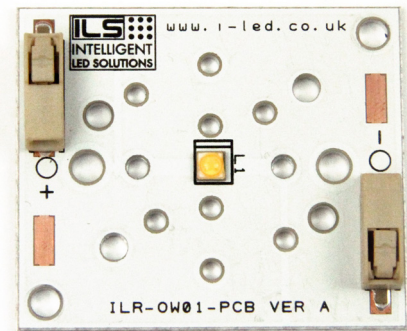


# LEDiL Selector OSLO<sup>®</sup> Square

IHR-OG01-xxxx-SC221.

## Product Overview

The LEDiL selector board from IHS is the latest LED Light Engine to be based on LEDiL lenses. The main purpose of the LEDiL Selector is for prototyping and understanding what secondary optic should be use with an OSLO<sup>®</sup> Square LED. The PCB has been designed to work with a wide variety of optics from LEDiL and enables the end user to simply plug and play with the Light Engine thanks to the on board connectors. OSLO<sup>®</sup> Square LEDs can be driven up to 1800mA while OSRAMs power chip technology remains efficient even at the highest drive currents. A very low thermal resistance ensures cool running and a highly efficient product.



Examples of how unique wavelengths can help with plant growth:

Colour Combination	Works For
Deep Blue + Hyper Red	Leafy greens such as lettuce and basil
Deep Blue + Hyper Red + Far Red	Leafy greens such as basil and aids in seed germination, stem elongation and leaf expansion
Deep Blue + Hyper Red + Yellow + Green	Flowering plants where biomass is the goal
White	Whites are added when the end application has no daylight, and these products offer the only source of useable wavelengths.

## Applications

- Prototyping
- Selection of the correct lens
- Research and Development
- Horticulture

## Technical Features

- LEDiL Selectors with a part number of IHR-OG01 use a single OSRAM Opto Semiconductors OSLO<sup>®</sup> Square with a 120° integral silicone optic
- Up to 100,000 hours lifetime to 70% of original brightness
- Mounting holes using M3 screws allow easy installation
- Size (LxWxH): 40mm x 35mm x 3mm
- Current range: 100mA to 1800mA
- Secondary Lens can be fitted – check options in Lens and Reflector section
- Suitable Heatsinks available – check options in Heatsink section
- Suitable Power Supplies available - check options in Power Supply section
- Suitable Thermal Interface Material available - check options in Thermal Interface Material section

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

## Important Information and Precautions

- LEDiL Selectors, when powered up, are very bright. Thus it is advised that you do not look directly at them. Turn the LEDiL Selector product away from you and do not shine into the eyes of others.
- LEDiL Selector products will overheat in operation if not attached to a suitable Heatsink. Overheating can cause failure or irreparable damage.
- Do not operate LEDiL Selector products with a Power Supply with unlimited current. Connection to constant voltage Power Supplies that are not current limited may cause the LEDiL Selector product to consume current above the specified maximum and cause failure or irreparable damage.
- LEDiL Selector products, 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 might cause irreparable damage.

## Product Options

IHS Part Number	Colour	Colour Temp (K)	Typical Wattage at 700mA §	Forward Voltage	Flux † at 700mA	Radiance Angle	CRI	Relevant OSRAM LED Data
IHR-OG01-HW90-SC221.	Hot White	2700K	1.96W	2.7-3.2V	180lm	+/-60	90	GWCSSRM2.CM
IHR-OG01-WM80-SC221.	Warm White	3000K	1.96W	2.7-3.2V	250lm	+/-60	80	GWCSSRM2.EM
IHR-OG01-QW90-SC221.	Quartz White	3500K	1.96W	2.7-3.2V	210lm	+/-60	90	GWCSSRM2.CM
IHR-OG01-NW80-SC221.	Neutral White	4000K	1.96W	2.7-3.2V	270lm	+/-60	80	GWCSSRM2.EM
IHR-OG01-WH80-SC221.	White	5000K	1.96W	2.7-3.2V	280lm	+/-60	80	GWCSSRM2.EM
IHR-OG01-UL70-SC221.	Ultra White	6500K	1.96W	2.7-3.2V	280lm	+/-60	70	GWCSSRM2.PM

