

LLK-AR25 LED Illuminator Heatsink Enclosure Kit

The LLK-AR25 LED lighting heatsink enclosure kit is a high-quality and high-performance multi-purpose LED lighting unit. The large, extruded aluminum heatsink has high thermal conductivity, is light weight and high strength to provide optimum performance for high power LEDs lighting (up to 25W). RGB, coloured, white, or infrared LEDs could be used for special effects or applications. The CNC machined plastic window covers provide a precision finish and look to the product.



The LLK-AR25 is designed to perform in professional as well as general lighting applications. Whether you need LED lighting for portable, area, video, machine vision or CCTV applications, the LLK-AR25 will provide years of maintenance-free service. This kit is for wide angle star LEDs without collimator lens installed.

Features:

- Large aluminum heatsink, up to 25W
- CNC machined window and case
- Compact, small, light weight, durable
- Easy mounting and installation
- Easy to drill plastic and aluminum parts.
- Corrosion resistant parts and hardware
- High-power, multi-purpose design
- Assembly hardware included

Benefits:

- Maximise and maintains peak LED performance
- Configurable for various lighting applications.
- Efficient and low cost, long life illumination

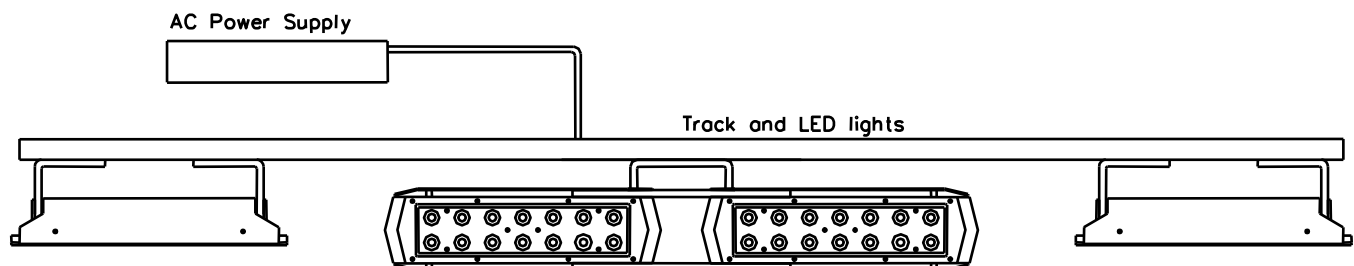
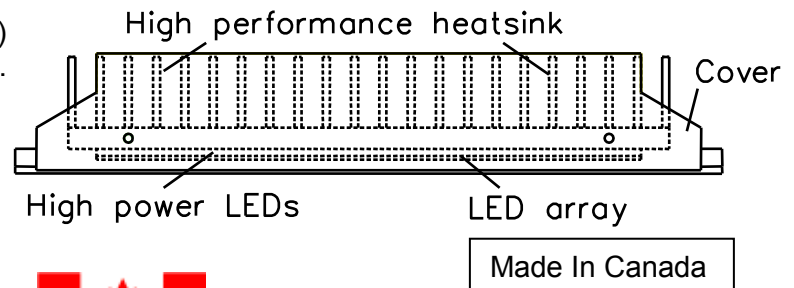
Applications:

- Residential, commercial general lighting,
- CCTV, machine vision lighting
- Accent, architectural lighting

Technical Specifications:

LLK-AR25 LED Illuminator Heatsink Enclosure Kit.

| | |
|------------|---|
| Power: | 25W Max. |
| LEDs: | 14x 1/3W star LEDs. |
| Dimension: | 10.0" (L) x 1.7" (W) x 2.4" (D) |
| Material: | Extruded aluminum heatsink. CNC ABS plastic shell. |
| Window: | 1/16" clear Lexan, CNC machined. |
| Weight: | 0.8kg (1.75lb) |
| Hardware: | Plastic, stainless steel |
| Warranty: | 2 years. |

