

BIVAR

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We Are...

The Go-To-Provider of LED Indication Products and Solutions that make Moving Light

- Practical
- Easy
- Efficient
- Affordable



We are Passionate Partners who Welcome the Opportunity to Apply and Adapt Our Products to Empower Designers in Achieving Their Goals

BIVAR

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www.bivar.com

Light Pipes

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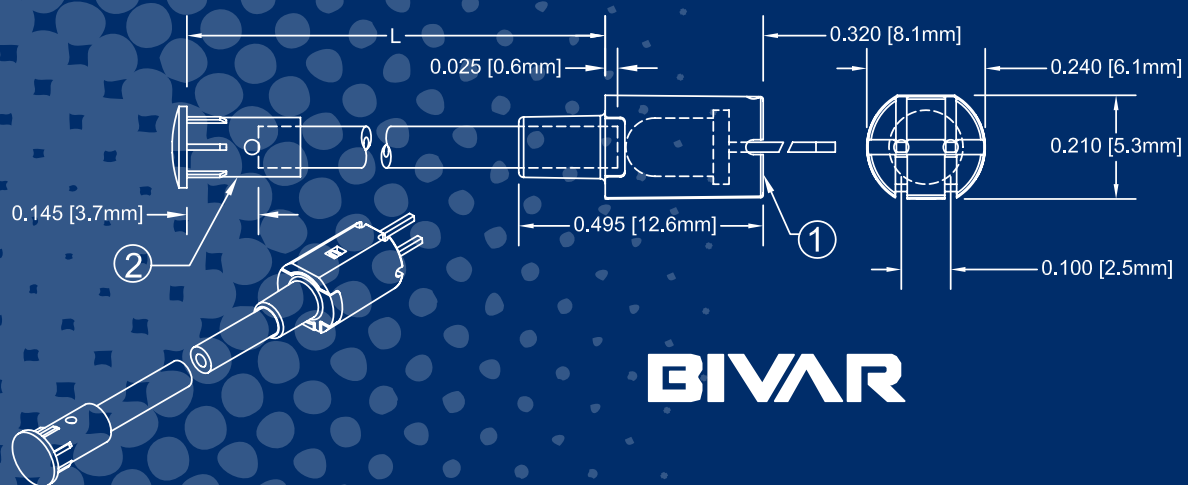
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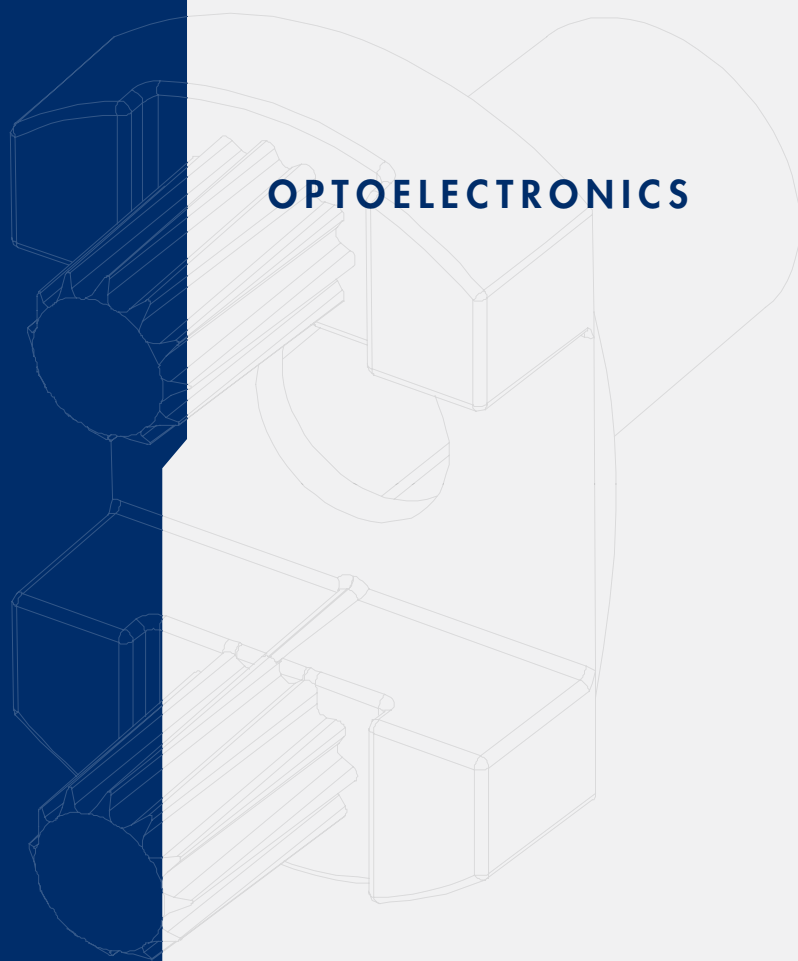
LEDs

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OPTOELECTRONICS



FLEXIBLE LIGHT PIPE ASSEMBLIES



- Eliminates need for thru-hole drilling of PCBs
- Exclusively designed for Flexible Light Pipe Lens Cap Assemblies
- Brilliant LED display capable of being extended from 2.5" (63.5mm) to 328" (100m) via the FLP mono-fiber
- Available in all standard colors including RGB and red/green bi-color
- Patents issued and patents pending

The all-new (patent and patent pending) SMPT Series of Surface Mount LED devices exclusively designed to accept the company's patented Flexible Light Pipes (FLP Series), create a new design and installation style that eliminates the need for thru-hole PCBs typically required for installation of light pipes.

