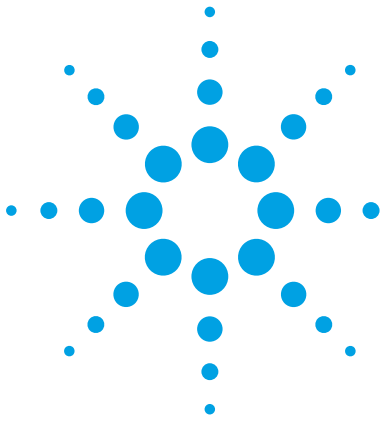




Agilent Standard and High Brightness Through-hole LED Lamps

Product Selection



Through-hole Lamp LED Products

Agilent is one of the largest visible LED producers in the world. Through-hole LED devices are built using advanced optical grade epoxy, giving superior high temperature and high moisture resistance. In addition, these devices have high reliability and wide operating temperature range.

These thin, light-weight, robust devices perform well under vibration and mechanical shock tests. Through-hole LED lamps are available in several package options, different sizes, spatial radiation patterns and a full spectrum of colors.

Agilent has a strong worldwide, technical support team with expertise in product application, development and engineering.

About the Products

Agilent offers three types of technology based LEDs. GaP based technologies are suitable for low to moderate light output requirements. AlInGaP and InGaN product offering are suitable for high brightness needs. Through-hole LEDs are offered in a variety of packages such as 3 mm, 5 mm, rectangular, bicolor, integrated resistors in standard and low current options.

Features and Benefits

- Excellent product quality and reliability
- Wide range of products
- Competitive pricing
- Wide operating temperature range
 - With minor electrical/optical changes
- Lower power consumption
 - High efficiency, low drive currents and low driving voltages required
- High reliability
 - No replacement for life of equipment
- High reliability for AlInGaP Lamps compared to TsAlGaAs at equivalent pricing and high brightness
 - No replacement for life of equipment with 100,1000 hours projected life
- Thin, light weight and robust packaging
 - Excellent performance even under vibration & mechanical shock
- Different material technologies available in Standard GaP LED Lamps
 - Choice of colors (560 nm – 626 nm): Green, Yellow, Amber, Orange, and Red
- Three colors available with high luminous intensity in AlInGaP LED lamps
 - Amber (590 nm), Red (626 nm) and deep Red (635 nm)

- Two colors available with high luminous intensity in InGaN LED lamps
 - Blue (470 nm) and Green (527 nm)
- Several packaging options
 - Different sizes with clear or diffused lens, several lead configurations and different spatial radiation patterns available in bulk, ammo-pack, right angle housing and tape and reel

Typical Applications

All applications requiring back lighting and status indications in:

- Signs and Signals
 - road safety signs
 - exit signs
 - moving message panels
 - static message displays
 - full color signs
 - traffic signals
- Consumer
 - ovens, washers, etc
 - audio, hi-fi and electrical appliances
 - gaming and vending machines
 - electronic toys and games
- Automotive and Other
 - automotive interior
 - exercise equipment
 - medical equipment
 - front panel industrial equipment



Agilent Technologies

Standard Through-hole LED Lamps

Part Number	Color	Dominant Wavelength (nm)	Viewing Angle	Lens	Intensity		Vf Typ. (V)	Test Current (mA)	2 Intensity Bin Selection
					Min (mcd)	Typ (mcd)			

3 mm (T1) LED Lamps—Standard Current

HLMP-K101		AlGaAs Red	637	60°	Tinted, Diffused	22	45	1.8	20	I,J
HLMP-K105		AlGaAs Red	637	45°	Untinted, Non-diffused	35.2	65	1.8	20	K,L
HLMP-1521		GaP Green	569	45°	Tinted, Non-diffused	6.7	22	2.1	10	E,F
HLMP-K640		GaP Green	560	45°	Untinted, Non-diffused	4.2	21	2.2	20	F,G
HLMP-1301-G0002		GaP Red	626	60°	Tinted, Diffused	8.6	11	1.9	10	F,G & G,H
HLMP-1321		GaP Red	626	45°	Tinted, Non-diffused	8.6	30	1.9	10	H,I
HLMP-1340		GaP Red	626	45°	Micro-tinted, Non-diffused	8.6	30	1.9	20	J,K & G,H
HLMP-1401-E0000		GaP Yellow	585	60°	Tinted, Diffused	3.6	6	2	10	E,F
HLMP-1440		GaP Yellow	585	45°	Micro-tinted, Non-diffused	23.5	45	2.1	20	H,I
HLMP-1503		GaP Green	569	60°	Tinted, Diffused	4.2	8.5	2	10	D,E
HLMP-1540		GaP Green	569	45°	Untinted, Non-diffused	27.3	45	2.2	20	I,J
HLMP-KB45-A0000		GaN Blue	462	40°	Untinted, Non-diffused	30	45	4	20	n/a

3 mm (T1) LED Lamps—Autoinsertable

HLMP-NS30		InGaN Blue	470	30°	Untinted, Non-diffused	240	550	3.6	20	n/a
HLMP-NM30		InGaN Green	527	30°	Untinted, Non-diffused	180	1000	3.8	20	n/a
HLMP-NL06		AlInGaP Amber	590	60°	Micro-tinted, Non-diffused	90.2	—	2.02	20	n/a
HLMP-NG05		AlInGaP Red	626	45°	Micro-tinted, Non-diffused	90.2	—	1.90	20	n/a
HLMP-NG07		AlInGaP Red	626	60°	Micro-tinted, Non-diffused	90.2	—	1.90	20	n/a

3 mm (T1) 5V, 12V Integrated Resistor LED Lamps

HLMP-1621 ^[1]		GaP Yellow	585	60°	Tinted, Diffused	2.2	8	8	—	n/a
HLMP-1640-B00A2 ^[2]		GaP Green	569	60°	Tinted, Diffused	1.6	8	8	—	n/a

Notes: 1. Operating Voltage = 12V. 2. Operating Voltage = 5V.

