

## Arktis Laser Product Datasheet

### LQS-1053 Passively Q-Switched Laser System



#### Series Specifications:

Nominal Wavelength	1053 nm
Output Type	Q-Switched
Laser Source Type	DPSS

#### Overview:

The LQS-1053 Series of Diode-Pumped Solid-State (DPSS) Q-Switched Lasers are ideal for applications requiring a very high peak power or short pulse duration at 1053 nm.

These lasers are commonly used for Raman spectroscopy, material processing, and a broad range of other applications. The driver is available as a plug-and-play benchtop system or an O.E.M. component designed for system integration.

#### Key Features:

- Pulse energy of 10  $\mu$ J - 50  $\mu$ J
- Pulse repetition rate of 1 Hz - 5 kHz
- Pulse duration in the range of 6-10 ns
- Air cooled
- Runs on standard AC power (85 - 264 V, 47 - 63 Hz)
- 10,000 hour maintenance-free operating life (Expected)
- FDA/CDRH compliant Class IV enclosure

#### Package Includes:

- Laser Head
- Driver/Power Supply
- Power Cable
- BNC Connector (LabSpec models only)
- Keys, Safety Interlock
- Hard-shell Carrying Case

## Specifications:

This spec sheet has been generated specifically for part number QA5-M, per your request, and data for the entire series is also displayed for your reference. The specs which are specific to QA5-M have been highlighted below in **red + bold**.

Output Power (mW)	<b>&gt;50, &gt;100</b>	>150, >250
Single Pulse Energy (μJ)	<b>10, 20</b>	30, 50
Optimal Pulse Frequency (Hz)	<b>5000</b>	5000
Output Power Stability (%RMS/4h)	<b>&lt;1, &lt;3, &lt;5, &lt;10</b>	<1, <3, <5, <10
Central Wavelength (nm)	<b>1053.3</b>	1053.3
Wavelength Tolerance (+/- nm)	<b>1</b>	1
Divergence (mrad, full angle)	<b>&lt;1.5</b>	<2
Beam Dimensions (mm, 1/e <sup>2</sup> )	<b>1.5</b>	3
Warm-up Time (minutes)	<b>10</b>	10
Avg. Pulse Duration (ns)	<b>10</b>	10
Approximate Peak Power (W)	<b>1500</b>	3000, 10000
Optical Noise Amplitude (%RMS @ 20 Hz - 20 MHz)	<b>&lt;20</b>	<20
M <sup>2</sup>	<b>&lt;1.2</b>	<1.5
Beam Pointing Stability (mrad)	<b>&lt;0.05</b>	<0.05
Operating Temperature Range (°C)	<b>10 to 35</b>	10 to 35
Max. TTL Modulation Freq. (Hz)	<b>20000</b>	20000
Minimum Pulsing Frequency (Hz)	<b>1</b>	1
Modulation Input Signal	<b>0-5 VDC</b>	0-5 VDC
Total Power Consumption (W)	<b>25</b>	80
Max. Power Input Duty Cycle	<b>100%</b>	100%
Standard Warranty (months)	<b>12</b>	12
MTTF (operational hours)	<b>10000</b>	10000
Weight of Product or Laser Head (kg)	<b>0.6</b>	0.9
Beam Height from Base Plate (mm)	<b>24.8</b>	29
Dimensions of Product or Laser Head (mm)	<b>140.8 (l) x 73 (w) x 46.2 (h)</b>	155 (l) x 77 (w) x 60 (h)

CW: All specifications are based on performance at full output power and after the specified warmup period. Output characteristics may change if the

laser is run at a different power level.

Q-Switched: Specifications are based on the laser pulsing at the specified design frequency. Output characteristics may change if the laser is run at a different frequency.

**Specifications Page 2:**


Laser Form Factor		
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CW: All specifications are based on performance at full output power and after the specified warmup period. Output characteristics may change if the laser is run at a different power level.


Q-Switched: Specifications are based on the laser pulsing at the specified design frequency. Output characteristics may change if the laser is run at a different frequency.

## Power Supply Options:

These lasers are available with several different power supply options. The model that you have selected is highlighted below, and any other options are shown for easy reference.

	Power Supply Type:	<b>OM</b>
	Input Power	<b>85v to 264v</b>
	Power Supply Weight (kg)	<b>0.2</b>
	Dimensions (mm)	<b>100 (l) x 60 (w) x 56 (h)</b>

	Power Supply Type:	<b>FM</b>	<b>FH</b>
	Input Power	85v to 264v	85v to 264v
	Power Supply Weight (kg)	1.5	2.6
	Dimensions (mm)	154 (l) x 155 (w) x 95 (h)	268 (l) x 145 (w) x 106 (h)

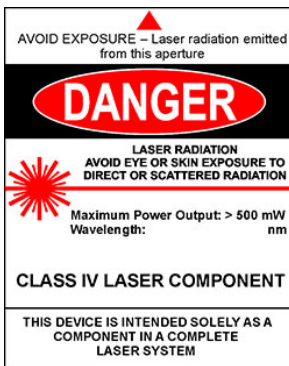
	Power Supply Type:	<b>SM</b>	<b>SH</b>
	Input Power	85v to 264v	85v to 264v
	Power Supply Weight (kg)	1.2	2.3
	Dimensions (mm)	133 (l) x 130 (w) x 65 (h)	238 (l) x 146 (w) x 102 (h)