The SMPT Series significantly expands the benefits of using Bivar's original award-winning FLP series, which introduced a two-piece flexible light pipe system capable of transmitting the light from an LED to a display panel up to 100m [328'] away. While the original FLP series provided an adapter for use with surface mount (SMD) LEDs, the adapter still required thru-holes in the PCB for mounting purposes. The SMPT Series eliminates not only the need for PCB thru-holes, but also the costly secondary post-reflow operations by integrating the adapter and LED into a single surface-mountable package that is compatible with all modern, automated pick-and-place equipment.

ORDERING INFORMATION

FLP	5	R	6.0	- SR
Series	Lens	Orientations	length	- Color

COLOR OPTION AND SUFFIXES:

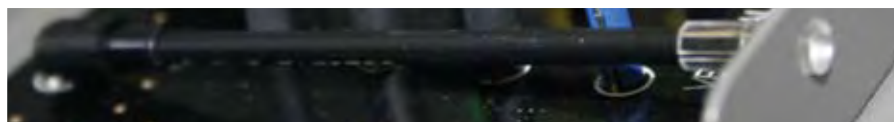
Suffix	Color	Peak (nm)	Typ.Vf	Iv (mcd) Typ.
SR	Super Red	660	1.7	250
SG	Super Green	568	2.2	120
SY	Super Yellow	585	2.1	65
SA	Super Amber	610	2.2	350
SBC	Super Bi-Color (Red/Green)	660/568	1.8/2.2	150/80
UBW.6K	Ultra Blue	470	3.5	600
UT	Ultra Turquoise	502	3.5	900
UG	Ultra Green	563	2.2	800
UR	Ultra Red	660	1.7	400
UY	Ultra Yellow	588	2.0	600

FLEXIBLE LIGHT PIPE LENGTH TOLERANCES:

2.5" through 12" = +/- .250"

13" through 24: = +/- .500"

Tighter tolerances available.



FLEXIBLE LIGHT PIPE ASSEMBLIES

Lens, Fiber and Adapters

LENS



FLP
4mm
Lens Cap



FLP5
7mm
Lens Cap



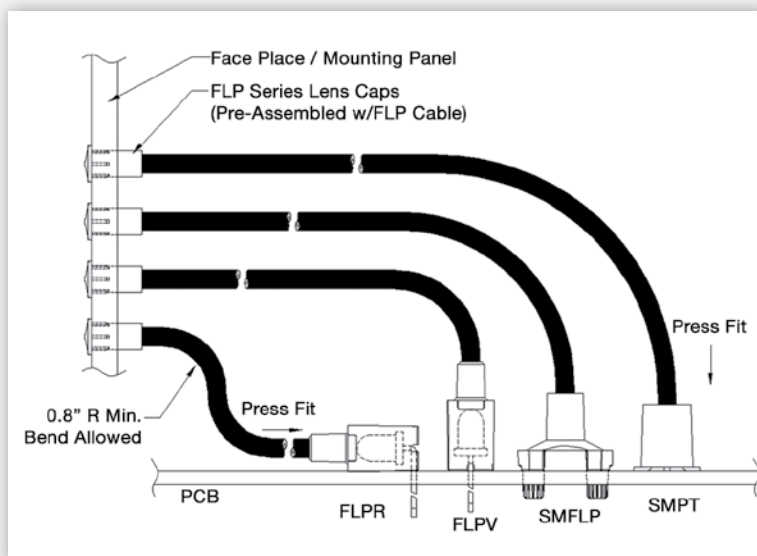
FLP-R1
Rectangular
Lens Cap



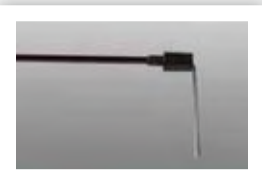
FLP-O
Oval
Lens Cap



FLP-IR
Infrared
Lens Cap



ADAPTERS



FLPR
Right Angle
Adapter



FLPV
Vertical
Adapter



SMFLP
Surface Mount
Adapter



SMPT
LED/Integrated
Adapter

RIGID LIGHT PIPES

Panel Light Pipes and Self-Retaining Clip

Light Pipes are ideal for applications where an automatically placed LED requires its output redirected to a front panel. Light pipes are engineered of 94V-0 compliant clear polycarbonate for maximum light transmission and viewing angle to 120°. Light pipes will also protect circuits from accidental damage from ESD by isolating the PCB from potential contact.

- Protect circuits from ESD
- Use with SMD or Thru-Hole Series LEDs
- PLP Series Panel Light Pipes press fit into panel
- For PLP1 Series added retention and contrast, use C-103-SR Self-Retaining Clip
- For PLP5 Series added retention and contrast, use C-105-SR



PLP1/PLP1-F

Rear Mount 3mm Panel Light Pipes



PLP2

Front Mount 3mm Panel Light Pipes



PLP5

Rear Mount 5mm Panel Light Pipes



PLP5-2

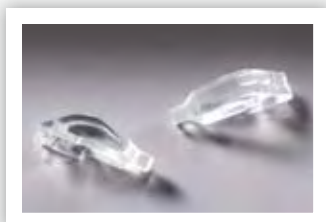
Front Mount 5mm Panel Light Pipes



RIGID LIGHT PIPES

Right Angle Light Pipes for Surface Mount LEDs

- Wide viewing angle
- ESD protection
- Use with SM0603 through SM1210 Series LEDs
- May be heat staked or glued



