DATASHEET

OL1S PowerStars employ high bright LEDs from Osram

OSRAM Opto Semiconductors

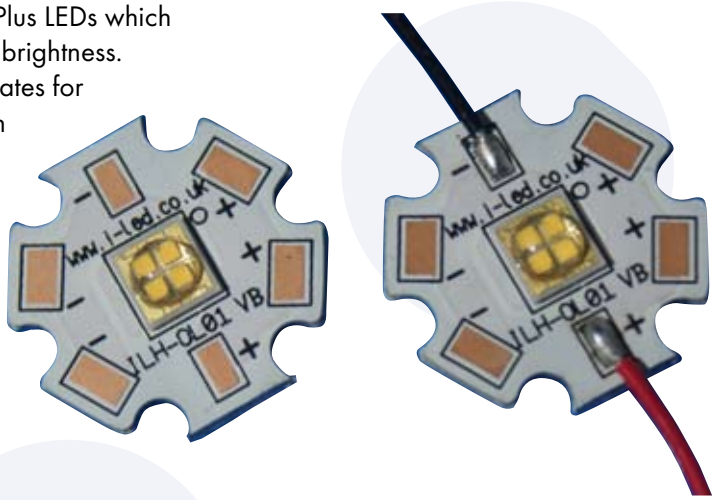
Intelligent LED Solutions

OL1S PowerStar

ILH-OL01-xxxx-SC201-xx series

Product Overview

Ostar1S PowerStars use the new Osram Ostar Lighting Plus LEDs which provides this product with superior lumen efficiency and brightness. OL1S PowerStars are constructed using aluminum substrates for optimal thermal management and they are supplied with and without connecting wires. ILS offer a range of low loss lenses to fit.



Applications

- General Lighting
- High Intensity Task Lighting
- Flood Lighting
- Downlighters
- Retail and Entertainment Lighting

Technical Features:

- Each OL1S PowerStar contains a 4 die Osram Ostar Lighting Plus LED
- The four LED die contained in the Osram Ostar are connected in series
- Colour Rendering Index (CRI) 80
- Up to 100,000 hours lifetime to 70% of original brightness (L70/B50)
- Mounting holes using a M3 screw allows easy installation
- Size (L x W x H) : 20mm x 20mm x 3.94 mm
- Available with or without 200mm connecting wires
- OL1S PowerStar can be linked together to produce longer chains.
- Current range 100mA to 700 mA (see parameter table for details)
- Compatible with LOST lenses (see lens table on page 4)

Important Information and Precautions

- The OL1S PowerStar's LED, when powered up, is very bright thus it is advised that you do NOT look directly at it. Turn the OL1S PowerStar away from you and do not shine into the eyes of others.
- OL1S PowerStar will overheat in operation if not attached to a suitable heat-sink. Over heating can cause failure or irreparable damage.
- Do not operate OL1S PowerStar with power supplies with unlimited current. Connection to constant voltage power supplies that are not current limited may cause the OL1S PowerStar to consume current above the specified maximum and cause failure or irreparable damage.
- OL1S PowerStar, when operated, can reach high temperatures thus there is risk of injury if they are touched.

LED Light for you powered by OSRAM CERTIFIED PARTNER

Intelligent LED Solutions, 3 Clerewater Place, Lower Way, Thatcham, Berkshire RG19 3RF UK
Telephone : +44 (0)1635 294606 Fax : +44 (0)1635 869200 Email: info@i-led.co.uk www.i-led.co.uk
A division of Intelligent Display Solutions Ltd

Product Options

ILS PART NUMBER	Colour	CCT*	LED Current 350 mA†					LED Current 700 mA†					Radiance Angle	Relevant LED Data
			Luminous Flux*			Voltage Range	LED Power (Typ)	Luminous Flux*			Voltage Range	LED Power (Typ)		
			Min	Typ	Max			Min	Typ	Max				
ILH-OL01-UL80-SC201.	Cool White	6000-6500K	350 lms	400 lms	520 lms	10.8 - 14.8 Vdc	4.5 W	602 lms	688 lms	894 lms	10.8 - 15.0 Vdc	9.5 W	140˚ /±70˚	LE UW S2LN
ILH-OL01-NU80-SC201.	Neutral White	4000K	290 lms	375 lms	450 lms	10.8 - 14.8 Vdc	4.5 W	479 lms	619 lms	743 lms	10.8 - 15.0 Vdc	9.5 W	140˚ /±70˚	LE CW S2LN
ILH-OL01-WM80-SC201.	Warm White	3000K	290 lms	375 lms	450 lms	10.8 - 14.8 Vdc	4.5 W	479 lms	619 lms	743 lms	10.8 - 15.0 Vdc	9.5 W	140˚ /±70˚	LE CW S2LN
ILH-OL01-HW80-SC201.	Hot White	2700K	290 lms	375 lms	450 lms	10.8 - 14.8 Vdc	4.5 W	479 lms	619 lms	743 lms	10.8 - 15.0 Vdc	9.5 W	140˚ /±70˚	LE CW S2LN

*Due to the special conditions of the manufacturing processes of LED 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.
† Brightness values are measured during a current pulse of typical 25 ms, with an internal reproducibility of +/- 8 % and an expanded uncertainty of +/- 11 % (acc. to GUM with an expansion factor of k = 3).

