
LED Light Bars

Technical Data

HLCP-A100, -B100, -C100,
-D100, -E100, -F100, -G100,
-H100
HLMP-2300, -2350, -2400,
-2450, -2500, -2550, **-2600,**
-2620, -2635, -2655, -2670,
-2685, -2700, -2720, -2735,
-2755, -2770, -2785, -2800,
-2820, -2835, -2855, -2870,
-2885, -2950, -2965

Features

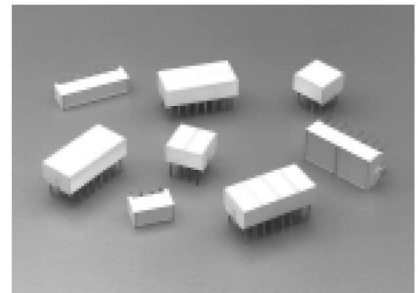
- Large Bright, Uniform Light Emitting Areas
- Choice of Colors
- Categorized for Light Output
- Yellow and Green Categorized for Dominant Wavelength
- Excellent ON-OFF Contrast
- X-Y Stackable
- Flush Mountable
- Can be Used with Panel and Legend Mounts
- Light Emitting Surface Suitable for Legend Attachment per Application Note 1012
- HLCP-X100 Series Designed for Low Current Operation
- Bicolor Devices Available

Applications

- Business Machine Message Annunciators
- Telecommunications Indicators
- Front Panel Process Status Indicators
- PC Board Identifiers
- Bar Graphs

Description

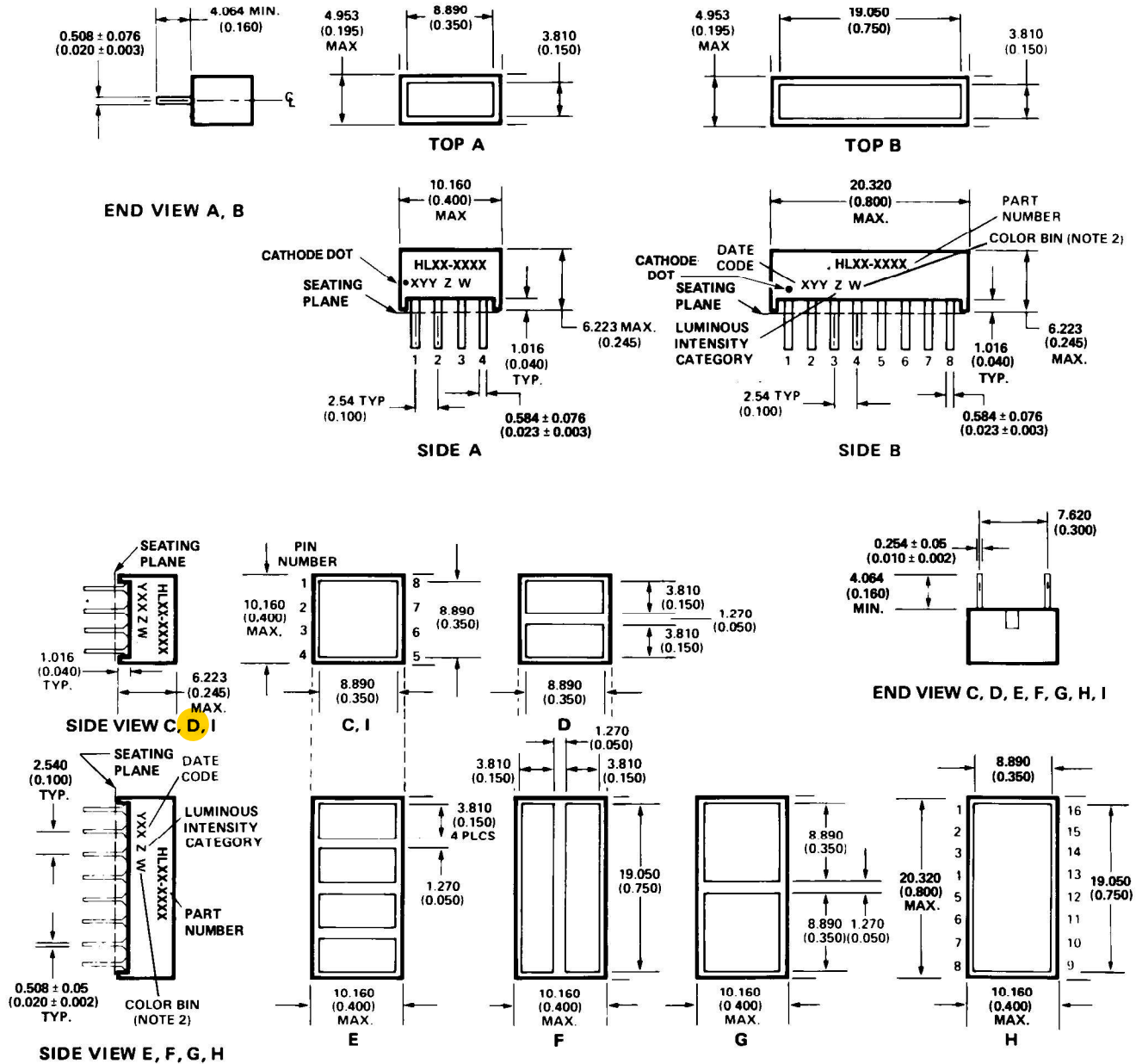
The HLCP-X100 and HLMP-2XXX series light bars are rectangular light sources designed for a variety of applications where a large bright source of light is required. These light bars are configured in single-in-line and dual-in-line packages that contain either single or segmented light emitting areas. The AlGaAs Red HLCP-X100 series LEDs use double heterojunction AlGaAs on a GaAs substrate. The HER HLMP-2300/2600 and Yellow HLMP-2400/2700 series LEDs have their p-n junctions diffused into a GaAsP epitaxial layer on a GaP substrate. The Green HLMP-2500/2800 series LEDs use a liquid phase GaP epitaxial layer on a GaP substrate. The bicolor HLMP-2900 series use a combination of HER/Yellow or HER/Green LEDs.



