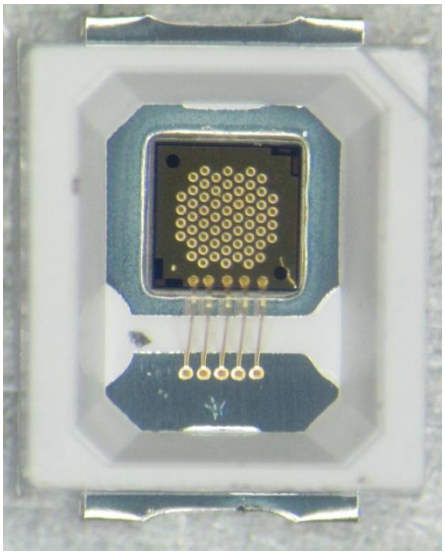
680nm Power Array VCSEL with power emission of 25mW to 400mW



Visible Red Vertical Cavity Surface Emitting Laser (VCSEL)
Model: Multi Mode Array VCSEL
Specifically designed for high power multi mode applications up to 400 milliwatt optical operating power.

Applications

- 3D Scanning
- Time of Flight
- Medical Scanning
- Low light laser therapy

Package Details: This VCSEL array is typically delivered in a PLCC 3528 package (shipped in tape on reel for minimum quantities of 2000 pcs), or bare die, or can be delivered on a test board for easy evaluation of VCSEL and package performance. The PLCC package is compatible with standard SMT solder reflow processing.

Additional packaging option: Vixar can attach a diffuser to broaden the divergence. The customer can choose a diffuser with angles of 20, 30, 40, 60, 80, and 90 degree (custom angles are available upon request).

REACH COMPLIANT

RoHS COMPLIANT

VISIBLE AND INVISIBLE
LASER RADIATION
AVOID EYE OR SKIN EXPOSURE TO
DIRECT OR SCATTERED RADIATION
CLASS 4 LASER PRODUCT

COMPLIES WITH IEC 60825-1, 2nd Edition 2007.

COMPLIES WITH 21 CFR 1040.10 AND 1040-10.11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO.50 DATED 27 MAY 2001.

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Absolute Maximum Ratings

Parameter	Rating	Notes
Storage temperature	-40 to 100 °C	
Operating temperature (VCSEL)	-20 to 60 °C	
Maximum package SMT solder reflow temperature	250°C, 10 seconds	
CW current (VCSEL)	800 mA	(Note 1)
Maximum pulsed current	1.2 A	20µs pulse width, 1% duty cycle, T=25°C (Note 2)

Note 1: The maximum CW laser current in the Absolute Maximum Ratings is valid for the operating temperature noted at the top of this table; however, the maximum CW laser current decreases with increasing temperature. Contact Vixar for maximum CW laser current values at other temperatures.

Note 2: For details refer to the Vixar Application Note "Operation of VCSELs Under Pulsed Conditions". (http://www.vixarinc.com/technology/applicationnotes.html)

Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only. Functional operation of the device at these or any other conditions beyond those indicated for extended periods of time may affect device reliability.

CW Typical Electro-Optical Characteristics

VCSEL Operating Temp (Tv) =25°C

Product ID			**KP01**	**KP02**	**KP03**	**KP04**
Parameter	**Symbol**	**Units**				
Threshold current	Ith	mA	22	50	75	140
Operating voltage	Vf	Volts	2.4	2.4	2.4	2.7
Optical Operating power	Lop	mW	80	150	250	400
Optical Operating power	Lop	W	0.08	0.15	0.25	0.40
			Minimum	**Typical**	**Maximum**	**Notes**
Slope efficiency	SE	W/A	--	0.90	--	
Power conversion efficiency	PCE	%	--	25	--	
Reverse breakdown voltage		V	10	--	--	Ir ≤ 1nA
Beam divergence	FWHM	deg	--	22	--	
Operating wavelength	λop	nm	670	680	690	

