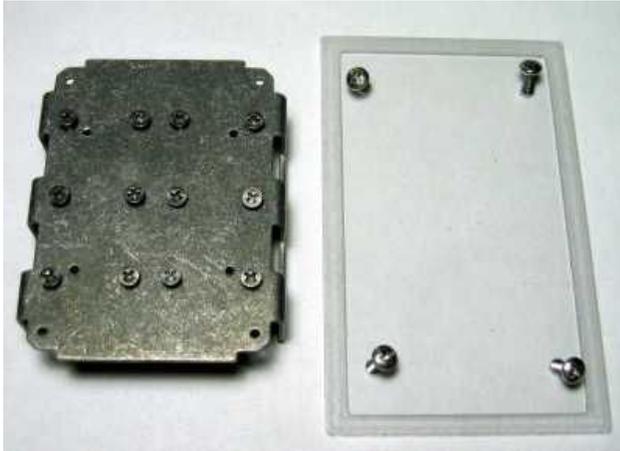


### LLK-02 LED Lighting/Meter Heatsink Plate Kit



The LLK-02 LED lighting/meter heatsink plate kit is specifically designed for mounting high power, star-type LEDs for use with a metal box. The mounting bolts allow for easy LED mounting without glue and to provide a constant pressure on the LED for good heat transfer. The kit is best used with a single-gang, die-cast Thomas & Betts Red Dot Series IH type dry-tite universal box (readily available) to provide a rugged and sealed lighting unit. The aluminum bracket fits snug against the die-cast box sides to provide maximum heat transfer to the surrounding. The tough, clear Lexan window provides protection against the weather and impact attacks. The assembled unit provides maximum performance and flexibility for various LED applications indoors or outdoors as well as mounting instrumentation or other electronic products such as meters and displays.

#### Features:

- Large aluminum heatsink plate, >10W
- tough 1/8" clear Lexan
- Easy mounting and installation
- Space for control box and accessories
- High-power, multi-purpose design
- Compatible with standard electrical boxes

#### Benefits:

- Maximise and maintains peak LED performance
- Efficient and low cost, durable

#### Applications:

- landscape, area lighting, architectural lighting
- Instrumentation, meters, display enclosure

#### Specifications:

BP-LL-01 metal plate assembly:

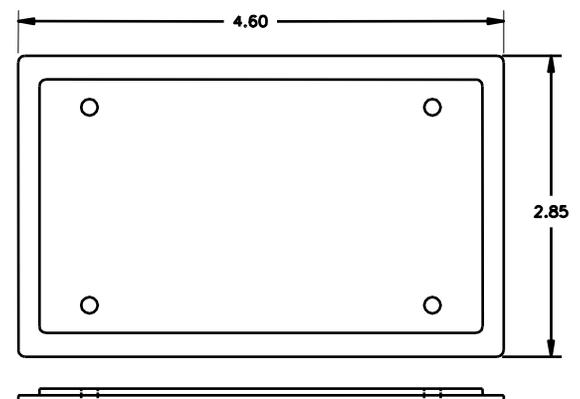
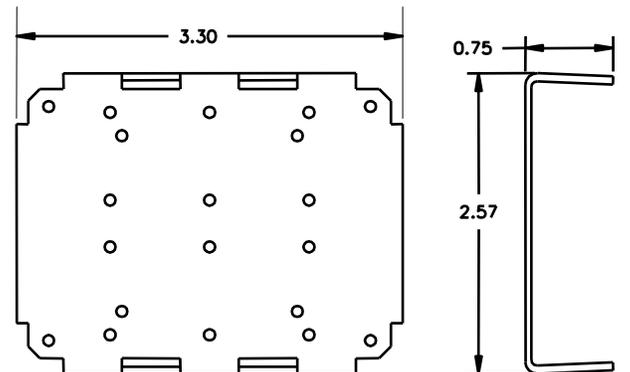
Dimension: 2.57" (W) x 3.30" (L) x 0.75" (H)  
 Material: 14 gauge aluminum (~1/16")  
 Finish: Tumbled (grey)  
 Hardware: 4-40 flat head SS machine bolts