SLP-1

Round Face Right Angle Light Pipe



SLP-1-3

Round Face Right Angle Light Pipe
Additional Mounting Peg



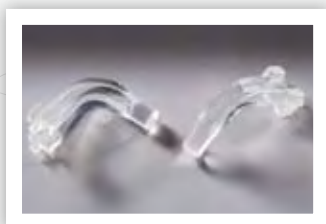
SLP-2

Rectangular Face Right Angle Light Pipe



SLP-3

Variable Centerline Right Angle Light Pipe



LP5-1000

Wide Viewing Right Angle Light Pipe

RIGID LIGHT PIPES

Multi-Level Light Pipes

- Proprietary design eliminates bleeding
- Works with SM0603 or SM0805 Series LEDs
- Side-stackable with a horizontal pitch .175"
- LP4 allows the use of 4 SMD LEDs in small footprint



LP-230

Bi-Level Right Angle Light Pipe



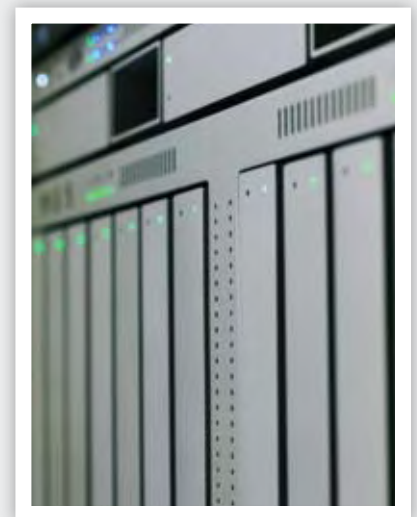
LP4-EP

Quad-Level Right Angle Light Pipe –
Extended



LP4-LP

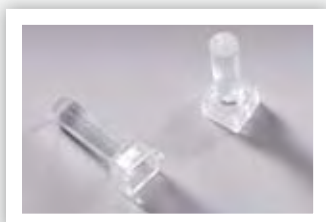
Quad-Level Right Angle Light Pipe –
Recessed



RIGID LIGHT PIPES

Vertical Light Pipes

- Protect circuit from ESD
- Use with SM0603–SM0805 Series LEDs
- May be heat staked or glued



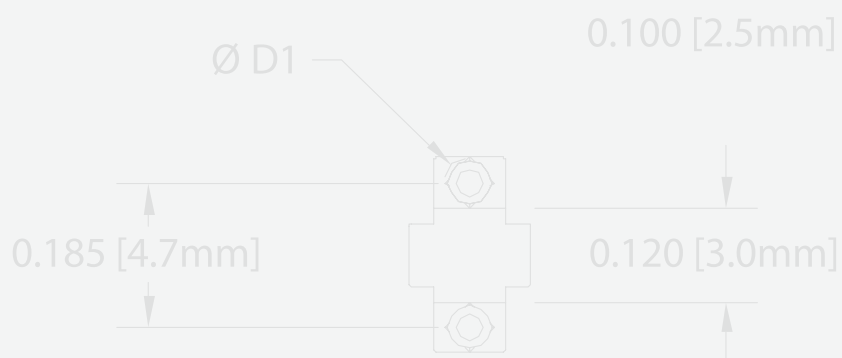
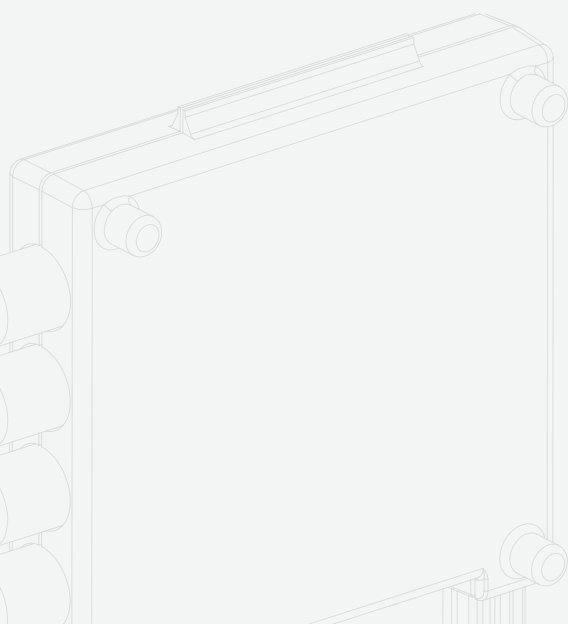
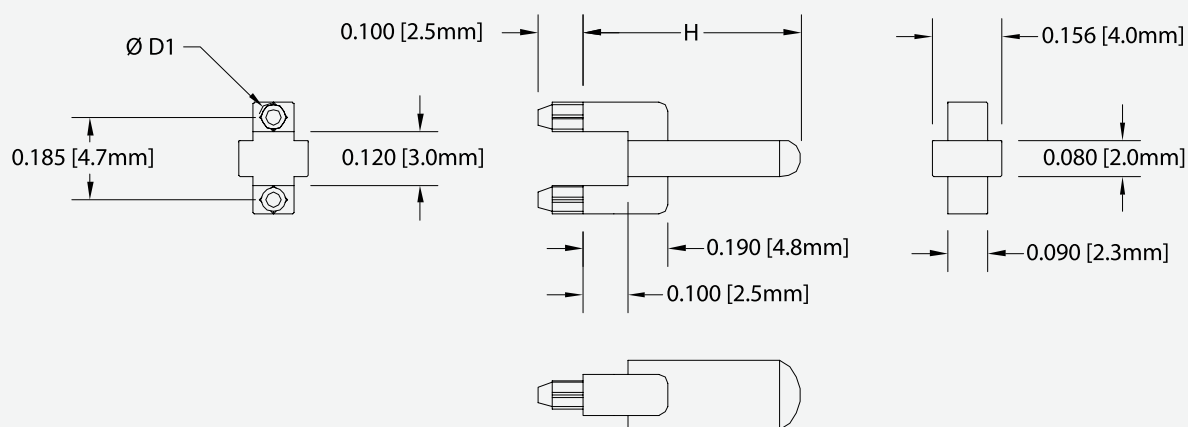
VLP Series

