



PART NUMBER 0830L-44A
 ITEM NAME 830 NM NARROW LINEWIDTH LASER (HP VBG DIODE; MM FIBER)

PRODUCT DATASHEET



DESCRIPTION

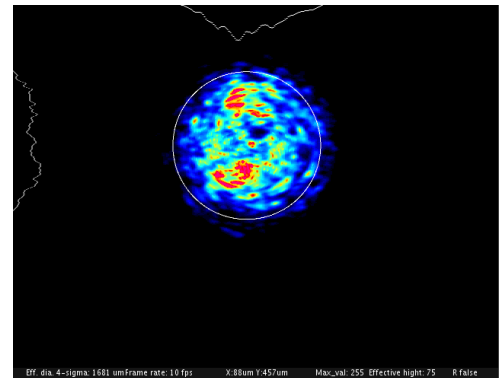
High power, narrow linewidth 830 nm infrared laser of the MatchBox series coupled with multi mode (MM) fiber. These lasers are used as compact and cost effective laser sources for industrial Raman spectroscopy applications. Internal optical power feedback ensures good power stability and On/Off repeatability over the lifetime of the laser.

SPECIFICATIONS

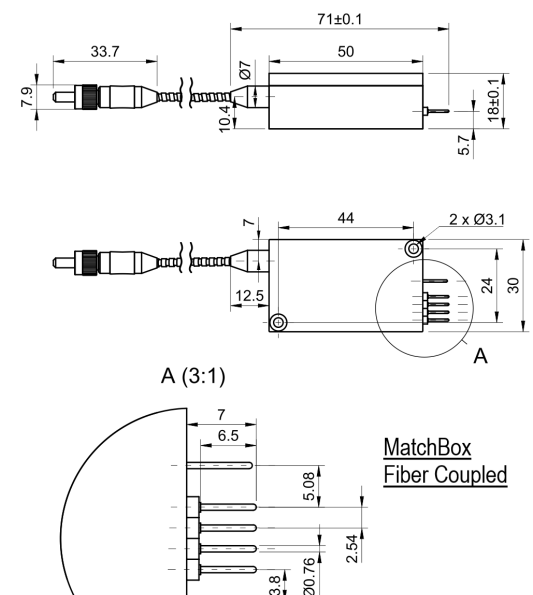
Specifications updated: 30 September 2020

Parameter	Minimum Value	Typical Value	Maximum Value
Central Wavelength, nm	829.7	830	830.3
Longitudinal modes	-	Narrow Spectrum	-
Spectral line width FWHM, pm	-	50	100
Output power, mW	-	350 ¹	500
Power stability, % (RMS, 8 hrs)	0.05	1 ²	2
Power stability, % (peak-to-peak, 8 hrs)	0.1	2 ³	3
Noise, % (RMS, 20 Hz to 20 MHz)	0.05	0.25 ⁴	0.6
Transversal modes	-	Multiple	-
Control interface type	-	UART ⁵	-
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
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

TYPICAL NEAR FIELD



DRAWING



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 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.