

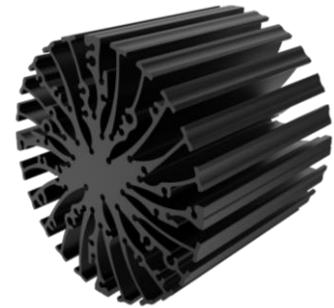


EtraLED

EtraLED-SEO-9680 Seoul Modular Passive Star LED Heat Sink Φ 96mm

Features VS Benefits

- * The EtraLED-SEO-9680 Seoul Passive Star LED Heat Sinks are specifically designed for luminaires using the Seoul LED engines.
- * Mechanical compatibility with direct mounting of the LED engines to the LED cooler and thermal performance matching the lumen packages.
- * For spotlight and downlight designs from 2500 to 6,200 lumen.
- * Thermal resistance range R_{th} 1.20°C/W.
- * Modular design with mounting holes foreseen for direct mounting of Seoul COB series.
- * Diameter 96.0mm - standard height 80.0mm, Other heights on request.
- * Forged from highly conductive aluminum.



Zhaga LED engine and radiator assembly is a unified future international standardization

- * Below you find an overview of Seoul COB's and LED modules which standard fit on the srar LED heat sinks.
- * In this way mechanical after work and related costs can be avoided, and lighting designers can standardize their designs on a limited number of srar LED heat sinks.



SEoul SEMICONDUCTOR



Seoul LED Modules directly Mounting Options

Seoul COB Series, Size 13.5x13.5mm.

- | | |
|------------|------------|
| SAW80661A; | SDW01F1C; |
| SAW90661A; | SDW81F1B; |
| SAW810xxx; | SDW81F1C; |
| SAW910xxx; | SDW81F1DY; |

With the Zhaga Book 11 holders for the green indicator marks.
 BJB holder: 47.319.6294.50; AAG.STUCCHI: 8100-G2
 Without the holders for the pink indicator marks.
 Direct mounting with machine screws M3x6.5mm.

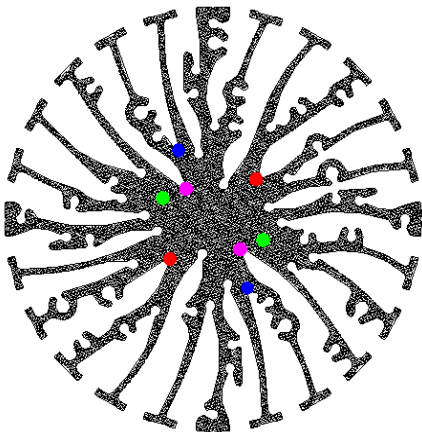
With the LEDiL products:
 Olivia series: FN14637-S
 Ronda series: FN15972-xxx; FN15971-xxx; FN15969-xxx;

Seoul COB Series, Size 19x19mm.

- | | |
|-----------|-----------|
| SDW02F1C; | SDW82F1C; |
| SDW03F1C; | SDW83F1C; |
| SDW92F1C; | |

With the Zhaga Book 3 holders for the blue indicator marks.
 BJB holder: 47.319.2021.50; AAG.STUCCHI: 8101-G2
 Without the holders for the red indicator marks.
 Direct mounting with machine screws M3x6.5mm.

With the LEDiL products:
 Olivia series: FN14637-S; FN14828-M;
 Ronda series: FN15xxx-xx;



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Mounting Options and Drawings & Dimensions

Example: EtraLED-SEO-9680-B-1,2

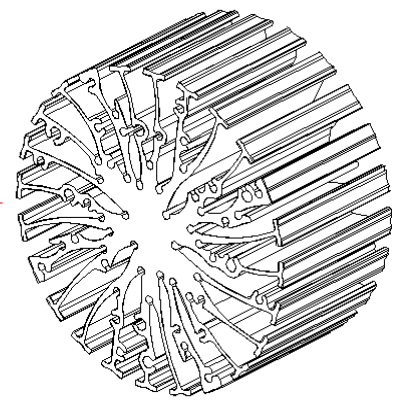
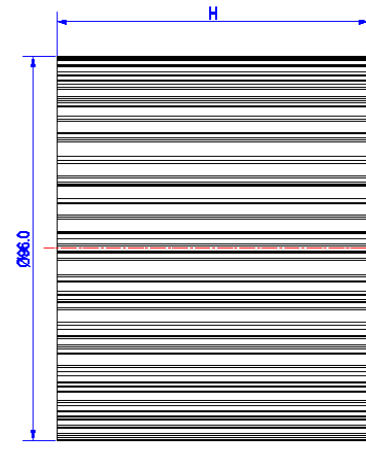
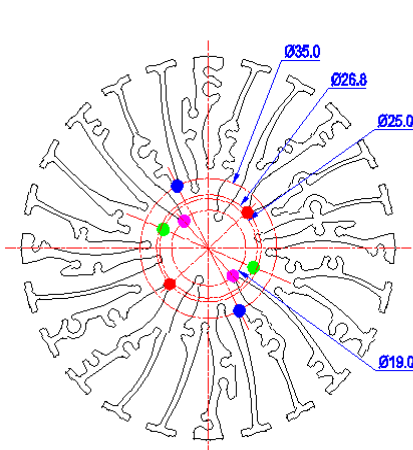
Example: EtraLED-SEO-96 **1** - **2** - **3**

- 1** Height (mm)
- 2** Anodising Color
B-Black
C-Clear
Z-Custom
- 3** Mounting Options - see graphics for details Combinations available
Ex.order code - 12
means option 1 and 2 combined

Notes:

