

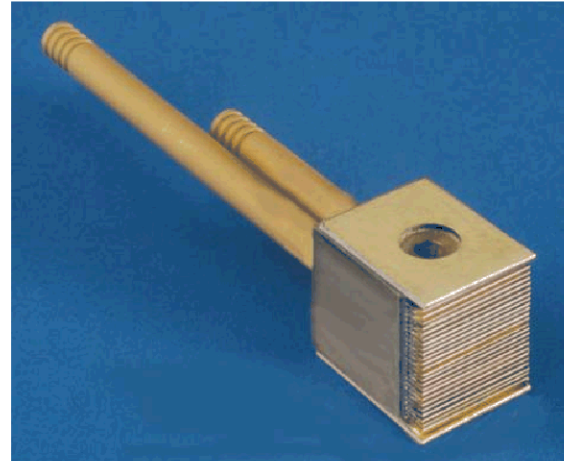
500W to 2.5kW QUASI-CW STACKED ARRAYS

DESCRIPTION

The TH-Q14xx-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 TH-Q14xx-C 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.



MAIN FEATURES

- 795nm to 860nm
- 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-Q1410-C), 15 bars (TH-Q1415-C) and 25 bars (TH-Q1425-C) at 808nm

Fluid temperature : 25° C

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

PARAMETERS	TH-Q1410-C	TH-Q1415-C	TH-Q1425-C	UNITS
QCW output power	1 000	1 500	2 500	Watt
Energy per pulse	200	300	500	MJ
Emitting area	10 x 3.6	10 x 5.8	10 x 9.6	mm x mm
Threshold current, typical	14	14	14	Amp.
max.	18	18	18	
Operating current (If), typical	102	102	102	Amp.
max.	113	113	113	
Operating voltage	< 20	< 30	< 50	Volt
Total efficiency, typical	51	51	51	%
min	44	44	44	
$\Delta I_f / (I_f \Delta T)^1$	0.4	0.4	0.4	%/K
$\Delta \lambda / \Delta T$	0.26	0.26	0.26	nm/K
Spectral width (FWHM)	< 4	< 4	< 4	nm
Beam divergence (FWHM)	10 x 40	10 x 40	10 x 40	degree

¹ Variation of operating current with temperature

Note :

- Standard wavelength is 808nm
- Tolerance on wavelength is +/- 4nm (+/- 3nm upon request)
- Specifications are for nominal lifetime 10⁹ pulses (for 200 μ s pulse width)

ABSOLUTE MAXIMUM RATINGS

PARAMETERS	TH-Q1410-C	TH-Q1415-C	TH-Q1425-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

For further information please contact:

THALES LASER DIODES - Route Départementale 128 - BP 46 - 91401 ORSAY Cedex / France

Tel : (33) 1 69 33 06 61

Fax : (33) 1 69 33 06 62

E-mail : infotld@fr.thalesgroup.com

<http://www.thales-laser-diodes.com>

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