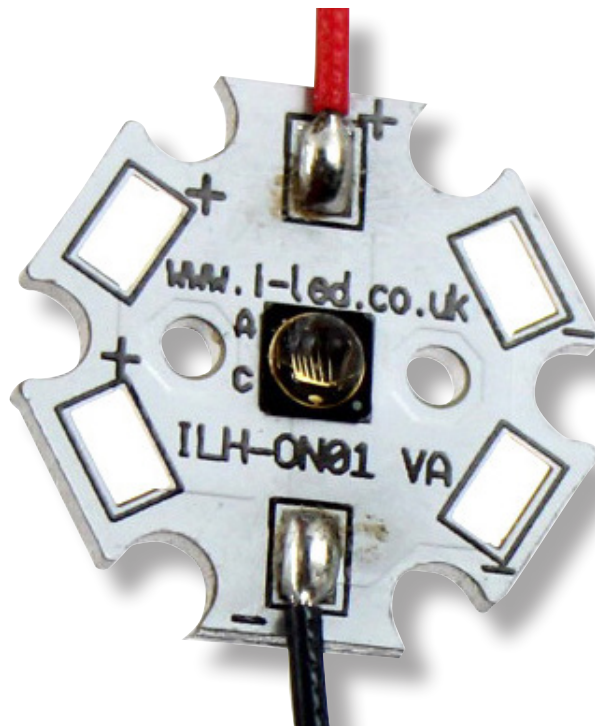


Stanley 1 IR PowerStar Far Red

ILH-xM01-FRED-SC201-WIR200.

At the heart of each PowerStar is a Stanley high power IR LED. Stanley 7 / 8M LEDs can be driven up to 1000mA while Stanleys latest power chip technology remains efficient even at the highest drive currents. A low thermal resistance of 5° C/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.



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APPLICATIONS

- » Driver monitoring
- » Time of flight sensors
- » Remote cameras
- » Surveillance cameras
- » ANPR
- » Machine Vision

TECHNICAL FEATURES

LED Family	Stanley 7M LEDs with primary 60 deg beam Stanley 8M LEDs with primary 120 deg beam
Lifetime	Up to 100,000 hours lifetime to 70% of original brightness
Mounting	Mounting holes using M3 screws allow easy installation
Dimensions (L x W x H)	7M (L x W x H) 20x 20 x 4.4 mm 8M (L x W x H) 20 x 20 x 3.7 mm
Wiring	Available with 200mm connecting wires
Secondary Optics	A secondary optic can be fitted. Suitable options on page 7 or visit our website for a full range
Heatsinks	Required over 350mA. Suitable options on page 7 or visit our our website for a full range
Power Supply	4 - 75W dimming and non dimming. Suitable options on page 7 or visit our website for a full range
Chain	Powerstars can be linked together to produce longer chains
Current Range	10 to 1000mA
Thermal Resistance	5K/W

PRODUCT OPTIONS

ILS Part Number	Colour	Radiant intensity (mW/sr)	Forward Voltage	Radiance Angle	Relevant Stanley LED Data
ILH-7M01-FRED-SC201-WIR200.	755nm	370mW/sr	1.4-2.4V	60° (+/- 30°)	FWR1107MS-TR
ILH-8M01-FRED-SC201-WIR200.	755nm	200W/sr	1.4-2.4V	120° (+/- 60°)	FWR1108MS-TR

Due to the special conditions of the manufacturing processes of LEDs, the typical data of technical parameters can only reflect overall 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 85 °C

MINIMUM AND MAXIMUM RATINGS

ILS Part Number	Operating Temperature at Tc-Point [° C]	Storage Temperature [° C]	Forward Current per chip [mA]	Reverse Voltage [Vdc]
ILH-7M01-FRED-SC201-WIR200.	-40 to +125°	-40 to +125°	10-1000mA	Not designed for reverse voltage
ILH-8M01-FRED-SC201-WIR200.	-40 to +125°	-40 to +125°	10-1000mA	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.

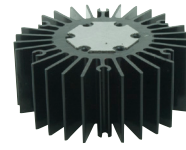
ACCESSORIES

Secondary Optics



LEDiL precision-engineered lenses 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 are released alongside the latest products from our LED suppliers. Suitable options on [page 7](#) or visit [our website](#) for a full range.

