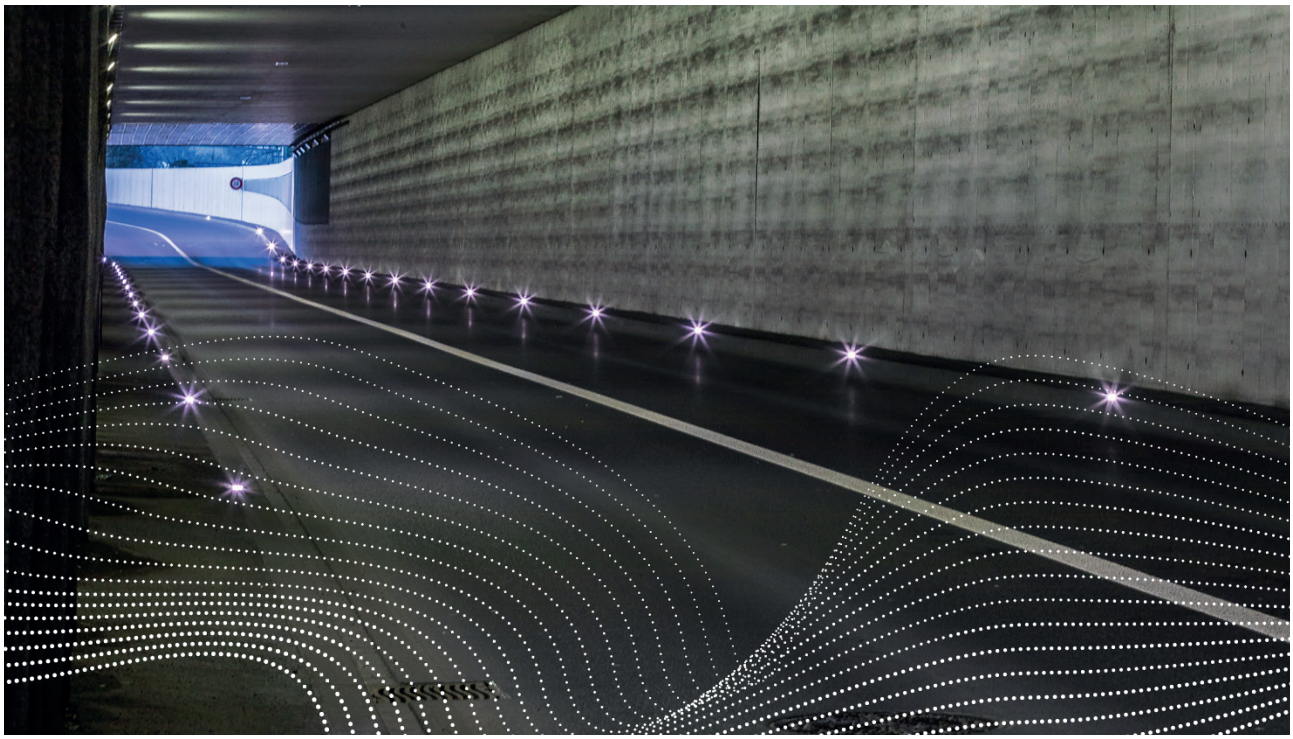
GIFAS ELECTRIC



09.27

DETAILED CATALOGUE

MarkLED i1

LIGHTING SOLUTIONS

V0625

Content

Introduction

Our product line of optical guidance devices is applicable in tunnels, roundabouts or on the road in general.
We have detailed information, documentation, certificates for our system MarkLED i1 which we would be appreciate to send if you are interested.

Why optical guidance systems?

An optical guidance system improves recognition of lanes or obstacles, particularly during times of poor visibility (at night, fog, etc.) as well as vulnerable traffic areas such as tunnels, curves, roundabouts or traffic islands. The signals provide a very high degree of safety for traffic.