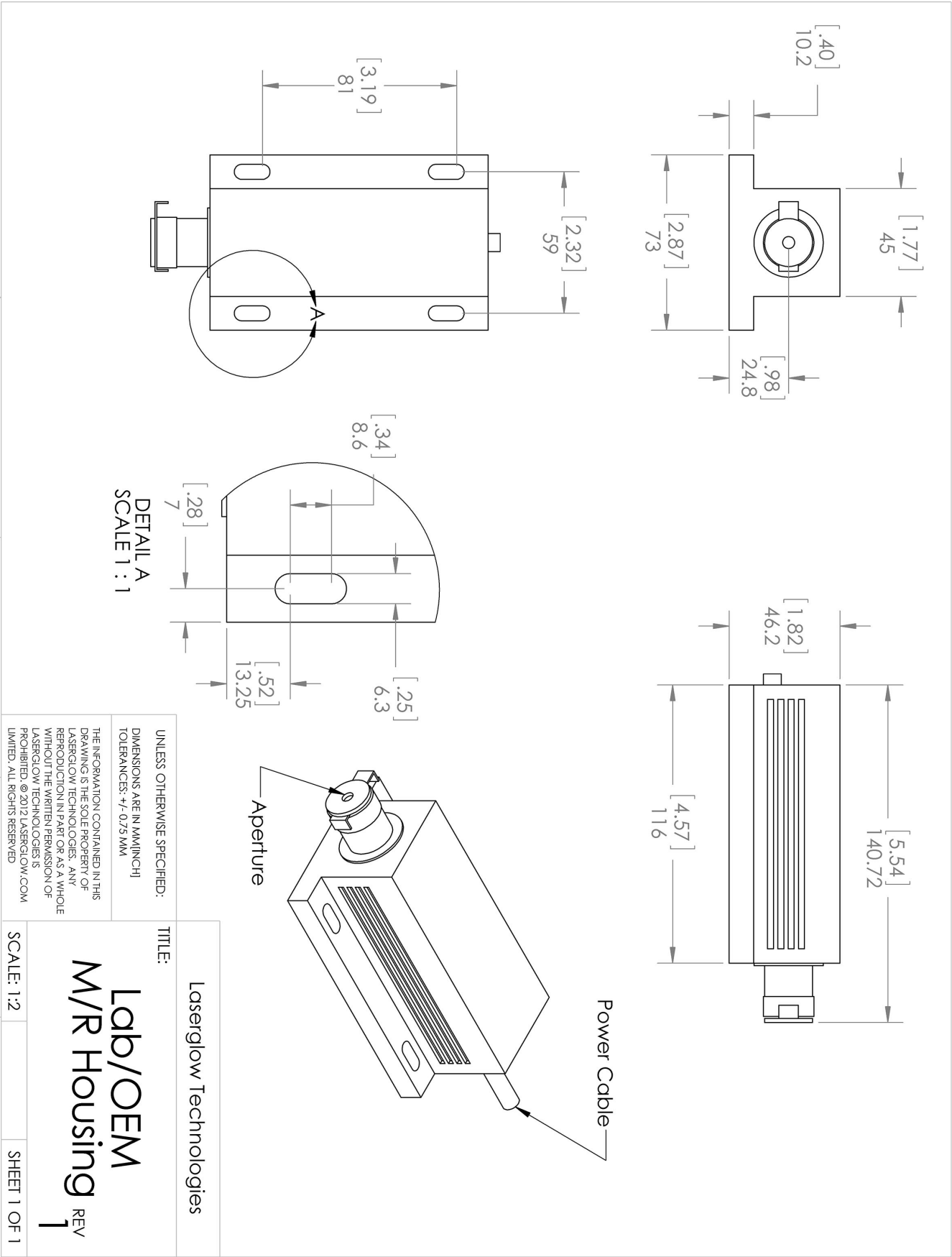
\*Power supply may not be exactly as shown, see dimensional drawings on next 2 pages.

\*Dimensions for fiber-integrated (I\_) include laser head packaged inside.

## Regulatory Classification:







The model you have selected (QA5-M) requires the following safety label(s):





## Accessories:

The most popular accessories for model QA5-M are shown below. For additional details regarding these or other accessories please see our website or contact us directly.

Part Number	Description	
 AGFA647XX	LSG-1064-NF-7 Fit-Over Safety Goggles 1064nm Output: OD 7+ at 950-1070 nm CE Certified Full Details: <a href="http://www.arktislaser.com/AGF">www.arktislaser.com/AGF</a>	
 ACFMIRHXA	FC/PC Fiber Coupler/Collimator for IR wavelengths (1000 to 1300 nm) (installed and aligned) 11mm diameter input lens Full Details: <a href="http://www.arktislaser.com/ACF">www.arktislaser.com/ACF</a>	
 ACSMIRHXA	SMA-905 Fiber Coupler/Collimator for IR wavelengths (1000 to 1300 nm) (installed and aligned) 11mm diameter input lens Full Details: <a href="http://www.arktislaser.com/ACS">www.arktislaser.com/ACS</a>	
 AFF2002XX	Armored Fiber With FC/PC Connectors 200um Core Multimode 2m length Full Details: <a href="http://www.arktislaser.com/AFF">www.arktislaser.com/AFF</a>	
 AFS2002XX	Armored Fiber With SMA 905 Connectors 200um Core Multimode 2 m length Full Details: <a href="http://www.arktislaser.com/AFS">www.arktislaser.com/AFS</a>	
 ACALBMXXX	Carrying Case-102 Holds Lab/OEM M, R and S size, standard or LabSpec laser Full Details: <a href="http://www.arktislaser.com/ACA">www.arktislaser.com/ACA</a>	Included With Laser

## FOR MORE INFORMATION PLEASE CONTACT:

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E&OE: Data included in this sheet may be subject to change without notice.

Please confirm critical specifications with our staff prior to ordering.