5 mm (T1 3/4) LED Lamps—Standard Current

HLMP-C625-P0000		AlInGaP Red	635	25°	Untinted, Non-diffused	500	700	1.9	20	n/a
HLMP-C608-R0000		AlInGaP Red	635	8°	Untinted, Non-diffused	1000	2000	1.9	20	n/a
HLMP-C025-P0000		AlInGaP Red	626	25°	Untinted, Non-diffused	500	1000	1.9	20	n/a
HLMP-C008-U0000		AlInGaP Red	626	8°	Untinted, Non-diffused	2900	6000	1.9	20	n/a
HLMP-C225-O0000		AlInGaP Amber	590	25°	Untinted, Non-diffused	450	800	1.9	20	n/a
HLMP-C208-S0000		AlInGaP Amber	590	8°	Untinted, Non-diffused	2600	3000	1.9	20	n/a
HLMP-DB25-B0000		GaN Blue	462	25°	Untinted, Non-diffused	40	100	4	20	n/a
HLMP-3301		GaP Red	626	60°	Tinted, Diffused	5.4	7	1.9	10	F,G
HLMP-3401		GaP Yellow	585	60°	Tinted, Diffused	5.7	8	2	10	E,F
HLMP-3507		GaP Green	569	60°	Tinted, Diffused	4.2	5.2	2.1	10	E,F
HLMP-3950		GaP Green	569	24°	Micro-tinted, Non-diffused	111.7	265	2.2	20	L,M
HLMP-DS25-F0000		InGaN Blue	470	25°	Untinted, Non-diffused	110	260	3.6	20	n/a
HLMP-DM25-J0000		InGaN Green	527	25°	Untinted, Non-diffused	240	970	3.8	20	n/a

5 mm (T1 3/4) LED Lamps—Low Current

HLMP-D150		AlGaAs Red	637	65°	Tinted, Diffused	1.3	3	1.6	1	C,D
HLMP-4700		GaP Red	626	50°	Tinted, Diffused	1.3	2.3	1.8	2	C,D
HLMP-4719		GaP Yellow	585	50°	Tinted, Diffused	0.9	2.1	1.9	2	B,C
HLMP-4740		GaP Green	569	50°	Tinted, Diffused	1	2.3	1.8	2	A,B

Standard Through-hole LED Lamps

Part Number	Color	Dominant Wavelength (nm)	Viewing Angle	Lens	Intensity		Vf Typ. (V)	Test Current (mA)	2 Intensity Bin Selection
					Min (mcd)	Typ (mcd)			
2 mm x 5 mm Rectangular LED Lamps									
HLMP-S201	 GaP Red	626	110°	Tinted, Diffused	3.4	7.5	1.9	20	E,F
HLMP-S301	 GaP Yellow	585	110°	Tinted, Diffused	2.2	4	2.1	20	C,D
HLMP-S501	 GaP Green	569	110°	Tinted, Diffused	4.2	8	2.2	20	D,E

5 mm (T1 3/4) LED Lamps—Bicolor

HLMP-4000	 GaP Green	570	65	Untinted, Diffused	4.2	—	2.2	10	n/a
	 GaP Red	626	65	Untinted, Diffused	2.1	—	1.9	10	n/a
HLMP-4015	 GaP Green	570	65	Untinted, Non-Diffused	20	—	2.2	20	n/a
	 GaP Yellow	585	65	Untinted, Non-Diffused	20	—	2.6	20	n/a

Through-hole LEDs

Standard Intensity Categories (approx. 2:1 bins)

Bin ID	Iv in mcd		Color Bin	Wavelength (nm)	
	min	max		min	max
Yellow/Amber			Yellow		
A	1.0	1.6	1	582	584.5
B	1.6	2.5	3	584.5	587
C	2.5	4.0	2	587	589.5
D	4.0	6.5	4	589.5	592
E	6.5	10.3	5	592	593.0
F	10.3	16.6	Amber		
G	16.6	26.5			
H	26.5	42.3	3	584.5	587
I	42.3	67.7	2	587	589.5
J	67.7	108.2	4	589.5	592
K	108.2	173.2	6	592	594.5
L	173.2	250	7	594.5	597
M	250	360			
N	360	510			
O	510	800			
P	800	1250			
Q	1250	1800			
R	1800	2900			
S	2900	4700			
T	4700	7200			
U	7200	11700			
V	11700	18000			
W	18000	27000			

Maximum Tolerance for each bin limit is +/- 18%

Maximum Tolerance for each color bin limit is +/- 0.5 nm

Bin ID	Iv in mcd	
	min	max
Red/Orange		
A	0.6	0.9
B	0.9	1.5
C	1.5	2.4
D	2.4	3.8
E	3.8	6.1
F	6.1	9.7
G	9.7	15.5
H	15.5	24.8
I	24.8	39.6
J	39.6	63.4
K	63.4	101.5
L	101.5	162.4
M	162.4	234.6
N	234.6	340.0
O	340	540
P	540	850
Q	850	1200
R	1200	1700
S	1700	2400
T	2400	3400
U	3400	4900
V	4900	7100
W	8100	10200
X	10200	14800
Y	14800	21400
Z	21400	30900

Maximum Tolerance for each bin limit is +/- 18%

Maximum Tolerance for each color bin limit is +/- 0.5 nm

Standard Through-hole LED Lamps

Through-hole LEDs Standard Intensity Categories (approx. 2:1 bins)

colorS: Blue (InGaN/GaN) 

InGaN Green 

Bin ID	Iv in mcd	
	min	max
A	30.0	40.0
B	40.0	50.0
C	50.0	65.0
D	65.0	85.0
E	85.0	110.0
F	110.0	140.0
G	140.0	180.0
H	180.0	240.0
J	240.0	310.0
K	310.0	400.0
L	400.0	520.0
M	520.0	680.0
N	680.0	880.0
P	880.0	1150.0
Q	1150.0	1500.0
R	1500.0	1900.0
S	1900.0	2500.0
T	2500.0	3200.0
U	3200.0	4200.0
V	4200.0	5500.0
W	5500.0	7200.0
X	7200.0	9300.0
Y	9300.0	12000.0
Z	12000.0	16000.0
1	16000.0	21000.0
2	21000.0	27000.0
3	27000.0	35000.0
4	35000.0	45000.0
5	45000.0	59000.0

Tolerance for each bin limit is $\pm 15\%$.

