

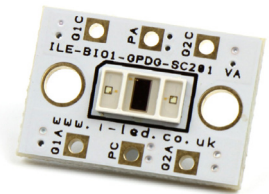
SFH7070 Biofy® Health Monitoring Eco1

ILE-BI01-GPDG-SC201.

Product Overview

At the heart of each Biofy® Eco1 is a Biofy® SFH7070 sensor. The SFH7070 consists of a large-format photo diode and three green LEDs with a wavelength of 530 nanometres (nm). It is used for monitoring heart rate by measuring the volume of blood passing through blood vessels. It works by shining light on the surface of the skin.

Different amounts of this light are absorbed by blood and the surrounding tissue. The light not absorbed is reflected to the detector. With its green emission spectrum the SFH7070 is ideal for measuring the pulse rate at the wrist. 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.



Applications

- Heart Rate Monitoring

Technical Features

- Biofy® Eco1s contain a Biofy® SFH7070 Sensor*
- Mounting holes using M3 screws allows easy installation
- Size (LxWxH): 20.25x13.70x0.90mm
- SFH7070 Contains 2 x Green LED 530nm 1 x Detector with a spectral range sensitivity of 402...694nm

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

Important Information and Precautions

- The Biofy® Eco1's LED, when powered up, is very bright. Thus it is advised that you do not look directly at it. Turn the Eco1 away from you and do not shine into the eyes of others.
- Do not operate Biofy® Eco1's with a Power Supply with unlimited current. Connection to constant voltage Power Supplies that are not current limited may cause the Eco1 to consume current above the specified maximum and cause failure or irreparable damage.
- The Eco1 board is a DOUBLE sided board for ease of connections, please ensure that one side is insulated to avoid shorting.
- DO NOT HOT PLUG ON LED SIDE OF POWER SUPPLY.
- DO NOT TOUCH or PUSH on the LED as this can cause irreparable damage.

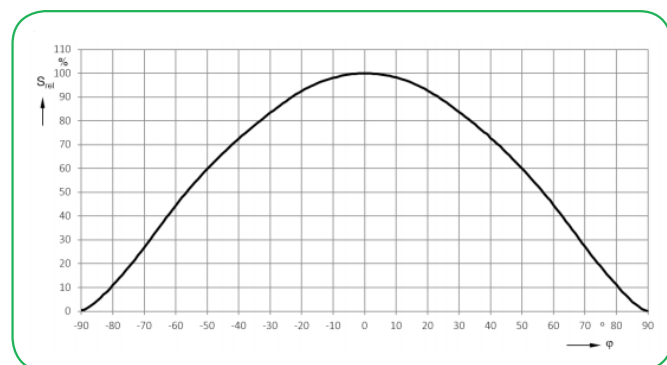
Product Options

ILS PART NUMBER	Colour	Relevant OSRAM LED Data
ILE-BI01-GPDG-SC201.	Please consult the relevant OSRAM Datasheet for further information on Parameters of the Biofy®	SFH7070

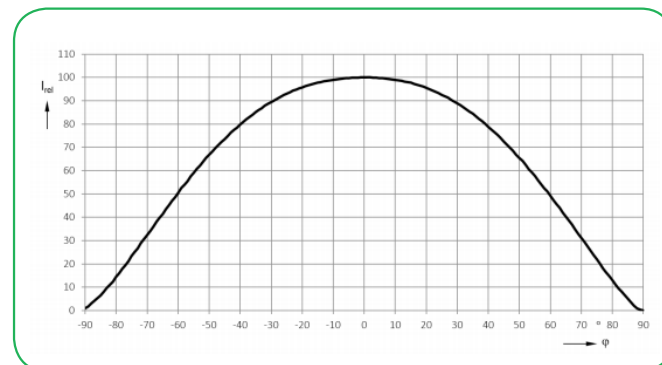
Minimum and Maximum Ratings

ILS PART NUMBER	Operating Temperature [°C]	Storage Temperature [°C]
ILE-BI01-GPDG-SC201.	-40...85°C	-40...85°C

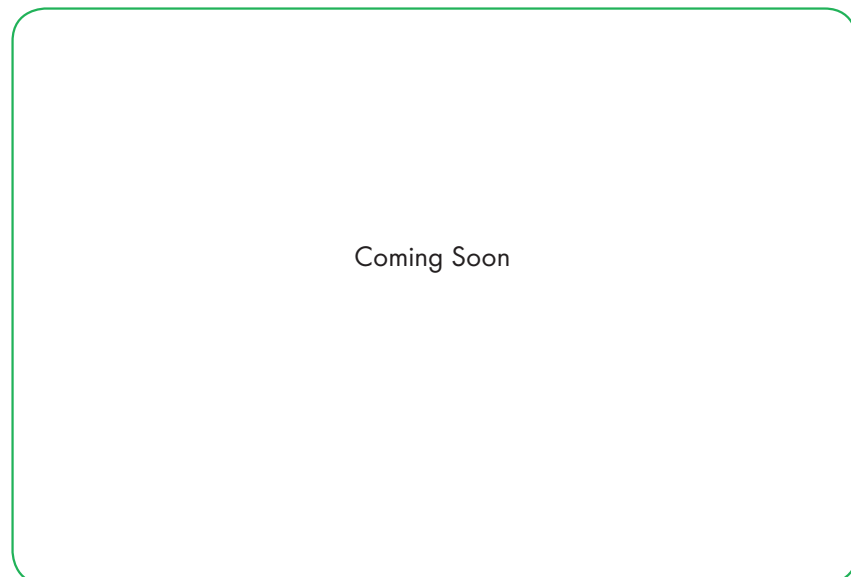
Radiation Characteristics of Detector



Radiation Characteristics of Emitters



Technical Drawing with cables (mm)



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

Pin Configuration

Name	Function
G1C	Green LED 1 cathode
PA	Photodiode anode
G2C	Green LED2 cathode
G2A	Green LED2 anode
PC	Photodiode cathode
G1A	Green LED1 anode

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.

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 Biofy® Eco1.
- The Biofy® Eco1, 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, 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 housing 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 z 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.