

# Duris S family of SCOBs – LES 23

ILO-12FFx-23xx-xP211.

**SCOB - a series of PCBA's utilising Osram DURIS S family LEDs to create COB equivalent lighting sub-assemblies**

## Product Overview

The SCOB range of products from ILS, utilise the very latest multi-chip devices from Osram Opto Semiconductor – The Duris S5, S8 and S10.

These new LEDs enable a very flexible, powerful light source design, allowing simple optics design and flexibility to fit various accessories.

The combination of small light-emitting surface and high lumen package provides excellent optical control and very narrow angle design.

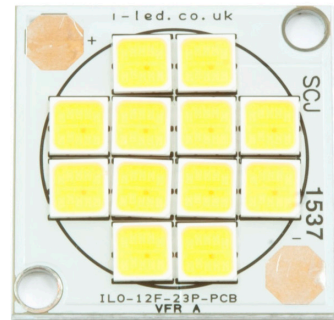
The SCOB family are based on the industry standard Zhaga footprints, enabling the device to utilise all the existing industry standard connectors, reflectors and heat sinks.

Utilising these very latest chip designs, SCOBs offer an unparalleled range of colour temperatures, CRI options, forward voltage and drive current configurations.

SCOBs are compact, powerful LED light sources built on aluminium substrates for optimal thermal management.

With this unique approach to SCOB design we are also able to offer mixed colour temperatures and single colour versions of our SCOB family.

The ILO-12FFx-23xx-xP211. family of products is available as 9 Osram Duris S8's 6 in series and 2 in parallel, enabling us to offer 5 voltage groups and 2 CRI groups, min 80 CRI and min 90 CRI



## Applications

- Retrofit Bulbs
- Downlights
- Spotlights
- Residential
- Area & Parking Lot
- Landscape
- Building Exterior
- Roadway
- High Bay

## Technical Features

- Mounting using M3 screws or Zhaga connector
- Size (L x W x H) : 28.0×28.0×1.4 (mm)
- Optional 200mm connecting wires available.
- Suitable Heat Sinks available – check options in Heat Sink section
- Matching Power Supply available - check options in Power Supply section
- SCOBs can be linked together to produce longer chains

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

### Important Information and Precautions

- The SCOB, when powered up, is very powerful and can damage eyes. Thus it is advised that you do not look directly at it. Turn the SCOB away from you and do not shine into the eyes of others.
- SCOBs will overheat in operation if not attached to a suitable Heat Sink. Overheating can cause failure or irreparable damage.
- Do not operate SCOBs with a Power Supply with unlimited current. Connection to constant voltage Power Supplies that are not current limited may cause the SCOBs to consume current above the specified maximum and cause failure or irreparable damage.
- SCOBs when operated, can reach high temperatures thus there is risk of injury if they are touched.
- DO NOT TOUCH or PUSH on the LED as this can cause irreparable damage.
- DO NOT HOT PLUG ON LED SIDE OF POWER SUPPLY.

### Product Options

#### ILO-12FF1-23xx-EP211. Family of Products - 108V min 80 CRI

ILS PART NUMBER	CRI	CCT*	Forward Voltage	Current	Flux †	Typical Wattage§	Efficacy Lumens/Watt	Radiance Angle	Relevant OSRAM LED Data
ILO-12FF1-23HW-EP211.	min 80	2700K	108V	300mA	5028Lm	32.4W	155	+/- 60°	GWP9LM31. EM
ILO-12FF1-23WM-EP211.		3000K			5028Lm		155		
ILO-12FF1-23QW-EP211.		3500K			5028Lm		155		
ILO-12FF1-23NW-EP211.		4000K			5028Lm		155		
ILO-12FF1-23MW-EP211.		4500K			5400Lm		167		
ILO-12FF1-23WW-EP211.		5000K			5400Lm		167		
ILO-12FF1-23ST-EP211.		5700K			5400Lm		167		
ILO-12FF1-23UL-EP211.		6500K			5400Lm		167		

\* 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 20mS 350mA pulse at 25 °c