Part Number Ordering Information for OL1S PowerStars With and Without Wires

Colour	CCT Ref	Part Number no wires	Part Number with 200mm wires
Cool White	6000-6500K	ILH-OL01-UL80-SC201.	ILH-OL01-UL80-SC201-WIR200.
Neutral White	4000K	ILH-OL01-NU80-SC201.	ILH-OL01-NU80-SC201-WIR200.
Warm White	3000K	ILH-OL01-WM80-SC201.	ILH-OL01-WM80-SC201-WIR200.
Hot White	2700K	ILH-OL01-HW80-SC201.	ILH-OL01-HW80-SC201-WIR200.

Minimum and Maximum Ratings

ILS PART NUMBER	Operating Temperature at Tc-Point *	Storage Temperature*	Maximum Current	Surge current t ≤ 50 ms, D = 0.016, TS=25°C	Reverse Voltage
All ILH-OL01 Series	-20˚C to +75˚C	-30˚C to +85˚C	700mA	2,000mA	not allowed

* 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 a the Tc-Point according to EN60598-1 in a thermally constant status with a temperature sensor or a temperature sensitive label.

Typical Luminous Flux Estimates in Full Operation

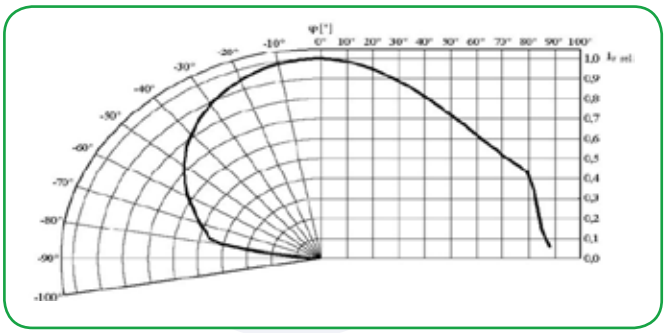
These notes are included here to guide the user in determining the luminous flux of the OL1S PowerStar in practical use. In preparing the tables below we have referred to the relevant Osram Ostar Light Plus LED data sheet.

The luminous output of OL1S PowerStar s is determined by the luminous output of the LEDs employed and the junction temperature of the LEDs used. LED light outputs in the table "Product Options" above are given with a LED junction temperature of 25˚C and the pulse of 25 mS duration. This is done because Osram measure and bin the Osram Ostar LEDs using that method of measurement. In practise the LEDs are run with direct current [DC] and the over prolonged periods and this causes the junction temperature to increase until it reaches a ultimate temperature. The ultimate temperature reached by the junction is determined by the effectiveness of the heat sink, ambient temperature and the current running through the LEDs. More information can be obtained about this by studying Osram application notes at http://catalog.osram-os.com/catalogue/catalogue.do;jsessionid=2B56DD66285C1D3171AA9050F4D37004?favOid=00000030002277b01e200b7&act=showBookmark. It is not possible in practice to measure the junction temperature but it is related to the current running though the LED and the temperature measured at the Tc point on the OL1S PowerStar when the system has reached thermal equilibrium. Please refer above for the maximum allowable operating temperature of the Tc point.

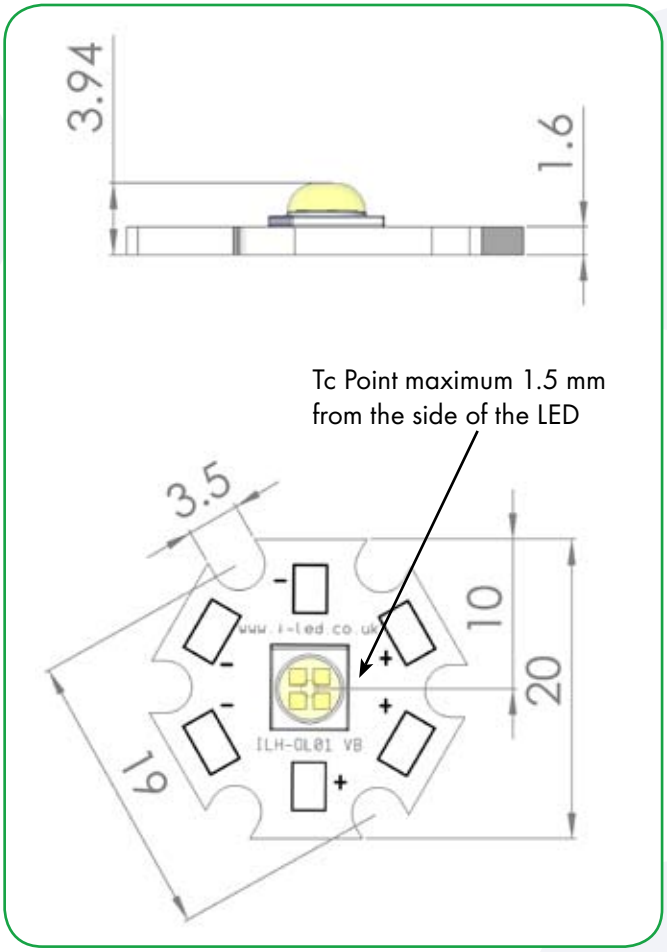
ILS presents the table below so you may know the estimated light output at different Tc point temperatures and LED currents. It should be used as a guide only as photometric measurements should be made on the lighting system to determine the actual light outputs.