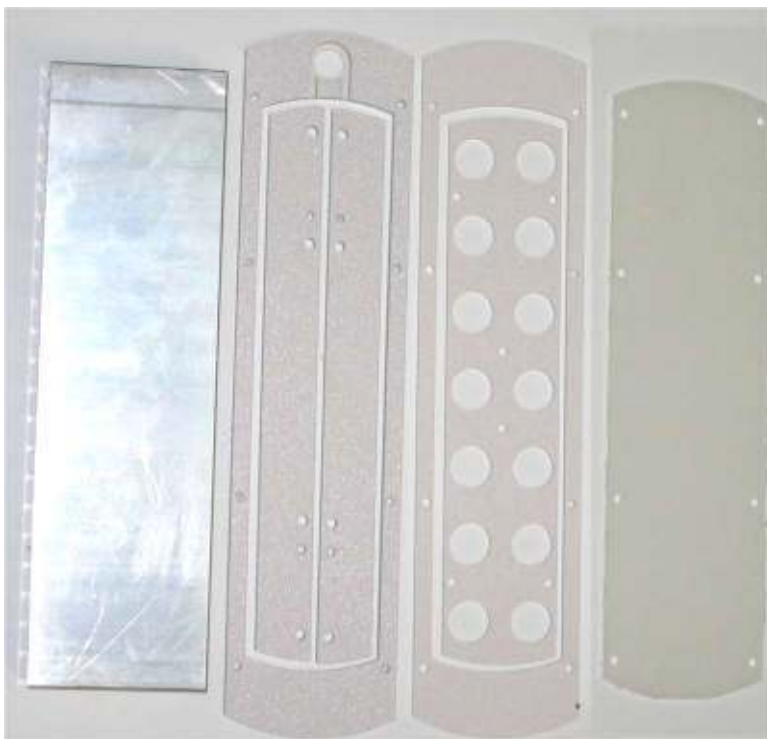


DO NOT STARE DIRECTLY INTO THE LED LIGHT

This kit requires soldering and machining. Please use safety precautions when using tools. Please consult an experienced person if you have difficulties. Onstate will not be responsible for injuries.

Assembly:

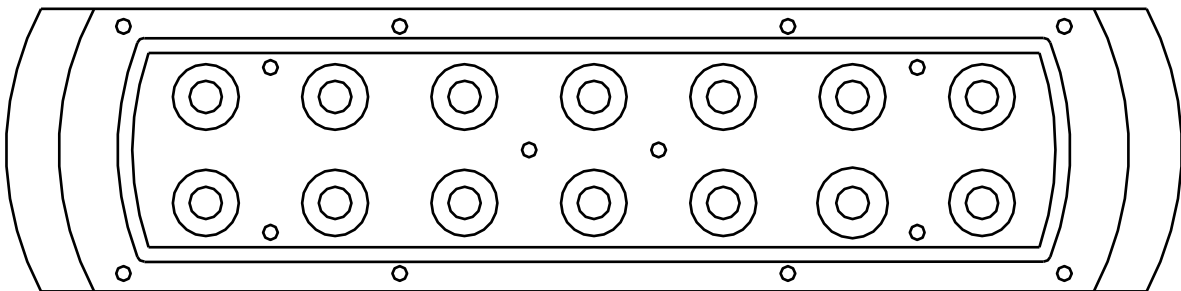
Maximize airflow to LED array for best performance. The LEDs and components get warm during operation. Do not install in an enclosed area or expose to high temperatures. LEDs are sensitive to heat and static. Use proper care during soldering and assembly. Follow the assembly procedures sequentially for quick and easy assembly. Please use proper safety precautions when using tools. If you do not have the proper tools or have insufficient experience assembling electronic parts, this kit may be difficult for you.

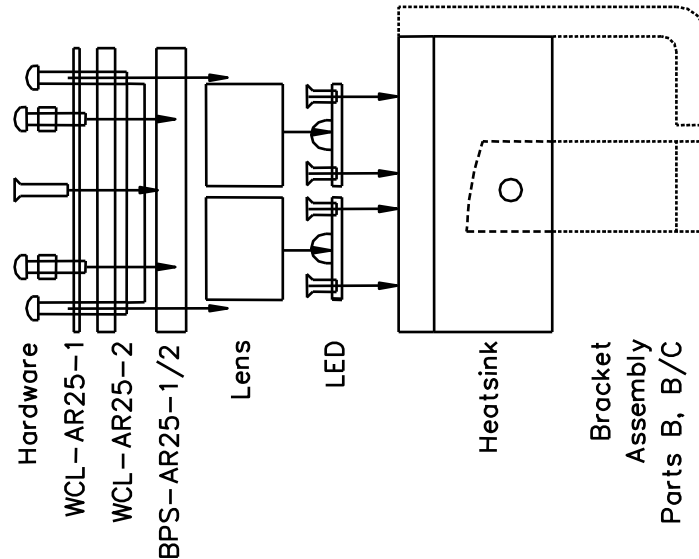


LLK-AR25 parts.



