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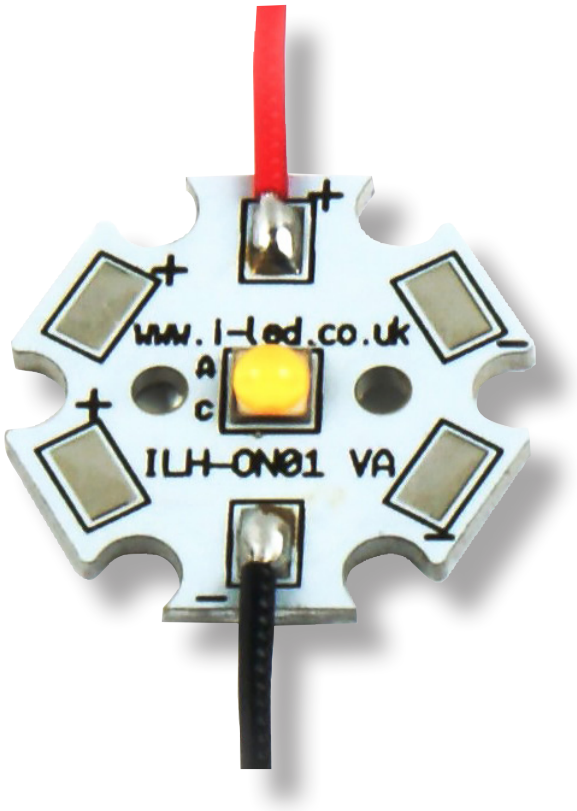
OSLON® Square Horti White PowerStar

IHH-OG01-HORW-SC221-WIR200.

At the heart of each PowerStar is an OSLON® Square Horti White LED. The OSLON® Square Horti White enables luminaires to maximize system level photon efficacy performance for horticulture applications.



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PRODUCT OVERVIEW

At the heart of each PowerStar is an OSLON® Sqaure Horti White LED. THe OSLON® Square Horti White enables uminaires to maximize system level photon efficacy performance for horticulture applications. Unlike conventional white LEDs, OSRAM's Horti White LEDs utilizes a customized phosphor solution designed to facilitate the increase of non-converted red photons to deliver superior fixture level efficacy. OSLON® Squares can be driven up to 1800mA while OSRAM's latest power chip technology remains efficient even at the highest drive currents. A low thermal resistance of 1.7K/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.

APPLICATIONS INCLUDE

- » Horticultural lighting
- » General lighting
- » Environmental Chambers
- » Propagators
- » Vertical farms
- » Indoor farming
- » Schools and universities
- » Research institutes

SPECIFICATIONS

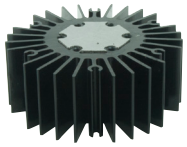
LED/s	OSLON® Square Horti White
Lifetime	Up to 100,000 Hour lifetime to 70% of original brightness
Mounting	Mounting holes using M3 screws allows easy installation
Dimensions (L x W x H)	20 x 20 x 3.62 mm
Wiring	Available with 200mm connecting wires
Lenses and Reflectors	Integral 120 degree silicone resin lens. A secondary Lens can be fitted. Suitable options on page 6 or visit our website for a full range.
Heatsinks	Required over 700mA. Suitable options on page 8 or visit our website for a full range
Power Supply	Suitable options on page 7 or visit our website for a full range.
Chain	Yes. PowerStars can be linked together to produce longer chains
Current Range	200-1800 mA
Thermal	Suitable options on page 7 or visit our website for a full range.

ACCESSORIES

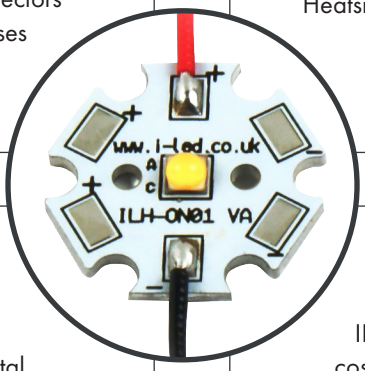
Lenses and Reflectors

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. Visit our website for a full range.

Heatsinks



ILS has a series of Aluminium Alloy Heatsinks to be used with our standard range of PowerFlex.These Heatsinks are supplied with end caps, mounting brackets and 2 diffusers - clear or diffused. ILS is continually expanding its Heatsink range and we are equally happy to manufacture custom Heatsinks upon your request. Suitable options on page 8 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 9

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. These strips have 3M thermal tape already attached for perfect thermal bonding.

