

Integrated Optics, UAB Company code: 302833442 VAT No: LT100007179012 https://integratedoptics.com info@integratedoptics.com



PART NUMBER 1064L-16B ITEM NAME 1064 NM LASER (DPSS; SMA PORT)

PRODUCT DATASHEET

1064 nm MatchBotts

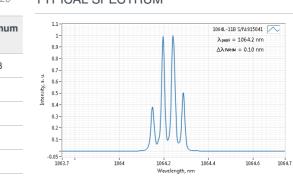
DESCRIPTION

1064 nm laser with SMA output is a very compact high performance laser source for multimode fiber installations. Fiber could be supplied optionally.

SPECIFICATIONS

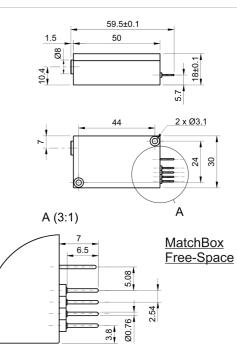
Specifications updated: 17 August 2020

TYPICAL SPECTRUM



Typical spectrum of 1064 nm DPSS laser. Measured with 20 pm resolution.

DRAWING



Parameter Minimum Value Typical Value Maximur Value Central Wavelength, nm 1063.7 1064 1064.3 Longitudinal modes - Multiple - Spectral line width FWHM, nm 0.02 0.1 0.5 Output power, mW - 400 ¹ 500 Fiber coupling efficiency, % 50 70 ² 80 Fiber core diameter, ILm 50 105 200 Power stability, % (RMS, 8 hrs) 0.02 0.1 ³ 0.4 Power stability, % (Reak-to-peak, 8 hrs) 0.1 0.5 ⁴ 1.5 Noise, % (RMS, 20 Hz to 20 MHz) 0.5 3 ⁵ 30 Transversal modes - Multiple - Control interface type - UART ⁶ - Operation mode - APC (CW) - Modulation bandwidth, MHz - N/A ⁷ - Input voltage, VDC 4.8 5 5.3 External power supply requirement - +5 V DC, 5 A -				
Longitudinal modes - Multiple - Spectral line width FWHM, nm 0.02 0.1 0.5 Output power, mW - 400 ¹ 500 Fiber coupling efficiency, % 50 70 ² 80 Fiber core diameter, ILm 50 105 200 Power stability, % (RMS, 8 hrs) 0.02 0.1 ³ 0.4 Power stability, % (peak-to-peak, 8 hrs) 0.1 0.5 ⁴ 1.5 Noise, % (RMS, 20 Hz to 20 MHz) 0.5 3 ⁵ 30 Transversal modes - Multiple - Control interface type - UART ⁶ - Operation mode - APC (CW) - Modulation bandwidth, MHz - N/A ⁷ - Input voltage, VDC 4.8 5 5.3 External power supply requirement - +5 V DC, 5 A - Dimensions, mm - 50 × 30 × 18 ⁸ - Heat-sinking requirement, °C/W - 0.5 - Optimum he	Parameter		Typical Value	Maximum Value
Spectral line width FWHM, nm 0.02 0.1 0.5 Output power, mW - 400 1 500 Fiber coupling efficiency, % 50 70 2 80 Fiber core diameter, ÎLm 50 105 200 Power stability, % (RMS, 8 hrs) 0.02 0.1 3 0.4 Power stability, % (peak-to-peak, 8 hrs) 0.1 0.5 4 1.5 Noise, % (RMS, 20 Hz to 20 MHz) 0.5 3 5 30 Transversal modes - Multiple - Control interface type - UART 6 - Operation mode - APC (CW) - Modulation bandwidth, MHz - N/A 7 - Input voltage, VDC 4.8 5 5.3 External power supply requirement - +5 V DC, 5 A - Dimensions, mm - 50 x 30 x 18 8 - Heat-sinking requirement, °C/W - 0.5 - Optimum heatsink temperature, °C 15 20 30 Warm up time, m	Central Wavelength, nm	1063.7	1064	1064.3
Output power, mW - 400 1 500 Fiber coupling efficiency, % 50 70 2 80 Fiber core diameter, ILm 50 105 200 Power stability, % (RMS, 8 hrs) 0.02 0.1 3 0.4 Power stability, % (peak-to-peak, 8 hrs) 0.1 0.5 4 1.5 Noise, % (RMS, 20 Hz to 20 MHz) 0.5 3 5 30 Transversal modes - Multiple - Control interface type - UART 6 - Operation mode - APC (CW) - Modulation bandwidth, MHz - N/A 7 - Input voltage, VDC 4.8 5 5.3 External power supply requirement - +5 V DC, 5 A - Dimensions, mm - 50 x 30 x 18 8 - 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 stabi	Longitudinal modes	-	Multiple	-
