

Model: ZQ2

Max. power 6,000 mW	IP 50	Infrared laser	Integrated active cooling	Manual focus	Serial communication	24 VDC	Mechanical shutter
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High-power laser with thermal management

The structured light laser series ZQ2 was developed for measurement applications, demanding strong and bright lines with an IR wavelength.

The ZQ2 series is the right choice whenever a high output power and industrial-suited design is needed. The right working distance for the application can easily be adjusted with the manual focus.

The laser along with its intelligent monitoring functions enables a high stability in performance also in rough environments. The integrated active cooling system keeps the laser diode at a constant temperature. Due to its communication interfaces (RS-232 & I²C) the laser can be integrated efficiently in a sophisticated machine vision setup.

HIGHLIGHTS

- Infrared (IR)
- Optical output power up to 6,000 mW
- Line optics available
- System integration: optical, thermal & electrical components in an all-in-one case
- External TTL trigger up to 10 kHz
- Various communication interfaces: RS-232 and I²C
- Focus manually adjustable: 100 mm to 10,000 mm
- Graphical user interface

APPLICATIONS

- Machine Vision
- 3D-Measurement
- Metrology
- Road and rail inspection
- Metal inspection

ORDER CODE

Z??	-	Q2	-	?	-	?	-	?
Power		Product name		F = focusable		Wavelength		Optics

SYSTEM SPECIFICATION

Wavelength	nm	808 nm
Wavelength tolerance	nm (typical)	±2,5 nm
Wavelength drift	nm (temperature stabilized, over total operating temperature)	< 1 nm
Output power	mW	≤ 6.000 mW
Spatial mode		Multi Transverse Mode
Pointing stability over temp.	μrad / K	< 15 μrad / K
Emission point height ⁽¹⁾	mm	27 mm
Long-term power stability	(24 h)	< 1 %
Warm-up time	min	< 2 min
Laser operation mode		APC with current limitation, active cooling (TEC)

ELECTRICAL SPECIFICATION

Operating voltage		24 VDC
Operating current	(max. at 25 °C)	< 10 A
Protection		Over temperature protection and LED pre-failure indicator, reverse polarity and transient protection (ESD, burst & surge)
Electrical isolation		Potential-free housing
Connection		Sub-D Stecker, 9-pin
Power consumption		< 225 W
Communication interfaces		I ² C, RS-232
Digital modulation	(TTL)	≤ 10 kHz

OPTICAL SPECIFICATION

Fan angles ⁽²⁾	Degrees	10°, 20°, 30°, 45°, 60°, 75°, 90° (homogeneous line profile)
Line straightness ⁽³⁾	% (of line length)	< 0.1 % ⁽⁵⁾
Line uniformity ⁽⁴⁾	% (typical)	< 25 % ⁽⁵⁾
Focus range	mm	100 mm up to 10,000 mm

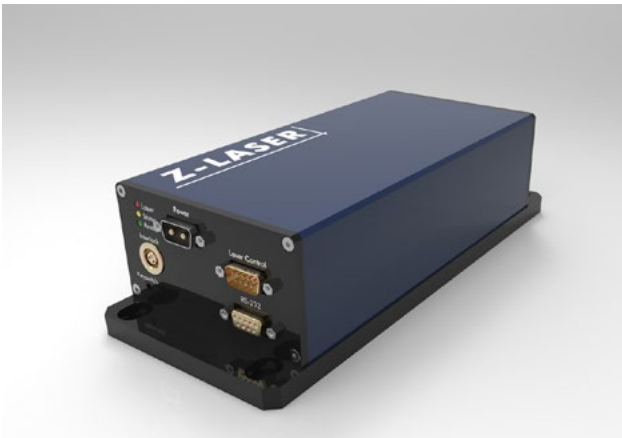
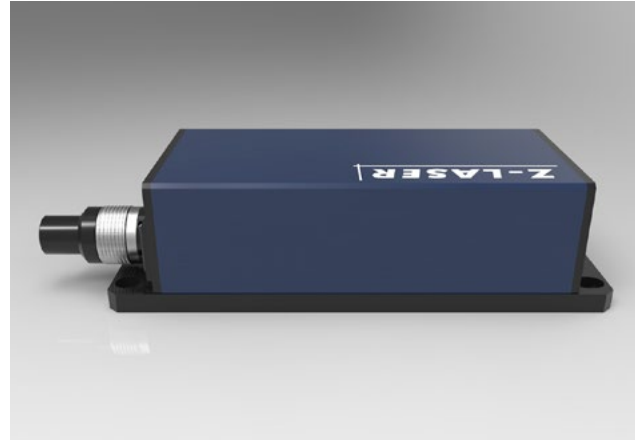
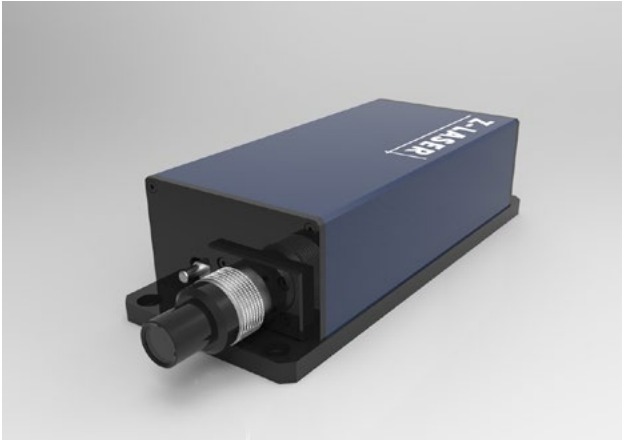
SOFTWARE FEATURES