PRODUCT OPTIONS

ILS Part Number	Colour	Colour Temp* (Degrees Kelvin)	Typical Wattage at 700mA §	Forward Voltage	Luminous Flux † at 700mA	Radiance Angle	Relevant OSRAM LED Data
IHH-OG01-HORW-SC221-WIR200.	Horti White	>8000K	2.03W	2.7V to 3.2V	960mW	120° (+/- 60 °)	GW CSSRM3. HW-xxxx-H1H2-1

*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 700mA pulse at 85˚C

MICROMOLES

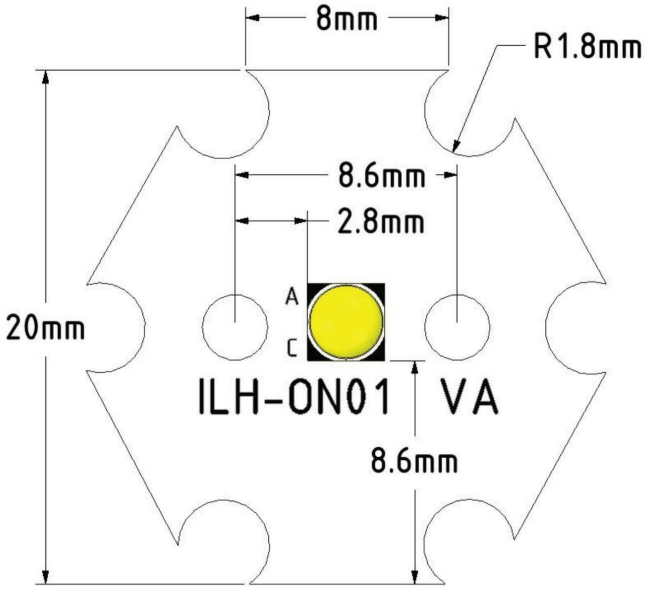
ILS Part Number	[µmol/s]		DIN5031-10 400-700nm YPF [µmol/s]	McCree	
	PAR 400-700nm	Photon Flux 240-800nm		400-700nm	300-800nm
IHH-OG01-HORW-SC221-WIR200.	4.26umol/s	4.32umol/s	2.53 YPF umol/s	3.57 YPF umol/s	3.58 YPF umol/s

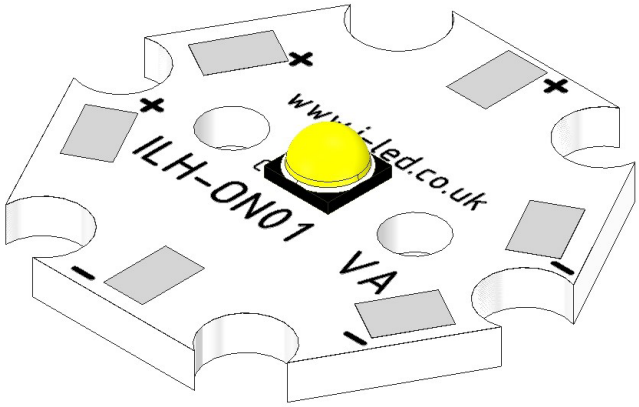
MINIMUM AND MAXIMUM RATINGS

ILS Part Number	Operating Temperature at Tc-Point [˚C]*	Storage Temperature [˚C]*	Forward Current per chip [mA]*	Reverse Voltage [Vdc]*
IHH-OG01-HORW-SC221-WIR200.	-40 ... 125 (°C)	–40 ... 125 (°C)	200mA ... 1800mA	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 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.

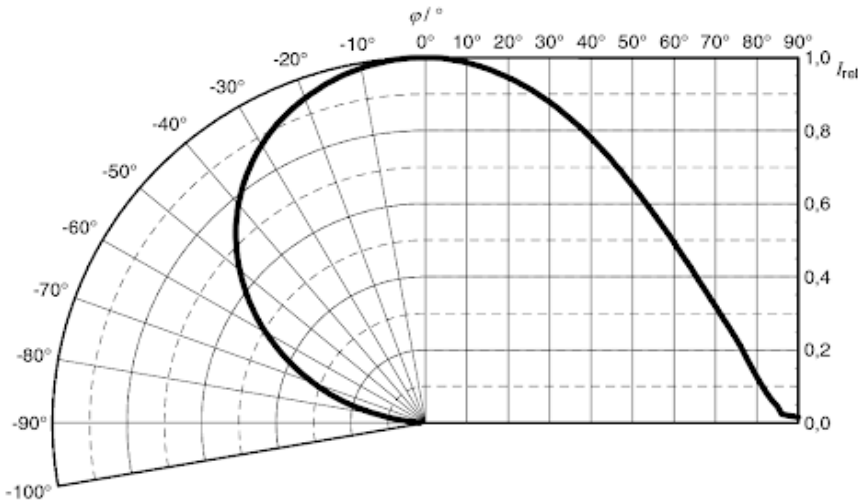
TECHNICAL DRAWING (MM)





