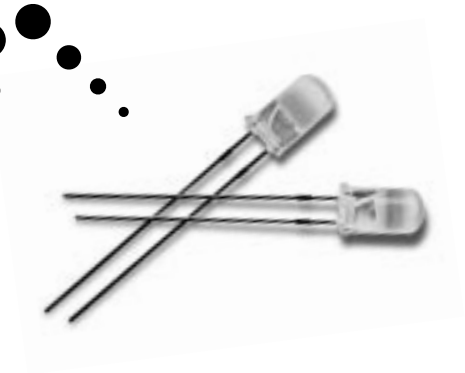
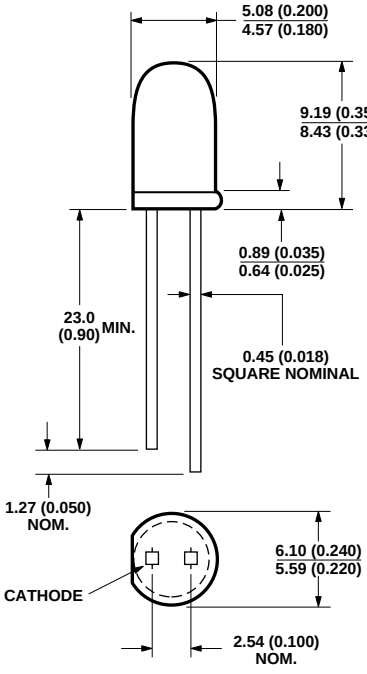
Agilent HLMP-Dx25/Nx30
T-1 3/4 (5 mm), T-1 (3 mm)
InGaN LED Lamps
Data Sheet

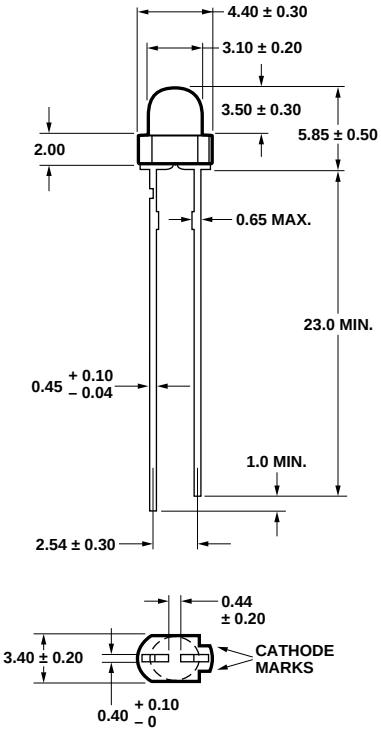


HLMP-DS25-R0000, HLMP-NS30-Q00xx, HLMP-DM25-M0000, HLMP-NM30-L0000

Package Dimensions



HLMP-DS25/DM25



HLMP-NS30/NM30

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS (INCHES).
2. EPOXY MENISCUS MAY EXTEND ABOUT 1 mm (0.040") DOWN THE LEADS.

Features
- Popular T-1 3/4 and T-1 diameter packages
- General purpose leads
- Reliable and rugged
- Binned for color and intensity
- Bright InGaN dice

Applications
- Status indicators
- Small message panel
- Running and decorative lights for commercial use
- Back lighting
- Consumer audio

Description
The blue HLMP-DS25 and HLMP-NM30, and green HLMP-DM25 and HLMP-NM30 LEDs are designed in an industry standard T-1 3/4 and T-1 packages with clear and non-diffused optics.

These lamps are ideal for use as indicators and for general purpose lighting. Blue lamps offer color differentiation as blue is attractive and not widely available.

Caution: *Devices are Class I ESD sensitive. Please observe appropriate precautions during handling and processing. Refer to Application Note AN-1142 for additional details.*

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Selection Guide

Package Description	Color	Part Number	Luminous Intensity Iv (mcd) @ 20 mA Min.	Max.
T-1 3/4	Blue	HLMP-DS25-R0000	100.0	–
	Green	HLMP-DM25-M0000	245.0	–
T-1	Blue	HLMP-NS30-Q00xx	63.0	–
	Green	HLMP-NM30-L0000	170.0	–

Part Numbering System

HLMP - X X XX - X X X XX

Mechanical Option
00: Bulk
DD: Ammo pack

Color Bin Options
0: Full color bin distribution

Maximum Iv Bin Options
0: Open (No. max. limit)

