

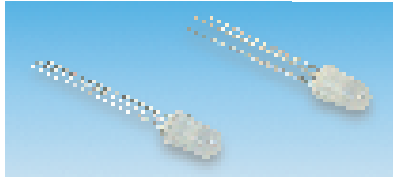
Bicolour LEDs have two diodes connected in inverse parallel. AC operation gives a third intermediate colour, e.g. red + green gives orange.

Colours	View Angle	Typ. Lum. Intensity (mcd)	I <sub>F</sub> (mA) (max)	Mftrs. List No.	Order Code
<b>Untinted Diffused Lens</b>					
HE Red/Green	90°	5.0/4.8 @ 20mA	25	L24R5005K2P2	178-318
HE Red/Yellow	90°	5.0/4.5 @ 20mA	25	L34R5005K2P2	178-319
Green/Yellow	90°	4.8/4.5 @ 20mA	25	L23R5005K2P2	178-320

FOR SUITABLE MOUNTING CLIP SEE ORDER CODE 233-547 **PAGE 190** OPT93

Colours	Order Code	Price Each			
		1+	50+	100+	1K+
HE Red/Green	<b>.178-318</b>				
HE Red/Yellow	<b>178-319</b>				
Green/Yellow	<b>.178-320</b>				

## Tricolour, 5mm/T1<sup>3</sup>/<sub>4</sub>



178-296	HLMP4000	178-296
L = 8.6, Dia = 5.0	L = 8.6, Dia = 5.0	A1 = Green (longest lead)
Leads on 2.54 PCD with stand-offs	L = 8.6, Dia = 5.0	A2 = Orange/Red (shortest lead)
Leads L = 24 0.5sq	Leads spacing 1.27	HLMP4000
	(leads in line), no stand-offs	A2 = Red (short lead)
	Leads L = 25 0.51sq	K = Common cathode (centre lead)

Two colour LEDs connected common cathode. Both diodes connected gives third intermediate colour.

Colours	View angle	Typ. Lum. Intensity (mcd)	I <sub>F</sub> (mA) (max.)	Mftr.	List No.	Order Code
<b>Untinted Diffused Lens</b>						
Orange-Red/Green	60°	6 @ 20mA	30mA	VISH	TLUV5300	178-296
HE Red/Green	65°	5/8 @ 10mA	30mA	AGI	HLMP4000	323-500

FOR SUITABLE MOUNTING CLIP AND RING FOR HLMP4000 SEE ORDER CODE 233-547 - **PAGE 190** OPT95

Order Code	1+	Price Each		
		25+	100+	1K+
<b>178-296</b>				
<b>323-500</b>				

## Tricolour, 5mm/T1<sup>3</sup>/<sub>4</sub>



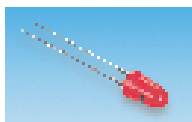
Pin Config.	Anodes	
	A1	A2
a	Red	Green
c	Green	Yellow

L = 8.6, Dia = 5, Lead spacing = 2.54 (in-line)  
Lead length A1 = 20.5 K = 24.5 A2 = 22.5

Colours	View Angle	Lum Intensity (mcd) @ 20mA		I <sub>F</sub> (mA) max	Pin PIV	Pin Config.	Order Code
		min	typ				
<b>Untinted Clear Lens</b>							
HE Red/Green	24°	100/50	300/200	30/25	5	a	637-282
Green/Yellow	24°	50/30	200/80	25/30	5	c	637-300
Ultra Red/Ultra Green	24°	300/80	700/200	30/25	5	a	637-312

Colours	Order Code	Price Each				
		1+	50+	100+	500+	1K+
Red/Green	<b>637-282</b>					
Green/Yellow	<b>637-300</b>					
Ultra Red/Ultra Green	<b>637-312</b>					

## Flashing, 5mm/T1<sup>3</sup>/<sub>4</sub>



178 Series: L = 8.6, Dia. = 5  
Lead pitch = 2.54 with stand-offs, Leads = 24 0.5sq  
Cathode identified by flat on body and shorter lead.  
515 Series: L = 8.6, Dia. = 5.9  
Lead pitch = 2.54, Leads = 25.5 0.5sq  
Cathode identified by shorter lead

178 Series	515 Series
Flash rate 3Hz (typ.)	Flash rate 1.5-2.5Hz
Supply voltage Min 4.75, Max 7.0V	Supply voltage 3.5V (min.) 12V (max.)

