

Backlight Displays  
Technical Data Sheet

Part No.: KWB-R8445W-1W

**Features:**

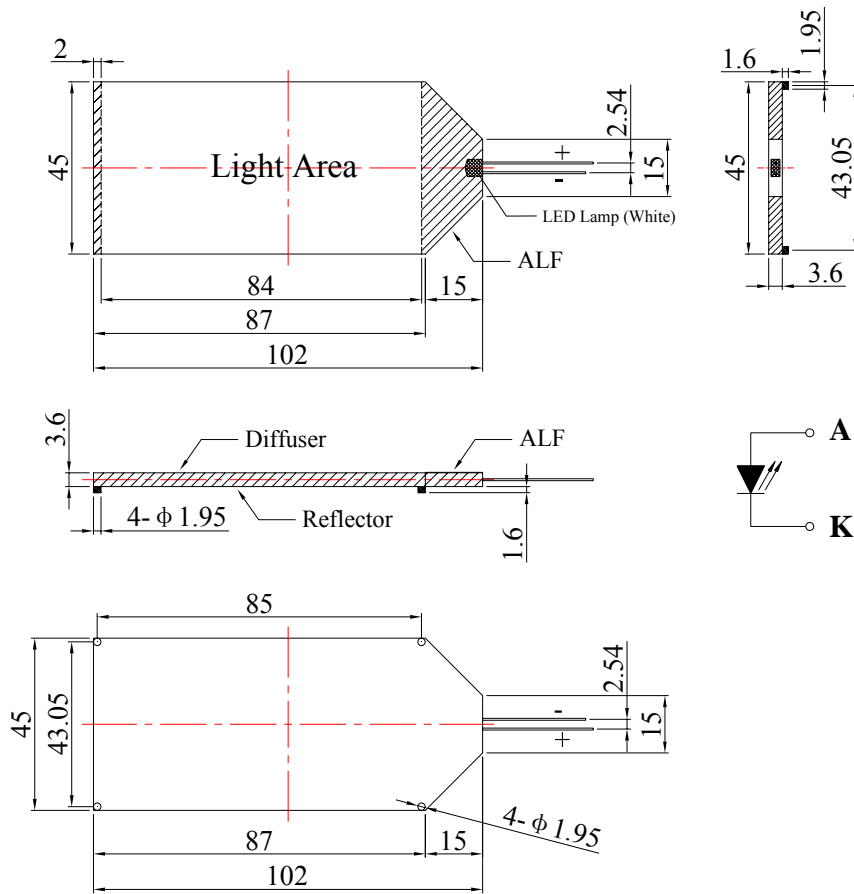
- ◇ Low power requirements.
- ◇ Large area, uniform, bright light emitting surface.
- ◇ Easy for installation.
- ◇ Color: White.
- ◇ The product itself will remain within RoHS compliant Version.

**Descriptions:**

- ◇ The White source color devices are made with InGaN on InGaN substrate light emitting diode.

**Applications:**

- ◇ Flat backlight for LCD, switches and symbols.
- ◇ Indicator and backlight in office equipment.
- ◇ Indicator and backlight for battery driven equipment.
- ◇ Indicator and backlight for audio and video equipment.
- ◇ Automotive: Backlighting in dashboards and switches.
- ◇ Telecommunication: Indicator and backlighting in telephone and fax.

**Package Dimension:**


Part No.	Chip Material	Face Color	Source Color
KWB-R8445W-1W	InGaN	White	White

**Notes:**

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25$  mm (.010") unless otherwise specified.
3. Specifications are subject to change without notice.

