



LIGITEK

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## ROUND TYPE LED LAMPS

LWK2043/F443

# DATA SHEET

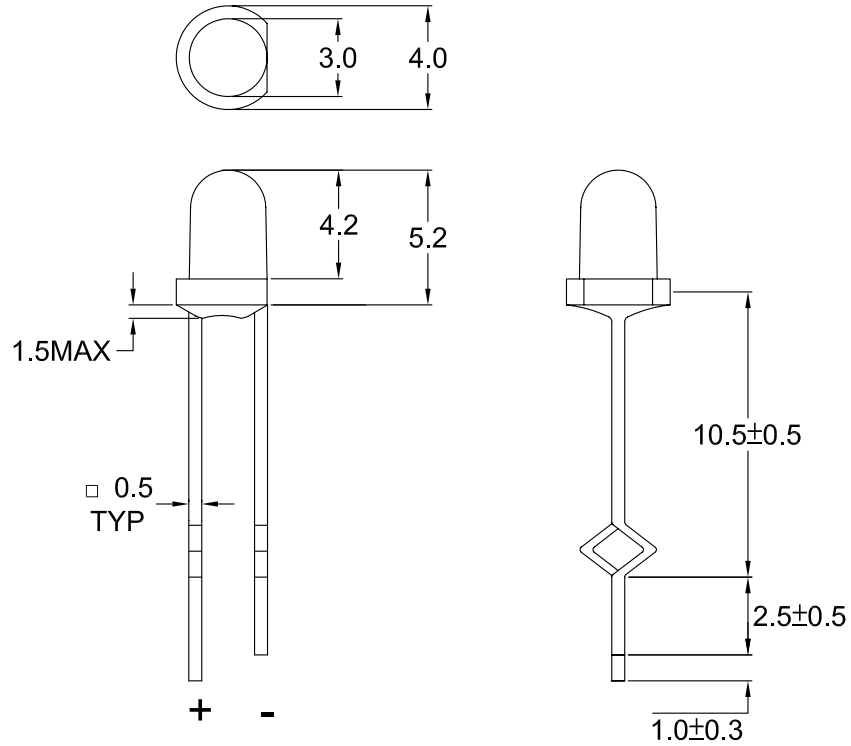
DOC. NO : QW0905-LWK2043/F443

REV. : A

DATE : 31 - May- 2004

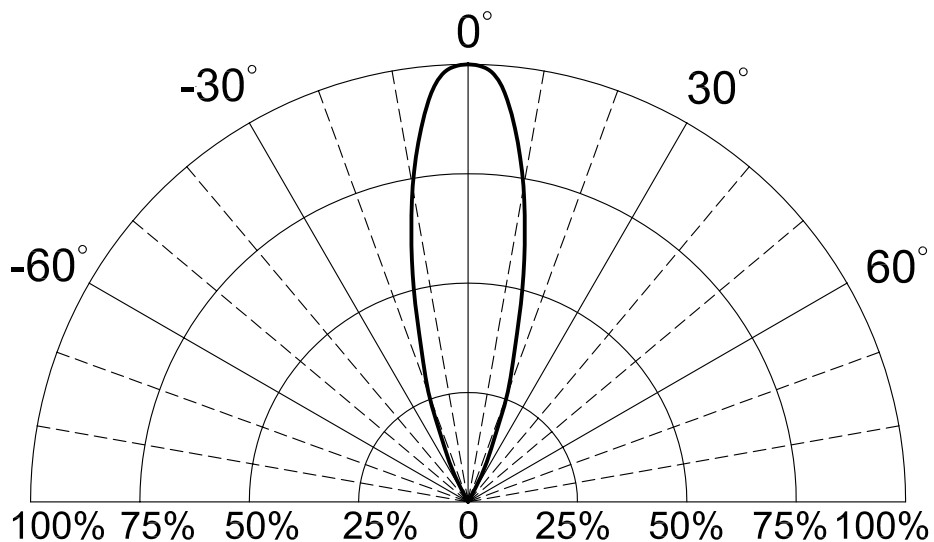


### Package Dimensions



Note : 1.All dimension are in millimeter tolerance is  $\pm 0.25\text{mm}$  unless otherwise noted.  
2.Specifications are subject to change without notice.

### Directivity Radiation





## Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Ratings	UNIT
		WK	
Forward Current	IF	30	mA
Peak Forward Current Duty 1/10@10KHz	IFP	100	mA
Power Dissipation	PD	120	mW
Reverse Current @5V	Ir	50	μA
Electrostatic Discharge	ESD	150	V
Operating Temperature	Topr	-20 ~ +80	°C
Storage Temperature	Tstg	-30 ~ +100	°C
Soldering Temperature	Tsol	Max 260°C for 5 sec Max (2mm from Body)	

## Typical Electrical &amp; Optical Characteristics (Ta=25°C)

PART NO	MATERIAL	COLOR		Chromaticity Coordinates		Forward voltage @20mA(V)		Luminous intensity @20mA(mcd)		Viewing angle 2θ 1/2 (deg)
		Emitted	Lens	X	Y	Typ.	Max.	Min.	Typ.	
LWK2043/F443	InGaN/GaN	White	Water Clear	0.28±0.03	0.28±0.06	3.5	4.0	450	900	30

Note : 1.The forward voltage data did not including ±0.1V testing tolerance.