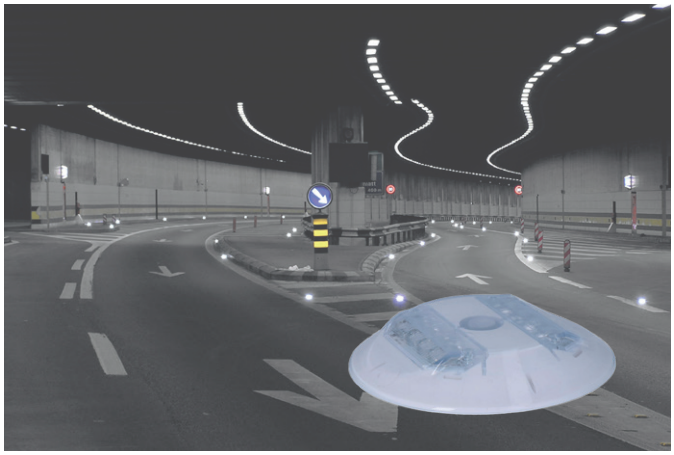
Your benefits with our system

- certified products
- quick and easy installation
- latest LED technology, very low power consumption
- no series capacitors necessary
- this provides an end-to-end uninterruptible supply line
- dimmable by control unit
- simple design, minimised risk of failure
- low-maintenance
- many years of experience with inductive systems
- this means a high level of technical and product and application know-how

We provide

- many years of know-how, experienced Project Managers
- individual advice, also on site
- expert advice on installation and bringing into service
- creating CAD documents and tunnel disposals
- own service team with professional equipment

The system



The power supply for the MarkLED i1 is provided inductively, i.e. wirelessly via Wireless Power Transfer (WPT). This allows complete enclosure of the light module, which is thereby optimally protected against environmental conditions. In the event of a defect, the supply line remains intact. The light module can be easily removed and replaced with a new one. No galvanic connection to the supply line is necessary. The power supply for the light module is provided via the completely enclosed cable drum recessed in the floor.

Product features

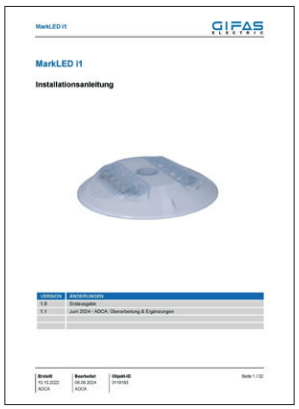
- dimmable, switchable, flashing, lightning
- latest LED technology with integrated optics
- impact-resistant, UV-resistant polycarbonate case
- scratch-resistant coating
- self-cleaning design
- completely enclosed
- quick and easy mounting and replacement

Remark

Only system products from GIFAS may be used, in order to fulfil the warranty conditions. GIFAS system products are carefully matched and tested for safe and trouble-free operation. The use of third-party products results in the loss of warranty claims and may adversely affect the safety features of the system.