Vertical, Round or Flat Face Light Pipes



VLPR Series

Vertical Rectangular Light Pipes



VERTICAL LED ASSEMBLIES

3mm/Universal Self Retaining

- Stock lengths .030" – .850" (1.0mm–21.0mm)
- Available on tape and reel in .050" – .500" (2mm–13mm) lengths 1,000 per reel
- Additional LED colors available



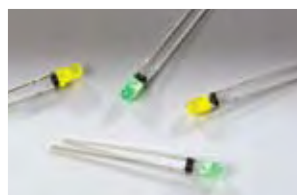
ELM2

3mm Standard Profile LED Assemblies



ELM5

3mm Narrow Profile LED Assemblies



ELM7

3mm Reduced Profile LED Assemblies



VERTICAL LED ASSEMBLIES

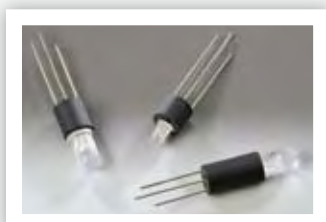
5mm/Universal Self Retaining

- Over 2,000 available combinations
- High temperature versions available



ELM1

5mm Narrow Profile LED Assemblies



ELM3

5mm 3 Lead LED Assemblies



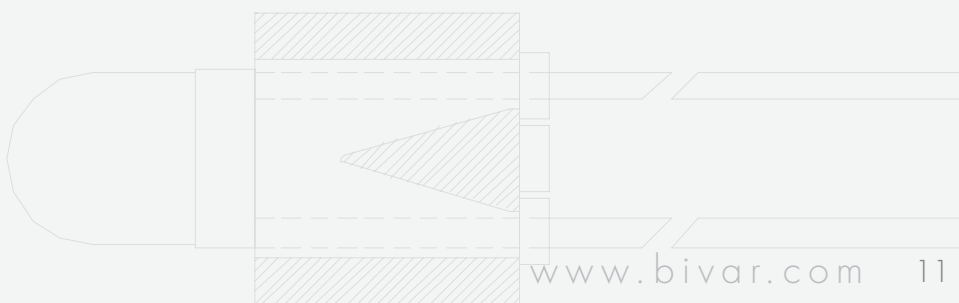
LTM

High Temp Universal LED Assemblies



NTM

Standard Universal LED Assemblies



RIGHT ANGLE LED ASSEMBLIES

Single-Level

- 4mm PC standard
- Additional configurations
- Standard footprint, conserves PCB space
- High reliability



H178C

5mm Right Angle LED Assemblies



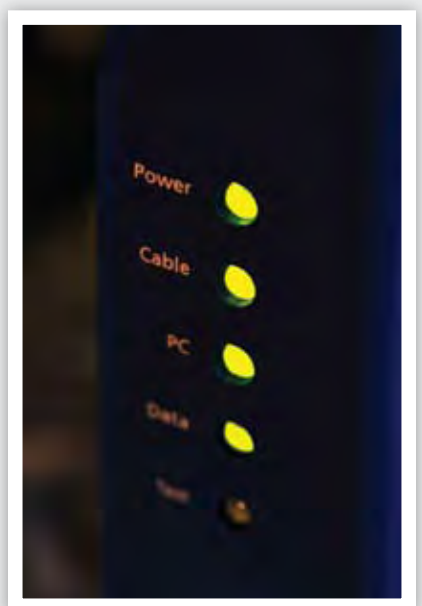
H178CBC-3

5mm Tri-Color Right Angle LED Assemblies



H1 Series

3mm Right Angle LED Assemblies



RIGHT ANGLE LED ASSEMBLIES

Bi/Tri/Quad Level

- Five centerline combinations
- Available with recessed LEDs
- Additional configurations
- Space saving design



H2 Series

Bi-Level Right Angle LED Assemblies



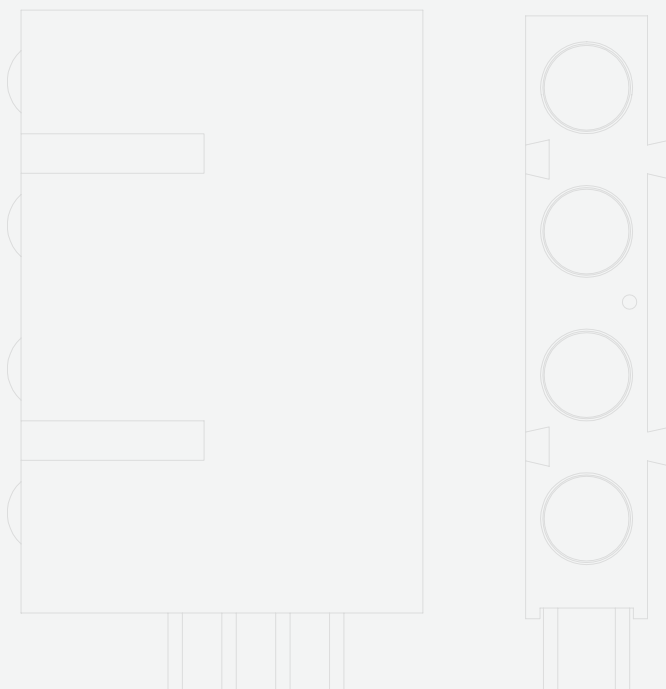
H3 Series

Tri-Level Right Angle LED Assemblies



H4 Series

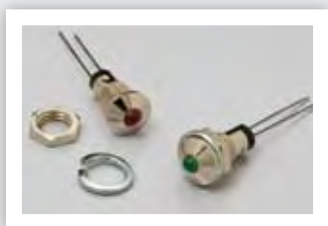
Quad-Level Right Angle LED Assemblies



PANEL MOUNT LED ASSEMBLIES

3mm

- Available in a wide range of LED colors
- Press fit mounting lowers labor and assembly cost (for PM3)
- 6" 24AWG wire leads at no additional cost (for PM3)
- Wire leads available in optional lengths
- Wide variety of connectors available



