

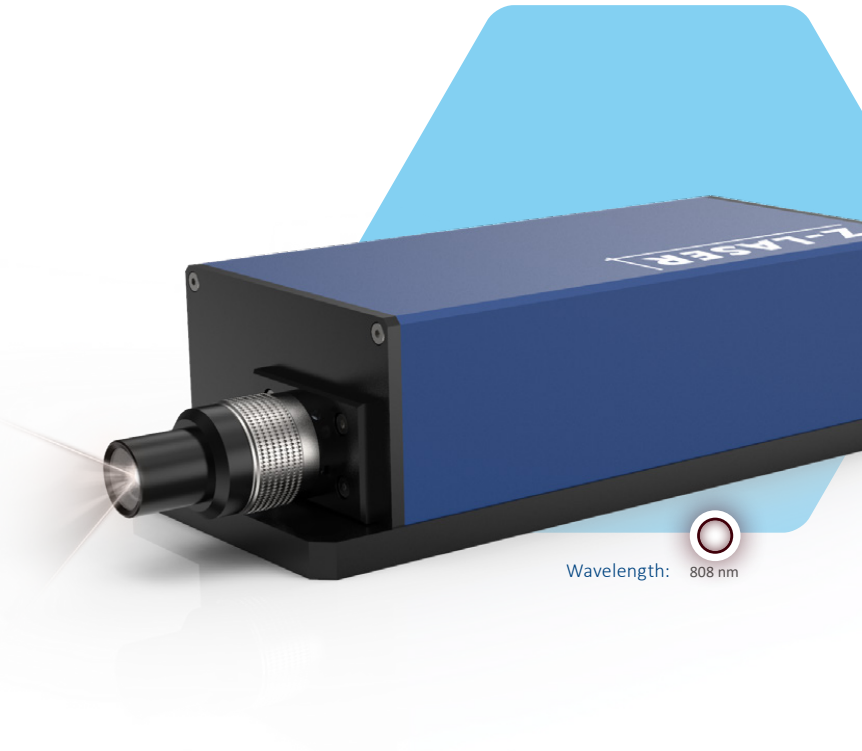
ZQ2

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 wherever 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 interface (RS-232) the laser can be integrated efficiently in a sophisticated machine vision setup.



Wavelength: 808 nm



Integrated active cooling



Output power up to 6,000 mW



Infrared laser

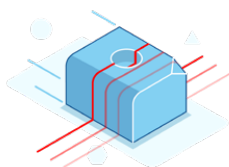


IP 50

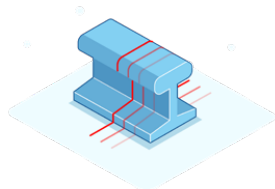
Highlights

- 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
- Communication interfaces: RS-232
- Focus manually adjustable: 100 mm to 10,000 mm
- Graphical user interface

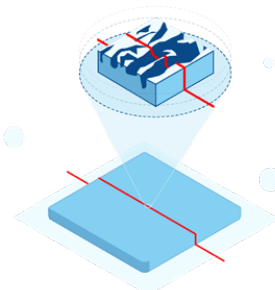
Sample applications



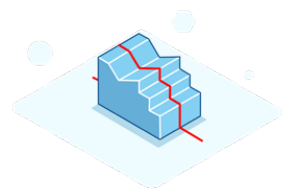
Machine Vision



Road and rail inspection



Metal inspection



3D-Measurement

Order Code

Z??	Q2	F	808	?
Output power	Product family	Focusable	Wavelength	Optic

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	≤6000 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 (24h)		<1 %
Long-term power stability (over lifetime)		<5 %
Warm-up time	min	<2 min
Laser operation mode		APC with active cooling (TEC)

Electrical specification

Operating voltage		24 VDC +/-20%
Operating current (max. at 25 °C)		<10 A
Protection		Over temperature protection and LED pre-failure indicator e.g. end of life. Reverse polarity and transient voltage protection (ESD, burst & surge)
Electrical isolation		Connection to GND through 1 MΩ
Connection		Sub-D plug, 9-pin
Power consumption		<150W (depends on product variant)
Communication interface		RS-232
Communication Interface, IO-Ports		galvanically isolated
Digital modulation (TTL)		≤10 kHz

Optical specification

Fan angles ⁽²⁾	Degrees (at >13,5 % I _{max})	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 - 10.000 mm

KEYNOTES

⁽¹⁾ Emission point height	Offset of optical axis to ground plate
⁽²⁾ Line length / fan angle	Fan angle is the angle of the projection taken at the 80% clip. Line length is the physical length at the given working distance taken at 80% clip
⁽³⁾ Line straightness	Deviation from best fit line, for homogeneous lines
⁽⁴⁾ Line uniformity	Maximum relative optical power variation over medially 80% of the line, for homogeneous lines
⁽⁵⁾ Indications	

Software features

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

Environmental conditions

Operating temperature	°C / °F	0°C to +50°C / 32°F to +122°F
Storage temperature	°C / °F	-20°C to +70°C / -4°F to +158°F
Humidity	%	<90 %, non-condensing
Dissipated heat	W	150 W

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		Aluminum
Protection class		IP 50
Mounting		4x Screws