WC-LL-01 Window assembly:

Dimension: 2.85" (W) x 4.60" (L) x 1/8" thick  
 with 1/16" undercut at outer edges  
 Material: 1/8" clear Lexan  
 Hardware: 6-32 pan head SS machine bolts

Optional accessories:

Heatsink: TO-220 type. 15W with added heatsinks.  
 Enclosure: Die-cast single-gang electrical box or similar  
 LEDs: High power. 6x high power star-type.  
 10W max. Onstate LI90 LED array.  
 LED lens: LED light collimator (lens) and holder  
 Meters/  
 Displays: 3"x2" up to 0.75" height.

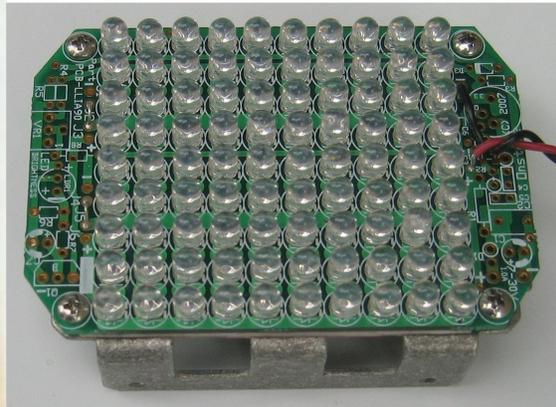
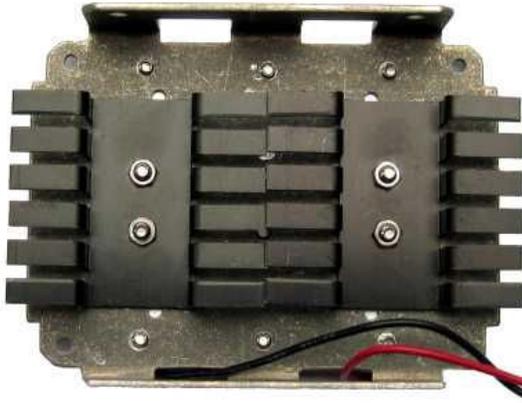
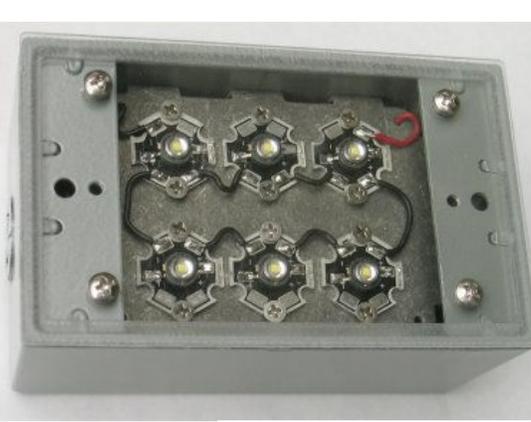


**Installation:****DO NOT STARE DIRECTLY INTO THE LED**

Please read the appropriate data sheet prior to installation for best results. The installation should be made by a person knowledgeable in the product and conforms to all appropriate local codes. Onstate Technologies Inc. will not be responsible for injuries or damages resulting from the improper installation or use of any products sold by Onstate or its retailers. Install the product within its specification limits.

Maximise airflow to LED array for best performance. The LEDs and components get warm during operation. Use appropriate enclosure sealing for the application. Do not expose to high temperatures. If the LED array is using full power in a confined location, use the appropriate heatsink and heat transfer method. LEDs are sensitive to heat and static. Use proper care during soldering and assembly. Follow the assembly and installation instructions for quick and easy installation.