Bin ID color Green/  Emerald Green	Iv in mcd		Color Bin Green color	wavelength (nm)		Color Bin Blue color 	wavelength (nm)	
	min	max		min	max		min	max
A	1.1	1.8	9	552.5	555.5	1	460.0	464.0
B	1.8	2.9	8	555.5	558.5	2	464.0	468.0
C	2.9	4.7	7	558.5	561.5	3	468.0	472.0
D	4.7	7.6	6	561.5	564.5	4	472.0	476.0
E	7.6	12.0	5	564.5	567.5	5	476.0	480.0
F	12.0	19.1	4	567.5	570.5	6	480.0	484.0
G	19.1	30.7	3	570.5	573.5	Green color 		
H	30.7	49.1	2	573.5	576.5			
I	49.1	78.5				1	520.0	530.0
J	78.5	125.7				2	530.0	540.0
K	125.7	201.1				3	520.0	525.0
L	201.1	289				4	525.0	530.0
M	289	417				5	530.0	535.0
N	417	680				6	535.0	540.0
O	680	1100						
P	1100	1800						
Q	1800	2700						
R	2700	4300						
S	4300	6800						
T	6800	10800						
U	10800	16000						
V	16000	25000						
W	25000	40000						

Maximum Tolerance for each bin limit is $\pm 18\%$

Maximum Tolerance for each color bin limit is ± 0.5 nm

Tolerance for each bin limit is $\pm 2\%$.

High Brightness LED Lamps

Part Number	Color	Dominant Wavelength (nm)	Intensity (mcd) @ 20 mA		Leads with Stand-offs
			Min	Max	

Precision Optical Performance AlInGaP 5 mm Round LED Lamps

6° Viewing Angle

HLMP-EL08-T0000	 Amber	590	2170	—	No
HLMP-EL08-VY000	 Amber	590	3600	13800	No
HLMP-EL10-VY000	 Amber	590	3600	13800	Yes
HLMP-EL08-WZ000	 Amber	590	4700	18400	No
HLMP-EL10-T0000	 Amber	590	2170	—	Yes
HLMP-EJ08-X1000	 Orange	605	6200	24100	No
HLMP-EJ10-X1000	 Orange	605	6200	24100	Yes
HLMP-EH08-X1000	 Red-Orange	615	6200	24100	No
HLMP-EG08-T0000	 Red	626	2170	—	No
HLMP-EG08-WZ000	 Red	626	4700	18400	No
HLMP-EG10-T0000	 Red	626	2170	—	Yes
HLMP-EG10-WZ000	 Red	626	4700	18400	Yes
HLMP-EG08-X1000	 Red	626	6200	24100	No
HLMP-EG10-X1000	 Red	626	6200	24100	Yes

Part-numbers in BOLD are recommended for new designs.

High Brightness LED Lamps

Part Number	Color	Dominant Wavelength (nm)	Intensity (mcd) @ 20 mA		Leads with Stand-offs
			Min	Max	

Precision Optical Performance AlInGaP 5 mm Round LED Lamps

15° Viewing Angle

HLMP-EL15-TW000	 Amber	590	2170	8300	No
HLMP-EL15-TWK00	 Amber	590	2170	8300	No
HLMP-EL15-UX000	 Amber	590	2750	10700	No
HLMP-EL15-VY000	 Amber	590	3600	13800	No
HLMP-EL15-VYK00	 Amber	590	3600	13800	No
HLMP-EL17-TW000	 Amber	590	2170	8300	Yes
HLMP-EL17-UX000	 Amber	590	2750	10700	Yes
HLMP-EL17-VY000	 Amber	590	3600	13800	Yes
HLMP-EH15-TW000	 Red-Orange	615	2170	8300	No
HLMP-EH15-UX000	 Red-Orange	615	2750	10700	No
HLMP-EH17-TW000	 Red-Orange	615	2170	8300	Yes
HLMP-EH17-UX000	 Red-Orange	615	2750	10700	Yes
HLMP-EG15-TW000	 Red	626	2170	8300	No
HLMP-EG15-UX000	 Red	626	2750	10700	No
HLMP-EG17-TW000	 Red	626	2170	8300	Yes
HLMP-EG17-UX000	 Red	626	2750	10700	Yes
HLMP-EL15-PS000	 Amber	590	765	2900	No
HLMP-EL15-QSK00*	 Amber	590	1000	2900	No
HLMP-EL15-QT000	 Amber	590	1000	3700	No
HLMP-EL17-M0000	 Amber	590	450	—	Yes
HLMP-EJ15-QT000	 Orange	605	1000	3700	No
HLMP-EJ17-QT000	 Orange	605	1000	3700	Yes
HLMP-EH15-RU000	 Red-Orange	615	1300	4800	No
HLMP-EG15-N0000	 Red	626	590	—	No
HLMP-EG15-QT000	 Red	626	1000	3700	No
HLMP-EG17-N0000	 Red	626	590	—	Yes
HLMP-EG17-QT000	 Red	626	1000	3700	Yes
HLMP-EG15-RU000	 Red	626	1300	4800	No

Part-numbers in BOLD are recommended for new designs.

* HLMP-xLxx-xxK00 are selected to Amber color bins 2 and 4 only.

High Brightness LED Lamps

Part Number	Color	Dominant Wavelength (nm)	Intensity (mcd) @ 20 mA		Leads with Stand-offs
			Min	Max	

Precision Optical Performance AlInGaP 5 mm Round LED Lamps

23° Viewing Angle

HLMP-EL24-RU000	 Amber	590	1300	4800	No
HLMP-EL24-RUK00	 Amber	590	1300	4800	No
HLMP-EL24-SV000	 Amber	590	1650	6300	No
HLMP-EL24-SVK00	 Amber	590	1650	6300	No
HLMP-EL24-TW000	 Amber	590	2170	8300	No
HLMP-EL24-TWK00	 Amber	590	2170	8300	No
HLMP-EL26-RU000	 Amber	590	1300	4800	Yes
HLMP-EL26-SV000	 Amber	590	1650	6300	Yes
HLMP-EL26-TW000	 Amber	590	2170	8300	Yes
HLMP-EH24-SV000	 Red-Orange	615	1650	6300	No
HLMP-EH26-SV000	 Red-Orange	615	1650	6300	Yes
HLMP-EL24-L0000	 Amber	590	345	—	No
HLMP-EL24-NR000	 Amber	590	590	2200	No
HLMP-EL24-PS000	 Amber	590	765	2900	No
HLMP-EL26-L0000	 Amber	590	345	—	Yes
HLMP-EL26-PS000	 Amber	590	765	2900	Yes
HLMP-EJ24-QT000	 Orange	605	1000	3700	No
HLMP-EH24-QT000	 Red-Orange	615	1000	3700	No
HLMP-EG24-M0000	 Red	626	450	—	No
HLMP-EG24-PS000	 Red	626	765	2900	No
HLMP-EG24-QT000	 Red	626	1000	3700	No
HLMP-EG26-M0000	 Red	626	450	—	Yes

Part-numbers in BOLD are recommended for new designs.

