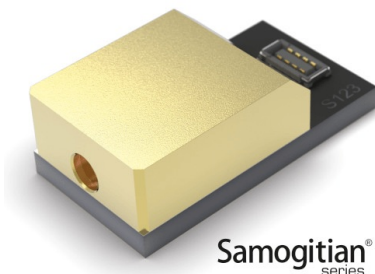




PART NUMBER 0785S-41A  
 ITEM NAME 785 NM LASER (DIODE; FREE-SPACE)

## PRODUCT DATASHEET



### DESCRIPTION

A SWAP (Size, Weight, and Power) - compatible laser source for portable and industrial Raman spectroscopy!

Up to 1W of spectrally-stabilized laser radiation, an integrated clean-up filter, and a robust package (much more robust than butterfly packages) - the features all laser integrators have asked for - are now available in the new 'Samogitian' laser platform.

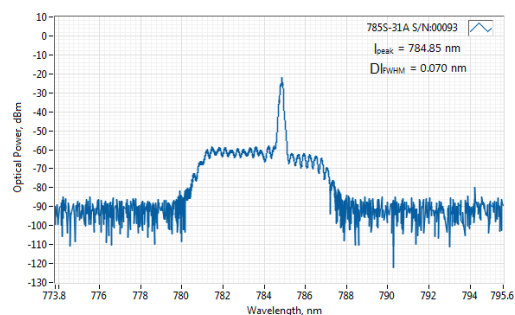
An OEM-dedicated package comprises no driving electronics, just a powerful laser diode (multimode beam), collimation, and wavelength stabilization optics.

### SPECIFICATIONS

Specifications updated: 14 November 2023

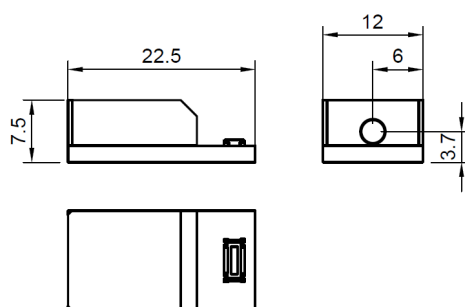
Parameter	Minimum Value	Typical Value	Maximum Value
Central wavelength, nm	784.5	785	785.5
Longitudinal modes	-	Multiple	-
Spectral line width FWHM, pm	-	80	120
Output power, mW	-	700 <sup>1</sup>	1000
Side-mode suppression ratio (SMSR), dB	-	30 <sup>2</sup>	-
Power stability, % (RMS, 8 hrs)	-	0.2 <sup>3</sup>	1
Power stability, % (peak-to-peak, 8 hrs)	-	2 <sup>4</sup>	3
Intensity noise, % (RMS, 20 Hz to 20 MHz)	-	10 <sup>5</sup>	15
Transversal modes	-	Multiple	-
Beam diameter at aperture (1/e <sup>2</sup> ), mm	-	2.2 x 1.1	-
Operation mode	-	ACC (CW)	-
Modulation bandwidth, MHz	-	N/A	-
Laser diode driver requirement	-	2.2A, 1.83V <sup>6</sup>	-
Dimensions (LxWxH), mm	-	22.5 x 12 x 7.5	-
Net weight, kg	-	0.006	0.007
Beam height from the base, mm	-	3.7	-
Heat-sinking requirement, °C/W	-	1	2
Optimum heatsink temperature, °C	-	20-25	-
Temperature stabilization	-	N/A <sup>7</sup>	-
Overheat protection	-	N/A <sup>8</sup>	-
Storage temperature, °C (non-condensing)	-10	-	50
Max. power consumption, W	0.4	2	4
Warranty, months	-	14	-

### TYPICAL SPECTRUM



Typical spectrum of 0785S-41A nm diode laser. Measured with 10 pm resolution.

### DRAWING



RoHS	-	Yes	-
CE compliance	-	- General Product Safety Directive (GPSD) 2001/95/EC - (EMC) Directive 2004/108/EC	-
Laser safety class	-	4	-
OEM lasers are not compliant with	-	IEC60825- 1:2014 (compliant using additional accessories)	-
Country of origin	-	Lithuania	-

<sup>1</sup> The output power of SLM lasers shall not be tuned and SLM performance is not guaranteed at power ratings other than factory preset. However, the power setting capability is not disabled. External attenuators are recommended instead.

<sup>2</sup> The typical SMSR is specified at the clean-up filter transmission window, and the maximum rating is for the clean-up filter blocking range. The clean-up filter is installed as an output window in the standard configuration.

<sup>3</sup> 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.

<sup>4</sup> 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.

<sup>5</sup> Noise level is measured with a fast photodiode connected to an oscilloscope. The overall system bandwidth is from 2 kHz to 20 MHz.

<sup>6</sup> The constant-current driver is required. Use of non-suitable driving electronics renders the warranty void in terms of overcurrent or overvoltage events.

<sup>7</sup> It must be implemented externally, based on operating conditions.

<sup>8</sup> It must be implemented externally. The laser has a 10k NTC temperature sensor on-board.

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