#### ILO-12FF2-23xx-EP211. Family of Products - 36V min 80 CRI

ILS PART NUMBER	CRI	CCT*	Forward Voltage	Current	Flux †	Typical Wattage§	Efficacy Lumens/Watt	Radiance Angle	Relevant OSRAM LED Data
ILO-12FF2-23HW-EP211.	min 80	2700K	36V	1200mA	6756Lm	43.2W	156	+/- 60°	GWP9LR32. EM
ILO-12FF2-23WM-EP211.		3000K			6756Lm		156		
ILO-12FF2-23QW-EP211.		3500K			6756Lm		156		
ILO-12FF2-23NW-EP211.		4000K			7320Lm		169		
ILO-12FF2-23MW-EP211.		4500K			7320Lm		169		
ILO-12FF2-23WW-EP211.		5000K			7320Lm		169		
ILO-12FF2-23ST-EP211.		5700K			7320Lm		169		
ILO-12FF2-23UL-EP211.		6500K			7320Lm		169		

\* 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 20mS 350mA pulse at 25 °c

**ILO-12FF3-23xx-EP211. Family of Products - 150V min 80 CRI**

ILS PART NUMBER	CRI	CCT*	Forward Voltage	Current	Flux †	Typical Wattage§	Efficacy Lumens/Watt	Radiance Angle	Relevant OSRAM LED Data
ILO-12FF3-23HW-EP211.	min 80	2700K	150V	300mA	6756Lm	45W	150	+/- 60°	GWP9LR31. EM
ILO-12FF3-23WM-EP211.		3000K			6756Lm		150		
ILO-12FF3-23QW-EP211.		3500K			6756Lm		150		
ILO-12FF3-23NW-EP211.		4000K			7320Lm		163		
ILO-12FF3-23MW-EP211.		4500K			7320Lm		163		
ILO-12FF3-23WW-EP211.		5000K			7320Lm		163		
ILO-12FF3-23ST-EP211.		5700K			7320Lm		163		
ILO-12FF3-23UL-EP211.		6500K			7320Lm		163		

\* 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 20mS 350mA pulse at 25° c

**ILO-12FF4-23xx-EP211. Family of Products - 36V min 80 CRI**

ILS PART NUMBER	CRI	CCT*	Forward Voltage	Current	Flux †	Typical Wattage§	Efficacy Lumens/Watt	Radiance Angle	Relevant OSRAM LED Data
ILO-12FF4-23HW-EP211.	min 80	2700K	36V	1500mA	7896Lm	54W	146	+/- 60°	GWP9LT32. EM
ILO-12FF4-23WM-EP211.		3000K			7896Lm		146		
ILO-12FF4-23QW-EP211.		3500K			7896Lm		146		
ILO-12FF4-23NW-EP211.		4000K			8520Lm		158		
ILO-12FF4-23MW-EP211.		4500K			8520Lm		158		
ILO-12FF4-23WW-EP211.		5000K			8520Lm		158		
ILO-12FF4-23ST-EP211.		5700K			8520Lm		158		
ILO-12FF4-23UL-EP211.		6500K			8520Lm		158		

\* 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 20mS 350mA pulse at 25° c

**ILO-12FF5-23xx-EP211. Family of Products - 186V min 80 CRI**

ILS PART NUMBER	CRI	CCT*	Forward Voltage	Current	Flux †	Typical Wattage§	Efficacy Lumens/Watt	Radiance Angle	Relevant OSRAM LED Data
ILO-12FF5-23HW-EP211.	min 80	2700K	186V	300mA	7896Lm	55.8W	142	+/- 60°	GWP9LT31. EM
ILO-12FF5-23WM-EP211.		3000K			7896Lm		142		
ILO-12FF5-23QW-EP211.		3500K			7896Lm		142		
ILO-12FF5-23NW-EP211.		4000K			8520Lm		153		
ILO-12FF5-23MW-EP211.		4500K			8520Lm		153		
ILO-12FF5-23WW-EP211.		5000K			8520Lm		153		
ILO-12FF5-23ST-EP211.		5700K			8520Lm		153		
ILO-12FF5-23UL-EP211.		6500K			8520Lm		153		