Assembled LLK-AR25





LLK-AR25 parts assembly layout.

1. Arrange all parts on a clean, flat surface for inspection and assembly. Check all parts for fit and use. Clean sharp edges on parts if necessary. Determine power and LEDs required. The LED cover plate is designed for 14 star LEDs.
2. Print heatsink layout drawing (HSK-E85W24-1) for a 1:1 scale (adjust printer settings if necessary). The heatsink dimension should be 8.50" length. Use a scissors to cut-out the outer shape of the heatsink. Put the white cover plate on top of the parts layout to check for accurate hole alignment. With the cover plate on top, use a pencil to mark off holes on the printout. Center punch mounting holes. Determine LED mounting holes. Center punch appropriate hole locations. Center and align the printout on the heatsink. Tape printout onto heatsink. Mark off drill holes with pencil. Drill cover plate mounting holes with a 3/32" drill bit (14x) to 1/4" depth. Drill LED mounting holes with a 5/64" drill bit (28x) to 1/4" depth. If mounting LEDs with adhesive, mounting holes may not be required. Thread the 3/32" holes with a 4-40 thread tap. Do not over torque the tap or it might break.
3. Determine AR25 mounting method. For 1/4-20 thread use 7/32" holes. The plastic parts provided may be used. Other mounting methods are possible.
4. Clean LED mounting surfaces. Mount LEDs onto heatsink with screws provided. Do not over torque screws. Mark off wiring connections with pencil.
5. Clean LED mounting surfaces. Mount LEDs onto heatsink with screws provided. Do not over torque screws. Tighten screws after soldering. Mark off wiring connections with pencil. Solder LED connections and power leads. Test LED array. Insert power cable and strain relief into bottom cover plate (BPS-AR25). The top area of the strain relief may be trimmed for proper wire fit. Use screws to temporarily mount the plate. Test LED array for proper operation.



6. Mount WCL-AR25 parts with hardware provided. Clean plastic surfaces. Add adhesive if necessary. Do not over torque screws.



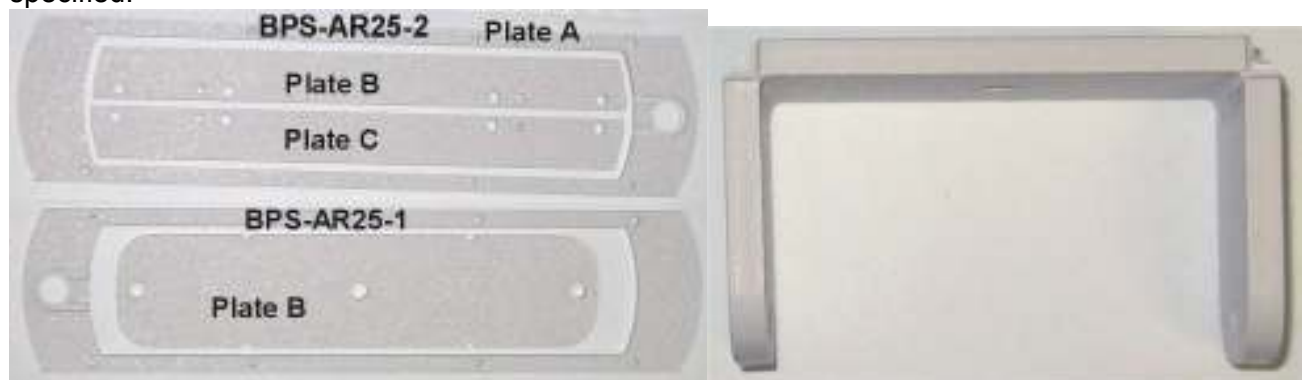
7. Assemble mounting bracket parts. Use appropriate mounting method. Test LED unit for proper operation. The AR25 LED unit assembly is now complete.

