

## Dragon1IR PowerStars

ILH-ID01-xxxx-SC201-xx series

### Product Overview

Dragon1IR PowerStars employ the new Osram Opto Semiconductors' Dragon Infrared LEDs. Dragon1IR PowerStars are constructed using aluminum substrates for optimal thermal management and they are supplied with and without connecting wires. ILS offer a range of low loss lenses to fit.

### Applications

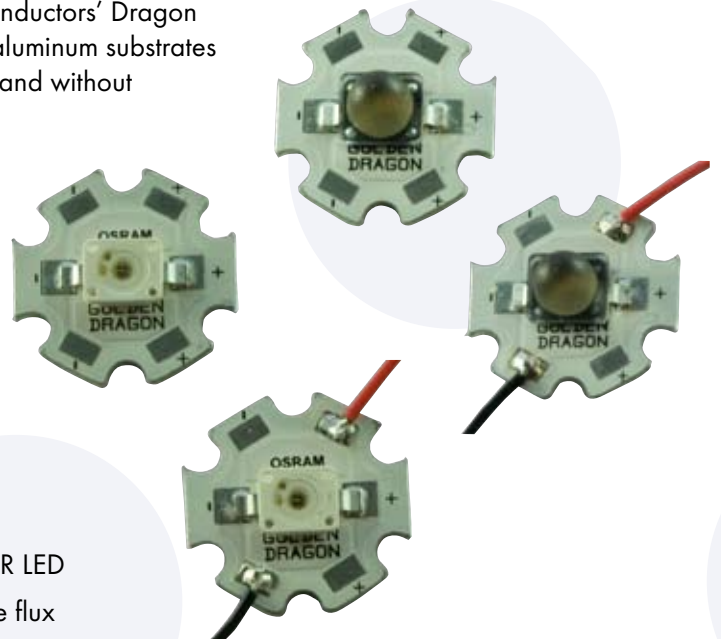
- Surveillance systems
- IR illumination for cameras
- Machine vision
- Night vision light
- Driver assistance systems

### Technical Features:

- Each Dragon1IR PowerStar contains an Osram Dragon IR LED
- Up to 100,000 Hour lifetime to 70% of original radiance flux
- Mounting holes using a M3 screw allows easy installation
- Footprint size 20mm x 20mm
- Available with or without 200mm connecting wires
- Dragon1IR PowerStar can be linked together to produce longer chains.
- Current range: up to 1 A DC and up to 5 A pulsed.

### Important Information and Precautions

- Depending on the mode of operation, these devices emit highly concentrated non visible infrared light which can be hazardous to the human eye. Products which incorporate these devices have to follow the safety precautions given in IEC 60825-1 and IEC 62471.
- The Dragon1IR PowerStar's LED, when powered up, emits high levels of IR light thus it is advised that you do NOT look directly at it. Turn the Dragon1IR PowerStar away from you and do not shine into the eyes of others.
- Dragon1IR PowerStar will overheat in operation if not attached to a suitable heat-sink. Over heating can cause failure or irreparable damage.
- Do not operate Dragon1IR PowerStar with power supplies with unlimited current. Connection to constant voltage power supplies that are not current limited may cause the Dragon1IR PowerStar to consume current above the specified maximum and cause failure or irreparable damage.
- Dragon1IR PowerStar, when operated, can reach high temperatures thus there is risk of injury if they are touched.



