



MASTER INSTRUMENT CORPORATION

MODEL NO. : ML50W13H-BED  
(MUB-50W3-30-15)

PAGE: 1/3

Dics Material	Light Color	Lens Color
InGaN	White	Water Clear

**Absolute Ratings**

(Ta=25°C)

Item	Symbol	Maximum	Unit
Power Dissipation	P <sub>D</sub>	100	mW
Continuous Forward Current	I <sub>F</sub>	30	mA
Peak Forward Current (1/10 Duty Cycle 0.1ms Pulse Width)	I <sub>FP</sub>	100	mA
Reverse Voltage	V <sub>R</sub>	5	V
Derating Linear Form 25°C		0.45	MA/°C
Operating temperature Range	T <sub>opr</sub>	-20 to +80	°C
Storage Temperature Range	T <sub>stg</sub>	-30 to +85	°C
Electrostatic Discharge Threshold (HBM)	E <sub>ot</sub>	1000	V

**\*\*Condition for IFP is pulse of 1/10 duty and 0.1 msec width.**

**\*\*Solder temperature 1.6mm from body for 5 seconds at 250°C ±5°C.**

**\*\*Caution in ESD: Static Electricity and surge damages the LED. It is recommend to use a wrist band or anti-electrostatic glove when handling the LED. All devices, Equipment and machinery must be properly grounded.**

**CHARACTERISITIC**

(Ta=25°C)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V <sub>F</sub>	IF=20mA		3.5	4.0	V
Reverse Current	I <sub>R</sub>	VR=5V			10	uA
Viewing Angle	2θ <sub>1/2</sub>	IF=20mA		15		Deg
Luminous Intensity	I <sub>v</sub>	IF=20mA	2100	3000		mcd



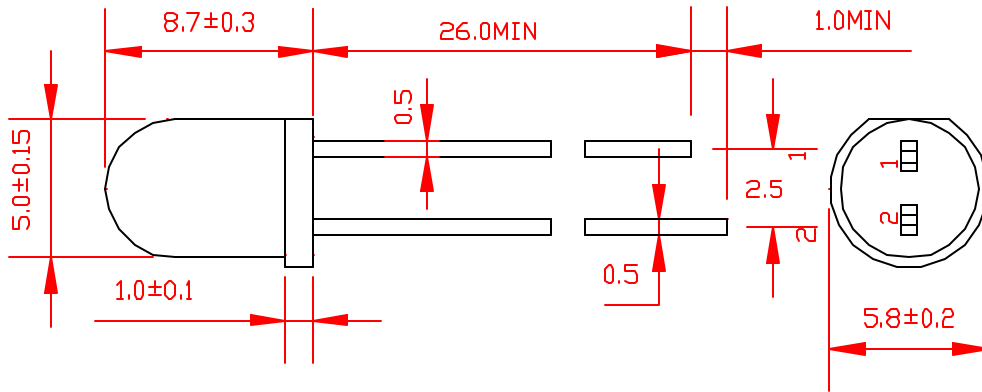
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MODEL NO. : ML50W13H-BED  
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PAGE: 2/3

P- 8

- 1. Cat hode
- 2. Anode





MASTER INSTRUMENT CORPORATION

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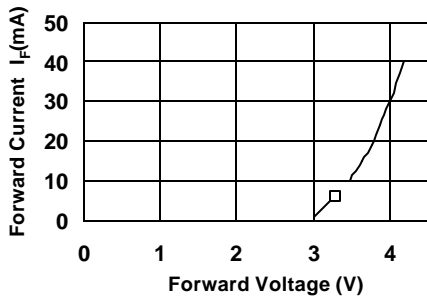


