

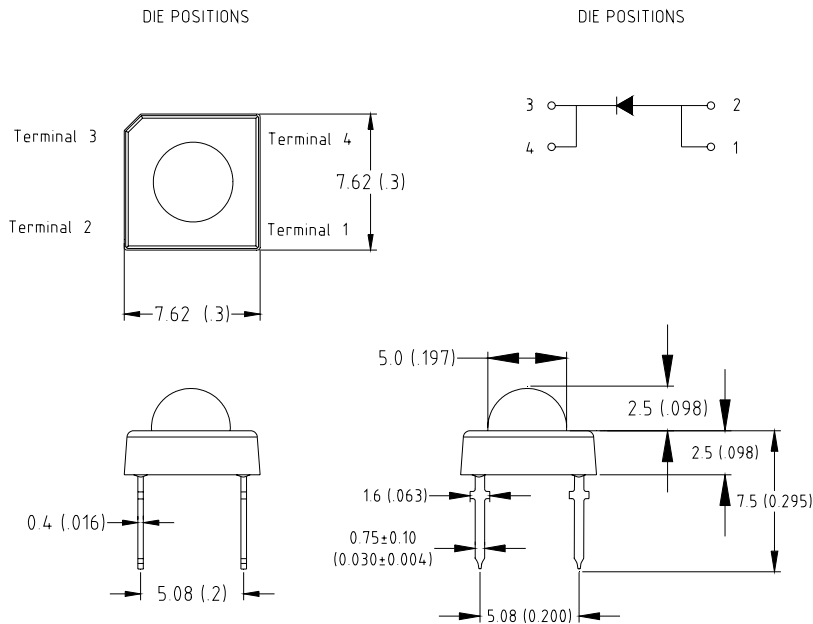
SPECIFICATIONS FOR UPEC FLUX TYPE BLUE LED

MODEL: UE-FR500NB0-1TN

Features

- High intensity
- General purpose leads
- Reliable and rugged

Package Dimensions



Part NO.	Chip Material	Lens Color	Source Color
UE-FR500NB0-1TN	InGaN	Water Clear	Blue

Notes

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25\text{mm}$ (.010") unless otherwise noted.
3. Protruded resin under flange is 1.0mm (.04") max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.
6. 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.
7. This data-sheet only valid for six months.

Mark	Date	Description Approve	Approved	Checked	Symbol	UPEC LED	
-	OCT/18/05		FERRE	Kyo	Name	UPEC LED	
							UE-FR500NB0-1TN
						Drawing No	WIENDS496

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Max	Unit
Power Dissipation	PD	80	mW
Pulse Forward Current	IPF	100	mA
Forward Current	IF	20	mA
Reverse Voltage	VR	5	V
Operating Temperature Range	Topr	- 30 to +80	°C
Storage Temperature Range	Tstg	- 40 to +100	°C
Lead Soldering Temperature [1.6mm (0.063inch) From Body] 260 °C For 5 Seconds			

Electrical / Optical Characteristics at Ta=25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	Iv	140	310	---	mcd	IF=20mA
Viewing Angle	2θ _{1/2}	---	80	---	Deg	IF=20mA
Dominant Wavelength	λ _d	463	468	473	nm	IF=20mA
Forward Voltage	V _F	3	3.3	3.8	V	IF=20mA
Reverse Current	I _R	---	---	100	μA	VR = 5V

BIN	LK	LL	LM	LN	---	---
Range	140-210	210-310	310-460	460---	---	---

Measurement Uncertainty of the Luminous Intensity: ± 15%

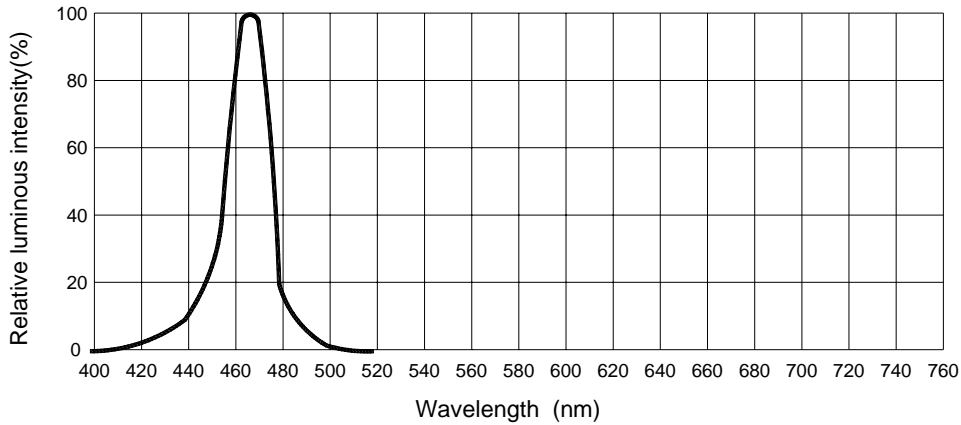
Notes

- Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
- θ_{1/2} is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
- The dominant wavelength (λ_d) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