LLK-AR25 Parts:

Bill-of-Materials for LLK-AR25 LED lighting heatsink enclosure kit.

| QTY | Application | Description |
|-----|--|--|
| 1 | LED heatsink | LED heatsink, 8.50"x2.4" |
| 1 | Plastic shell 1 (option 1, parts A/B) or Plastic shell 2 (option 2, parts A/B/C) | 10.0"x2.4", 1/4" CNC plate. BPS-AR25-1/2 |
| 1 | Window cover plate | 1/16" PC, clear Lexan window |
| 1 | Wire strain relief | 7/16" wire strain relief |
| 6 | LED cover plate spacer | #4 x1/8" plastic spacers |
| 6 | LED cover plate mounting | 4-40 x3/8" pan head phillips drive |
| 28 | LED mounting | 2-56 x 1/4" flat head phillips drive |
| 8 | Plastic shell (1 or 2) and window plate | 4-40 x 5/8" pan head phillips drive |
| 2 | Bracket mounting | 1/4-20 x1/2" hex bolt |
| 2 | Bracket mounting washer | 1/4" flat washer |
| 2 | Bracket mounting 2 | 8-32 x 1/4" pan head phillips drive |
| 4 | AR25 side cover (optional part) | 4-40 x3/8" flat head phillips drive |
| 4 | Side cover plate spacer | #4 x1/4" plastic spacers |

Note: Specify plastic shell 1 or 2 when ordering. Plastic shell 1 (large piece) is standard when not specified.



(Left) Plastic shell options. Use plates inside for mounting bracket applications. (Right) BPS-AR25-1 part B bent for mounting bracket. It should be cut in half for mounting both sides.

Equipment Required:

Parts for machining and assembly.

| QTY | Application | Description |
|-----|---------------------------|--|
| 1 | Drill holes, threading | Drill press, electric drill |
| 1 | 4-40, 1/4-20 thread holes | 4-40, 1/4-20 thread tap |
| 1 | Holes | Drill bit set |
| 1 | Screw assembly | Screw driver set |
| 1 | Counter-sunk holes | 1/4" counter-sunk bit |
| 1 | LED connection | 24-22 AWG wires |
| 1 | Soldering | Soldering iron and solder |
| 1 | Holes marker | Pencil |
| 1 | Power leads and connector | 22-18AWG cable. Locking connector set |
| 1 | Hole alignment | Hole center punch |
| 1 | LED driver | LED power supply. Constant current |
| 1 | Tools, DMM, power supply | General electronics assembly and testing tools |

Optional Accessories/Parts:

Optional materials (not supplied) for LLK-AR25 LED lighting unit.

LEDs, LED lens and holder, LED driver

| Part | QTY | Application | Description |
|------------------|-----|--------------------------------------|------------------------------------|
| Star-PCB LED | 14 | high brightness star-type white LED. | Star-type or similar. |
| Power cable | 1 | LED power cable, 2 conductor | Power cable, 2 conductor, 22AWG |
| LED driver | 1 | Provide constant current to LEDs | LED driver and regulator |
| AR25 cover plate | 2 | Heatsink side cover plate | 1/16" plastic heatsink cover plate |

