

0. Application Coverage

Blue laser diode bank : NUBM08

(In this specification, the blue laser diode bank is referred to as "LD-Bank", and the laser diode with collimator lens mounted on the LD-Bank is referred as "LD".)

1. Specifications

(1) Features

Forward Current : 3.0A(CW Operation), $T_m = 70^{\circ}\text{C}$, ACC(Auto Current Control) Operation

(2) LD-Bank Absolute Maximum Ratings

Item	Symbol	Absolute Maximum Ratings	Unit
Forward Current ($T_m = 25^{\circ}\text{C}$) *1)	I_f	3.5	A
Allowable Reverse Current ($T_m = 25^{\circ}\text{C}$) *1)	$I_r(\text{LD})$	85	mA
Storage Temperature	T_{stg}	$-40 \sim 85$	$^{\circ}\text{C}$
Operating Temperature *2)	T_m	$0 \sim 70$	$^{\circ}\text{C}$

*1) Individual LD

*2) Refer to Fig.1

(3) Initial Electrical/Optical Characteristics of LD-Bank

($T_m = 25^{\circ}\text{C}$, equivalent to $T_b = 32^{\circ}\text{C}$)

Item	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Optical Output Power	P_o	$I_f = 3.0\text{A}$	34	(36)	-	W
Dominant Wavelength *3)	λ_d	$I_f = 3.0\text{A}$	450	(455)	460	nm
Operating Voltage *4)	V_{op}	$I_f = 3.0\text{A}$	29	(34)	38	V
Beam Pointing Tilt Angle *5)	$\Delta\theta$	$I_f = 3.0\text{A}$	-	-	0.7	$^{\circ}$

All figures in this specification are measured by Nichia's method and may contain measurement deviations.

() are reference figures.

*3) The average value of the dominant wavelength of the LDs.

*4) When connected in series with the 8 LDs.

*5) Beam Pointing Tilt Angle $\Delta\theta = \sqrt{\Delta\theta_{\parallel}^2 + \Delta\theta_{\perp}^2}$ (Individual LD)

(4) Lifetime Characteristics of LD-Bank

Item	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Estimated Lifetime *6) *7)	Life	Cumulative Failure Rate 50%	10000	(20000)	-	Hr
		Cumulative Failure Rate 1%	1000	-	-	Hr

() are reference figures.

*6) Condition: $T_m = 70^{\circ}\text{C}$, ACC, $I_f = 3.0\text{A}$ (CW)

*7) Calculation Method: Estimated in the linear extrapolation by degradation rate at tested duration 1000 hrs.

Criteria for Judging the Defect of Lifetime: $P_o \times 0.5$

Cumulative failure rate is calculated by the parameter greater than 500pcs.

(5) Initial Electrical/Optical Characteristics of LD

(T_c = 25°C)

Item	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Optical Output Power	P _o	I _f =3.0A	-	(4.35)	-	W
Dominant Wavelength *8)	λ _d	I _f =3.0A	448	(455)	462	nm
Threshold Current	I _{th}	CW Operation	280	-	480	mA
Slope Efficiency	η	CW Operation	-	(1.7)	-	W/A
Operating Voltage	V _{op}	I _f =3.0A	3.6	-	4.8	V
Beam Divergence *9)	Parallel	θ//	I _f =3.0A	0.65	(0.85)	1.05 °
	Perpendicular	θ⊥	I _f =3.0A	-1.0	(0.1)	1.0 °

All figures in this specification are measured by Nichia's method and may contain measurement deviations.

() are reference figures.

*8) λ_d is defined from trichromatic coordinate (x, y) values on chromaticity diagram calculated from the peak intensity higher than 1/e² shown in Fig.2.

