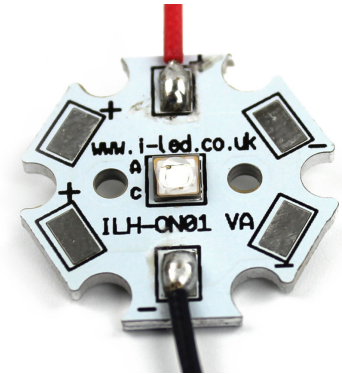


OSLON® 120 1 LED PowerStar Colours

IHH-OM01-XXXX-SC221-WIR200.

Product Overview

At the heart of each PowerStar is an OSLON® SSL 120 LED. OSLON® SSL can be driven up to 1000mA while OSRAM's latest power chip technology remains efficient even at the highest drive currents. A low thermal resistance of 7K/W ensures cool running and a highly efficient product. PowerStars are compact, powerful LED light sources built on aluminium substrates for optimal thermal management. Available with 200mm wires as standard.



Examples of how unique wavelengths can help with plant growth:

| Colour Combination | Works For |
|----------------------------------------|---------------------------------------------------------------------------------------------|
| Deep Blue + Hyper Red | Leafy greens such as lettuce and basil |
| Deep Blue + Hyper Red + Far Red | Leafy greens such as basil and aids in seed germination, stem elongation and leaf expansion |
| Deep Blue + Hyper Red + Yellow + Green | Flowering plants where biomass is the goal |
| True Green | Needed for leaves to get their green colour |

Applications

- Horticultural Lighting
- Retail and Entertainment Lighting
- Decorative Lighting
- General Lighting

Technical Features

- OSLON®120 1+ PowerStars contain OSLON® SSL 120 LEDs with integral 120 degree silicone resin Lenses
- Up to 100,000 Hour lifetime to 70% of original brightness
- Mounting holes using M3 screws allows easy installation
- Size (L x W x H): 20mm x 20mm x 3.85mm
- Available with 200mm connecting wires
- Secondary Lens can be fitted – check options in suitable Lens and Reflector section
- Suitable Heat Sinks available – check options in Heat Sink section
- Matching Power Supply available - check options in Power Supply section
- PowerStars can be linked together to produce longer chains
- Current range 100 to 1,000mA

*This datasheet should be read in conjunction with the relevant OSRAM Opto Semiconductors data on the LED used

Important Information and Precautions

- The PowerStar's LED, when powered up, is very bright. Thus it is advised that you do not look directly at it. Turn the PowerStar away from you and do not shine into the eyes of others.
- PowerStars will overheat in operation if not attached to a suitable Heat Sink. Over heating can cause failure or irreparable damage.
- Do not operate PowerStars with a Power Supply with unlimited current. Connection to constant voltage Power Supplies that are not current limited may cause the PowerStar to consume current above the specified maximum and cause failure or irreparable damage.
- PowerStars, when operated, can reach high temperatures thus there is risk of injury if they are touched.
- DO NOT HOT PLUG ON LED SIDE OF POWER SUPPLY
- DO NOT TOUCH or PUSH on the LED as this can cause irreparable damage.

Product Options

| IHS Part Number | Colour | Wavelength * | Typical Wattage at 350mA § | Forward Voltage | Flux at † 350mA | Radiance Angle | Relevant OSRAM LED Data |
|-----------------------------|------------|--------------|----------------------------|-----------------|-----------------|----------------|-------------------------|
| IHH-OM01-DEBL-SC221-WIR200. | Deep Blue | 455nm | 1.00W | 2.75-3.25 volts | 610mW | 120° (±60°) | GD CSSPM1.14 |
| IHH-OM01-TRGR-SC221-WIR200. | True Green | 521nm | 1.17W | 3.00-3.60 volts | 121lm | 120° (±60°) | GT CSSPM1.13 |
| IHH-OM01-RDOR-SC221-WIR200. | Red Orange | 625nm | 0.74W | 1.80-2.60 volts | 89.2lm | 120° (±60°) | GA CSSPM1.23 |
| IHH-OM01-HYRE-SC221-WIR200. | Hyper Red | 660nm | 0.75W | 1.80-2.60 volts | 355mW | 120° (±60°) | GH CSSPM1.24 |
| IHH-OM01-FRED-SC221-WIR200. | Far Red | 730nm | 0.65W | 1.60-2.30 volts | 250mW | 120° (±60°) | GF CSSPM1.24 |

