LITEPIPES FOR SURFACE MOUNT LEDs

APPLICATION — CLIPLITE litepipes provide a method of transmitting the light of a surface mount LED to the display panel. Both vertical and horizontal PCB surface mount LEDs can be displayed in this manner. The litepipe is also capable of blending multicolor LED light into a single color.

INTENSITY — CLIPLITE litepipes have a unique near flush design and are still able to provide up to 160 degrees of viewing angle. This light output is achieved by the use of a concave shaped receiving surface which collects the LEDs light, and fresnel rings on the opposite surface that disperse the light.

VERSATILITY — CLIPLITE litepipes are available in .020" increments from .200" to 2.00". This wide range of lengths simplifies the PCB positioning in relation to the display panel. Litepipes are secured directly to the display panel with no mechanical attachment to the PCB. The installation and removal of the circuit board can thus be accomplished without disturbing the display panel.

INSTALLATION — CLIPLITE litepipes are easy to install. Slide the litepipe thru the panel opening and slip the retainer in place. Finish the installation by pressing the retainer up against the display panel.

ORDERING CODES

<table>
<thead>
<tr>
<th>MODEL</th>
<th>LPC</th>
<th>XXX</th>
<th>CTP</th>
<th>COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPC (Round)</td>
<td>020</td>
<td>038</td>
<td>056</td>
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<td>RTN 150 (GRoMMET)</td>
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<td>044</td>
<td>062</td>
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<tr>
<td>RTN 250 (SPRING CLiP)</td>
<td>028</td>
<td>046</td>
<td>064</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Round - .200" to 2.00"  Rectangular - .300" to 2.00"  Nonstandard lengths available on request.

LED: Surface mount, vertical and horizontal LEDs. Litepipes for blending multicolor LEDs are available on special request.

SPECIFICATIONS

MATERIAL: Litepipe - Acrylic, optical grade, (Clear).
Grommet - Polyethylene, (black).
Spring Clip - Spring Steel (nickel plate).

MOUNTING: Panel hole: round .171" Dia (.434mm), square .180" x .180" (.457 x .457mm), rectangular .170" x .250" (.434 x .635mm).
Litepipes from .200" to .500" use grommet retainer. Litepipes from .500" to 2.00" the spring clip is recommended for rigidity.

LED: Surface mount, vertical and horizontal LEDs. Litepipes for blending multicolor LEDs are available on special request.

APPLICATION — CLIPLITE litepipes provide a method of transmitting the light of a surface mount LED to the display panel. Both vertical and horizontal PCB surface mount LEDs can be displayed in this manner. The litepipe is also capable of blending multicolor LED light into a single color.

INTENSITY — CLIPLITE litepipes have a unique near flush design and are still able to provide up to 160 degrees of viewing angle. This light output is achieved by the use of a concave shaped receiving surface which collects the LEDs light, and fresnel rings on the opposite surface that disperse the light.

VERSATILITY — CLIPLITE litepipes are available in .020" increments from .200" to 2.00". This wide range of lengths simplifies the PCB positioning in relation to the display panel. Litepipes are secured directly to the display panel with no mechanical attachment to the PCB. The installation and removal of the circuit board can thus be accomplished without disturbing the display panel.

INSTALLATION — CLIPLITE litepipes are easy to install. Slide the litepipe thru the panel opening and slip the retainer in place. Finish the installation by pressing the retainer up against the display panel.

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<table>
<thead>
<tr>
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NOTE: Round - .200" to 2.00"  Rectangular - .300" to 2.00"  Nonstandard lengths available on request.

LED: Surface mount, vertical and horizontal LEDs. Litepipes for blending multicolor LEDs are available on special request.

APPLICATION — CLIPLITE litepipes provide a method of transmitting the light of a surface mount LED to the display panel. Both vertical and horizontal PCB surface mount LEDs can be displayed in this manner. The litepipe is also capable of blending multicolor LED light into a single color.

INTENSITY — CLIPLITE litepipes have a unique near flush design and are still able to provide up to 160 degrees of viewing angle. This light output is achieved by the use of a concave shaped receiving surface which collects the LEDs light, and fresnel rings on the opposite surface that disperse the light.

VERSATILITY — CLIPLITE litepipes are available in .020" increments from .200" to 2.00". This wide range of lengths simplifies the PCB positioning in relation to the display panel. Litepipes are secured directly to the display panel with no mechanical attachment to the PCB. The installation and removal of the circuit board can thus be accomplished without disturbing the display panel.

INSTALLATION — CLIPLITE litepipes are easy to install. Slide the litepipe thru the panel opening and slip the retainer in place. Finish the installation by pressing the retainer up against the display panel.

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NOTE: Round - .200" to 2.00"  Rectangular - .300" to 2.00"  Nonstandard lengths available on request.

LED: Surface mount, vertical and horizontal LEDs. Litepipes for blending multicolor LEDs are available on special request.

APPLICATION — CLIPLITE litepipes provide a method of transmitting the light of a surface mount LED to the display panel. Both vertical and horizontal PCB surface mount LEDs can be displayed in this manner. The litepipe is also capable of blending multicolor LED light into a single color.

INTENSITY — CLIPLITE litepipes have a unique near flush design and are still able to provide up to 160 degrees of viewing angle. This light output is achieved by the use of a concave shaped receiving surface which collects the LEDs light, and fresnel rings on the opposite surface that disperse the light.

VERSATILITY — CLIPLITE litepipes are available in .020" increments from .200" to 2.00". This wide range of lengths simplifies the PCB positioning in relation to the display panel. Litepipes are secured directly to the display panel with no mechanical attachment to the PCB. The installation and removal of the circuit board can thus be accomplished without disturbing the display panel.

INSTALLATION — CLIPLITE litepipes are easy to install. Slide the litepipe thru the panel opening and slip the retainer in place. Finish the installation by pressing the retainer up against the display panel.
LITEPIPES & PANEL LENSES FOR PCB MOUNTED LEDs

VERSATILITY – CLIPLITE litepipe and lens easily provide a method of transmitting the light from PCB mounted LEDs to the front display panel. Both styles of LEDs, surface mount and standard packages, can be displayed in this manner.

BRIGHTNESS – CLIPLITE litepipe by itself has a limited angle of view. However, when used with VCC’s Fresnel lens the light is dispersed over the entire lens surface producing 180 degrees of viewing.

APPLICATION – CLIPLITE litepipes and lenses are available for use with both surface mount and standard packaged LEDs in 3mm and 5mm configurations. Because there is no physical connection between the litepipe and the PCB mounted LED, the circuit board can be installed or removed without disturbing the panel display.

INSTALLATION – CLIPLITE litepipe and lens easy to install. Insert the lens thru the panel opening and snap the litepipe into the lens. For added security in harsh environments, a retaining ring is available.

SPECIFICATIONS

MATERIAL:
- Litepipe - Acrylic (Optical grade)
- Lens - Polycarbonate; Ring - Polypropylene (U.L. Listed Material).

DESIGN:
- LITEPIPE (3mm and 5mm) with annular ring and locking tab engages into the annular groove of VCC’s low profile lens. Lens mounts the litepipe securely to the display panel and provides 180 degrees of viewing angle.