Heatsinks



ILS has a series of aluminium alloy heatsinks to be used with our standard range of PowerStars and PowerClusters. 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. Suitable options on [page 7](#) or visit [our website](#) for a full range.

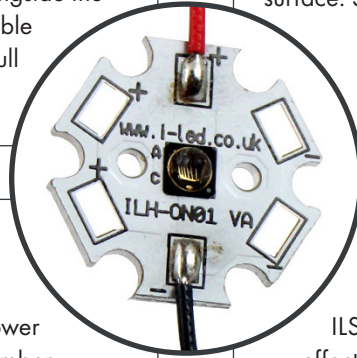
Power Supplies

ILS has a comprehensive range of standard power supplies. The table below shows the total number of ILS products each power supply can drive. Additional power supplies are being introduced so please call us or [check our website](#) for the latest offering. Suitable options on [page 8](#)

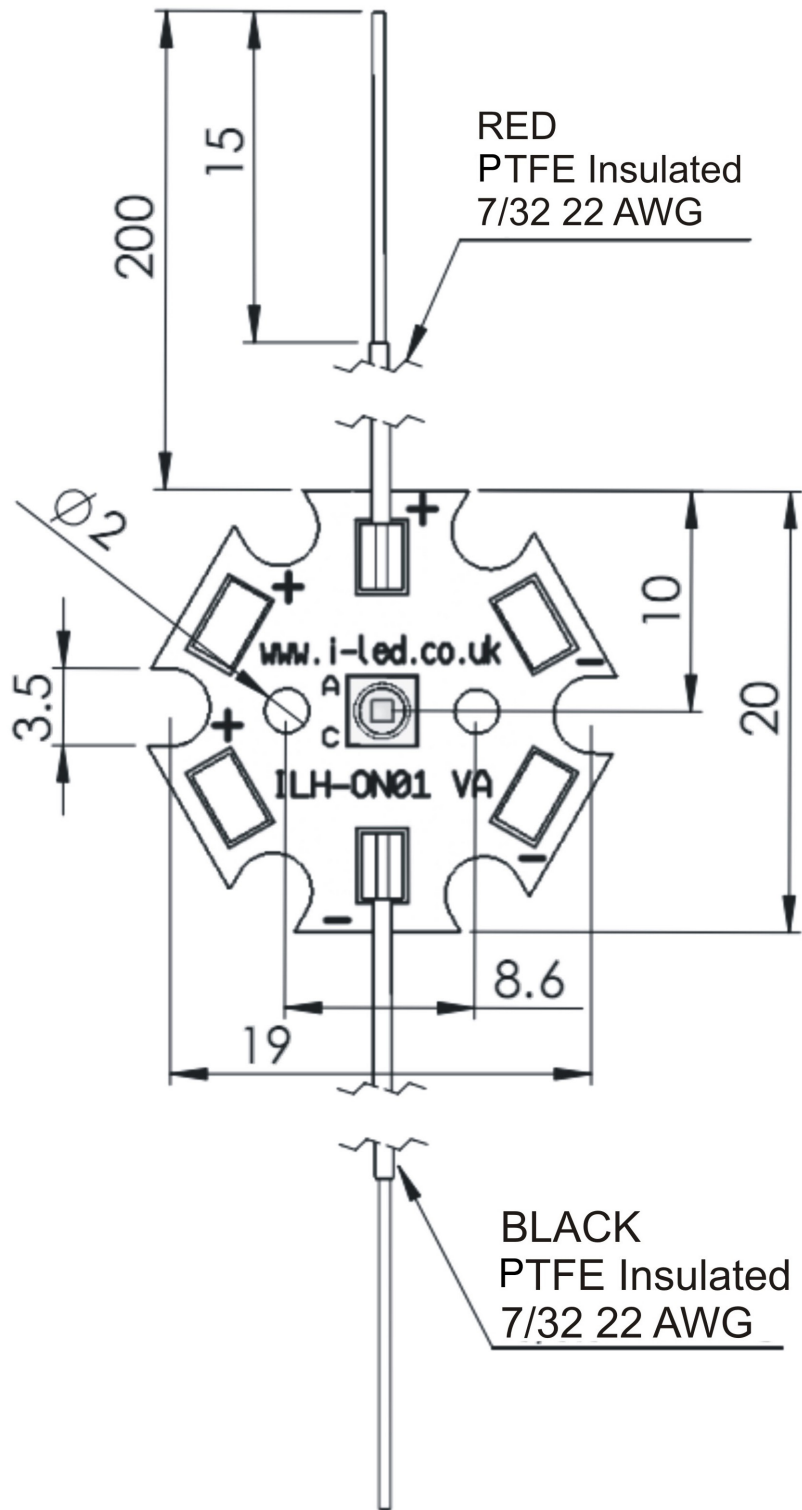


Thermal Interface Material (TIM)

ILS has 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 heatsink. ILS offers TIM in three options – double sided adhesive, single sided adhesive and non adhesive. Suitable options on [page 8](#) or visit [our website](#) for a full range.



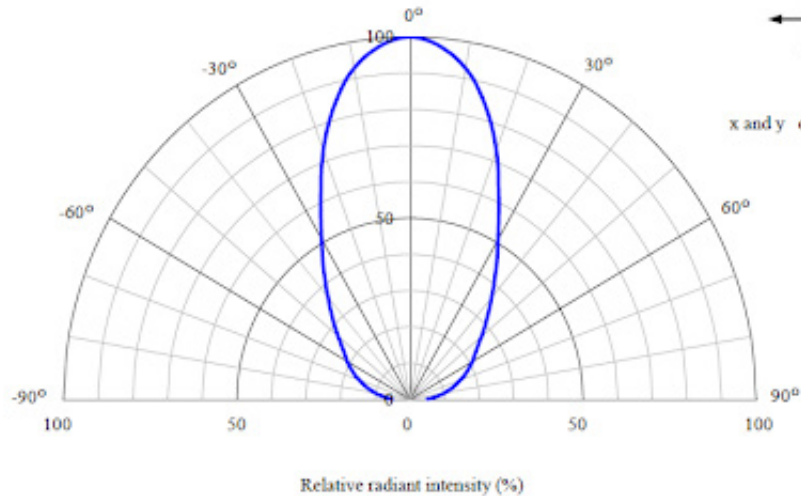
TECHNICAL DRAWINGS (MM)



