


LB-1064-DIE-60W	
High power bare chip Laser Diode Bar at 1064nm	
	<p>Features:</p> <ul style="list-style-type: none"> • High electro-optic conversion efficiency • Proprietary mirror coating technology enabling long life-time • Metallization suitable for AuSn or In soldering
	<p>Applications:</p> <ul style="list-style-type: none"> • Medical, industrial
Specification	DATE: 11 th Feb. 2010

EXPECTED PERFORMANCE AFTER BONDING (Not guaranteed)					
Conditions: bonded onto copper CS-mount, heatsink temperature 25°C, CW operation					
Parameters	Symb.	Min	Typ	Max	Unit
Output power	P_{out}	60			W
Central Wavelength	λ	1054	1064	1074	nm
Central wavelength temperature tunability	$\Delta\lambda/\Delta T$	0.30	0.35	0.4	nm/°C
Spectral width (FWHM)	$\Delta\lambda$		5	9	nm
Operating current at P_{out}	I_{op}		72		A
Threshold current	I_{th}		6.5	8.5	A
Forward voltage	V_f		1.45	1.55	V
Electro-optic conversion efficiency at P_{out}	η	53	58		%
Fast axis beam divergence (FWHM) at operating current	Θ_{\perp}		31	35	Deg.
Fast axis beam divergence (95% of total power) at operating current	$\Theta_{\perp 95}$		51	56	Deg.
Slow axis beam divergence (95% of total power) at operating current	$\Theta_{\parallel 95}$		14	17	Deg.

TESTED PARAMETERS					
Test conditions: two bars per Facet Coating batch tested in pulse mode, pulse width 5 μ s, temperature 25°C					
Parameters	Symb.	Min	Typ	Max	Unit
Threshold current of each individual emitter	I_{th-em}	290	340	440	mA
Slope efficiency of each individual emitter (at $I_{th-em} + 50$ mA)	η_{em}	0.85	0.9	1	W/A
Central wavelength of emitter #10 (at $I_{th-em} + 50$ mA)	λ_{em}	1045	1055	1065	nm
Deviation of I_{th-em} and η_{em} of each emitter from average value in the bar			3	10	%

ABSOLUTE MAXIMUM RATINGS				
Conditions: bonded onto copper CS-mount, heatsink temperature 25°C				
Parameters	Symb.	Min.	Max.	Unit
Laser Bar reverse voltage	$V_{rev\ max}$		2	V
CW forward current	I_{max}		80	A
QCW forward current (100 μ s pulse, 5% duty cycle)	$I_{QCW\ max}$		$I_{op} + 30$	A
Chip bonding temperature	$T_{bond\ max}$		350	°C
Storage temperature range (in original sealed pack)	$T_{storage}$	5	80	°C

DIMENSIONS (All sizes in mm)					
Parameters	Symb.	Min.	Typ.	Max.	Unit
Bar width		9.4	9.5	9.6	mm
Laser cavity length	L	1.99	2	2.01	mm
Number of emitters			19		
Single emitter aperture size	W		0.13		mm
Pitch (periodic distance between emitters)			0.5		mm
P-contact metallization finishing: Pt/Au			100/100		nm


SAFETY AND OPERATING INSTRUCTIONS

The laser light emitted from this Device is invisible and will harmful to the human eye. Avoid looking directly into the collimated beam along its optical axis when the device is in operation. Proper laser safety eyewear must be worn during operation.

Absolute Maximum Ratings may be applied to the Device for short period of time only. Exposure to maximum ratings for extended period of time or exposure above one or more max ratings may cause damage or affect the reliability of the Device. Operating the product outside of its maximum ratings may cause device failure or a safety hazard. Power supplies used with the Device must be employed such that the maximum peak optical power cannot be exceeded. A proper heatsink for the Device on thermal radiator is required, sufficient heat dissipation and thermal conductance to the heatsink must be ensured.

The Device is a bare chip Diode Laser, after bonding it may be operated in cleanroom atmosphere or dust-protected housing only. Operating temperature and relative humidity must be controlled to avoid water condensation on the laser facets. Any contamination or contact of the laser facet must be avoided; the Device is to be handled with vacuum tweezers exclusively.

ESD PROTECTION – Electrostatic discharge is the primary cause of unexpected product failure. Take extreme precaution to prevent ESD. Use wrist straps, grounded work surfaces and rigorous antistatic techniques when handling the product.



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

CAUTION
 STATIC SENSITIVE DEVICE
 OBSERVE PRECAUTIONS

DANGER

VISIBLE AND/OR INVISIBLE LASER RADIATION
 AVOID EYE OR SKIN EXPOSURE TO
 DIRECT OR SCATTERED RADIATION

DIODE LASER
 MAX POWER 100W
 WAVELENGTH 1000 - 1400 nm
 CLASS IV LASER PRODUCT

NOTE: Innolume product specifications are subject to change without notice.