LED Current	350 mA				500 mA				700 mA			
Tc Point Temperature	**40°C**	**50°C**	**60°C**	**70°C**	**40°C**	**50°C**	**60°C**	**70°C**	**40°C**	**50°C**	**60°C**	**70°C**
ILH-OL01-UL80-SC201.	392 lms	380 lms	376 lms	368 lms	529 lms	513 lms	508 lms	497 lms	667 lms	647 lms	633 lms	619 lms
ILH-OL01-NU80-SC201.	368 lms	356 lms	353 lms	345 lms	496 lms	481 lms	476 lms	466 lms	600 lms	582 lms	569 lms	557 lms
ILH-OL01-WM80-SC201.	368 lms	356 lms	353 lms	345 lms	496 lms	481 lms	476 lms	466 lms	600 lms	582 lms	569 lms	557 lms
ILH-OL01-HW80-SC201.	368 lms	356 lms	353 lms	345 lms	496 lms	481 lms	476 lms	466 lms	600 lms	582 lms	569 lms	557 lms

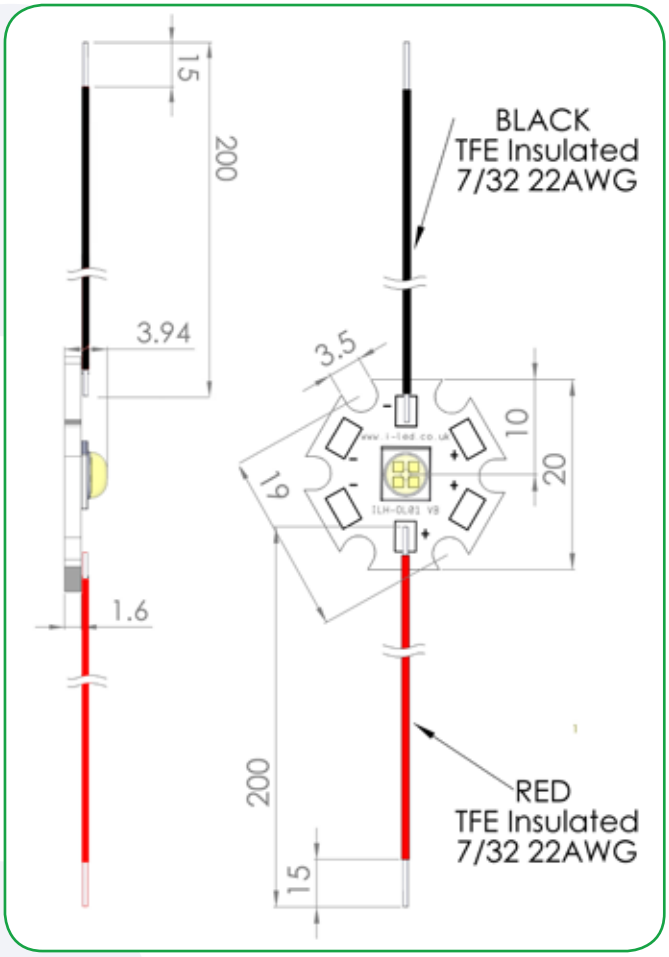
Radiation Pattern



Technical Drawing without cables (mm)



Technical Drawing with cables (mm)



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

OL1S PowerStars Lens Options

OL1S PowerStars have been designed to work with the LOST lens series

Name	Ordering Code	FWHM Angle
LOST REAL SPOT	FA11109_LOST-RS	approx. ±8°
LOST DIFFUSER	FA11110_LOST-D	approx. ±12°
LOST MEDIUM	FA11112_LOST-M	approx. ±15°
LOST MEDIUM 2	Coming soon	TBA
LOST OVAL	FA11115_LOST-REC	approx. ±18°approx. X approx. ±15°
LOST RECTANGULAR	FA11114_LOST-O-90	approx. ±18°approx. X approx. ±12°
LOST WIDE	Coming soon	TBA
LOST WW	Coming soon	TBA

OL1S PowerStar fitted with FA11109_LOST-RS ±8° lens

OL1S PowerStar fitted with FA11109_LOST-M ±15° lens

Assembly Information

- The mounting of the OL1S 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 OL1S PowerStar.
- The OL1S PowerStars, as manufactured, has no conformal coating and therefore offers 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.

Cont...

- 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.

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.

Intelligent LED Solutions, 3 Clerewater Place, Lower Way, Thatcham, Berkshire RG19 3RF UK
Telephone : +44 (0)1635 294606 Fax : +44 (0)1635 869200 Email: info@i-led.co.uk www.i-led.co.uk
A division of Intelligent Display Solutions Ltd