

3mm Round White LED (T-1)

Features

- Popular T-1 round package
- High luminous power
- Typical chromaticity coordinates $x=0.32, y=0.33$ according to CIE1931
- Bulk, available taped on reel
- ESD-withstand voltage: up to 4KV
- RoHS compliance



T-1



Descriptions

- The series is designed for application required high luminous intensity.
- The phosphor filled in the reflector converts the blue emission of InGaN chip to ideal white.

Applications

- Message panels
- Optical Indicators
- Backlighting
- Marker Lights

Device Selection Guide

Part No.	Chip		Lens Color
	Material	Emitted Color	
TLH-W1R3-20415X9	InGaN	White	Water Clear

3mm Round LED

TLH-W1R3-20415X9

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Value	Unit
Reverse Voltage	VR	5	V
Forward Current	IF	30	mA
Peak Forward Current (Duty 1/10 @ 1KHz)	IFP	100	mA
Power Dissipation	Pd	110	mW
Electronics Discharge	ESDHBM	4K	V
Zener Reverse Current	Iz	100	mA
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +100	°C
Soldering Temperature	Tsol	260 °C for 5 seconds	

Electro-Optical Characteristics (Ta=25°C)

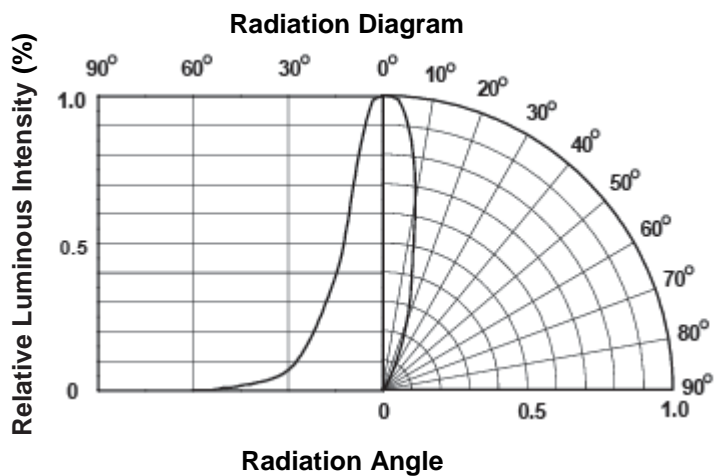
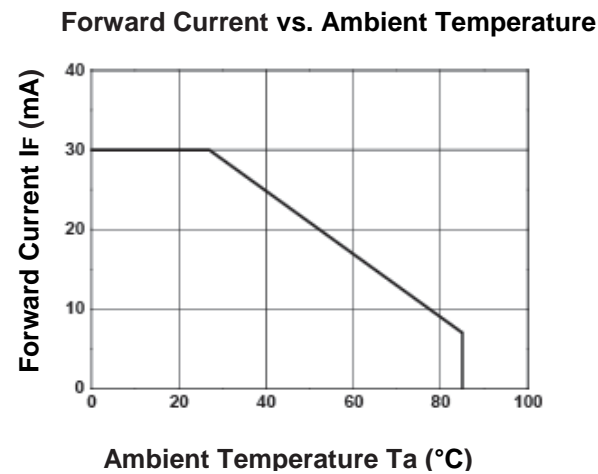
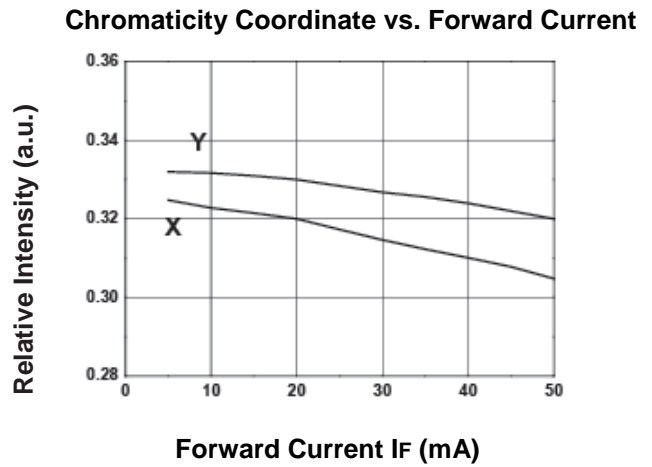
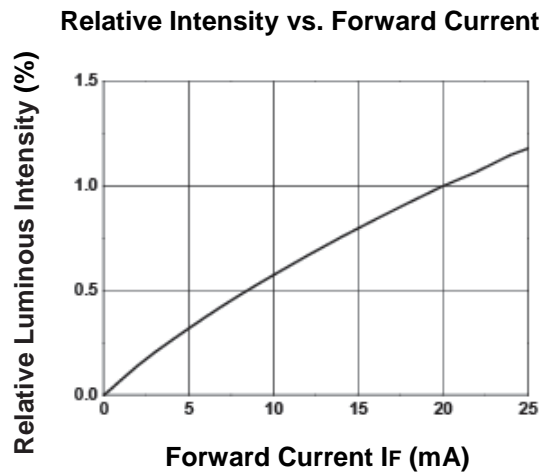
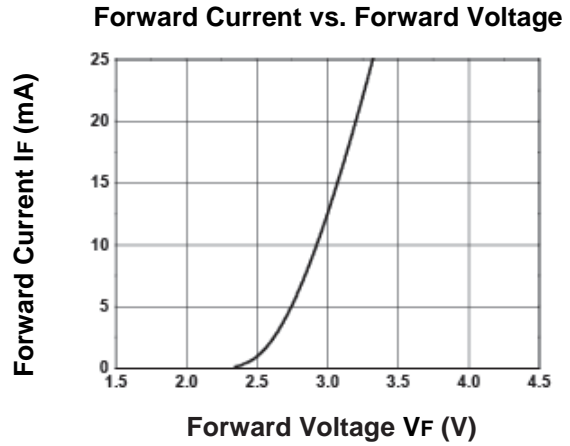
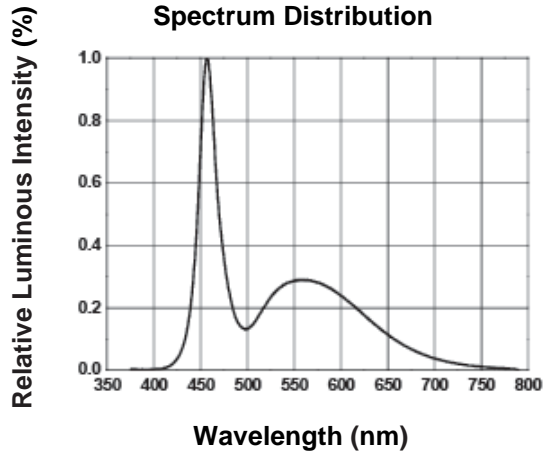
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	7150	-----	14250	mcd	IF =20mA
Viewing Angle	2θ1/2	-----	25	-----	deg	
Forward Voltage	VF	2.8	-----	3.6	V	
Chromaticity Coordinates	x	-----	0.32	-----	-----	
	y	-----	0.33	-----	-----	
Reverse Current	IR	-----	-----	50	μA	VR=5V
Zener Reverse Voltage	Vz	5.2	-----	-----	V	Iz=5mA

