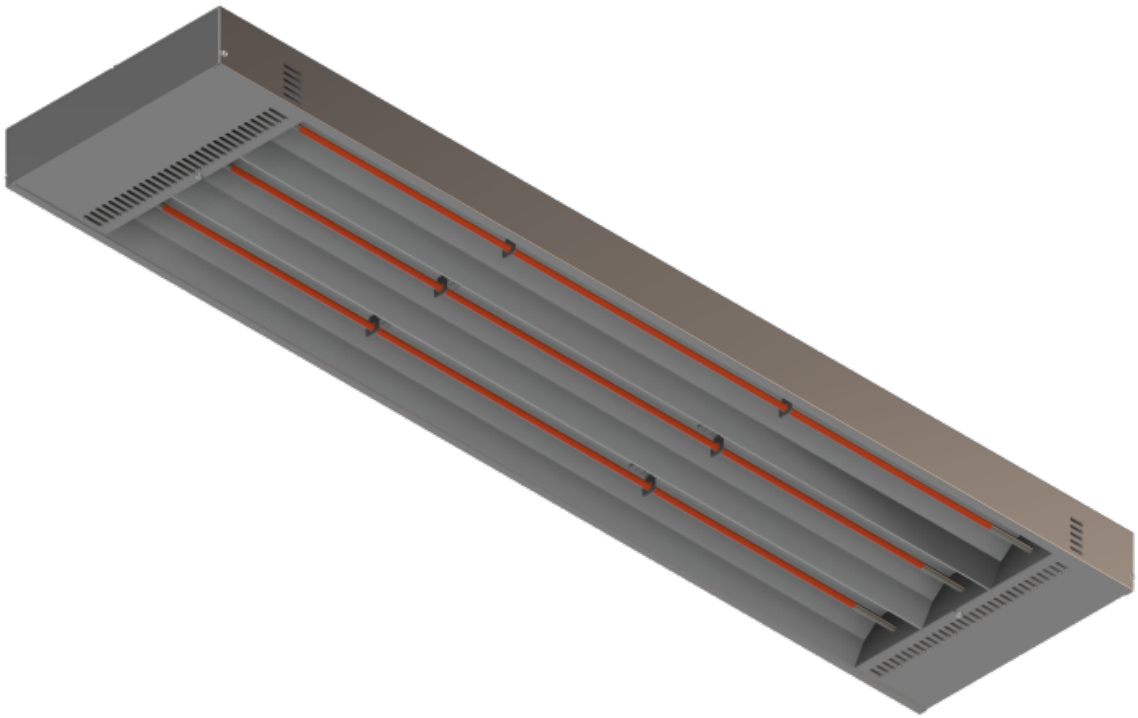
connect Infrared

SPECTRUM

Reference Manual for

1.5kW, 3.0kW & 4.5kW



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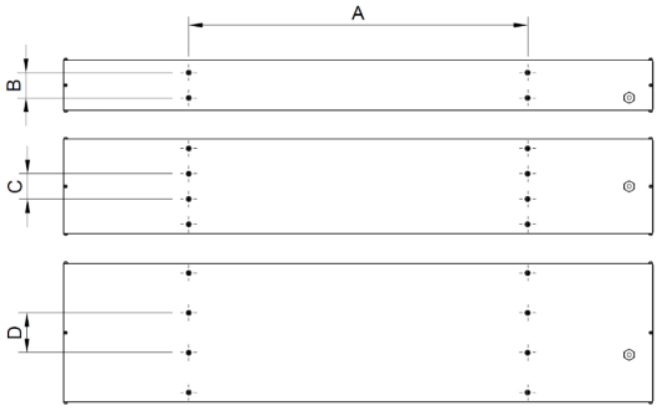

A = 852 mm (15R, 30R, 45R)
B = 1x 63,5 mm (15R)
C = 3x 63,5 mm (30R)
D = 3x 100 mm (45R)