High Brightness LED Lamps

Part Number	Color	Dominant Wavelength (nm)	Intensity (mcd) @ 20 mA		Leads with Stand-offs
			Min	Max	

Precision Optical Performance AlInGaP 5 mm Round LED Lamps

30° Viewing Angle

HLMP-EL30-K0000	 Amber	590	270	–	No
HLMP-EL30-MQ000	 Amber	590	450	1730	No
HLMP-EL30-QT000	 Amber	590	1000	3700	No
HLMP-EL30-QTK00	 Amber	590	1000	3700	No
HLMP-EL30-SV000	 Amber	590	1650	6300	No
HLMP-EL30-SVK00	 Amber	590	1650	6300	No
HLMP-EL32-SV000	 Amber	590	1650	6300	Yes
HLMP-EL32-QT000	 Amber	590	1000	3700	Yes
HLMP-EH30-QT000	 Red-Orange	615	1000	3700	No
HLMP-EH30-RU000	 Red-Orange	615	1300	4800	No
HLMP-EH32-QT000	 Red-Orange	615	1000	3700	Yes
HLMP-EH32-RU000	 Red-Orange	615	1300	4800	Yes
HLMP-EG30-QT000	 Red	626	1000	3700	No
HLMP-EG32-QT000	 Red	626	1000	3700	Yes
HLMP-EL32-K0000	 Amber	590	270	–	Yes
HLMP-EL32-NR000	 Amber	590	590	2200	Yes
HLMP-EJ30-NR000	 Orange	605	590	2200	No
HLMP-EG30-K0000	 Red	626	270	–	No
HLMP-EG30-MQ000	 Red	626	450	1730	No
HLMP-EG32-K0000	 Red	626	270	–	Yes
HLMP-EG32-MQ000	 Red	626	450	1730	Yes
HLMP-EG30-NR000	 Red	626	590	2200	No
HLMP-EG32-NR000	 Red	626	590	2200	Yes

Part-numbers in BOLD are recommended for new designs.

High Brightness LED Lamps

Part Number	Color	Dominant Wavelength (nm)	Intensity (mcd) @ 20 mA		Leads with Stand-offs
			Min	Max	

Precision Optical Performance AlInGaP II 5 mm Round LED Lamps

15° Viewing Angle

HLMP-EL16-S0000	 Amber	592	1650	—	No
HLMP-EL16-VY000	 Amber	592	3600	13800	No
HLMP-EL18-S0000	 Amber	592	1650	—	Yes
HLMP-EL18-VY000	 Amber	592	3600	13800	Yes
HLMP-EH18-TW000	 Red-Orange	615	2170	8300	Yes
HLMP-EH16-UX000	 Red-Orange	615	2750	10700	No
HLMP-EH18-UX000	 Red-Orange	615	2750	10700	Yes
HLMP-ED16-S0000	 Red	630	1650	—	No
HLMP-ED16-TW000	 Red	630	2170	8300	No
HLMP-ED18-TW000	 Red	630	2170	8300	No
HLMP-ED18-S0000	 Red	630	1650	—	Yes

23° Viewing Angle

HLMP-EL25-Q0000	 Amber	592	1000	—	No
HLMP-EL25-SV000	 Amber	592	1650	6300	No
HLMP-EL25-SVK00	 Amber	592	1650	6300	No
HLMP-EL25-SUK00	 Amber	592	1650	4800	No
HLMP-EL27-Q0000	 Amber	592	1000	—	Yes
HLMP-EL27-SV000	 Amber	592	1650	6300	Yes
HLMP-EL25-TW000	 Amber	592	2170	8300	No
HLMP-EL27-TW000	 Amber	592	2170	8300	Yes
HLMP-EH25-SV000	 Red-Orange	615	1650	6300	No
HLMP-EH25-TW000	 Red-Orange	615	2170	8300	No
HLMP-ED25-R0000	 Red	630	1300	—	No
HLMP-ED25-SV000	 Red	630	1650	6300	No
HLMP-ED27-SV000	 Red	630	1650	6300	Yes
HLMP-ED27-R0000	 Red	630	1300	—	Yes
HLMP-ED25-TW000	 Red	630	2170	8300	No
HLMP-ED27-TW000	 Red	630	2170	8300	Yes

30° Viewing Angle

HLMP-EL31-P0000	 Amber	592	765	—	No
HLMP-EL31-SV000	 Amber	592	1650	6300	No
HLMP-EL33-P0000	 Amber	592	765	—	Yes
HLMP-EL33-SV000	 Amber	592	1650	6300	Yes
HLMP-EL31-SVK00*	 Amber	592	1650	6300	No
HLMP-EH31-SV000	 Red-Orange	615	1650	6300	No
HLMP-EH33-RU000	 Red-Orange	615	1300	4800	Yes
HLMP-ED31-Q0000	 Red	630	1000	—	No
HLMP-ED31-SV000	 Red	630	1650	6300	No
HLMP-ED33-Q0000	 Red	630	1000	—	Yes
HLMP-ED33-SV000	 Red	630	1650	6300	Yes

Part-numbers in BOLD are recommended for new designs.

* HLMP-xLxx-xxK00 are selected to Amber color bins 2 and 4 only.

High Brightness LED Lamps

Part Number	Color	Dominant Wavelength (nm)	Intensity (mcd) @ 20 mA		Leads with Stand-offs
			Min	Max	

Precision Optical Performance AlInGaP II 5 mm Round LED Lamps

55° Viewing Angle

HLMP-EL57-LP000	 Amber	592	345	1330	No
HLMP-EH57-LP000	 Red-Orange	615	345	1330	No
HLMP-ED57-LP000	 Red	630	345	1330	No

Part-numbers in BOLD are recommended for new designs.

