



OSRAM OSTAR® Projection Compact 1 PowerStars

ILH-PC01-xxxx-SC221-WIR200.

At the heart of each PowerStar is an OSRAM OSTAR® Projection Compact LED from OSRAM Opto Semiconductors. OSRAM OSTAR® Projection Compact can be driven up to 3000mA (Red LED up to 2500mA) while OSRAM's latest power chip technology remains efficient even at the highest drive currents. A low thermal resistance of 3.4K/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.



CONTENTS

Applications	page 2	Lens and Reflector Options	page 6
Technical Features	page 2	Heatsink Options	page 7
Product Options	page 3	Power Supply Options	page 8-9
Min and Max Value Table	page 3	Thermal Interface Material Options	page 9
Technical Drawings	page 5	Important Information and Precautions	page 9
LED Radiation Diagram	page 6	Safety Information	page 10

APPLICATIONS INCLUDE

- » General lighting
- » Decorative lighting
- » Garden lighting
- » Spot lighting
- » Mood lighting
- » Stage lighting
- » Entertainment lighting

TECHNICAL FEATURES

LED/s	PowerStars contain OSRAM OSTAR® Projection Compact LEDs with 120° lambertian lens
Lifetime	Up to 100,000 hour lifetime to 70% of original brightness
Mounting	Mounting holes using M3 screws allows easy installation
Dimensions (L x W x H)	20 x 20 x 2.31mm
Wiring	Available with 200mm connecting wires
Lenses and Reflectors	Secondary Lens can be fitted. Suitable options. Suitable options on page 6 or visit our website for a full range.
Heatsinks	Required over 350mA. Suitable options on page 8 or visit our website for a full range
Power Supply	4 - 75W Dimming and non dimming. Suitable options on page 9 or visit our website for a full range.
Chain	Yes. PowerStars can be linked together to produce longer chains.
Current Range	40 to 3000mA Green, Blue, White and Yellow PowerStars 40 to 2500mA Red PowerStar
Thermal Resistance	3.4K/W

PRODUCT OPTIONS

ILS Part Number	Colour	Dominant Wavelength*	Typical Power W § At 1000mA	Forward Voltage	Flux † at 1000mA	Radiance Angle	Relevant OSRAM LED Data
ILH-PC01-DEBL-SC221-WIR200.	Deep Blue	455nm	3.0W	2.75-3.5V	900mW	120° (±60°)	KB CSLNM1.14
ILH-PC01-PUGR-SC221-WIR200.	Pure Green	x=0.322 y=0.639	3.0W	2.75-3.5V	400lm	120° (±60°)	KP CSLNM1.F1
ILH-PC01-TRGR-SC221-WIR200.	True Green	525nm	3.5W	2.8-4.1V	180lm	120° (±60°)	KT CSLNM1.13
ILH-PC01-CNYL-SC221-WIR200.	Converted Yellow	x=0.57 y=0.42	3.0W	2.75-3.25V	140lm	120° (±60°)	KY CSLNM1.FY
ILH-PC01-RED1-SC221-WIR200.	Red	617nm	2.35W	1.95-2.55V	112lm	120° (±60°)	KR CSLNM1.23
ILH-PC01-ULWH-SC221-WIR200.	Ultra White	6500K	3.0W	2.75-3.5V	280lm	120° (±60°)	KW CSLNM1.TG

* 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 at 25 °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-PC01-DEBL-SC221-WIR200.	-40°C to +125°C	-40°C to +125°C	3000mA	not designed for reverse voltage
ILH-PC01-PUGR-SC221-WIR200.	-40°C to +125°C	-40°C to +125°C	3000mA	not designed for reverse voltage
ILH-PC01-TRGR-SC221-WIR200.	-40°C to +125°C	-40°C to +125°C	3000mA	not designed for reverse voltage
ILH-PC01-CNYL-SC221-WIR200.	-40°C to +125°C	-40°C to +125°C	3000mA	not designed for reverse voltage
ILH-PC01-RED1-SC221-WIR200.	-40°C to +125°C	-40°C to +125°C	2500mA	not designed for reverse voltage
ILH-PC01-ULWH-SC221-WIR200.	-40°C to +125°C	-40°C to +125°C	3000mA	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.