## Product Option

Types without integral lens

ILS Part Number	IR centroid wavelength	Radiance Flux (mW)		Forward Voltage		Radiance Angle [half power]	Relevant Osram LED Data Sheet
		Typical	Max	@ 1A †	@ 5A †		
ILH-ID01-85SN-SC201.	850 nm	950	1250	3.0 V typ	3.5 V typ	±60°	SFH4235
ILH-ID01-94NN-SC201.	940 nm	500	800	1.4 V typ	2.0 V typ	±60°	SFH4233

Types with integral lens

ILS Part Number	IR centroid wavelength	Radiance Flux (mW)		Forward Voltage		Radiance Angle [half power]	Relevant Osram LED Data Sheet
		Typical	Max	@ 1A †	@ 5A †		
ILH-ID01-85NL-SC201.	850 nm	630	1250	1.5 V typ	2.0 V typ	±20°	SFH4236
ILH-ID01-94NL-SC201.	940 nm	550	1250	1.4 V typ	2.0 V typ	±20°	SFH4239

## Part Number Ordering Information for Dragon1IR PoweStars With and Without Wires

IR centroid wavelength	Part Number No Wires	Part Number with 200mm Wires	Note
850 nm	ILH-ID01-85SN-SC201.	ILH-ID01-85SN-SC201-WIR200.	No integral lens
940 nm	ILH-ID01-94NN-SC201.	ILH-ID01-94NN-SC201-WIR200.	No integral lens
850 nm	ILH-ID01-85NL-SC201.	ILH-ID01-85NL-SC201-WIR200.	With integral lens
940 nm	ILH-ID01-94NL-SC201.	ILH-ID01-94NL-SC201-WIR200.	With integral lens

## Minimum and Maximum Ratings

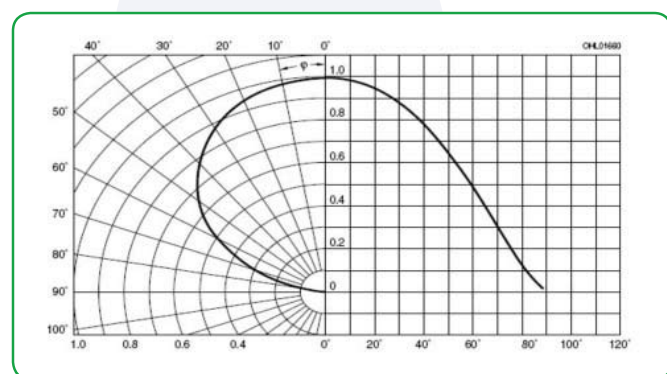
	Operating Temperature at Tc-Point *	Storage Temperature *	Maximum Current	Surge current tp < 200 μs, D = 0, TS=25°C	Reverse Voltage
all dragon1IR Series	-20°C to +75°C	-30°C to +85°C	1,000 mA	5,000 mA	1 volt max

\* Exceeding maximum ratings for operating and storage temperature will reduce expected life time or destroy the Dragon1 IR Powerstars.

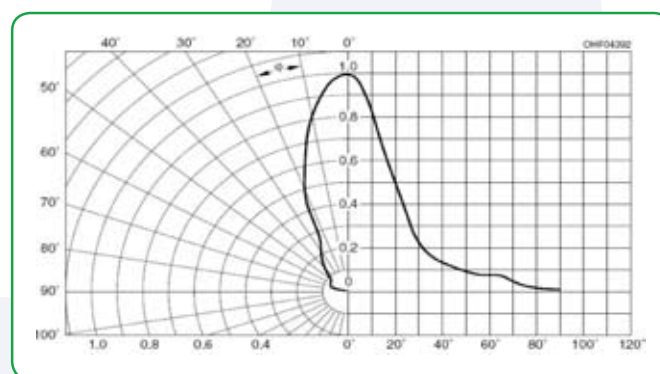
Exceeding maximum ratings for operating voltage will cause hazardous overload and will likely destroy the Dragon1 IR Powerstars.

The temperature of the Dragon1 IR Powerstars must be measured at the Tc-Point (located at the centre of the board) according to EN60598-1 in a thermally constant status with a temperature sensor or a temperature sensitive label.