\* 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 700mA pulse at 85 °c

## Micromoles

IHS Part Number	PAR	Photon Flux	DIN5031-10	McCree	
	(400-700nm)	(240-790nm)	(400-725nm)	400-700nm	300-800nm
	umol/s	umol/s	YPF umol/s	YPF umol/s	YPF umol/s
IHR-OG01-HW90-SC221.	2.94	3.22	1.97	2.63	2.68
IHR-OG01-WM80-SC221.	3.69	3.97	2.42	3.29	3.35
IHR-OG01-QW90-SC221.	3.38	3.63	2.26	2.96	3.02
IHR-OG01-NW80-SC221.	3.86	4	2.52	3.38	3.41
IHR-OG01-WH80-SC221.	4.1	4.29	2.73	3.51	3.55
IHR-OG01-UL70-SC221.	4.41	4.53	2.94	3.72	3.75

## Product Options Colours

IHS Part Number	Colour	Wavelength	Typical Wattage at 700mA §	Forward Voltage	Flux † at 700mA	Radiance Angle	Relevant OSRAM LED Data
IHR-OG01-DEBL-SC221.	Deep Blue	445nm	2.03W	2.80-3.20V	1300mW	120° (±60°)	GDCSSRM2.14
IHR-OG01-HYRE-SC221.	Hyper Red	656nm	1.47W	1.80-2.30V	890mW	120° (±60°)	GHCSSRM3.24
IHR-OG01-HYRE-SC231.	Hyper Red	660nm	1.33W	1.90-2.60V	825mW	120° (±60°)	GH CSSRM3.24

\* 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 700mA pulse at 85° c

## Micromoles

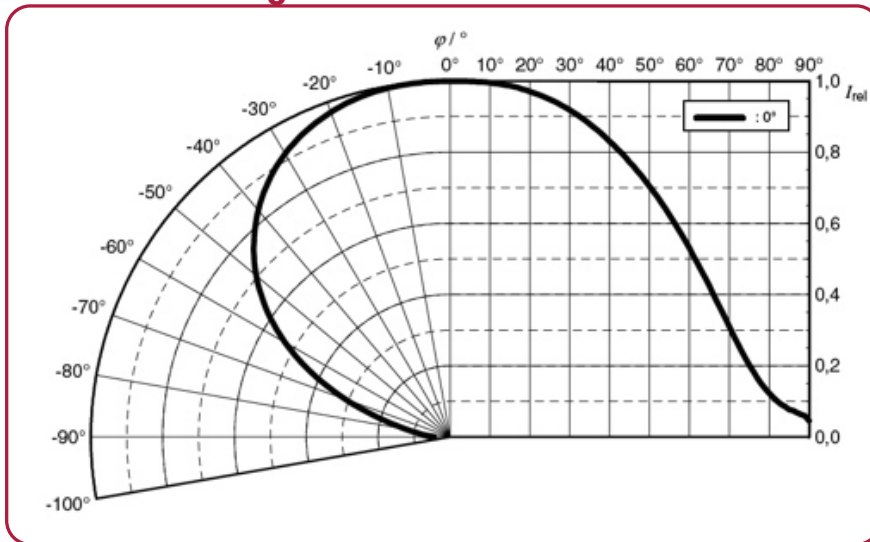
IHS Part Number	PAR	Photon Flux	DIN5031-10	McCree	
	(400-700nm)	(240-790nm)	(400-725nm)	400-700nm	300-800nm
	umol/s	umol/s	YPF umol/s	YPF umol/s	YPF umol/s
IHR-OG01-DEBL-SC221.	4.90	4.91	4.62	3.61	3.62
IHR-OG01-HYRE-SC221.	4.85	4.87	3.91	4.54	4.54
IHR-OG01-HYRE-SC231.	5.05	5.24	3.50	5.27	3.52