\* 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 20mS 350mA pulse at 25° c

**ILO-12FF3-23xx-CP211. Family of Products - 150V min 90 CRI**

ILS PART NUMBER	CRI	CCT*	Forward Voltage	Current	Flux †	Typical Wattage§	Efficacy Lumens/Watt	Radiance Angle	Relevant OSRAM LED Data
ILO-12FF3-23HW-CP211.	min 90	2700K	150V	300mA	5400Lm	45W	120	+/- 60°	GWP9LR33. CM
ILO-12FF3-23WM-CP211.		3000K			5400Lm		120		
ILO-12FF3-23QW-CP211.		3500K			5400Lm		120		
ILO-12FF3-23NW-CP211.		4000K			5400Lm		120		

\* 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 20mS 350mA pulse at 25°c

**ILO-12FF5-23xx-CP211. Family of Products - 186V min 90 CRI**

ILS PART NUMBER	CRI	CCT*	Forward Voltage	Current	Flux †	Typical Wattage§	Efficacy Lumens/Watt	Radiance Angle	Relevant OSRAM LED Data
ILO-12FF5-23HW-CP211.	min 90	2700K	186V	300mA	6240Lm	55.8W	112	+/- 60°	GWP9LT31. CM
ILO-12FF5-23WM-CP211.		3000K			6240Lm		112		
ILO-12FF5-23QW-CP211.		3500K			6240Lm		112		
ILO-12FF5-23NW-CP211.		4000K			6756Lm		121		

\* 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 20mS 350mA pulse at 25°c

**Minimum and Maximum Ratings**

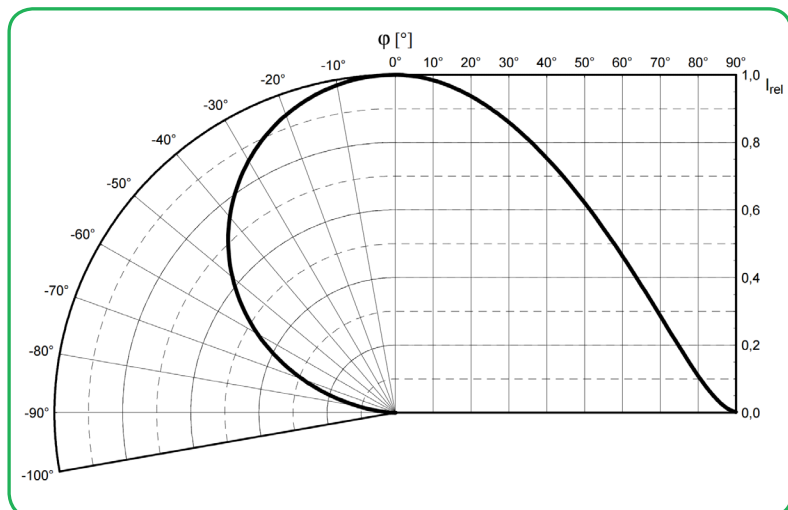
ILS PART NUMBER	Operating Temperature at Tc-Point [°C]*	Storage Temperature [°C]*	Forward Current per chip [mA]*	Reverse Voltage [Vdc]*
ILO-12FFx-23xx-xP211.	85	-40 to +125	400mA	1.2V

\* Exceeding maximum ratings for operating and storage temperature will reduce expected life time or destroy the LED module.

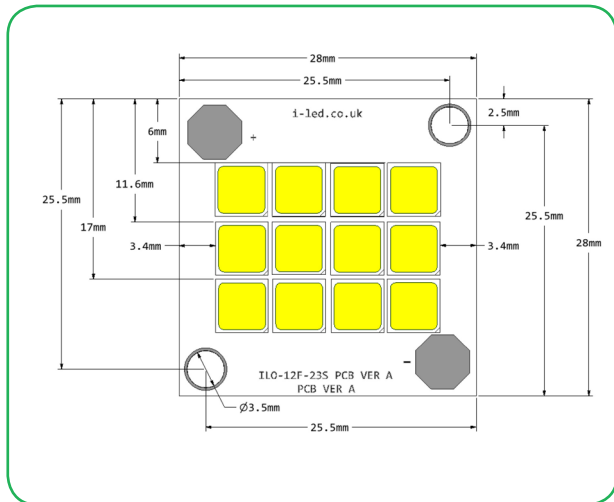
Exceeding maximum ratings for operating voltage will cause hazardous overload and will likely destroy the LED module.

