

# OSCONIQ® P3030 1 LED PowerStar Colours

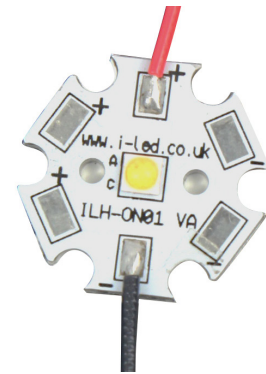
ILH-PO01-xxxx-SC221-WIR200.

## Product Overview

At the heart of each PowerStar is an OSCONIQ® P3030 Series LED from OSRAM Opto Semiconductors with more than one watt of optical power. This small package with its integrated lens allows superior compact arrangements of very high power, whilst also being available in 9 different colours. Due to its compact size and varieties of colours available this package is perfect for Horticultural Lighting, among other applications. PowerStars are compact, powerful LED light sources built on aluminium substrates for optimal thermal management. Available with 200mm wires as standard.

## Applications

- General lighting
- Decorative lighting
- Task lighting
- Spot lighting
- Downlighters
- Retail and entertainment lighting
- Horticultural Lighting



## Technical Features

- Up to 50,000 hours lifetime to 70% of original brightness
- PowerStars contain OSCONIQ® P3030 LED from OSRAM Opto Semiconductors with integral 120 degree or 130 degree silicone resin Lens
- Secondary Lens can be fitted – check suitable options in the Lens and Reflectors section
- Suitable Heatsinks available – check suitable options in the Heatsink section
- Matching Power Supply available - check suitable options in the Power Supply section
- Mounting holes using M3 screws allow easy installation
- Available with 200mm connecting wires
- Size (LxWxH): 20x20x3.23mm
- PowerStars can be linked together to produce longer chains
- Current range 100mA to 1300mA

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

### Important Information and Precautions

- PowerStars, when powered up, are very bright. Thus it is advised that you do not look directly at them. Turn the PowerStar product 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.
- When operated, PowerStar products can reach, 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	Colour	Typical Wattage at 350mA §	Forward Voltage	Flux † at 350mA	Radiance Angle	Relevant OSRAM LED Data Sheet
ILH-PO01-DEBL-SC221-WIR200.	Deep Blue (455nm)	1.0W	2.75V to 3.25V	660mW	130° (+/- 65°)	GDQSSPA1.14
ILH-PO01-BLUE-SC221-WIR200.	Blue (470nm)	1.0W	2.70V to 3.20V	33 lm	120° (+/- 60°)	GBQSSPA1.13
ILH-PO01-VEGR-SC221-WIR200.	Verde Green (505nm)	1.0W	2.70V to 3.00V	61 lm	130° (+/- 65°)	GVQSSPA1.13
ILH-PO01-TRGR-SC221-WIR200.	True Green (528nm)	0.95W	2.40V to 3.10V	140 lm	120° (+/- 60°)	GTQSSPA1.13
ILH-PO01-YELL-SC221-WIR200.	Yellow (590nm)	1.0W	2.70V to 3.20V	89.2 lm	120° (+/- 60°)	GYQSSPA1.13
ILH-PO01-RDOR-SC221-WIR200.	Red Orange (617nm)	0.76W	1.80V to 2.40V	89.2 lm	130° (+/- 65°)	GAQSSPA1.23
ILH-PO01-RED1-SC221-WIR200.	Red (625nm)	0.76W	1.90V to 2.50V	71 lm	130° (+/- 65°)	GRQSSPA1.23
ILH-PO01-HYRE-SC221-WIR200.	Hyper Red (656nm)	0.73W	1.80V to 2.60V	400mW	130° (+/- 65°)	GHQSSPA1.24
ILH-PO01-MINT-SC221-WIR200.	Mint White	1.0W	2.70V to 3.20V	164 lm	130° (+/- 65°)	GWQSSPA1.WB

