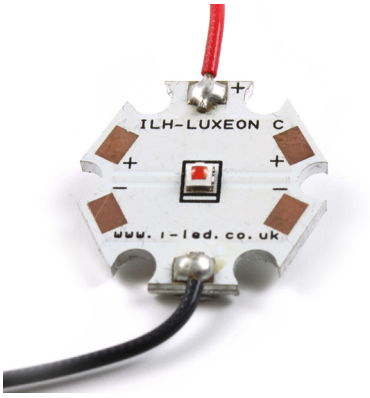
INTELLIGENT
LED SOLUTIONS

LUXEON C Colour Line 1 LED PowerStar

ILH-LC01-XXXX-SC201-WIR200.

Product Overview

At the heart of each PowerStar is a LUXEON C LED from LUMILEDS. The LUXEON C Colour Line is an optically advanced portfolio of Colour and White LEDs. Designed for flawless colour mixing, LUXEON C Colour Line has one focal length for all colours, which provides consistent radiation patterns from secondary optics and maximizes optical efficiency. With low dome design, it keeps effective source size small while still improving light extraction. Designed for smooth colour mixing and maximum punch, LUXEON C Colour Line is the ideal LED solution for architecture, entertainment and emergency vehicle lighting applications. PowerStars are compact, powerful LED light sources built on aluminium substrates for optimal thermal management. Available with 200mm wires as standard.



Applications

- Architectural Lighting
- Entertainment Lighting
- Tuneable Lighting
- Emergency Lighting

Technical Features

- LUXEON C Colour Line PowerStars contain LUXEON C LEDs with integral 175 degree silicone resin Lenses
- Mounting holes using M3 screws allows easy installation
- Size (L x W x H): 20mm x 20mm x 2.95mm
- Available with 200mm connecting wires
- Secondary Lens can be fitted – check options in suitable Lens and Reflector section
- Suitable Heat Sinks available – check options in Heat Sink section
- Matching Power Supply available - check options in Power Supply section
- PowerStars can be linked together to produce longer chains
- Current Range 100-700mA

*This datasheet should be read in conjunction with the relevant LUMILED LUXEON C data on the LED used

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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 will overheat in operation if not attached to a suitable Heat Sink. Overheating can cause failure or irreparable damage.
- 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.
- PowerStars, when operated, 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 can cause irreparable damage.

Product Options

ILS PART NUMBER	Colour	Wavelength*	Typical Wattage at 350mA	Forward Voltage	Flux † at 350mA	Radiance Angle	Relevant LUMILEDs LED Data
ILH-LC01-DEBL-SC201-WIR200.	Royal Blue	440-460nm	0.96W	2.75V	480mW	175° (±87.5°)	L1C1
ILH-LC01-CYAN-SC201-WIR200.	Cyan	490-510nm	0.91W	2.60V	65lm	175° (±87.5°)	L1C1
ILH-LC01-TRGR-SC201-WIR200.	Green	520-540nm	0.89W	2.55V	90lm	175° (±87.5°)	L1C1
ILH-LC01-LIME-SC201-WIR200.	Lime	530-540nm	0.96W	2.75V	125lm	175° (±87.5°)	L1C1
ILH-LC01-MINT-SC201-WIR200.	Mint	535-545nm	0.96W	2.75V	140lm	175° (±87.5°)	L1C1
ILH-LC01-YELL-SC201-WIR200.	Yellow	585-600nm	0.72W	2.05V	20lm	175° (±87.5°)	L1C1
ILH-LC01-RED1-SC201-WIR200.	Red	624-634nm	0.70W	2.00V	35lm	175° (±87.5°)	L1C1
ILH-LC01-FRED-SC201-WIR200.	Far Red	720-750nm	0.61W	1.73V	190mW	175° (±87.5°)	L1C1

*Lumileds maintains a tolerance of ±6.5% on luminous flux measurements. PC Amber, Mint and Lime are binned by chromaticity coordinates. Far Red, Deep Red and Royal Blue are binned by peak wavelength. All other colours are binned by dominant wavelength.
† Far Red, Deep Red and Royal Blue are binned by radiometric power. All other colours are binned by luminous flux.