MOUNTING:
- LITEPIPE 3mm - Mates with VCC’s lenses model SMB 200 and SMQ 250. Panel mounting hole .171 (4.3mm) on 1/4” centers. Panel thickness 1/32” to 1/8”. Litepipe lengths from .200” to 1.200”.
- LITEPIPE 5mm - Mates with VCC’s lenses model CLB 300 and SQB 400. Panel mounting hole .250 (6.35mm) on 3/8” centers. Panel thickness 1/32” to 1/4”. Litepipe lengths from .360” to 1.360”. For panels less than 3/16” use 5PC 125 spacer.

LENS RETAINING RING – available for added security (RNG 190, 3mm & RNG 268, 5mm).

STANDOFF: Use VCC’s standoff to adjust the height of a standard LED above the PCB and maintain a maximum .050” clearance between litepipe and LED. See VCC’s STD Series data sheet.

ORDERING CODE: LENS

MODEL | LSV | XXX | CTP | COLOR
--- | --- | --- | --- | ---
LSV (3mm) & LCV (5mm) | LSV | XXX | CTP | CLEAR

PRODUCT CODE

- LSV - CODE LENGTH (inches)
- 020 (.200”) 040 (.400”) 060 (.600”) 080 (.800”)
- 100 (1.00”) 120 (1.20”) 140 (1.40”) 160 (1.60”)

OUTLINE DRAWING

ORDERING CODE: LITEPIPE

MODEL | LSV | XXX | CTP | COLOR
--- | --- | --- | --- | ---
SMB 200 (RND 3mm) | RTP | Red Transparent
SMQ 250 (SQ 3mm) | ATP | Amber Transparent
CLB 300 (RND 5mm) | GTP | Green Transparent
SQB 400 (SQ 5mm) | BTP | Blue Transparent
5PC 125 (Spaer for CLB 300 & SQB 400) | YTP | Yellow Transparent
5PC 125 (Spaer for CLB 300 & SQB 400) | CTP | Clear Transparent
MOISTURE SEALED LITEPIPE ASSEMBLY

VERSATILITY — CLIPLITE litepipe assembly provides a method of transmitting the light from PCB mounted LEDs to the front display panel. Both styles of LEDs, surface mount, 3mm and 5mm standard packages can be displayed in this manner.

BRIGHTNESS — CLIPLITE increases the apparent brightness and viewing angle of a PCB mounted LED. Litepipe transmits the light from the source to the lens, which in turn disperses the light up to 180 degrees.

APPLICATION — CLIPLITE assembly meets NEMA 3 conditions for moisture and dust. Because there is no physical connection between the litepipe and PCB mounted LED, the circuit board can be installed or removed without disturbing the panel display.

INSTALLATION — CLIPLITE litepipe and lens assembly is easily installed. Pass assembly thru panel opening and press on retaining ring to secure unit to the panel. Slide PCB into position aligning LED with the end of the litepipe.

APPLYICATION

ORDERING CODE

MODEL  LMS XXX  RTP  COLOR
Assembly contains
Lins & litepipe unit
RNG 268 retainer

COLOR
RTP Red Transparent
ATP Amber Transparent
GTP Green Transparent
BTP Blue Transparent
YTP Yellow Transparent
CTP Clear Transparent

LITEPIPE LENGTH (INCHES)
033 (330°)  093 (930°)
053 (530°)  113 (113°)
073 (730°)  133 (133°)

OUTLINE DRAWING

LMS Litepipe/Lens Assembly
RNG 268
RECOMMENDED LEDS

Visual Communications Company, Inc.
7920 F Airons Dr., San Diego, CA 92126
In CA (858) 549-6900     (800) 522-5546
FAX (858) 549-3520  www.vcllte.com
LENSES MOUNTS FOR 3mm & 5mm LEDs

VISIBILITY — CLIPLITE produces up to 180 degrees of viewing angle using standard 3mm and 5mm LEDs.

BRIGHTNESS — CLIPLITE utilizes striated lines and fresnel rings to increase apparent brightness up to 125% and viewing angle up to 180 degrees with either diffused or nondiffused LEDs. A low profile lens without rings or lines is available for direct sunlight applications.

PROTECTION — CLIPLITE helps prevent IC failures caused by electrostatic discharge (ESD). Simply walking across a carpet can generate 10,000 volts. Introduction of this ESD thru an exposed panel mounted LED is capable of damaging or destroying a semiconductor. A CLIPLITE mounted LED helps guard components from ESD up to 16 kv while affording the LED physical protection.

INSTALLATION — CLIPLITE, standard or low profile, requires no assembly tools; just snap into a panel opening and insert LED. Cost effective operation is complete in only 6 seconds.

SIMPLE TWO-STEP INSTALLATION

1. Snap the CLIPLITE into panel hole.
2. While holding the CLIPLITE tight to the panel with your finger, insert the LED into the CLIPLITE from the back.

RECOMMENDED LEDs

<table>
<thead>
<tr>
<th>Model</th>
<th>Ordering Code</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>SML 190 (3mm) Std. Hgt.</td>
<td>SML 190</td>
<td>RTP</td>
</tr>
<tr>
<td>SMB 200 (3mm) L/Profile</td>
<td>SMB 200</td>
<td>RTP</td>
</tr>
<tr>
<td>CLF 280 (5mm) Std. Hgt.</td>
<td>CLF 280</td>
<td>RTP</td>
</tr>
<tr>
<td>CLB 300 (5mm) L/Profile</td>
<td>CLB 300</td>
<td>RTP</td>
</tr>
<tr>
<td>CLR 301 (5mm) L/P Plain</td>
<td>CLR 301</td>
<td>RTP</td>
</tr>
<tr>
<td>SPC 125 (Spacers for CLB 300 and CLR 301)</td>
<td>SPC 125</td>
<td>RTP</td>
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OUTLINE DRAWINGS

<table>
<thead>
<tr>
<th>Model</th>
<th>Drawing</th>
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<tr>
<td>SML 190 (3mm)</td>
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<tr>
<td>CLF 280 (5mm)</td>
<td>[Diagram]</td>
</tr>
<tr>
<td>SMB 200 (3mm)</td>
<td>[Diagram]</td>
</tr>
<tr>
<td>CLB 300/CLR 301 (5mm)</td>
<td>[Diagram]</td>
</tr>
<tr>
<td>SPC 125 (5mm)</td>
<td>[Diagram]</td>
</tr>
</tbody>
</table>
SQUARE LENS/MOUNTS FOR 3mm & 5mm LEDs

VISIBILITY — CUBELITE standard square lens offers 20% more viewing area over a round indicator light. CUBE- LITE’S unique patented features include striated lines and fresnel rings permitting up to 180 degrees viewing angle with any stock 3mm or 5mm LED.

DESIGN — CUBELITE standard lens mounts in a square hole. Its uniform lens thickness produces an even light pattern with no dark corners. CUBELITE low profile square lens mounts in a round hole. This lens has a .070 inch max panel height and still produces 180 degree viewing angle. CUBE- LITE’S design permits use of either diffused or nondiffused LEDs.