Fig. 1

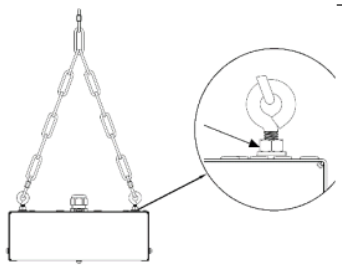

Fig. 2

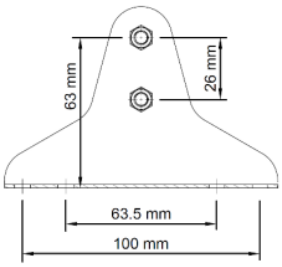

Fig. 3

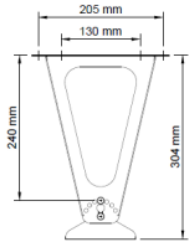

Fig. 4

	< α = 0° - 45°			< α = 0°		< α = 15° - 45°	
Model	A	B	C	D1	E1	D2	E2
15R	30 cm	230 cm	100 cm	20 cm	20 cm	20 cm	4 cm
30R	40 cm	250 cm	140 cm	25 cm	20 cm	20 cm	8 cm
45R	50 cm	250 cm	180 cm	30 cm	25 cm	25 cm	12 cm

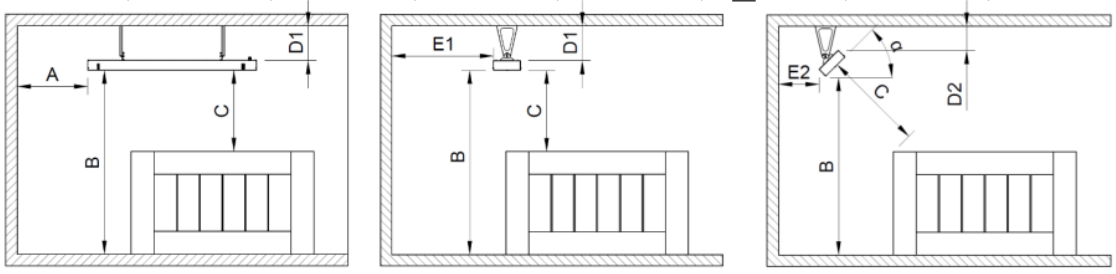

Fig. 5

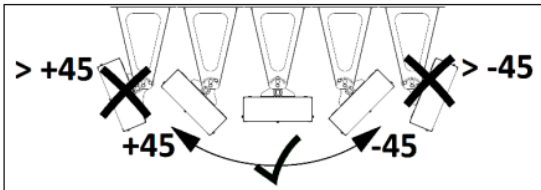

Fig. 6

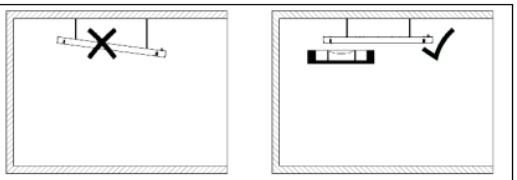

Fig. 7

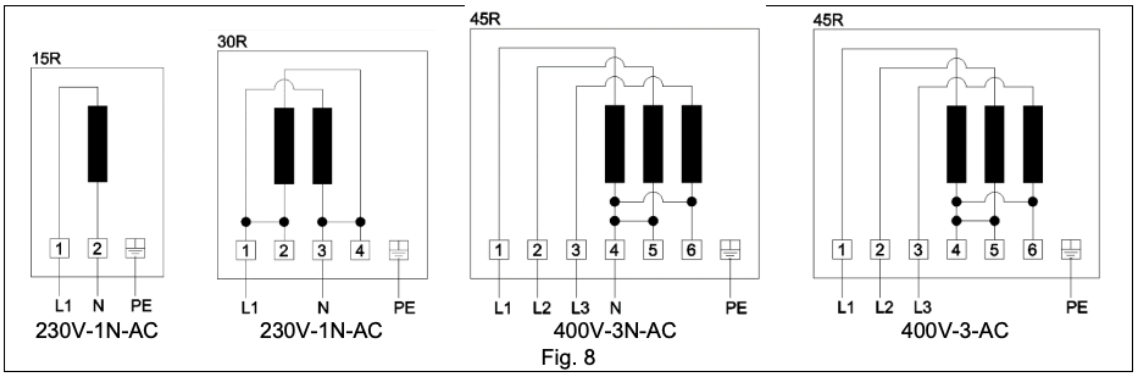

Fig. 8

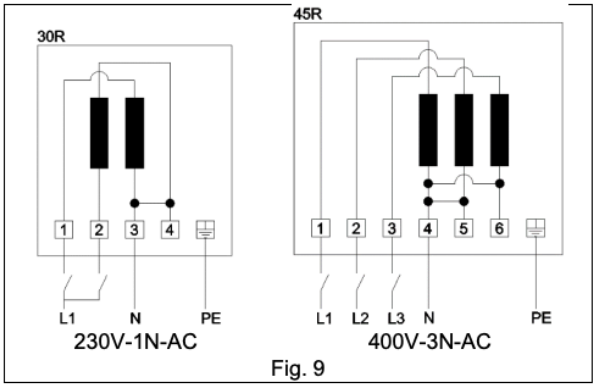

Fig. 9

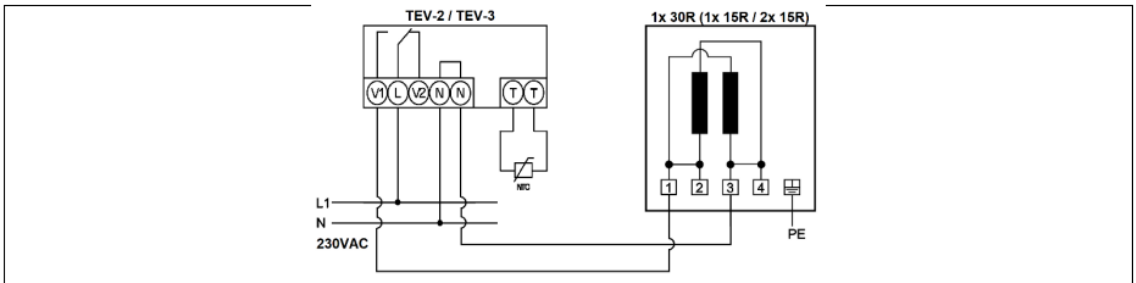

Fig. 10

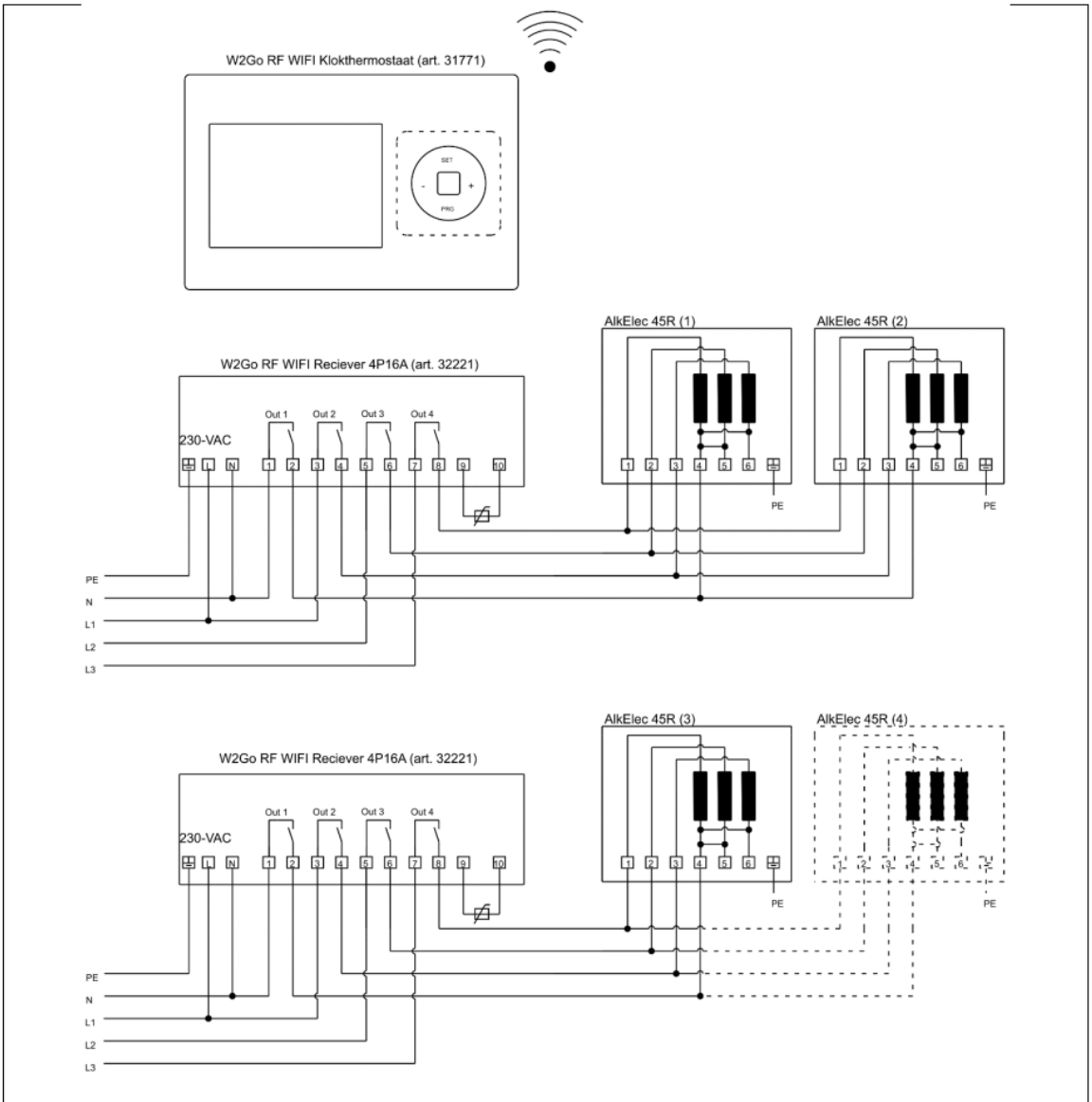

Fig. 11

Summary of Safety Warnings for the Infrared Heater

What to Do:

1. **Read the manual thoroughly** before installation and use, and keep it for future reference.
2. **Use the infrared heater only as described** in the manual.
3. **Ensure all users are familiar with the safety instructions** and aware of potential hazards; operate the heater safely, or only under competent supervision.
4. **Install the infrared heater in accordance with local regulations**, and ensure that installation, maintenance, and repairs are performed by qualified electricians.

5. **Verify that the electrical connection matches** the requirements on the heater's nameplate before installation and use.
