SPECIFICATIONS FOR UPEC POWER LIGHT SOURCE TYPE LED

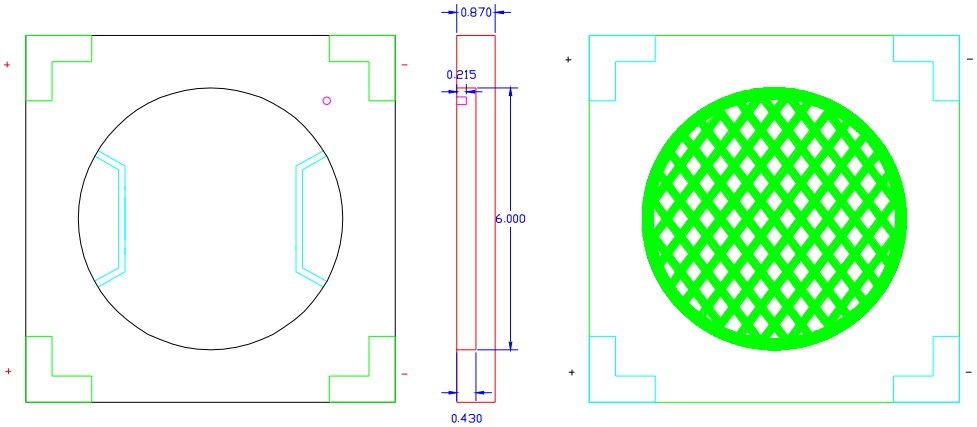
MODEL: **UE-HP845 Series**

UPEC ELECTRONICS CORPORATION

Features

- Highest Flux
- Very long operating life (life >> 50000hr)
- More Energy Efficient than Incandescent and most Halogen lamps
- Low voltage DC operated
- Instant light (less than 100 ns)
- Superior ESD protection

Package Dimensions



Notes

1. Drawings not to scale
2. All dimensions are in millimeters .
3. Tolerance is ±0.1mm unless otherwise noted.
4. Protruded resin under flange is 1.0mm max.
5. Lead spacing is measured where the leads emerge from the package.
6. Specifications are subject to change without notice.
7. Precautions for ESD:
   STATIC SHIELD 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
8. This data-sheet only valid for six months

			Approved	Checked	Symbol	UPEC LED
			FREER	DENNY	Name	UE-HP845 Series
-	JAN/17/06				Drawing No	WIENDS486
Mark	Date	Description Approve				

Absolute Maximum Ratings at Ta=25

Parameter	Symbol	Max	Unit
Power Dissipation	PD	5	W
Pulse Forward Current	IPF	1000	mA
Forward Current	IF	700	mA
Reverse Voltage	VR	5	V
Operating Temperature Range	Topr	- 40 to +85	
Storage Temperature Range	Tstg	- 40 to + 100	

Flux Characteristics at 700mA , Junction Temperature, TJ= 25

Color	Model	Min.	Typ.
White	UE-HP845NW	100	150
Warm White	UE-HP845WW	80	120
Royal Blue	UE-HP845RB	25	40
Blue	UE-HP845NB	35	50
Cyan	UE-HP845CN	120	160
Pure Green	UE-HP845PG	120	160
Amber	UE-HP845NO	100	150
Red-Orange	UE-HP845RO	100	150
Red	UE-HP845NR	100	150

Optical Characteristics at 700mA , Junction Temperature, TJ = 25

Color	CCT / λD			λ	λ/ T
	Min.	Typ.	Max.		
White	4500K	6000K	12000K	--	--
Warm White	2850K	3300K	3800K	--	--
Royal Blue	450nm	455nm	460nm	25	0.04
Blue	460nm	470nm	475nm	25	0.04
Cyan	495nm	505nm	515nm	30	0.04
Pure Green	515nm	530nm	540nm	35	0.04
Amber	587nm	590nm	595nm	20	0.05
Red-Orange	600nm	610nm	615nm	20	0.05
Red	615nm	625nm	645nm	20	0.05