FIG1. FORWARD CURRENT VS. FORWARD VOLTAGE

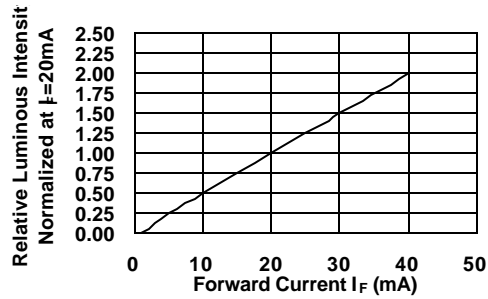


FIG2. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

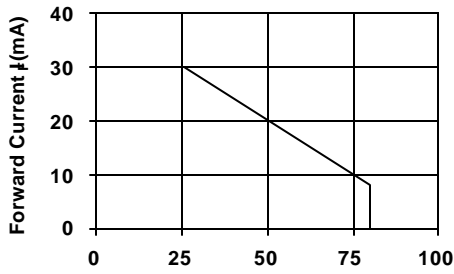


FIG3-27. FORWARD CURRENT VS. AMBIENT TEMPERATURE

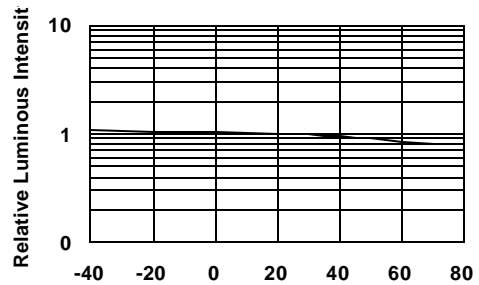
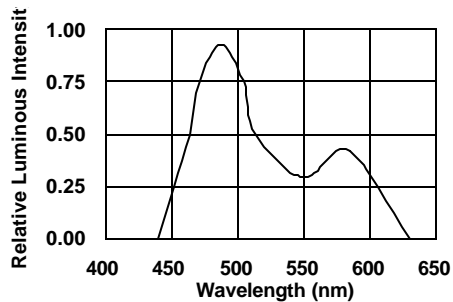


FIG4. LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE



RELATIVE INTENSITY LUMINOUS VS. WAVELENGTH

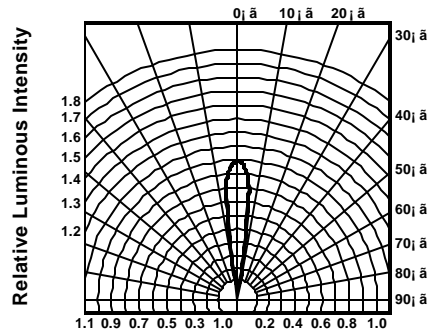


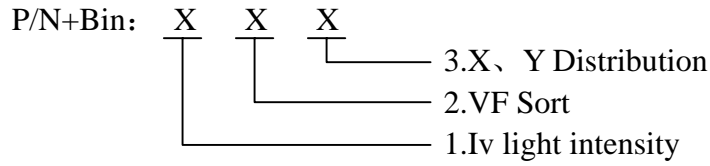
FIG6-46. SPATIAL DISTRIBUTION

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## 2. White Color :

### 2.1 White Color Bin Selection :



### 2.2. Luminous Intensity (IV)、Forward Voltage (VF) :

IV (Luminous Intensity)	
Code	Range
<u>F</u>	52-67
<u>E</u>	67-87
<u>D</u>	87-113
<u>C</u>	113-147
<u>B</u>	147-192
A	249-324
B	324-421
C	421-547
D	547-711
E	711-924
F	924-1202
G	1202-1562
H	1562-2031
I	2031-2640
J	2640-3432
K	3432-4462
L	4462-5801
M	5801-7541
N	7541-9803
O	9803-12744
P	12744-16567
Q	16567-21537
R	21537-27998
S	27998-36398
T	36398-47317
U	47317-61512

VF (Forward Voltage)	
C	Range
A	2.80-3.00
B	3.00-3.20
C	3.20-3.40
D	<b>3.40-3.60</b>
E	<b>3.60-3.80</b>
F	<b>3.80-4.00</b>

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## 2.3、 White Color X、 Y:

1	X	0.22	0.22	0.26	0.26
	Y	0.19	0.25	0.29	0.24
2	X	0.26	0.26	0.28	0.28
	Y	0.24	0.29	0.31	0.26
3	X	0.28	0.28	0.30	0.30
	Y	0.26	0.31	0.33	0.28
4	X	0.30	0.30	0.32	0.32
	Y	0.28	0.33	0.35	0.30
5	X	0.32	0.32	0.34	0.34
	Y	0.30	0.35	0.37	0.32
6	X	0.34	0.34	0.36	0.36
	Y	0.32	0.37	0.39	0.34
7	X	0.36	0.36	0.38	0.38
	Y	0.34	0.39	0.41	0.36