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PART NUMBER 1123L-14B ITEM NAME 1123 NM LASER

PRODUCT DATASHEET



DESCRIPTION

Compact 1123 nm laser is a DPSS module used in numerous applications, such as inspection, optical guiding, infrared absorption. This laser is coupled with multimode (MM) fiber. The small size and all-inone concept of the MatchBox series make the laser ready for integration into portable handheld devices. High long-term power stability is ensured by TEC thermal stabilization, as well as thermal and optical feedback.

By default, this type of laser is built with FC/PC connector, but other fiber terminations are available upon request. Details about non-standard connector and the fiber used with it should be discussed with the Integrated Optics sales team.

SPECIFICATIONS

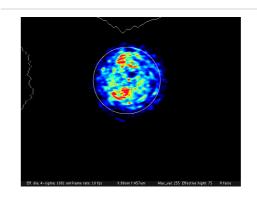
Specifications updated: 29 August 2023

Central wavelength, nm 1122 1123 1124 Longitudinal modes - Multiple - Spectral line width FWHM, nm 0.1 0.7 1 Output power, mW - 160 ¹ - Power stability, % (RMS, 8 hrs) 0.1 0.5 ² 2 Power stability, % (peak-to-peak, 8 hrs) 0.5 2 ³ 3 Intensity noise, % (RMS, 20 Hz to 20 0.5 3 ⁴ 30 MHz) - Multiple - Control interface type - UART ⁵ - Operation mode - APC (CW) - Input voltage, VDC 4.8 5 5.3 External power supply requirement - +5 V DC, 5 A - Dimensions (WxDxH), mm - 50 x 30 x 18 ⁶ - Fiber length, m 0.95 1 1.1 Heat-sinking requirement, °C/W - 0.5 - Optimum heatsink temperature, °C 15 20 30 Warm up time, mins (cold start)	Parameter	Minimum Value	Typical Value	Maximum Value
Spectral line width FWHM, nm 0.1 0.7 1 Output power, mW - 160 ¹ - Power stability, % (RMS, 8 hrs) 0.1 0.5 ² 2 Power stability, % (peak-to-peak, 8 hrs) 0.5 2 ³ 3 Intensity noise, % (RMS, 20 Hz to 20 0.5 3 ⁴ 30 MHz) - Multiple - Control interface type - UART ⁵ - Operation mode - APC (CW) - Input voltage, VDC 4.8 5 5.3 External power supply requirement - +5 V DC, 5 A - Dimensions (WxDxH), mm - 50 x 30 x 18 ⁶ - Fiber length, m 0.95 1 1.1 Heat-sinking requirement, °C/W - 0.5 - Optimum heatsink temperature, °C 15 20 30 Warm up time, mins (cold start) 0.2 1 2 Temperature stabilization - Internal TEC - Overheat protection	Central wavelength, nm	1122	1123	1124
Output power, mW - 160 1	Longitudinal modes	-	Multiple	-
Power stability, % (RMS, 8 hrs) 0.1 0.5 ² 2 Power stability, % (peak-to-peak, 8 hrs) 0.5 2 ³ 3 Intensity noise, % (RMS, 20 Hz to 20 MHz) Multiple - Control interface type - UART ⁵ - Operation mode - Input voltage, VDC 4.8 5 5.3 External power supply requirement - Heat-sinking requirement, °C/W - Optimum heatsink temperature, °C Temperature stabilization Storage temperature, °C (non-condensing) Net weight, kg 0.1 0.5 2 3 Multiple - UART ⁵ - UOS ⁵ - Internal TEC - Overheat protection - Yes - Storage temperature, °C (non-condensing) Net weight, kg 0.1 0.12 0.14 Max. power consumption, W	Spectral line width FWHM, nm	0.1	0.7	1
Power stability, % (peak-to-peak, 8 hrs) 0.5 2 ³ 3 Intensity noise, % (RMS, 20 Hz to 20 MHz) 0.5 3 ⁴ 30 Transversal modes - Multiple - Control interface type - UART ⁵ - Operation mode - APC (CW) - Input voltage, VDC 4.8 5 5.3 External power supply requirement - +5 V DC, 5 A - Dimensions (WxDxH), mm - 50 x 30 x 18 ⁶ - Fiber length, m 0.95 1 1.1 Heat-sinking requirement, °C/W - 0.5 - Optimum heatsink temperature, °C 15 20 30 Warm up time, mins (cold start) 0.2 1 2 Temperature stabilization - Internal TEC - Overheat protection - Yes - Storage temperature, °C (noncondensing) 0.1 0.12 0.14 Max. power consumption, W 5 10 0.14	Output power, mW	-	160 ¹	-
