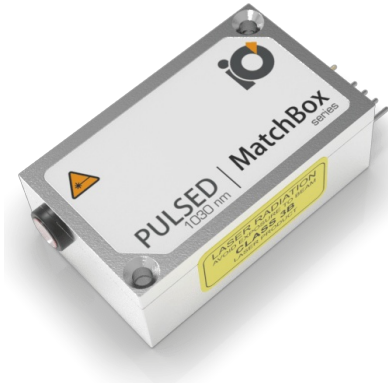




PART NUMBER 1030L-21C
 ITEM NAME 1029 NM NANOSECOND SLM LASER (PASSIVE Q-SWITCH;
 FREE-SPACE)

PRODUCT DATASHEET



DESCRIPTION

1029 nm nanosecond SLM laser module is a turnkey laser featuring single-frequency operation in a very compact package. True SLM operation (each pulse is emitted in the same longitudinal mode) ensures high pulse-to-pulse stability, low jitter, and extremely stable harmonic generation. High pulse energy and pulse-on-demand operation make this laser suitable for sorting, illumination, and pump-probe spectroscopy applications.

Other potential applications of this laser are:

- seeding high power fiber lasers
- seeding optical parametric amplifiers
- supercontinuum generation
- UV generation

Current configurations in production:

Variant	Pulse duration, ns	Pulse energy, μJ	Peak power, kW	Repetition rate, kHz
1	1.5	60	40	3
2	2.4	30	12	10
3	3.5	15	4	35

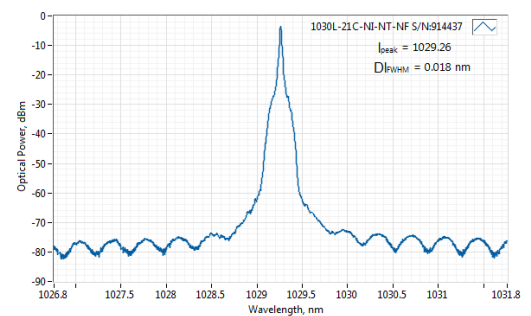
**Other parameters can be developed based on customer specifications. Please refer to the table below for possible parameter ranges.*

SPECIFICATIONS

Specifications updated: 1 October 2020

Parameter	Minimum Value	Typical Value	Maximum Value
Central Wavelength, nm	1029	1029.5	1030
Longitudinal modes	-	Single	-
Spectral line width FWHM, pm	0.5	0.8 ¹	1
Output power, mW	-	As per request	300
Central wavelength stability, pm (per hour, at stable body temperature)	-	1	2
Pulse duration, ns	1.5	3	10
Repetition rate, kHz (depending on pulse energy)	-	As per request	35
Pulse energy, μJ	-	As per request	35
Power stability, % (RMS, 8 hrs)	-	0.5 ²	1
Pulse-to-pulse stability, % RMS	-	2	5
Transversal modes	-	TEM ₀₀	-
Beam width (1/e ²), mm	-	1.2 ³	-
Beam height (1/e ²), mm	-	1.1	-
Horizontal beam divergence, mrad	-	1	-

TYPICAL SPECTRUM



Typical spectrum of 1030 nm passive Q-Switch DPSS laser. Measured with 20 pm resolution.

Vertical beam divergence, mrad	-	1	-
M ² effective	-	1.1	1.2
Polarization direction	-	Horizontal ⁴	-
Polarization contrast	-	better than 500:1	-
Control interface type	-	UART ⁵	-
Operation mode	-	APC (CW)	-
Input voltage, VDC	-	5	-
External power supply requirement	-	+5 V DC, 5A	-
Dimensions (L-W-H), mm	-	50 x 30 x 18 ⁶	-
Beam height from the base, mm	-	10.4	-
Heat-sinking requirement, °C/W	-	<0.5	-
Optimum heatsink temperature, °C	-	20	-
Warm up time, mins (cold start)	-	10	-
Temperature stabilization	-	Internal TEC	-
Overheat protection	-	Yes	-
Storage temperature, °C (non-condensing)	-	-	-
Net weight, kg	-	0.29	-
Max. power consumption, W	-	25	-
Warranty, months (op. hrs)	-	14 (10000) ⁷	-
RoHS	-	Yes	-
CE compliance	-	- General Product Safety Directive (GPSD) 2001/95/EC - (EMC) Directive 2004/108/EC	-

Laser Safety Class	-	3B	-
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OEM lasers are not compliant with	-	IEC60825-1:2014 (compliant using additional accessories)	-
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¹ Measured with a scanning Fabry-Perot interferometer having 7.5 Mhz resolution, with scanning frequency of about 10 Hz. Interferometer testing is not provided for each laser being manufactured, the standard test is OSA measurement with 10-20 pm resolution instead.

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 Beam width and height are measured at 0.45 m from output aperture.

⁴ For lasers without integrated optical isolators.

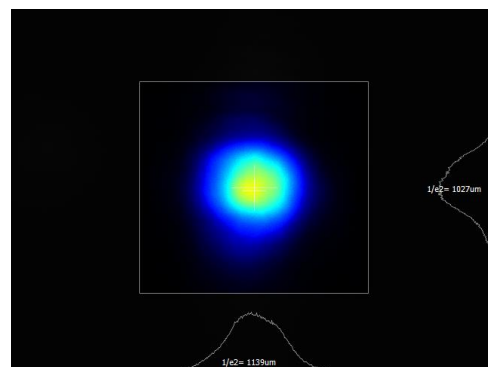
⁵ Break-out-boxes AM-C8 and AM-C3 can be used for conversion of UART communication to either USB or RS232.

⁶ Excluding control interface pins and an output window/fiber assembly.

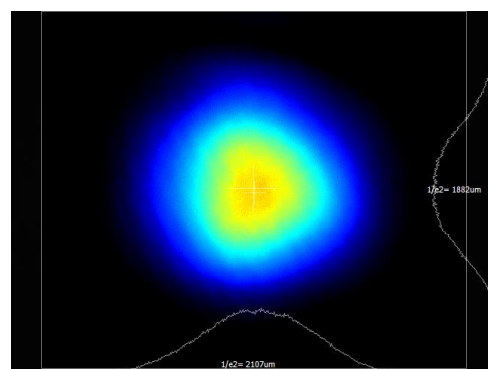
⁷ Whichever occurs first. The laser has an integrated operational hours counter.

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

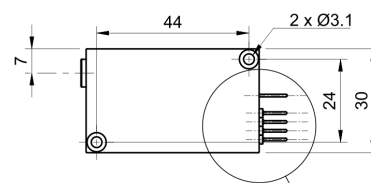
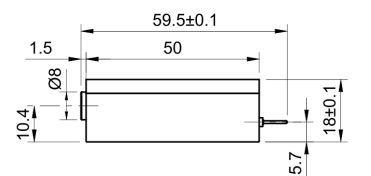
TYPICAL NEAR FIELD



TYPICAL FAR FIELD

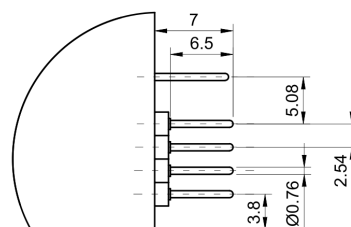


DRAWING



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A



MatchBox
Free-Space