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.

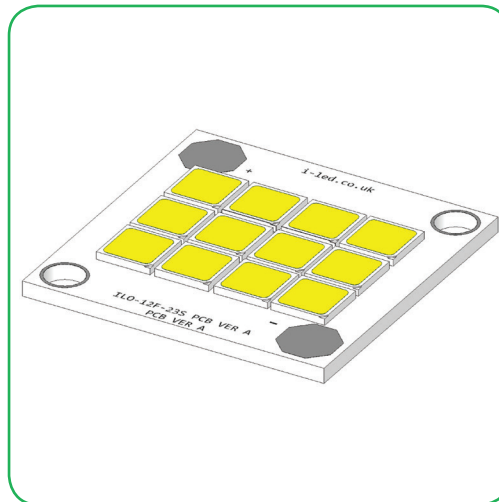
**Radiation of Single LED**



**Technical Drawing**



**3D Drawing**



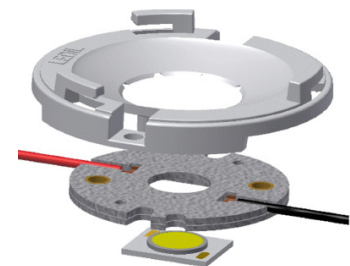
**3D drawing files are available on request from ILS. Please call or email**

**Sockets and Connectors**

The ILS SCOBs are designed to meet the Zhaga standards, and as such will work with any relevant Zhaga compliant connectors or sockets.

Below is a selection of products that will work with the ILO-12FFx-23xx-xP211. family of products;

Connector: 431 Typ L3  
 Manufacturer: Bender Wirth



Connector: 8102/G2  
 Manufacturer: A.A.G. STUCCHI



Connector: 47.319.2030  
 Manufacturer: BJB



**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.



Ordering Code	Beam	Diameter	Height	Family	FWHM	Material /Lens	Material /Holder	Material /Reflector	Colour	Fastening
F13662_ANGELA-S-B	S	119.5	74.5	ANGELA	15			PC	metal	
F13662_ANGELA-S-B	S	119.5	74.5	ANGELA	15			PC	metal	
F13663_ANGELA-M-B	M	119.5	74.5	ANGELA	21			PC	metal	
F13663_ANGELA-M-B	M	119.5	74.5	ANGELA	21			PC	metal	
F13664_ANGELA-W-B	W	119.5	74.5	ANGELA	38			PC	metal	
F13664_ANGELA-W-B	W	119.5	74.5	ANGELA	39			PC	metal	
FCN13697_ANGELA-S	S	119.5	79.31	ANGELA	14		PC	PC	metal	
FCN13698_ANGELA-M	M	119.5	79.31	ANGELA	21		PC	PC	metal	
FCN13704_ANGELA-W	W	119.5	79.31	ANGELA	39		PC	PC	metal	
F13841_ANGELA-XW-B	W	119.5	74.5	ANGELA	71			HRPC	white	
F13841_ANGELA-XW-B	W	119.5	74.5	ANGELA	72			HRPC	white	
FC13980_ANGELA-RZ-S-B	S	119.5	74.5	ANGELA	15	PC		PC	metal	screw, socket
FC13983_ANGELA-RZ-XW-B	W	119.5	74.5	ANGELA	72	PC		HRPC	white	socket, screw
FC13987_ANGELA-RZ-M-B	S	119.5	74.5	ANGELA	22	PC		PC	metal	socket, screw
FC13988_ANGELA-RZ-W-B	W	119.5	74.5	ANGELA	41	PC		PC	metal	socket, screw
FCN14691_ANGELA-XW	W	119.5		ANGELA	70			HRPC	white	
CN14421_ANGELETTE-WAS	Asymmetric	97.2 x 83.4		ANGELETTE	Asymmetric		PC	PC	metal	
FCN13912_ANGELINA-XW				ANGELINA	88		PC	HRPC	white	screw
F13659_ANGELINA-S-B	S	82	31	ANGELINA	0			PC	metal	
F13659_ANGELINA-S-B	S	82	31	ANGELINA	30			PC	metal	



