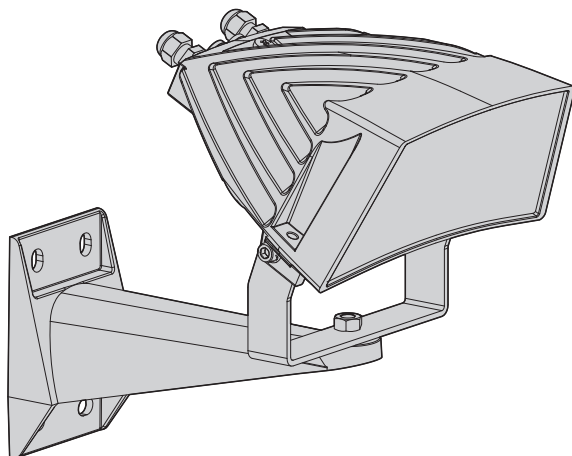




IRN Installation Manual

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1 About this manual

Read all the documentation supplied carefully before installing and using this product. Keep the manual in a convenient place for future reference.

1.1 Typographical conventions



DANGER!
High level hazard.
Risk of electric shock. Disconnect the power supply before proceeding with any operation, unless indicated otherwise.



DANGER!
Hot surface.
Avoid contact. Surfaces are hot and may cause personal injury if touched.



DANGER!
Emission of visible light or infrared.
Can be harmful for eyes. Pay attention to the provided indications.



CAUTION!
Medium level hazard.
This operation is very important for the system to function properly. Please read the procedure described very carefully and carry it out as instructed.



INFO
Description of system specifications.
We recommend reading this part carefully in order to understand the subsequent stages.

2 Notes on copyright and information on trademarks

The mentioned names of products or companies are trademarks or registered trademarks.

3 Safety rules



CAUTION! Device installation and maintaining must be performed by specialist technical staff only.



Do not stare at the lamp when on. Can be harmful for eyes.



The infrared LED illuminator emits high-intensity visible light. In compliance with standard EN62471/IEC62471, the photobiological safety assessment has classified the device in Risk Group 2, where it exceeds the values of the Exempt Group. The risk linked to the observer depends on how the product has been installed and is used. For installation, follow the instructions in this manual. Do not open the illuminator for whatever reason. Do not look directly at the illuminator using optical lenses. Exposure hazard values (EHV): 88.1s. Hazard distance (HD): 200mm.

RISK GROUP 2	GROUPE DE RISQUE 2
CAUTION: IR emitted from this product. Avoid eye exposure. Use appropriate shielding or eye protection.	ATTENTION: IR sont émis par ce produit. Éviter toute exposition des yeux. Utiliser un blindage approprié ou une protection oculaire.

Fig. 1 Infrared illuminator.



CAUTION! The white light LED illuminator emits high-intensity visible light. In compliance with standard EN62471/ IEC62471, the photobiological safety assessment has classified the device in Risk Group 2, where it exceeds the values of the Exempt Group. The risk linked to the observer depends on how the product has been installed and is used. For installation, follow the instructions in this manual. Do not open the illuminator for whatever reason. Do not look directly at the illuminator using optical lenses. Exposure hazard values (EHV): 24.3s. Hazard distance (HD): 200mm.

RISK GROUP 2 GROUPE DE RISQUE 2	
CAUTION: Possibly hazardous optical radiation emitted from this product. Do not stare at operating lamp. May be harmful to the eye.	ATTENTION: Des rayonnements optiques dangereux peuvent être émis par ce produit. Ne pas regarder la lampe directement. Peut être dangereux pour les yeux.

Fig. 2 White light illuminator.



During normal operation the surface of the illuminator can reach high temperatures. Do not allow direct contact and position the appliance where it is inaccessible to unauthorised persons. Before touching switch off the illuminator and allow to cool for a minimum period of 10 minutes.

- Before starting any operation, make sure the power supply is disconnected.
- Be careful not to use cables that seem worn or old.
- Never, under any circumstances, make any changes or connections that are not shown in this handbook. Improper use of the appliance can cause serious hazards, risking the safety of personnel and of the installation.
- Use only original spare parts. Non-original spare parts could cause fire, electrical discharge or other hazards.
- Before proceeding with installation, check the supplied material to make sure it corresponds to the order specification by examining the identification labels (4.2 Product marking, page 5).
- A power disconnect device must be included in the electrical installation, and it must be very quickly recognizable and operated if needed.
- To connect the power supply line use the appropriate junction-box (IRNJBUL). For further information, refer to the product use and installation manual.
- This is a Class A product. In a domestic environment this product may cause radio interference. In this case the user may be required to take adequate measures.
- To comply with the main supply voltage dips and short interruption requirements, use a suitable Uninterruptable Power Supply (UPS) to power the unit.