Part Number	Color	Dominant Wavelength (nm)	Intensity (mcd) @ 20 mA		Leads with Stand-offs
			Min	Max	

Precision Optical Performance InGaN 5 mm LED Lamps

15° Viewing Angle

HLMP-CB15-P0000	 Blue	472	765	—	No
HLMP-CB15-PS000	 Blue	472	765	2900	No
HLMP-CB15-R0000	 Blue	472	1300	—	No
HLMP-CB15-QT000	 Blue	472	1000	3700	No
HLMP-CB15-RSC00	 Blue	472	1300	2900	No
HLMP-CB16-QT000	 Blue	472	1000	3700	Yes
HLMP-CM15-S0000	 Green	526	1650	—	No
HLMP-CM15-W0000	 Green	526	4700	—	No
HLMP-CE15-TWC00	 Bluish-Green	505	2170	8300	No
HLMP-CE15-TWQ00	 Bluish-Green	505	2170	8300	No
HLMP-CE15-UVC00	 Bluish-Green	505	2750	6300	No
HLMP-CE16-TWC00	 Bluish-Green	505	2170	8300	Yes
HLMP-CE16-UXQ00	 Bluish-Green	505	2750	10700	Yes
HLMP-CB18-TW000	 Blue	470	2170	8300	No
HLMP-CB18-UVA00	 Blue	470	2750	6300	No
HLMP-CB19-TW000	 Blue	470	2170	8300	Yes
HLMP-CM15-SV000	 Green	526	1650	6300	No
HLMP-CM15-VY000	 Green	526	3600	13800	No
HLMP-CM16-VY000	 Green	526	3600	13800	Yes
HLMP-CM15-WXB00	 Green	526	4700	10700	No
HLMP-CM18-X1000	 Green	530	6200	24100	No
HLMP-CM18-YZC00	 Green	530	8000	18400	No
HLMP-CM19-X1000	 Green	530	6200	24100	Yes

23° Viewing Angle

HLMP-CE23-SVC00	 Bluish-Green	505	1650	6300	No
HLMP-CE24-SVC00	 Bluish-Green	505	1650	6300	Yes
HLMP-CE23-SVQ00	 Bluish-Green	505	1650	6300	No
HLMP-CE23-SVQDD	 Bluish-Green	505	1650	6300	No
HLMP-CE24-SVQ00	 Bluish-Green	505	1650	6300	Yes
HLMP-CE24-SVQDD	 Bluish-Green	505	1650	6300	Yes
HLMP-CE23-TUC00	 Bluish-Green	505	2170	4800	No
HLMP-CE23-TVQ00	 Bluish-Green	505	2170	6300	No
HLMP-CE24-TVQ00	 Bluish-Green	505	2170	6300	Yes
HLMP-CE23-UVQ00	 Bluish-Green	505	2750	6300	No
HLMP-CB28-RU000	 Blue	470	1300	4800	No
HLMP-CB28-STD00	 Blue	470	1650	3700	No
HLMP-CB29-RU000	 Blue	470	1300	4800	Yes
HLMP-CM28-WXC00	 Green	530	4700	10700	No
HLMP-CM28-WZ000	 Green	530	4700	18400	No
HLMP-CM29-WZ000	 Green	530	4700	18400	Yes

High Brightness LED Lamps

Part Number	Color	Dominant Wavelength (nm)	Intensity (mcd) @ 20 mA		Leads with Stand-offs
			Min	Max	
30° Viewing Angle					
HLMP-CB30-K0000	 Blue	472	270	—	No
HLMP-CB30-M0000	 Blue	472	450	—	No
HLMP-CB30-NRG00	 Blue	472	590	2200	No
HLMP-CB30-PQCDD	 Blue	472	765	1730	No
HLMP-CB31-PQC00	 Blue	472	765	1730	Yes
HLMP-CB31-NRG00	 Blue	472	590	2200	Yes
HLMP-CB30-NPC00	 Blue	472	590	1330	No
HLMP-CM30-M0000	 Green	526	450	—	No
HLMP-CM30-S0000	 Green	526	1650	—	No
HLMP-CE30-QTC00	 Bluish-Green	505	1000	3700	No
HLMP-CE31-QTC00	 Bluish-Green	505	1000	3700	Yes
HLMP-CE30-QTQ00	 Bluish-Green	505	1650	6300	No
HLMP-CE30-QTQDD	 Bluish-Green	505	1650	6300	No
HLMP-CE31-QTQ00	 Bluish-Green	505	1650	6300	Yes
HLMP-CE31-QTQDD	 Bluish-Green	505	1650	6300	Yes
HLMP-CE30-RUQ00	 Bluish-Green	505	1300	4800	No
HLMP-CE31-RUQ00	 Bluish-Green	505	1300	4800	Yes
HLMP-CE30-RSC00	 Bluish-Green	505	1300	2900	No
HLMP-CE30-RSQ00	 Bluish-Green	505	1300	2900	No
HLMP-CB38-QRA00	 Blue	470	1000	2200	No
HLMP-CB38-QT000	 Blue	470	1000	3700	No
HLMP-CB39-QT000	 Blue	470	1000	3700	Yes
HLMP-CB39-RSDDD	 Blue	470	1300	2900	Yes
HLMP-CM30-RSB00	 Green	526	1300	2900	No
HLMP-CM30-TUB00	 Green	526	2170	4800	No
HLMP-CM30-TUCDD	 Green	532	2170	4800	No
HLMP-CM31-TUCDD	 Green	532	2170	4800	Yes
HLMP-CM31-TW000	 Green	526	2170	8300	Yes
HLMP-CM30-TW000	 Green	526	2170	8300	No
HLMP-CM30-TWA00	 Green	526	2170	8300	No
HLMP-CM31-TWA00	 Green	526	2170	8300	Yes
HLMP-CM30-UVA00	 Green	526	2750	6300	No
HLMP-CM38-UVC00	 Green	530	2750	6300	No
HLMP-CM38-UX000	 Green	530	2750	10700	No
HLMP-CM39-UVCDD	 Green	530	2750	6300	Yes
HLMP-CM39-UX000	 Green	530	2750	10700	Yes
HLMP-CM39-WXDDD	 Green	530	4700	10700	Yes

Part numbers in BOLD are recommended for new designs.

High Brightness LED Lamps

Part Number	Package Drawing	Color	Dominant Wavelength (nm)	Intensity (mcd) @ 20 mA		Leads with Stand-offs	Tint	Leadframe Orientation
				Min	Max			

Precision Optical Performance AlInGaP 4 mm Oval LED Lamps

60° x 120° Viewing Angle

HLMP-RG10-JM000	F	 Red	626	205	780	Yes	Red	Parallel
HLMP-RL10-LP000	F	 Amber	590	345	1330	Yes	Amber	Parallel
HLMP-SG10-JM000	E	 Red	626	205	780	Yes	Red	Perpendicular
HLMP-SL10-LP000	E	 Amber	590	345	1330	Yes	Amber	Perpendicular

Precision Optical Performance AlInGaP II 4 mm Oval LED Lamps

50° x 100° Viewing Angle

HLMP-LD16-LP000	D	 Red	630	345	1330	Yes	Red	Parallel
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60°x 120° Viewing Angle