Minimum Iv Bin Options
Please refer to the Iv bin Table

Viewing Angle
25: 25 Degree
30: 30 Degree

Color Options
S: Blue
M: Green

Package Options
D: T-1$^3/_4$ (5 mm)
N: T-1 (3 mm) Auto-insertable

Absolute Maximum Ratings

T_A = 25°C

Parameter	HLMP-DS25/DM25	HLMP-NS30/NM30
Peak Forward Current	100 mA	100 mA
DC Current[1]	30 mA	30 mA
Reverse Voltage (I_R = 100 μA)	5 V	5 V
LED Junction Temperature	115°C	115°C
Operating Temperature	–40 to +85°C	–40 to +85°C
Storage Temperature	–40 to +100°C	–40 to +85°C
Dip/Drag Solder Temperature	260°C for 5 seconds	260°C for 5 seconds
Wave Solder Temperature	245°C for 3 seconds	245°C for 3 seconds
	[1.59 mm (0.060 in.) below seating plane]	

Note:

1. Derate linearly as shown in Figure 4.

Optical Characteristics

T_A = 25°C

Part Number	Luminous Intensity I_V (mcd) @ I_F = 20 mA Min.	Typ.	Color, Dominant Wavelengh λ_d[1] (nm) Typ.	Peak Wavelength λ_{PEAK} (nm) Typ.	Viewing Angle $2\theta_{1/2}$[2] Degrees Typ.
HLMP-DS25	100	260	470	468	25
HLMP-DM25	245	970	527	520	25
HLMP-NS30	63	150	470	468	30
HLMP-NM30	170	1000	527	520	30

Notes:

1. The dominant wavelength, λ_d, is derived from the CIE Chromaticity Diagram and represents the single wavelength which defines the color of the device.
2. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half of the axial luminous intensity.

Electrical Characteristics

Part Number	Forward Voltage V_F (volts) I_F = 20 mA Typ.	Max.	Reverse Breakdown V_R (volts) @ I_R = 100 μA Min.	Typ.	Speed Response τ_s (ns) Typ.	Capacitance C (pF), V_F = 0 f = 1 MHz Typ.	Thermal Resistance $R\theta_{J\text{-}PIN}$ (°C/W) Junction to Cathode Lead
HLMP-DS25	3.6	4.2	3.0	30	500	50	260
HLMP-DM25	3.8	4.2	3.0	30	500	50	260
HLMP-NS30	3.6	4.2	3.0	30	500	50	290
HLMP-NM30	3.8	4.2	3.0	30	500	50	290

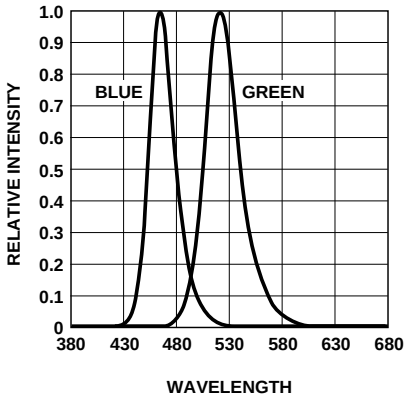

Figure 1. Relative intensity vs. wavelength.

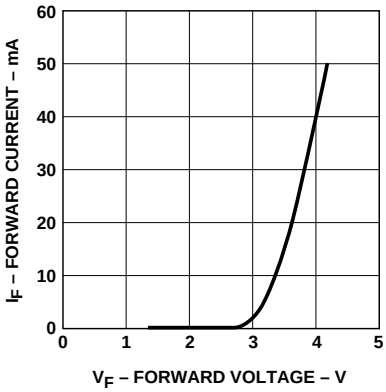

Figure 2. Forward current vs. forward voltage.

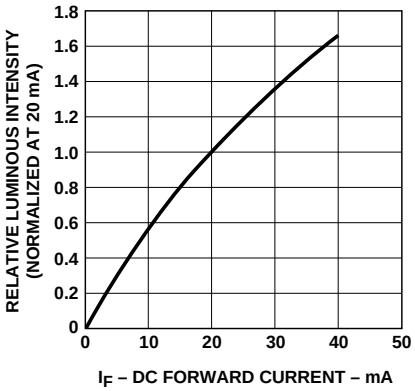

Figure 3. Relative luminous intensity vs. forward current.