Fiber coupling efficiency, % 50 70 ² 80 Fiber core diameter, ILm 50 105 200 Power stability, % (RMS, 8 hrs) 0.02 0.1 ³ 0.4 Power stability, % (peak-to-peak, 8 hrs) 0.1 0.5 ⁴ 1.5 Noise, % (RMS, 20 Hz to 20 MHz) 0.5 3 ⁵ 30 Transversal modes - Multiple - Control interface type - UART ⁶ - Operation mode - APC (CW) - Modulation bandwidth, MHz - N/A ⁷ - Input voltage, VDC 4.8 5 5.3 External power supply requirement - +5 V DC, 5 A - Dimensions, mm - 50 x 30 x 18 ⁸ - 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 -	Spectral line width FWHM, nm	0.02	0.1	0.5
Fiber core diameter, ÎLm 50 105 200 Power stability, % (RMS, 8 hrs) 0.02 0.1 ³ 0.4 Power stability, % (RMS, 8 hrs) 0.1 0.5 ⁴ 1.5 Noise, % (RMS, 20 Hz to 20 MHz) 0.5 3 ⁵ 30 Transversal modes - Multiple - Control interface type - UART ⁶ - Operation mode - APC (CW) - Modulation bandwidth, MHz - N/A ⁷ - Input voltage, VDC 4.8 5 5.3 External power supply requirement - +5 V DC, 5 A - Dimensions, mm - 50 × 30 × 18 ⁸ - 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 - 50	Output power, mW	-	400 ¹	500
Power stability, % (RMS, 8 hrs)0.020.1 30.4Power stability, % (peak-to-peak, 8 hrs)0.10.5 41.5Noise, % (RMS, 20 Hz to 20 MHz)0.53 530Transversal modes-Multiple-Control interface type-UART 6-Operation mode-APC (CW)-Modulation bandwidth, MHz-N/A 7-Input voltage, VDC4.855.3External power supply requirement-50 x 30 x 18 8-Dimensions, mm-50 x 30 x 18 8-Heat-sinking requirement, °C/W-0.5-Optimum heatsink temperature, °C152030Warm up time, mins (cold start)0.212Temperature stabilization-Internal TEC-Overheat protection-Yes-50Storage temperature, °C (non-condensing)-10-50	Fiber coupling efficiency, %	50	70 ²	80
Power stability, % (peak-to-peak, 8 hrs)0.10.51.5Noise, % (RMS, 20 Hz to 20 MHz)0.53 530Transversal modes-Multiple-Control interface type-UART 6-Operation mode-APC (CW)-Modulation bandwidth, MHz-N/A 7-Input voltage, VDC4.855.3External power supply requirement-+5 V DC, 5 A-Dimensions, mm-50 x 30 x 18 8-Heat-sinking requirement, °C/W-0.5-Optimum heatsink temperature, °C152030Warm up time, mins (cold start)0.212Temperature stabilization-Internal TEC-Overheat protection-Yes-50Storage temperature, °C (non-condensing)-10-50	Fiber core diameter, ÎĽm	50	105	200
Noise status, if (prover prove p	Power stability, % (RMS, 8 hrs)	0.02	0.1 ³	0.4
Transversal modes-Multiple-Control interface type-UART 6-Operation mode-APC (CW)-Modulation bandwidth, MHz-N/A 7-Input voltage, VDC4.855.3External power supply requirement-+5 V DC, 5 A-Dimensions, mm-50 x 30 x 18 8-Heat-sinking requirement, °C/W-0.5-Optimum heatsink temperature, °C152030Warm up time, mins (cold start)0.212Temperature stabilization-Internal TEC-Overheat protection-Yes-50Storage temperature, °C (non-condensing)-10-50	Power stability, % (peak-to-peak, 8 hrs)	0.1	0.5 ⁴	1.5
Control interface type-UART 6-Operation mode-APC (CW)-Modulation bandwidth, MHz-N/A 7-Input voltage, VDC4.855.3External power supply requirement-+5 V DC, 5 A-Dimensions, mm-50 x 30 x 18 8-Heat-sinking requirement, °C/W-0.5-Optimum heatsink temperature, °C152030Warm up time, mins (cold start)0.212Temperature stabilization-Internal TEC-Overheat protection-Yes-Storage temperature, °C (non-condensing)-10-50	Noise, % (RMS, 20 Hz to 20 MHz)	0.5	3 ⁵	30
Operation mode-APC (CW)-Modulation bandwidth, MHz-N/A 7-Input voltage, VDC4.855.3External power supply requirement-+5 V DC, 5 A-Dimensions, mm-50 x 30 x 18 8-Heat-sinking requirement, °C/W-0.5-Optimum heatsink temperature, °C152030Warm up time, mins (cold start)0.212Temperature stabilization-Internal TEC-Overheat protection-Yes-Storage temperature, °C (non-condensing)-10-50	Transversal modes	-	Multiple	-