HLMP-SL11-H0000	E	 Amber	592	155	—	Yes	Amber	Perpendicular
HLMP-SL11-LP000	E	 Amber	592	345	1330	Yes	Amber	Perpendicular
HLMP-SD11-J0000	E	 Red	630	205	—	Yes	Red	Perpendicular
HLMP-SD11-LP000	E	 Red	630	345	1330	Yes	Red	Perpendicular
HLMP-RL11-H0000	F	 Amber	592	155	—	Yes	Amber	Parallel
HLMP-RL11-LP000	F	 Amber	592	345	1330	Yes	Amber	Parallel
HLMP-RD11-J0000	F	 Red	630	205	—	Yes	Amber	Parallel
HLMP-RD11-LP000	F	 Red	630	345	1330	Yes	Red	Parallel

Part Number	Color	Dominant Wavelength (nm)	Intensity (mcd) @ 20 mA		Leads with Stand-offs
			Min	Max	

Precision Optical Performance InGaN 4 mm Oval LED Lamps

50° x 100° Viewing Angle

HLMP-LB11-FJ000	 Blue	472	96	360	Yes
HLMP-LB11-HJCDD	 Blue	472	155	360	Yes
HLMP-LB11-HL000	 Blue	472	155	600	Yes
HLMP-LB11-JKCDD	 Blue	472	205	460	Yes
HLMP-LM11-LP000	 Green	526	345	1330	Yes
HLMP-LM11-MNCDD	 Green	532	450	1010	Yes
HLMP-LM11-NR000	 Green	526	590	2200	Yes
HLMP-LM11-PQCDD	 Green	532	765	1730	Yes
HLMP-LM11-QRCDD	 Green	532	1000	2200	Yes

Part Number	Package Drawing	Color	Dominant Wavelength (nm)	Intensity (mcd) @ 20 mA		Leads with Stand-offs	Tint	Leadframe Orientation
				Min	Max			

Precision Optical Performance InGaN 4 mm Oval LED Lamps

60°X120° Viewing Angle

HLMP-RB11-D0000	F	 Blue	472	55	—	Yes	Blue	Parallel
HLMP-RB11-H0000	F	 Blue	472	155	—	Yes	Blue	Parallel
HLMP-RM11-H0000	F	 Green	526	155	—	Yes	Green	Parallel
HLMP-RM11-M0000	F	 Green	526	450	—	Yes	Green	Parallel

Precision Optical Performance AlInGaP 5 mm Oval LED Lamps

35 x 70° Viewing Angle

HLMP-AL01-NR000	W	 Amber	590	590	2200	No	Amber	Parallel
HLMP-AL11-NR000	X	 Amber	590	590	2200	Yes	Amber	Parallel
HLMP-BL01-NR000	Y	 Amber	590	590	2200	No	Amber	Perpendicular
HLMP-BL11-NR000	Z	 Amber	590	590	2200	Yes	Amber	Perpendicular

Part-numbers in BOLD are recommended for new designs.

High Brightness LED Lamps

Part Number	Package Drawing	Color	Dominant Wavelength (nm)	Intensity (mcd) @ 20 mA		Leads with Stand-offs	Tint	Leadframe Orientation
				Min	Max			

Precision Optical Performance AlInGaP II 5 mm Oval LED Lamps

35° x 70° Viewing Angle

HLMP-AL06-N0000	W	 Amber	592	590	—	No	Amber	Parallel
HLMP-AL16-N0000	X	 Amber	592	590	—	Yes	Amber	Parallel
HLMP-BL06-N0000	Y	 Amber	592	590	—	No	Amber	Perpendicular
HLMP-BL16-N0000	Z	 Amber	592	590	—	Yes	Amber	Perpendicular
HLMP-AD06-P0000	W	 Red	630	765	—	No	Red	Parallel
HLMP-AD16-P0000	X	 Red	630	765	—	Yes	Red	Parallel
HLMP-BD06-P0000	Y	 Red	630	765	—	No	Red	Perpendicular
HLMP-BD16-P0000	Z	 Red	630	765	—	Yes	Red	Perpendicular

50° x 100° Viewing Angle

HLMP-HD57-NR000	G	 Red	630	590	2200	Yes	Red	Parallel
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Precision Optical Performance InGaN 5 mm Oval LED Lamps

35° x 70° Viewing Angle

HLMP-BB11-J0000	Z	 Blue	472	205	—	Yes	Blue	Perpendicular
HLMP-BB11-K0000	Z	 Blue	472	270	—	Yes	Blue	Perpendicular
HLMP-BM11-L0000	Z	 Green	525	345	—	Yes	Green	Perpendicular
HLMP-BM11-Q0000	Z	 Green	525	1000	—	Yes	Green	Perpendicular

Part-numbers in BOLD are recommended for new designs.

Part Number	Color	Dominant Wavelength (nm)	Intensity (cd) @ 20 mA		Leads with Stand-offs
			Min	Max	

Precision Optical Performance InGaN 5 mm Oval LED Lamps

40° x 110° Viewing Angle

HLMP-HB55-FJ000	 Blue	472	96	360	Yes
HLMP-HB55-HJCDD	 Blue	472	155	360	Yes
HLMP-HB55-JKCDD	 Blue	472	205	460	Yes
HLMP-HM55-MQ000	 Green	526	450	1730	Yes
HLMP-HM55-NPCDD	 Green	532	590	1330	Yes
HLMP-HM55-PQCDD	 Green	532	765	1730	Yes

High Brightness LED Lamps Intensity Bin Limits (mcd at 20 mA)

Bin Name	Min.	Max.
D	65	85
E	85	110
F	110	140
G	140	180
H	180	240
J	240	310
K	310	400
L	400	520
M	520	680
N	680	880
P	880	1150
Q	1150	1500
R	1500	1900
S	1900	2500
T	2500	3200
U	3200	4200
V	4200	5500
W	5500	7200
X	7200	9300
Y	9300	12000
Z	12000	16000
1	16000	21000

Color Bin Structure

Bin ID	nm @ 20 mA	
Blue	Min.	Max.
1	460	464
2	464	468
3	468	472
4	472	476
5	476	480
Tolerance for each bin limit is ± 0.5 nm		
Green		
1	520	524
2	524	528
3	528	532
4	532	536
5	536	540
Tolerance for each bin limit is ± 0.5 nm		