Product documentation

Installation instructions


MarkLED i1

GIFAS

MarkLED i1

Installationsanleitung

Test reports


TZB

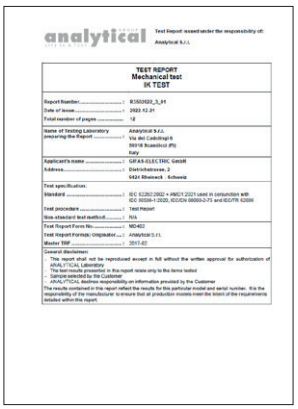
Testzentrum Baden

PRÜFBERICHT-NR.: 2634_PBN_23031401


analytical

TEST REPORT

IP TEST

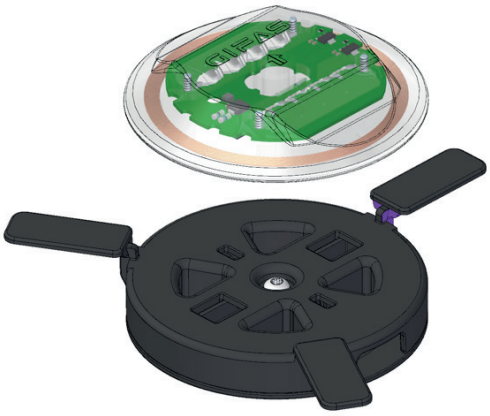

analytical

TEST REPORT

Mechanical test

IK TEST

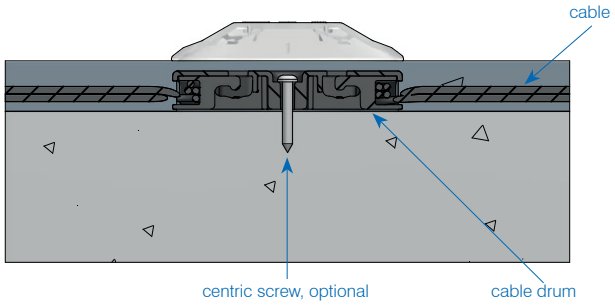
The technology



Technical Data

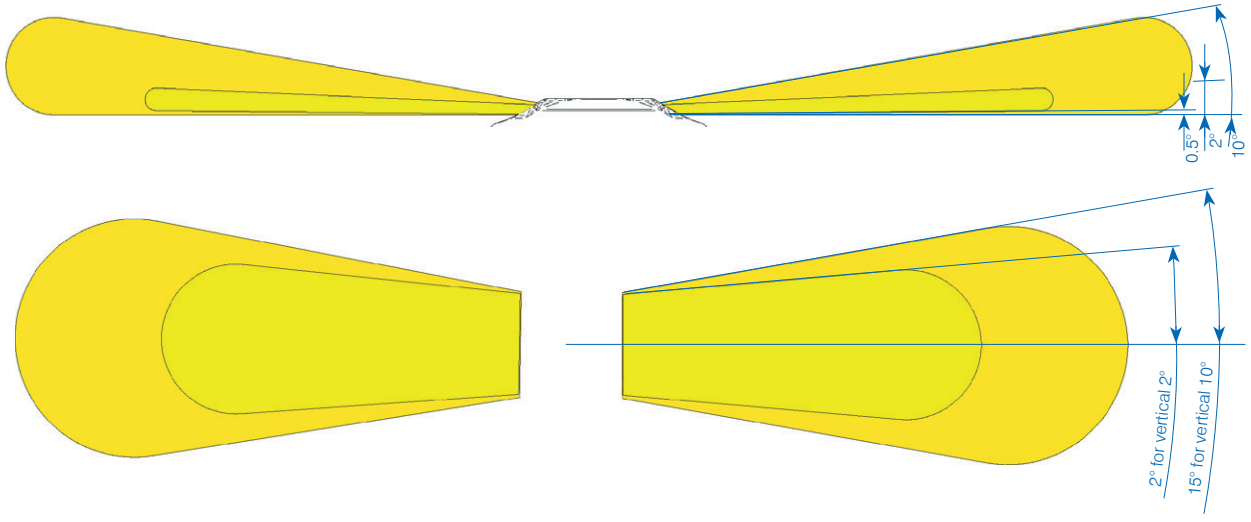
Construction:	single or double-sided with 4 LEDs each
Colour temperature :	white approx. 5'600 K
Light intensity:	65 cd
Protection category:	IP68 / IP69K
Protection class:	III
Impact resistance:	IK10
Feeding:	inductive
Power consumption:	< 2.5 W
Diameter:	115 mm
Height:	20 mm
Casing:	Polycarbonate transparent, nano-coated and dirt-repellent
Temperature resistance:	–40° C to +55° C
Axle load:	to 5 t (slow traffic with air-filled tyres)
Mounting:	joining by gluing