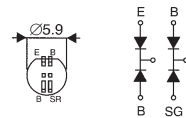
**Note:** Internally current controlled. Unsuitable for use with voltage dropping series resistors.

Colour	View Angle	Typ. Lum. Intensity (mcd)	I <sub>F</sub> (mA) (max.)	PIV (max.)	Mftr.	Mftrs. List No.	Order Code
<b>Tinted Diffused Lens</b>							
Red	80°	1.6 @ 5V typ	35	0.4	VISH	TLBR5410	178-298
Red	60°	8.0 @ 9V	38-56	0.5	MULT	—	515-723
Green	60°	32.0 @ 9V	38-56	0.5	MULT	—	515-735
Yellow	60°	32.0 @ 9V	38-56	0.5	MULT	—	515-747
HE Red	60°	80 @ 9V	38-56	0.5	MULT	—	636-927
Super-Bright Red	60°	300 @ 9V	38-56	0.5	MULT	—	636-939

FOR SUITABLE MOUNTING CLIP AND RING FOR 515 SERIES SEE ORDER CODE 233-547 **PAGE 190** OPT97

Colour	Order Code	Price Each			
		1+	25+	100+	250+
Red	<b>178-298</b>				
Red	<b>BV .515-723</b>				
Green	<b>BV 515-735</b>				
Yellow	<b>BV 515-747</b>				
HE Red	<b>BV 636-927</b>				
Super-Bright Red	<b>BV 636-939</b>				

## 5mm/T1<sup>3</sup>/<sub>4</sub>, Full Colour RGB



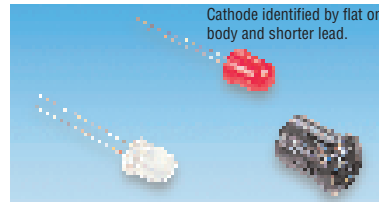
L = 8.6, Dia. = 5.0, Lead pitch = 2.54,  
Leads = 21.5 0.5sq, Centre pin anode.

Colour	View Angle	Lum. Intensity (mcd) @ I <sub>F</sub> = 20mA		I <sub>F</sub> (mA) (max.)	PIV (max.)	Order Code
		min.	typ.			
<b>Water Clear Lens</b>						
HE Red	90	200	30	5		
Green	15°	50	150	25	5	621-407
Blue		12.5	40	30	5	
Blue		12.5	40	30	5	
<b>White Diffused Lens</b>						
HE Red	20	90	30	5		
Green	30°	10	70	25	5	621-419
Blue		3.2	12.5	30	5	
Blue		3.2	12.5	30	5	

Order Code	1+	Price Each			
		25+	50+	100+	250+
Water Clear Lens					
<b>621-407</b>					
White Diffused Lens					
<b>621-419</b>					

## 8mm & 10mm Light Emitting Diodes (LEDs)

### 8mm, Standard and Ultrabright



L = 11, Dia = 8.0, Lead pitch = 2.54,  
Leads = 25.5 0.5 sq  
Black plastic mounting clip: Bezel dia=14  
Back of panel dia=12, Depth=13.5

Colour	View Angle	Typ. Lum. Intensity (mcd)	I <sub>F</sub> (mA) (max)	PIV (max)	Peak Wavelength	Order Code
<b>Tinted Diffused Lens</b>						
HE Red	60°	150 @ 20mA	30	5	625nm	179-020
Green	60°	70 @ 20mA	30	5	565nm	179-021
Yellow	60°	70 @ 20mA	30	5	590nm	179-022
<b>Ultra Bright-Tinted Diffused Lens</b>						
Red	100°	200 @ 20mA	30	5	660nm	179-023
Red	100°	350 @ 20mA	30	5	660nm	179-024
Red	100°	550 @ 20mA	30	5	660nm	253-637
<b>Ultra Bright-Untinted Clear Lens</b>						
Red	20°	1000 @ 20mA	30	5	660nm	179-025
Red	20°	3000 @ 20mA	30	5	600nm	253-649

Order Multiple=5	Colour	Order Code	Price Each			
			5+	50+	100+	250+
	HE Red	<b>.179-020</b>				
	Green	<b>.179-021</b>				
	Yellow	<b>.179-022</b>				
	Red	<b>179-023</b>				
	Red	<b>179-024</b>				
	Red	<b>.253-637</b>				
	Red	<b>.179-025</b>				
	Red	<b>.253-649</b>				
	Mounting clip	<b>.179-037.</b>				

continued