6. **Disconnect power during maintenance**, and allow the heater to cool before cleaning or other work.
7. **Keep small children and persons with physical or mental limitations away** from the heater without adequate supervision.

What Not to Do:

1. **Do not use the infrared heater for household purposes** or in residential spaces.
2. **Do not use the heater for anything other than heating** the environment, as it is not designed or evaluated for other uses.
3. **Do not use the heater in areas with flammable liquids or substances** or where flammable vapors are present.
4. **Do not cover the heater with clothing, fabric, or other materials**, as this could cause a fire hazard.
5. **Do not install gas or electrical lines** directly above or near the infrared heater.
6. **Do not make unauthorized modifications** to the heater or install it in any way other than as instructed in the manual.
7. **Do not touch, move, or service the heater while it is operating** or still hot.
8. **Do not turn on the power with the end caps removed**, as this may expose live parts and create an electrical hazard.
9. **Have installation and maintenance performed by a qualified professional** to prevent injury or damage.

For help or additional information, it is recommended to contact your dealer or installer.

Technical Data

Model	Belasting [Watt]	Voltage [V]	Stroom [A]	Beschermings Klasse	Maximale element temp [°C]	Afmetingen LxBxH[4]) [cm]	Gewicht [kg]
AlkElec 15R	1500	230V-1N-AC	6,5	IP24	+/- 700	148x13x8,5	5,6
AlkElec 30R	3000 [1])	230V-1N-AC	13	IP24	+/- 700	148x24x8,5	8,4
AlkElec 45R	4500 [2])	400V-3N-AC [3])	3x6,5	IP24	+/- 700	148x35x8,5	11,3

The infrared heater is intended for fixed installation and not for mobile use. It is designed for the complete heating of (often) large, high spaces or for heating a specific location within such a space. Additionally, it can be used to provide supplemental warmth alongside other heating systems. Its intended use includes heating industrial halls, barns, workshops, and

similar applications. It is also suitable for outdoor use in sheltered areas, such as heating grandstands and terraces, or for keeping loading docks or storage locations dry and frost-free, among other uses.

Ecodesign Regulation (EU) 2015/1188

The Ecodesign Regulation (EU) 2015/1188 concerning local space heating applies to locations where indoor space heating is provided for human comfort. Applications such as heating outdoor areas, terraces, livestock barns, technical rooms, for drying processes, production processes, frost prevention, etc., fall outside the scope of this regulation. The infrared heater described in this manual can be used both within and outside the intended scope of the regulation.