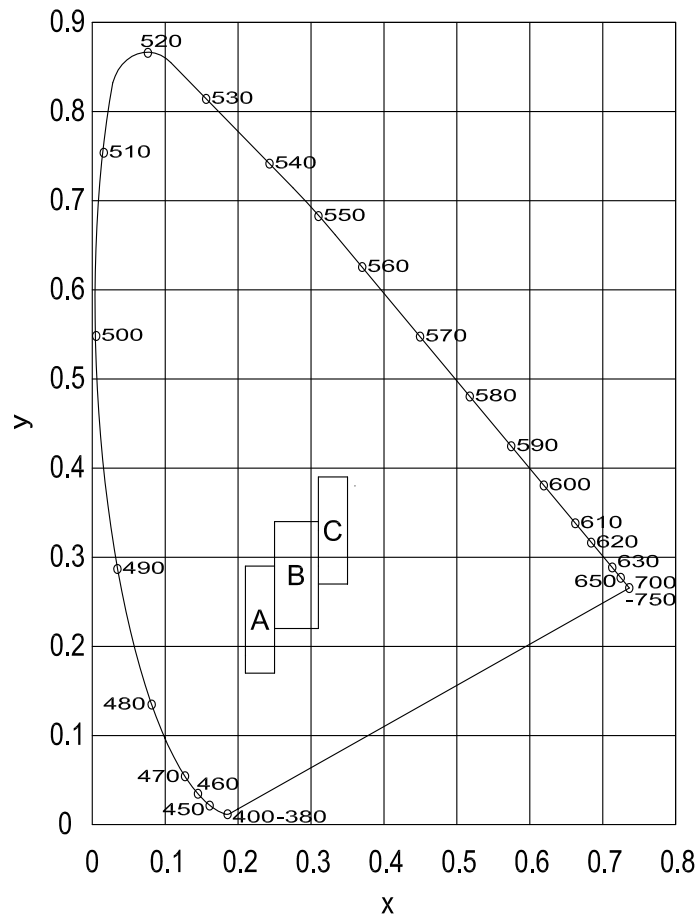
2. The luminous intensity data did not including ±15% testing tolerance.



### Chromaticity Coordinates Specifications for Bin Grading

Rank	Chromaticity Coordinates		Rank	Chromaticity Coordinates		Rank	Chromaticity Coordinates	
A	X=0.23±0.02	Y=0.23±0.06	B	X=0.28±0.03	Y=0.28±0.06	C	X=0.33±0.02	Y=0.33±0.06
A-1	X=0.23±0.02	Y=0.2±0.03	B-1	X=0.28±0.03	Y=0.24±0.015	C-1	X=0.33±0.02	Y=0.3±0.03
A-2	X=0.23±0.02	Y=0.26±0.03	B-2	X=0.28±0.03	Y=0.26±0.015	C-2	X=0.33±0.02	Y=0.36±0.03
			B-3	X=0.28±0.03	Y=0.29±0.015			
			B-4	X=0.28±0.03	Y=0.32±0.015			