Modulation bandwidth, MHz-N/A 7-Input voltage, VDC4.855.3External power supply requirement-+5 V DC, 5 A-Dimensions, mm-50 x 30 x 18 8-Heat-sinking requirement, °C/W-0.5-Optimum heatsink temperature, °C152030Warm up time, mins (cold start)0.212Temperature stabilization-Internal TEC-Overheat protection-Yes-Storage temperature, °C (non-condensing)-10-50	Control interface type	-	UART ⁶	-
Input voltage, VDC4.855.3External power supply requirement-+5 V DC, 5 A-Dimensions, mm-50 x 30 x 18 ⁸ -Heat-sinking requirement, °C/W-0.5-Optimum heatsink temperature, °C152030Warm up time, mins (cold start)0.212Temperature stabilization-Internal TEC-Overheat protection-Yes-Storage temperature, °C (non-condensing)-10-50	Operation mode	-	APC (CW)	-
External power supply requirement-+5 V DC, 5 A-Dimensions, mm-50 x 30 x 18 ⁸ -Heat-sinking requirement, °C/W-0.5-Optimum heatsink temperature, °C152030Warm up time, mins (cold start)0.212Temperature stabilization-Internal TEC-Overheat protection-Yes-Storage temperature, °C (non-condensing)-10-50	Modulation bandwidth, MHz	-	N/A ⁷	-
Dimensions, mm-50 x 30 x 18 8 -Heat-sinking requirement, °C/W-0.5-Optimum heatsink temperature, °C152030Warm up time, mins (cold start)0.212Temperature stabilization-Internal TEC-Overheat protection-Yes-Storage temperature, °C (non-condensing)-10-50	Input voltage, VDC	4.8	5	5.3
Heat-sinking requirement, °C/W-0.5-Optimum heatsink temperature, °C152030Warm up time, mins (cold start)0.212Temperature stabilization-Internal TEC-Overheat protection-Yes-Storage temperature, °C (non-condensing)-10-50	External power supply requirement	-	+5 V DC, 5 A	-
Optimum heatsink temperature, °C152030Warm up time, mins (cold start)0.212Temperature stabilization-Internal TEC-Overheat protection-Yes-Storage temperature, °C (non-condensing)-10-50	Dimensions, mm	-	50 x 30 x 18 ⁸	-
Warm up time, mins (cold start)0.212Temperature stabilization-Internal TEC-Overheat protection-Yes-Storage temperature, °C (non- condensing)-10-50	Heat-sinking requirement, °C/W	-	0.5	-
Temperature stabilization - Internal TEC - Overheat protection - Yes - Storage temperature, °C (non-condensing) -10 - 50	Optimum heatsink temperature, °C	15	20	30
Overheat protection - Yes - Storage temperature, °C (non- condensing) -10 - 50	Warm up time, mins (cold start)	0.2	1	2
Storage temperature, °C (non10 - 50 condensing)	Temperature stabilization	-	Internal TEC	-
condensing)	Overheat protection	-	Yes	-
Net weight, kg 0.1 0.12 0.14		-10	-	50
	Net weight, kg	0.1	0.12	0.14

Max. power consumption, W	5	10	20
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	-	3B	-
OEM lasers are not compliant with	-	IEC60825- 1:2014 (compliant using additional accessories)	-

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.

²Output power is heavily dependent on fiber insertion repeatability.

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 Break-out-boxes AM-C8 and AM-C3 can be used for conversion of UART communication to either USB or RS232.
⁷ Modulation of DPSS lasers is limited to a few kHz by physics. Therefore we recommend to modulate the laser by sending commands through UART interface. The TTL pin of DPSS lasers is configured to provide PWM signal for control of fan speed instead of modulation.

⁸ Excluding control interface pins and an output window/fiber assembly.

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.