

TH-C17xx-M1 / TH-C55xx-M1

CW STACK HIGH POWER LASER DIODES

DESCRIPTION

The TH-C17xx-M1 & TH-C55xx-M1 products are multi-bar stacks for CW or high average optical power operation. An extremely low thermal resistance is obtained with water cooled micro-channel heat sinks. This leads to a very efficient heat extraction to give stacks with large optical power densities.

The possibility to design modular assembly of diodes bars allows the realisation of specific geometry to adjust the optical beam.

The TH-C17xx-M1 product series are very convenient for applications which request high CW optical power or which need to operate at high duty cycle: pumping of solid state rod or slabs, medical, material processing,...



MAIN FEATURES

- Up to 1200W CW optical output power
- Water cooled package
- High conversion efficiency
- 795-860nm, 940-980nm wavelengths

SPECIFICATIONS

Water temperature: 25°C

Fluid conditions : Flow rate
Pressure

0.4l/min per bar
2 - 3 bars

PARAMETERS	TH-C17xx-M1	TH-C18xx-M1	TH-C55xx-M1	TH-C55xx-M1	UNITS
Number of diode bars	xx = 5 to 30				
CW optical power	30 / bar	40 / bar	30 / bar	40 / bar	Watt
Bar to bar pitch	1.75				mm
Emitting area	10 x (xx-1) * 1.75				mm ²
Wavelength	808 / 840	808 / 840	940	940	nm
Operating current Typical Max	40 ≤ 45	50 ≤ 55	44 ≤ 50	55 ≤ 60	Amp.
Operating voltage		< 2 / bar	≤ 1.8 / bar	≤ 1.8 / bar	Volt
Total efficiency	42	42	42	42	%
Beam divergence	10 x 35	10 x 35	10 x 35	10 x 35	deg

Need to use desionized water with ion exchanger and a 20µm particules filter

Note :

- Variation of wavelength is approximately 0.26 to 0.3 nm/°C
- Tolerance on wavelength is ± 3 nm @ 808nm – 840nm and ± 5 nm @ 940nm
- Spectral width (FWHM) ≤ 3nm @ 808nm – 840nm and ≤ 5nm @ 940nm
- Fast-axis collimating lens to give 1 deg. beam divergence

ABSOLUTE MAXIMUM RATINGS

PARAMETERS	TH-C17xx-M1	TH-C18xx-M1	TH-C55xx-M1	TH-C55xx-M1	UNITS
CW output power	32 / bar	42 / bar	32 / bar	42 / bar	Watt
Reverse voltage	3	3	3	3	Volt
Case Operating temperature	+5 to +35				°C
Storage temperature	-30 to +80				°C

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

PACKAGE SPECIFICATION

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

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