* Due to the special conditions of the manufacturing processes of LEDs, the typical data of technical parameters can only reflect statistical figures and do not necessarily correspond to the actual parameters of each single product which could differ from the typical data.

§ Tolerance +/- 10%

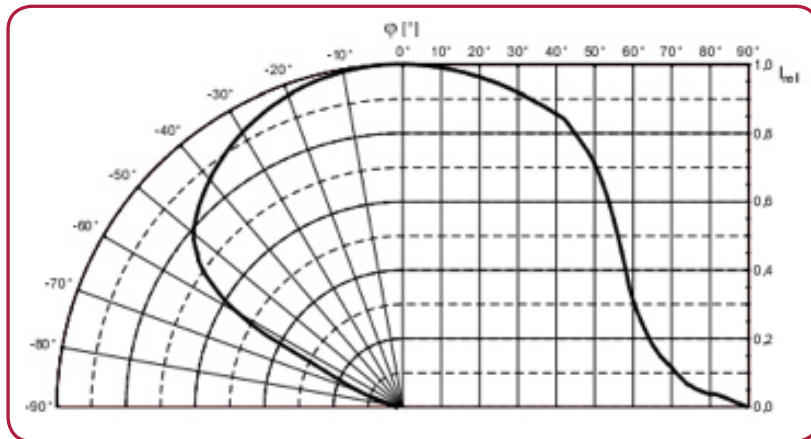
† Measured with 20mS 350mA pulse at 25° c

Minimum and Maximum Ratings

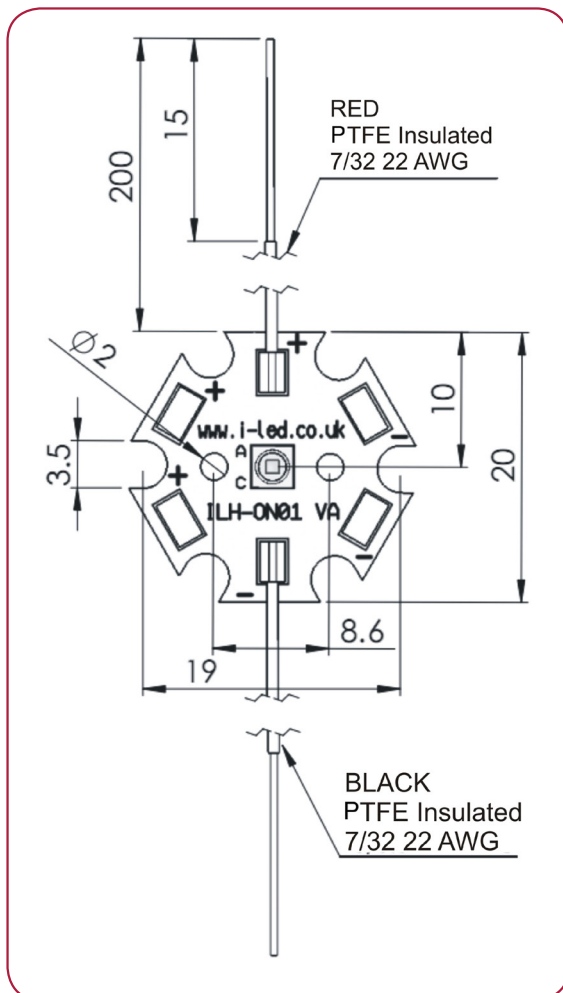
| IHS PART NUMBER | Operating Temperature at Tc-Point [°C] * | Storage Temperature [°C] * | Forward Current per chip [mA] * | Reverse Voltage [Vdc] * |
|-----------------------------|------------------------------------------|----------------------------|---------------------------------|----------------------------------|
| IHH-OM01-DEBL-SC221-WIR200. | 70° C max | - 40 to 110° C | 1,000mA max | not designed for reverse voltage |
| IHH-OM01-TRGR-SC221-WIR200. | 70° C max | - 40 to 110° C | 1,000mA max | not designed for reverse voltage |
| IHH-OM01-RDOR-SC221-WIR200. | 70° C max | - 40 to 110° C | 1,000mA max | not designed for reverse voltage |
| IHH-OM01-HYRE-SC221-WIR200. | 70° C max | - 40 to 110° C | 1,000mA max | not designed for reverse voltage |
| IHH-OM01-FRED-SC221-WIR200. | 70° C max | - 40 to 110° C | 1,000mA max | not designed for reverse voltage |