Intensity noise, % (RMS, 20 Hz to 20 MHz) 0.5 3 4 30 Transversal modes - Multiple - Control interface type - UART 5 - Operation mode - APC (CW) - Input voltage, VDC 4.8 5 5.3 External power supply requirement - +5 V DC, 5 A - Dimensions (WxDxH), mm - 50 x 30 x 18 6 - Fiber length, m 0.95 1 1.1 Heat-sinking requirement, °C/W - 0.5 - Optimum heatsink temperature, °C 15 20 30 Warm up time, mins (cold start) 0.2 1 2 Temperature stabilization - Internal TEC - Overheat protection - Yes - Storage temperature, °C (noncondensing) -10 - 50 Net weight, kg 0.1 0.12 0.14 Max. power consumption, W 5 10 20	Power stability, % (RMS, 8 hrs)	0.1	0.5 ²	2
MHz) Transversal modes - Multiple - Control interface type - UART ⁵ - Operation mode - APC (CW) - Input voltage, VDC 4.8 5 5.3 External power supply requirement - +5 V DC, 5 A - Dimensions (WxDxH), mm - 50 x 30 x 18 ⁶ - Fiber length, m 0.95 1 1.1 Heat-sinking requirement, °C/W - 0.5 - Optimum heatsink temperature, °C 15 20 30 Warm up time, mins (cold start) 0.2 1 2 Temperature stabilization - Internal TEC - Overheat protection - Yes - Storage temperature, °C (non-condensing) - 50 - Net weight, kg 0.1 0.12 0.14 Max. power consumption, W 5 10 20	Power stability, % (peak-to-peak, 8 hrs)	0.5	2 ³	3
Control interface type		0.5	3 4	30
Operation mode - APC (CW) - Input voltage, VDC 4.8 5 5.3 External power supply requirement - +5 V DC, 5 A - Dimensions (WxDxH), mm - 50 x 30 x 18 6 - Fiber length, m 0.95 1 1.1 Heat-sinking requirement, °C/W - 0.5 - Optimum heatsink temperature, °C 15 20 30 Warm up time, mins (cold start) 0.2 1 2 Temperature stabilization - Internal TEC - Overheat protection - Yes - Storage temperature, °C (noncondensing) -10 - 50 Net weight, kg 0.1 0.12 0.14 Max. power consumption, W 5 10 20	Transversal modes	-	Multiple	-
Input voltage, VDC 4.8 5 5.3 External power supply requirement - +5 V DC, 5 A - Dimensions (WxDxH), mm - 50 x 30 x 18 6 - Fiber length, m 0.95 1 1.1 Heat-sinking requirement, °C/W - 0.5 - Optimum heatsink temperature, °C 15 20 30 Warm up time, mins (cold start) 0.2 1 2 Temperature stabilization - Internal TEC - Overheat protection - Yes - Storage temperature, °C (noncondensing) -10 - 50 Net weight, kg 0.1 0.12 0.14 Max. power consumption, W 5 10 20	Control interface type	-	UART ⁵	-
External power supply requirement - +5 V DC, 5 A - Dimensions (WxDxH), mm - 50 x 30 x 18 6 - Fiber length, m 0.95 1 1.1 Heat-sinking requirement, °C/W - 0.5 - Optimum heatsink temperature, °C 15 20 30 Warm up time, mins (cold start) 0.2 1 2 Temperature stabilization - Internal TEC - Overheat protection - Yes - Storage temperature, °C (noncondensing) -10 - 50 Net weight, kg 0.1 0.12 0.14 Max. power consumption, W 5 10 20	Operation mode	-	APC (CW)	-
Dimensions (WxDxH), mm - 50 x 30 x 18 6 - Fiber length, m 0.95 1 1.1 Heat-sinking requirement, °C/W - 0.5 - Optimum heatsink temperature, °C 15 20 30 Warm up time, mins (cold start) 0.2 1 2 Temperature stabilization - Internal TEC - Overheat protection - Yes - Storage temperature, °C (noncondensing) -10 - 50 Net weight, kg 0.1 0.12 0.14 Max. power consumption, W 5 10 20	Input voltage, VDC	4.8	5	5.3
