

DP Series

High Pulse Energy Diode Pulse Pumped Lasers



DP Series

Photronics Industries International released a new line of pulsed diode pumped lasers. The DP Series is available in IR (1064nm, 1053nm) green (532nm, 527nm), UV (355nm, 351nm) or DUV (266nm, 263nm). These IR, green, UV and DUV wavelengths can also be blended for novel material processing applications. The DP laser is available in Nd: YLF for high pulse energy at low repetition rates, Nd: YAG for higher repetition rate, high pulse energy or YVO4 for higher repetition rate (~2kHz) operation. This laser is air-cooled and compact with power consumption of less than 60 W, as compared to traditional pulsed lamp pumped lasers.

Applications

- FPD Circuit Repair
- Cavity Ring Down Spectroscopy
- Laser Induced Breakdown Spectroscopy (LIBS)
- LIDAR
- Laser Induced Fluorescence (LIF)
- Aerospace
- Military
- Laser Cleaning
- PIV
- Pulsed Laser Deposition (PLD)
- Acousto-optic non destructive testing
- Intra-Glass Marking



Photronics Industries
International, Inc.

The Pioneer of Intra-Cavity Solid-State Harmonic Lasers

DP System Specifications

Nd: YLF

| | | |
|--------------------------|----------------------|----------------------|
| Wavelength | 1053 nm | 527 nm |
| Model Number | DP-1053-8 | DP-527-7 |
| Pulse Energy* (@ 100Hz) | 8mJ | 7mJ |
| Repetition Rate | Single Shot to 200Hz | Single Shot to 200Hz |
| Pulse to Pulse Stability | 2%rms | |
| Wavelength | 351 nm | 263 nm |
| Model Number | DP-351-2 | DP-263-1.5 |
| Pulse Energy* (@ 100Hz) | 2mJ | 1.5mJ |
| Repetition Rate | Single Shot to 200Hz | Single Shot to 200Hz |
| Pulse to Pulse Stability | <3%rms | |

*Higher pulse energies are available upon request.

Common Specifications

| | |
|--------------------------------------|---|
| Pulse width | <10ns |
| Spatial mode profile | TEM ₀₀ |
| M2 | <2 |
| Output Beam Diameter | 1.0mm (nominal) |
| Beam divergence | <4mrad |
| Beam Ellipticity | <10% |
| Beam Point Instability | <50urad |
| Long-Term Instability (8h +/-3deg.C) | 3%rms |
| Ambient Temperature | 15 to 30 °C (59 to 86 °F) Operating Range |
| Relative Humidity | Non condensing, 90% Max |

Mechanical Specifications

| | |
|--------------------------------------|-----------------------------------|
| Cooling | Air Cooled |
| Laser Head Dimensions | 102mm (W) x 102mm (H) x 253mm (L) |
| Laser Head Dimensions (4th Harmonic) | 102mm (W) x 102mm (H) x 432mm (L) |
| Controller Dimensions | 356mm (W) x 89mm (H) x 311mm (L) |

In order to continuously improve our product catalog, we reserve the right to change all specification with out prior notice. Please contact the factory for the most recent specifications.

DP System Specifications

Nd: YVO₄

| | | |
|------------------------------|--------------|-------------|
| Wavelength | 1064 nm | 532 nm |
| Model Number | DPH-1064-1.2 | DPH-532-1 |
| Pulse Energy | 1.2mJ | 1mJ |
| Repetition Rate | 2kHz | 2kHz |
| Pulse width | 8ns | 5ns |
| Long term stability (8 hour) | 3%rms | |
| Wavelength | 355 nm | 266 nm |
| Model Number | DPH-355-0.5 | DPH-266-0.1 |
| Pulse Energy | 500uJ | 100uJ |
| Repetition Rate | 2kHz | 2kHz |
| Pulse width | 5ns | 4ns |
| Long term stability (8 hour) | 3%rms | |

Common Specifications

| | |
|------------------------------------|---|
| Spatial mode profile | TEM ₀₀ |
| M ² | <1.3 |
| Output Beam Diameter | 1mm (nominal) |
| Beam divergence | <4mrad |
| Beam Ellipticity | <10% |
| Beam Point Instability | <50urad |
| Ambient Temperature (8h +/-3deg.C) | 15 to 30 °C (59 to 86 °F) Operating Range |
| Relative Humidity | Non condensing, 90% Max |

Mechanical Specifications

| | |
|--------------------------------------|-----------------------------------|
| Cooling | Air Cooled |
| Laser Head Dimensions | 102mm (W) x 102mm (H) x 253mm (L) |
| Laser Head Dimensions (4th Harmonic) | 102mm (W) x 102mm (H) x 432mm (L) |
| Controller Dimensions | 356mm (W) x 89mm (H) x 311mm (L) |