Single components



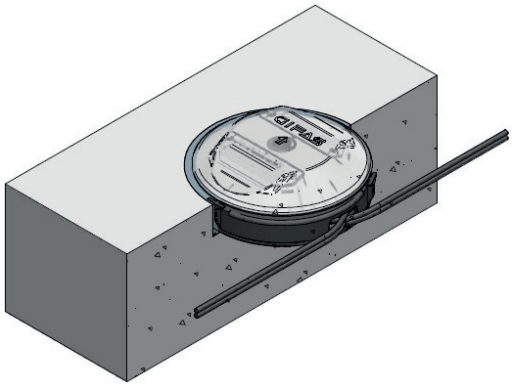
Light emission scheme

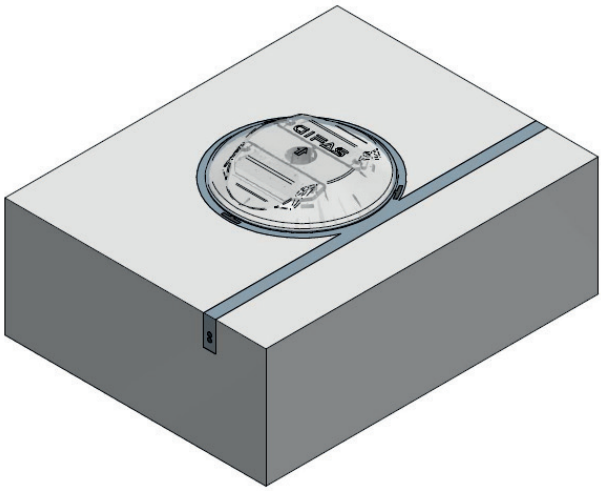
The MarkLED i1 system meets the regulations of the Federal Road Authority (e.g. BAST-Germany, FEDRO Switzerland).



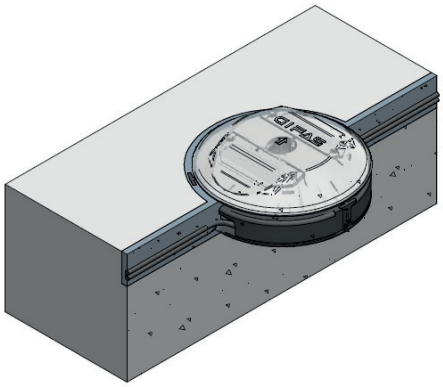
The technology

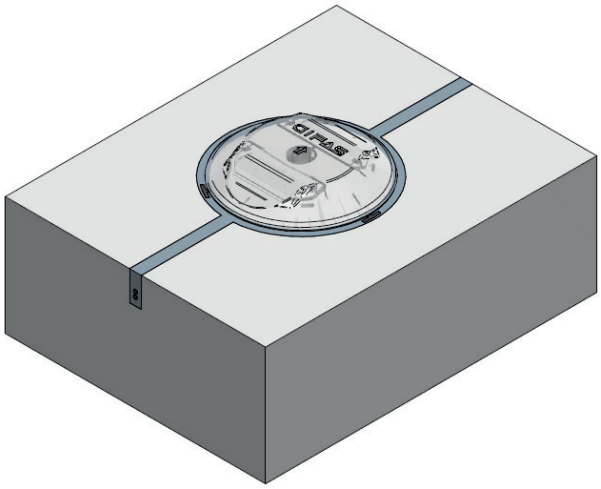
Installation situation: Slot lateral





Installation situation: Slot central





Applications

Assortment

Light module

Assortment

860950	MarkLED i1 light module, IP68/IP69K, IK10, 2×4 LED, white 5'600 K, casing Ø 115 mm, h = 20 mm

Capacitor box with capacitor*

Item no. 861239

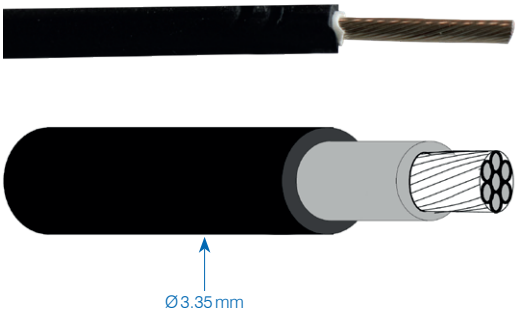
Item no. 861240

**this can vary depending on the project*

Assortment

861239	Housing with capasitor, applic. to InduLED Basic, housing for surface mounting
861240	Housing with capasitor, applic. to InduLED Basic, housing for recessed mounting

System cable



The system cable is a single-core, double isolated cable which is used to supply the signal units. It is continuous over the entire system length and therefore insulated end-to-end. It has excellent ozone, chemical, weather and UV resistance and is also halogen-free with enhanced behaviour in case of fire.

Note: An additional 2.5 m of system cable is required for the installation of each light module.