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-LC01-DEBL-SC201-WIR200.	135°C max	- 40 to 135°C	700mA max	LUXEON C LEDs are not designed to be driven in reverse bias
ILH-LC01-CYAN-SC201-WIR200.	135°C max	- 40 to 135°C	700mA max	LUXEON C LEDs are not designed to be driven in reverse bias
ILH-LC01-TRGR-SC201-WIR200.	135°C max	- 40 to 135°C	700mA max	LUXEON C LEDs are not designed to be driven in reverse bias

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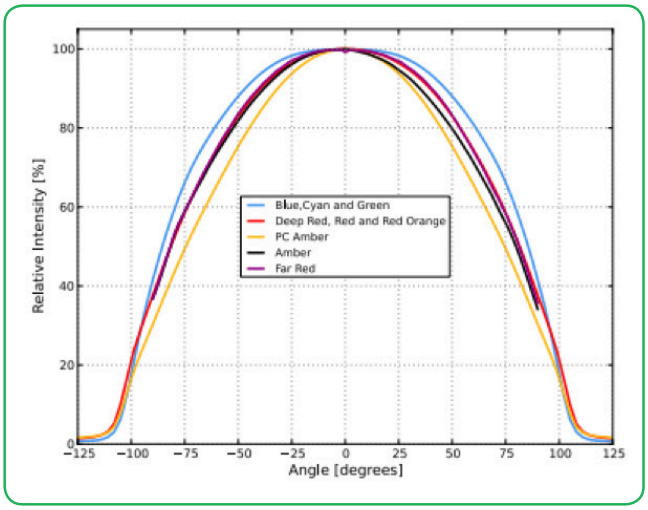
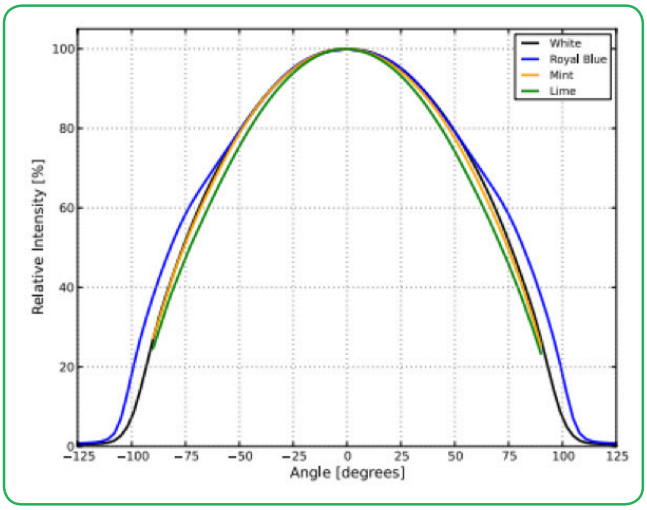
ILS PART NUMBER	Operating Temperature at Tc-Point [°C]*	Storage Temperature [°C]*	Forward Current per chip [mA]*	Reverse Voltage [Vdc]*
ILH-LC01-LIME-SC201-WIR200.	135°C max	- 40 to 135°C	700mA max	LUXEON C LEDs are not designed to be driven in reverse bias
ILH-LC01-MINT-SC201-WIR200.	135°C max	- 40 to 135°C	700mA max	LUXEON C LEDs are not designed to be driven in reverse bias
ILH-LC01-YELL-SC201-WIR200.	120°C max	- 40 to 135°C	700mA max	LUXEON C LEDs are not designed to be driven in reverse bias
ILH-LC01-RED1-SC201-WIR200.	135°C max	- 40 to 135°C	700mA max	LUXEON C LEDs are not designed to be driven in reverse bias
ILH-LC01-FRED-SC201-WIR200.	135°C max	- 40 to 135°C	700mA max	LUXEON C LEDs are not designed to be driven in reverse bias

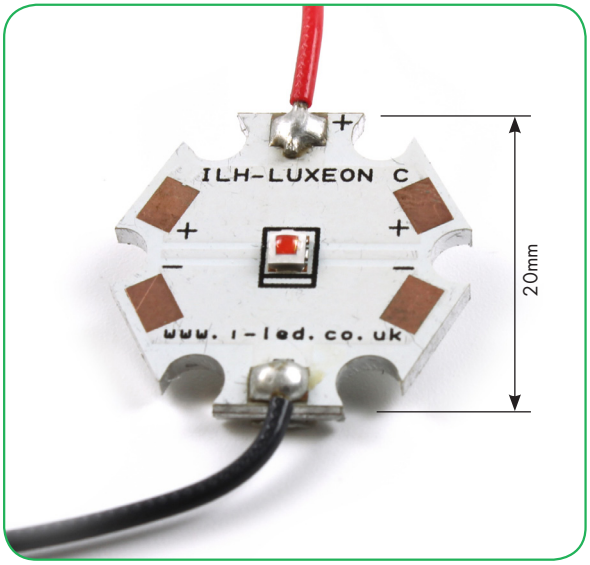
* Exceeding maximum ratings for operating and storage temperature will reduce expected life time or destroy the LED module. Exceeding maximum ratings for operating voltage will cause hazardous overload and will likely destroy the LED module. The temperature of the LED module must be measured at the Tc-Point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

