

## LQS-1053 Passively Q-Switched Laser System

**Laserglow Part Number:**  
**QA50503SX**



### Similar Products:

For information about the other lasers in this product family visit:

<http://www.laserglow.com/QA5>

### Ordering:

Order Online Now or Request Quote:

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### 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 QA50503SX, per your request, and data for the entire series is also displayed for your reference. The specs which are specific to QA50503SX have been highlighted below in **red + bold**.

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

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:

This spec sheet has been generated specifically for part number QA50503SX, per your request, and data for the entire series is also displayed for your reference. The specs which are specific to QA50503SX have been highlighted below in **red + bold**.


|                   |  |  |
|-------------------|--|--|
| Laser Form Factor |  |  |
|-------------------|--|--|


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

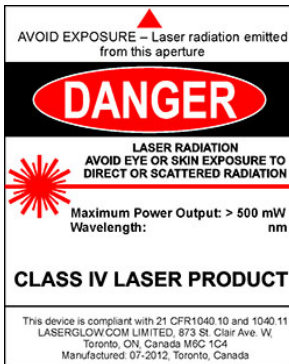
|   |                          |                            |                             |
|---|--------------------------|----------------------------|-----------------------------|
|  | Power Supply Type:       | <b>SM</b>                  | <b>SH</b>                   |
|   | Input Power              | 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:

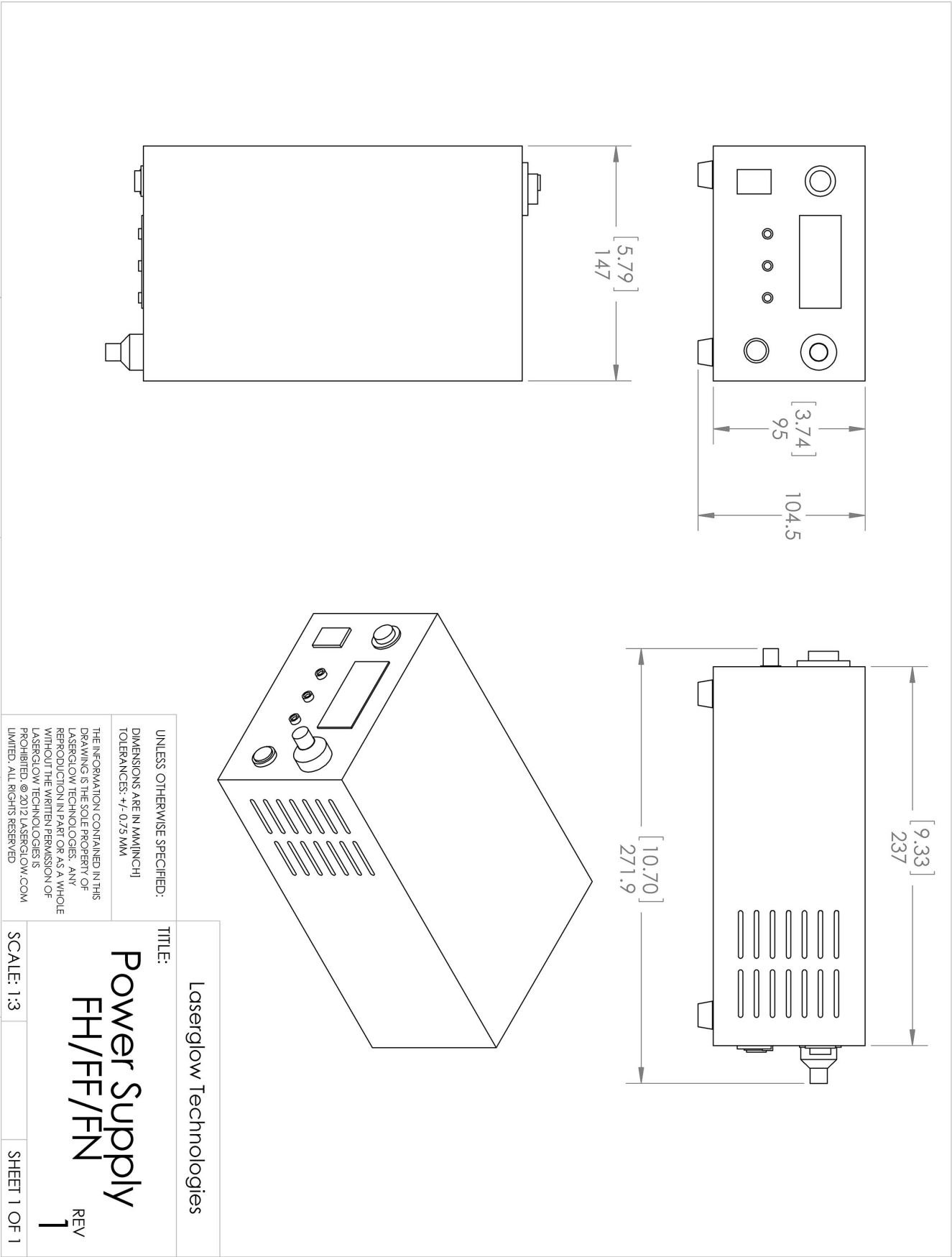
The model you have selected (QA50503SX) requires the following safety label(s):



### Dimensional Drawing - Laser Form Factor: H:









Dimensional Drawing - Power Supply Form Factor: FH:



## Accessories:

The most popular accessories for model QA50503SX are shown below. For additional details regarding these or other accessories please see our website or contact us directly.

| Part Number  | Description   |                     |
|--|---|---------------------|
| <br>AGFA647XX    | LSG-1064-NF-7 Fit-Over Safety Goggles 1064nm<br>Output: OD 7+ at 950-1070 nm<br>CE Certified<br>Full Details: <a href="http://www.laserglow.com/AGF">www.laserglow.com/AGF</a>                              |                     |
| <br>ACFMIRHXA   | FC/PC Fiber Coupler/Collimator for IR wavelengths (1000 to 1300 nm) (installed and aligned)<br>11mm diameter input lens<br>Full Details: <a href="http://www.laserglow.com/ACF">www.laserglow.com/ACF</a>   |                     |
| <br>ACSMIRHXA   | SMA-905 Fiber Coupler/Collimator for IR wavelengths (1000 to 1300 nm) (installed and aligned)<br>11mm diameter input lens<br>Full Details: <a href="http://www.laserglow.com/ACS">www.laserglow.com/ACS</a> |                     |
| <br>AFF2002XX   | Armored Fiber With FC/PC Connectors 200um Core Multimode 2m length<br>Full Details: <a href="http://www.laserglow.com/AFF">www.laserglow.com/AFF</a>  |                     |
| <br>AFS2002XX | Armored Fiber With SMA 905 Connectors 200um Core Multimode 2 m length<br>Full Details: <a href="http://www.laserglow.com/AFS">www.laserglow.com/AFS</a>   |                     |
| <br>ACALBHFXX | Carrying Case-103<br>Holds Lab/OEM H, F and O size Standard/LabSpec laser<br>Full Details: <a href="http://www.laserglow.com/ACA">www.laserglow.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.