



PART NUMBER 0638L-31A
 ITEM NAME 638 NM LASER (MM DIODE; FREE-SPACE)

PRODUCT DATASHEET



DESCRIPTION

High power 638 nm laser with free-space output and broad-spectrum. Suitable laser source for industrial fluorescence applications, red illumination, and sorting applications.

SPECIFICATIONS

Specifications updated: 11 May 2021

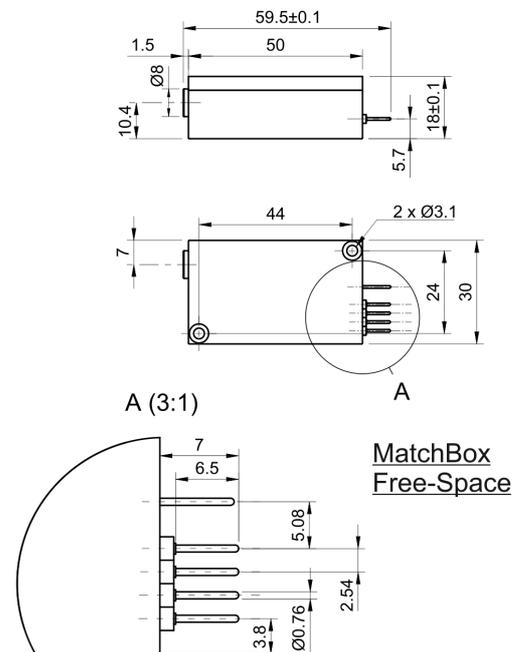
Parameter	Minimum Value	Typical Value	Maximum Value
Central Wavelength, nm	633	638	643
Longitudinal modes	-	Multiple	-
Spectral line width FWHM, nm	0.5	1	2
Output power, mW	-	600 ¹	700
Power stability, % (RMS, 8 hrs)	0.02	0.2 ²	0.5
Power stability, % (peak-to-peak, 8 hrs)	0.1	1 ³	3
Intensity noise, % (RMS, 20 Hz to 20 MHz)	0.1	0.4 ⁴	1
Transversal modes	-	Multiple	-
Control interface type	-	UART ⁵	-
Operation mode	-	APC (CW)	-
Modulation bandwidth, kHz	-	1 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	-
Heat-sinking requirement, °C/W	-	1	-
Optimum heatsink temperature, °C	15	20	30
Warm up time, mins (cold start)	0.1	0.5	1
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	2	10	20

TYPICAL SPECTRUM

Spectrum of 638 nm Laser (MM Diode; Free-Space)

Typical spectrum of 0638 nm diode laser. Measured with 20 pm resolution.

DRAWING



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	-	4	-
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 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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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 Break-out-boxes AM-C8 and AM-C3 can be used for conversion of UART communication to either USB or RS232.

⁶ TTL digital modulation up to 10 MHz.

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.