⁶⁾	1.5
OPERATING REQUIREMENTS	
Ambient temperature, °C	18–27
Relative humidity (noncondensing), %	10–80
Voltage	100–240 VAC, single phase 50/60 Hz
Power, W	< 200

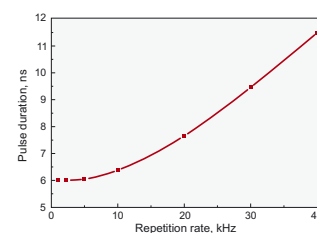
¹⁾ See Fig. 1. ²⁾ Std. dev. at 5 kHz. ³⁾ Full angle at 1/e². ⁴⁾ Up to 100 kHz repetition rate available. ⁵⁾ Other lengths available. ⁶⁾ Specifications are subject to changes without advance notice.



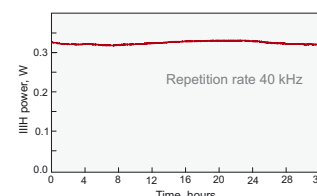
Laser head outline drawing



Laser head outline drawing with second harmonic (532 nm) unit



Typical pulse duration vs repetition rate performance data



Typical long term energy stability at 355 nm performance data

MICROMACHINING SAMPLES



Copper foil cutting



Marking of stainless steel



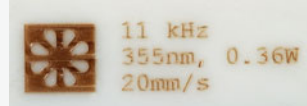
Marking of aluminium



Marking of cast acrylic glass (PMMA)



Silicon wafer marking



Marking of polyester



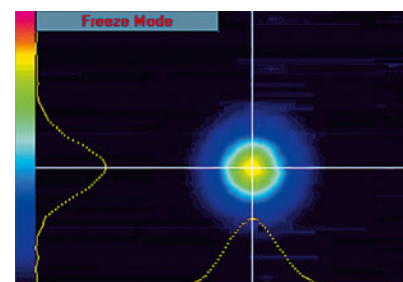
Polycarbonate marking



Marking of carbon fiber



Marking of fiber glass



Typical beam profile



Requests for custom made products are welcome !



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