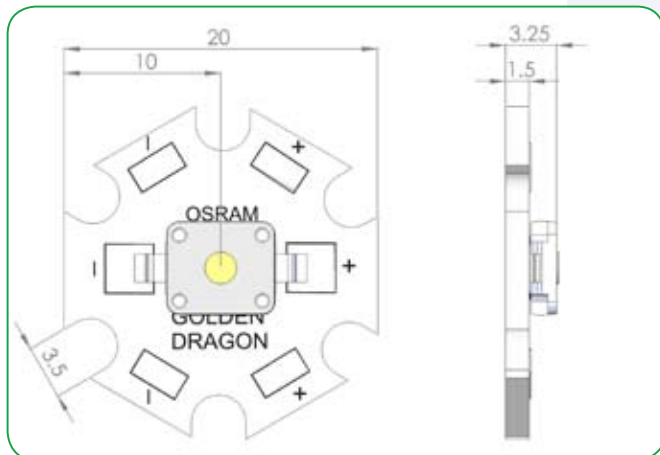
## Radiation of single LED - ILH-UD01-xxNL (UN-LENSED) Types



## Radiation of single LED - ILH-UD01-xxNL (INTEGRAL LENS) Types

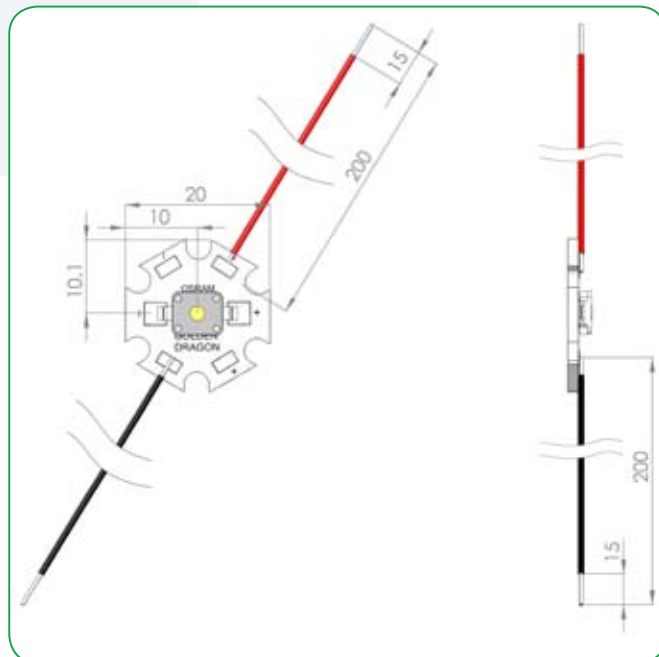


### Technical Drawing ILH-ID01-xxNL unwired

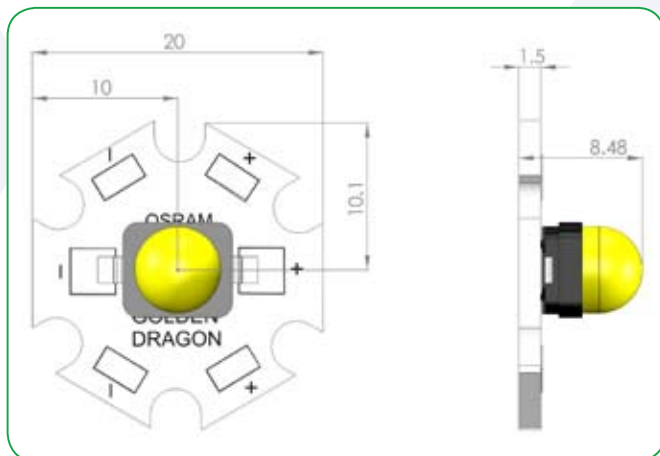


**3D drawing files are available on request from iLS. Please call or email**

### Technical Drawing ILH-ID01-xxNL wired

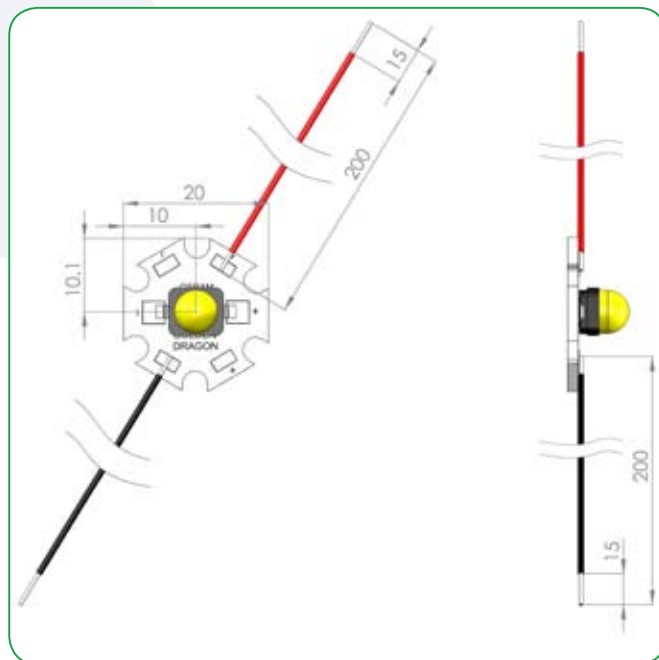


### Technical Drawing ILH-ID01-xxNN unwired



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

### Technical Drawing ILH-ID01-xxNN wired



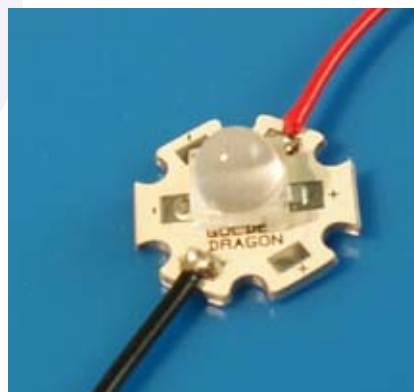
## Dragon1IR PowerStar Lens and Reflector Options

Suitable Lenses for the ILH-ID01-xxNL Types only (ILH-ID01-xxNN types have integral lenses)

### ILS Special Lens

Lens Part No	Beam Angle	Mounting Type
FL-35A	+/-5 DEGREES LAMBERTIAN	2 LEGS
FL-39	+/-5 DEGREES LAMBERTIAN	4 LEGS
FL-41	+/-5 & +/-15 DEGREES OVAL	4 LEGS
FL-42	+/-10 DEGREES LAMBERTIAN	CLIP-ON
