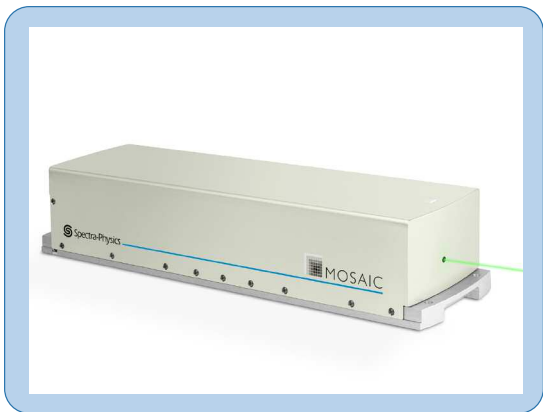


Mosaic™ 532-11 Lasers

ALL-IN-ONE 11 W, 532 nm Q-SWITCHED LASERS



The Mosaic Advantage

- Reliable design and manufacture for high uptime
- Gantry friendly, all-in-one design combines power supply and laser into a single, compact enclosure
- Short pulse width and high peak power
- Lower cost of ownership and double diode life
- E-Pulse™ programmable pulse energy
- Data logging and product traceability over the life of the laser
- Excellent product value and low cost per watt

APPLICATIONS

- Scribing of thin film solar cell layers
- Ablating material on PCBs and PCB structuring
- Ceramic scribing
- De-flashing electronic package leads
- Silicon wafer marking
- c-Si solar cell edge isolation



The Spectra-Physics Mosaic laser pulls together all the pieces by uniting an array of proprietary technologies and solutions into an innovative new platform to address market pressure for greater efficiency and lower cost.

HIGH RELIABILITY

The Mosaic laser is designed specifically for micromachining applications in a 24/7 manufacturing environment, where system uptime is critical. Reliability advantages of Mosaic lasers include:

- Double the industry average diode life
- Field-replaceable laser output window – corrects for burn spots caused by airborne particulates generated from the ablation process
- EternAlign™ optics – rugged laser housing and EternAlign optics eliminate potential damage and optical misalignment resulting from vibration and shipping

With Spectra-Physics' commitment to quality and reliability, Mosaic lasers offer the best in industrial reliability—higher uptime, lower mean time to repair (MTTR), and lower cost of ownership.

OUTSTANDING PERFORMANCE

With shorter pulse widths, Mosaic lasers have higher peak powers resulting in cleaner scribing and less thermal damage to your parts. Mosaic lasers also have excellent near- and far-field beam pointing stability and superior pulse-to-pulse stability translates to more consistent processing results and higher yields.

The integrated E-Pulse™ feature allows users to tailor the overall pulse energy to the specific job on hand.

SIMPLE, ELEGANT DESIGN

The Mosaic laser is smaller than competitive DPSS lasers of similar power. Mosaic lasers have an all-in-one design where the laser and power supply are both integrated into a single enclosure, ensuring simple integration into any machine tool. With its intuitive GUI, comprehensive data log, automated command set and superior design, the Mosaic laser is nearly maintenance free.

Specifications¹

General Characteristics²

Wavelength	532 nm
Power	>11 W at 50 kHz >10 W at 30 kHz
Repetition Rate	0–500 kHz
Pulse Width	<15 ns
Peak Power	11 kW at 50 kHz 22 kW at 30 kHz

Beam Characteristics²

Spatial Mode	TEM ₀₀
M ²	<1.2
Polarization	>100:1, horizontal
Beam Diameter, at waist	0.400 mm ±10%
Beam Divergence, full angle	<2 mrad
Beam Ellipticity	<10%
Boresight Tolerance	±0.5 mm <±1 mrad
Beam Pointing Stability	<±25 μrad/ °C
Pulse-to-Pulse Stability	<3% rms (1σ)
Power Stability (over 8 hours at constant temperature)	±2% for 8 hours peak to peak

Operating Conditions

Warm-up Time (from cold start)	<30 min
Warm-up Time (from warm start)	<15 min
Temperature Range	18–35 °C
Altitude	0–3,000 m
Humidity	8–95%, non-condensing

Non-operating Conditions

Temperature Range	0–50 °C
Altitude, Non-operating	0–12,000 m
Humidity, Non-operating	8–95%, non-condensing

Physical Characteristics

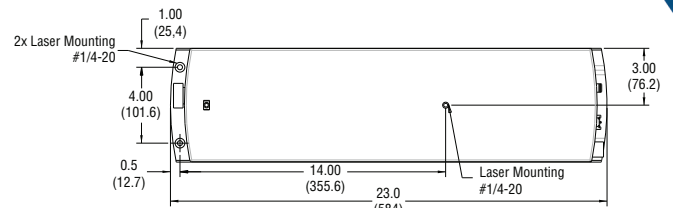
Dimensions (Laser Head) (L x H x W)	23.0 x 6.0 x 4.5 in (584.2 x 152.4 x 114.3 mm)
Weight (Laser Head)	<26 lbs (<12 kg)

Electrical/Mechanical Specifications

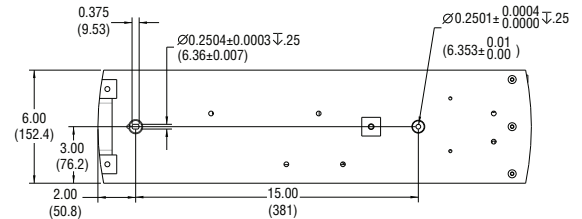
Voltage	100–240 V, ~2.5 A, 50–60 Hz
Power Consumption	<200 W
Water Cooling	Yes
Heat Load	<120 W
Water Temperature (Inlet)	20 °C
Water Flow Rate	1.5 liter per minute at 3 psi
Water Temperature Stability	<±0.1 °C

1. Due to our continuous product improvement, all specifications are subject to change without notice.
2. All specifications are at a repetition rate of 30 kHz unless otherwise specified.

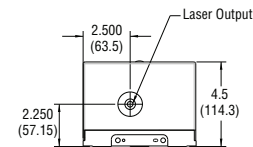
Mosaic Dimensions



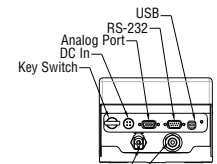
Top View



Bottom View



Front View



Back View

Dimensions in inch (mm)



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