



# 5/16" Relampable Panel LED Lamps

## Features

- Panel Mounting Diameter 5/16 in. (8.0mm)
- Long Life 100,000+ hrs (10 years)
- Solid-State, High Shock/Vibration Resistant
- Maintenance Free, Easy Installation

- Low Power, High Intensity
- Major Power Savings
- Major Reduction in Heat Generation
- Built-in Current Limiting Resistor

## Options

- Special Voltages
- Sunlight-Visible Super Bright or High-Efficiency LEDs
- Bi-Colors, Tri-Colors, RGB, IR
- Flashing / Blinking

### 5/16" (8mm) Mtg. Dia. Front & Rear Mount with T1 Sub-Midget Flange LED

**Series**  
 HLC310 = Front Mount  
 HLD310 = Rear Mount  
 HLD312 = 2 Chip  
 HLD314 = 4 Chip

**Lens**  
 C = Tinted Clear  
 CW = Water Clear  
 TW = Milky White

**LED Color**

<b>1 Chip (Super Intensity)</b>	<b>2/4 Chip (Std Intensity)</b>
R3K = SP Red	R6 = UL Red
O3K = SP Orange	R5 = HE Red
Y3K = SP Yellow	O5 = Orange
W900 = C. White	Y5 = Yellow
G1K = UL. Green	LY5 = L. Yellow
AG6K = A. Green	G5 = HE Green
B1K = SP. Blue	PG5 = P. Green

**Std. Operating Voltage DC**  
 2Vf (Ext. Res. Rqd.)  
 3.5Vf (Ext. Res. Rqd.)  
 3.6V  
 5/6V  
 12/14V  
 24V  
 28V

**Options**  
 P = Center Pos (Black Bezel)

**Waterproof Front Mount**

**Standard Front Mount**

**Standard Rear Mount**

**RFI EMI Shielded**

### Standard Front Mount

**Series**  
 FF120 = 1 Chip  
 F121 = 1 Chip  
 F122 = 2 Chip  
 F124 = 4 Chip

**Lens**  
 C = Clear

**LED Color**

<b>1 Chip (Super Intensity)</b>	<b>2/4 Chip (Std Intensity)</b>
R3K = SP Red	R6 = UL Red
O3K = SP Orange	R5 = HE Red
Y3K = SP Yellow	O5 = Orange
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G1K = UL. Green	LY5 = L. Yellow
AG6K = A. Green	G5 = HE Green
B1K = SP. Blue	PG5 = P. Green

**Std. Operating Voltage DC**  
 2Vf (Ext. Res. Rqd.)  
 3.5Vf (Ext. Res. Rqd.)  
 3.6V  
 5/6V  
 12/14V  
 24V  
 28V

**Options**  
 P = Positive Center  
 N = Negative Center

### Standard Rear Mount

### T1 LED Lamps

**Series**  
 FF120 = 1 Chip  
 F121 = 1 Chip  
 F122 = 2 Chip  
 F124 = 4 Chip

**Lens**  
 C = Clear

**LED Color**

<b>1 Chip (Super Intensity)</b>	<b>2/4 Chip (Std Intensity)</b>
R3K = SP Red	R6 = UL Red
O3K = SP Orange	R5 = HE Red
Y3K = SP Yellow	O5 = Orange
W900 = C. White	Y5 = Yellow
G1K = UL. Green	LY5 = L. Yellow
AG6K = A. Green	G5 = HE Green
B1K = SP. Blue	PG5 = P. Green

**Std. Operating Voltage DC**  
 2Vf (Ext. Res. Rqd.)  
 3.5Vf (Ext. Res. Rqd.)  
 3.6V  
 5/6V  
 12/14V  
 24V  
 28V

**Options**  
 P = Positive Center  
 N = Negative Center

Super Intensity 2 & 4 Chip LEDs Available in This Package for Special Applications

### Lens Cap

Lens Cap Part Number		Lens Type/Color	
HL230-RT	HL430-RT	Diff Red	●
HL230-AT	HL430-AT	Diff Orange	●
HL230-GT	HL430-GT	Diff Green	●
HL230-BT	HL430-BT	Diff Blue	●
HL230-WT	HL430-WT	Diff. White	○
HL230-WC	HL430-WC	Water Clear	○