The installer responsible for the installation is tasked with determining whether the Ecodesign Regulation applies and should take this into account during the installation process.

If the heater is used as a space heater within the meaning of the Ecodesign Regulation, it must be operated with one of the following approved control systems.

Controls Compliant with (EU) 2015/1188

To meet the legal requirements of (EU) 2015/1188, the control system of the infrared heater must achieve at least 5 points based on the composition of the control measures listed in tables 7 and 8 of (EU) 2015/1188.

These points ensure that the infrared heater is operated in a manner that meets energy efficiency standards for local space heating, where applicable. The specific controls used should be selected to meet the points requirement according to the regulation.

For further guidance, the installer should refer directly to tables 7 and 8 in the regulation to identify the control options that best fit the setup and intended use of the infrared heater.

Soort temperatuursregeling (1 selectie mogelijk)		Punten
a	Mechanische thermostaat voor de ruimte temperatuur	1
b	Handmatige twee (of meer) traps-schakeling zonder thermostaat	2
c	Electrische thermostaat voor de ruimte temperatuur	2
d	Electrische klokthermostaat voor de ruimte temperatuur met enkelvoudige dag regeling	3
e	Electrische klokthermostaat voor de ruimte temperatuur met een week / zevendaagse regeling	4

	Extra besparingsopties (meer dan 1 optie mag toegepast worden)	Punten
f	Optie Openraamdetectie	1
g	Optie Afstandsbediening	1
h	Optie Beperking van de werkingstijd	1
i	Optie Zwarte-bol thermostaatsensor	1
k	Optie Aanwezigheidsdetectie	2

Example: Control system **e+i = 4+1=5** meets the requirement; **b+f+h+i = 2+1+1+1=5** also meets the requirement; however, **c+g = 2+1=3** does not meet it.

A manufacturer-approved control system consists of the following components:

- **RF WIFI clock thermostat** (item 31771), in combination with the
- **RF WIFI receiver 4P16A** (item 32221).

This combination creates an electronic clock thermostat with a 7-day clock setting (4 points), a working-time limitation (1 point), and WiFi remote control (1 point). Additionally, it can include optional features such as open-window detection (1 point), a black-bulb sensor (1 point), or a presence detector (1 point). This system can switch up to **2x 4.5R, 3x 3.0R,** or **6x 1.5R**. See figure 10 for the wiring diagram.

For capacities above 11 kW, additional **RF WIFI receivers** (item 32221) are required. Each receiver can control **2x 4.5R, 3x 3.0R,** or **6x1.5R**. See figure 11 for the wiring diagram. For further information, consult the product manuals for the thermostat, receiver, and relay box.

Building Management System

The infrared heater can also be managed through an integrated building management system or climate control system. In this case, it is the installer's responsibility to ensure that the control system is programmed and equipped with additional measures so that the entire installation complies with the requirements of Regulation (EU) 2015/1188, Annex II. Refer to the selection tables above for more details.

Controls Not Compliant with (EU) 2015/1188

If the installation does not need to comply with (EU) 2015/1188, the following control options are available in addition to the above-mentioned temperature control. These controls are suitable for **230V** and up to **3600W** capacity, allowing **1x 3.0R** or **2x 1.5R** to be connected. See figure 10 for the wiring diagram.

- **Control TEV-2** (item 28595): Electronic thermostat for single temperature setting via a potentiometer inside the junction box. See the thermostat manual for more information.
- **Control TEV-3** (item 28596): Electronic thermostat for single temperature setting via a knob on the exterior of the junction box. See the thermostat manual for more information.

Mounting

Mounting points for hanging/installation are located on the top of the unit. **Model 15R** has **4 mounting points** with M6 threads, and **models 30R and 45R** have **8 mounting points** with M6 threads. See figure 1 for the dimensions of the mounting points for each model. Based on these mounting points, the installer can hang the unit using selected materials. Note: Do not use plastic materials or rope; use adequately strong metal mounting materials. Mounting kits for hanging the unit can be supplied as optional accessories.

- **Chain suspension set** (item 03057040): This set includes **4x M6 eye bolts + washers + lock nuts**, **2x 1-meter chain**, and **6 quick links**. Insert the eye bolts into the mounting points and secure them by tightening.