Ordering Code	Beam	Diameter	Height	Family	FWHM	Material /Lens	Material /Holder	Material /Reflector	Colour	Fastening
F13660_ANGELINA-M-B	M	82	31	ANGELINA	0			PC	metal	
F13660_ANGELINA-M-B	M	82	31	ANGELINA	39			PC	metal	
F13661_ANGELINA-W-B	W	82	31	ANGELINA	0			PC	metal	
F13661_ANGELINA-W-B	W	82	31	ANGELINA	62			PC	metal	
FCN13691_ANGELINA-S	S	82	36.04	ANGELINA	29		PC	PC	metal	
FCN13692_ANGELINA-M	M	82	36.04	ANGELINA	42		PC	PC	metal	
FCN13693_ANGELINA-W	W	82	36	ANGELINA	54		PC	PC	metal	
F13839_ANGELINA-XW-B	W	82	31	ANGELINA	91			HRPC	white	
F13839_ANGELINA-XW-B	W	82	31	ANGELINA	92			HRPC	white	
FC13977_ANGELINA-RZ-S-B	S	82	31	ANGELINA	33	PC		PC	metal	socket, screw
FC13978_ANGELINA-RZ-M-B	M	82	31	ANGELINA	50	PC		PC	metal	socket, screw
FC13979_ANGELINA-RZ-W-B	W	82	31	ANGELINA	66	PC		PC	metal	socket, screw
FC13982_ANGELINA-RZ-XW-B	W	82	31	ANGELINA	91	PC		HRPC	white	socket, screw
CN14577_LENA-S-DL	S			Lena	19				metal	
CN14577_LENA-S-DL	S			Lena	23				metal	
CN14578_LENA-M-DL	M			Lena	27	PC		PC	metal	
CN14578_LENA-M-DL	M			Lena	30	PC		PC	metal	
CN14579_LENA-W-DL	W			Lena	49	PC		PC	metal	
CN14579_LENA-W-DL	W			Lena	50	PC		PC	metal	
CN14580_LENA-WAS-DL	Asymmetric			Lena	Asymmetric	PC		PC	metal	
CN14580_LENA-WAS-DL	Asymmetric			Lena	asymmetric	PC		PC	metal	
CN14581_LENA-X-WAS-DL	Asymmetric			Lena	asymmetric	PC		HRPC	white	
C11979_LENA-S	S	111	80	Lena	16			PC	metal	
C11979_LENA-S	S	111	80	Lena	17			PC	metal	
C11980_LENA-W	W	111	80	Lena	50			PC	metal	
C12154_LENA-M	M	111	80	Lena	24			PC	metal	