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%

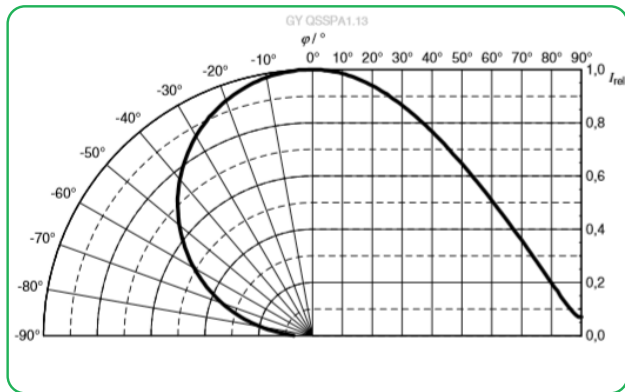
† Measured with 350mA pulse at 25 °C

### Minimum and Maximum Ratings

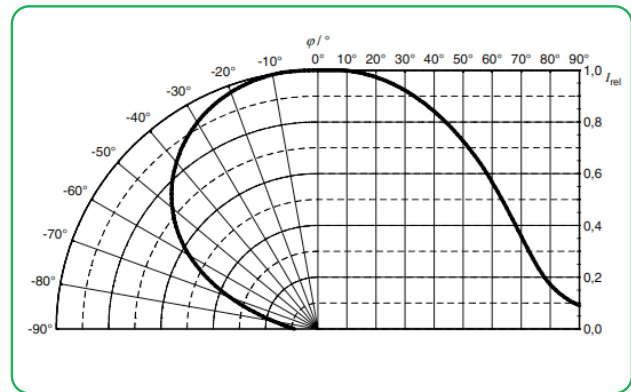
ILS Part Number	Operating Temperature at Tc-Point [ °C ]*	Storage Temperature [ °C ]*	Forward Current per chip	Reverse Voltage [Vdc]*
ILH-PO01-DEBL-SC221-WIR200.	-40 ... 125 (°C)	-40 ... 125 (°C)	100mA ... 1300mA	Not designed for reverse operation
ILH-PO01-BLUE-SC221-WIR200.	-40 ... 125 (°C)	-40 ... 125 (°C)	100mA ... 1300mA	Not designed for reverse operation
ILH-PO01-VEGR-SC221-WIR200.	-40 ... 125 (°C)	-40 ... 125 (°C)	100mA ... 1300mA	Not designed for reverse operation
ILH-PO01-TRGR-SC221-WIR200.	-40 ... 125 (°C)	-40 ... 125 (°C)	100mA ... 1300mA	Not designed for reverse operation
ILH-PO01-YELL-SC221-WIR200.	-40 ... 125 (°C)	-40 ... 125 (°C)	100mA ... 1300mA	Not designed for reverse operation
ILH-PO01-RDOR-SC221-WIR200.	-40 ... 125 (°C)	-40 ... 125 (°C)	100mA ... 1000mA	Not designed for reverse operation
ILH-PO01-RED1-SC221-WIR200.	-40 ... 125 (°C)	-40 ... 125 (°C)	100mA ... 1000mA	Not designed for reverse operation
ILH-PO01-HYRE-SC221-WIR200.	-40 ... 125 (°C)	-40 ... 125 (°C)	100mA ... 1000mA	Not designed for reverse operation
ILH-PO01-MINT-SC221-WIR200.	-40 ... 125 (°C)	-40 ... 125 (°C)	100mA ... 1300mA	Not designed for reverse operation

\* 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.

