

Polaris 300

INDUSTRIAL Q-SWITCHED DPSS LASER



Polaris-300 laser head with on-board Thermal Management System

The Polaris-300 is an air-cooled 100Hz diode pumped Nd:YAG laser with four-wavelength output capability.

Polaris-300 extends ESI/NWR's portfolio of FPD repair lasers with a targeted OEM product specifically designed to meet the needs for emerging LCD manufacturing technologies. Polaris-300 also enables applications for medical device manufacturing, laser ablation, laser annealing and high energy spectroscopy.

Polaris-300 requires no water cooling and comes integrated with a cleanroom compatible fan. It offers industry-leading energy stability and beam uniformity with its proprietary diode-pumped laser architecture. The laser can be configured in multiple wavelengths for optimal flexibility.

2010 NWR/ESI document No. PL300 Rev 4. All specifications are subject to change.

www.eolite.com

Features

- Compact DPSS laser head.
- Quad-lite and Tri-lite (1064, 532, 355 and 266 nm) configurations available with user-selectable wavelengths.
- Flat-top superGaussian beam in all 4 wavelengths.
- Selectable repetition rates from single shot to 100 Hz.
- 100% air-cooled operation.
- Built-in motorized optical attenuator.
- Automatic Power Stabilization (APS) for excellent energy stability.
- Industry-leading diode lifetime and reliability.
- External triggering option for dynamic variation of repetition rate.
- Rack-mountable power supply with RS232 serial port.
- "Smart" laser head design allows interchangeability for any head and power supply units.
- Standard 5 m Umbilical (Gantry) Cable.

Benefits

- 3rd and 4th harmonics for advanced production techniques.
- Precision cutting.
- Fast throughput.
- Easy to maintain and operate.
- Ease of use, rapid integration.
- Low cost of ownership.
- Low maintenance.
- Functional umbilical length with long extensions available for gantry use.
- More power, greater flexibility.

Polaris 300

INDUSTRIAL Q-SWITCHED DPSS LASER

Laser Specifications¹

| Repetition Rate (Hz) | Single shot - 100 | |
|--|-------------------|--------|
| Energy ² (mJ) | 1064 nm | ≥ 15.0 |
| | 532 nm | ≥ 10.0 |
| | 355 nm | ≥ 3.0 |
| | 266 nm | ≥ 2.0 |
| Energy Stability ³ (%) | 1064 nm | ≤ 6% |
| | 532 nm | ≤ 6% |
| | 355 nm | ≤ 10% |
| | 266 nm | ≤ 10% |
| Pulse Width ⁴ (ns) | < 12ns | |
| Beam Pointing (μrad) | < 250 | |
| Divergence (mrad) | < 9 | |
| Polarization directions from IR to UV ⁵ | HHVV | |
| Polarization Ratio | > 100:1 | |
| Warm up time | < 15 min | |

- Notes:
1. Specification listed is for a Quad-lite or Tri-lite configuration with user-selectable wavelengths. Beam blended Tri-lite output (1064/532/355 nm or 1064/532/266 nm) is also available
 2. Energy per pulse measured at 100 Hz operation
 3. Energy Stability is expressed as 100% of shots, peak-to-peak, 2000 shots continuous
 4. Pulse width (FWHM) @ 1064 nm
 5. H for Horizontal, V for Vertical, other options available.



VISIBLE AND INVISIBLE LASER RADIATION, AVOID DIRECT OR SCATTERED RADIATION.
Wavelength 1064 nm / 150 mJ / 7 ns
Wavelength 532 nm / 100 mJ / 6 ns
Wavelength 355 nm / 50 mJ / 5 ns
Wavelength 266 nm / 30 mJ / 5 ns
CLASS 4 LASER PRODUCT

This document is for Informational purposes only and does not set forth any warranty, expressed or implied, concerning any hardware and software feature or services offered or to be offered by New Wave Research. Specification and product offering subject to change without notice.

All rights reserved. New Wave Research and all New Wave Research product names and logos are trademarks or registered trademarks of New Wave Research, a division of ESI. Other product names and logos mentioned herein may be trademarks or registered trademarks of their respective companies.

USA
ESI - New Wave Research, Inc
48660 Kato Road
Fremont CA 94538-7339
Phone: 510-249-1550
Phone: 800-566-1743
Fax: 510-249-1551
eMail: NWR_lasers@esi.com

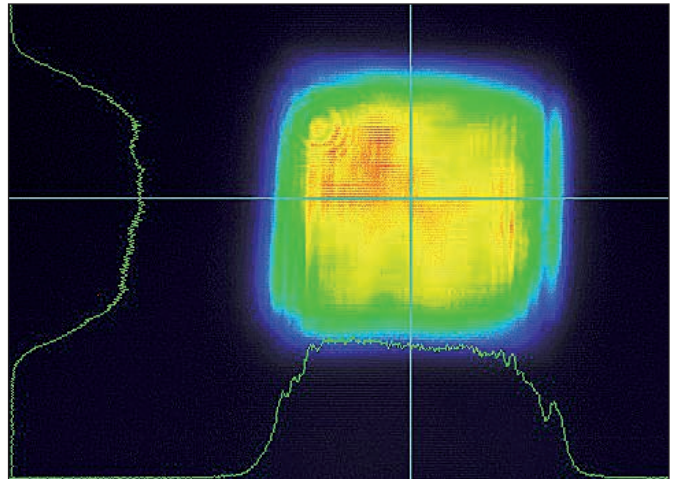
Japan
ESI - New Wave Research, KK.
Moriichi Building 2F
14-3 Takabashi, Koto-ku
Tokyo, 135-00051 Japan
Phone: +81.3.5625.5100
Fax: +81.3.5625.5229
eMail: NWR_lasers@esi.com

Taiwan
ESI - New Wave Research GC Co., Ltd.
2F, NO 26, Tai Yuen Street
Jubei City 302, Hsinchu County,
Taiwan
Phone: 886-3-552-6788
Fax: 886-3-552-6799
eMail: NWR_lasers@esi.com

Europe
ESI - New Wave Research Co. Ltd.
8 Avro Court
Ermine Business Park
Huntingdon, Cambridge
PE29 6XS, UK
Phone: 44-(0)1480-456-566
Fax: 44-(0)1480-456-545
eMail: NWR_lasers@esi.com

China
ESI - New Wave Research (China) Co., Ltd.
Rm. 1701-1702, Information Tower,
No.1403 Min Sheng Road
Pudong, Shanghai, China
Phone: 86-21-3392-7070
Fax: 86-21-5237-1289
eMail: NWR_lasers@esi.com

Beam Profile in 1064nm



- Flat-top beam for larger usable portion.
- Higher small-area energy density.
- Beam size and profiles consistent across wavelengths

Physical Characteristics

| | Laser Head | Power Supply |
|--------|---------------------|------------------|
| Depth | 14.25" (362 mm) | 18" (457mm) |
| Width | 5.50" (140 mm) | 19" (483 mm) |
| Height | 6.33" (161 mm) | 3.5" (89 mm) |
| Weight | 23.1 lbs. (10.5 kg) | 13 lbs. (5.9 kg) |

Operating Requirements

| | |
|-------------------|-----------------------------------|
| Temperature | 20 to 250°C (68 to 770°F) |
| Relative Humidity | 20 to 80% non-condensing |
| Voltage | 100—120/240 VAC (laser), 50/60 Hz |
| Power Consumption | < 300 watts |