

# Stanley xM 1 IR PowerStar

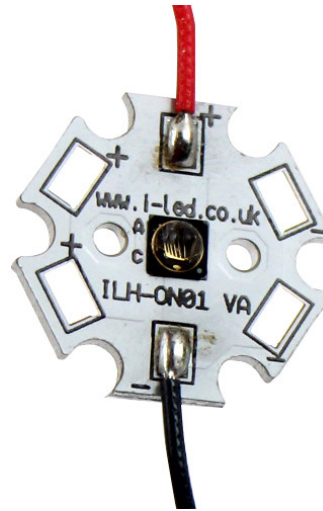
ILH-xMX1-xxxx-SC201-WIR200.

## Product Overview

At the heart of each PowerStar is a Stanley high power IR LED. Stanley 7 / 8M LEDs can be driven up to 1500mA and the 5 / 6M 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. 5M and 6M products have been manufactured to meet automotive regulation, 7M and 8M parts are designed primarily for consumer/ security applications.

## Applications

- 5M / 6M
  - Driver monitoring
  - Time of flight sensors
  - Machine vision
  - Vehicle monitoring
- 7M / 8M
  - Surveillance cameras
  - Remote cameras
  - Face recognition systems



## Technical Features

- Stanley 5M and 7M IR 1 LED PowerStars have a 60 degree silicone resin lens
- Stanley 6M and 8M IR 1 LED PowerStars have a 120 degree silicone resin lens
- Up to 100,000 Hour lifetime to 70% of original brightness
- Mounting holes using M3 screws allows easy installation
- Available with 200mm connecting wires
- A secondary Lens can be fitted – check options in Lens and Reflector section
- Suitable Heatsinks available – check options in Heatsink section
- Matching Power Supply available – check options in Power Supply section
- Suitable Thermal Interface Material available – check options in Thermal Interface Material section
- 5M/7M PowerStars Size (L x W x H): 20 x 20 x 4.4mm
- 6M/8M PowerStars Size (L x W x H): 20x 20 x3.89mm
- PowerStars can be linked together to produce longer chains

\*This datasheet should be read in conjunction with the relevant Stanley data for the LED used

### Important Information and Precautions

- The PowerStar's LED, when powered up, is very powerful. Although the light may appear off, however IR is invisible to the human eye and can still damage eyes. 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.
- PowerStar products will overheat in operation if not attached to a suitable Heatsink. Overheating can cause failure or irreparable damage.
- Do not operate PowerStar products with a power supply with unlimited current. Connection to constant voltage power supplies that are not current limited may cause the PowerStar product to consume current above the specified maximum and cause failure or irreparable damage.
- PowerStar products, when operated, can reach high temperatures thus there is a 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 Centriod Wavelength	Radiant intensity (mW/sr)	Forward Voltage	Radiance Angle	Relevant Stanley LED Data
ILH-5MA1-85NA-SC201-WIR200.	850nm	530mW/sr	1.1V to 2.1V	60° (+/- 30°)	MGN1105MS
ILH-6MA1-85NA-SC201-WIR200.	850nm	280mW/sr	1.1V to 2.1V	120° (+/- 60°)	MGN1106MS
ILH-5MA1-95NA-SC201-WIR200.	940nm	440mW/sr	1.1V to 2.1V	60° (+/- 30°)	MFN1105MS
ILH-6MA1-95NA-SC201-WIR200.	940nm	230mW/sr	1.1V to 2.1V	120° (+/- 60°)	MFN1106MS
ILH-7MC1-85NC-SC201-WIR200.	850nm	530mW/sr	1.1V to 2.1V	60° (+/- 30°)	MGN1107MS
ILH-8MC1-85NC-SC201-WIR200.	850nm	280mW/sr	1.1V to 2.1V	120° (+/- 60°)	MGN1108MS
ILH-7MC1-95NC-SC201-WIR200.	940nm	440mW/sr	1.1V to 2.1V	60° (+/- 30°)	MFN1107MS
ILH-8MC1-95NC-SC201-WIR200.	940nm	230mW/sr	1.1V to 2.1V	120° (+/- 60°)	MFN1108MS