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

RADIATION OF SINGLE LED



OSLON® SSL 80 1 POWERSTAR LENS AND REFLECTOR OPTIONS

LENSES

Ordering Code	Beam	Diameter	Height	Family	FWHM	Material/Lens	Colour	Fastening
CA11929_LR2-RS	Spot	21.6mm	14.8mm	LEILA	9.6	PMMA	White	Pin+Glue
CA11931_LR2-M	Medium	21.6mm	14.8mm	LEILA	25	PMMA	White	Pin+Glue
CA112393_LR2-W	Wide	21.6mm	14.8mm	LEILA	40	PMMA	White	Pin+Glue
CA12629_LR2-O-90	Oval	21.6mm	14.8mm	LEILA	10 x 40	PMMA	White	Pin+Glue
CP12413_LOS-D	Diffused Spot	21.6mm	14.8mm	LEILA	14	PMMA	White	Pin+Glue
C12469_LISA2-R-PIN	Wide	9.9mm	6.5mm	LISA2	80	PMMA	White	Pin
FP13026_LISA2-WW-PIN	Wide	9.9mm	6.5mm	LISA2	45	PMMA	Black	Pin
F13028_LISA2-M-PIN	Medium	9.9mm	6.5mm	LISA2	20	PMMA	Black	Pin
FA11203_TINA-O	Oval	16.1mm	9.5mm	TINA	35x15	PMMA	Black	Tape + Pin
FA11208_TINA-RS	Spot	16.1mm	9.5mm	TINA	13	PMMA	Black	Tape + Pin
FA11209_TINA-D	Diffused Spot	16.1mm	9.5mm	TINA	16	PMMA	Black	Tape + Pin
C13253_TINA2-R-CLIP16	Wide	16.1mm		TINA2	60	PC	White	Clip

OSLON® SSL 80 1 POWERSTAR HEATSINK OPTIONS

ILS Product		OSLON 1 PowerStars		
		350mA	700mA	1000mA
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

OSLON® SQUARE HORTI WHITE POWERSTARPOWER SUPPLY OPTIONS

IHS 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	PowerStars per Driver
	IZC035-008F-5065C-SA	8W	350mA	2-12
	IZC035-017F-0067A-SA	17W	350mA	3-16
	IZC035-018T-9500A-SX	18W	350mA	6-17
	IZC050-018T-9500A-SX	18W	500mA	4-12
	IZC070-018T-9500A-SX	18W	700mA	3-8
	IZC070-035F-0067C-SA	35W	700mA	4-16
	IZC045-040A-9266C-SA	40W	450mA	11-30
	IZC095-040M-9067C-SAL	40W	950mA	9-14
	IZCVAR-040M-9020C-SAL	40W	350mA, 500mA, 600mA, 700mA, 900mA, 1050mA	350mA 1-34, 500mA 1-27, 600mA 1-23, 700mA 1-19,900mA 1-15, 1050mA 1-13
	OT-FIT-30/220-240/700-CS-G2	30W	500-700mA	8-14
	OT-FIT-40/220-240/1A0-LT2-LP	40W	500-1050mA	6-17
	OTE-10/220-240/700-PC	10W	700mA	3-4
	OTi-DALI-10/220-240/700-NFC	10W	150-700mA	1-15
	OTi-DALI-50/220...240/1A4-LT2-FAN-NFC	50W	600-1400mA	6-18
	OT-20/170-240/800-4DIMLT2-G2-CE	20W	200-1050mA	4-13

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THERMAL INTERFACE MATERIAL OPTIONS

Product	Non Adhesive	Single Sided Adhesive	Double Sided Adhesive
OSLON® Square 1 PowerStar	ILA-TIM-STAR-0A	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'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.

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.

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. Intelligent Horticultural Solutions is a division of Intelligent Group Solutions, delivering LED solutions to the rapidly evolving and highly important horticultural lighting market.

All trademarks recognised.

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ABOUT IHS

LEDs are producing revolutionary advancements in many areas of technology and life, but none more so important than in Horticulture. The complexities and knowledge required is growing daily, with different plants requiring different spectral illumination and control.

Intelligent Horticultural Solutions (IHS) was formed in 2017 to support the development of products in the fast moving and exciting area of LED lighting. We have brought together key horticultural LED manufacturers, leveraging their 20+ years of experience in general LED lighting in order to offer development platforms and custom growing solutions.

IHS is part of the Intelligent Group Solutions Ltd (IGS) group of companies founded in 2001 which operate from the head office in Thatcham, Berkshire. Sister divisions specialise in a variety of opto and mainstream electronics distribution, design as well as prototyping and assembly services. The horticultural specialism has evolved, due to market demand in the LED division, Intelligent LED Solutions (ILS).

INTELLIGENT GROUP SOLUTIONS DIVISIONS

IGS INTELLIGENT GROUP SOLUTIONS
IDS INTELLIGENT DISPLAY SOLUTIONS
ILS INTELLIGENT LED SOLUTIONS
IPS INTELLIGENT PROTOTYPE SOLUTIONS
IES INTELLIGENT EMBEDDED SOLUTIONS