- Notes:** 1. Tolerance of Luminous Intensity: ±10%.
 2. Tolerance of Forward Voltage: ±0.1V

3mm Round LED

TLH-W1R3-20415X9

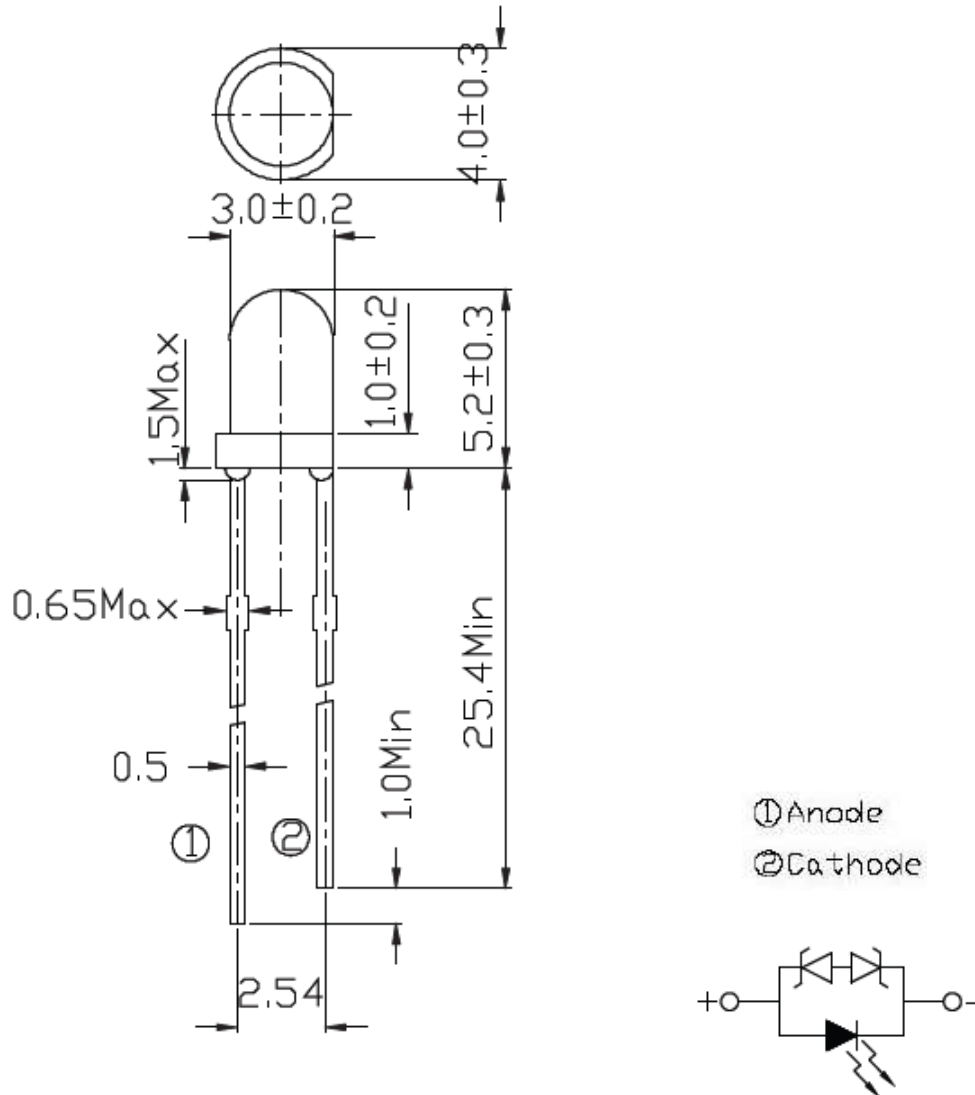
Typical Electro-Optical Characteristics Curves (Ta=25°C)



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Package Dimensions (In mm)



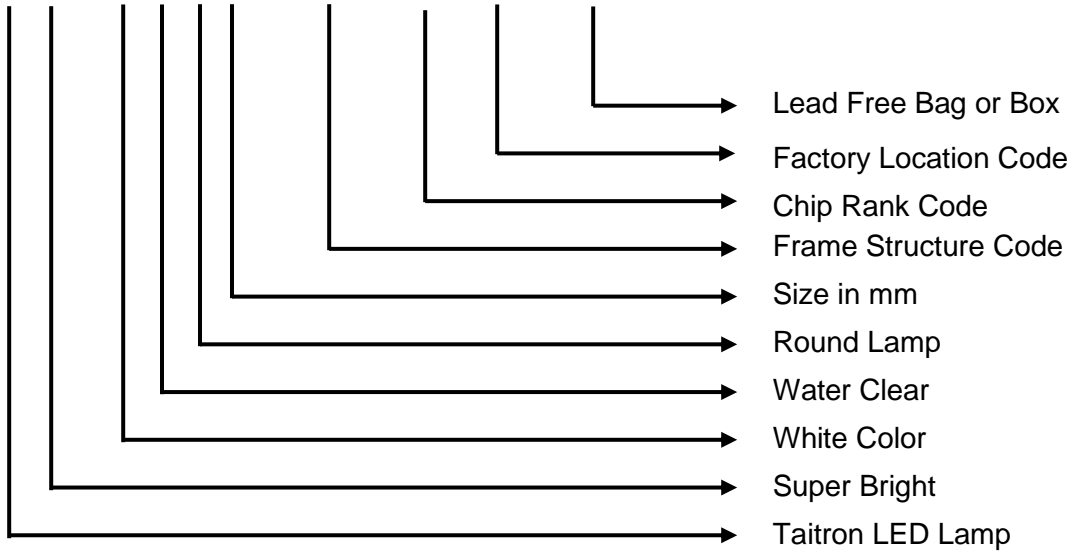
- Note:**
1. All dimensions are in millimeters, and tolerance is 0.25mm without special declared.
 2. Lead spacing is measured where the lead emerge from the package.
 3. Protruded resin under flange is 1.5mm Max. LED.