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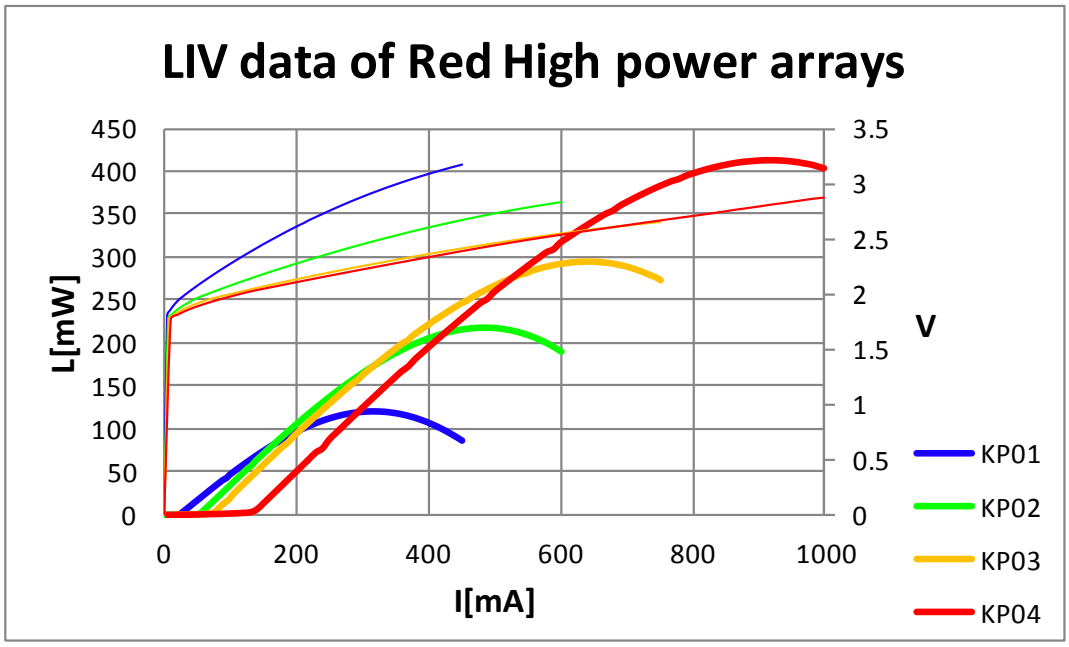
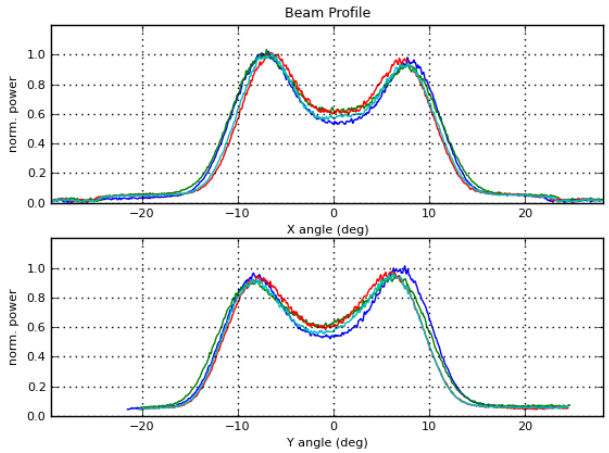
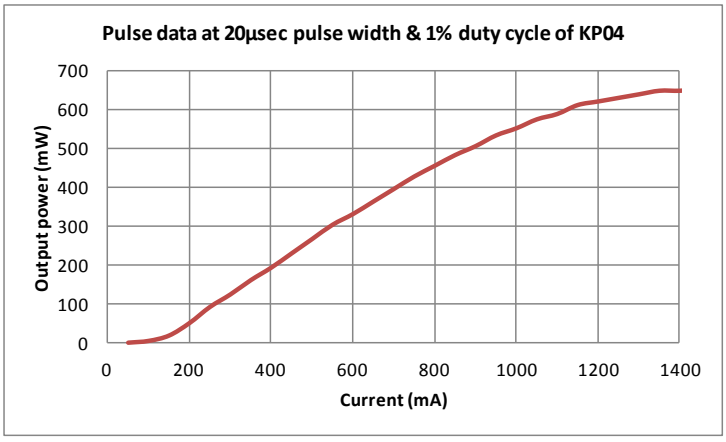
TYPICAL PERFORMANCE CURVES AT 25°C:



Beam divergence data at Room temperature



Sample Pulse data



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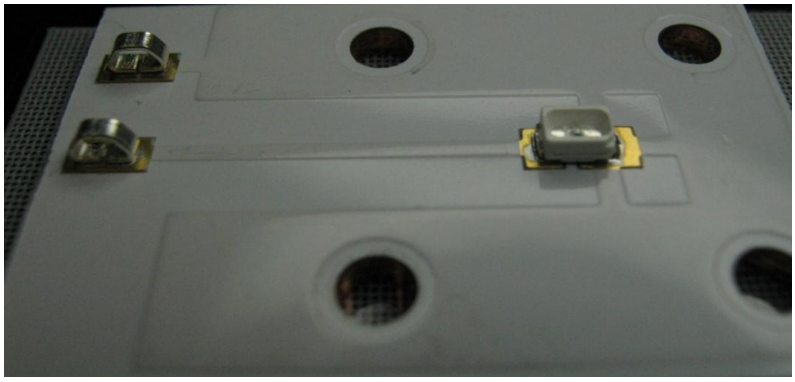
ORDERING INFORMATION

Description	Package	Part Number
80 milliWatt 680 nm Power array VCSEL on a PLCC package	PLCC 3528	680M-0000-KP01
150 milliwatt 680 nm Power array VCSEL on a PLCC package	PLCC 3528	680M-0000-KP02
250 milliwatt 680 nm Power array VCSEL on a PLCC package	PLCC 3528	680M-0000-KP03
400 milliwatt 680 nm Power array VCSEL on a PLCC package	PLCC 3528	680M-0000-KP04
80 milliwatt 680 nm Power array VCSEL on a PLCC package with an evaluation board	PLCC 3528 & Evaluation board	680M-0000-MP01
150 milliwatt 680 nm Power array VCSEL on a PLCC package with an evaluation board	PLCC 3528 & Evaluation board	680M-0000-MP02
250 milliwatt 680 nm Power array VCSEL on a PLCC package with an evaluation board	PLCC 3528 & Evaluation board	680M-0000-MP03
400 milliwatt 680 nm Power array VCSEL on a PLCC package with an evaluation board	PLCC 3528 & Evaluation board	680M-0000-MP04

Additional Packing Information:

Sample photo of an Evaluation Board for PLCC 3528 Packages



Please refer Vixar Packaging datasheet page 13 for more information on the test board dimension
Please contact Vixar for Bare die samples and Optics alignment options

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