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Electrical Characteristics at 700mA , Junction Temperature, TJ = 25

Color	Forward Voltage			/W Thermal Resistance, Junction To Case	V/ T
	Min.	Typ.	Max.		
White	5.6 v	7 v	9 v	20	-2.0
Warm White	5.6 v	7 v	9 v	20	-2.0
Royal Blue	5.6 v	7 v	9 v	20	-2.0
Blue	5.6 v	7 v	9 v	20	-2.0
Cyan	5.6 v	7 v	9 v	20	-2.0
Pure Green	5.6 v	7 v	9 v	20	-2.0
Amber	4.0 v	5.0 v	6.0 v	25	-2.0
Red-Orange	4.0 v	5.0 v	6.0 v	25	-2.0
Red	4.0 v	5.0 v	6.0 v	25	-2.0

Notes

1. **Minimum luminous flux or radiometric power performance guaranteed within published operating conditions. maintains a tolerance of ±10% on flux and power measurements**
2. **Dominant wavelength is derived from the CIE 1931 Chromaticity diagram and represents the perceived color. maintains a tolerance of± 1 nm for dominant wavelength measurements.**
3. **CCT ±5% tester tolerance.**
4. **CRI (Color Rendering Index) for White product types is 70. CRI for Warm White product type is 90 with typical R9 value of 70.**
5. **Voltage maintains a tolerance of ± 0.1V on forward voltage measurements.**

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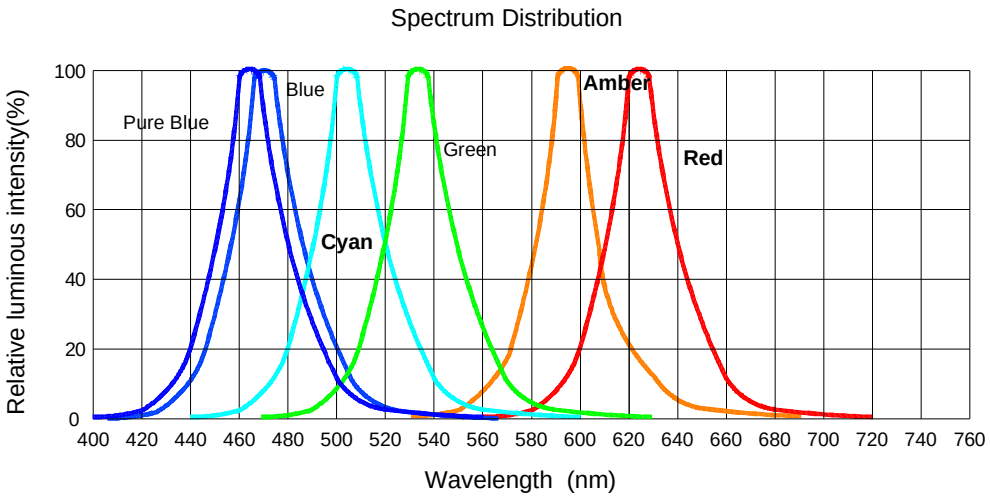
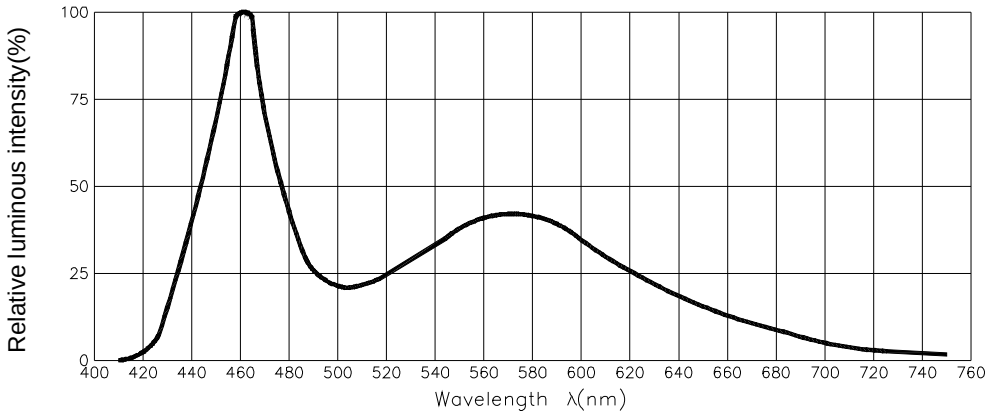
Typical Electrical / Optical Characteristics Curves





