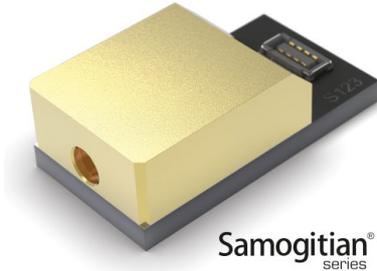




PART NUMBER 0785S-31A
 ITEM NAME 785 NM LASER (DIODE; FREE-SPACE)

PRODUCT DATASHEET

DESCRIPTION



Samogitian
series

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.

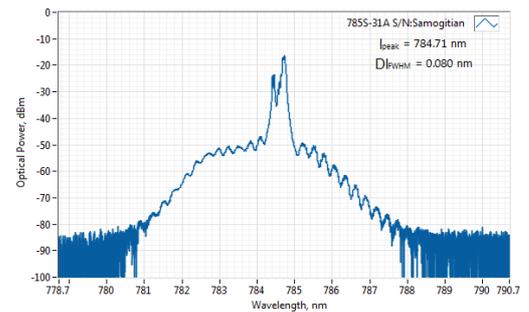
SPECIFICATIONS

Datasheet generated: 2 June 2020

Specification updated: 2 June 2020

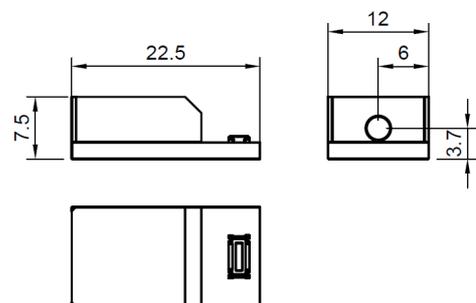
| Parameter | Minimum Value | Typical Value | Maximum Value |
|---|---------------|--------------------------|---------------|
| Central Wavelength, nm | 784.5 | 785 | 785.5 |
| Longitudinal modes | - | Multiple | - |
| Spectral line width FWHM, pm | - | 80 | 120 |
| Output power, mW | - | 700 ¹ | 1000 |
| Side-mode suppression ratio (SMSR), dB | - | 30 ² | 70 |
| 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 | - | Multiple | - |
| Beam Diameter at Aperture (1/e ²), mm | - | 2.2 x 1.1 | - |
| Operation mode | - | ACC (CW) | - |
| Modulation bandwidth, MHz | - | N/A | - |
| Input voltage, VDC | 4.8 | 5 | 5.3 |
| Laser diode driver requirement | - | 2.2A, 1.83V ⁶ | - |
| Dimensions (L-W-H), mm | - | 22.5 x 12 x 7.5 | - |
| 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 ⁷ | - |
| Overheat protection | - | N/A ⁸ | - |
| Storage temperature, °C (non-condensing) | -10 | - | 50 |
| Net weight, kg | - | 0.006 | - |

TYPICAL SPECTRUM



Typical spectrum of 0785S-31A nm diode laser. Measured with 10 pm resolution.

DRAWING



| | | | |
|-----------------------------------|-----|---|----|
| 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 | - | 4 | - |
| OEM lasers are not compliant with | - | IEC60825-1:2014 (compliant using additional accessories) | - |
| Country of origin | - | Lithuania | - |

¹ 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.

² 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.

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.

⁴ 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.

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

⁷ It must be implemented externally, based on operating conditions.

⁸ It must be implemented externally. The laser has an NTC temperature sensor on-board.

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.