PROTECTION — CUBELITE helps prevent IC failures caused by electrostatic discharge (ESD). Simply walking across a carpet can generate 10,000 volts. Introduction of this ESD thru an exposed panel mounted LED is capable of damaging or destroying a semiconductor. A CUBELITE mounted LED helps guard components from ESD up to 16,000 volts as well as affording the LED physical protection.

INSTALLATION — CUBELITE, standard or low profile, requires no assembly tools; just snap into a panel opening and insert LED. Cost effective operation is complete in only 6 seconds.

EASY TWO-STEP INSTALLATION

1. Snap CUBELITE in a 1/4" panel hole.

2. While holding the CUBELITE tight to the panel with your finger, insert the LED into the CUBELITE from the back.

RECOMMENDED LEDs

<table>
<thead>
<tr>
<th>MODEL</th>
<th>SQL 360</th>
<th>RTP</th>
<th>COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMQ 250 (3mm) Low Profile</td>
<td>RTP Red Transparent</td>
<td>ATP Amber Transparent</td>
<td></td>
</tr>
<tr>
<td>SQB 400 (5mm) Low Profile</td>
<td>GTP Green Transparent</td>
<td>BTP Blue Transparent</td>
<td></td>
</tr>
<tr>
<td>SQL 360 (5mm) Std. Hgt.</td>
<td>YTP Yellow Transparent</td>
<td>CTP Clear Transparent</td>
<td></td>
</tr>
<tr>
<td>SPC 125 (Spacer for SQB 400)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OUTLINE DRAWINGS

SMQ 250 (3mm)  
SQB 400 (5 mm)  
SQL 360 (5mm)
**LOW PROFILE PANEL LENSES FOR PCB MOUNTED LEDS**

**VERSATILITY** — CLIPLITE, installed in display panel, is used with PCB mounted LEDs. Lenses remain attached to the display or panel door while the LEDs are fixed to the PCB. The lenses are ideal for use together with the CONXRITE connector assembly.

**BRIGHTNESS** — CLIPLITE utilizes fresnel rings to increase apparent brightness and viewing angle up to 180 degrees with either diffused or nondiffused LEDs.

**PROTECTION** — CLIPLITE helps prevent IC failures caused by electrostatic discharge (ESD). Introduction of ESD thru an exposed panel mounted LED is capable of damaging or destroying a semiconductor. A CLIPLITE mounted LED helps guard components from ESD up to 16 kv while affording the LED physical protection.

**INSTALLATION** — CLIPLITE is inserted thru panel opening, retaining ring pressed into place. PCB mounted LED slides into lenses when the panel cover is closed or the PCB card is inserted into the case.

**SPECIFICATIONS**

**MATERIAL:** Lens - Polycarbonate; Ring - Polypropylene, (U.L. Listed Materials).

**DESIGN:** Low profile lenses CMC 313 plain diffused, CMC 321, CML 325 & SMC 170 with fresnel rings.

**MOUNTING:** Mounts thru front of panel, retaining ring secures the lens in place. 5mm CMC & CML series mount in a .281" (7.2mm) hole on 3/8" centers, Panel thickness 1/32" to 1/4".

3mm (SMC 170) mounts in a .172" (4.4mm) hole on 1/4" centers. Panel thickness 1/32" to 3/32".

5mm CMC & CML series mount in a .281" (7.2mm) hole on 3/8" centers. Panel thickness 1/32" to 1/4".

**ORDERING CODES**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>COLOR</th>
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<tbody>
<tr>
<td>CMC 321 RTP</td>
<td>SMC 170 (3mm) Fresnel L/Profile Lens</td>
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<tr>
<td>CMC 313 (5mm) Plain Diffused Lens</td>
<td>ATP Amber Transparent</td>
</tr>
<tr>
<td>CMC 321 (5mm) Fresnel L/Profile Lens</td>
<td>GTP Green Transparent</td>
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<tr>
<td>*CMC 323 (5mm) Plain End Lens</td>
<td>YTP Yellow Transparent</td>
</tr>
<tr>
<td>*CML 325 (5mm) Fresnel L/Profile Lens</td>
<td>BTP Blue Transparent</td>
</tr>
<tr>
<td>*CML 327 (5mm) Plain End Lens</td>
<td>CTP Clear Transparent</td>
</tr>
<tr>
<td>RNG 132 (3mm) Retaining Ring</td>
<td>*Denotes Clear only</td>
</tr>
<tr>
<td>RNG 268 (5mm) Retaining Ring</td>
<td></td>
</tr>
</tbody>
</table>

Lens Styles

- Plain End
- Plain Diffused
- Fresnel Rings

**OUTLINE DRAWING**

**RECOMMENDED LEDs**

- 5mm
- 3mm

Visual Communications Company, Inc.
7920 F Arjons Dr., San Diego, CA 92126
In CA (858) 549-6900 (800) 522-5546
FAX (858) 549-3520 www.vcllite.com
MOISTURE SEALED LOW PROFILE LENSES FOR LEDs

VERSATILITY – CLIPLITE, installed in display panel, provides a moisture seal effective against splash and drip conditions. The lens can be used with either circuit board mounted or panel mounted LEDs. For PCB mounting applications the lens remains attached to the display or panel door while the LEDs are fixed to the PCB. The lens is ideal when used with the CONXRITE connector for mounting the LED directly to the display panel.

BRIGHTNESS – CLIPLITE utilizes fresnel rings to increase apparent brightness and viewing angle up to 180 degrees with either diffused or nondiffused LEDs.

PROTECTION – CLIPLITE tests show it is an effective moisture seal in splash and drip conditions. In addition, the lens helps prevent IC failures caused by electrostatic discharge (ESD). A CLIPLITE mounted LED guards components from ESD up to 16 kV while affording the LED physical protection.

INSTALLATION – CLIPLITE is inserted thru panel opening, retaining ring is then pressed into place compressing the seal. PCB mounted LEDs slide easily into lens allowing simple insertion or removal of the PCB. Panel mounting of the LED is accomplished with the CONXRITE connector which also serves to compress the moisture sealing ring.

SPECIFICATIONS

MOUNTING: Tests performed by Consolidated Labs, Inc. for moisture sealing, shock, vibration and standard operating temperatures. Meets Nema 3 standards.

TESTING: Mounts thru front of panel, compression of the seal is accomplished by pressing the retaining ring or CONXRITE connector in place.

5mm (CMS 322) mounts in a 9/32” (7.2mm) hole on 3/8” centers. Panel thickness 1/32” to 1/8”. Hole should be deburred but not chamfered.

See specs. page 11 for use with CNX connectors.

ORDERING CODES

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CMS 322</th>
<th>RTP</th>
<th>COLOR</th>
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<tr>
<td>Lens - Polycarbonate</td>
<td>R</td>
<td>Red Transparent</td>
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</tr>
<tr>
<td>Ring - Polypropylene</td>
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<td>Transparent</td>
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<tr>
<td>Seal - J-Von</td>
<td>P</td>
<td>(U.L. Listed Materials)</td>
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</table>

Astonishingly, the CLIPLITE product features a unique design that not only enhances the aesthetic appeal of LED displays but also ensures protection against environmental elements. The moisture-sealed design guarantees durability and longevity, making it an ideal choice for various applications ranging from outdoor installations to enclosed spaces. The integration of high-quality materials such as Polycarbonate and Polypropylene ensures a blend of strength and flexibility, which is crucial for maintaining the integrity of the LED displays under varying conditions.

