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PART NUMBER 0785L-25A
ITEM NAME 785 NM SLM LASER (VBG DIODE; PM FIBER)

PRODUCT DATASHEET

DESCRIPTION

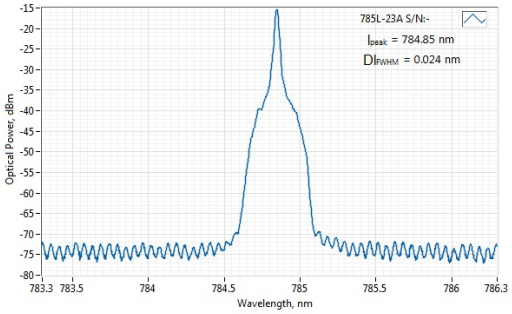
Single-frequency 785 nm laser is a VBG stabilized diode, fiber coupled to a polarization-maintaining (PM) fiber. Such configuration is particularly suitable for high-resolution scanning imaging using Raman scattering. SLM 785 nm laser features very stable central wavelength over wide temperature range and between different turn-on/off cycles, which makes it ideal for terahertz Raman and other high-end applications. Precise alignment of the PM fiber provides high polarization extinction ratio with minimum polarization rotation during twist and bend of the fiber. VBG spectrum stabilization not only ensures single-longitudinal-mode (SLM) oscillation but also provides high (>50 dB) side-mode suppression ratio, thus reducing requirements for laser line clean-up filters. For a top-notch scientific setup a notch clean-up filter can be added to the interior of the laser - please contact us for such customization.

SPECIFICATIONS

Last edited on: *24 January 2019*

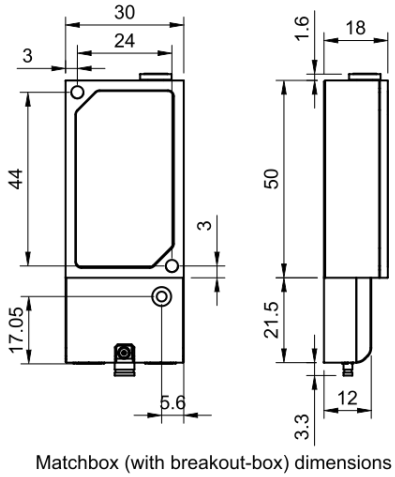
Parameter	Minimum Value	Typical Value	Maximum Value
Central Wavelength, nm	784.7	784.8	785.1
Longitudinal modes	-	Single	-
Spectral line width FWHM, pm	-	0.1 [1]	1
Output power, mW	-	80 [2]	-
Side-mode suppression ratio (SMSR), dB	40	50	60
Power stability, % (RMS, 8 hrs)	-	1 [3]	2
Power stability, % (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 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	-	N/A [6]	-
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 [7]	-
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.

DRAWING



Matchbox (with breakout-box) dimensions

Warm up time, mins (cold start)	0.2	1	2
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) [8]	-
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] The optical power of SLM lasers shall not be tuned and SLM performance is not guaranteed at power ratings other than the factory preset. However, the power setting capability is not disabled. External attenuators are recommended.
[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] 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.
[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] SLM lasers shall not be modulated - use external modulators instead.
[7] Excluding control interface pins and an output window/fiber assembly.
[8] 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.