Ordering Code	Beam	Diameter	Height	Family	FWHM	Material /Lens	Material /Holder	Material /Reflector	Colour	Fastening
C12154_LENA-M	M	111	80	Lena	25			PC	metal	
CN12715_LENA-S	S	111	86.3	Lena	15		PC	PC	metal	screw
CN12716_LENA-M	M	111	86.3	Lena	26		PC	PC	metal	screw
CN12717_LENA-W	W	111	86.3	Lena	52		PC	PC	metal	screw
CN12721_LENA-S-DL	S	111	87.6	Lena	16	PMMA	PC	PC	metal	screw
CN12722_LENA-M-DL	M	111	87.6	Lena	24	PMMA	PC	PC	metal	screw
CN12723_LENA-W-DL	W	111	87.6	Lena	46	PMMA	PC	PC	metal	screw
C12948_LENA-WAS	Asymmetric	111	37	Lena	asymmetric			PC	metal	glue
C13117_LENA-SS	SS	111	80	Lena	20			PC	metal	socket
C13117_LENA-SS	SS	111	80	Lena	20			PC	metal	socket
CN13164_LENA-WAS	Asymmetric	111		Lena	Asymmetric			PC	metal	socket
CN13174_LENA-WAS-DL	Asymmetric	111		Lena	Asymmetric			PC	metal	socket
CN13370_LENA-X-WAS	Asymmetric	111	39.1	Lena	Asymmetric		PC	HRPC	white	socket, screw
CN13372_LENA-X-WAS-DL	Asymmetric	111	42	Lena	Asymmetric	PC	PC	HRPC	white	socket, screw
CN13649_LENA-SS	SS	111	87.6	Lena	22		PC	PC	metal	
CN13650_LENA-SS-DL	SS	111	87.6	Lena	24	PC	PC	PC	metal	
CN14061_LENA-M	M	111	84.4	Lena	27		PC		metal	
CN14063_LENA-WAS	Asymmetric	111	37.01	Lena	Asymmetric		PC		metal	
CN14064_LENA-SS	SS	111	84.4	Lena	20		PC		metal	
CN14065_LENA-S-DL	S	111	86	Lena	21		PC		metal	
CN14066_LENA-M-DL	M	111	86	Lena	30		PC		metal	
CN14078_LENA-WAS-DL	Asymmetric	111	39.11	Lena	Asymmetric		PC		metal	
CN14079_LENA-X-WAS	Asymmetric	111	37.01	Lena	Asymmetric		PC		white	
CN14080_LENA-X-WAS-DL	Asymmetric	111	39.11	Lena	Asymmetric		PC		white	
CN14081_LENA-SS-DL	SS	111	86	Lena	23		PC		metal	
C12692_LENA-STD-BASE-CLL040		58.64	13.5	Lena	N/A		PC		white	screw
C12598_LENINA-M	M			Lenina	35			PC	metal	
C12598_LENINA-M	M			Lenina	36			PC	metal	
CN14582_LENINA-S-DL	S			Lenina	25	PC		PC	metal	

Ordering Code	Beam	Diameter	Height	Family	FWHM	Material /Lens	Material /Holder	Material /Reflector	Colour	Fastening
CN14582_LENINA-S-DL	S			Lenina	26	PC		PC	metal	
CN14583_LENINA-M-DL	M			Lenina	37	PC		PC	metal	
CN14583_LENINA-M-DL	M			Lenina	38	PC		PC	metal	
CN14584_LENINA-W-DL	W			Lenina	55	PC		PC	metal	
CN14584_LENINA-W-DL	W			Lenina	58	PC		PC	metal	
CN14585_LENINA-XW-DL	WWW			Lenina	71				white	
CN14585_LENINA-XW-DL	WWW			Lenina	73				white	
C12597_LENINA-S	S	74	40	Lenina	23			PC	metal	
C12597_LENINA-S	S	74	40	Lenina	24			PC	metal	
C12599_LENINA-W	W	74	40	Lenina	54			PC	metal	
C12599_LENINA-W	W	74	40	Lenina	57			PC	metal	
CN12706_LENINA-S	S	74	46.3	Lenina	26		PC	PC	metal	screw
CN12707_LENINA-M	M	74	46.3	Lenina	40		PC	PC	metal	screw
CN12708_LENINA-W	W	74	46.3	Lenina	59		PC	PC	metal	screw
CN12709_LENINA-S-DL	S	74	48.4	Lenina	30		PC	PC	metal	screw
CN12710_LENINA-M-DL	M	74	48.4	Lenina	43		PC	PC	metal	screw
CN12711_LENINA-W-DL	W	74	48.4	Lenina	56		PC	PC	metal	screw
C12958_LENINA-XW	WWW	74	40	Lenina	72			HRPC	white	
C12958_LENINA-XW	WWW	74	40	Lenina	74			HRPC	white	
CN12965_LENINA-XW	WWW	74	46.3	Lenina	71		PC	HRPC	white	socket, socket
CN12979_LENINA-XW-DL	WWW	74	48.4	Lenina	71	PC	PC	HRPC	white	socket
CN14093_LENINA-S	S	74	44.4	Lenina	26		PC	PC	metal	
CN14094_LENINA-M	M	74	44.4	Lenina	39		PC	PC	metal	
CN14095_LENINA-W	W	74	44.4	Lenina	61		PC	PC	metal	
CN14096_LENINA-XW	WWW	74	44.4	Lenina	75		PC		metal	
CN14097_LENINA-XW-DL	WWW	74	46.15	Lenina	75		PC		metal	