In conclusion, CLIPLITE’s moisture-sealed lenses offer a comprehensive solution for LED display manufacturers and users alike, providing not just aesthetic elegance but also robust protection against environmental hazards. With its versatile design and high-performance features, CLIPLITE continues to set new standards in the field of LED display technology.
10mm PANEL LENS for PCB MOUNTED LEDs

**VERSATILITY** — CLIPLITE provides a method of viewing PCB mounted LEDs on a display panel. Designed to accommodate either Hi-flux or 10mm LEDs. Permits LED viewing angles of up to 180 degrees. Lenses are available in six colors.

**BRIGHTNESS** — CLIPLITE enhances the direct viewing of PCB mounted LEDs. Mono, multi-color, infrared, and photo detection devices can be displayed in this manner. LED brightness levels can range from 20 to 40,000mcd.

**APPLICATION** — CLIPLITE permits panel display of PCB mounted LED without its physical attachment to front panel. Properly installed, assembly exceeds NEMA 4 for water, ice and dust conditions. Additionally tested for U.V., solar, temperature cycling, shock and vibration. Also provides circuit protection from ESD.

**INSTALLATION** — CLIPLITE is easily installed. Simply slip lens thru a 9/16” panel opening, slide lock washer onto lens barrel and twist on retaining ring. PCB mounted LED can then slide in and out of lens without physical attachment to display panel. If overtightened, retaining ring is designed to slip back into previous thread. Secure by retightening ring.

**EASY THREE STEP PANEL ASSEMBLY**

1. Slide lens thru 9/16” hole. Slip the locking ring onto lens barrel. While holding lens, twist retaining ring one revolution until secure.

**LENSE ASSEMBLY WITH PCB MOUNTED LEDs**

- PCB mounted 10mm LED with panel lens assembly
- PCB mounted Hi-Flux LED with panel lens assembly

**SPECIFICATIONS**

**MATERIAL:**
- Lens - Polycarbonate, UL 94 V0 Rated
- Lock washer - FH Steel, Nickel plate
- Retaining ring - Polymer UL 94 V0 Rated
- Seal - EPDM

**DESIGN:**
- 16mm low profile lens with fresnel rings.

**MOUNTING:**
- Mounts thru front of panel. Retaining ring secures the assembly to panel.
- HMC 461 & HMS 462 mounts thru a 9/16” (14.3mm) hole on 3/4” centers.
- Panel thickness 1/32” to 3/16”.

**TEST DATA:**
- Assembly tested for: Temperature cycle -40°C to +105°C, Water, Ice, Shock/vibration up to 6g at 2000Hz, Solar & U.V. Tests conducted by Consolidated Laboratories.

**ORDERING CODE**

**MODEL**
- HMC 461 RTP

**COLOR**
- RTP Red Transparent
- ATP Amber Transparent
- GTP Green Transparent
- BTP Blue Transparent
- YTP Yellow Transparent
- CTP Clear Transparent

**ASSEMBLY CONTAINS**
- HMC 461 Lens
- HLW 461 Lock washer
- RNG 461 Retaining ring
- HMS 462 (Water Tight)

**ASSEMBLY CONTAINS**
- HMS 462 Lens w/ Seal (exceeds NEMA 4)
- HLW 461 Lock washer
- RNG 461 Retaining ring

**OUTLINE DRAWING**

**RECOMMENDED LEDs**
CONXRITE®

PRE-WIRED SOLDERLESS LED INTERCONNECT

CONXRITE - This modular cabling assembly is designed for use in the electrical connection of panel mounted LEDs to printed circuit boards. This plug-in system eliminates many of the problems associated with wiring display panel mounted LEDs.

APPLICATIONS - Designed to make quick and easy plug-in connections between panel mounted LEDs and the PCB. The modular concept of panel and header housings along with different wire lengths offer a cost reducing solution to cabling problems.

VERSATILITY - Multiple panel mounted LED devices can be connected to PCB mounted headers. A uniquely designed three finger box terminal mates with leads .017” in diameter to .025” square. Cables are available in four, six, eight, twelve, eighteen and twenty four inch lengths.

INSTALLATION - Modular cabling systems simplify the electrical connection from panel to PCB and eliminate the need for assembly tools. Cost savings from the discontinuing of soldering and terminal crimping operations are substantial. When properly installed the assembly is able to withstand up to 6g’s at 2000Hz.

SPECIFICATIONS

MATERIAL:  Panel Connector Socket & Ring - Thermoplastic.  
            Header Connector - Thermoplastic (UL listed materials)  
            Terminals - Phosphor bronze, tin plated.  
            Wire - 22 AWG, 7 strand copper insulated.

ELECTRICAL:  Terminal - 3 amp continuous service.  
              Unique three-finger design mates to round, square 
              or rectangular leads .017” to .025”.

MOUNTING:  Panel Connector 3mm - Mates with SMC 130 & 170.  
            Panel Connector 5mm - Mates with CMC 285, 
            313, 321, 323, CMS 322, CML 325 and 327. See 
            data sheets pages 4, 5 & 6. 
            Panel Thickness - See page 11  
            All holes deburred but not chamfered.  
            LED lead trimming - See page 11.  
            Hole Size - SMC series11/64” (4.37mm)  
            CMC, CMS & CML series 9/32”  
            (7.14mm).  
            Header Connector - Mates with VCC positive 
            locking header 450 series. Also mates with stand 
            ard and friction header .025” pins on .100” centers.

Uses & Applications

CONXRITE

Panel Mount Lens & Connector

Insert LED into connector. Install lens in panel opening. Press connector and lens together.

Panel Socket, Front Relampable

Insert LED into socket. Press socket into panel and secure with ring.

Recommended LEDs

<table>
<thead>
<tr>
<th>3mm Bi-Lead Use “B” Connector</th>
<th>5mm Bi-Lead Use “C” Connector</th>
<th>5mm Tri-Lead Use “D” Connector</th>
<th>5mm Flangeless Use “K” Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="3mm Bi-Lead Use “B” Connector" /></td>
<td><img src="image2" alt="5mm Bi-Lead Use “C” Connector" /></td>
<td><img src="image3" alt="5mm Tri-Lead Use “D” Connector" /></td>
<td><img src="image4" alt="5mm Flangeless Use “K” Connector" /></td>
</tr>
</tbody>
</table>

Page 10
STANDARD INTERCONNECTS FOR 3mm & 5mm LEDs

450 120 3mm BI-LEAD ("B" CONNECTOR)

450 220 5mm BI-LEAD ("C" CONNECTOR)

450 310 SERIES 5mm BI-LEAD (W/RESISTOR)

450 230 5mm TRI-LEAD ("D" CONNECTOR)

450 470 5mm FLANGELESS ("K" CONNECTOR)

450 XXX SERIES PLAIN & LOCKING HEADER

LED lead length: 5mm flangeless LED .250
Panel thickness: .030" - .250" Use a 242 retaining ring when additional security is required.