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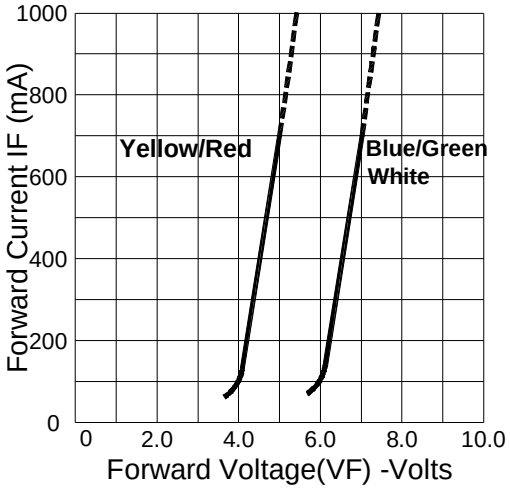
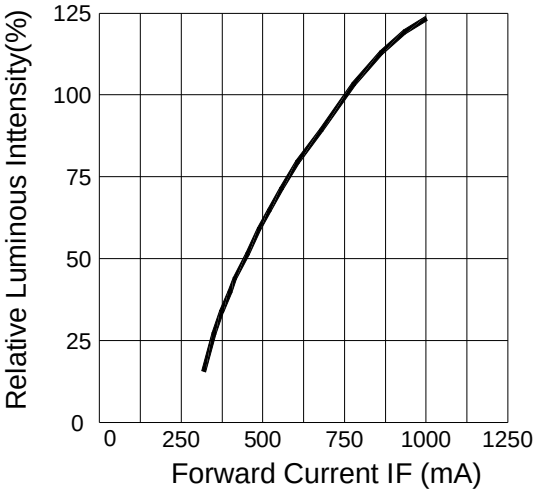
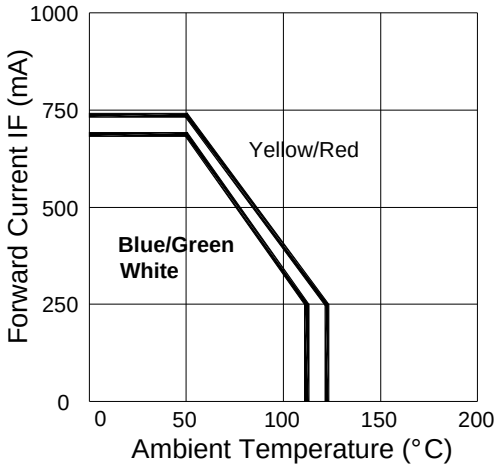
Forward Current VS. Forward Voltage