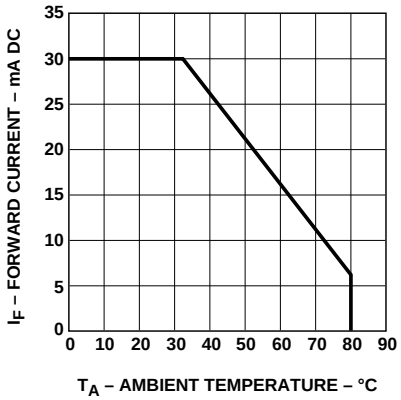

Figure 4. Maximum forward current vs. ambient temperature based on T_J max. = 115°C.

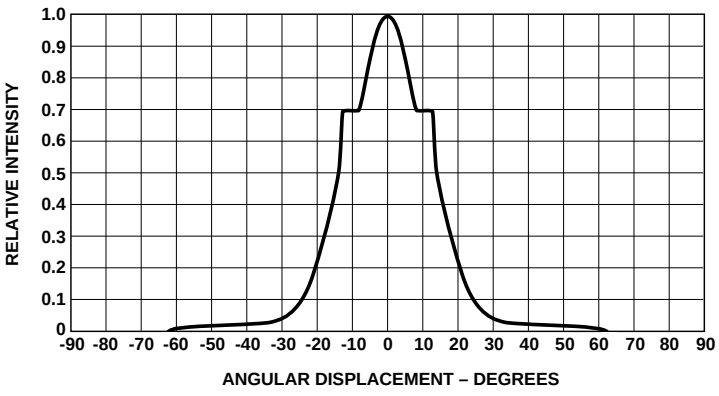

Figure 5. Relative luminous intensity vs. angular displacement for HLMP-DS25 and HLMP-DM25.

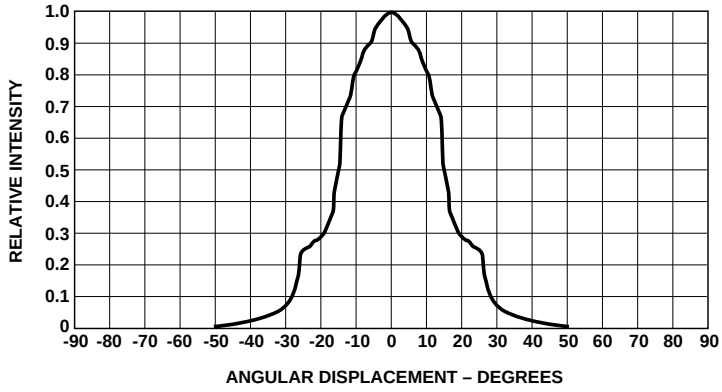

Figure 6. Relative luminous intensity vs. angular displacement for HLMP-NS30 and HLMP-NM30.

Bin Limits

Color	Bin	Intensity Range (mcd) Min.	Max.
Blue	Q	71.5	112.5
	R	112.5	180.0
	S	180.0	285.0
	T	285.0	450.0
	U	450.0	715.0
	V	715.0	1125.0
	W	1125.0	1800.0
	X	1800.0	2850.0
	Y	2850.0	4500.0
Green	L	201.1	289.0
	M	289.0	417.0
	N	417.0	680.0
	O	680.0	1100.0
	P	1100.0	1800.0
	Q	1800.0	2700.0
	R	2700.0	4300.0
	S	4300.0	6800.0
	T	6800.0	10800.0
	U	10800.0	16000.0
	V	16000.0	25000.0
	W	25000.0	40000.0

Maximum tolerance for each bin limit is ±18%.

Color Categories

Color	Category #	Min. - Max. Limit (nm)
Blue	1	460.0 - 470.0
	2	470.0 - 480.0
Green	1	520.0 - 530.0
	2	530.0 - 540.0

Maximum tolerance for each bin limit is ±18%.

Mechanical Option Matrix

Mechanical Option Code	Definition
00	Bulk Packaging, minimum increment 200 pcs/bag
DD	Ammo Pack, straight leads, minimum increment 2K pcs/pack

All categories are established for classification of products. Products may not be available in all categories. Please contact your local Agilent representative for further clarification/information.

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Data subject to change.

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