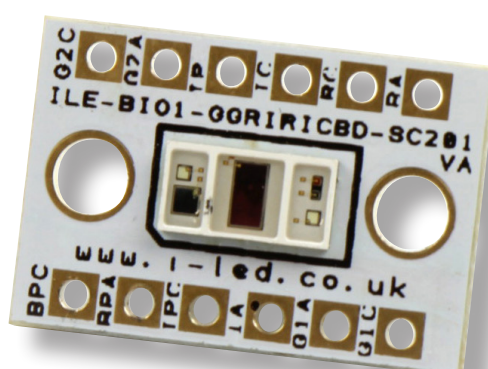




SFH7072 BIOFY® Health Monitoring Eco1

ILE-BI01-GGRIRICBD-SC201.

At the heart of each BIOFY® Eco1 is a BIOFY® SFH7072 sensor. Apart from two green emitters and one photodiode with an infrared filter, it also contains one red and one infrared emitter as well as a broadband photodiode. The distance between the three latter components was increased so that more light is reflected onto the detector. The improved signal quality of the measurements with infrared and red light simplifies the calculation of the oxygen saturation of blood (SpO₂). Eco1s are compact, powerful LED light sources built on FR4 PCB with thermal vias for optimal thermal management. BIOFY® Eco1s generate very little heat and therefore do not require any secondary Heat Sinking.



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APPLICATIONS

- » Heart Rate Monitoring
- » Pulse Oximetry

TECHNICAL FEATURES

LED Family	BIOFY® SFH7072 Sensor*
Mounting	Mounting holes using M3 screws allows easy installation
Dimensions (L x W x H)	20.25 x 13.70 x 0.90mm
Emitter	Infrared Emitter 950nm
LEDs	1 x Red LED 660nm, 2 x Green LED 530nm
IR Cut Detector	Spectral range sensitivity of 402...694nm
Broadband Detector	Spectral range sensitivity of 420...1100nm

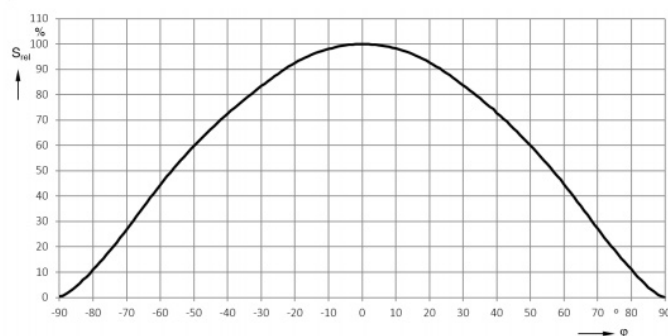
PRODUCT OPTIONS

ILS Part Number	Colour	Relevant OSRAM LED Data
ILE-BI01-GGRICBD-SC201.	Please consult the relevant OSRAM Datasheet for further information on Parameters of the BIOFY®	SFH7072

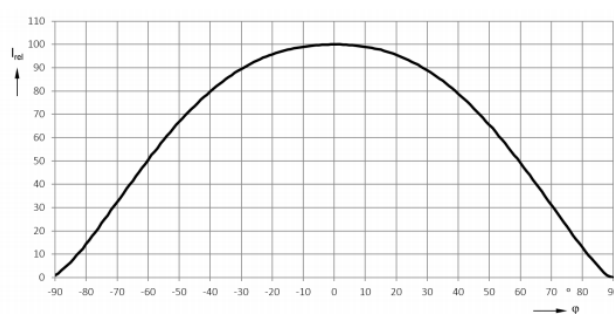
MINIMUM AND MAXIMUM RATINGS

ILS Part Number	Operating Temperature at Tc-Point [°C]	Storage Temperature [°C]
ILE-BI01-GGRICBD-SC201.	-40 to 85 °C	-40 to 85 °C

RADIATION CHARACTERISTICS OF DETECTOR



RADIATION CHARACTERISTICS OF EMITTERS



PIN CONFIGURATION

Name	Function
BPC	Broadband photodiode cathode
BPA	Broadband photodiode anode
IPC	IR-Cut photodiode cathode
IA	Infrared LED anode
G1A	Green LED 1 anode
G1C	Green LED 1 cathode
RA	Red LED Anode
RC	Red LED Cathode
IC	Infrared LED cathode
IP	IR-Cut photodiode anode
G2A	Green LED 2 anode
G2C	Green LED 2 cathode

ASSEMBLY INFORMATION

- » 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 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.



LEDs, when operated, can reach high temperatures thus there is risk of injury if they are touched.



LEDs 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 LEDs 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 LED.



The LED, 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 T_c 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 a specific or custom enquiry, please contact the ILS team via email or phone. Alternatively please visit our website for more product information and to see our full ranges.



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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, and from providing design support and prototyping within the European market place. We can deliver production displays to wherever in the world that the customer's manufacturing or assembly is being undertaken.

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