1. LLK-02 is best for die-cast T&B Red Dot Series IH type dry-tite 1/2NPT electrical box.
2. Determine mounting location and mounting method for electrical box.
3. Determine LED power requirement for illumination required and clearance height required.
4. Insert metal plate diagonally half-way into die-cast box. Slide to one side inside box. Tilt plate flat. Use flat screwdriver to slide plate to center of box. Check for fit. Press evenly and snap into place. Measure clearance height to top of box. The die-cast box is usually tapered. Some minor bending of the end tabs may be required for a snug fit with varying clearance heights. Bend evenly on the tab using a bench vice to tilt the plate tabs to the correct angle. Also a flat surface may work for minor plate bending. Use a hammer or vice to compress the plate width evenly for better fitting into the box.
5. With bracket plate on workbench, mount LEDs with mounting bolts. Have all the bolts come to contact with the LED metal plate first then tighten the bolts to a snug fit. When using a LED array, a heat transfer material may be required to maximise heat transfer from the LEDs to the plate. Solder LEDs in the appropriate pattern.
6. Connect the LED to the appropriate power supply and regulator. Check the temperature of bracket and array during operating. Extra heat sinking maybe required.
7. Insert the LED bracket into the die-cast box. Press until snug. Make sure the bracket and box metal surfaces touch.
8. Tighten cover plate. Seal conduit entry and window surfaces if using the unit in wet locations.
9. Apply power to unit.



LLK-01 kit installed with various LED arrays and meters.

 <b>Onstate Technologies</b>	<b>LLK-02 LED Lighting Kit</b> Bracket plate parts kit	Technical Information- LED Lighting LED Lighting Kits And Accessories
		Illuminating A Renewable World™

**Product assembly:**

Bill-of-Materials for LLK-01 LED lighting kit.

LED illuminator basic kit with 90 LED PCB array, heat transfer pads and hardware.

Part	Quantity	Application	Description
PCB-LLIA90	1	90 LED illuminator array to provide lighting.	90 LED illuminator array PCB
HW-BLT-I4-01	4	LED array mounting	4-40 x 1/4" pan head Philips drive bolts, SS
HW-LW-I4-01	4	Lock washer	#4 split lock washer
HW-SPC-I4-01	4	LED PCB/plate clearance spacer	#4/TO-220 plastic spacer
ELE-MIS-01	1	Transfer LED heat to mounting surface. Heat transfer pad on LED array	60mil Sil-pad, heat transfer pad set
Optional items			
LEDs	90	LED lighting, 5mm LED, white	5mm LEDs
LED driver	1	Provide constant current to LED, power regulation	LED driver and regulator

Bill-of-Materials for LLK-02 LED lighting kit.

Electrical box basic kit with bracket plate, window and hardware.

Part	Quantity	Application	Description
BP-LL-01-02	1	Bracket heatsink plate. For mounting LEDs and accessories	14 AWG aluminum plate
WC-LL-01	1	Window cover for electrical box	1/8" clear Lexan.
Optional items			
HW-BLT-I4-02	6	Star-type LED mounting hardware	4-40 x 1/4" flat head Philips drive bolts, SS
HW-BLT-I4-03	6	Star-type LED mounting hardware, TO-220 heatsink mounting hardware	4-40 x 3/8" flat head Philips drive bolts, SS
HW-NUT-I4-01	6	TO-220 heatsink mounting hardware	4-40 nut, SS
HW-BLT-I6-03	4	Window mounting hardware	6-32 x 1/2" pan head Philips drive bolts, SS
Optional items			
Die-cast box	1	Provide protection and mounting for LED bracket. single-gang, die-cast Thomas & Betts Red Dot Series IH type dry-tite universal box	Aluminum die-cast enclosure
TO-220	2	Provide extra cooling for LEDs	Large 1.75" sqr TO-220 heatsinks
LED driver	1	Provide current regulation for LEDs	LED driver and controller
Power resistor		Current limiting of regulated voltage power to LED	1/2W-1W power resistor
LLK-01	1	LLIA90 LED array. LED lighting	90 LED illuminator array kit
LED1-6	6	LED lighting. High power LED	Star-type high power LED
hardware		Mounting hardware to surface	Lighting unit mounting hardware