



DESCRIPTION

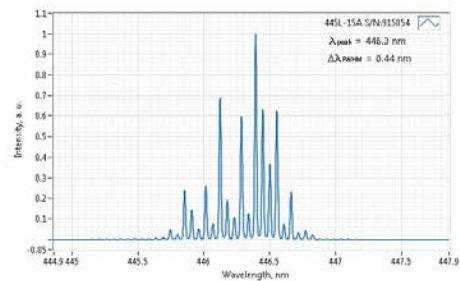
445 nm laser diode module is an excellent choice for flow cytometry, fluorescence and biomedical applications. Small footprint, stable power, low power consumption are only a few advantages of this laser. This particular version of 445 nm laser is fiber coupled to a PM fiber.

SPECIFICATIONS

Last edited on: 24 January 2019

| Parameter | Minimum Value | Typical Value | Maximum Value |
|---|---------------|--|---------------|
| Central Wavelength, nm | 442 | 445 | 448 |
| Longitudinal modes | - | multiple | - |
| Spectral line width FWHM, nm | - | 0.8 | 1 |
| Output power, mW | - | 35 ¹ | - |
| Power stability, % (RMS, 8 hrs) | - | 1 ² | 2 |
| Power stability, % (peak-to-peak, 8 hrs) | - | 2 ³ | 3 |
| Noise, % (RMS, 20 Hz to 20 MHz) | - | 0.25 ⁴ | 0.6 |
| Transversal modes | - | TEM00 | - |
| M ² effective | - | 1.05 | 1.1 |
| Polarization direction | - | Aligned within the slow axis of the PM fiber and the key position. | - |
| Polarization extinction ratio (from PM fiber), dB | 20 | 23 | 30 |
| Control interface type | - | UART/USB | - |
| Operation mode | - | APC (CW) | - |
| Modulation bandwidth, MHz | - | optional ⁵ | - |
| Input voltage, VDC | 4.8 | 5 | 5.3 |
| External power supply requirement | - | +5 V DC, 1.5 A | - |
| Dimensions, mm | - | 50 x 30 x 18 ⁶ | - |
| Fiber Length, m | 0.95 | 1 | 1.1 |
| Heat-sinking requirement, °C/W | - | 1 | - |
| Optimum heatsink temperature, °C | 15 | 20 | 30 |

TYPICAL SPECTRUM



Typical spectrum of 0445 nm diode laser. Measured with 10 pm resolution.



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| | | | |
|--|-----|--|------|
| Warm up time, mins (cold start) | 0.1 | 0.5 | 1 |
| Temperature stabilization | - | Yes | - |
| Overheat protection | - | Yes | - |
| Storage temperature, °C (non-condensing) | -10 | - | 50 |
| Net weight, kg | 0.1 | 0.12 | 0.14 |
| Max. power consumption, W | 0.4 | 2 | 10 |
| Warranty, months (op. hrs) | - | 14 (10000) ⁷ | - |
| RoHS | - | Yes | - |
| CE compliance | - | - General Product Safety Directive (GPSD) 2001/95/EC - (EMC) Directive 2004/108/EC | - |
| Laser Safety Class | - | 3B | - |
| OEM lasers are not compliant with | - | IEC60825-1:2014 (compliant using additional accessories) | - |
| Country of origin | - | Lithuania | - |

¹ The optical power can be tuned from virtually 0% to 100%. However, other specifications, such as central wavelength, power stability, noise, polarization ratio, beam shape, quality and circularity are not guaranteed at power levels other than factory preset power. Significantly worse power stability is to be expected at very low power levels, e.g. <3% from specified nominal power.

² Long term power test is carried out using an optical power meter with an input bandwidth of 10 Hz. Actual measurement rate has a period of about 20 seconds to 1 minute.

³ Long term power test is carried out using an optical power meter with an input bandwidth of 10 Hz. Actual measurement rate has a period of about 20 seconds to 1 minute.

⁴ Noise level is measured with a fast photodiode connected to an oscilloscope. The overall system bandwidth is from 2 kHz to 20 MHz.

⁵ TTL digital modulation up to 10 MHz.

⁶ Excluding control interface pins and an output window/fiber assembly.

⁷ Whichever occurs first. The laser has an integrated operational hours counter.

Note: Product specifications are subject to change without prior notice to improve reliability, function or design or otherwise.