- The manufacturer declines all responsibility for any damage caused by an improper use of the appliances mentioned in this manual. Furthermore, the manufacturer reserves the right to modify its contents without any prior notice. The documentation contained in this manual has been collected and verified with great care. The manufacturer, however, cannot take any liability for its use. The same thing can be said for any person or company involved in the creation and production of this manual.

- Installation category (also called Overvoltage Category) specifies the level of mains voltage surges that the equipment will be subjected to. The category depends upon the location of the equipment, and on any surge voltage protection provided. Equipment in an industrial environment, directly connected to major feeders/short branch circuits, is subjected to Installation Category III. If this is the case, a reduction to Installation Category II is required. This can be achieved by use of an insulating transformer with an earthed screen between primary and secondary windings, or by fitting UL listed Surge Protective Devices (SPDs) from live to neutral and from neutral to earth. Listed SPDs shall be designed for repeated limiting of transient voltage surges and the following rated operation conditions: Type 2 (SPDs permanently connected to the power network and intended for installation on the load side of the service equipment); Nominal Discharge Current (In) 20kA min. For example: FERRAZ SHAWMUT, STT2240SPG-CN, STT2BL240SPG-CN rated 120Vac/240Vac, (In=20kA). Maximum distance between installation and reduction is 5m.
- In the case of a 24Vac power supply, you must provide for adequate separation from the AC power supply line using double or reinforced insulation between the main power supply line and the secondary circuit.

4 Identification

4.1 Product description and type designation

The GEKO lights the entire scene evenly, eliminating hotspots and underexposures, for unbeatable night-time images and secure surveillance of the area.

The high efficiency heat sink body ensures maximum LED durability and protection against over-temperatures, whereas the front glass, made of special technopolymer, provides high infrared transmittance.

The illuminators are protected against electrostatic discharges.

The illuminator is available in versions 24Vac/12-24Vdc or 100-240Vac with integrated power supply.

GEKO is supplied with a wall-mount bracket that rotates horizontally and vertically.

The GEKO infrared illuminator guarantee is 5 years, while for GEKO with the white light is 2 years.

4.2 Product marking

See the label attached to the product.

5 Preparing the product for use



Any change that is not expressly approved by the manufacturer will invalidate the guarantee.

5.1 Unpacking

When the product is delivered, make sure that the package is intact and that there are no signs that it has been dropped or scratched.

If there are obvious signs of damage, contact the supplier immediately.

When returning a faulty product we recommend using the original packaging for shipping.

Keep the packaging in case you need to send the product for repairs.

5.2 Contents

Check the contents to make sure they correspond with the list of materials as below:

- Illuminator with bracket
- Wall-fastening bracket
- Bolts and screws
- Instruction manual

5.3 Safely disposing of packaging material

The packaging material can all be recycled. The installer technician will be responsible for separating the material for disposal, and in any case for compliance with the legislation in force where the device is to be used.

6 Assembly

Fasten the top bracket (01) to the illuminator using the screws and washers (02) supplied.

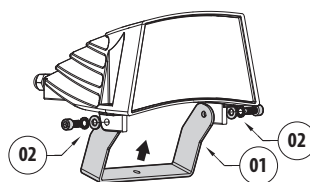


Fig. 3

7 Installation

7.1 Installation of wall-mounted illuminator



The illuminator's position can be decided at the time of installation.

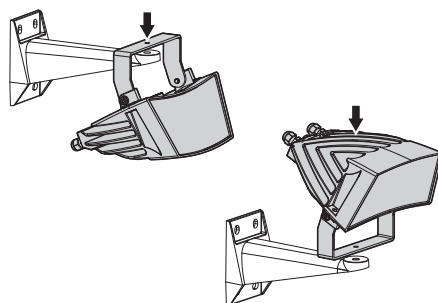


Fig. 4

Fasten the bracket as shown in the figure. Drive the wall screws in tight.

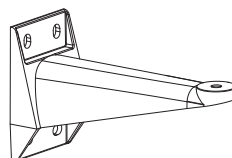


Fig. 5

Fasten the illuminator, complete with its bracket, using the screw, the nut and the washer supplied.