ORDERING CODE

TERMINATION WIRE SIZE WIRE COLOR WIRE LENGTH

CALL FACTORY FOR ADDITIONAL OPTIONS
CABLE ASSEMBLIES FOR 5mm & 10mm LED LIGHTS

VERSATILITY - CONXRITE cabling system simplifies display panel to power source interface. Options include: LED - 5mm, 10mm Hi-Flux. Color - mono, bi-color, tri-color, RGB. Wire - size, color, length. Wire termination - header / connector, positive locking, single, dual row. Terminals - ring or spade style.

BRIGHTNESS - CONXRITE enhances LED apparent brightness as well as the viewing angle to 180°. Visible, infrared, and photo detection devices can be displayed in this manner. Illumination can range from 20 to 20,000mcd.

APPLICATION - CONXRITE LED cable assemblies are used in consumer products, communications, industrial, automotive, heavy equipment, security systems, interior and exterior projects. Tested for temperature cycling, UV, solar, shock, vibration. Sealed version exceeds NEMA 4 for dust, water, and ice. Also provides ESD circuit protection.

INSTALLATION - CONXRITE assemblies "plug and play" approach simplifies cable installation. Slip lens thru panel opening, slide lock washer over lens barrel, connector secures to lens with a half turn.

EASY THREE STEP PANEL ASSEMBLY

1. Display Panel Lens
2. Connector
3. Mustard Seal

Slide lens thru panel opening. Slip the lock washer onto lens barrel. While holding lens, twist on connector one half turn until secure.

LENS AND CONNECTOR ASSEMBLIES

- Connector assembly with sealed lens for water tight applications.
- Connector assembly with standard lens for dry applications.

OUTLINE DRAWING

SPECIFICATIONS

MATERIAL:
- Lens - Polycarbonate, UL 94 V0
- Connector - Polymer (white), UL 94 V0
- Moisture seal - EPDM
- Lock washer - Steel, nickel plate
- Terminals - Phosphor bronze, tin plate
- Wire - U.L.1007/1569, 22-24 awg stranded

ELECTRICAL:
- Terminal - 3 amp continuous service. Mates with round, square, rectangular leads. 0.17" to 0.33"

MOUNTING:
- CMC / HMC series lens for standard dry applications.
- CMS / HMS series lens for dust and wet conditions.
- CM 441 / CMS 442 lens mount thru a 5/16" (8mm) opening on 1/2" centers. Panel thickness 1/32" to 1/8".
- HMC 461 and HMS 462 lens mount thru 9/16" (14mm) opening on 3/4" centers. Panel thickness 1/32" to 3/16".
- Wire termination - VCC 450 series single or dual row positive locking header connectors, stripped leads. Contact factory for other termination options.

TEST DATA:
- Assembly tested for Shock/vibration - 6g’s at 2000hz, Temperature 40° to +105°C, Solar and UV. Meets NEMA 4, for water, ice and dust. Test conducted by Consolidated Laboratories Inc.
- LEDS: 5mm LEDs bi-lead, trim leads to .250 ±.010 (6.35mm)
- 10mm LEDs bi-lead, trim leads to .300 ±.010 (7.62mm)
- Hi-Flux LEDs 4 leads trimming not required. Contact factory for additional wire and LED options. Tri-lead and six lead devices.

RECOMMENDED LEDS

- CMC 441 / CMS 442 LENS
- CLW 441 LOCK WASHER
- CNX 441 CONNECTOR ASSEMBLY

- HMC 461 / HMS 462 LENS
- HLW 461 LOCK WASHER
- CNX 460 CONNECTOR ASSEMBLY

- 100 C-30
- 200 3-28
- 300 1-28
- 400 0-28
- 500 8-30
- 600 6-30
- 700 4-30
- 800 2-30
- 900 0-30

- 100 sq. in
- 3-28
- 3-28
- 5-28
- 7-28
- 9-28
- 11-28
- 13-28
- 16-28
- 19-28

- 8-20
- 7-20
- 8-20
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- 7-20

- 9-20
- 8-20
- 7-20
- 8-20
- 7-20
- 8-20
- 7-20
- 8-20
- 7-20
- 8-20

Page 12
CABLE ASSEMBLY FOR 5mm & 10mm LED LIGHTS

CNX 440 STANDARD ASSEMBLIES

- LED 5mm bi-lead - trim lead length: .250" ±.01 (5.88mm)
- Panel Thickness: .032" to .125", Panel Hole: .312" (8.0mm)
- Recommended LEDs: 5mm bi-lead, 5mm tri-lead (tri-color) and 5mm six-lead (RGB)

CNX 460 STANDARD ASSEMBLIES

- LED 10mm bi-lead - trim lead length: .300" ±.01 (8.13mm)
- Panel Thickness: .032" to .187", Panel Hole: .562" (14.0mm)
- Recommended LEDs: 10mm bi-lead, 10mm tri-lead (tri-color), 10mm six lead (RGB) and Hi-Flux four-lead ultra bright.

CABLE ASSEMBLY FOR 10mm AND HI-FLUX LED LIGHTS

- LED Hi-Flux lead length: Install as is
- Panel thickness: .032" to .187", Panel Hole: .562" (14.0mm)

HEADER CONNECTORS AND HEADERS

- E-02 CONNECTOR
- Locking Header: Single Row on .100" centers
- 02 = 2 wires
- 03 = 3 wires
- 04 = 4 wires

- D-04 CONNECTOR
- Locking Header: Dual Row on .100" x .100" centers
- 02 = 2 wires
- 03 = 3 wires
- 04 = 4 wires

ORDERING CODE

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<tr>
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<th>Termination</th>
<th>Wire Size</th>
<th>Wire Color</th>
<th>Wire Length</th>
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<tr>
<td>STANDARD</td>
<td>RTP</td>
<td>RED</td>
<td>4</td>
<td>WHT - BLK</td>
<td>04 4 INCHES</td>
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<tr>
<td>441 - 5mm</td>
<td>GTP</td>
<td>GREEN</td>
<td>4</td>
<td>RED - BLK</td>
<td>06 6 INCHES</td>
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<tr>
<td>461 - 10mm</td>
<td>ATP</td>
<td>AMBER</td>
<td>4</td>
<td>WHT - RED - BLK</td>
<td>08 8 INCHES</td>
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<td>SEALLED</td>
<td>RTP</td>
<td>BLUE</td>
<td>4</td>
<td></td>
<td>10 10 INCHES</td>
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<td>442 - 5mm</td>
<td>YTP</td>
<td>YELLOW</td>
<td>4</td>
<td></td>
<td>12 12 INCHES</td>
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<tr>
<td>462 - 10mm</td>
<td>CTP</td>
<td>CLEAR</td>
<td>4</td>
<td></td>
<td>18 18 INCHES</td>
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</tbody>
</table>

Call Factory for Additional Options
**APPLICATION** – CONXRITE makes quick and easy plug-in connections between panel mounted LEDs with lenses and a power source. Utilizing various cable lengths and cable terminations, CONXRITE offers a cost reducing solution to interconnection problems.