MPC3

3mm Standard Chrome Panel Mount



MPR3

3mm Recessed Chrome Panel Mount



PM3

3mm Press Fit LED Panel Assembly



PANEL MOUNT LED ASSEMBLIES

5mm

- Available in a wide range of LED colors
- Press fit mounting lowers labor and assembly cost (for PM5)
- 6" 24AWG wire leads at no additional cost (for PM5)
- Wide variety of connectors available
- Wire leads available in optional lengths



MPC5

5mm Standard Chrome Panel Mount



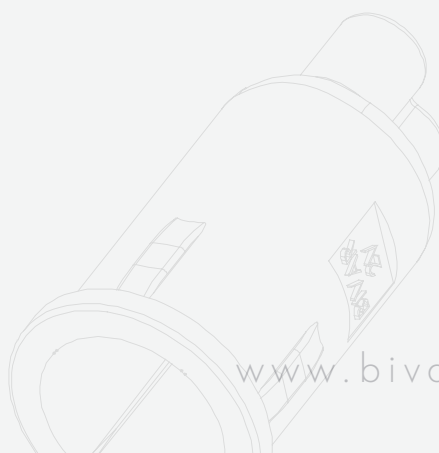
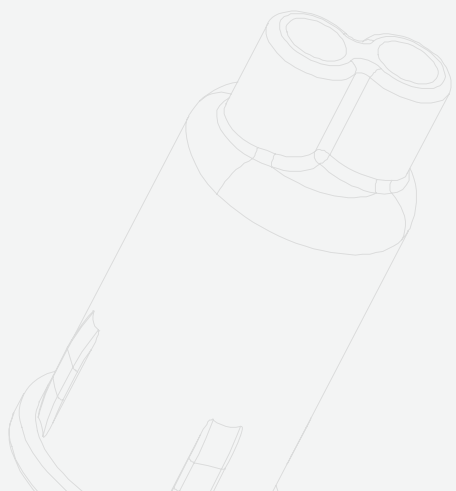
MPR5

5mm Recessed Chrome Panel Mount



PM5

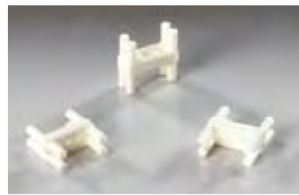
5mm Press Fit LED Panel Assemblies



MOLDED LED MOUNTS

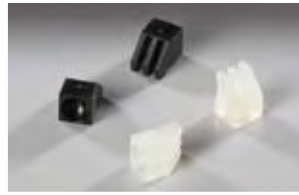
Rectangular/Right-Angle

- RL1 and RL2 suitable for automatic insertion
- Feet facilitate cleaning and inspection
- Made from 94V-0 rated nylon
- Two different inside diameters accept most industry standard T-1 3/4 LEDs



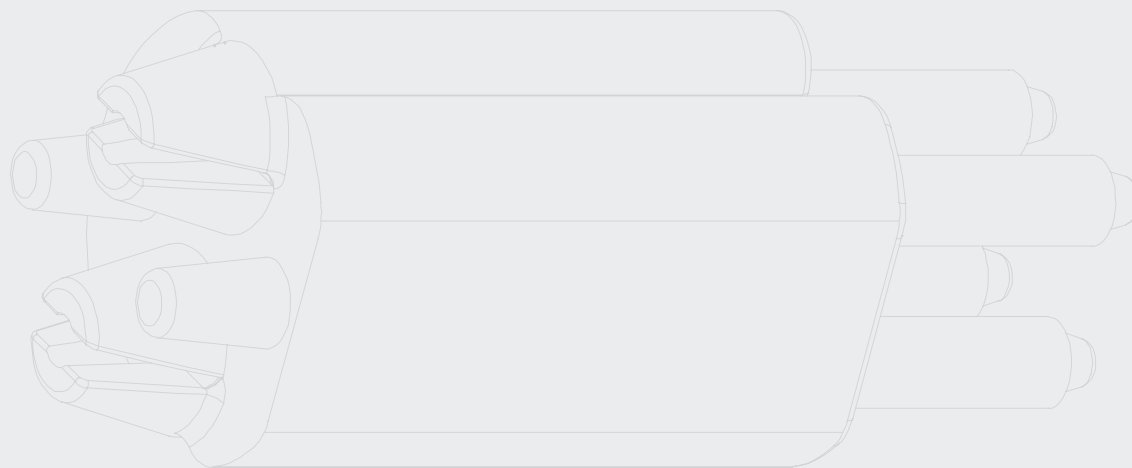
RL Series

Rectangular LED Mount



909-235

Right Angle 5mm LED Mount



MOLDED LED MOUNTS

Vertical

- Funnel shaped lead entry holes for assembly ease
- Feet facilitate cleaning and inspection



450 Series

Molded LED Mount



ENM

Extruded, Self Retaining, High Temperature LED Mount



LTM

High Temperature LED Mount



NTM

Cost Efficient LED Mount



SRM

Self Retaining LED Mount

LED HOLDERS

Single/Tri Level Holders

- Unique LED holders
- Positive lead retention
- Lower assembly cost and improved quality