* Exceeding maximum ratings for operating and storage temperature will reduce expected life time or destroy the LED module. Exceeding maximum ratings for operating voltage will cause hazardous overload and will likely destroy the LED module. The temperature of the LED module must be measured at the Tc-Point according to EN60598-1 in a thermally constant status with a temperature sensor or a temperature sensitive label.

Radiation of single LED



Technical Drawing



3D drawing files are available on request from IHS. Please call or email

OSLON® 120 1 LED PowerStar Lens and Reflector Options

LEDiL precision-engineered Lenses and Reflectors allow for rapid deployment of all types of light fixtures, including street lights, wall-wash, high-bay, sconces, emergency beacons, parking garage/low-bay, MR and AR downlights, and dock lights. Precision-engineered for maximum efficiency and durability, LEDiL Lenses and Reflectors are released alongside the latest product releases from our LED suppliers. You select the best LED for the application; choose LEDiL and you're selecting the best optical solution as well.



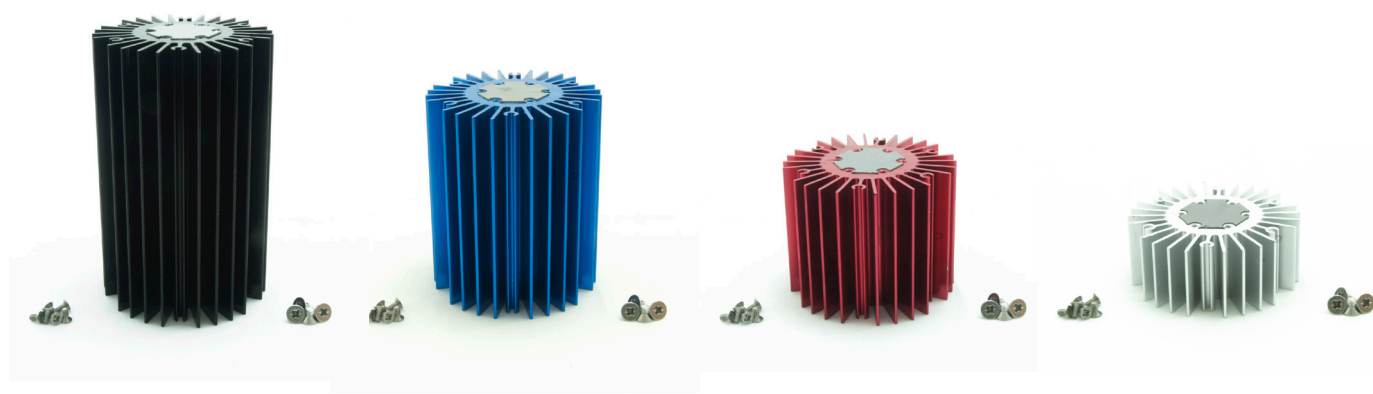
Currently LEDiL are testing various optics with the OSLON® SSL 120 LED.