Fiber length, m 0.95 1 1.1 Heat-sinking requirement, °C/W - 0.5 - Optimum heatsink temperature, °C 15 20 30 Warm up time, mins (cold start) 0.2 1 2 Temperature stabilization - Internal TEC - Overheat protection - Yes - Storage temperature, °C (noncondensing) -10 - 50 Net weight, kg 0.1 0.12 0.14 Max. power consumption, W 5 10 20	External power supply requirement	-	+5 V DC, 5 A	-
Heat-sinking requirement, °C/W - 0.5 - Optimum heatsink temperature, °C 15 20 30 Warm up time, mins (cold start) 0.2 1 2 Temperature stabilization - Internal TEC - Overheat protection - Yes - Storage temperature, °C (noncondensing) -10 - 50 Net weight, kg 0.1 0.12 0.14 Max. power consumption, W 5 10 20	Dimensions (WxDxH), mm	-	50 x 30 x 18 ⁶	-
Optimum heatsink temperature, °C 15 20 30 Warm up time, mins (cold start) 0.2 1 2 Temperature stabilization - Internal TEC - Overheat protection - Yes - Storage temperature, °C (noncondensing) -10 - 50 Net weight, kg 0.1 0.12 0.14 Max. power consumption, W 5 10 20	Fiber length, m	0.95	1	1.1
Warm up time, mins (cold start) 0.2 1 2 Temperature stabilization - Internal TEC - Overheat protection - Yes - Storage temperature, °C (noncondensing) -10 - 50 Net weight, kg 0.1 0.12 0.14 Max. power consumption, W 5 10 20	Heat-sinking requirement, °C/W	-	0.5	-
Temperature stabilization - Internal TEC - Overheat protection - Yes - Storage temperature, °C (noncondensing) -10 - 50 Net weight, kg 0.1 0.12 0.14 Max. power consumption, W 5 10 20	Optimum heatsink temperature, °C	15	20	30
Overheat protection - Yes - Storage temperature, °C (noncondensing) -10 - 50 Net weight, kg 0.1 0.12 0.14 Max. power consumption, W 5 10 20	Warm up time, mins (cold start)	0.2	1	2
Storage temperature, °C (noncondensing) -10 - 50 Net weight, kg 0.1 0.12 0.14 Max. power consumption, W 5 10 20	Temperature stabilization	-	Internal TEC	-
Condensing) 0.1 0.12 0.14 Max. power consumption, W 5 10 20	Overheat protection	-	Yes	-
Max. power consumption, W 5 10 20		-10	-	50
	Net weight, kg	0.1	0.12	0.14
Warranty, months (op. hrs) - 14 (10000) 7 -	Max. power consumption, W	5	10	20
	Warranty, months (op. hrs)	-	14 (10000) ⁷	-

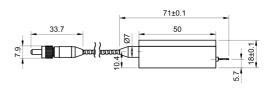
TYPICAL SPECTRUM

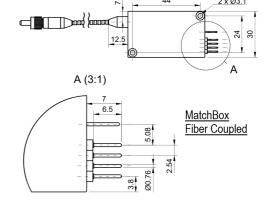
Spectrum of 1123 nm Laser
Typical spectrum of 1123 nm DPSS laser. Measured with 20 pm resolution.

TYPICAL NEAR FIELD



DRAWING





RoHS -	Yes -	
CE compliance -	- General - Product Safety Directive (GPSD) 2001/95/EC - (EMC) Directive 2004/108/EC	
Laser safety class -	3В -	
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,

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

evers one man record 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.

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 Noise level is measured with a fast photodiode connected to an oscilloscope. The overall system bandwidth is from

² kHz to 20 MHz.

⁵Break-out-boxes AM-C8 and AM-C3 can be used for conversion of UART communication to either USB or RS232.

 $^{^{\}rm 6}\,\rm Excluding$ control interface pins and an output window/fiber assembly.

⁷ Whichever occurs first. The laser has an integrated operational hours counter.