# LED Color Chart

LEDtronics Code	LED Chip Code	Wavelength nm	Color Name	Fwd Voltage $V_f$ @ 20mA	Intensity 5mm LEDs	Viewing Angle	LED Dye Material
941	IR941	940	Infrared	1.5	16mW @ 50mA	15°	GaAlAs/GaAs - Gallium Aluminum Arsenide/ Gallium Arsenide
881	IR881	880	Infrared	1.7	18mW @ 50mA	15°	GaAlAs/GaAs - Gallium Aluminum Arsenide/ Gallium Arsenide
851	IR851	850	Infrared	1.7	26mW @ 50mA	15°	GaAlAs/GaAlAs - Gallium Aluminum Arsenide/ Gallium Aluminum Arsenide
0UR	R3KF	660	Ultra Red	1.8	2000mcd @ 20mA	15°	GaAlAs/GaAlAs - Gallium Aluminum Arsenide/ Gallium Aluminum Arsenide
00R	R3/R4/R5	635	High Eff. Red	2.0	200mcd @ 20mA	15°	GaAsP/GaP - Gallium Arsenic Phosphide /Gallium Phosphide
0ER	E3K	633	Super Red	2.2	3500mcd @ 20mA	15°	InGaAlP - Indium Gallium Aluminum Phosphide
0UO	O3K/O6K	620	Super Orange	2.2	4500mcd @ 20mA	15°	InGaAlP - Indium Gallium Aluminum Phosphide
0UO	O3KF	612	Super Orange	2.2	6500mcd @ 20mA	15°	InGaAlP - Indium Gallium Aluminum Phosphide
00O	O4/O5	605	Orange	2.1	160mcd @ 20mA	15°	GaAsP/GaP - Gallium Arsenic Phosphide /Gallium Phosphide
0UY	Y3KF	595	Super Yellow	2.2	5500mcd @ 20mA	15°	InGaAlP - Indium Gallium Aluminum Phosphide
0PY	Y3KH	592	Super Pure Yellow	2.1	7000mcd @ 20mA	15°	InGaAlP - Indium Gallium Aluminum Phosphide
00Y	Y3/Y4/Y5	585	Yellow	2.1	100mcd @ 20mA	15°	GaAsP/GaP - Gallium Arsenic Phosphide /Gallium Phosphide
0IW	IW2K	4500K	Incand White	3.6	2000mcd @ 20mA	20°	SiC/GaN - Silicon Carbide/Gallium Nitride
0PW	PW4K	6500K	Pale White	3.6	4000mcd @ 20mA	20°	SiC/GaN - Silicon Carbide/Gallium Nitride
0CW	CW6K	8000K	Cool White	3.6	6000mcd @ 20mA	20°	SiC/GaN - Silicon Carbide/Gallium Nitride
0LY	LY1K	574	Super Lime Yellow	2.4	1000mcd @ 20mA	15°	InGaAlP - Indium Gallium Aluminum Phosphide
0UG	G1K	570	Super Lime Green	2.0	1000mcd @ 20mA	15°	InGaAlP - Indium Gallium Aluminum Phosphide
00G	G3/G4/G5	565	High Eff. Green	2.1	200mcd @ 20mA	15°	GaP/GaP - Gallium Phosphide/Gallium Phosphide
UPG	PG350	560	Super Pure Green	2.1	350mcd @ 20mA	15°	InGaAlP - Indium Gallium Aluminum Phosphide
0PG	PG5	555	Pure Green	2.1	80mcd @ 20mA	15°	GaP/GaP - Gallium Phosphide/Gallium Phosphide
0AG	AG10K	525	Aqua Green	3.5	10,000mcd @ 20mA	15°	SiC/GaN - Silicon Carbide/Gallium Nitride
0BG	BG2K	505	Blue Green	3.5	2000mcd @ 20mA	45°	SiC/GaN - Silicon Carbide/Gallium Nitride
0PB	PB3K	470	Super Blue	3.6	3000mcd @ 20mA	15°	SiC/GaN - Silicon Carbide/Gallium Nitride
00B	UB500	430	Ultra Blue	3.8	100mcd @ 20mA	15°	SiC/GaN - Silicon Carbide/Gallium Nitride