RADIATION OF SINGLE LED

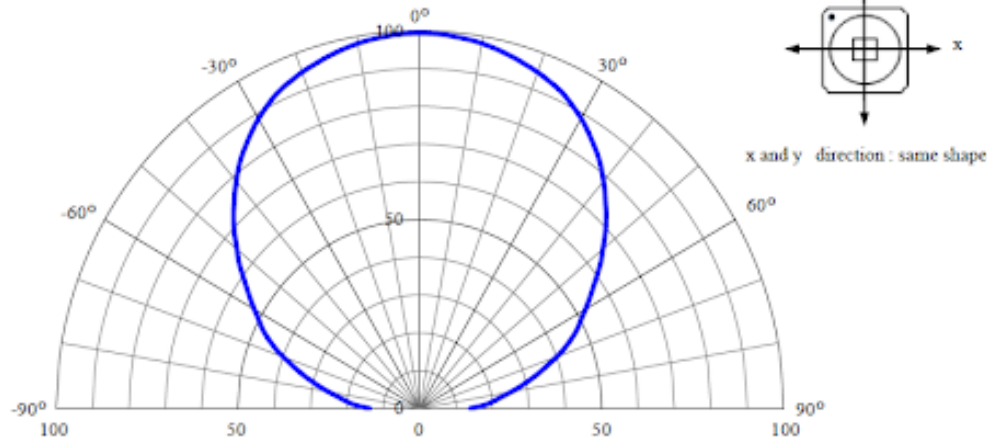
7M Powerstar

Spatial distribution
Conditions: $T_a = 25^{\circ}\text{C}$, $I_f = 1\text{A}$



8m Powerstar

Spatial distribution
Conditions: $T_a = 25^{\circ}\text{C}$, $I_f = 1\text{A}$




SECONDARY OPTICS OPTIONS





Part Number	Beam	Size	Height	Family	FWHM	Material	Colour	Fastening
FP16558_LISA3-RS-PIN	Spot	10mm	6.9mm	LISA3	7.5°	PMMA	Black	Pin+Glue
FP16559_LISA3-M-PIN	Medium	10mm	6.9mm	LISA3	25°	PMMA	Black	Pin+Glue
FP16560_LISA3-W-PIN	Wide	10mm	6.9mm	LISA3	35°	PMMA	Black	Pin+Glue
FP16561_LISA3-WW-PIN	Wide	10mm	6.9mm	LISA3	45°	PMMA	Black	Pin+Glue
FP16562_LISA3-WWW-PIN	Wide	10mm	6.9mm	LISA3	60°	PMMA	Black	Pin+Glue
FP16563_LISA3-O-PIN	Wide	10mm	6.9mm	LISA3	50x10°	PMMA	Black	Pin+Glue

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HEATSINK OPTIONS





ILS Product		Stanley 1 IR PowerStar		
		350mA	700mA	1000mA
No Heatsink, in free air		Yellow	Yellow	Red
ILA-HSINK-STAR-50X20MM		Green	Green	Green

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

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POWER SUPPLY OPTIONS

	ILS Driver Part Number	Rating	Current	LED Driver Voltage	Dimming
	IZCO70-004F-4065C-SAL	4W	700mA	2-6V	No
	IT FIT 4/220...240/400 CS I	4W	100-400mA	2.5-10V	No
	IT FIT 7/220...240/700 CS I	7W	350-700mA	2.5-11V	No
	OTi DALI 10/220...240/700 NFC I	10W	150-700mA	2.5-45V	DALI

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THERMAL INTERFACE MATERIAL OPTIONS

As the Eco 1 generates little heat, TIM is therefore not needed. Our double sided thermal tape would be suitable for fixing the Eco 1 to a fixture, heatsink and flat substrate.

Non Adhesive	Single Sided Adhesive	Double Sided Adhesive
ILA-TIM-STAR-OA	ILA-TIM-STAR-1A	ILA-TIM-STAR-2A

Other sizes are available, including customised parts

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ASSEMBLY INFORMATION

- » The mounting of the PowerStar has to be on a metal heatsink.
- » 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.

IMPORTANT INFORMATION AND PRECAUTIONS



The Powerstar, 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, when operated, can reach high temperatures thus there is risk of injury if they are touched.



Powerstars will overheat in operation if not attached to a suitable Heatsink. Overheating can cause failure or irreparable damage.



DO NOT HOT PLUG ON LED SIDE OF POWER SUPPLY.



Do not operate Powerstar 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.



DO NOT TOUCH or PUSH on the LED as this can cause irreparable damage.

SAFETY INFORMATION



The Powerstar 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 Eco 1.



The Powerstar, 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 datasheet 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.

FURTHER INFORMATION

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

If you require further assistance or have a specific or custom enquiries, please contact the ILS team via email or phone. Alternatively please visit our website for more product info and to see our full ranges.



Unit 2, Berkshire Business Centre,
Berkshire Drive, Thatcham,
Berkshire, RG19 4EW
+44 (0)1635 294606

info@i-led.co.uk

<https://i-led.co.uk>

ABOUT ILS

ILS offers a high level of technical skill, professionalism and commercial understanding to companies requiring market-leading optoelectronics solutions. Offering conceptual advice, electronics design and manufacturing capability, we use high quality production resources both in-house and in Asia, providing project support from prototyping to mass production. We also understand the need to provide cost effective solutions and we do so using high quality components to ensure that the end product's reliability and quality is uncompromised. Apart from LEDs in the visible spectrum, we have a wide range of Infrared, UV LEDs, UV tubes, and lasers.

ILS is a division of Intelligent Group Solutions Ltd (IGS) a well-established respected industry leading Optoelectronics solutions provider. Much of IGS' business comes from providing semi-custom or custom products both in component and sub-assembly form. This comes from providing design support and prototyping within the European market place. With the capability to deliver production displays to wherever in the world that the customer's manufacturing or assembly is being undertaken.

INTELLIGENT GROUP SOLUTIONS DIVISIONS