Selection Guide

Light Bar Part Number				Size of Light Emitting Areas	Number of Light Emitting Areas	Package Outline		Corresponding Panel and Legend Mount Part No. HLMP-
HLCP-	HLMP-							
AlGaAs	HER	Yellow	Green					
A100	2300	2400	2500	8.89 mm x 3.81 mm (.350 in. x .150 in.)	1	A		2599
B100	2350	2450	2550	19.05 mm x 3.81 mm (.750 in. x .150 in.)	1	B		2598
D100	2600	2700	2800	8.89 mm x 3.81 mm (.350 in. x .150 in.)	2	D		2898
E100	2620	2720	2820	8.89 mm x 3.81 mm (.350 in. x .150 in.)	4	E		2899
F100	2635	2735	2835	3.81 mm x 19.05 mm (.150 in. x .750 in.)	2	F		2899
C100	2655	2755	2855	8.89 mm x 8.89 mm (.350 in. x .350 in.)	1	C		2898
G100	2670	2770	2870	8.89 mm x 8.89 mm (.350 in. x .350 in.)	2	G		2899
H100	2685	2785	2885	8.89 mm x 19.05 mm (.350 in. x .750 in.)	1	H		2899
	2950	2950		8.89 mm x 8.89 mm (.350 in. x .350 in.)	Bicolor	I		2898
	2965		2965	8.89 mm x 8.89 mm (.350 in. x .350 in.)	Bicolor	I		2898

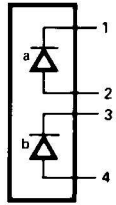
Package Dimensions



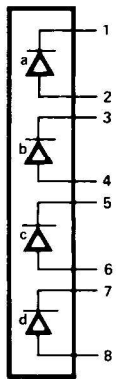
NOTES:

1. DIMENSIONS IN MILLIMETRES (INCHES). TOLERANCES ± 0.25 mm (± 0.010 IN.) UNLESS OTHERWISE INDICATED.
2. FOR YELLOW AND GREEN DEVICES ONLY.

Internal Circuit Diagrams

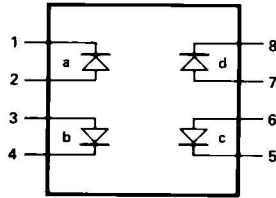


A

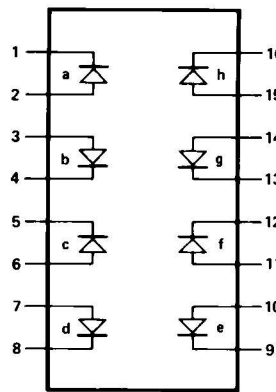


B

PIN FUNCTION		
PIN	A -2300/-2400 -2500/A100	B -2350/-2450 -2550/B100
1	CATHODE a	CATHODE a
2	ANODE a	ANODE a
3	CATHODE b	CATHODE b
4	ANODE b	ANODE b
5		CATHODE c
6		ANODE c
7		CATHODE d
8		ANODE d

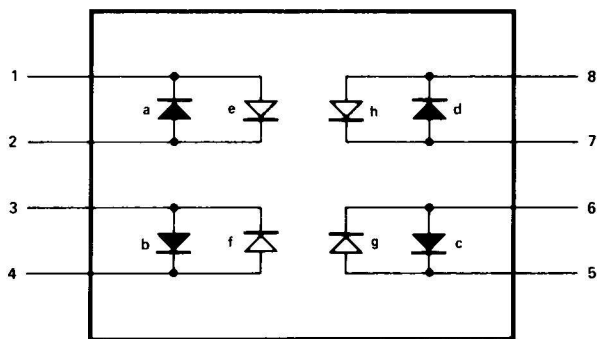


C,D



E,F,G,H

PIN	PIN FUNCTION	
	C, D	E, F, G, H
1	CATHODE a	CATHODE a
2	ANODE a	ANODE a
3	ANODE b	ANODE b
4	CATHODE b	CATHODE b
5	CATHODE c	CATHODE c
6	ANODE c	ANODE c
7	ANODE d	ANODE d
8	CATHODE d	CATHODE d
9		CATHODE e
10		ANODE e
11		ANODE f
12		CATHODE f
13		CATHODE g
14		ANODE g
15		ANODE h
16		CATHODE h