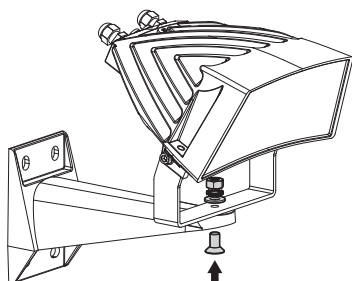


Fig. 6

Set the illuminator's vertical and horizontal inclination by adjusting the two fastening screws.

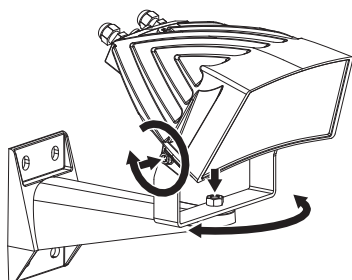


Fig. 7

Check the resulting illumination range on the screen. Tighten all the screws.

7.2 Description of connection cables

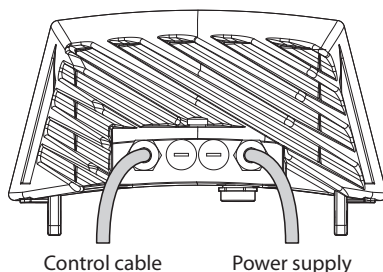


Fig. 8 12Vdc, 24Vdc and 24Vac version.

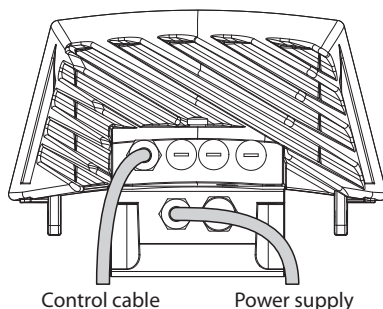


Fig. 9 From 100Vac to 240Vac version.

7.2.1 Power supply cable version 12Vdc, 24Vdc, and 24Vac



The device is Class III. Provide power supply using a safety transformer or a SELV continuous current power supply.

The illuminator is provided with a 2m (6.56ft) power cable.

Power supply cables (blue, brown): Connect the two poles to the supply (24Vac, 50/60Hz or 12-24Vdc). In case of continuous current power supply, polarity is irrelevant.

For maximum lengths and recommended cable sections, refer to the relative chapter (7.2.4 Cable technical specifications, page 9).

7.2.2 Power supply cable version from 100Vac to 240Vac

⚠ The device is Class I. Connection of the yellow-green cable to the safety ground is therefore necessary to ensure electrical safety.

The illuminator is provided with a 2m (6.56ft) power cable.

Power supply cables (blue, brown, yellow/green): Connect the brown cable to the phase, the blue one to the neutral and the yellow-green one to the safety ground.

For maximum lengths and recommended cable sections, refer to the relative chapter (7.2.4 Cable technical specifications, page 9).

7.2.3 Control cable

The product is equipped with a control cable to manage one input contact and one output contact.

COLORS AND FEATURES OF THE CONTROL CABLE	
Cable color	Function
Red	Input for activation by means of external dry contact
Green	Input for activation by means of external dry contact
White	Dry contact output (Follow)
Black	Dry contact output (Follow)

Tab. 1

Input contact: It allows a remote activation of the illuminator by means of a dry contact placed between the red and green conductors. For proper operation, make sure that the twilight sensor is disabled (7.2.5.2 Disabling the twilight sensor, page 10). The input contact status is the following:

- Open contact input (insulated red and green poles): Illuminator on.
- Contact closed input (red and green poles in short-circuit): Illuminator off.

⚠ Avoid to use the same external contact to switch-on or switch-off 2 or more illuminators.