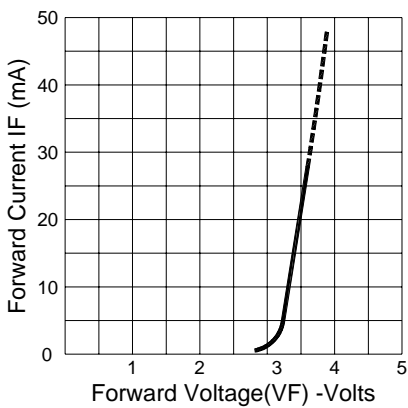
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Typical Electrical / Optical Characteristics Curves

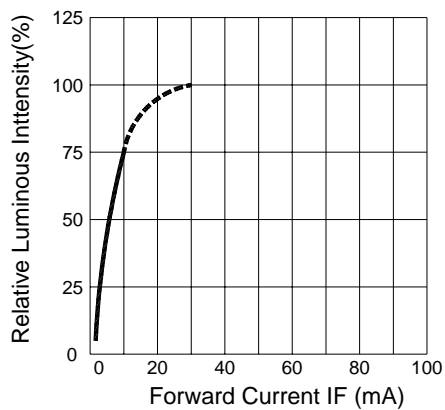
Spectrum Distribution



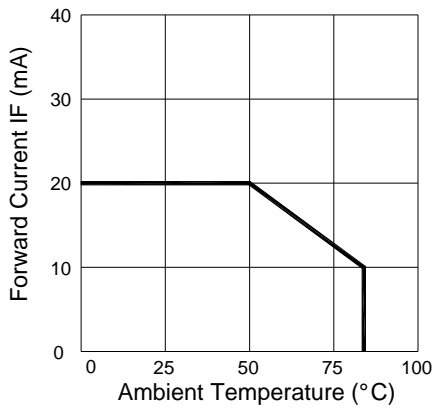
Forward Current VS. Forward Voltage



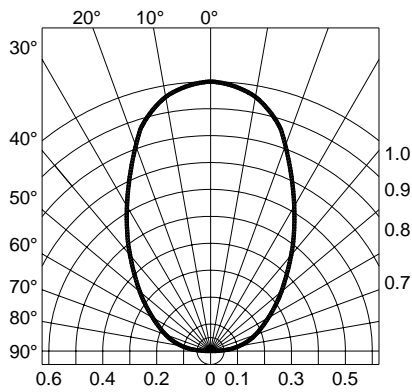
Luminous Intensity VS. Forward Current



Forward Current VS. Ambient Temperature



Radiation Diagram



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Reliability Test Items and Conditions

No.	Item	Test Conditions	Test Hours / Cycle	Sample Q'ty	Ac/Re
1	Solder Heat	TEMP : 260°C±5°C	5 sec	22 pcs	0/1
2	Temperature Cycle	H : +85°C 30min. ∫ 5min. L : -35°C 30min.	50 cycle	22 pcs	0/1
3	Thermal Shock	H : +85°C ∫ 5min. L : -35°C 5min.	50 cycle	22 pcs	0/1
4	High Temperature Storage	TEMP : 85°C	1000 hrs	22 pcs	0/1
5	Low Temperature Storage	TEMP : -35°C	1000 hrs	22 pcs	0/1
6	DC Operating Life	I _F = 20mA	1000 hrs	22 pcs	0/1
7	High Temperature / High Humidity	65°C/85~90%R.H.	1000 hrs	22 pcs	0/1

Judgment Criteria

Forward Voltage Vf	V _{fmax} Increase <1.2x
Reverse Current Ir	I _{rmax} Increase <2x
Luminous Intensity Iv	Iv Decay < 50%

Note : Measurement shall be taken after the tested samples have been returned to normal ambient conditions (generally after two hours)

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