

QCW Linear Bar Array

QD-Qxy01-A1 / QD-Qxy01-T / QD-Qxy01-H

DESCRIPTION

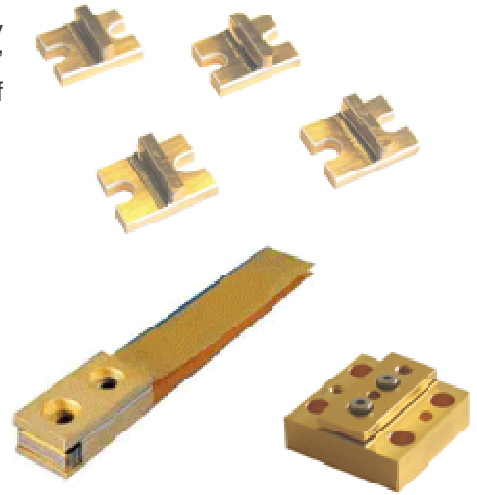
QD-Qxy01-A1, QD-Qxy01-T, QD-Qxy01-J, QD-Qxy01-H are conductively cooled laser single diode bars operating at high QCW optical power. The 'x' designs the wavelength window and 'y' characterizes the optical power of diode bar proposed up to 400W QCW (cf Table below).

These products are based on an efficient and reliable 1cm linear bar arrays. Design is optimized to very high repetition rate (up to 50 kHz).

Operation at high Duty Cycle and high average optical power is addressed with "H" package offering a low thermal resistance.

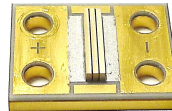
An additional FAC lens is an option appropriate for application requesting well collimated beam (~8 mrad @ 1/e²).

Assembly in a compact and rugged package (A1 or T) using AuSn hard solder allows building association of bars for dense pumping arrays for a wide range of applications.



MAIN FEATURES

- QCW operation
- Highly compact design
- Conductively cooled package
- High conversion efficiency
- Wavelengths: from 790 up to 980 nm
- Option with FAC lens (0,5°)
- Option for operation at high Duty Cycle
- Mechanically robust, shock and vibration resistant



x =	1	2	3	4	5	6	
λ	808	790	830	915	940	980	nm
y =	2	3	4	5	6	7	8
P/bar	60	80	100	125	150	200	300
							400
							W

SPECIFICATIONS

Case temperature: + 25 °C

Quasi-continuous mode: pulse width = 200µs
repetition rate = 100Hz

PARAMETERS	QD-Q1401-A1 or other packaging	QD-Q1701-A1 other packaging	QD-Q1901-A1 other packaging	Units
QCW Optical Power	100	200	400	W
Operating current	Typ. 95 Max. < 115	185 < 200	370 < 390	A A
Threshold current (Typ.)	18			A
Operating voltage (Typ.)	1.8 / Bar			V
Total efficiency (Typ.)	58% @ 808 nm, 65% @ 940/980 nm			%
Wavelength	790 to 980			nm
Wavelength variation with Temperature	0.26			nm / °C
Beam divergence (FWHM)	8 X 36			deg.

Note :

- Standard Polarisation is TM or TE mode @ 808 nm, TE @ 9xx nm
- Spectral width is ≤ 3 nm FWHM
- Double or Triple Quantum Well bars available on demand
- Standard tolerance on wavelength is +/- 3nm, +/- 1,5 nm on demand
- Specifications are for nominal lifetime > 1. 10⁹ pulses @ +25°C and > 0.3 10⁹ pulses @ +75°C (for 200µs pulse width)

Quantel Laser Diodes reserves the right to change specifications without prior notice

ABSOLUTE MAXIMUM RATINGS

PARAMETERS	QD-Q1401-A1 QD-Q1401-T	QD-Q1701-A1 QD-Q1701-T	QD-Q1901-A1 QD-Q1901-T	Units
Pulse width	5000	5000	3000	µs
Maximum duty cycle (*)	10	5	2.5	%
Reverse voltage	3			V
Operating temperature	-40 to +75			%
Storage temperature	-55 to +85			nm