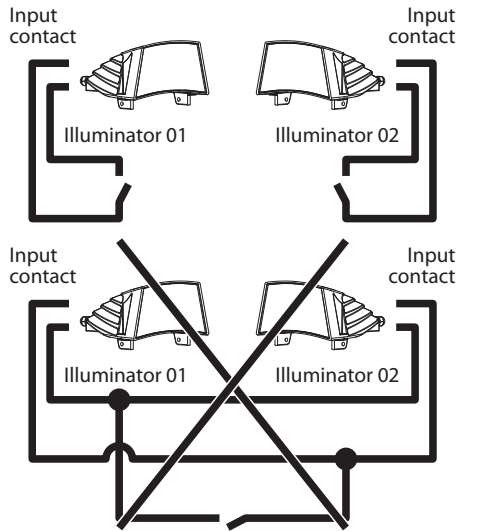


Fig. 10

Output contact (Follow): The Follow output has a dry contact in the white and black poles. The Follow contact can be used to turn on or off other illuminators simultaneously in the system or to verify the camera day/night status. Regardless the illuminator is activated through the input contact or the twilight sensor, the output contact status (Follow) is the following:

- Open contact output (insulated white and black poles): Illuminator on.
- Contact closed output (white and black poles in short-circuit): Illuminator off.

7.2.4 Cable technical specifications

Depending on the type of illuminator and supply voltage, comply with the following maximum lengths for the power cables.

Power supply, 12Vdc

- Voltage drop: 0.6V max.
- Minimum voltage at the power cable input provided with the illuminator: 11.4Vdc.

CABLES SPECIFICATIONS (POWER SUPPLY, 12VDC)	
Cable section	Maximum length
0.75mm ² (18AWG)	4.5m (14.8ft)
1mm ² (17AWG)	6.5m (21.3ft)
1.5mm ² (16AWG)	9m (29.5ft)
2.5mm ² (14AWG)	15m (49.2ft)
4mm ² (10AWG)	24m (78.7ft)

Tab. 2

Power supply, 24Vac or 24Vdc

- Voltage drop: 3V max.
- Minimum voltage at the power cable input provided with the illuminator: 21Vac.

CABLES SPECIFICATIONS (POWER SUPPLY, 24VAC OR 24VDC)	
Cable section	Maximum length
0.75mm ² (18AWG)	35m (114ft)
1mm ² (17AWG)	50m (164ft)
1.5mm ² (16AWG)	80m (262ft)
2.5mm ² (14AWG)	120m (393ft)
4mm ² (10AWG)	200m (656ft)

Tab. 3

Power supply, from 100Vac up to 240Vac

- The cable section is less critical, so no particular prescription is requested. Ensure the ground connection is efficient for safety reasons.
- Cable minimum section: 0.75mm² (18AWG).

Control cable

- External command: Red, Green.
- Follow command: White, Black.
- Cable minimum section: 0.34mm² (22 AWG).
- Cable length: 200m (656ft) max.

7.2.5 LED illuminator switching on threshold adjustment

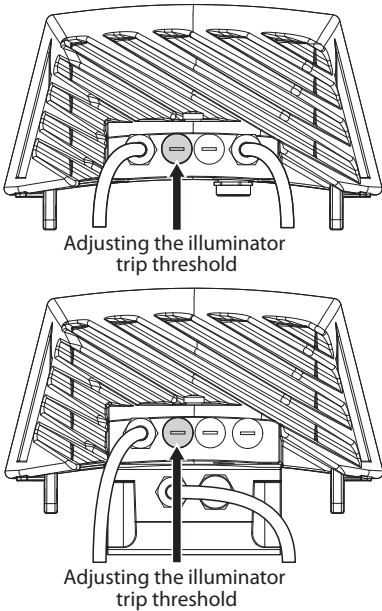


Fig. 11

7.2.5.1 Twilight sensor activation threshold adjustment

The illuminator has an integrated twilight sensor that allows its automatic activation and deactivation at predefined luminous conditions.

The twilight sensor is set in the factory at a predetermined luminous level, suitable for most installations (approximately 50lx). If you want to adjust in different ways the threshold, loosen the plug on the illuminator rear and proceed for the adjustment with a screwdriver.

By rotating the trimmer clockwise, the night mode changeover is anticipated (at a greater luminous value). By rotating the trimmer anti-clockwise, the night mode changeover is delayed (at a lower luminous value).

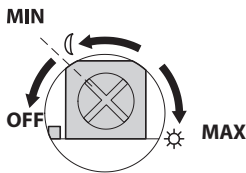


Fig. 12

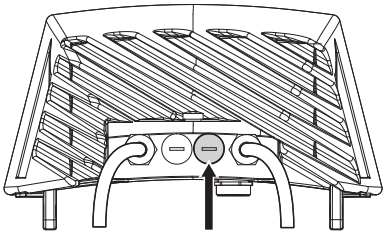
Wait for appropriate brightness before switching on the illuminator. Rotate the trimmer slowly until the LED on the side of the trimmer switches on. Once the intervention threshold has been surpassed (LED on), rotate it slightly in the opposite direction.

