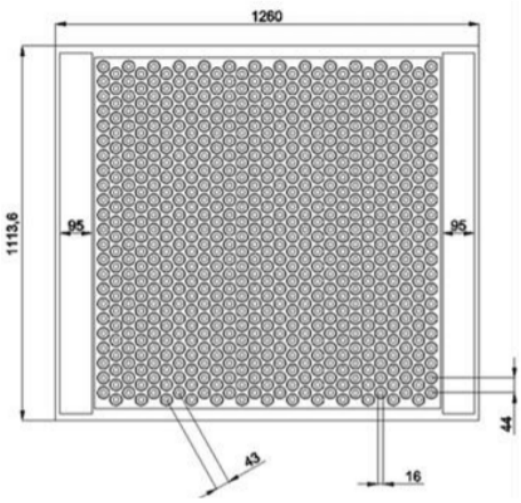
LASERMATE GROUP, INC.
THE FRIEND OF LASERS

Model No. VCC-94A2WH



Chip size

Features:

- 940nm VCSEL chip
- Typical 2W peak pulse output at 2.5A
- High PCE (Power Conversion Efficiency): 41%
- -20 to 85 °C operating temperature
- Chip size: 1260 x 1113.6 ± 15 μm
- Electrode Side:
  Gold alloy on both anode P (emission side) and cathode N (backside)

Applications:

- Sensing light source
- Optical encoders
- Photoelectric sensors
- 3D sensing
- 3D imaging including Time of Flight, Structure light, Iris/ Facial recognition etc.

Absolute Maximum Ratings (TA = 25°C unless otherwise noted)

Parameter	Symbol	Rating
Storage Temperature	Tstg	-40 to 85 °C
Operating Temperature	Top	-20 to 85 °C
Continuous Forward Current	I_f	2.6A
Maximum package SMT solder reflow Temperature		260°C, 10 seconds

Note: The maximum CW laser current in the Absolute Maximum Ratings is valid for the operating temperature noted at the table above. Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device.

Electro-Optics Characteristics (Ta=25°C unless otherwise noted)

Parameters	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Threshold Current	I_{th}	-	500	-	mA	
Slope Efficiency	η	0.9	1.0	-	W/A	I_f = 2500mA
Optical Output Power	P_o		2000	-	mW	I_f = 2500mA
Center Wavelength	λ_c	930	940	950	nm	I_f = 2500mA
Beam Divergence	Θ		26		degree	Full Width 1/e^2
Operating Voltage	V_f	1.7	2.0	2.3	V	I_f = 2500mA
Power Conversion Efficiency	PCE		41		%	I_f = 2500mA
Wavelength Shift	$\triangle\lambda/\triangle T$	-	0.07	-	nm/°C	I_f = 2500mA

Note 1: Forward Voltage (V_f) measurement allowance is ±0.1V.

Note 2: Center Wavelength (λ_c) measurement allowance is ±1.5nm.

Note 3: Others measurement allowance is ±10%.

Note 4: Test DUTs are mounted on star board and measured with operating bias current @ 2.5A, Duty Cycle:1%.

Note: The specifications are subject to change without notice.

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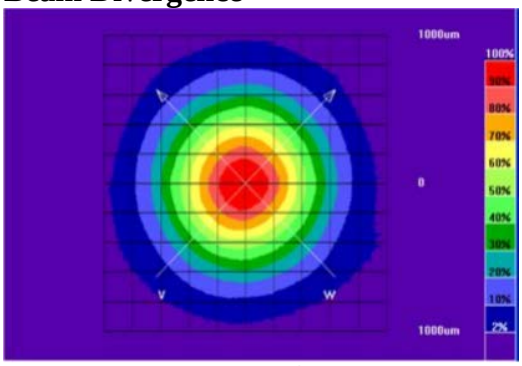
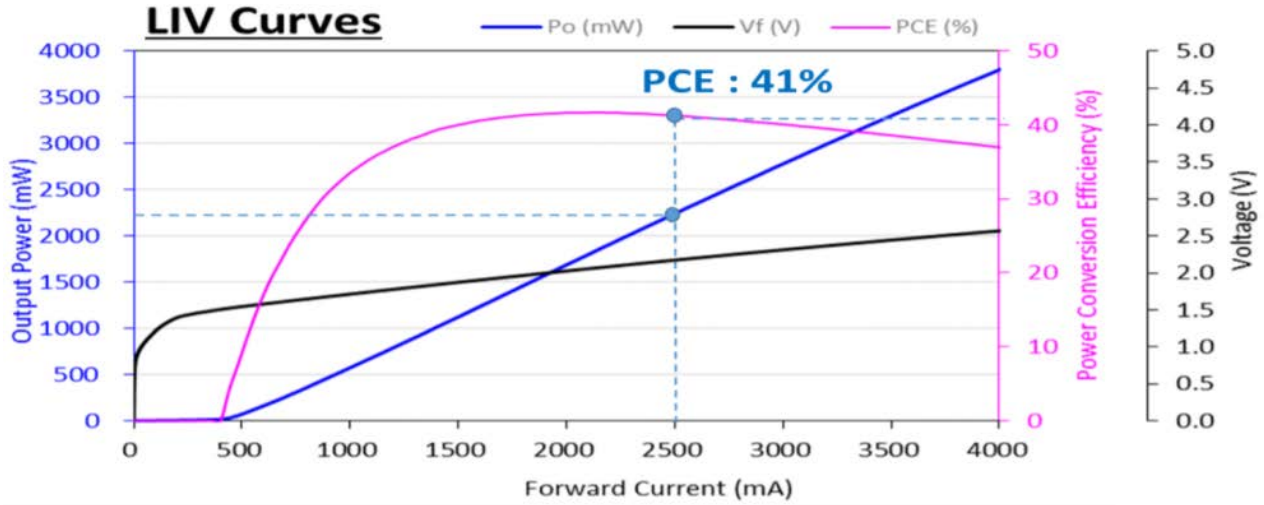
Typical Performance Graph:
Beam Divergence



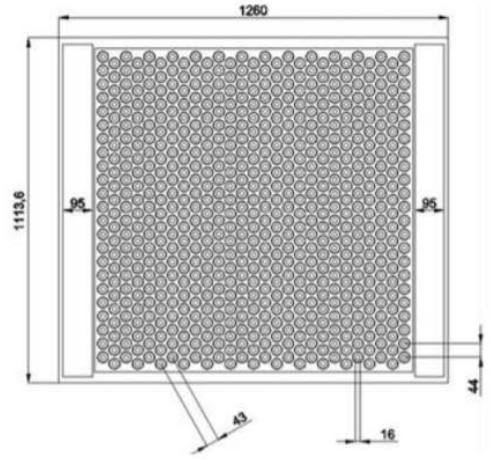
Full Width 1/e^2 26 degree

LIV Graph at 25 ºC



Note: Curves measurement at 0 ~ 4A current sweep with 1% duty cycle.

Dimensions (unit: μm):



Specification	Min	Typ	Max
Chip width	1245	1260	1275
Chip length	1098.6	1113.6	1128.6
Chip thickness	105	120	135
Bond pad width	-	95	-

Unit: μm

Note: 1. Allowable abnormal aperture is 1%.
2. Continuous abnormal aperture (x, y or diagonal direction) is not allowed.

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