DP System Specifications

Nd: YAG

| | | |
|-----------------------|-----------|-----------|
| Wavelength | 1064 nm | |
| Model Number | DP-1064-4 | DP-1064-8 |
| Pulse Energy (@ 1kHz) | 4mJ | 8mJ |
| Repetition Rate | 1kHz | 1kHz |
| Wavelength | 532 nm | |
| Model Number | DP-532-4 | DP-532-7 |
| Pulse Energy (@ 1kHz) | 4mJ | 7mJ |
| Repetition Rate | 1kHz | 1kHz |
| Wavelength | 355 nm | |
| Model Number | DP-355-2 | DP-355-4 |
| Pulse Energy (@ 1kHz) | 2mJ | 4mJ |
| Repetition Rate | 1kHz | 1kHz |

Common Specifications

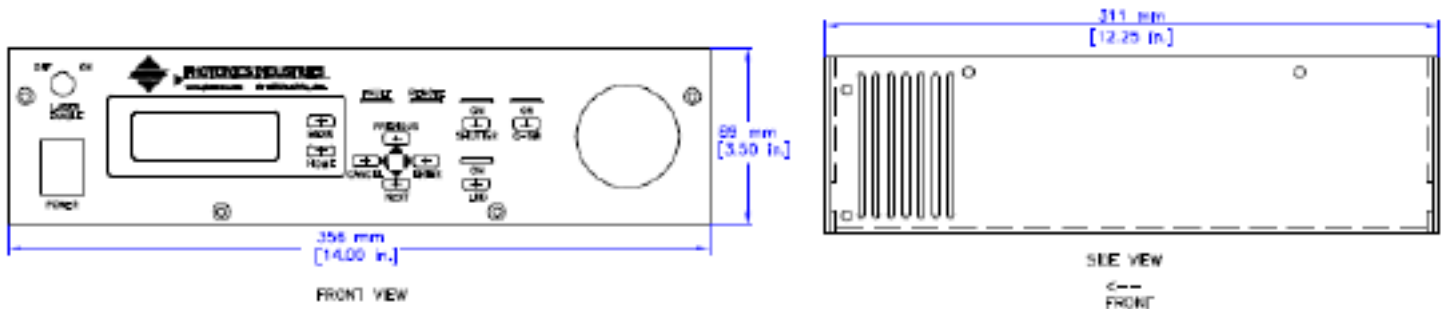
| | |
|--------------------------------------|---|
| Pulse width | 10ns |
| Spatial mode profile | TEM00 |
| M2 | <1.3 |
| Output Beam Diameter | 0.9mm |
| Beam divergence | 5 mrad |
| Beam Ellipticity | <15% |
| Beam Point Instability | <25urad |
| Long-Term Instability (8h +/-3deg.C) | 3%rms |
| Ambient Temperature | 15 to 30 °C (59 to 86 °F) Operating Range |
| Relative Humidity | Non condensing, 90% Max |

Mechanical Specifications

| | |
|-----------------------|-------------------------------------|
| Cooling | Water Cooled |
| Laser Head Dimensions | 191mm (W) x 95.25mm (H) x 559mm (L) |
| Controller Dimensions | 356mm (W) x 89mm (H) x 311mm (L) |

Dimensional Drawings

DP Controller



Application Photos



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US Main Office
 390 Central Ave, Bohemia, NY,
 11716
 Phone: 631-218-2240
 Fax: 631-218-2275
 E-Mail: info@photonix.com
 Website: www.Photonix.com



Photronics Industries
 International, Inc.

Japan Office
 Rokusan Bldg. 9F, Funamachi 7
 Shinjuku-ku, Tokyo 160-0006, Japan
 Tel: [81] 03-6423-1805
 Fax: [81] 03-6423-1806
 Email: kseita@photonix.co.jp

Korea Office
 703 Sogong Bldg, 352-5 Gugal-Dong
 Giheung-gu, Yongin City
 Gyeonggi-Do, 446-569 Korea
 Tel: +82-31-284-9520
 Fax: +82-31-284-9521
 Contact: Sang-Moon Kim
 Email: kimsm@photonix.com

China Office
 Room 1401, B8
 No 208 XingHai Street, Suzhou Industrial
 Park
 Suzhou 215021, P. R. China
 Tel: 86-512-6763 5761
 Fax: 86-512-6763 5762
 Email: china@photonix.com
 Website: <http://www.photonix.com.cn/>



Photronics Industries conforms to provisions of US 21 CFR 1040.10 & 1040.11 and is made under one or more US patents listed below:
 7,346,092; 7,082,149; 7,079,557; 6,999,483; 6,980,574; 6,961,355; 6,842,293; 6,762,405; 6,690,692; 6,587,487; 6,584,487; 6,366,596;
 6,327,281; 6,356,578; 6,246,707; 6,229,839; 6,108,356; 6,061,370; 6,028,620; 5,936,938; 5,898,717 and Pending Patents

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