After making the adjustments make sure that the plug is closed tight to ensure perfect sealing.

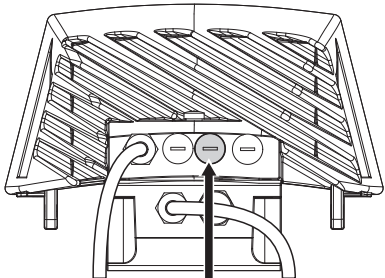
7.2.5.2 Disabling the twilight sensor

To deactivate the illuminator from automatically switching itself on, fully rotate the adjustment trimmer anticlockwise (end run) (Fig. 12, page 10). This way, switching the illuminator on and off will be controlled by an external control (switch).

7.2.6 LED illuminator power adjustment



Adjusting the power of the infrared illuminators



Adjusting the power of the infrared illuminators

Fig. 13

Loosen the hermetic plug. Rotate the trimmer, clockwise to increase the power of the infrared illuminators and anti-clockwise to decrease it.

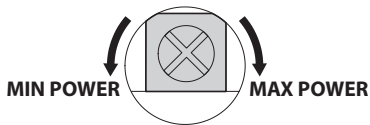


Fig. 14

After making the adjustments make sure that the plug is closed tight to ensure perfect sealing.

7.3 Operational test

7.3.1 Check operation of the twilight sensor

Check operation of the twilight sensor by darkening it with black tape.

8 Information on disposal and recycling

The European Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE) mandates that these devices should not be disposed of in the normal flow of municipal solid waste, but they should be collected separately in order to optimize the recovery stream and recycling of the materials that they contain and to reduce the impact on human health and the environment due to the presence of potentially hazardous substances.



The symbol of the crossed out bin is marked on all products to remember this.

The waste may be delivered to appropriate collection centers, or may be delivered free of charge to the distributor where you purchased the equipment at the time of purchase of a new equivalent or without obligation to a new purchase for equipment with size smaller than 25cm (9.8in).

For more information on proper disposal of these devices, you can contact the responsible public service.

9 Technical data

9.1 General

Supplied complete with support

Adjustable built-in twilight sensor for automatic activation and deactivation

9.2 Mechanical

Die cast aluminum body

Dimensions: 187x251x242mm (7.4x9.9x9.5in)

Unit weight:

- 1.7kg (3.7lb) (from 12Vdc up to 24Vdc, 24Vac)
- 2.2kg (4.8lb) (from 100Vac up to 240Vac)

9.3 Electrical

Supply voltage/Current consumption:

- from 12Vdc up to 24Vdc, 2.5A max
- 24Vac, 2.5A max, 50/60Hz
- from 100Vac up to 240Vac, 1.5A max, 50/60Hz

Power supply voltages permitted tolerance:

- from 100Vac up to 240Vac: $\pm 10\%$
- 24Vac or 24Vdc: $\pm 10\%$
- 12Vdc: $\pm 5\%$

Input for activation by means of external dry contact

Dry contact output (Follow)

Multipolar cable L: 2m (6.56ft)

- Control: $4 \times 0.34\text{mm}^2$ (22AWG)
- Power supply from 12Vdc up to 24Vdc, 24Vac: $2 \times 0.75\text{mm}^2$ (18AWG)
- Power supply from 100Vac up to 240Vac: $3 \times 0.75\text{mm}^2$ (18AWG)

9.4 Illuminators

LED SMD

GEKO IRN - BEAM PATTERN AND ACHIEVABLE DISTANCES FOR ONE ILLUMINATOR			
Horizontal and vertical beam patterns	Maximum distance		
	850nm	940nm	White light
10°	–	140m (460ft)	–
30°	130m (427ft)	80m (262ft)	120m (393ft) ¹
60°	80m (262ft)	60m (197ft)	90m (295ft) ¹

Tab. 4 The distances and the performance depend on the camera/lens used and on the environmental light conditions.