## Minimum and Maximum Ratings

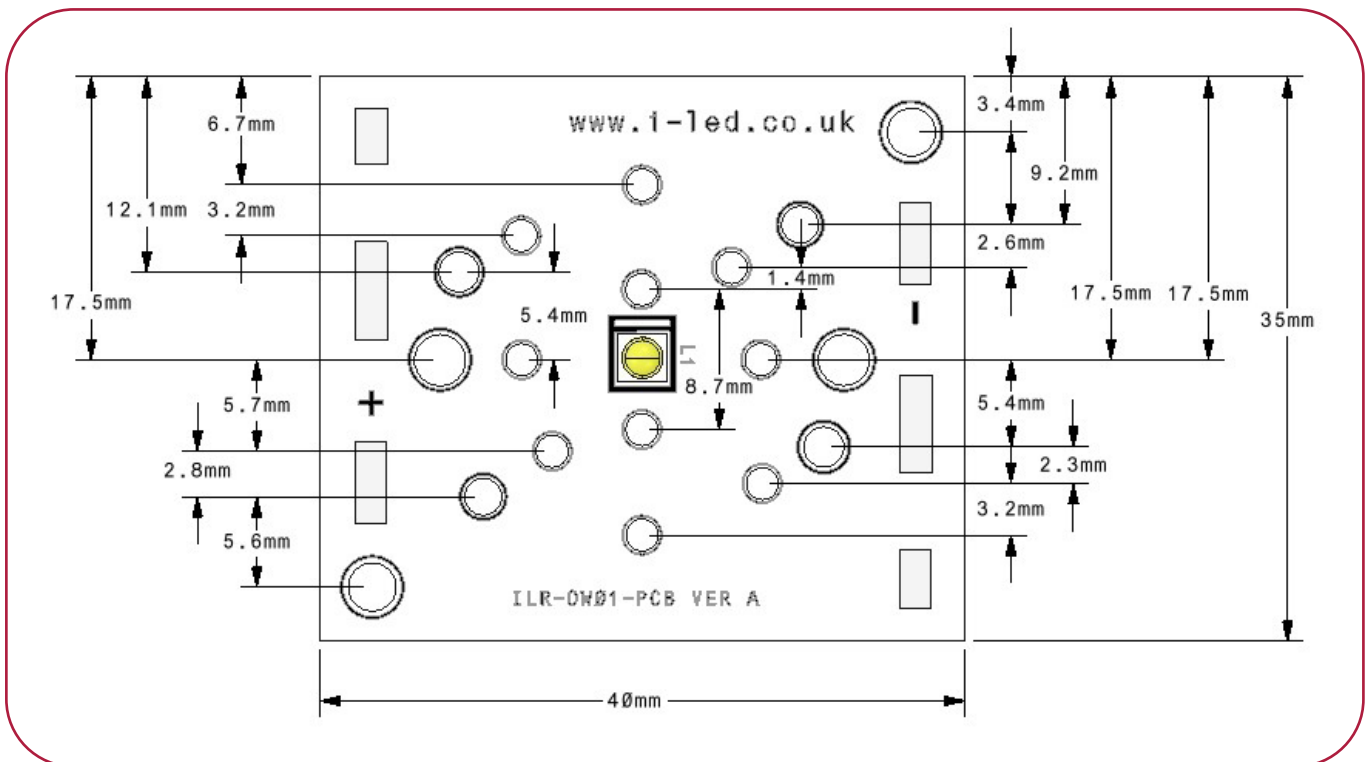
IHS Part Number	Operating Temperature	Storage Temperature	Forward Current per chip	Reverse Voltage
IHR-OG01-HW90-SC221.	-40 ... 125 (°C)	-40 ... 125 (°C)	100mA ... 1800mA	Not designed for reverse operation
IHR-OG01-WM80-SC221.	-40 ... 125 (°C)	-40 ... 125 (°C)	100mA ... 1800mA	Not designed for reverse operation
IHR-OG01-QW90-SC221.	-40 ... 125 (°C)	-40 ... 125 (°C)	100mA ... 1800mA	Not designed for reverse operation
IHR-OG01-NU80-SC221.	-40 ... 125 (°C)	-40 ... 125 (°C)	100mA ... 1800mA	Not designed for reverse operation
IHR-OG01-WH80-SC221.	-40 ... 125 (°C)	-40 ... 125 (°C)	100mA ... 1800mA	Not designed for reverse operation
IHR-OG01-UL70-SC221.	-40 ... 125 (°C)	-40 ... 125 (°C)	100mA ... 1800mA	Not designed for reverse operation
IHR-OG01-DEBL-SC221.	-40 ... 120 (°C)	-40 ... 120 (°C)	200mA ... 2000mA	Not designed for reverse operation
IHR-OG01-HYRE-SC221.	-40 ... 125 (°C)	-40 ... 125 (°C)	100mA ... 1000mA	Not designed for reverse operation
IHR-OG01-HYRE-SC231.	-40 ... 125 (°C)	-40 ... 125 (°C)	100mA ... 1000mA	Not designed for reverse operation

\* 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 is likely to 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 a single LED**