- Mentioned models are an extraction of full product range.
- For specific mechanical adaptations please contact MingfaTech.
- MingfaTech reserves the right to change products or specifications without prior notice.

| MOUNTING OPTION | Module type | Holder NO. | LEDiL products | | THREAD | THREAD DEPTH | THREAD HOLE DISTANCE |
|-----------------|-------------------------|--|--------------------------|--|--------|--------------|------------------------------------|
| | | | Olivia series | Ronda series | | | |
| 1 | COB Size 13.5x13.5mm | / | FN14637-S; | FN15972-xxx; FN15971-xxx; FN15969-xxx; | M3 | 6.5mm | 19.0mm/ 2-@180° |
| 2 | | BJB Holder 47.319.2021.50 AAG.STUCCHI 8101-G2 | | | M3 | 6.5mm | 25.0mm/ 2-@180° (Zhaga book 11) |
| 3 | COB Size 19x19mm | / | FN14637-S; FN14828-M; | FN15xxx-xx; | M3 | 6.5mm | 26.8mm/ 2-@180° |
| 4 | | BJB Holder 47.319.2021.50 AAG.STUCCHI 8101-G2 | | | M3 | 6.5mm | 35.0mm/ 2-@180° (Zhaga book 3) |



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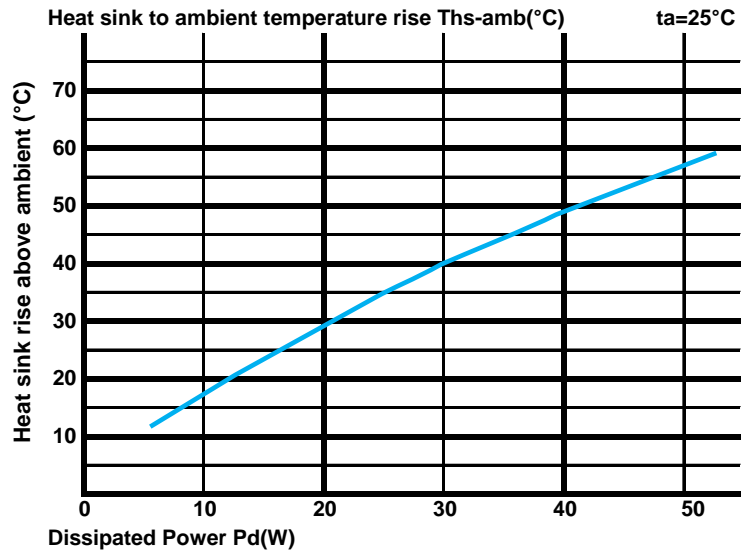
The product data table

| | | |
|--|---|------------------|
| | Model No. | EtraLED-SEO-9680 |
| | Heatsink Size | Φ96xH80mm |
| | Heatsink Material | AL6063-T5 |
| | Finish | Black Anodized |
| | Weight (g) | 575.0 |
| | Dissipated power (T_{hs-amb},50°C) | 41.5 (W) |
| | Cooling surface area (mm²) | 180427 |
| | Thermal Resistance (R_{hs-amb}) | 1.2 (°C/W) |

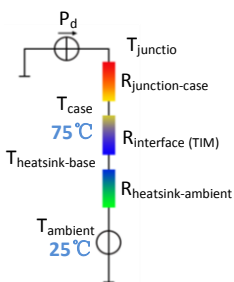
The thermal data table

* Please be aware the dissipated power Pd is not the same as the electrical power Pe of a LED module.
 *To calculate the dissipated power please use the following formula: Pd = Pe x (1-ηL).
 Pd - Dissipated power ; Pe - Electrical power ; ηL = Light efficiency of the LED module;

| Dissipated Power Pd(W) | Pd = Pe x (1-ηL) | Heat sink to ambient thermal resistance R _{hs-amb} (°C/W) | Heat sink to ambient temperature rise Ths-amb (°C) |
|------------------------|------------------|--|--|
| | | EtraLED-SEO-9680 | |
| 10.0 | | 1.70 | 17.0 |
| 20.0 | | 1.45 | 29.0 |
| 30.0 | | 1.33 | 40.0 |
| 40.0 | | 1.20 | 48.0 |
| 50.0 | | 1.12 | 56.0 |



*The aluminum substrate side of the package outer shell is thermally connected to the heat sink via TIM (Thermal interface material).
 MingFa recommends the use of a high thermal conductive interface between the LED module and the LED cooler.
 Either thermal grease, A thermal pad or a phase change thermal pad thickness 0.1-0.15mm is recommended.



*Thermal resistance is a heat property and a measurement of a temperature difference by which an object or material resists a heat flow. Geometric shapes are different, the thermal resistance is different. Formula: $\theta = (T_{hs} - T_a) / P_d$
 θ - Thermal Resistance [°C/W]; T_{hs} - Heatsink temperature ; T_a - Ambient temperature ;

*The thermal resistance between the junction section of the light-emitting diode and the aluminum substrate side of the package outer shell is $R_{junction-case}$, the thermal resistance of the TIM outside the package is $R_{interface (TIM)}$ [°C/W], the thermal resistance with the heat sink is $R_{heatsink-ambient}$ [°C/W], and the ambient temperature is $T_{ambient}$ [°C].

*Thermal resistances outside the package $R_{interface (TIM)}$ and $R_{heatsink-ambient}$ can be integrated into the thermal resistance $R_{case-ambient}$ at this point. Thus, the following formula is also used:
 $T_{junction} = (R_{junction-case} + R_{case-ambient}) \cdot P_d + T_{ambient}$