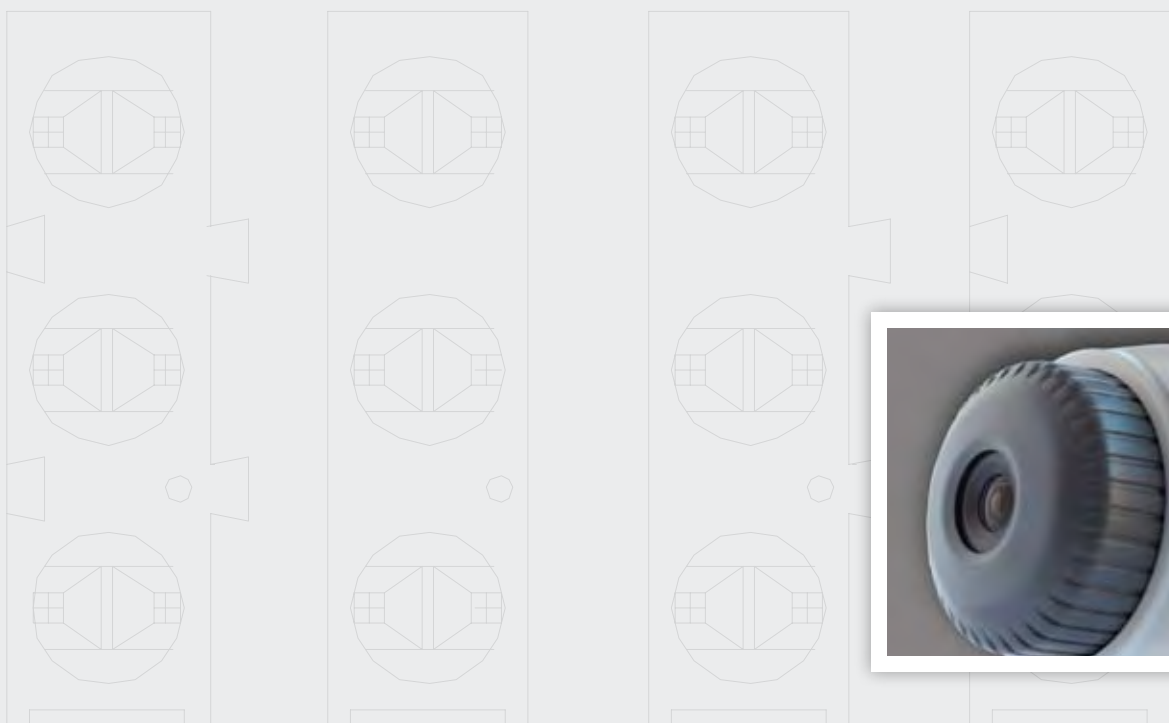
H-320 Series

3mm LED Holder with Locating Pin



H-RV Series

Single Rectangular LED Holder with Locating Pin



LED HOLDERS

Quad/Tri Level Right Angle

- Molded from black nylon per ASTM D-4066
- Housing made from 94V-0 rated material



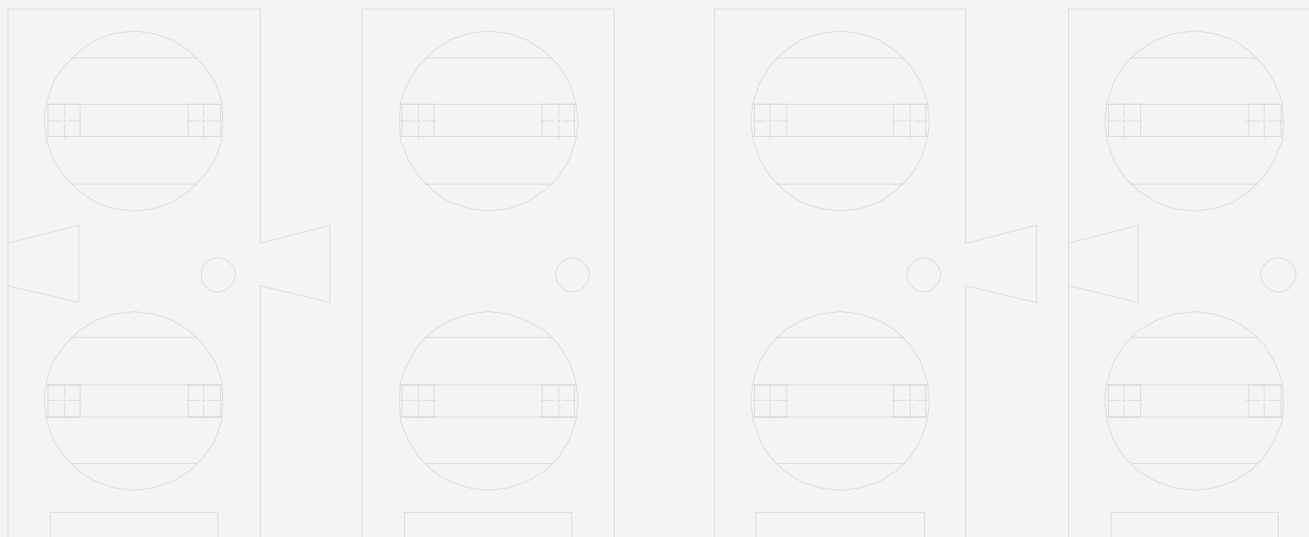
H-31 Series

3mm with Optional Interlocking Versions



H-4 Series

3mm with Optional Interlocking Versions



THRU-HOLE LEDs

1.8mm/3mm

- Wide color and brightness selection
- Wide viewing angle
- Ideal for ICT and process status indicators
- LEDs are safe for direct viewing Class 1 EN-60825-1 and EN-60825-2