OSLON® 120 1 LED PowerStar Heat Sink Options

IHS has a series of Aluminium Alloy Heat Sinks to be used with our standard range of Strips and PowerClusters. These Heat Sinks are supplied with fixing screws for the light engine and for fixing to a base plate. They also come with Thermal Interface Material (TIM) attached to the top surface. Available in Black, Red, Silver and Blue colour variants. More versions will be introduced over the coming months and we are also happy to manufacture custom Heat Sinks to your request.

| | |
|-----|-----------------------------------------------------------------|
| | Operates under the recommended ILS junction temperature |
| | Operates under the recommended LED maximum junction temperature |
| | Not suitable for use |
| N/A | Heat Sink not designed for use with this product |

| IHS Product | | No Heat Sink, in free air | ILA-HSINK-STAR-50X20MM.-K | ILA-HSINK-STAR-50X40MM.-K | ILA-HSINK-STAR-50X60MM.-K | ILA-HSINK-STAR-50X80MM.-K | ILA-HSINK-CLUSTER-70X70X55MM.-K | ILA-HSINK-CLUSTER-78X46X25MM.-K |
|-------------------------|--------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------------|---------------------------------|
| Oslon 1+ PowerStars | 350mA | | | | | | | |
| | 700mA | | | | | | | |
| | 1000mA | | | | | | | |
| Oslon 4+ PowerStars | 350mA | | | | | | | |
| | 700mA | | | | | | | |
| | 1000mA | | | | | | | |
| Oslon 9+ PowerStars | 350mA | | | | | | | |
| | 700mA | | | | | | | |
| | 1000mA | | | | | | | |
| Oslon 16+ PowerClusters | 350mA | | | | | | | |
| | 700mA | | | | | | | |
| | 1000mA | | | | | | | |






OSLON® 120 1 PowerStar Power Supply Options

IHS has a comprehensive range of standard Power Supplies. The table below shows forward voltage of each LED driver please consult the product options table to find the forward voltage of the PowerStar used.

Additional Power Supplies are being introduced so please call us or check our website for the latest offering.

| IHS Driver Part No. | Rating (W) | Constant Current Output | Forward Voltage | |
|----------------------|------------|-------------------------|-----------------|---------------------------------------------------------------------------------------|
| IZC015-005F-0067C-QA | 5W | 150mA | 20-33V |  |
| IZC035-005F-0067C-QA | 5W | 350mA | 2-12V |  |
| IZC070-005F-0067C-QA | 5W | 700mA | 2-5V |  |
| IZC035-008F-5065C-SA | 8W | 350mA | 3-36V |  |
| IZC070-008F-5065C-SA | 8W | 700mA | 3-12V |  |
| IZC035-017F-0067A-SA | 17W | 350mA | 6-48V |  |
| IZC035-018T-9500A-SX | 18W | 350mA | 15-52V |  |
| IZC050-018T-9500A-SX | 18W | 500mA | 9-36V |  |
| IZC070-018T-9500A-SX | 18W | 700mA | 6-26V |  |
| IZC035-035F-9067C-QA | 35W | 350mA | 40-80V |  |
| IZC070-035F-0067C-SA | 35W | 700mA | 9-48V |  |
| IZC045-040A-9266C-SA | 40W | 450mA | 30-89V |  |

| IHS Driver Part No. | Rating (W) | Constant Current Output | Forward Voltage | |
|----------------------|------------|-------------------------|-----------------|-------------------------------------------------------------------------------------|
| IZC070-050A-9267C-SA | 50W | 700mA | 24-72V |  |
| IZC050-060F-9067C-QA | 60W | 500mA | 40-110V |  |
| IZC070-075A-9267C-SA | 75W | 700mA | 54-108V |  |

Thermal Interface Material Options

IHS have produced a range of High-performance, cost effective Thermal Interface Materials to match perfectly their standard products.