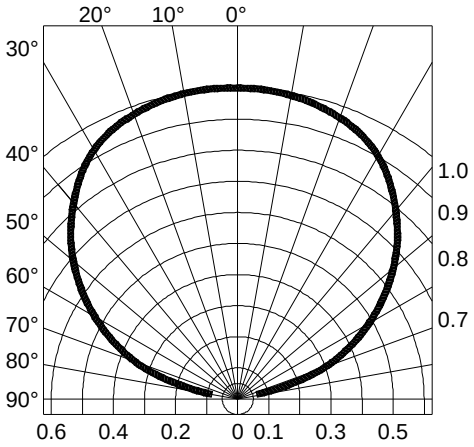
Luminous Intensity VS. Forward Current



Forward Current VS. Ambient Temperature



Radiation Diagram



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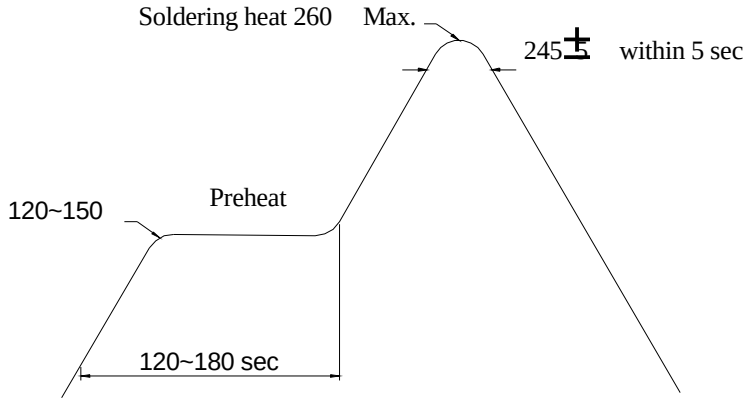
Reliability Test Items and Conditions

No.	Item	Test Conditions				Test time	Ac/Re
1	Solder Heat	260±5				5 sec	0/1
2	Temperature Cycle	-40	25	105	25	100cycle	0/1
		30 min	5 min	30 min	5 min		
3	Thermal Shock	-40		105		20 cycle	0/1
		5 min		5 min			
4	High Temperature Storage	85				1000 hrs	0/1
5	Low Temperature Storage	-35				1000 hrs	0/1
6	DC Operating Life	I_F 700mA				1000 hrs	0/1
7	High Temperature/High Humidity	Ta 60 R.H 90 .				1000 hrs	0/1

Judgment Criteria		
	Forward Voltage Vf	Vf_{max} Increase <1.2x
	Reverse Current I_R	$I_{R\ max}$ Increase <2x
	Luminous Intensity Flux	Iv Decay < 50%

Note Measurement shall be taken after the tested samples have been returned to normal ambient conditions (generally after two hours) Sample Q'ty is 30 pcs.

Soldering heat reliability DIP Please refer to the following figure



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Precautions For Use

- Over–current–proof

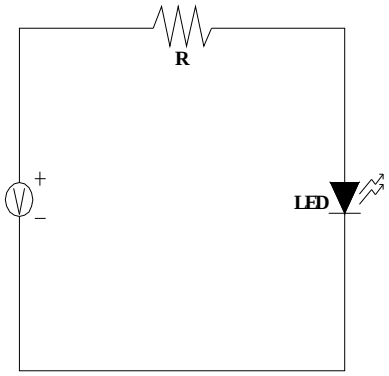
Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change Burn out will happen

- Storage

1. The operation of temperature and R.H. are -20 80 , 60 R.H. Max..
2. Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp proof box with desiccating agent. Considering the tape life, we suggest our customers to use our products within 1.5 year from production date .

It is recommended to bake before soldering when the package is unsealed after 72 hrs.
The condition is : 60 ±5 for 15hrs.

Test Circuit



Soldering Conditions

Reflow soldering			Hand Soldering	
	Lead Solder	Lead – free Solder	Temp. Soldering	350 Max.
Pre-Heat	120~150	180~200	time	3 sec .Max.
Pre-heat time	120 sec. Max.	120 sec. Max.		
Peak Temperature	240 . Max.	260 . Max.		
Soldering Time	10 sec . Max.	10 sec . Max.		

- Occasionally there is a brightness decrease caused by the influence of heat or ambient atmosphere during air reflow . It is recommended that the User use the nitrogen reflow method.
- Repairing should not be done after the LEDs have been soldered. When repairing is unavoidable , a double-head soldering iron should be used. It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.
- Reflow soldering should not be done more than two times.
- When soldering ,do not put stress on LEDs during heating.
- After soldering ,do not warp the circuit board.

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