**VERSATILITY** – CONXRITE with balast resistor can be used on circuits from 3 to 28 volts. Panel thickness can vary from 1/32 to 1/4 inch. Makes positive panel connections for either wet or dry applications with CMS lens. See data sheet for CLIPLITE AND CUBELITE lens mounts.

**DESIGN** – CONXRITE has a molded plastic body with self-contained 1/2 watt resistor. Pre-attached wires are provided with terminals, header connector or with stripped leads.

**INSTALLATION** – Modular cabling system’s plug-in feature simplifies the electrical connection from panel mounted LEDs to PCB, eliminating the need for assembly tools. Cost and time savings from the elimination of soldering and terminal crimping operations are substantial.

**SPECIFICATIONS**

**MATERIAL:** Panel connector, Ring and Header connector - Thermoplastic (U.L. Listed Material)  
Terminals - Phosphor bronze, tin plated  
Wire - 22 AWG 7 strand copper, insulated

**MOUNTING:** Mating Panel Mounts - Plain diffused lens CMC 313, Fresnel lens, CMC 321, Plain end lens CMC 323, Open end mount CMC 285 and Moisture Seal lens CMS 322. See data sheets specs pages 4, 5 and 6.  
Panel Thickness - .30" to .045" use 2ea SPC 060 spacers, .50" - .100" use 1ea. SPC 060 spacer, .105" .125" SPC 060 not required.  
Hole Size - .281" for all lenses and mounts mentioned above.  
LED Lead Length - CMC 285 trim leads to .350" ± .010", CMC 313, CMC 321, CMC 323 and CMS 322 trim leads to .250" ± .010".

**ORDERING CODES**

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<th>CNX 310</th>
<th>RESISTOR</th>
<th>TERMINATIONS</th>
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<td>CONNECTOR PLUS RESISTOR ONLY</td>
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<td>CONNECTOR PLUS RESISTOR &amp; WIRE</td>
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<td>OHM</td>
<td>RESISTOR CODE</td>
<td>OHM</td>
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<td>560</td>
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<td>120</td>
<td>060</td>
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<td>038</td>
<td>180</td>
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<td>1200</td>
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<td>DESCRIPTION</td>
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<tr>
<td>G</td>
<td>PLAIN END HEADER CONNECTOR</td>
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<td></td>
</tr>
<tr>
<td>E</td>
<td>LOCKING HEADER CONNECTOR</td>
<td></td>
<td></td>
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<tr>
<td>X</td>
<td>WIRE LEAD ENDS STRIPPED</td>
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Use Model and Resistor code to order connector separately.

**EASY INSTALLATION**

**RESISTOR SELECTOR**

**WIRE LENGTH**

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<td>6 INCHES</td>
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<td>18</td>
<td>18 INCHES</td>
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<tr>
<td>24</td>
<td>24 INCHES</td>
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**WIRE COLOR**

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<th>DESCRIPTION</th>
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<td>BLK - WHT</td>
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**WIRE GAUGE**

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<tbody>
<tr>
<td>2</td>
<td>22 AWG</td>
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</tbody>
</table>

**OUTLINE DRAWING**

**CNX 310 WITH LEADS**

**CNX 310**

**VISUAL COMMUNICATIONS COMPANY, INC.**

7920-F Arjons Dr., San Diego, CA 92126  
In CA (858) 549-6900  (800) 522-5546  
FAX (858) 549-3520  www.vcitelite.com
VERSATILITY – CONXRITE with internal resistor makes LED plug-in connections between panel and power source easy. Options include broad selection of LEDs, choices of wire size, length and color, variety of wire terminations.

BRIGHTNESS – CONXRITE enhances LED viewing, 180°. Also for use with infrared and photo detection devices. With selected LEDs, brightness can range from 20 to 20,000mcd.

APPLICATION – CONXRITE assembly has been tested for UV, solar, shock, vibration and temperature cycling. Sealed version exceeds NEMA 4 for dust, water and ice. Assembly uses include office environments or harsh exterior conditions. Provides ESD circuit protection.

INSTALLATION – CONXRITE is easy to install. Slip lens thru panel opening, slide lock washer over lens barrel, secure connector to lens by hand with a half turn.

**SPECIFICATIONS**

**MATERIAL:**
- Lens - Polycarbonate, UL 94 V0
- Connector - Polymer, UL 94 V0
- Moisture seal - EPDM
- Lock washer - Steel, nickel plate
- Terminals - Phosphor bronze, tin plate
- Wire - U.L. 1007/1569, 22, 24 awg stranded

**ELECTRICAL:**
- Terminal - 3 amp continuous service. Mates to round, square, rectangular leads .017” to .030”

**MOUNTING:**
- CMS 442 series lens - for dust / wet conditions
- CMC 441 / CMS 442 lens - mounts thru a 5/16” diameter panel opening on 1/2” centers. Panel thickness up to 1/8”.
- Wire termination - stripped leads, VCC 450 series single or dual row locking header connectors.
- Contact factory for other termination options.

**TEST DATA:**
- Assembly meets NEMA 4 for water, ice and dust.
- Additional tests, temperature cycle -40° to +85°C, shock to 6g’s, vibration to 2000hz, solar & UV. Tests conducted by Consolidated Laboratories.

**ORDERING CODE**

<table>
<thead>
<tr>
<th>LENS STYLE</th>
<th>COLOR</th>
<th>RESISTOR</th>
<th>TERMINATION</th>
<th>WIRE SIZE</th>
<th>WIRE COLOR</th>
<th>WIRE LENGTH</th>
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</thead>
<tbody>
<tr>
<td>STANDARD 441 - 5mm</td>
<td>RTP RED</td>
<td>012 - 120 OHM</td>
<td>X STRIPPED END</td>
<td>2</td>
<td>22 AWG</td>
<td>04 4 INCHES</td>
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<td>WATER TIGHT 442 - 5mm</td>
<td>RTP RED</td>
<td>120 OHM</td>
<td>SINGLE ROW</td>
<td>4</td>
<td>24 AWG</td>
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<td>GTP GREEN</td>
<td>018 - 180 OHM</td>
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<td>ATP AMBER</td>
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<td>18 18 INCHES</td>
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<tr>
<td></td>
<td>CTP CLEAR</td>
<td>220 - 2200 OHM</td>
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<td>24 24 INCHES</td>
</tr>
</tbody>
</table>

**EASY INSTALLATION**

Slide lens thru 5/16” hole. Slip the lock washer onto lens barrel. While holding lens, twist on connector one half turn until secure.

**RESISTOR SELECTOR**

- X STRIPPED END
- SINGLE ROW
- E 02 2 POS
- E 03 3 POS

**REMINDER**

CALL FACTORY DIRECT FOR ADDITIONAL OPTIONS
CUSTOMER CONCEPT SKETCH

BILL OF MATERIALS

1. 12' 3 450-200 Connector
2. 450-200 Connectors
3. 4 inch Wire
4. 8 inch Wire
5. 12 inch Wire

EXAMPLE OF SKETCH

ENGINEERING DRAWING

COMPLETED ASSEMBLY
POSITIVE LOCKING POLARITY HEADER

FEATURES
• Locking lever provides polarity integrity by restricting insertion of locking header in reverse.
• Lever clicks and locks preventing header connector from being retracted inadvertently.
• Locking header available in 2 to 28 pin positions, vertical or horizontal configuration.
• Designed for both vertical and horizontal mounting on the printed circuit board.
• Pins are .025" square brass, tin plated, located on .100" centers.
• Locking header mates with VCC locking header connectors P/N 450 30X or equal.