**Absolute Maximum Ratings at Ta=25°C**

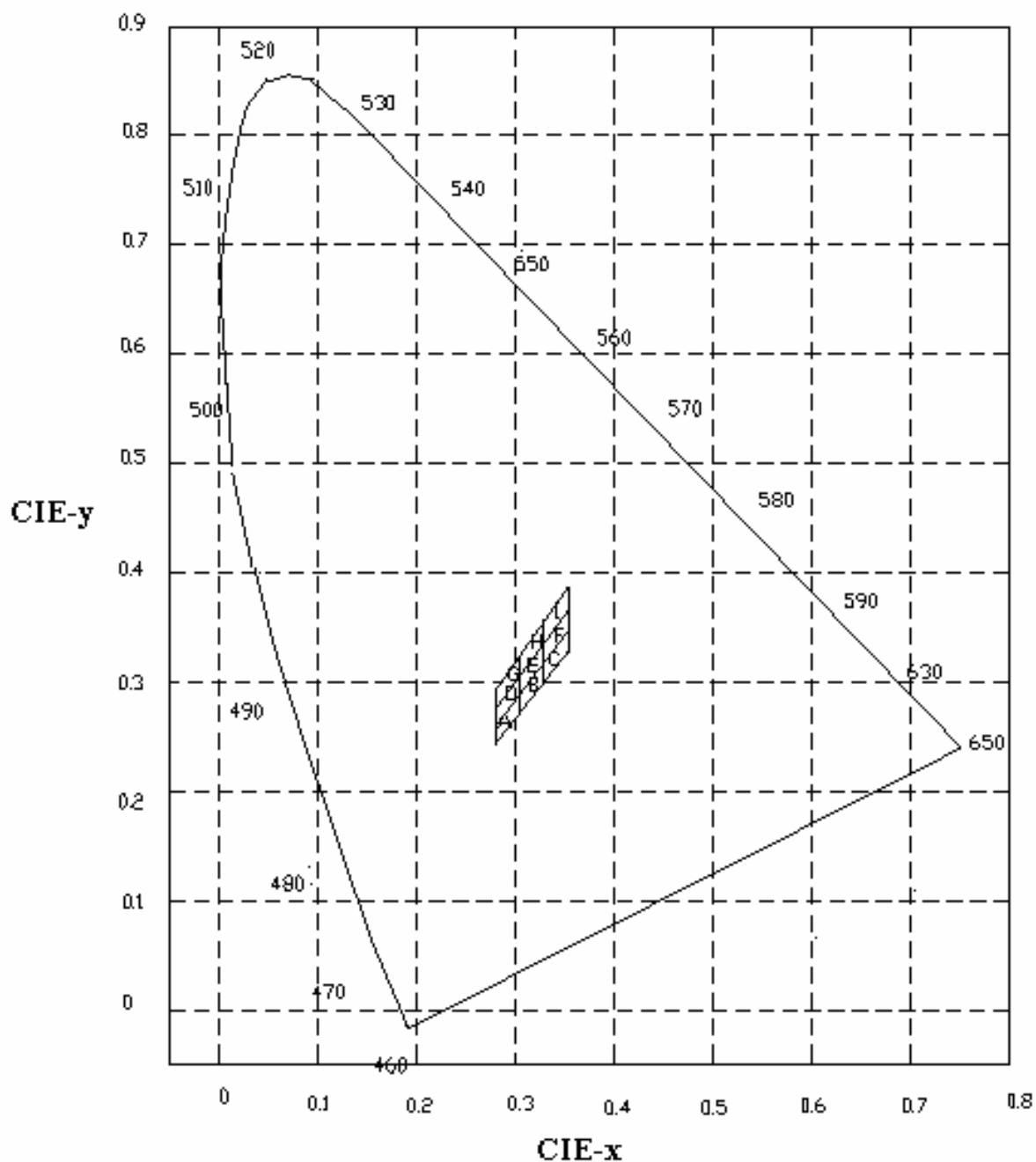
Parameters	Symbol	Max.	Unit
Power Dissipation	PD	100	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	IFP	50	mA
Forward Current	IF	25	mA
Reverse Voltage	VR	5	V
Electrostatic Discharge	ESD	400	V
Operating Temperature Range	Topr	-20°C to +70°C	
Storage Temperature Range	Tstg	-25°C to +75°C	
Lead Soldering Temperature [4mm (.157") From Body]	Tsld	260°C for 5 Seconds	

**Electrical Optical Characteristics at Ta=25°C**

Parameters	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	IV	---	40	---	cd/m <sup>2</sup>	IF=20mA
Forward Current	IF	15	20	25	mA	VF=3.30V
Chromaticity Coordinates	x	---	0.27	---		IF=20mA
	y	---	0.28	---		IF=20mA
Forward Voltage	VF	3.00	3.30	3.60	V	IF=20mA
Reverse Current	IR	---	---	10	μA	VR=5V

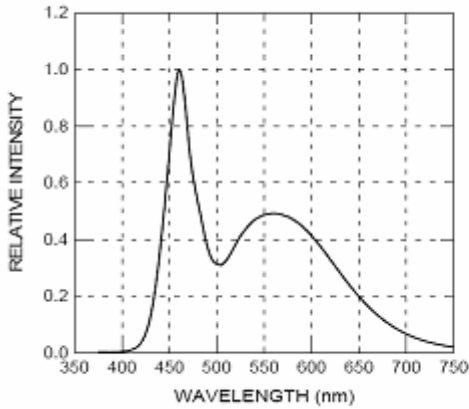
**Notes:**

- Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
- It use many parameters that correspond to the CIE 1931 2°. X, Y, and Z are CIE 1931 2° values of Red, Green and Blue content of the measurement.