Amber		
1	584.5	587.0
2	587.0	589.5
4	589.5	592.0
6	592.0	594.5

Tolerance for each bin limit is ± 0.5 nm

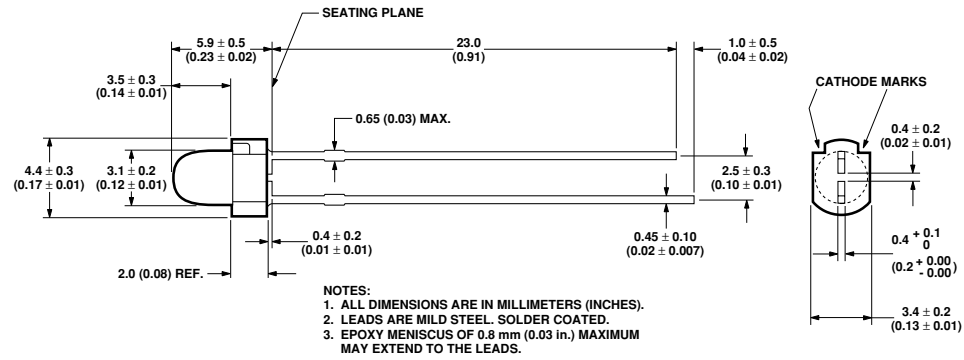
BI-Green		
1	490	495
2	495	500
3	500	505
4	505	510
7	498	503
8	503	508

Tolerance for each bin limit is ± 0.5 nm

These intensity and color charts show the various binning information for Precision Optical Performance AlInGaP LEDs. Red and reddish orange devices are not color binned as eyes are less sensitive to wavelength shifts in these color regions.