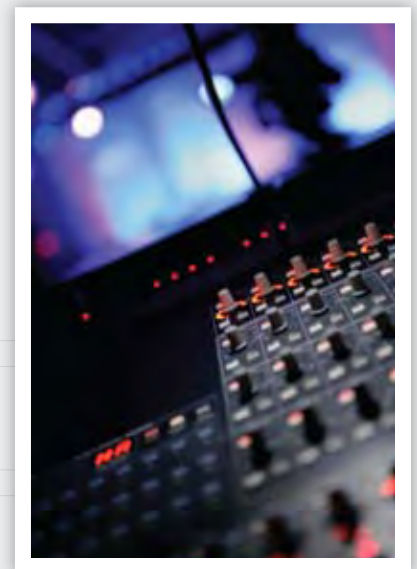
1.8mm Series

Radial Lead Small Footprint



3mm Series

Industry Standard T-1 Package



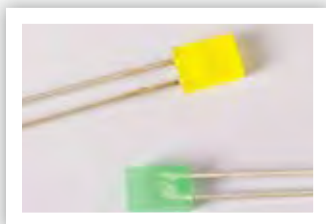
THRU-HOLE LEDs 5mm/Rectangular/7.6mm

- 5mm available with (-F) or without flanges
- Wide color and brightness selection
- Water clear, tinted or diffused lenses
- Ideal for general status indication and front panel display



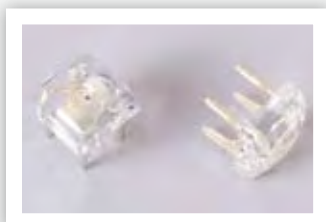
5mm Series

Industry Standard T-1 3/4 Package



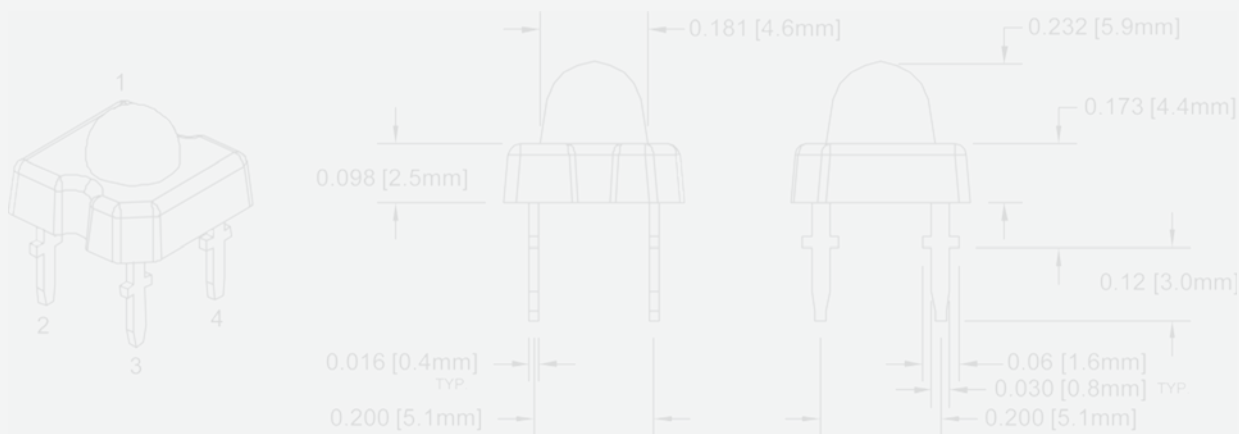
Rectangular Series

R3 (2mm x 3mm), R4 (2mm x 4mm),
R5 (2mm x 5mm), R7 (2mm x 7mm)



R20/R50 Series, ORCA

7.6mm Square Package



SURFACE MOUNT LEDs

- Ideal for Bivar Light Pipe application
- Back light applications
- Industry standard footprint