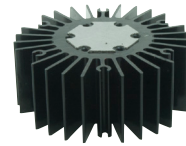
ACCESSORIES

Lenses and Reflectors

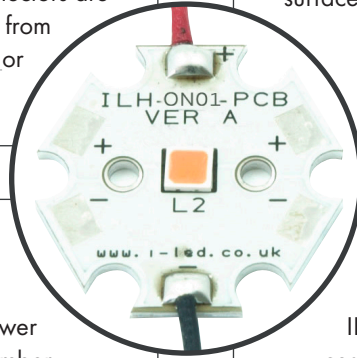


LEDiL precision-engineered Lenses and Reflectors allow for rapid deployment of all types of light fixtures, including street lights, wall-wash, high-bay, sconces, emergency beacons, parking garage/low-bay, MR and AR downlights, and dock lights. Precision-engineered for maximum efficiency and durability, LEDiL Lenses and Reflectors are released alongside the latest product releases from our LED suppliers. Suitable options on [page 6](#) 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](#)

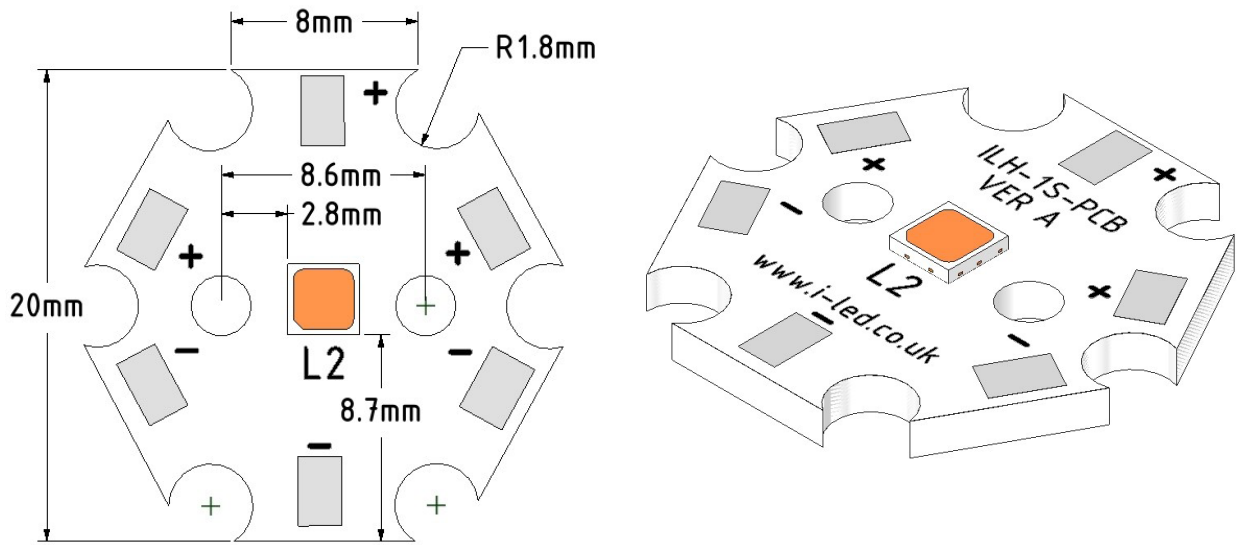


Thermal Interface Material (TIM)

ILS have 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 offer our TIM in three options – double sided adhesive, single sided adhesive and non adhesive. Suitable options on [page 9](#) or visit [our website](#) for a full range.

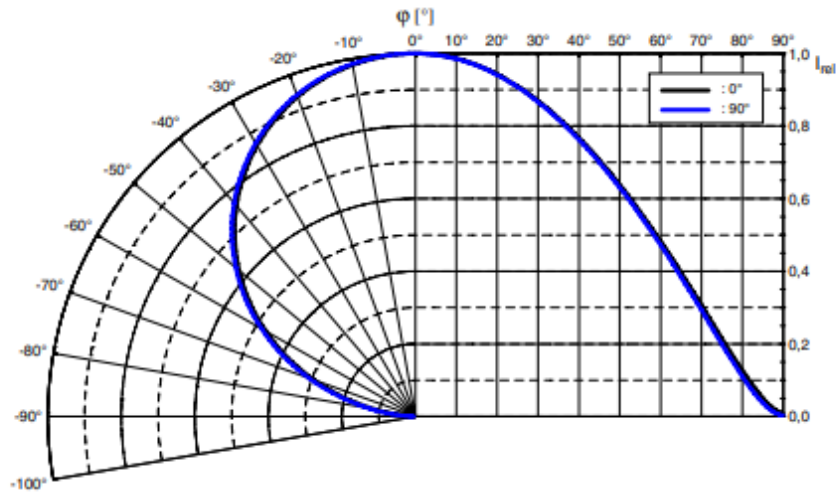


TECHNICAL DRAWINGS (MM)