\* 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 1000mA pulse at 25 °C

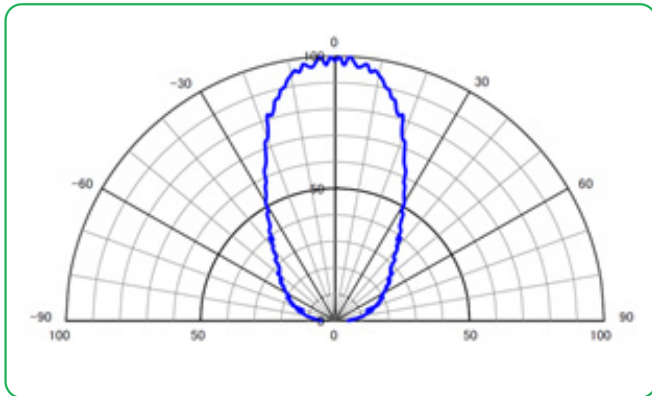
### Minimum and Maximum Ratings

ILS Part Number	Operating Temperature at Tc-Point [°C]*	Storage Temperature [°C]*	Forward Current per chip	Reverse Voltage [Vdc]*
ILH-5MA1-85NA-SC201-WIR200.	-40 ... 125 (°C)	-40 ... 125 (°C)	1000mA	Refer to LED Datasheet
ILH-6MA1-85NA-SC201-WIR200.	-40 ... 125 (°C)	-40 ... 125 (°C)	1000mA	Refer to LED Datasheet
ILH-5MA1-95NA-SC201-WIR200.	-40 ... 125 (°C)	-40 ... 125 (°C)	1000mA	Refer to LED Datasheet
ILH-6MA1-95NA-SC201-WIR200.	-40 ... 125 (°C)	-40 ... 125 (°C)	1000mA	Refer to LED Datasheet
ILH-7MC1-85NC-SC201-WIR200.	-40 ... 125 (°C)	-40 ... 125 (°C)	1500mA	Refer to LED Datasheet
ILH-8MC1-85NC-SC201-WIR200.	-40 ... 125 (°C)	-40 ... 125 (°C)	1500mA	Refer to LED Datasheet
ILH-7MC1-95NC-SC201-WIR200.	-40 ... 125 (°C)	-40 ... 125 (°C)	1500mA	Refer to LED Datasheet
ILH-8MC1-95NC-SC201-WIR200.	-40 ... 125 (°C)	-40 ... 125 (°C)	1500mA	Refer to LED Datasheet

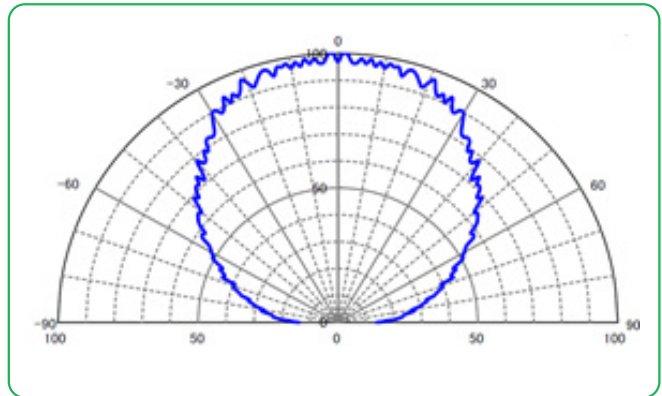
\* Exceeding maximum ratings for operating and storage temperature will reduce expected life time or destroy the LED module. Exceeding maximum ratings for operating voltage will cause hazardous overload and is likely to destroy the LED module. The temperature of the LED module must be measured at the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

