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PART NUMBER 0405L-13A
ITEM NAME 405 NM LASER (DIODE; SM FIBER)

PRODUCT DATASHEET

DESCRIPTION

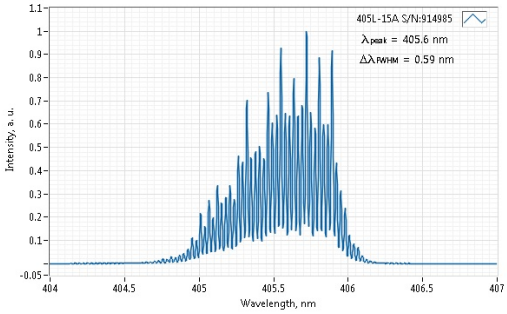
Single-mode fiber coupled 405 nm laser diode is a compact and robust unit for alignment-free operation throughout the lifetime of the laser. Single-mode fiber ensures virtually ideal beam quality and focusability, thus making this laser an ideal solution for high-resolution fluorescence imaging or 3D lithography applications. Proprietary fiber coupling technology ensures good power stability and excellent fiber-coupling efficiency. An end-cap is provided against degradation of the fiber tip inside the module thus, up 100 mW of power can be coupled into the fiber. FC/PC connector is provided as a standard and the pigtail length is approx. 1 m. Other connectors and fiber lengths are available on request.

SPECIFICATIONS

Last edited on: *24 January 2019*

Parameter	Minimum Value	Typical Value	Maximum Value
Central Wavelength, nm	400	405	410
Longitudinal modes	-	Multiple	-
Spectral line width FWHM, nm	-	0.5	1
Output power, mW	-	80 [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
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	-	0.5	-
Optimum heatsink temperature, °C	15	20	30
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

TYPICAL SPECTRUM



Typical spectrum of 0405 nm diode laser. Measured with 10 pm resolution.

Max. power consumption, W	0.5	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.