

High Temperature / Multi-color QCW Stacked Array

QD-Q1yzz-B(n) / QD-Q1yzz-BS(n) / QD-Q1yzz-G(n) / QD-Q1yzz-J(n)

DESCRIPTION

QD-Q1yzz-B(n), QD-Q1yzz-BS(n), and QD-Q1yzz-G(n) are a variety of conductively cooled laser diode stacked arrays with a design adapted for a reliable operation over extremely severe temperature range. These Stacks can be built from 1 to 19 diode bars of 60W QCW to 400W QCW.

The laser diode bar arrays benefit from a fully mastered technology, with the appropriate design for improved efficiency and performing reliable at high temperature of operation.

The possibility for mixing diode bars of different wavelength gives a broad optical spectrum of emission. This performance is well suited for building efficient pumping skim in a non stabilized environment in temperature.

Assembly, using AuSn hard solder technology, in a compact and rugged package allows easy and efficient connection which is ideal for a large range of defence, aerospace, industrial applications: pumping rods or slabs solid state lasers, illuminators...



MAIN FEATURES

- QCW operation up to 400W QCW per diode bar
- Hard solder technology
- High efficiency over a very large operating temperature range
- Possibility of Multi-color emission and collimation
- Low thermal resistance assembly
- 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 = 200 μ s
repetition rate = 100Hz

PARAMETERS	QD-Q1yzz-B(n) or J(n)	QD-Q1yzz-BS(n)	QD-Q1yzz-G(n)	Units
Number of Diode bars (pitch = 400 μ m) zz =	1 to 12	1 to 19	1 to 16	
Pitch between diode bars	From 330 to few 1000s			μ m
Emitting area	10 X (zz – 1)* pitch			mm ²
QCW Optical Power per Diode Bar	up to 400			W
QCW Optical Power	up to 4800	up to 7000	up to 6800	W
Operating current @ 100W / bar	95A @ +25°C110A @ +75°C			A
Operating current @ 200W/bar	185A @ +25°C205A @ +75°C			A
Operating current @ 300W/bar	275A @ +25°C300A @ +75°C			A
Operating voltage	2V / bar			V
Total efficiency @ +25°C	58 Typ. @ 25°C and 50% @ 75°C			%
Wavelength ('n' = number of different λ)	790 to 820			nm
Wavelength variation with Temperature	0.26/°C			nm / °C
Beam divergence (FWHM)	8 X 36			deg.

Note :

- Standard Polarisation: TM or TE mode
- Tolerance on wavelength is +/- 3nm, +/- 1,5 nm on demand
- Other wavelength selections are available (9xx nm)
- Specifications are for nominal lifetime > 1. 10⁹ pulses @ 25°C and > 0.3 10⁹ pulses @ +75°C (for 200 μ s pulse width)

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

ABSOLUTE MAXIMUM RATINGS

PARAMETERS	QD-Q1yzz-B(n)	QD-Q1yzz-BS(n)	QD-Q1yzz-G(n)	Units
Pulse width		500		μs
Maximum duty cycle		4		%
Reverse voltage		3		V
Operating temperature		-40 to +75		°C
Storage temperature		-55 to +85		°C

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

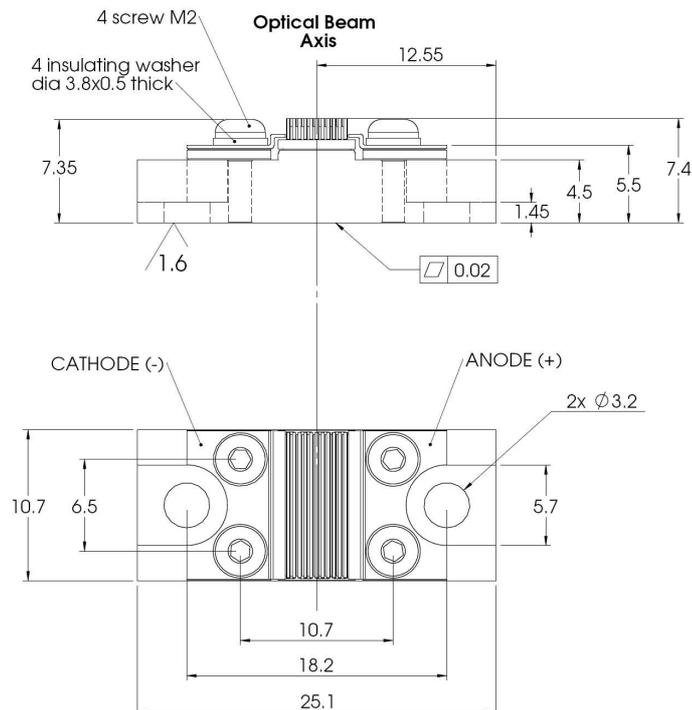
PACKAGE SPECIFICATIONS

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

QD-Q1yzz-B



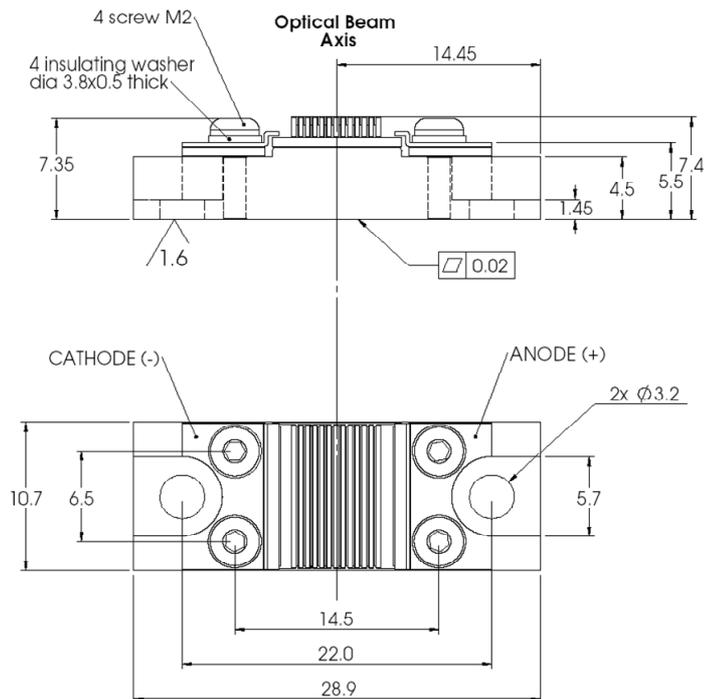
This stack "B" type can be proposed with a variable number ('zz') of diode bars:
 'zz' = 1 to 12 bars at a pitch of 330μm,
 'zz' = 1 to 11 bars at a pitch of 400μm,
 'zz' = 1 to 8 bars at a pitch of 500μm



QD-Q1yzz-BS



This stack "BS" type can be proposed with a variable number ('zz') of diode bars:
 'zz' = 1 to 19 bars at a pitch of 400µm,
 'zz' = 1 to 15 bars at a pitch of 500µm
 'zz' = 1 to 6 bars at a pitch of 1000µm



QD-Q1yzz-G



This stack "BS" type can be proposed with a variable number ('zz') of diode bars.
 'zz' = 1 to 19 bars at a pitch of 400µm,
 'zz' = 1 to 15 bars at a pitch of 500µm
 'zz' = 1 to 6 bars at a pitch of 1000µm