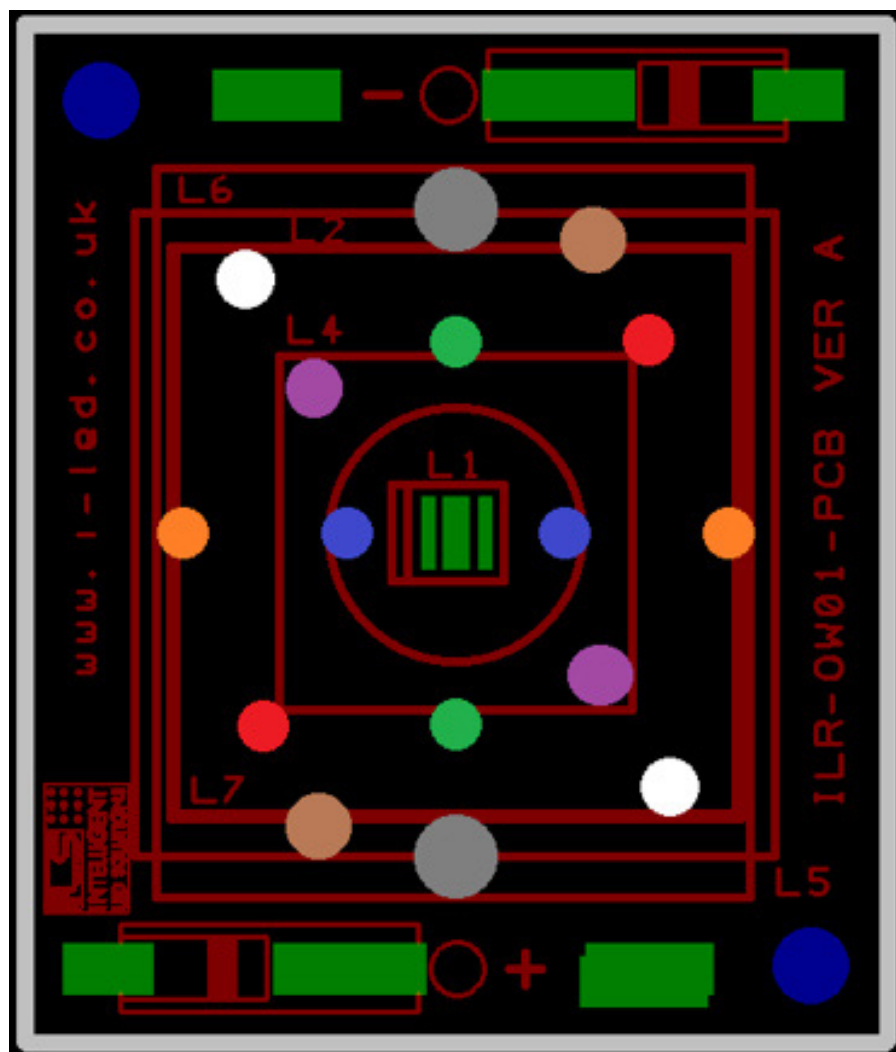
**Technical Drawing (mm)**



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

### 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. The LEDiL Selector LED Engine is compatible with over 1000 lenses, consult the illustration below to check which lenses are compatible and where these would fix on the PCB. Other compatible families for the LEDiL Selector. Consult the table and image of the PCB below for lens locations.