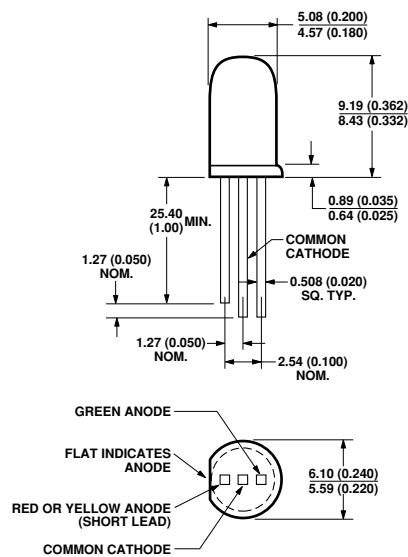
Tolerance for each bin limit is ±15%

3mm(T1) LED Lamps – Autoinsertable Package



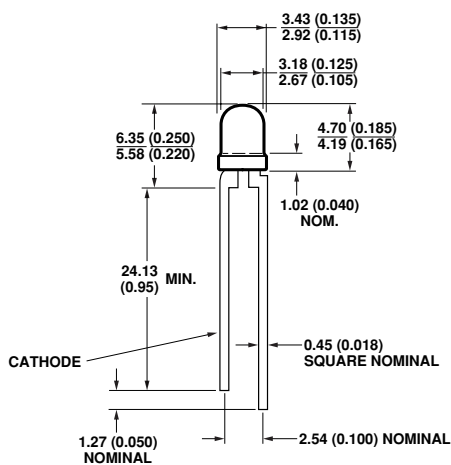
HLMP-N305 Pkg Dimen

5mm(T1-3/4)LED Lamps - Bicolor

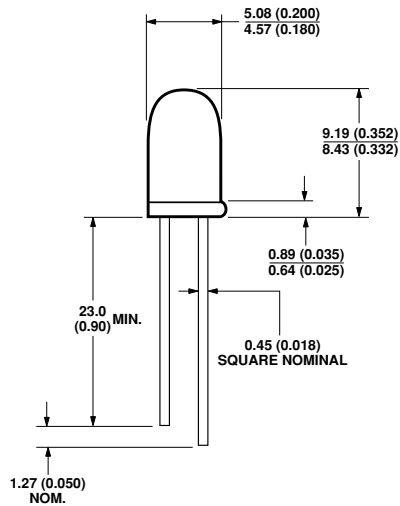


HLMP-40xx STRAIGHT LEADS

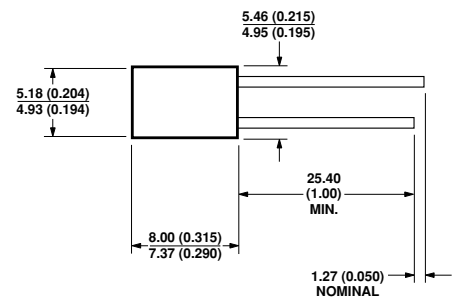
3 mm (T1) LED Lamps Package



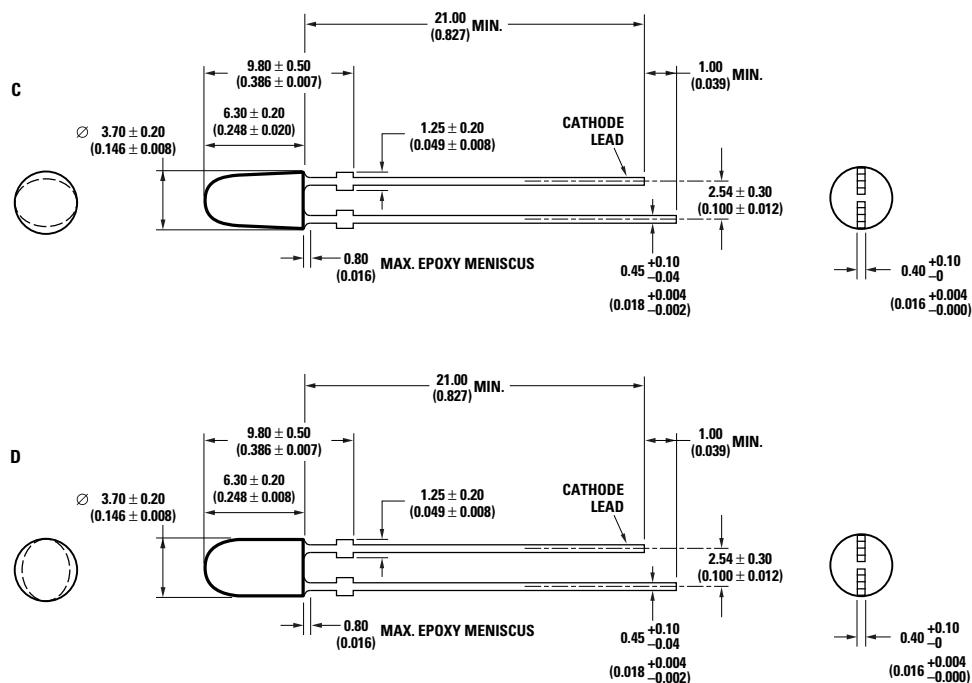
5 mm (T1 3/4) LED Lamps Package



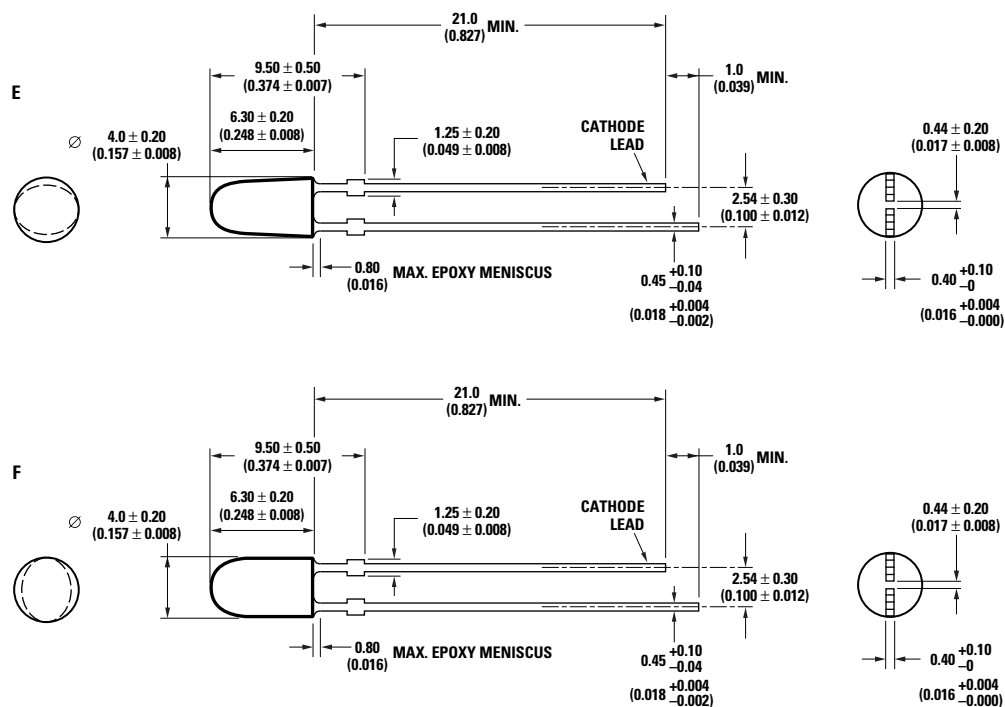
2 x 5 mm Rectangular LED Lamps Package



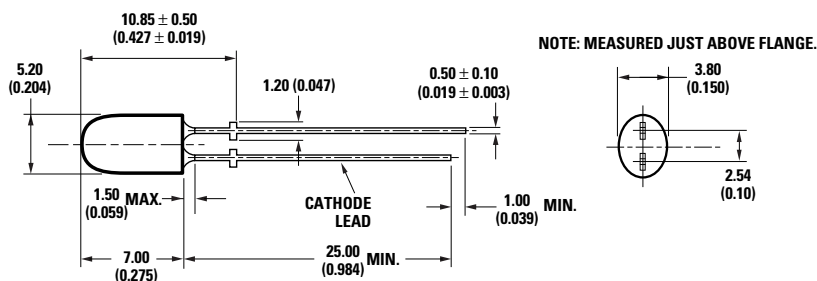
4mm Oval LED Lamps 50 x 100 Viewing Angle



4mm Oval LED Lamps 60 x 120 Viewing Angle

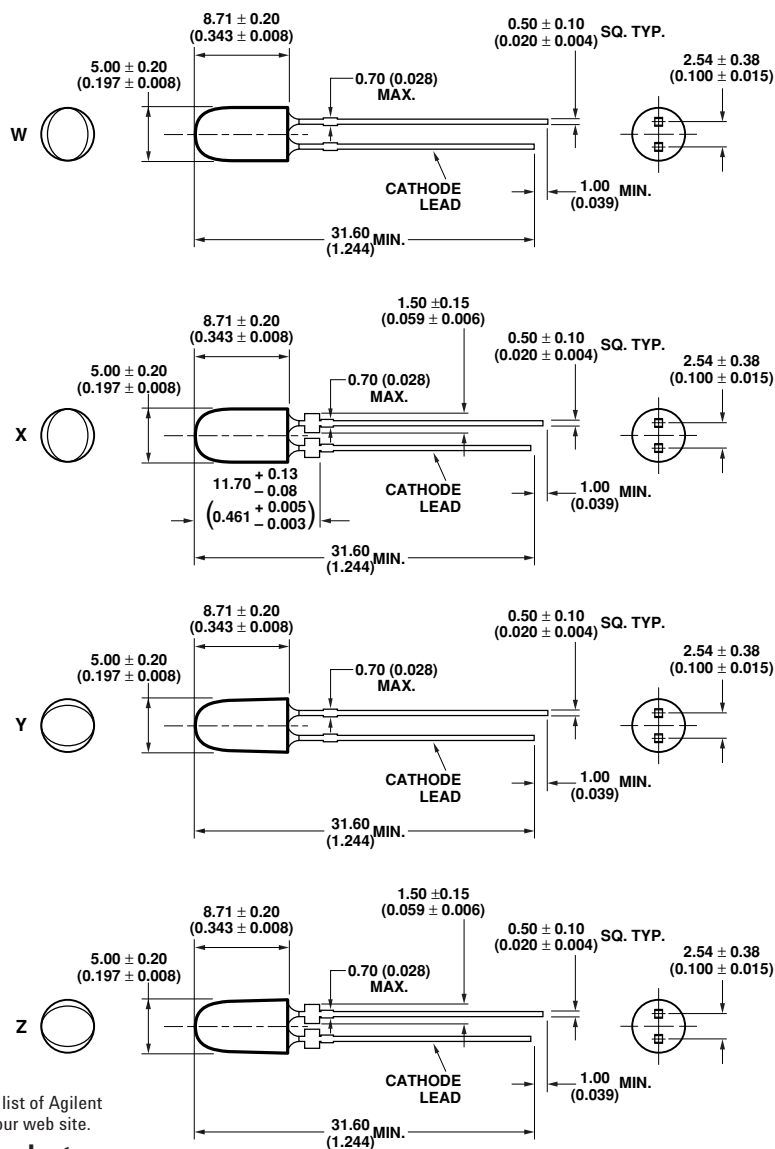


5mm Oval LED Lamps 50 x 100 Viewing Angle



DIMENSIONS ARE IN MILLIMETERS (INCHES)

5mm Oval LED Lamps 35 x 70 Viewing Angle



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