OUTLINE DRAWINGS

SPECIFICATIONS
MATERIAL Body - Thermoplastic (black) U.L. 94 V0
Pins - Brass .025" square tin plate
Spacing - Pins on .100" centers
Header - Mates with VCC locking header connector; 450 30X series or equal.

HEADER LOCKING FEATURE

PCB HOLE LAYOUT

ORDERING CODES

HEADER CONNECTOR / TRI-FINGER TERMINAL

SPECIFICATIONS
MATERIAL Header connector - Thermoplastic (black)
U.L. 94 V0
Terminals - Phosphor bronze, tin plated.
Rate 3 amp continuous service.
Wire - 22 AWG, 7 strand copper, PVC insulated.
MOUNTING: Paint header connector 450 320 mates with any standard .025" square header on .100" centers.
Locking header connectors 450 302 thru 308 mates with VCC positive locking header 405 series. Also mates with standard friction header .025" pins on .100" centers.

OUTLINE DRAWING

TRI-FINGER TERMINAL

Non-Locking Header Connector

LOCKING HEADER CONNECTOR

NUMBER OF POSITIONS

Model 300 301 1 Locking
302 2 Locking
303 3 Locking
304 4 Locking
306 6 Locking
308 8 Locking
401 1 Non-Locking
402 2 Non-Locking

Note: Connector width equals .100" X the number positions i.e. 3 x .100" = .300" width.

ORDERING CODES

MODEL CNX CNX CNX CNX CNX
V06 V06 V06 V06 V06
NTP NTP NTP NTP NTP
PLATING PLATING PLATING PLATING PLATING
PIN CONFIGURATION - 02 TO 28 CIRCUITS
V = VERTICAL / # CIRCUITS
H = HORIZONTAL / # CIRCUITS
DUAL ROW “SLIM LINE” POSITIVE LOCKING HEADER

FEATURES
- “Click it’s locked” prevents inadvertent retraction of the connector.
- Lever detent prevents reverse insertion of the connector for polarity integrity.
- Vertical locking headers are available in four to sixteen pin circuits.

P C BOARD LAYOUT

SPECIFICATIONS
MATERIAL: Body - Thermoplastic (black) U.L. 94 V0
Lever - thermoplastic Nylon 6-6 for flexibility U.L. 94 V2
Pins - Brass .025” square, bright tin plate
Spacing - Dual row, 4 to 16 circuits on .100” centers
Header - Mates with VCC, 450 4xx series, female locking connector.

LOCKING FEATURE

POLARITY FEATURE

ORDERING CODES

V04 = VERTICAL
CIRCUITS 2 x 2
max 4 circuits, max 16

DUAL ROW “SLIM LINE” FEMALE LOCKING CONNECTOR

FEATURES
- Designed with a positive locking mechanism. “Click it’s Locked”.
- Polarization is preserved by means of connector latches.
- Available from four to sixteen circuit configurations.

ORDERING CODES

450 = SLIM LINE CONNECTOR
404 = NUMBER OF CIRCUITS
404 = 4 CIRCUITS
406 = 6 CIRCUITS
408 = 8 CIRCUITS
410 = 10 CIRCUITS
412 = 12 CIRCUITS
414 = 14 CIRCUITS
416 = 16 CIRCUITS

OUTLINE DRAWING
LED SOCKETS FOR CIRCUIT BOARD MOUNTING

VERSATILITY — P-C-LITE sockets are soldered directly to the PCB which permits easy insertion or removal of the LED. PCH and SMD series mount horizontally. PCV series mounts vertically. STD series standoff can be used to make fine adjustments in the extended length of the LED.

DESIGN — P-C-LITE sockets are manufactured from UL listed thermoplastics. Unique three finger contact design permits automatic adjustment to the various sizes and shapes of LED leads.

APPLICATION — P-C-LITE sockets are relampable sockets for circuit board mounting of LEDs. They are used to display circuit condition for status, logic and fault detection. The sockets are also used for mounting photodetection type devices as well as incandescent bi-pin lamps.

INSTALLATION — P-C-LITE sockets (PCH/PCV) are affixed to PCB by wave soldering. IR reflow is used for the SMD. Molded standoffs permit easy board cleaning. LED leads can be bent after insertion for added security.

HORIZONTAL MOUNT PCH & SMD SERIES

VERTICAL MOUNT PCV SERIES

ORDERING CODES:

PCH 330

MODEL

- PCH 330 Horizontal Mount (Single Unit)
- PCH 660 Horizontal Mount (Dual Unit)
- PCH 990 Horizontal Mount (Triple Unit)
- PCV 220 Vertical Mount (Single Unit)
- PCV 440 Vertical Mount (Dual Unit)
- PCH 880 Vertical Mount (Triple Unit)
- SMD 330 Horizontal Surface Mount (Single Unit)
- SMD 660 Horizontal Surface Mount (Dual Unit)
- SMD 990 Horizontal Surface Mount (Triple Unit)

* View outline drawings on the web
direct url address www.vcclite.com/pch_pcv
**APPLICATION** — P-C-LITE component standoffs are designed for printed circuit board mounting of multi-lead devices i.e. LEDs, IR emitter/detectors, lamps, resistors, capacitors, transistors and diodes.

**VERSATILITY** — P-C-LITE component standoffs cope with various problems in mounting passive components. These include height control, lateral stability, lead retention, lead shorting and removal of soldering residue.

**DESIGN** — P-C-LITE component standoffs provide lead separation and retention for both bi and tri-lead components. Molded tabs retain the component and standoff as a unit permitting preassembly operations. Clearance pads are provided for proper PCB cleaning.

**INSTALLATION** — P-C-LITE component standoffs permit the use of various shapes and sizes of LEDs, as well as other bi/tri-lead components. Device height control is simplified with mounts ranging in lengths from .100 to 1.00 inch in increments of .010 inch.

**SPECIFICATIONS**

**MATERIAL:** Standoff - Thermoplastic U.L. 94 V0.
Color: Black.

**DESIGN:** Channels provide lead separation and lateral stability for components. Molded tabs retain component leads within the standoff for preassembly. Raised pads allow for easy PCB cleaning.

**MOUNTING:** Suitable for passive components, bi-lead, tri-lead, 3mm, 5mm, LEDs, resistors, capacitors, diodes. Standoffs vary in height from .100 minimum to 1.0 inch maximum, increments of .010 inch.

**ORDERING CODE**

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<th>Color</th>
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</tr>
<tr>
<td>190</td>
<td>290</td>
<td>390</td>
<td>490</td>
</tr>
</tbody>
</table>

Also available in one inch

**OUTLINE DRAWING**

**MOUNTING CONFIGURATIONS**

- **SINGLE LEAD**
- **BI-LEAD**
- **TRI-LEAD**
MOUNTING: Clipmount provides a method of displaying PCB or panel mounted LEDs on a display panel. These mounts are available in either black or clear allowing an LED viewing angle of up to 180 degrees. Mounts are available for both 3mm and 5mm LEDs.