Technical Data

Measured DC	
Conductor resistance at 20° C:	< 14 Ω/k
Nominal conductor-to-earth voltage:	1'800 VAC
Nominal conductor-to-conductor voltage:	3'000 VAC
External diameter:	3.35 mm
Conductor cross-section:	1.5 mm²
Construction of n×Ø:	37×0.23 mm
Conductor:	tin-plated, finely stranded (EN 60228 Kl. 5)
Insulation, internal (white):	RADOX EI 110
Insulation, external (black):	RADOX EI 109

Assortment

225755	InduLED Basic system cable 1×1.5 mm², double insulated

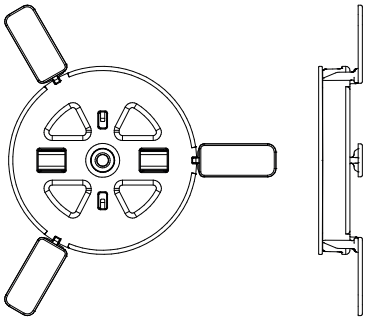
Assortment

Cable drum

The cable drum, consisting of a holder and cover, is placed under each light module. It is used for correct guidance and winding of the system cable and provides the inductive coupling to the light module. No tools are required for mounting.
After the cable has been wound on and the drum closed, it can be placed in the hole. As an option, the cable drum can be anchored in the floor with a central screw. The three wings define the correct distance to the mounting surface of the light module.
After placement and sealing, the wings can be broken off and disposed of.
The cable drum is then invisibly integrated in the floor.

Technical Data

Material:	Saxaketon 160FR GF30
Diameter (without wings):	122 mm
Height (without wings):	19 mm
Mounting position:	horizontal
Hole diameter:	Ø130 - 150mm
Drilling depth:	min. 25 mm
Fastening (optional):	screw centre
Encapsulation:	f.e. mortar, BücoFix, ...



Assortment

860951	InduLED Basic cable drum holder
860952	InduLED Basic cable drum lid

Adhesive and sealant

The light module is glued to the base with the help of the sealant and adhesive. Our adhesive is a single-component adhesive that polymerised itself into an elastic compound as it reacts to the air humidity. It also has no silicone or solvents.

Technical Data

Basis:	MS-Polymer
Cross-linking system:	polymerisation through air humidity
Temperature resistance:	–40° C to +90° C
Processing temperature:	~ +5° C to +30° C
Color:	pebble gray
Processing:	using a hand spray gun
Packaging:	cartridge of 290 ml

Assortment

020157	Adhesive and sealant hybrid pebble grey, 290 ml Permafix 1153

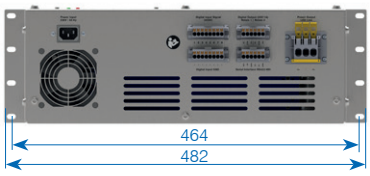
Accessories

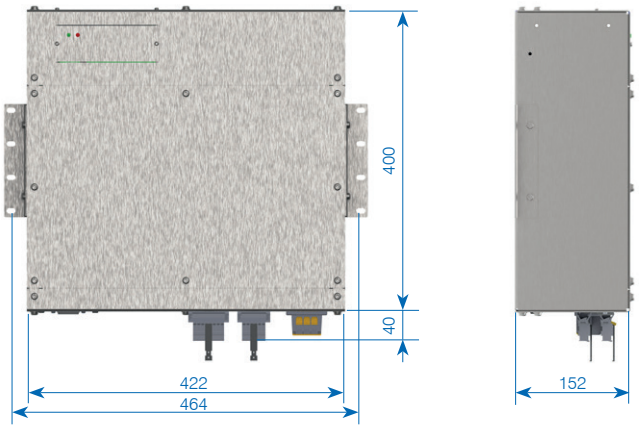
Power supply unit

Power supply unit for inductively coupled guidance system, wall or 19“ rack mounting.

Product features

- The control system enables the power supply of system lengths of up to 500 m.
- Control of up to 50 Basic LED lighting modules





Assortment

861050	InduLED Basic control unit 230 VAC / 3A, max. 500 m system length, casing 422×400×152 mm

Technical Data

Function statuses

Status of the control system resp. status during start-up:	LED status display (red / green)
Passive functions for the LED signal units:	continuous lighting, up to 4 individually adjustable dimming levels (15 - 100 %), synchronous flashing

Connection options

Input:	standard 230 V
Output:	2-pin Phoenix contacts
Digital I/O:	8 inputs, 2 outputs