Radiation of single LED





Technical Drawing with cables (mm)



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

LUXEON C 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

ILS Part Number	Beam	Diameter	Height	Family	Led	FWHM	Colour	Fastening
C12763_FLARE-MINI-A	O	16	8.6	Flare	LUXEON C		clear	glue
CA12764_FLARE-MINI-A	REC	16	9.1	Flare	LUXEON C		clear	tape
C12837_FLARE-MINI-A-PIN	O	16	8.6	Flare	LUXEON C		clear	glue, pin
CA12838_FLARE-MINI-A-PIN	REC	16	9.1	Flare	LUXEON C		clear	tape, pin
C13015_FLARE-MINI-AD	O	16	8.6	Flare	LUXEON C		clear	glue
C13016_FLARE-MINI-AD-PIN	O	16	8.6	Flare	LUXEON C		clear	glue, pin
CA13057_FLARE-MINI-AD	O	16	9.1	Flare	LUXEON C		clear	tape
CA13058_FLARE-MINI-AD-PIN	O	16	9.1	Flare	LUXEON C		black	pin, tape
CA11264_HEIDI-D	D	21.6	11.7	Heidi	LUXEON C	9	clear	pin, tape
CA11265_HEIDI-M	M	21.6	11.7	Heidi	LUXEON C	26	clear	tape, pin
CA11266_HEIDI-O	O	21.6	11.7	Heidi	LUXEON C	53+9	clear	pin, tape
CA11267_HEIDI-O-90	O-90	21.6	12.1	Heidi	LUXEON C	9+54	clear	tape, pin
CA11268_HEIDI-W	W	21.6	11.7	Heidi	LUXEON C	31	clear	pin, tape
CA11663_HEIDI-RS	RS	21.6	11.7	Heidi	LUXEON C	7	clear	pin, tape
CA12079_HEIDI-W2	W2	21.6	12	Heidi	LUXEON C	40	clear	tape, pin
CA12242_HEIDI-SS	SS	21.6	11.7	Heidi	LUXEON C	13	clear	tape, pin
CP12941_LARISA-M-CLIP16	M	9.9 + 9.9	7.5	Larisa	LUXEON C	27	black	clips
CP12943_LARISA-O-CLIP16	O	9.9 + 9.9	7.5	Larisa	LUXEON C	40+18	black	clips
CP15304_LARISA-RS-PIN	RS	9.9 +9.9	7.5	Larisa	LUXEON C	17	black	pin, glue
CP15305_LARISA-M-PIN	M	9.9 +9.9	7.5	Larisa	LUXEON C	27	black	pin, glue
CP15306_LARISA-O-PIN	O	9.9 +9.9	7.5	Larisa	LUXEON C	40+18	black	pin, glue
CP15307_LARISA-W-PIN	W	9.9 +9.9	7.5	Larisa	LUXEON C	43	black	glue, pin
CP15309_LARISA-RZ-PIN		9.9 +9.9	7.5	Larisa	LUXEON C	26	black	glue, pin

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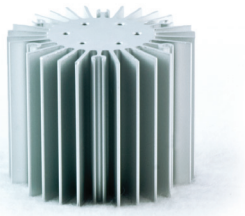
ILS Part Number	Beam	Diameter	Height	Family	Led	FWHM	Colour	Fastening
CP12939_LARISA-RS-CLIP16	RS	9.9 x 9.9	7.5	Larisa	LUXEON C	17	black	clips
CP13665_LARISA-RZ-CLIP8		9.9x9.9	7.5	Larisa	LUXEON C	26	black	clips
C13353_LEILA-R-CLIP16	WWW	21.6	13	Leila	LUXEON C	76	white	clips
CA14507_G2-LXP2-D-P	D	21.8	14.7	Leila	LUXEON C	11	black	tape, pin
CA14509_G2-LXP2-M-P	M	21.8	14.7	Leila	LUXEON C	23	black	tape, pin
FP10995_LISA2-M-PIN	M	9.9	6.8	Lisa	LUXEON C	24	black	pin, glue
FP10996_LISA2-W-PIN	W	9.9	6.8	Lisa	LUXEON C	34	black	pin, glue
FP10997_LISA2-WW-PIN	WW	9.9	7	Lisa	LUXEON C	34	black	glue, pin
FP11055_LISA2-RS-PIN	RS	9.9	6.8	Lisa	LUXEON C	16	black	glue, pin
FP11125_LISA2-O-PIN	O	9.9	6.8	Lisa	LUXEON C	50+17	black	pin, glue
FP11856_LISA2-O-90-CLIP	O-90	9.9	6.8	Lisa	LUXEON C	17+47	black	glue, clips
C12469_LISA2-R-PIN	WWW	9.9	6.5	Lisa	LUXEON C	84	white	glue, pin
CA12374_TINA2-RS	RS	16	9.5	Tina	LUXEON C		black	tape, pin
CA12376_TINA2-SS	SS	16	9.26	Tina	LUXEON C		black	tape, pin
CA12377_TINA2-M	M	16	9.5	Tina	LUXEON C		black	tape, pin
CA12378_TINA2-W	W	16	9.5	Tina	LUXEON C		black	tape, pin
CA12379_TINA2-O	O	16	9.5	Tina	LUXEON C		black	tape, pin
C12607_VIRPI-S	S	74.9 x 74.9	9.5	Virpi	LUXEON C		clear	glue, pin
C12608_VIRPI-M	M	74.9 x 74.9	9.5	Virpi	LUXEON C		clear	glue, pin
C12609_VIRPI-W	W	74.9 x 74.9	9.5	Virpi	LUXEON C		clear	glue, pin

