

OSLON® P1616 1 Micro IR

ILM-IP01-xxxx-SC201-WIR200.

Product Overview

At the heart of each Micro OSLON® IR is an OSLON® P1616 IR LED from OSRAM Opto Semiconductors, which is today's smallest infrared LED. This small package with its integrated lens allows for superior compact arrangements of very high-power density. Micro OSLON® IR are compact, powerful LED light sources built on an aluminium substrate for optimal thermal management. They are available with 200mm wires as standard.

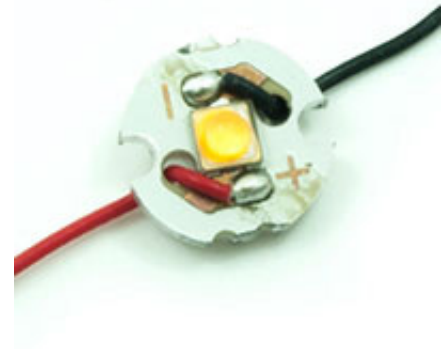
Applications

- Access Control
- Eye Tracking
- Gesture Recognition
- Safety and Security
- CCTV Surveillance

Technical Features

- Up to 100,000 hours lifetime to 70% of original brightness
- High efficiency to enable better energy saving
- OSLON® P1616 1 Micro IR contain OSLON® P1616 IR LEDs from OSRAM Opto Semiconductors with an integral 130° silicone optic
- Secondary Lens can be fitted – options in Lens and Reflector section
- Suitable Heatsinks available – check options in Heatsink section
- Suitable Thermal Interface Material available - check options in Thermal Interface Material section
- Suitable Power Supplies available - check options in Power Supply section
- Available with 200mm connecting wires
- Size (LxWxH): 11x11x3.85mm
- Micro OSLON® IR can be linked together to produce longer chains
- Current range: 100mA to 350mA

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



Important Information and Precautions

- The Micro OSOLON® IR LED, when powered up, is very powerful. Although the light may appear to be switched off, IR wavelengths are invisible to the human eye and can still cause damage to the eye. Thus it is advised that you do not look directly at it. Micro OSOLON® IR products will overheat in operation if not attached to a suitable Heatsink. Overheating can cause failure or irreparable damage.
- Do not operate Micro OSOLON® IR products with a Power Supply with unlimited current. Connection to constant voltage Power Supplies that are not current limited may cause the Micro OSOLON® IR product to consume current above the specified maximum and cause failure or irreparable damage.
- When operated, Micro OSOLON® IR 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 might cause irreparable damage.

Product Options

ILS Part Number	IR centroid wavelength	Radiant intensity IF = 350mA , tp = 10 ms§	Forward Voltage†	Radiance Angle	Relevant OSRAM LED Data Sheet
ILM-IP01-85SN-SC201-WIR200.	850nm	280mW/sr	3.7V – 4.3V	+/- 65° (130°)	SFH4170S
ILM-IP01-94SN-SC201-WIR200.	940nm	280mW/sr	3.4V – 4.0V	+/- 65° (130°)	SFH4180S

* 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 10ms pulse at 350mA pulse at 25 °c

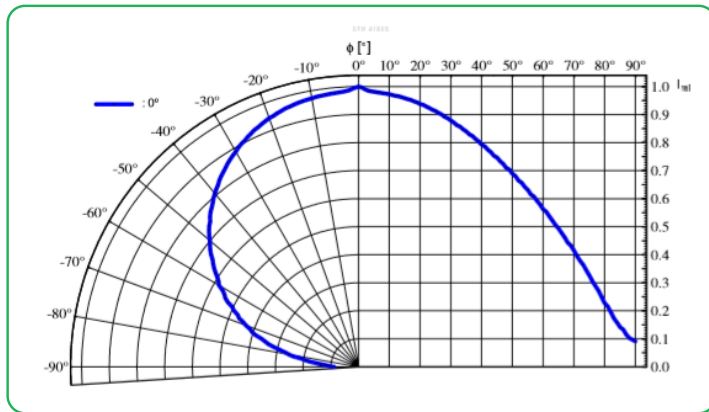
Minimum and Maximum Ratings

ILS Part Number	Operating Temperature at Tc-Point [°C]*	Storage Temperature [°C]*	Maximum Current per chip [mA]*	Surge Current per chip [mA]*	Reverse Voltage [Vdc]*
ILM-IP01-85SN-SC201-WIR200.	-40 ... 105 (°C)	-40 ... 105 (°C)	350mA	2A	12V
ILM-IP01-94SN-SC201-WIR200.	-40 ... 105 (°C)	-40 ... 105 (°C)	350mA	2A	12V