¹ Achievable distances with camera in Day mode (colour image)

9.5 Environment

For indoors and outdoors installation

Operating temperature: from -40°C (-40°F) up to +60°C (140°F)

9.6 Certifications

Electrical safety (CE): EN62368-1, IEC62368-1

Electromagnetic compatibility (CE): EN50130-4, EN55032 (Class A), EN61000-6-4

Electromagnetic compatibility (North America): FCC part 15 (Class A), ICES-003 (Class A)

Outdoor installation (CE): EN62368-1, IEC62368-1

Photobiological safety (CE): EN62471, IEC62471

IP protection degree (EN60529): IP66

IK protection degree : IK10

UL certification (UL60950-1, CAN/CSA C22.2 No. 60950-1-07): cULus Listed

Level of protection Type (UL50E): 4X

Restriction of Hazardous Substances (RoHS), Directive 2011/65/EU

Waste Electrical and Electronic Equipment (WEEE), Directive 2012/19/EU

10 Technical drawings



The indicated measurements are expressed in millimetres.

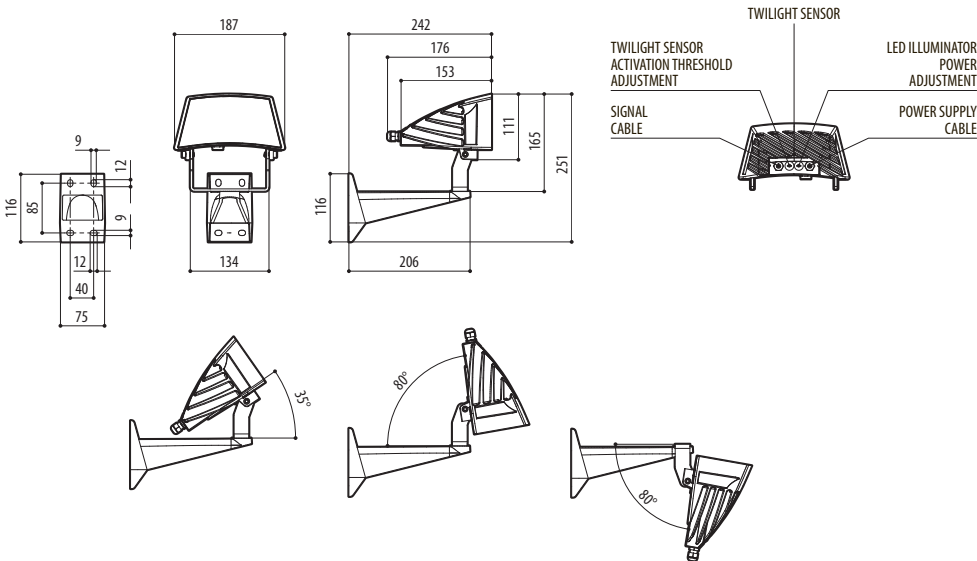


Fig. 15 GEKO IRN (from 12Vdc a 24Vdc, 24Vac).

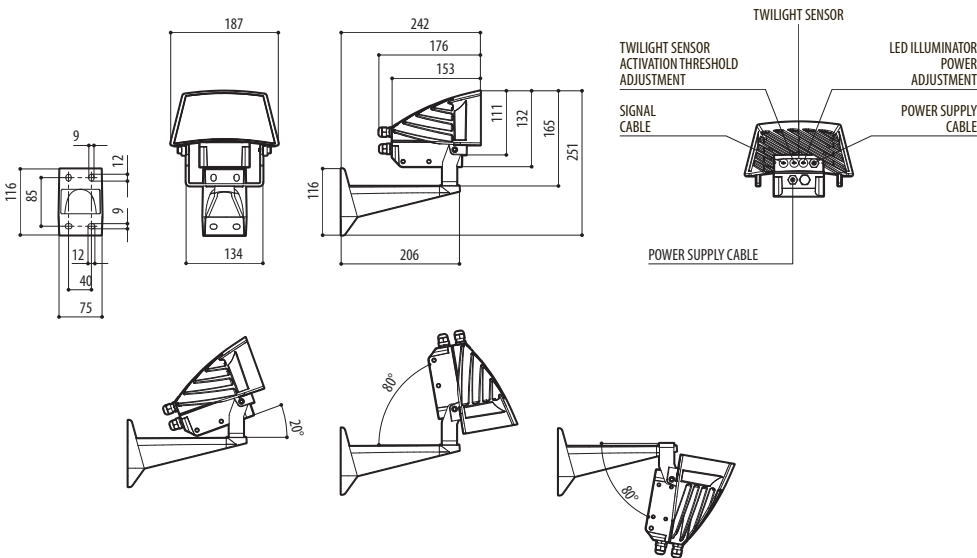


Fig. 16 GEKO IRN (from 100Vac a 240Vac).



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