Our product fills the air pockets between the two surfaces, forming a continuous layer to conduct heat away from the LED to the Heat Sink.

IHS offer our TIM in three options – double sided adhesive, single sided adhesive and non adhesive.

| Product | Non Adhesive | Single Sided Adhesive | Double Sided Adhesive |
|-----------------|--------------------------|--------------------------|---------------------------|
| Star | ILA-TIM-STAR-0A | ILA-TIM-STAR-1A | ILA-TIM-STAR-2A. |
| 25x25mm Cluster | ILA-TIM-CLUSTER-25x25-0A | ILA-TIM-CLUSTER-25x25-1A | ILA-TIM-CLUSTER-25x25-2A. |
| 30x30mm Cluster | ILA-TIM-CLUSTER-30x30-0A | ILA-TIM-CLUSTER-30x30-1A | ILA-TIM-CLUSTER-30x30-2A. |
| 300x20mm Strip | ILA-TIM-STRIP-300x20-0A | ILA-TIM-STRIP300x20-1A | ILA-TIM-STRIP-300x20-2A. |
| 25x15mm Strip | ILA-TIM-STRIP-25x15-0A | ILA-TIM-STRIP-25x15-1A | ILA-TIM-STRIP-25x15-2A. |
| 58x58mm Square | ILA-TIM-SQUARE-58X58-0A | ILA-TIM-SQUARE-58X58-1A | ILA-TIM-SQUARE-58X58-2A. |

Other sizes are available, including customised parts

Assembly Information

- The mounting of the OSLO[®]120 1+ PowerStar has to be on a metal Heat Sink.
- In order to optimise the thermal management, the metal surface needs to be clean (dirt and oil free) and planar for the best contact with the LED module. A thermal grease or heat transfer material is highly recommended.

Safety Information

- The LED module itself and all its components must not be mechanically stressed.
- Assembly must not damage or destroy conducting paths on the circuit board.
- The mounting of the module is carried out by attaching it at the mounting holes. Metal mounting screws must be insulated with synthetic washers to prevent circuit board damage and possible short circuiting.
- To avoid mechanical damage to the connecting cables, the boards should be attached securely to the intended substrate. Heavy vibration should be avoided.
- Observe correct polarity!
- Depending on the product, incorrect polarity will lead to emission of red or no light. The module can be destroyed!
- Pay attention to standard ESD precautions when installing the OSOLON®120 1 PowerStar.
- The OSOLON®120 1 PowerStars, as manufactured, have no conformal coating and therefore offer no inherent protection against corrosion.
- Damage by corrosion will not be accepted as a materials defect claim. It is the user's responsibility to provide suitable protection against corrosive agents such as moisture and condensation and other harmful elements.
- For outdoor usage, a housing is definitely required to protect the board against environmental influences. The design of the housing must correspond to the IP standards in the application. It is also the responsibility of the user to ensure any housings or modifications keep the Tc junction temperature to within stated ranges.
- To also ease the luminaire/installation approval, electronic control gear for LED or LED modules should carry the CE mark and be ENEC certified. In Europe the declarations of conformity must include the following standards: CE: EC 61374-2-13, EN 55015, IEC 61547 and IEC 61000-3-2 - ENEC: 61374-2-13 and IEC/EN 62384.
- The evaluation of eye safety occurs according to the standard IEC 62471:2006 ("photobiological safety of lamps and lamp systems"). Within the risk grouping system of this CIE standard, the LED specified in this data sheet falls into the class "moderate risk" (exposure time 0.25s). Under real circumstances (for exposure time, eye pupils, observation distance), it is assumed that no endangerment to the eye exists from these devices. As a matter of principle, however, it should be mentioned that intense light sources have a high secondary exposure potential due to their blinding effect. As is also true when viewing other bright light sources (e.g. headlights), temporary reduction in visual acuity and afterimages can occur, leading to irritation, annoyance, visual impairment and even accidents, depending on the situation.

For further information please contact IHS

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.