### CIE Chromaticity Diagram





# Typical Electro-Optical Characteristics Curve

## DBK CHIP

Fig.1 Forward current vs. Forward Voltage

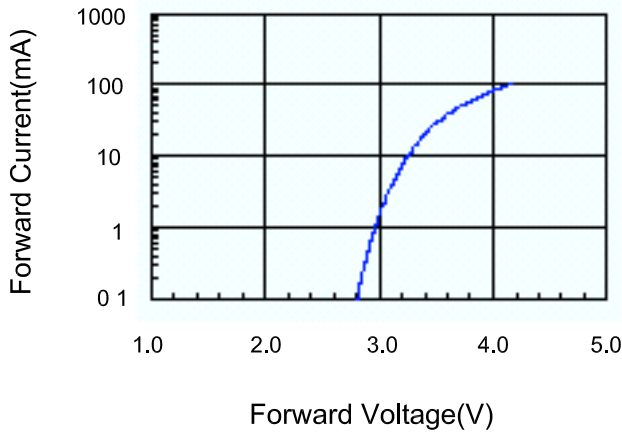


Fig.2 Relative Intensity vs. Forward Current

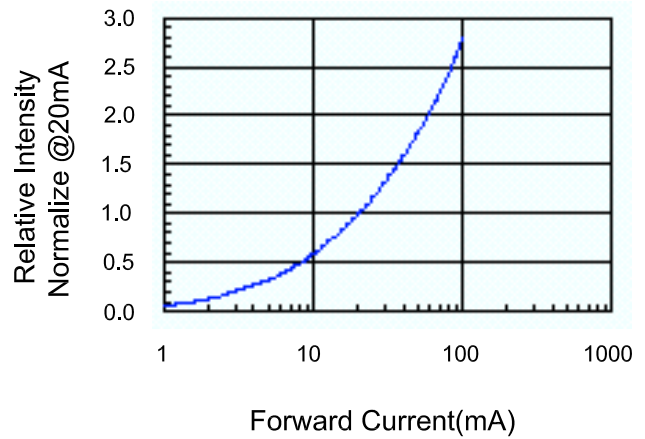


Fig.3 Forward Voltage vs. Temperature

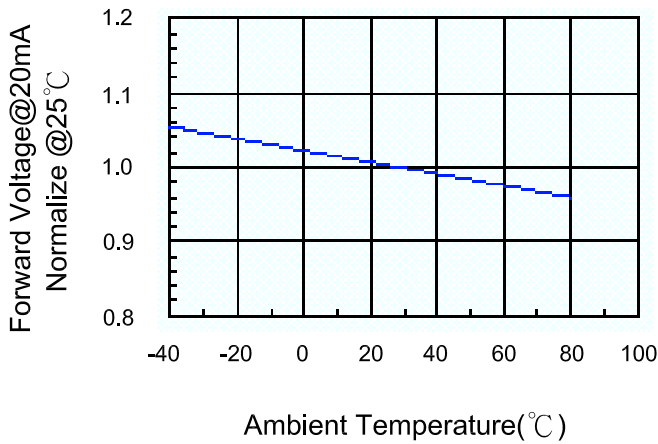


Fig.4 Relative Intensity vs. Temperature

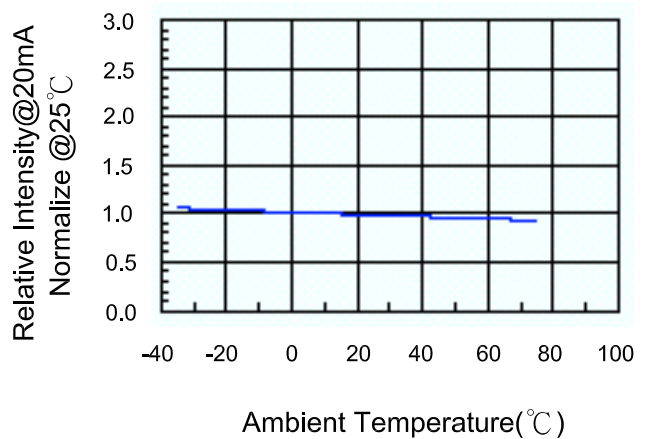
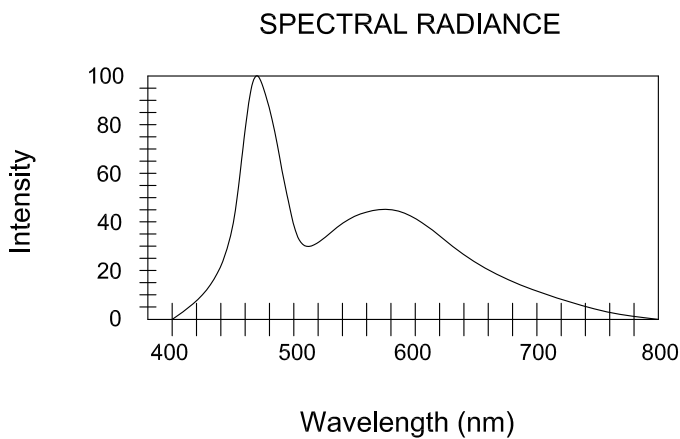


Fig.5 Luminous Spectrum (Ta=25°C)



**Reliability Test:**

Test Item	Test Condition	Description	Reference Standard
Operating Life Test	1.Under Room Temperature 2.If=20mA 3.t=1000 hrs (-24hrs, +72hrs)	This test is conducted for the purpose of determining the resistance of a part in electrical and thermal stressed.	MIL-STD-750: 1026 MIL-STD-883: 1005 JIS C 7021: B-1
High Temperature Storage Test	1.Ta=105°C±5°C 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under condition of high temperature for hours.	MIL-STD-883:1008 JIS C 7021: B-10
Low Temperature Storage Test	1.Ta=-40°C±5°C 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under condition of low temperature for hours.	JIS C 7021: B-12
High Temperature High Humidity Test	1.Ta=65°C±5°C 2.RH=90%~95% 3.t=240hrs±2hrs	The purpose of this test is the resistance of the device under tropical for hours.	MIL-STD-202:103B JIS C 7021: B-11
Thermal Shock Test	1.Ta=105°C±5°C & -40°C±5°C (10min) (10min) 2.total 10 cycles	The purpose of this is the resistance of the device to sudden extreme changes in high and low temperature.	MIL-STD-202: 107D MIL-STD-750: 1051 MIL-STD-883: 1011
Solder Resistance Test	1.T.Sol=260°C±5°C 2.Dwell time= 10±1sec.	This test intended to determine the thermal characteristic resistance of the device to sudden exposures at extreme changes in temperature when soldering the lead wire.	MIL-STD-202: 210A MIL-STD-750: 2031 JIS C 7021: A-1
Solderability Test	1.T.Sol=230°C±5°C 2.Dwell time=5±1sec	This test intended to see soldering well performed or not.	MIL-STD-202: 208D MIL-STD-750: 2026 MIL-STD-883: 2003 JIS C 7021: A-2