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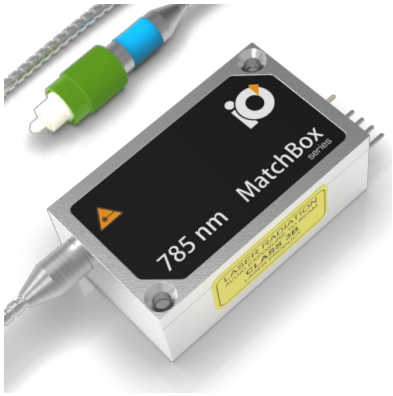
PART NUMBER 0785L-28A
ITEM NAME 785 NM SLM LASER (FBG; PM FIBER)

PRODUCT DATASHEET



DESCRIPTION

Polarization maintaining fiber-coupled 785 nm lasers are a perfect choice for high-end Raman microscopy solutions. Highly flexible installation into new and existing PM fiber-based setups ensures a fast transition to a new, more effective solution, both in terms of output power and cost. Unprecedented >80 mW of power out of a PM fiber provides more flexibility in choosing focal spot size, by maintaining perfect spatial resolution. The typical linewidth of <200 MHz leads to high spectral resolution.
As a standard, these lasers are offered with FC/APC connector, however other connector types or a collimator may also be offered at a very competitive cost.

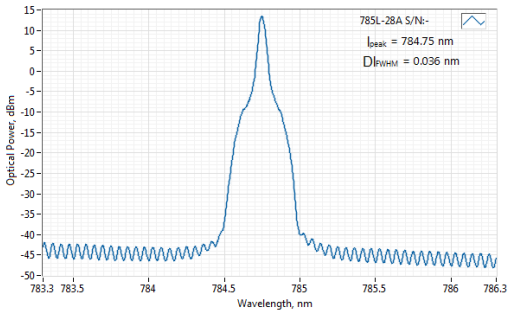
Note:
In optical systems with strong back-reflections (e.g. more than 10%), the laser must be protected by using an optical isolator with at least 20 dB isolation. Typical applications include interferometry, confocal microscopy (especially working with reflective samples), etc. Failure to comply with these requirements will render the warranty void for cases of COD (Catastrophic Optical Damage) of laser diode facets.

SPECIFICATIONS

Specifications updated: *30 September 2020*

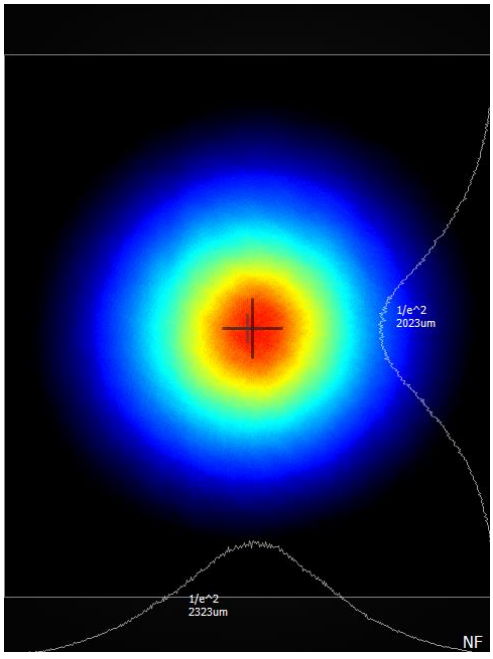
Parameter	Minimum Value	Typical Value	Maximum Value
Central Wavelength, nm	784.9	785	785.1
Longitudinal modes	-	Single	-
Spectral line width FWHM, pm	-	5 [1]	1
Output power, mW	5	80 [2]	90
Side-mode suppression ratio (SMSR), dB	40	50	60
Power stability, % (RMS, 8 hrs)	-	0.2 [3]	1
Power stability, % (peak-to-peak, 8 hrs)	-	2 [4]	3
Noise, % (RMS, 20 Hz to 20 MHz)	-	0.25 [5]	0.6
Transversal modes	-	TEM00	-
Polarization direction	-	Aligned with the slow axis of the PM fiber and the connector key.	-
Polarization extinction ratio (from PM fiber), dB	20	23	30
Control interface type	-	UART [6]	-
Operation mode	-	APC (CW)	-
Modulation bandwidth, MHz	-	10 [7]	-
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 [8]	-
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 0785 nm diode laser. Measured with 20 pm resolution.

TYPICAL NEAR FIELD



Warm up time, mins (cold start)	0.2	1	2
Temperature stabilization	-	Internal TEC	-
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) [9]	-
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] Measured with a scanning Fabry-Perot interferometer having 7.5 Mhz resolution, with scanning frequency of about 10 Hz. Interferometer testing is not provided for each laser being manufactured, the standard test is OSA measurement with 10-20 pm resolution instead.
[2] Output power of FBG lasers can be changed with fairly good repeatability of spectrum.
[3] The long term power test is carried out at constant laser body temperature (+/-0.1 °C) using an optical power meter with an input bandwidth of 10 Hz. The actual measurement rate has a period of about 20 seconds to 1 minute.
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[5] Noise level is measured with a fast photodiode connected to an oscilloscope. The overall system bandwidth is from 2 kHz to 20 MHz.
[6] Break-out-boxes AM-C8 and AM-C3 can be used for conversion of UART communication to either USB or RS232.
[7] TTL digital modulation up to 10 MHz.
[8] Excluding control interface pins and an output window/fiber assembly.
[9] 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.

DRAWING

Drawing of 785 nm SLM Laser (FBG; PM Fiber)