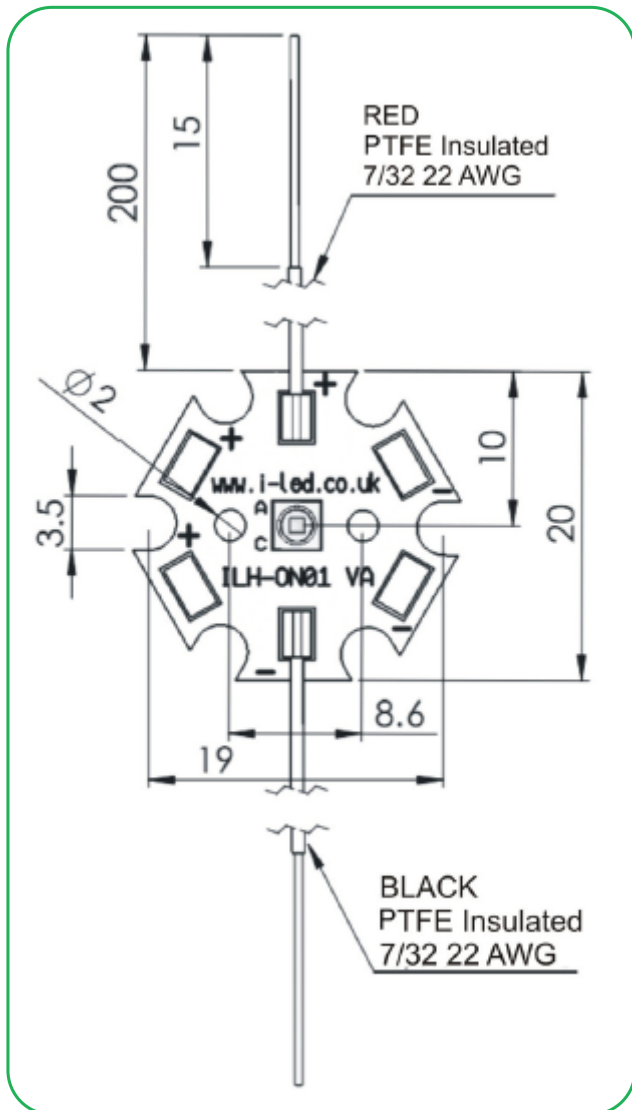
**Radiation of single LED**  
**120°**



**130°**



**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.



## Lenses

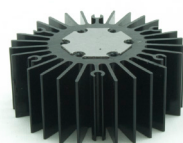
Ordering Code	Beam	Dimensions	Height	Family	FWHM	Material	Colour	Fastening
FP11957_LISA2-WWW-PIN	W	10mm	6.7mm	Lisa2	+/-40	PMMA	Black	Glue, Pin
FP16558_LISA3-RS-PIN	S	10mm	7.9mm	Lisa3	+/-7.5	PMMA	Black	Glue
FP16559_LISA3-M-PIN	M	10mm	7.9mm	Lisa3	+/-12.5	PMMA	Black	Glue
FP16560_LISA3-M-PIN	W	10mm	7.0mm	Lisa3	+/-17.5	PMMA	Black	Pin
FP16561_LISA3-WW-PIN	WW	10mm	7.0mm	Lisa3	+/-22.5	PMMA	Black	Pin
FP16562_LISA3-WWW-PIN	WWW	10mm	7.0mm	Lisa3	+/-30	PMMA	Black	Pin
FP16563_LISA3-O-PIN	O	10mm	7.9mm	Lisa3	+/- 16.5	PMMA	Black	Glue
CA12374_TINA2-RS	RS	16mm	9.5mm	Tina 2	+/- 7	PMMA	Black	Tape, Pin
CA12375_TINA2-D	D	16mm	9.5mm	Tina 2	+/- 8	PMMA	Black	Tape, Pin
CA12376_TINA2-SS	SS	16mm	9.3mm	Tina 2	+/- 10	PMMA	Black	Tape, Pin
CA12377_TINA2-M	M	16mm	9.5mm	Tina 2	+/- 15	PMMA	Black	Tape, Pin

## 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. More versions will be introduced over the coming months and we are also happy to manufacture custom Heatsinks to your request.

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

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-70X70X55MM.	ILA-HSINK-78-46X25MM.
OSCONIQ P3030 PowerStars	350mA							
	700mA							
	1000mA							



**OSCONIQ P3030 1 LED PowerStar 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 PowerStar used.

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

To determine how many PowerStars can be used with each LED driver you will need the following. Forward voltage of the PowerStar and forward voltage of the LED Driver.

For example ILH-PO01-DEBL-SC221-WIR200. forward voltage of 2.75V to 3.25V (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 PowerStars this driver can run take the minimum output voltage of the Driver 3.00V and divide by the forward minimum voltage of the PowerStar  $2.75 - 3.00 \div 2.75 = 1.09$  PowerStars. If the sum delivers a figure such as 2.3 or 7.7 when working out the minimum, you will need to round up the figure.

To determine the maximum number of PowerStars this driver can run take the maximum forward voltage 12.00V and divide this by the maximum forward voltage of the PowerStar  $3.25V - 12.00 \div 3.25 = 3.69$  PowerStars. If the sum delivers a figure such as 2.3 or 7.7 when working out the maximum, you will need to round the figure down.

ILS Driver Part Number	Rating (Watts)	Current (mA)	Output Volts	
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	6-26V	
IZC035-035F-9067C-QA	35W	350mA	40-80V	

ILS Driver Part Number	Rating (Watts)	Current (mA)	Output Volts	
IZC070-035F-0067C-SA	35W	700mA	9-48V	
IZC105-035F-9067C-QA	35W	1050mA	16-32V	
IZC045-040A-9266C-SA	40W	450mA	30-89V	
IZC095-040M-9067C-SAL	40W	950mA	25.2-42V	
IZCVAR-040M-9020C-SAL	40W	350mA, 500mA, 600mA, 700mA, 900mA, 1050mA	40 - 100V	
IZC105-040A-0067C-QA	40W	1050mA	24-40V	
IZC070-050A-9267C-SA	50W	700mA	24-72V	
IZC050-060F-9067C-QA	60W	500mA	40-110V	
IZC105-060F-9067C-QA	60W	1050mA	30-60V	
IZC070-075A-9267C-SA	75W	700mA	54-108V	

## Thermal Interface Material Options

ILS has 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
Star	ILA-TIM-STAR-0A	ILA-TIM-STAR-1A	ILA-TIM-STAR-2A.

Other sizes are available, including customised parts

## Assembly Information

- The mounting of the OSCONIQ® P3030 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 OSCONIQ® P3030 PowerStar.
- The OSCONIQ® P3030 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.

# www.i-led.co.uk

## 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.