LUXEON C 1 PowerStar Heat Sink Options

ILS has recently introduced a series of Aluminium Alloy Heat Sinks to be used with our standard range of PowerStars and PowerClusters. These Heat Sinks 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. Available in Black, Red, Silver and Blue colour variants. More versions will be introduced over the coming months and we are also happy to manufacture custom Heat Sinks to your request.

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

ILS Product		No Heat Sink, in free air	ILA-HSINK-STAR-50X20MM-K.	ILA-HSINK-STAR-50X40MM-K.	ILA-HSINK-STAR-50X60MM-K.	ILA-HSINK-STAR-50X80MM-K.	ILA-HSINK-70X70x55mmMM-K.	ILA-HSINK-78X46X25MM-K.
Luxeon C 1 LED PowerStar	350mA							
	700mA							



LUXEON C 1 PowerStar Power Supply Options

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.

ILS Driver Part No.	Rating	Constant Current Output	LED Driver Forward Voltage	
IZC015-005F-0067C-QA	5W	150mA	20-33	
IZC035-005F-0067C-QA	5W	350mA	2-12	
IZC070-005F-0067C-QA	5W	700mA	2-5	
IZC035-008F-5065C-SA	8W	350mA	3-36	
IZC070-008F-5065C-SA	8W	700mA	3-12	
IZC035-017F-0067A-SA	17W	350mA	6-48	
IZC035-018T-9500A-SX	18W	350mA	15-52	
IZC050-018T-9500A-SX	18W	500mA	9-36	
IZC070-018T-9500A-SX	18W	700mA	6-26	
IZC035-035F-9067C-QA	35W	350mA	40-80	
IZC070-035F-0067C-SA	35W	700mA	9-48	
IZC045-040A-9266C-SA	40W	450mA	30-89	

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Thermal Interface Material Options

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 Heat Sink.

ILS offer our TIM in three options – double sided adhesive, single sided adhesive and non adhesive.

Product	Non Adhesive	Single Sided Adhesive	Double Sided Adhesive
Star	ILA-TIM-STAR-0A	ILA-TIM-STAR-1A	ILA-TIM-STAR-2A.
25x25mm Cluster	ILA-TIM-CLUSTER-25x25-0A	ILA-TIM-CLUSTER-25x25-1A	ILA-TIM-CLUSTER-25x25-2A.
30x30mm Cluster	ILA-TIM-CLUSTER-30x30-0A	ILA-TIM-CLUSTER-30x30-1A	ILA-TIM-CLUSTER-30x30-2A.
300x20mm Strip	ILA-TIM-STRIP-300x20-0A	ILA-TIM-STRIP300x20-1A	ILA-TIM-STRIP-300x20-2A.
25x15mm Strip	ILA-TIM-STRIP-25x15-0A	ILA-TIM-STRIP-25x15-1A	ILA-TIM-STRIP-25x15-2A.
58x58mm Square	ILA-TIM-SQUARE-58X58-0A	ILA-TIM-SQUARE-58X58-1A	ILA-TIM-SQUARE-58X58-2A.

Other sizes are available, including customised parts

Assembly Information

- The mounting of the LUXON C 1 PowerStar has to be on a metal Heat Sink.
- 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 LUXON C 1 PowerStar.
- The LUXON C 1 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.

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.

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