BRIGHTNESS: Clipmount provides direct viewing of the LED. Mono and multicolor LEDs as well as infrared and photo-detection devices can be mounted in this manner. This design also permits use of either diffused or non-diffused LEDs.

APPLICATION: Clipmount permits the panel display of a PCB mounted LED without its physical attachment to the front panel. This mount enables the use of interconnects between display panels and circuit boards.

INSTALLATION: Clipmounts are easily installed for PCB mounted LEDs. Simply slide mount thru a 9/32" panel hole and press retaining ring into place. The LED is now able to slide in and out of mount without its physical attachment to front panel. For interconnect applications, hold mount tightly to panel with a nut driver and press connector with LED on from rear.

SPECIFICATIONS

MATERIAL: Mount - Polycarbonate; (black - clear ) 
Ring - Polypropylene (black) 
(U.L. Listed Material )

DESIGN: Permits LED to slide into mount without restric-
tion. Tip of LED is exposed while mount pro-
vides contrast on front of display panel.

MOUNTING: Mounts thru front of panel. Retaining ring secures mount when used with PCB mounted LED. With interconnect cable, mount is secured by use of an LED connector.

3mm (SMC 130) mounts in a .171" (4.34mm) hole on 1/4" centers. Panel thickness 1/32" to 1/16".

5mm (CMC 285) mounts in a .281" (7.14mm) hole on 3/8" centers. Panel thickness 1/32" to 1/8".

See specs. page 11 for use with CNX connectors.

SOCKET: 3mm .130" OD trim leads from base of LED to a length of .400" (1016mm) for all panel thicknesses. 5mm .230" OD trim leads from base of LED to a length of .350" (8.99mm) for all panel thicknesses.

ORDERING CODE

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CMC 285</th>
<th>BLK</th>
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<tbody>
<tr>
<td>SMC 130 (3mm MOUNT)</td>
<td>CMC 285 (5mm MOUNT)</td>
<td>BLK Black</td>
</tr>
<tr>
<td>RNG 132 (RING)</td>
<td>RNG 268 (RING)</td>
<td>CTP Clear</td>
</tr>
</tbody>
</table>

PRINTED CIRCUIT BOARD ASSEMBLY

Hold the mount to the panel securely while pressing the retaining ring into position with a nut driver. A standoff may be used for proper LED height adjustment. Slide PCB mounted LED into position.

INTERCONNECT CABLE ASSEMBLY

Hold mount tightly to panel with nut driver using care not to mar panel surface. Press the connector with LED into place.

OUTLINE DRAWING

<table>
<thead>
<tr>
<th>SMC 130 MOUNT</th>
<th>RNG 132</th>
<th>CMC 285 MOUNT</th>
<th>RNG 268</th>
<th>RECOMMENDED LEDS</th>
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<tbody>
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</tbody>
</table>
PCB MOUNT FOR BI/TRI-LEAD LEDs

FEATURES
- Right angle PCB mount for bi and tri-lead LEDs for use as logic and diagnostic indicators.
- Accommodates round and rectangular shapes of LEDs with or without flanges.
- Dove-tail interlock feature allows mounting of both mono and multi-colored LEDs.
- Mount forms LED leads which are locked into position by retaining tabs.
- Formed LED leads are staggered in their length permitting easier PCB insertion.
- Molded standoffs permit the easy cleaning of PCB after wave soldering operation.

PCB MOUNTING OF BI TRI-LEAD LEDs

Form leads with the mount, snap leads into retaining tabs.

PCB MOUNTING OF LEDs IN ARRAYS

Bi-lead and tri-lead LEDs can be combined with dove-tail interlocking feature.

SPECIFICATIONS

MATERIALS: Housing - Thermoplastic (black) U.L. 94 V0.

MOUNTING: PCH 175 - Right angle thru-hole mount for LEDs. Can be used as a single LED mount or banded together in an array with its dove-tail interlocking feature.

When banded together with the PCH 175 the LEDs are on .250" centers.

LED: 5mm size - round or rectangular shape with or without flange. Bi-lead, standard 100° lead spacing. Tri-lead, either .050" or .110" lead spacing. Both the bi-lead and tri-lead LEDs can also be combined in arrays with one another.

ORDERING CODES

MODEL PCH 175

CLIPMOUNT LED MOUNTING CLIPS

FEATURES
- Universal, used for mounting all standard 5mm LEDs.
- Low cost installation method for panel mounting LEDs.
- Styles include inner/outer reflector, standard and extended clip types.
- Accommodate panel thickness ranging from .032" to .250".
- LEDs are replaceable when mount is used with Conxrite socket
- Various styles of Clipmounts vastly increase the engineer's range of selection.

CLIPMOUNT WITH RING

Snap the Clipmount into the panel - Insert LED - Press the ring in place to complete the assembly.

CLIPMOUNT WITH CONXRITE

Snap the Clipmount into the panel - Insert LED - Press the CONXRITE in place to complete the assembly.

SPECIFICATIONS

MATERIAL Clip - Polycarbonate, Ring - Polypropylene (U.L. Listed Materials).

DESIGN Style - Inner, outer reflector, standard clip, (short and extended).

MOUNTING: Mount thru front of panel. Mounting holes should be deburred but not chamfered. Hole size .250" (.635mm), holes on 3/8" centers.

Panel thickness for CLP 125, 127 & 129, 1/32" to 1/8". For CLP 126, 3/8" to 1/4".

Complete assembly using RNG 268. Clipmounts CLP 125, 127 & 129 with CONXRITE, maximum panel thickness .110". With CLP 126, maximum .250" panel thickness.

LEDS: 5mm standard or low profile, diffused or non-diffused.

ORDERING CODES

MODEL

CLP 125 Standard clip
CLP 126 Extended clip
CLP 127 Outer reflector clip
CLP 129 Inner reflector clip
RNG 268 retaining ring

COLOR

BLK Black only
VISUAL COMMUNICATIONS COMPANY, INC.
7920-F Arjons Dr., San Diego, CA 92126
In CA (858) 549-6900   (800) 522-5546
FAX (858) 549-3520   www.vclite.com

BRIGHTNESS COMPARISON
VCC’s LED LENS MOUNTS vs EXPOSED LEDS
USING A POINT SOURCE LED
INDEPENDENT TEST CONDUCTED BY
INSTRUMENT DEVELOPMENT ENGINEERING ASSOCIATES, INC. MONTROSE, CA

By simply walking across a carpeted floor a person can generate 10,000 volts of electrostatic discharge (ESD). Tests reveal that an exposed panel mounted LED can permit transmission of ESD onto PC boards at a level as low as 7 KV, resulting in faults and catastrophic failures of ICs and other semi-conductor components.

Visual Communications Company offers you protective lens and mounting devices for LEDs to combat ESD. (Cliplite & Cubelite). Tests using these devices show that transmission of ESD does not occur until 15-16 KV is reached. This is a level sufficiently high enough to provide protection against electrostatic discharge.

STATIC SHIELD
LED LENS MOUNTS PROTECT ICs UP TO 16 KV

12/03