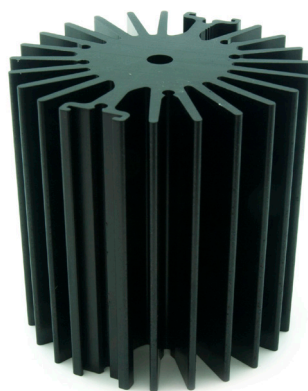
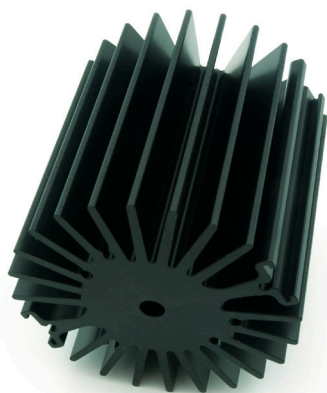
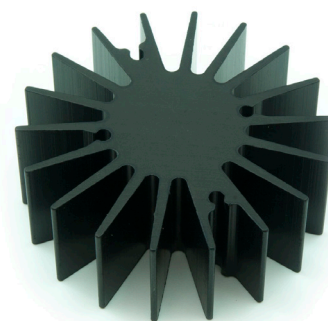
Ordering Code	Beam	Diameter	Height	Family	FWHM	Material /Lens	Material /Holder	Material /Reflector	Colour	Fastening
CN14098_LENINA-W-DL	W	74	46.15	Lenina	61		PC	PC	metal	
CN14099_LENINA-M-DL	M	74	46.15	Lenina	40		PC	PC	metal	
CN14100_LENINA-S-DL	S	74	46.15	Lenina	27	PC	PC	PC	metal	
FN14074_STELLA-HB	HB	90	19.5	STELLA	77	Silicone	PA66GF30		black	screw
FN14074_STELLA-HB	HB	90	19.5	STELLA	68	Silicone	PA66GF30		black	screw
FN14720_STELLA-FRESNEL	Street	90	23	STELLA	36	Silicone			black	screw
FN15186_STELLA-HB	HB	90	19.5	STELLA	68	Silicone	PA66GF30		white	
FN15186_STELLA-HB	HB	90	19.5	STELLA	77	Silicone	PA66GF30		white	
FN15188_STELLA-FRESNEL	Street	90	23	STELLA	36	Silicone			white	
FP15073_ZORYA-SC-50	Decorative	56	29.1	Zorya	0	Silicone	PC		clear	socket

### Heat Sink Options

ILS has 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. More versions will be introduced over the coming months and we are 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	ILA-HSINK-RADL-55X20MM-BLK	ILA-HSINK-RADL-70X20MM-BLK	ILA-HSINK-RADL-70X70MM-BLK	ILA-HSINK-RADL-100X65MM-BLK	ILA-HSINK-RADL-110X80MM-BLK	ILA-HSINK-RADL-120X150MM-BLK
ILO-01TTx-09xx-xC211.						
ILO-01FFx-13xx-xC211.						
ILO-04FFx-13xx-xP211.						
ILO-05FFx-13xx-xP211.						
ILO-01TTx-13xx-xC211.						
ILO-03FFx-19xx-xC211.						
ILO-04FFx-19xx-xC211.						
ILO-04TTx-23xx-xP211.						
ILO-09FFx-23xx-xC211.						
ILO-05FFx-23xx-xC211.						
ILO-12FFx-23xx-xP211.						
ILO-16FFx-33xx-xP211						
ILO-26FFx-33xx-xP211.						



## Power Supply Options

ILS has a comprehensive range of standard power supplies. The table below shows a selection from our offering which are suited to the SCOB application.