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

RADIATION OF SINGLE LED



OSRAM OSTAR® PROJECTION COMPACT 1 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.

LENSES

Ordering Code	Beam	Diameter	Height	Family	FWHM	Material	Colour	Fastening
CA12375_TINA2-D	Diffused Spot	16mm	9.5mm	TINA2	16°	Lens PMMA Holder PC	Clear	Pin and Tape

OSRAM OSTAR® PROJECTION COMPACT 1 POWERSTAR HEATSINK OPTIONS

PRODUCT DATASHEET » ILH-OC01-xxxx-SC221-WIR200.

ILS Product		OSRAM OSTAR® Projection Compact 1 POWERSTAR		
		1000mA	1500mA	2500mA
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-78X46X25MM				



















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

[Click here to visit our website for our latest range](#)

OSRAM OSTAR® PROJECTION COMPACT 1 POWERSTAR POWER SUPPLY OPTIONS

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

	ILS Driver Part Number	Rating	Current	Output Voltage	Dimming
	IZC035-004F-4065C-SAL	4W	350mA	3-12V	None
	IZC070-004F-4065C-SAL	4W	700mA	2-6V	None
	IZC035-008F-5065C-SA	8W	350mA	3-36V	None
	IZC070-008F-5065C-SA	8W	700mA	3-12V	None
	OTi-DALI-10/220-240/700-NFC	10W	150-700mA	2.5-45V	DALI
	OTE-10/220-240/700-PC	10W	700mA	7-14V	Phase Cut Dimming
	OTE-13/220-240/350-PC	13W	350mA	18-38V	Phase Cut Dimming
	OTi-DALI-15/220...240/1A0-LT2-NFC	15W	150-1050mA	7.5-54V	DALI
	OT-FIT-15/220-240/500-LT2-LP	15W	150-500mA	15-50V	None
	IZC035-018T-9500A-SX	18W	350mA	15-52V	Mains Dimming
	IZC050-018T-9500A-SX	18W	500mA	9-36V	Mains Dimming
	IZC070-018T-9500A-SX	18W	700mA	6-26V	Mains Dimming
	OT-20/170-240/800-1DIMLT2-G1-CE	20W	200-1050mA	10-38V	ASTRO Dimming
	OT-FIT-25/220-240/700-LT2-LP	25W	300-700mA	15-50V	None
	OTi-DALI-35/220...240/1A0-LT2-NFC	35W	350-1050mA	15-54V	DALI
	IZCVAR-040M-9020C-SAL	40W	350-1050mA	350mA 2-100V, 500mA 2-80V, 600mA 2-67V, 700mA 2-57V, 900mA 2-45V, 1050mA 2-40V	0-10V, PWM and Resistance
	OT-FIT-40/220-240/1A0-LT2-LP	40W	500-1050mA	15-50V	None
	OT-50/120-277/1A2-2DIMLT2-P	50W	600-1250mA	20-55V	1-10V

[Click here to visit our website for our latest range](#)

THERMAL INTERFACE MATERIAL OPTIONS

Product	Non Adhesive	Single Sided Adhesive	Double Sided Adhesive
OSRAM OSTAR® Projection Compact 1 POWERSTAR	ILA-TIM-STAR-0A	ILA-TIM-STAR-1A	ILA-TIM-STAR-2A.

Other sizes are available, including customised parts

[Click here to visit our website for our latest range](#)

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's LED, 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. Over heating can cause failure or irreparable damage.



DO NOT HOT PLUG ON LED SIDE OF POWER SUPPLY.



Do not operate PowerStars 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 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 OSRAM OSTAR® Projection Compact 1 POWERSTAR



The OSRAM OSTAR® Projection Compact 1 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 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.

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 an 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
www.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