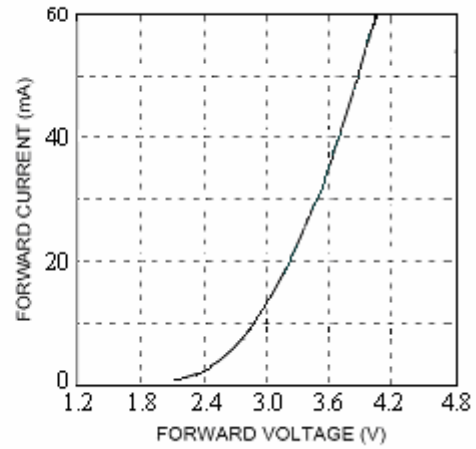
**CIE Chromaticity Diagram:**


**Typical Electrical / Optical Characteristics Curves**  
 (25°C Ambient Temperature Unless Otherwise Noted)

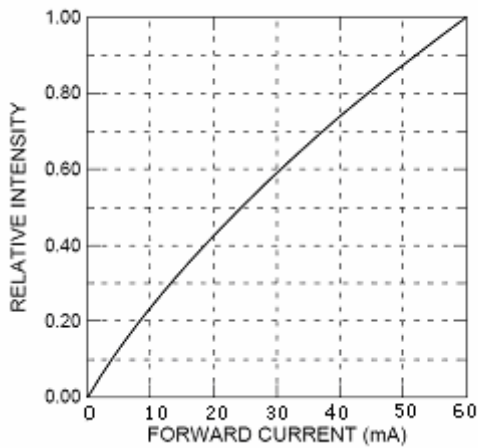
**Relative Intensity vs. Wavelength**



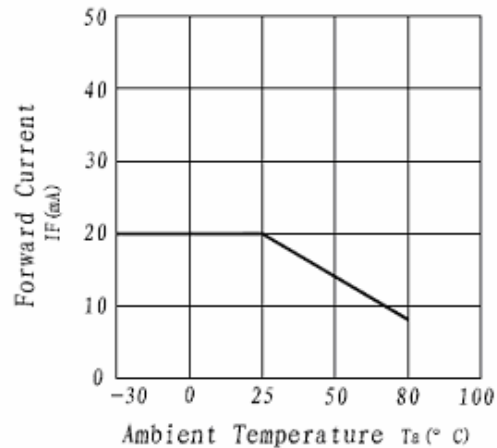
**Forward Current vs. Forward Voltage**



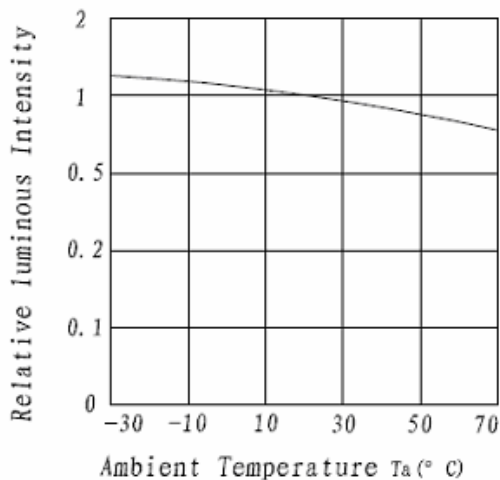
**Relative Intensity vs. Forward Current**



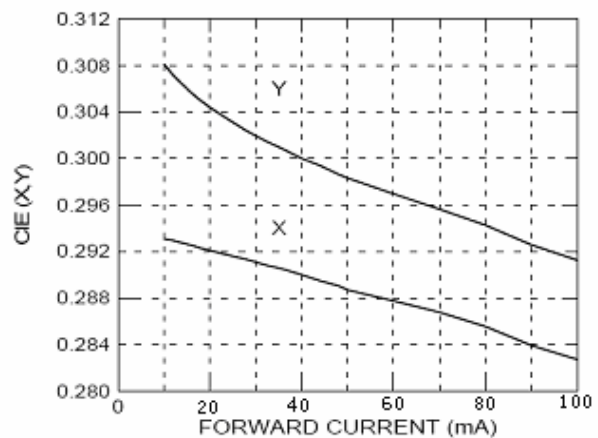
**Forward Current VS. Ambient Temperature**



**Relative Intensity VS. Ambient Temperature**



**Chromaticity Coordinate vs. Forward Current**



**Please read the following notes before using the datasheets:**

**1. Over-current-proof**

Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

**2. Storage**

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package, the LEDs should be kept at 30°C or less and 90%RH or less.

2.3 The LEDs should be used within a year.

2.4 After opening the package, the LEDs should be kept at 30°C or less and 70%RH or less.

2.5 The LEDs should be used within 168 hours (7 days) after opening the package.

**3. Soldering Condition**

3.1 Pb-free solder temperature profile.

3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

3.4 After soldering, do not warp the circuit board.

**4. Soldering Iron**

Each terminal is to go to the tip of soldering iron temperature less than 260°C for 5 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

**5. Repairing**

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

**6. Caution in ESD**

Static Electricity and surge damages the LED. It is recommended to use a wrist band or anti-electrostatic glove when handling the LED. All devices equipment and machinery must be properly grounded.