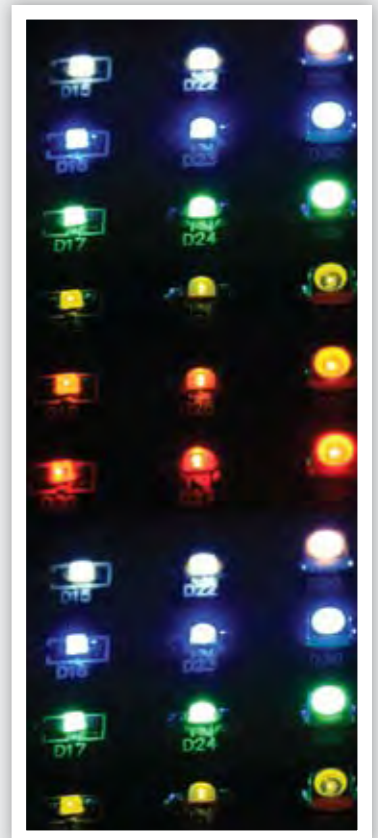
SM0603

1.6mm x 0.8mm

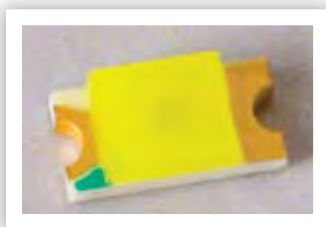


SM0805

2.0mm x 1.2mm



SURFACE MOUNT LEDs

**SM1206**

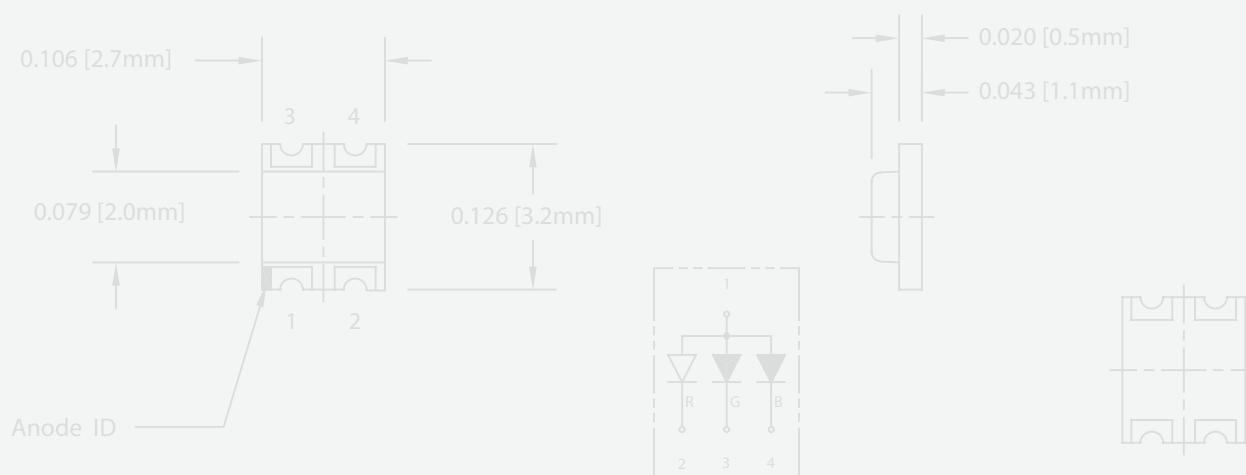
3.2mm x 1.6mm

**SM1210**

3.2mm x 2.7mm, Bi-Color, Tri-Color

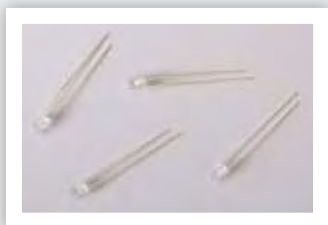
**SM1204**

3mm x 1mm, Right Angle



ULTRAVIOLET LEDs 3mm/5mm/TO-92

- Extended-life high power ultraviolet LED
- 15° or 30° viewing angle
- Glass and metal can package



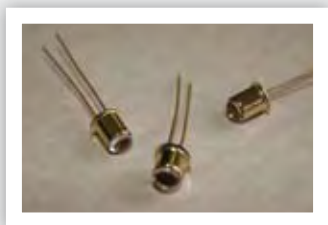
UV3TZ

3mm, 4 Wavelengths from 390-405nm



UV5TZ

5mm, 4 Wavelengths from 390-405nm



UVT092

Metal Can Package

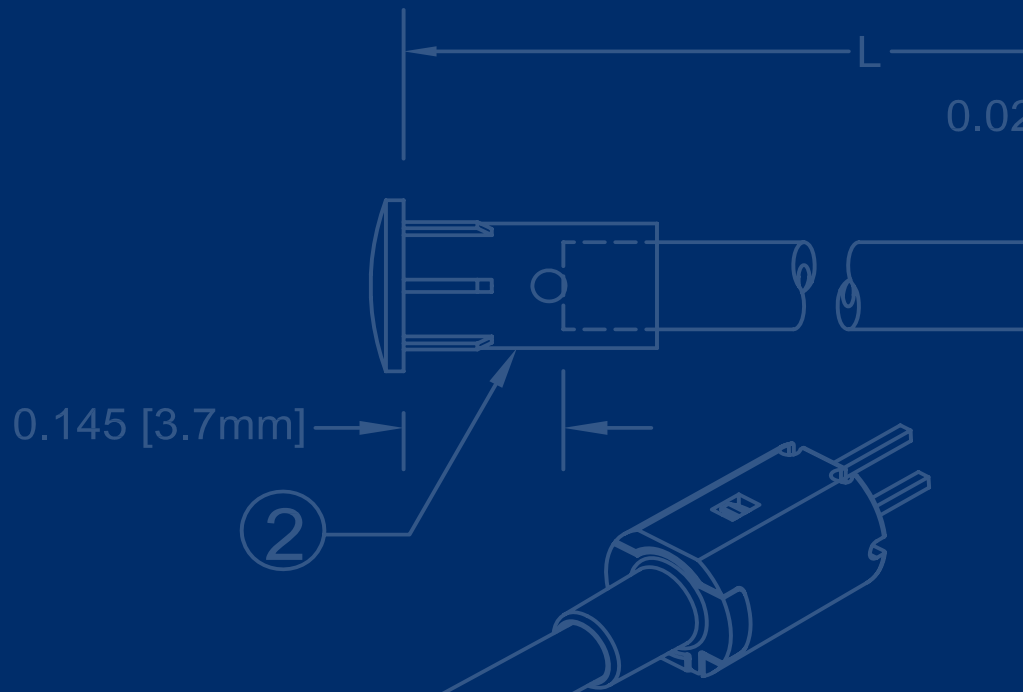
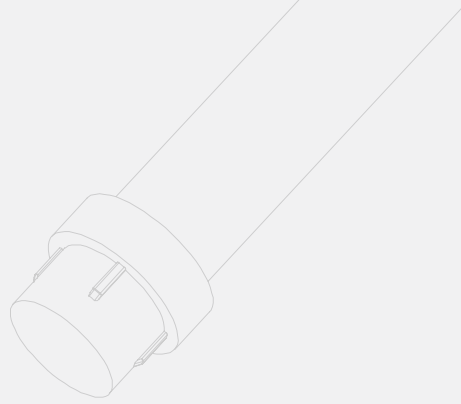


SM1206UV

3.2mm x 1.6mm, Surface Mount







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