Electrical data

Supply voltage:	230 V, 50 Hz
Current consumption (max.):	3A
Power factor:	~ 0.94
Power consumption (max.):	700 W
Main power fuse:	min. 6 A … max. 13 A
Output current (max.):	2.5 A (rms)
Frequency range of the power transmission:	37.6 kHz
Typical cable current:	1.5 A (rms)
Typical cable voltage:	< 300 V (rms)
Certificates (pending):	CE: JA / RoHS: JA

Operating environment

Operating temperature:	–10° C to 50° C
Humidity:	10 % to 80 % (non-condensing)
Cooling:	convection (fan, internal)

Dimensions

Weight:	~ 20 kg
Dimensions (W×H×D):	422 mm×400 mm×152 mm (without mounting brackets)

Installation

Installation environment:	switchgear cabinet / wall mounting
Clearance	
– side & below:	10 cm
– above:	20 cm
– front:	35 cm
Fixing method:	brackets for rear panel & 19“rack (can be changed, depending on the mounting position)

Accessories

Guard plate

During the winter months, when snow ploughs touch the light modules when entering and exiting tunnels, units are sheared off and need to be replaced. However, this can be prevented by using a protective plate in V4A quality. It is sufficient to equip the first MarkLED i1 at the tunnel entrance and exit with this protective plate.

Assortment

024446	Guard plate V4A, 190×150×24 mm
024676	Countersunk screw V4A with I-6Kt. without shaft M8×70 mm
024677	Nylon plug Fischer M8-S×50 mm
019180	Nylon plug Fischer Ø6×35 mm, without surrounding
019290	Chipboard screw V4A, Ø5×80/50 mm

Sealing compound

The recommended sealing compound is heated to 160°–180°C while being constantly mixed. The compound is applied using a spouted container or grouting lance. Excess compound must be removed by scraping once it has fully cooled.

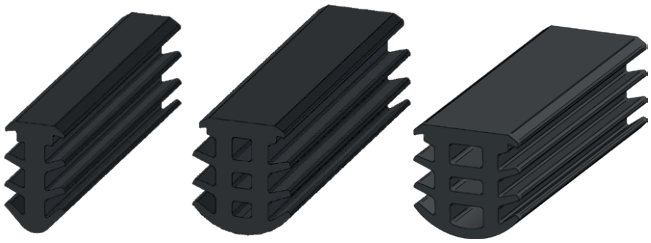
Technical Data

Colour:	black
Form of delivery:	1 box with 24 cubes of 700 g each
Sealing temperature:	160° C - 180° C
Weight per unit volume:	1.2 g/cm³

Assortment

208907	Hot/liquid/bitumen sealing compound TOK-Melt N2

Joint profile



Item no. 116753 Item no. 140862 Item no. 155809

The milled groove of the optical guidance system must be sealed against environmental conditions. A simple and low-cost solution is to use the halogen-free GIFAS joint profile made of EPDM. This is inserted in the slot. It is self-locking and available in three different widths. A stable and smooth slot with slot widths of 6 -16 mm is the prerequisite for use.

Technical Data

Material properties:	halogen-free, no corrosive and toxic gases
Shore hardness A:	70° ±5%
Special weight:	1.23 kg/l
Elongation at break:	237% DIN 53504
Breaking stress:	11.2 MPa DIN 53504
Item no. 116753	
Exterior dimensions:	9.3 mm×17.1 mm
Groove width:	6 - 8 mm
Nominal section:	89 mm²
Weight:	109 kg/km
Item no. 140862	
Exterior dimensions:	14.5 mm×17.1 mm
Groove width:	10 - 12 mm
Nominal section:	146 mm²
Weight:	177 kg/km
Item no. 155809	
Exterior dimensions:	17.35 mm×17.5 mm
Groove width:	14 - 16 mm
Nominal section:	171 mm²
Weight:	254 kg/km

Assortment

116753	Joint profile EPDM 70° Shore for groove 6 - 8 mm, 9.3×17.1 mm, black
140862	Joint profile EPDM 70° Shore for groove 10 - 12 mm, 14.5×17.1 mm, black
155809	Joint profile EPDM 70° Shore for groove 14 - 16 mm, 17.35×17.5 mm, black

GIFAS
ELECTRIC

THE SOLUTION PARTNER

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