(*) Maximum Duty Cycle: up to 20% on "H" package

Note : Operation at temperature below dew point requests to use dry N2 environment

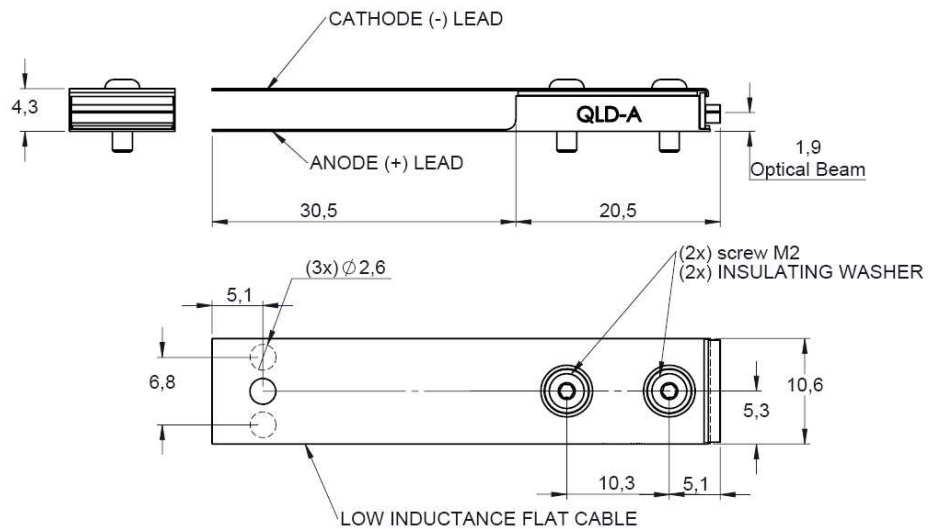
PACKAGE SPECIFICATIONS

- dimensions are in mm
- standard tolerances are ± 0.2 mm

QD-Qxy01-A1



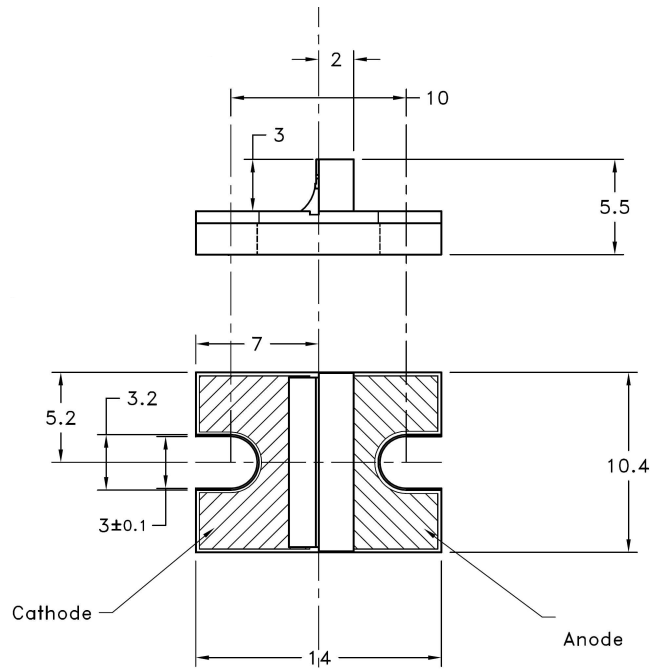
This "A1" package, with one diode bar, is a thin design (4.2mm) adapted for an integration in a small space. It is also well appropriate to realize a compact association for application which requests a long and quasi-uniform emission line.



QD-Qxy01-T



This “T” package has been design for high compactness. It is also well appropriate for building a multi-bars compact emission line.



QD-Qxy01-H



This “H” package allows a very low thermal resistance (~0.4°/W) and is specifically adapted for operation at high Duty Cycle and high average optical power.