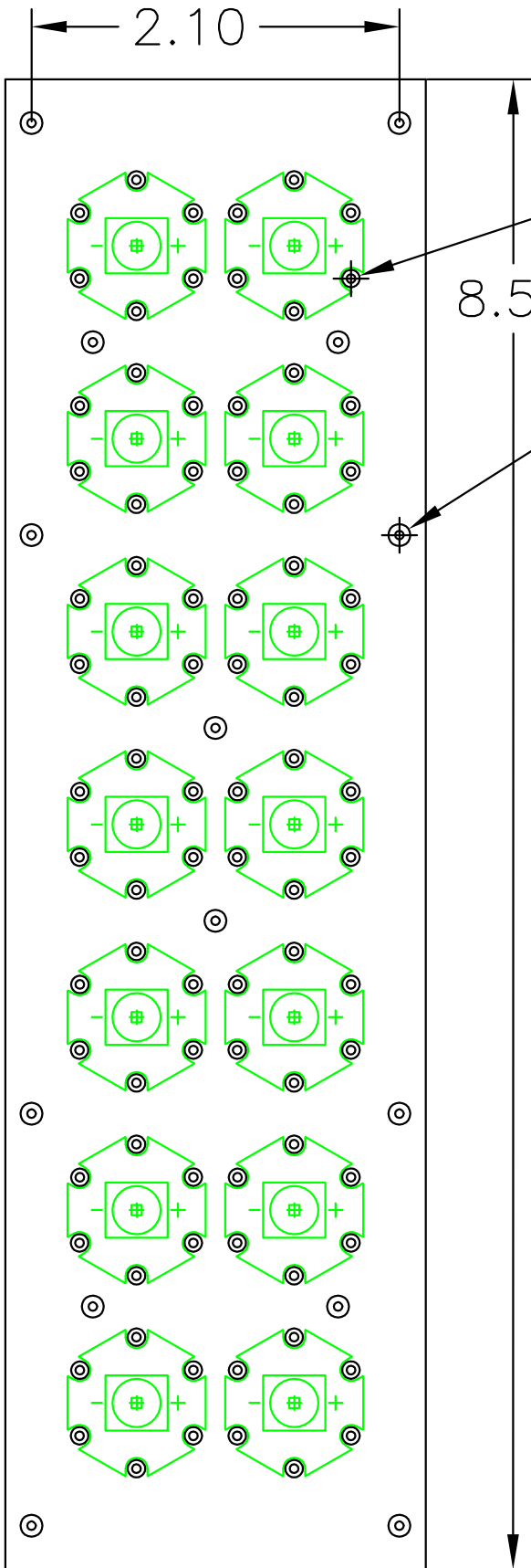


AR25 with side cover plate.

Warranty:

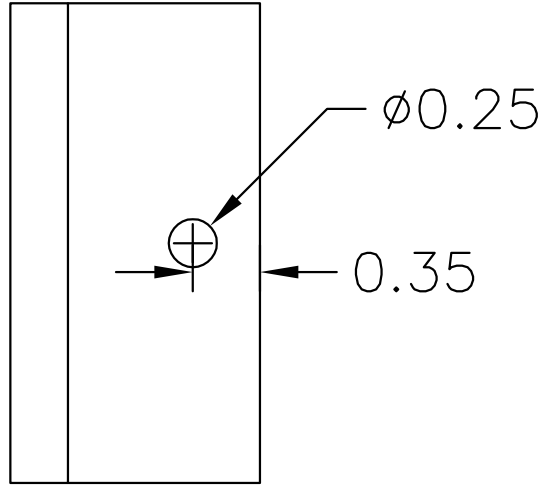
Onstate Technologies warrants its products to be free of defects in materials and workmanship for a period of two (2) years. All products are sold as-is. Onstate technologies assumes no liabilities or obligations due to consequential damages caused by the product directly or indirectly with respect to loss of property, revenue, or cost of removal, installation or reinstallation. Improper use will void warranty.

| | | |
|------------|----|---------------------|
| Revisions: | | |
| Feb. 15/10 | DH | rev. 1 part release |
| | | |
| | | |



28x $\frac{5}{64}$ " x $\frac{1}{4}$ " depth holes

14x $\frac{3}{32}$ " x $\frac{1}{4}$ " depth holes
14x 4-40 thread



Machining.

1. 14x $\frac{3}{32}$ " holes, $\frac{1}{4}$ " depth.
2. 14x 4-40 thread
3. 28x $\frac{5}{64}$ " holes, $\frac{1}{4}$ " depth. for LED mounting.
4. Bracket mounting A.
2x $\frac{1}{4}$ " holes" for 1/4-20 thread on plates.
5. Bracket mounting 2.
8-32 threads.
6. deburr edges.



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AR25 heatsink

Tolerance: +/-0.005"

| | |
|---|-------------------|
| Description: AR25 heatsink mounting holes | |
| Part: HSK-E85W24-1 | Scale: 1:1 inches |
| Drawn: DH | Date: Feb. 15/10 |
| Approved: DH | Date: Feb. 15/10 |