

Continuous Wave (CW) Single Frequency Green Laser

NPRO® 142 Series

**Key Features**

- 532 nm output
- Proven nonplanar ring oscillator (NPRO) design
- Superior power stability
- Narrow linewidth
- Ease of use

Applications

- Interferometry
- Holography
- Printing
- Detection
- Inspection

The JDSU NPRO 142 series is a compact, low-noise, 532 nm, CW laser for use in applications including interferometry, holography, printing, detection, and inspection. Each NPRO 142 features superior power and pointing stability, with a round, nearly diffraction-limited beam all in a compact package. All control electronics are contained within a small laser head in this OEM design. Only a basic DC power source is required to drive the laser.

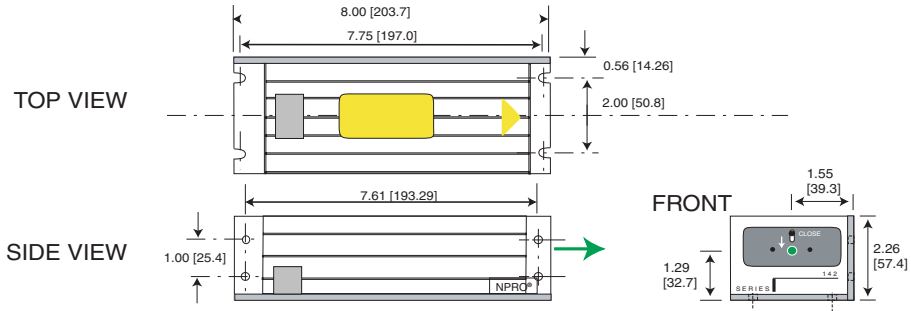
At the heart of each NPRO 142 laser is JDS Uniphase's unique, monolithic NPRO laser cavity delivering true single-frequency laser output. Since its initial development in 1985, NPRO technology has demonstrated a record of reliability and top-level performance.

NPRO lasers are built in a compact, OEM-friendly package. All necessary control electronics are onboard the laser head allowing for easy integration with existing systems or new product platforms.

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NPRO 142 Laser Head

(Specifications in inches [mm] unless otherwise noted.)



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NPRO 142 Specifications

| Parameter | 142H-532-xxx |
|---|-----------------------------|
| Wavelength | 532 nm |
| CW power options | >100, 200, 300, 400, 500 mW |
| Spatial mode | TEM ₀₀ |
| Longitudinal mode | Single frequency |
| Linewidth (high-stability option only) | <10 kHz/ms |
| Coherence length, calculated (high-stability option only) | >1000 m |
| Frequency drift (high-stability option only) ¹ | <10 MHz/minute |
| Amplitude noise, 10 Hz to 2 MHz | <0.2% rms |
| Power drift over 8 hours ² | <5% peak-to-peak |
| Polarization, linear ³ | >100:1, horizontal |
| Times diffraction limit | M ² <1.1 |
| Beam pointing stability ⁴ | <0.01 mrad |
| Waist diameter, at window, 1/e ² | 0.42 mm nominal |
| Beam divergence, full angle | 1.6 mrad nominal |
| Beam roundness, far field | <10% elliptical |
| Alignment tolerance | |
| Beam position | <±1 mm |
| Beam angle | <±15 mrad |
| Warm-up time, from cold start (AC off) | 10 minutes |
| Dimension | |
| Laser head size (W x H x D) | 6 x 8 x 20 cm |
| Weight | 1.2 kg (2.65 lbs) |

1. Base temperature constant to within <2 °C, total range, after 30 minute warm-up.
2. Base temperature constant to within <5 °C, total range.
3. Ratio of maximum transmission to minimum transmission, nominally horizontal.
4. Deviation from centroid, measured over 1 hour, after 30 minute warm-up and with base temperature constant to within <2 °C, total range.

NPRO 142 Integration Requirements

| Parameter | Specification |
|-----------------------------------|--------------------------------|
| Input and Ambient | |
| DC voltage/current, maximum | 5 V/4 A, 12 V/4 A, -12 V/0.5 A |
| Operating base temperature | 15 to 35 °C |
| Storage temperature | -20 to 50 °C |
| Relative humidity, non-condensing | 10 to 90% |

Ordering Information

For more information on this or other products and their availability, please contact your local JDSU account manager or JDSU directly at 1-800-498-JDSU (5378) in North America and +800-5378-JDSU worldwide or via e-mail at customer.service@jdsu.com.

Sample: 142H-532-100 (532 nm, 100 mW laser head) and 142-OPN-PS-A (standard power supply)
Laser Head

| Product Code | Description |
|-----------------|--|
| 142H-532-100 | NPRO 142 frequency-doubled, 532 nm, 100 mW laser head |
| 142H-532-200 | NPRO 142 frequency-doubled, 532 nm, 200 mW laser head |
| 142H-532-300 | NPRO 142 frequency-doubled, 532 nm, 300 mW laser head |
| 142H-532-400 | NPRO 142 frequency-doubled, 532 nm, 400 mW laser head |
| 142H-532-500 | NPRO 142 frequency-doubled, 532 nm, 500 mW laser head |
| 142H-532-100 SF | NPRO 142 frequency-doubled, 532 nm, 100 mW, SF option includes linewidth spec of <10 kHz/msec laser head |
| 142H-532-200 SF | NPRO 142 frequency-doubled, 532 nm, 200 mW, SF option includes linewidth spec of <10 kHz/msec laser head |
| 142H-532-300 SF | NPRO 142 frequency-doubled, 532 nm, 300 mW, SF option includes linewidth spec of <10 kHz/msec laser head |
| 142H-532-400 SF | NPRO 142 frequency-doubled, 532 nm, 400 mW, SF option includes linewidth spec of <10 kHz/msec laser head |
| 142H-532-500 SF | NPRO 142 frequency-doubled, 532 nm, 500 mW, SF option includes linewidth spec of <10 kHz/msec laser head |

Power Supply

| Product Code | Description |
|--------------|-----------------------|
| 142-OPN-PS-A | Standard power supply |

Safety Label


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