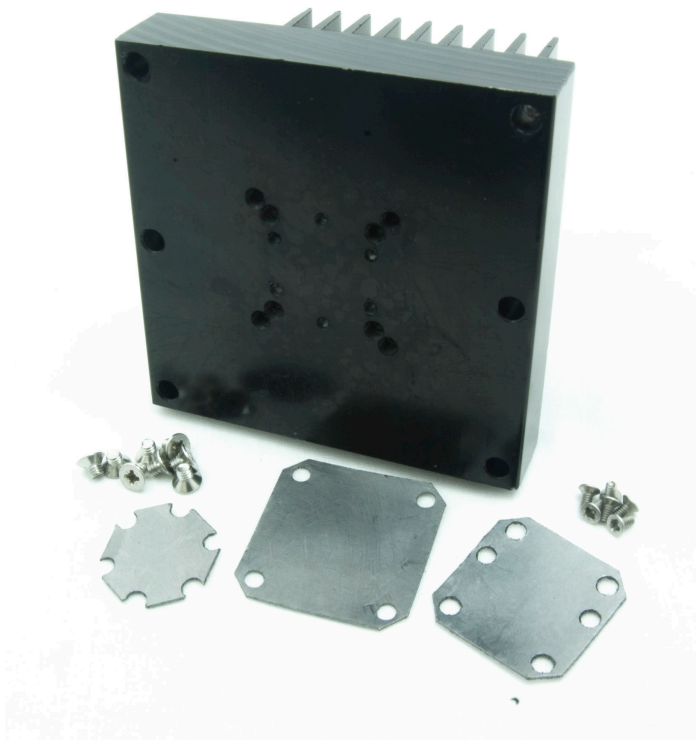
Family	Locator Pin
AMELIA	RED
BILLIE	BLUE
CRYSTAL	RED
Emerald	BLUE
EMILY	BLUE
EMMA	BLUE
EVA	N/A
EYA	N/A
FLARE	WHITE
FLARE-MINI	BLUE
FLORENTINA-1	RED
FRIDA	BLUE
HEIDI	RED
IRENE	BLUE
IRINA	BLUE
IRIS	BLUE
JULIA	BLUE
KIKI	ORANGE
LARISA	BLUE
LAURA	BLUE
LEILA	BLUE
LISA2	BLUE
LOTTA	BLUE
MIRELLA	BLUE
OONA	N/A
REGINA	BLUE
RITA	BLUE
ROSE	N/A
SEANNA	N/A
SIRI	BLUE
STRADA-A	BLUE
STRADA-C2	BLUE
STRADA-D	BLUE
STRADA FORWARD	BLUE
STRADA-K	BLUE
STRADA-S	BLUE
STRADA-SQ	N/A
STRADA-T	BLUE
STRADELLA	BLUE
TINA	BLUE
TINA2	BLUE
TINA3	BLUE
TWIDDLE	BLUE
VERONICA	GREEN
ZOWIE	N/A

## 1 OSLO<sup>®</sup> Square LEDiL Selector Heatsink Options

IHS has a series of Aluminium Alloy Heatsinks to be used with our standard range of PowerStars, PowerClusters and PowerLinear Engines. These Heatsinks 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 also happy to manufacture custom Heatsinks to your request.

IHS Product		No Heatsink, in free air	ILA-HSINK-75X46X25MM	ILA-HSINK-70X70X55MM
1 OSLO <sup>®</sup> LEDiL Selector	350mA	Yellow	Green	Green
	700mA	Yellow	Green	Green
	1000mA	Red	Green	Green

Green	Operates under the recommended IHS junction temperature
Yellow	Operates under the recommended LED maximum junction temperature
Red	Not suitable for use
N/A	Heatsink not designed for use with this product





## 1 OSLO<sup>®</sup> Square LEDiL Selector Power Supply Options

IHS has a comprehensive range of standard Power Supplies. The table below shows forward voltage of each LED driver please consult the product options table to find the forward voltage of the LEDiL Selector used.

Additional Power Supplies are being introduced so please call us or check our website for the latest offering.

IHS Driver Part No.	Rating	Current	Forward Voltage Range	
IZC035-004F-4065C-SAL	4W	350mA	3 - 12 V	
IZC070-004F-4065C-SAL	4W	700mA	2 - 6 V	
IZC035-008F-5065C-SA	8W	350mA	3 - 36 V	
IZC070-008F-5065C-SA	8W	700mA	3 - 12 V	
IZC035-017F-0067A-SA	17W	350mA	6 - 48 V	
IZC035-018T-9500A-SX	18W	350mA	15 - 52 V	
IZC050-018T-9500A-SX	18W	500mA	9 - 36 V	
IZC070-018T-9500A-SX	18W	700mA	6 - 26 V	
IZC070-035F-0067C-SA	35W	700mA	9 - 48 V	
IZC045-040A-9266C-SA	40W	450mA	30 - 89 V	



IHS Driver Part No.	Rating	Current	Forward Voltage Range	
IZC070-050A-9267C-SA	50W	700mA	24 - 72 V	
IZC070-075A-9267C-SA	75W	700mA	54 - 108 V	

## Thermal Interface Material Options

IHS 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 Heatsink.

Product	Non Adhesive	Single Sided Adhesive	Double Sided Adhesive
<b>LEDiL Selector</b>	ILA-TIM-LEDIL-40x35-0A	ILA-TIM-LEDIL-40x35-1A	ILA-TIM-LEDIL-40x35-2A

Other sizes are available, including customised parts

## Assembly Information

- The mounting of the OSOLON® LEDiL Selector has to be on a metal Heatsink.
- 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 OSOLON® LEDiL Selector
- The OSOLON® LEDiL Selector, 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 IHS.

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.