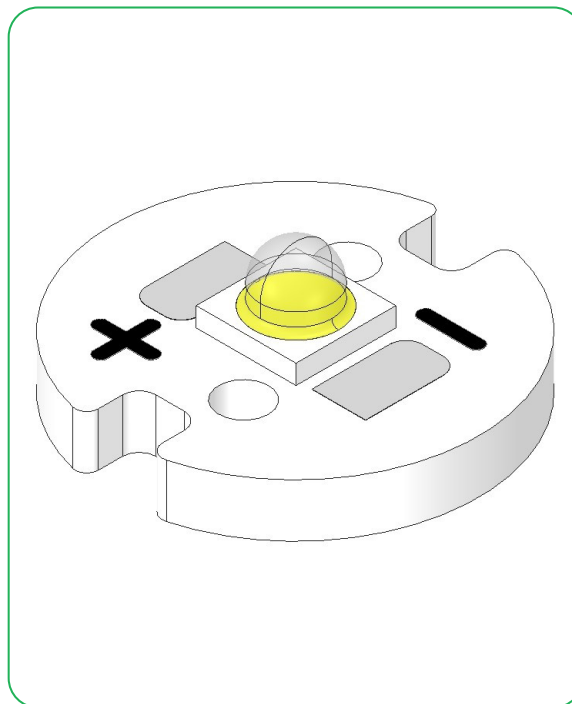
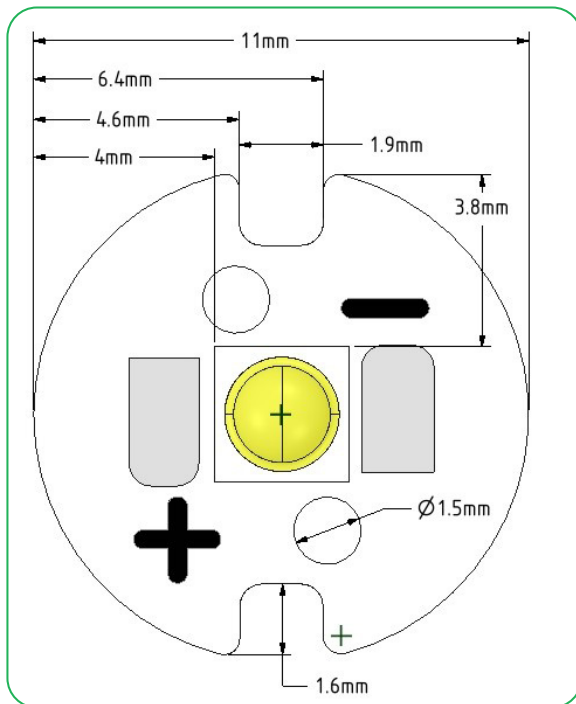
* Exceeding maximum ratings for operating and storage temperature will reduce expected life time or destroy the LED module.

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 with Cables (mm)



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

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 down lights, 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.



Ordering Code	Beam	Dimensions	Height	Family	FWHM	Material	Colour	Fastening
FP11055_LISA2-RS-PIN	S	10mm	6.8mm	LISA2	+/- 8°	PMMA	Black	glue, pin
FP16607_LISA3CSP-RS-PIN	S	10mm	7.2mm	LISA3	+/- 5.5°	PMMA	Black	glue

OSLON® P1616 1 Micro IR Heatsink Options

ILS has a series of Aluminium Alloy Heatsinks to be used with our standard range of PowerStars, PowerClusters and PowerLinear Engines. These Heatsinks 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. More versions will be introduced over the coming months and we are also happy to manufacture custom Heatsinks to your request.

ILS Product		No Heatsink, in free air
OSLON® P1616 Micro IR	350mA	

Key

- Operates under the recommended ILS junction temperature
- Operates under the recommended LED maximum junction temperature
- Not suitable for use
- Heatsink not designed for use with this product

OSLON® P1616 1 Micro IR Power Supply Options

ILS 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 MicroOSLON used.






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

To determine how many MicroOSLONs can be used with each LED driver you will need the following; 1) forward voltage of the MicroOSLON and 2) forward voltage of the LED Driver.

For example ILM-IP01-SC201-WIR200. forward voltage of 3.7 – 4.3V (this can be found under product options page 2) and IZC035-004F-4065C-SAL has an output voltage of 3-12V.

To determine the minimum number of MicroOSLONs this driver can run take the minimum output voltage of the Driver 3.00V and divide by the forward minimum voltage of the PowerStar $3.7 - 3.00 \div 3.7 = 0.81$ MicroOSLONs.

To determine the maximum number of MicroOSLONs this driver can run take the maximum forward voltage 12.00V and divide this by the maximum forward voltage of the PowerStar $4.3V - 12.00 \div 3.40 = 3.52$ MicroOSLONs.

ILS Driver Part Number	Rating (Watts)	Current (mA)	Forward Voltage	
IZC035-004F-4065C-SAL	4W	350mA	3-12V	
IZC035-008F-5065C-SA	8W	350mA	3-36V	
IZC035-017F-0067A-SA	17W	350mA	6-48V	
IZC035-018T-9500A-SX	18W	350mA	15-52V	
IZCVAR-040M-9020C-SAL	40W	350mA	2-100V	

Thermal Interface Material Options

ILS has produced a range of high-performance, cost effective Thermal Interface Materials to complement their standard products. The product fills the air pockets between the two surfaces, forming a continuous layer to conduct heat away from the LED to the Heatsink.

ILS currently supply TIM with double sided adhesive (see below). Should you require single sided adhesive or TIM without adhesive please get in touch.

Product	Double Sided Adhesive
Micro OSLON®	ILA-TIM-MICRO-2A

Other sizes are available, including customised parts

Assembly Information

- The mounting of the OSOLON® P1616 1 LED Micro IR has to be on a metal Heatsink.
- In order to optimise 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® P1616 Micro IR.
- The OSOLON® P1616 Micro IR, 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 ILS

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