HIGH EFFICIENCY RED LED



YELLOW OR GREEN LED

PIN	PIN FUNCTION	
	HER	YELLOW/ GREEN
1	CATHODE a	ANODE e
2	ANODE a	CATHODE e
3	ANODE b	CATHODE f
4	CATHODE b	ANODE f
5	CATHODE c	ANODE g
6	ANODE c	CATHODE g
7	ANODE d	CATHODE h
8	CATHODE d	ANODE h

Absolute Maximum Ratings

Parameter	AlGaAs Red HLCP-X100 Series	HER HLMP-2300/ 2600/29XX Series	Yellow HLMP-2400/ 2700/2950 Series	Green HLMP-2500/ 2800/2965 Series
Average Power Dissipated per LED Chip	37 mW ^[1]	135 mW ^[2]	85 mW ^[3]	135 mW ^[2]
Peak Forward Current per LED Chip	45 mA ^[4]	90 mA ^[5]	60 mA ^[5]	90 mA ^[5]
Average Forward Current per LED Chip	15 mA	25 mA	20 mA	25 mA
DC Forward Current per LED Chip	15 mA ^[1]	30 mA ^[2]	25 mA ^[3]	30 mA ^[2]
Reverse Voltage per LED Chip	5 V	6 V ^[6]		
Operating Temperature Range	-20°C to +100°C ^[7]	-40°C to +85°C		-20°C to +85°C
Storage Temperature Range	-40°C to +85°C			
Wave Soldering Temperature 1.6 mm (1/16 inch) below Body	250°C for 3 seconds			

Notes:

1. Derate above 87°C at 1.7 mW/°C per LED chip. For DC operation, derate above 91°C at 0.8 mA/°C.
2. Derate above 25°C at 1.8 mW/°C per LED chip. For DC operation, derate above 50°C at 0.5 mA/°C.
3. Derate above 50°C at 1.8 mW/°C per LED chip. For DC operation, derate above 60°C at 0.5 mA/°C.
4. See Figure 1 to establish pulsed operation. Maximum pulse width is 1.5 mS.
5. See Figure 6 to establish pulsed operation. Maximum pulse width is 2 mS.
6. Does not apply to bicolor parts.
7. For operation below -20°C, contact your local Agilent sales representative.

Electrical/Optical Characteristics at T_A = 25°C

AlGaAs Red HLCP-X100 Series

Parameter	HLCP-	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Luminous Intensity per Lighting Emitting Area ^[1]	A100/D100/E100	I _V	3	7.5		mcd	I _F = 3 mA
	B100/C100/F100/G100		6	15		mcd	
	H100		12	30		mcd	
Peak Wavelength		λ _{PEAK}		645		nm	
Dominant Wavelength ^[2]		λ _d		637		nm	
Forward Voltage per LED		V _F		1.8	2.2	V	I _F = 20 mA
Reverse Breakdown Voltage per LED		V _R	5	15		V	I _R = 100 μA
Thermal Resistance LED Junction-to-Pin		Rθ _{J-PIN}		250		°C/W/ LED	

High Efficiency Red HLMP-2300/2600/2900 Series

Parameter	HLMP-	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Luminous Intensity per Lighting Emitting Area ^[1]	2300/2600/2620	I_V	6	23		mcd	$I_F = 20 \text{ mA}$
	2350/2635/2655/2670/2950 ^[3]		13	45		mcd	
	2965 ^[4]		19	45		mcd	
	2685		22	80		mcd	
Peak Wavelength		λ_{PEAK}		635		nm	
Dominant Wavelength ^[2]		λ_d		626		nm	
Forward Voltage per LED		V_F		2.0	2.6	V	$I_F = 20 \text{ mA}$
Reverse Breakdown Voltage per LED ^[5]		V_R	6	15		V	$I_R = 100 \text{ }\mu\text{A}$
Thermal Resistance LED Junction-to-Pin		$R\theta_{\text{J-PIN}}$		150		$^{\circ}\text{C/W/LED}$	

Yellow HLMP-2400/2700/2950 Series

Parameter	HLMP-	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Luminous Intensity per Lighting Emitting Area ^[1]	2400/2700/2720	I_V	6	20		mcd	$I_F = 20 \text{ mA}$
	2450/2735/2755/2770/2950 ^[3]		13	38		mcd	
	2785		26	70		mcd	
Peak Wavelength		λ_{PEAK}		583		nm	
Dominant Wavelength ^[2]		λ_d		585		nm	
Forward Voltage per LED		V_F		2.1	2.6	V	$I_F = 20 \text{ mA}$
Reverse Breakdown Voltage per LED ^[5]		V_R	6	15		V	$I_R = 100 \text{ }\mu\text{A}$
Thermal Resistance LED Junction-to-Pin		$R\theta_{\text{J-PIN}}$		150		$^{\circ}\text{C/W/LED}$	