Status query, output power control, system configuration, digital modulation, intensity control

ENVIRONMENTAL CONDITIONS

Operating temperature	°C / °F	0 °C up to +50 °C / 32 °F up to +122 °F
Storage temperature	°C / °F	-20 °C up to +70 °C / -4 °F up to +158 °F
Humidity	%	< 90 %, non-condensing
Dissipated heat	W	max. 225 W

ZQ2 FROM DIFFERENT ANGLES



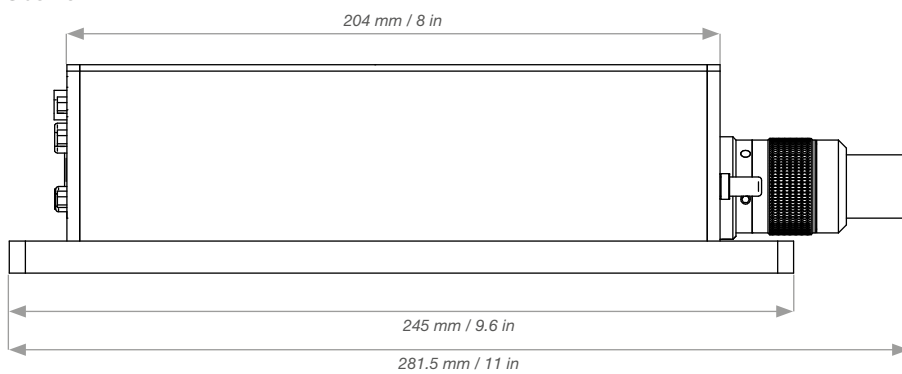
KEYNOTES

⁽¹⁾ Emission point height	Offset of optical axis to ground plate
⁽²⁾ Line length / fan angle	at $>13.5\% I_{max}$
⁽³⁾ Line straightness	Deviation from best fit line over the middle 80% of the line, for homogeneous lines
⁽⁴⁾ Line uniformity	Maximum relative optical power variation over the middle 80% of the line, for homogeneous lines
⁽⁵⁾ Indications	

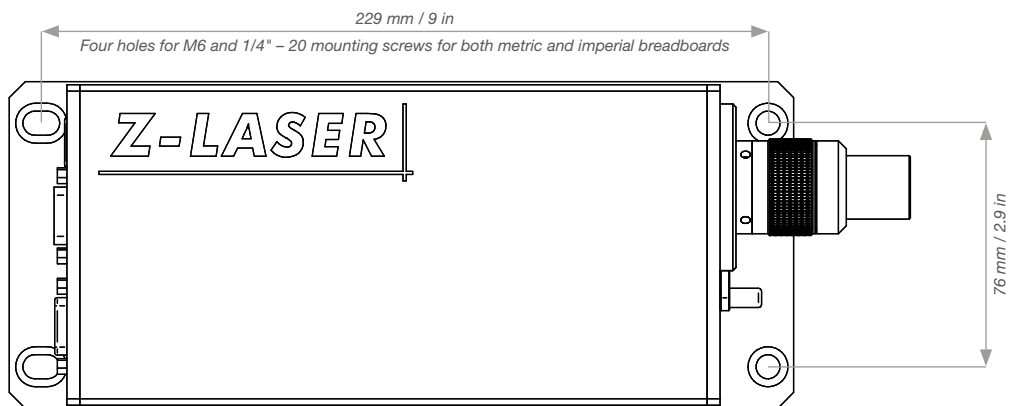
MECHANICAL SPECIFICATIONS

Weight	kg / lbs	2.50 kg / 5.51 lbs
Dimension	mm / inch	281.5 x 102 x 65 mm / 11.08 x 4.02 x 2.56 in
Diameter head Ø	mm / inch	20 mm / 0.79 in
Material		Aluminium (eloxed)
Protection class		IP 50
Mounting		4x Screws

Side view



Topview



Rear view