*9) Full angle at 1/e² from peak intensity

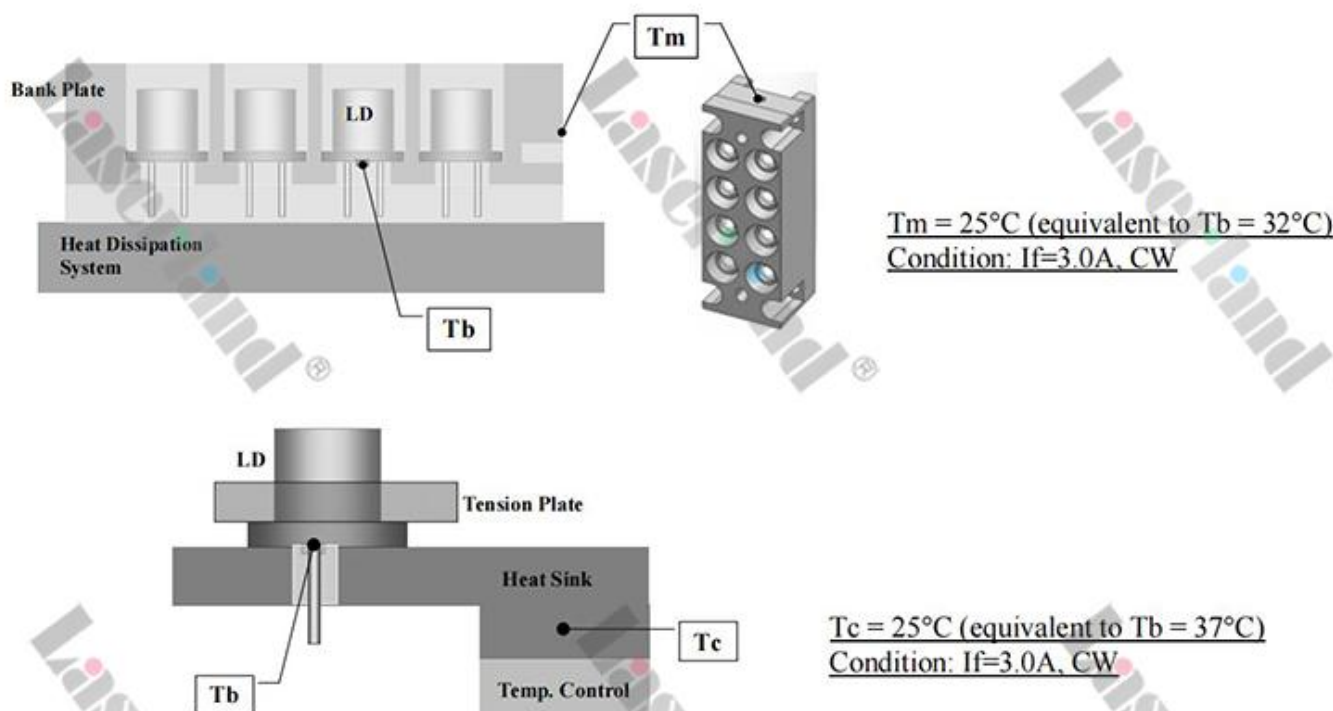
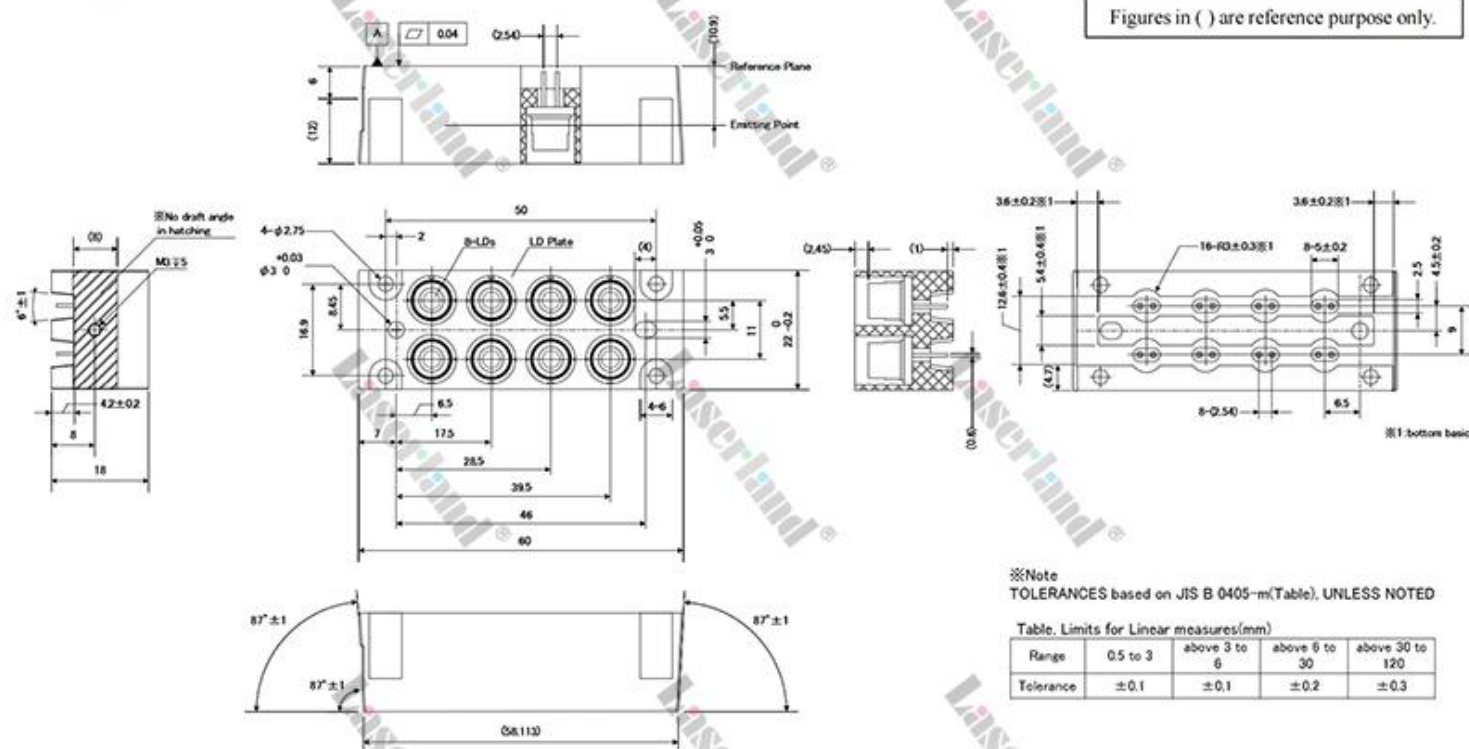