FL-54	+/-62.5 DEGREES BATWING	CLIP-ON
FL-63S	+/-15 DEGREES LAMBERTIAN	TWIST-ON
FL-66S	+/-30 DEGREES LAMBERTIAN	TWIST-ON
FL-68S	+/-60 & +/-30 DEGREES OVAL	TWIST-ON
FL-68D	+/-30 & +/-60 DEGREES OVAL	TWIST-ON
FL-69S	+/-70 DEGREES SPOT	TWIST-ON
FL-70	+/-55 DEGREES SPOT	TWIST-ON
FL-82	135 x 70 x 30 TOTAL DEGREES ASYMETRIC	TWIST-ON
FL-90	+/-7.5 DEGREES LAMBERTIAN	CLIP-ON
FL-901	+/-5 DEGREES SPOT	2 LEGS
FL-902	+/-10 DEGREES SPOT	2 LEGS
FL-903	+/-15 DEGREES SPOT	2 LEGS

### Dragon1IR PowerStar Lens Options



with Clip-on Lens



with Legged Lens



with Twist-on Lens

## Assembly Information

- The mounting of the Dragon 1 IR 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 Dragon 1 IR PowerStar.
- The Dragon 1 IR PowerStars, as manufactured, has no conformal coating and therefore offers 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 T<sub>c</sub> 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.

## 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.