### Constant Current Types

ILS Driver Part Number	Rating Watts	Output	IP Rating	Output Volts	PF	Dimming	
IZC015-005F-0067C-QA	5	150mA	IP67	20-33	0.6	NO	
IZC035-005F-0067C-QA	5	350mA	IP67	2-12	0.6	NO	
IZC070-005F-0067C-QA	5	700mA	IP67	2-5	0.6	NO	
IZC035-008F-5065C-SA	8	350mA	IP65	3-36	0.5	NO	
IZC070-008F-5065C-SA	8	700mA	IP65	3-12	0.5	NO	
IZCXX-012T-8000-SA	12	350mA - 1050mA	IP20	2-27	0.8	YES	
IZC035-017F-0067A-SA	17	350mA	IP67	6-48	0.6	NO	
IZC035-018T-9500A-SX	18	350mA	IP20	15-52	1	Triac	
IZC050-018T-9500A-SX	18	500mA	IP20	9-36	1	Triac	
IZC070-018T-9500A-SX	18	700mA	IP20	6-26	1	Triac	
IZC035-035F-9067C-QA	35	350mA	IP67	40-50	0.9	NO	
IZC070-035F-0067C-SA	35	700mA	IP67	9-48	0.6	NO	
IZC105-035F-9067C-QA	35	1.05A	IP67	16-32	0.9	NO	

ILS Driver Part Number	Rating Watts	Output	IP Rating	Output Volts	PF	Dimming	
IZC045-040A-9266C-SA	40	450mA	IP66	30-89	0.9	0-10 v	
IZC105-040A-0067C-QA	40	1.05A	IP67	24-40	0	0-10 v	
IZC070-050A-9267C-SA	50	700mA	IP67	24-72	0.9	0-10 v	
IZC050-060F-9067C-QA	60	500mA	IP67	40-110	0.9	NO	
IZC105-060F-9067C-QA	60	1.05A	IP67	30-60	0.9	NO	
IZC140-060F-9067C-QA	60	1.4A	IP67	20-42	0.9	NO	
IZC070-075A-9267C-SA	75	700mA	IP67	54-108	0.9	0-10 v	
IZC140-075F-9067A-QAL	75	1400mA	IP67	30-53	0.9	NO	

## 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 two options – Double Sided Adhesive and Single Sided Adhesive.

Product	Single Sided Adhesive	Double Sided Adhesive
<b>ILO-01TTx-09xx-xC211.</b>	ILA-TIM-LES09-1A	ILA-TIM-LES09-2A
<b>ILO-01FFx-13xx-xC211.</b>	ILA-TIM-LES13-1A	ILA-TIM-LES13-2A
<b>ILO-04FFx-13xx-xP211.</b>	ILA-TIM-LES13-1A	ILA-TIM-LES13-2A
<b>ILO-05FFx-13xx-xP211.</b>	ILA-TIM-LES13-1A	ILA-TIM-LES13-2A
<b>ILO-01TTx-13xx-xC211.</b>	ILA-TIM-LES13-1A	ILA-TIM-LES13-2A
<b>ILO-03FFx-19xx-xC211.</b>	ILA-TIM-LES19-1A	ILA-TIM-LES19-2A
<b>ILO-04FFx-19xx-xC211.</b>	ILA-TIM-LES19-1A	ILA-TIM-LES19-2A
<b>ILO-04TTx-23xx-xP211.</b>	ILA-TIM-LES23-1A	ILA-TIM-LES23-2A
<b>ILO-09FFx-23xx-xC211.</b>	ILA-TIM-LES23-1A	ILA-TIM-LES23-2A
<b>ILO-05FFx-23xx-xC211.</b>	ILA-TIM-LES23-1A	ILA-TIM-LES23-2A
<b>ILO-12FFx-23xx-xP211.</b>	ILA-TIM-LES23-1A	ILA-TIM-LES23-2A
<b>ILO-16FFx-33xx-xP211</b>	ILA-TIM-LES33-1A	ILA-TIM-LES33-2A
<b>ILO-26FFx-33xx-xP211.</b>	ILA-TIM-LES33-1A	ILA-TIM-LES33-2A

Other sizes are available, including customised parts

## Assembly Information

- The mounting of the SCOB 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 SCOB.
- The SCOB, 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 users 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.