Radiation of single LED

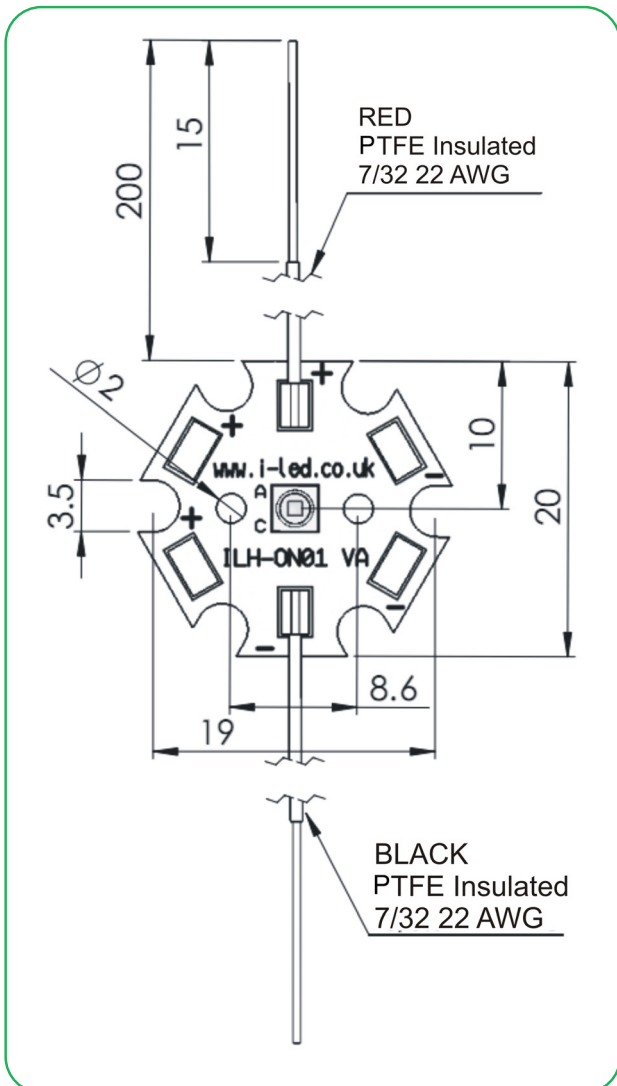
5M/7M



6M/8M



Technical Drawing (mm)



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

### Stanley xM 1 IR 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 there are no recommended LEDiL optics to be used with these PowerStars

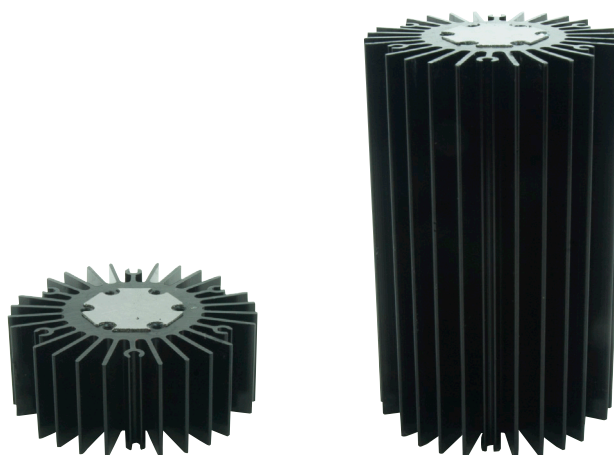
### Stanley xM 1 IR PowerStar Heatsink Options

ILS has a series of Aluminium Alloy Heatsinks to be used with our standard range of PowerStars, PowerClusters and PowerLinear Engines. Some Heatsinks are supplied as kits with fixing screws and Thermal Interface Material (TIM). ILS is continually expanding its Heatsink range and we are equally happy to manufacture custom Heatsinks upon your request.

ILS Product		No Heatsink, in free air	ILA-HSINK-STAR-50X20MM	ILA-HSINK-STAR-50X40MM	ILA-HSINK-STAR-50X60MM	ILA-HSINK-STAR-50X80MM	ILA-HSINK-STAR-50X80MM	ILA-HSINK-78X46X25MM
Stanley xM 1 IR PowerStar	350mA	Yellow	Green	Green	Green	Green	Green	Green
	700mA	Yellow	Green	Green	Green	Green	Green	Green
	1000mA	Red	Yellow	Green	Green	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



**Stanley xM 1 IR PowerStar Power Supply Options**

ILS has a comprehensive range of standard Power Supplies. Additional Power Supplies are frequently being introduced so please call us or check our website for the latest offering.

ILS Driver Part Number	Rating (Watts)	Current (mA)	Forward Voltage	
ILA-1CH-LED-TESTER-USB-01	1.75W	50-350mA	5V	
ILA-1CH-LED-TESTER-PREC-01	16W	10-700mA	2-20V	
IZC035-004F-4065C-SAL	4W	350mA	3-12V	
IZC070-004F-4065C-SAL	4W	700mA	2-6V	
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	13-26V	
IZC070-035F-0067C-SA	35W	700mA	9-48V	

ILS Driver Part Number	Rating (Watts)	Current (mA)	Forward Voltage	
IZC045-040A-9266C-SA	40W	450mA	30-89V	
IZC095-040M-9067C-SAL	40W	950mA	25-42V	
IZCVAR-040M-9020C-SAL	40W	350mA 500mA 600mA 700mA 900mA 1050mA	2-100V 2-80V 2-67V 2-57V 2-45V 2-40V	
IZC070-050A-9267C-SA	50W	700mA	24-72V	
IZC050-060F-9067C-QA	60W	500mA	40-110V	
IZC070-075A-9267C-SA	75W	700mA	54-108V	

### Stanley xM 1 IR PowerStar Thermal Interface Material Options

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.

Product	Non Adhesive	Single Sided Adhesive	Double Sided Adhesive
<b>Stanley xM 1 IR PowerStar</b>	ILA-TIM-STAR-OA	ILA-TIM-STAR-1A	ILA-TIM-STAR-2A

Other sizes are available, including customised parts.

## 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.

## 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 PowerStar.
- The PowerStar, 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.
- 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 datasheet can change due to technical innovations. Any such changes will be made without separate notification.