Packing Quantity Specification

Packing Type	PCS per Bag	PCS Per Inner Box	PCS Per Carton
Bulk	500	2,500	25,000

Ordering Information

TL H - W 1 R 3 - 20415 X9 - 92 - BL

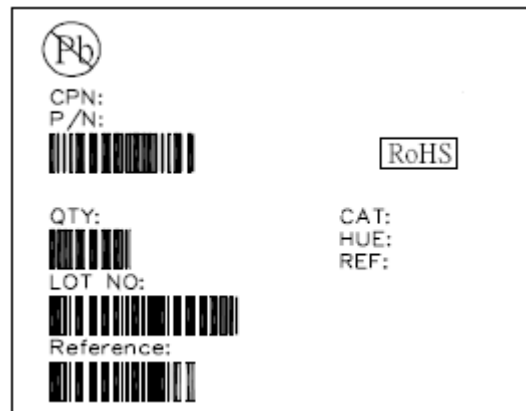


Label Explanation

CAT: Luminous Intensity and Forward Voltage Rank

HUE: Color Rank

REF: Reference



Rank Combinations

Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
T	7150	9000	mcd	IF=20mA
U	9000	11250		
V	11250	14250		

Bin Range of Forward Voltage

Bin Code	Min.	Max.	Unit	Condition
0	2.8	3.0	V	IF=20mA
1	3.0	3.2		
2	3.2	3.4		
3	3.4	3.6		

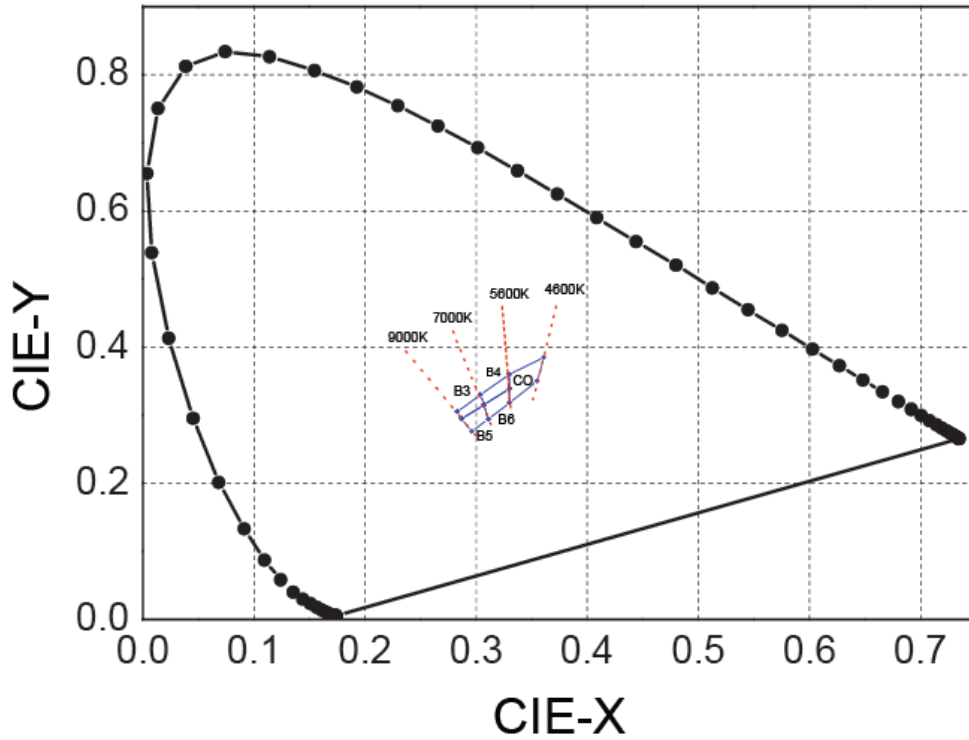
- Notes:** 1. Tolerance of Luminous Intensity: $\pm 10\%$.
2. Tolerance of Forward Voltage: $\pm 0.1V$

Color Rank

Bin Code	CIE Rank Code	CIE_x	CIE_y	Condition
B3	1	0.283	0.305	IF=20mA
	2	0.304	0.330	
	3	0.307	0.315	
	4	0.287	0.295	
B4	1	0.304	0.330	
	2	0.330	0.360	
	3	0.330	0.339	
	4	0.307	0.315	
B5	1	0.287	0.295	
	2	0.307	0.315	
	3	0.311	0.294	
	4	0.296	0.276	
B6	1	0.307	0.315	
	2	0.330	0.339	
	3	0.330	0.318	
	4	0.311	0.294	
C0	1	0.330	0.360	
	2	0.361	0.385	
	3	0.355	0.350	
	4	0.330	0.318	

Notes: Tolerance of Chromaticity Coordinates ± 0.01

CIE chromaticity Diagram



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