

TH-Q44xx-C TH-Q54xx-C TH-Q64xx-C

500W to 2.5kW QUASI-CW STACKED ARRAYS at 915nm- 980 nm

DESCRIPTION

The TH-Q44xx-C TH-Q54xx-C TH-Q64xx-C series are high optical power laser diodes stacks assembled on a liquid cooled heatsink.

These stacks are based upon highly efficient 1cm linear bar arrays. According to the number of assembled bars "xx", a large range of optical power is available from 500W QCW to 2.5kW QCW.

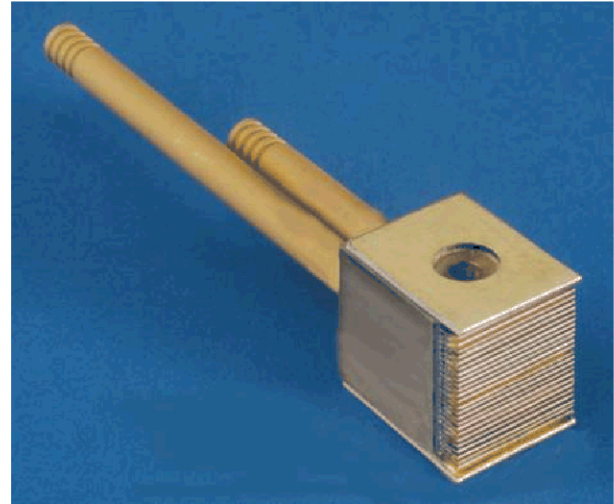
Low thermal impedance liquid cooled package allows easy control of the central wavelength. The stacks are therefore ideal for different applications : pumping rod or slab solid state lasers, illuminators...

Assembly in a compact and rugged package allows easy connection. The product is available at the following wavelengths :

TH-Q44xx-C for wavelengths around 915 nm

TH-Q54xx-C for wavelengths around 940 nm

TH-Q64xx-C for wavelengths around 980 nm



MAIN FEATURES

- 915nm to 980 nm
- Liquid cooled package
- High conversion efficiency
- Very high temperature stability of operation
- Mechanically robust, shock and vibration resistant
- Highly reproducible MOCVD process

SPECIFICATIONS

Products are designed with 5 to 25 linear bar arrays

Characteristics shown in the following table are respectively for 10 bars (TH-Q4410-C), 15 bars (TH-Q4415-C) and 25 bars (TH-Q4425-C) at 940 nm

Fluid temperature : 25° C

Quasi-continuous mode: duty cycle = 2 % pulse width = 200 μ s
repetition rate = 100 Hz

PARAMETERS	TH-Q4410-C	TH-Q4415-C	TH-Q4425-C	UNITS
QCW output power	1 000	1 500	2 500	Watt
Energy per pulse	200	30	500	mJ
Emitting area	10 x 3.6	10 x 5.8	10 x 9.6	mm x mm
Threshold current, typical max.	14 18	14 18	14 18	Amp.
Operating current (If), typical max	110 120	110 120	110 120	Amp.
Operating voltage	<20	<30	<50	Volt
Total efficiency, typical min	50 44	50 44	50 44	%
$\Delta I_f / (I_f \Delta T)^1$	0.4	0.4	0.4	%/K
$\Delta \lambda / \Delta T$	0.3	0.3	0.3	nm/K
Spectral width (FWHM)	< 6	< 6	< 6	nm
Beam divergence (FWHM)	10 x 40	10 x 40	10 x 40	degree

¹ Variation of operating current with temperature

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Note :

- Tolerance on wavelength is +/- 5nm (+/- 4nm upon request)
- Specifications are for nominal lifetime 10^9 pulses (for 200µs pulse width)

ABSOLUTE MAXIMUM RATINGS

PARAMETERS	TH-Q4410-C	TH-Q4415-C	TH-Q4425-C	UNITS
QCW output power	1050	1 500	2600	Watt
Pulse width	300	300	300	µs
Reverse voltage	3	3	3	Volt
Operating temperature	+5 to +60	+5 to +60	+5 to +60	°C
Storage temperature	-40 to +85	-40 to +85	-40 to +85	°C

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

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