Fig.1 Schematic diagram of measurement system

■ Outline Dimension(1)

Figures in () are reference purpose only.



※Note
TOLERANCES based on JIS B 0405-m(Table). UNLESS NOTED

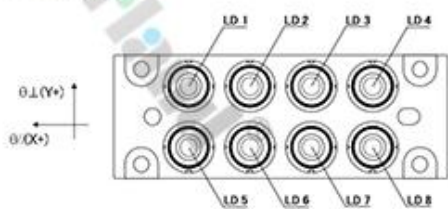
Table. Limits for Linear measures(mm)

Range	0.5 to 3	above 3 to 6	above 6 to 30	above 30 to 120
Tolerance	±0.1	±0.1	±0.2	±0.3

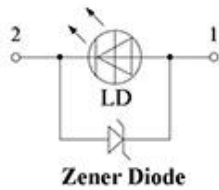
Model	Title
NUxMxxE / NUxMxx	OUTLINE DIMENSION(1)
NICHIA CORPORATION	No. UTZ-ZAF04760

■ Outline Dimension(2)

Connection



Parts	Materials
Stem	Cu + Fe + Ni plating + Au plating
Lead	Ni-Fe-Co alloys + Ni plating + Au plating
Cap	Fe-Cr alloys
Lens	Optical glass
Chip	Gallium nitride
Sub mount	SiC
Zener Diode	Silicon
LD plate	Al alloys + Ni plating + Au plating
Solder	Sn - Ag - Bi - In



1. LD Anode
2. LD Cathode

Model	Title
NUxMxxE / NUxMxx	OUTLINE DIMENSION(2)
NICHIA CORPORATION	No. UTZ-ZAF04770