- Secure the M6 nuts. Use the quick links to attach the chains to the eye bolts, then hang the device from ceiling mounting points or structural components of the building. See figure 2.
- **Mounting Kit with 2 Brackets** (item 03057041): This set includes **2 mounting brackets (MBK)** with **4x M6x16 bolts and washers**. The MBK mounting brackets must be installed on the top of the infrared heater. For models 30R and 45R, there are 3 position options. The installer can complete the installation using their own materials. See figure 3.

- **Mounting Kit with 4 Brackets** (item 03057042): This set includes **2 MBK mounting brackets** and **2 MBG mounting brackets** with **8x M6x16 bolts and washers**. The MBK brackets are installed on the top of the infrared heater. For models 30R and 45R, there are 3 mounting positions. The MBG bracket can then be attached to the ceiling or wall. Finally, the MBK bracket can be secured to the MBG bracket. Various angles of 0, 22.5, and 45 degrees are possible by using different hole patterns. See figure 4. When using this set, the hole pitch (dimension A in fig. 1) is 90 cm.
- Always observe the safe distances from other materials as indicated below and in figure 5 during installation.

Mounting Angles

- The infrared heater may be mounted (side view) at any angle from -45 to 0 to +45 degrees relative to the horizontal. Angles greater than 45 degrees are not permitted. See figure 6. The heating elements of the device must always hang level in the lengthwise direction. See figure 7.

Safe Distances

- For fire safety, it is essential to maintain the minimum safe distances from flammable materials as indicated in figure 5. Pay special attention to tarps, carpets, or curtains that could blow near the infrared heater, as well as distances to awnings, wooden walls or ceilings, etc. Smaller distances may be allowed for non-flammable materials if the nature of the materials allows. Be mindful of the potential for discoloration from higher temperatures. Always install the infrared heater at least **2.3 meters above the ground**.
-

Localised Heating

- When opting for localized heating within a space, it is recommended to place at least two infrared heaters opposite each other. This enhances comfort by allowing individuals to receive heat from two sides. For comfort, always try to maintain a distance of at least 2 meters from individuals' heads.

Electrical Installation

- The infrared heater does not come with a plug-in power cord, as it is intended for fixed installation to the electrical network. Always ensure proper grounding for

safety. Use 2-pole switching equipment with a contact gap of at least 3mm for switching the electrical power.

- Use a heat-resistant connection cable that can withstand a constant temperature of at least 90 degrees. Also, ensure the connection cable is not exposed to direct heat from the device, does not touch hot parts, and is not within the warm air flow from the elements. Install the M20 cable gland with a locknut in the hole on top of the device, and feed the connection cable through it. Tighten the locking nut to create a waterproof connection. The cable gland is suitable for cables with a diameter of 6-13mm. When using a cable with flexible conductors, apply ferrules when connecting to the terminal block in the device. The terminal block connections are suitable for conductors of **1.5-6mm²**. After connecting the wiring, check that all screws in the terminal block are tightly secured, and there are no loose connections. Ensure that after connecting to the terminal block, the wiring remains clear of the ends of the heating elements.

Wiring Diagrams

- See figure 8 for the electrical wiring diagrams for on/off operation of the infrared heater. See figure 9 for the electrical wiring diagrams for operation with power steps by disconnecting individual heating elements. For model 30R, the red jumper connection between terminals 1 and 2 must be removed. Model 45R with power connection without Neutral cannot be operated with power steps.
-

Residual Current Circuit Breaker (RCCB)

A 30mA RCCB is recommended for protection against personal injury and fire hazards. If the RCCB trips when the infrared heater starts, this may be caused by moisture in the elements, particularly if the heater has been in a damp environment for an extended period. This is not considered a manufacturer fault. Try drying the elements by temporarily operating the heater via a socket without an RCCB. Depending on the amount of moisture, drying may take several hours to a few days. In humid conditions, it is advisable to operate the infrared heater occasionally to keep the elements dry. If the RCCB frequently trips without a clear reason, consult your installer to determine whether a 300mA model might be a better solution.

Startup

During the initial startup, or after a prolonged period of inactivity, some smoke or odor may be released due to dust or dirt on the elements. This is normal, harmless, and will dissipate shortly. When heating up (and also when cooling down), the infrared heater may produce ticking sounds. This results from the expansion or contraction of materials and is normal.

If the infrared heater has not been used for an extended period, it is recommended to “dry” the elements first by turning the heater on for 5 minutes and then allowing it to cool down. After this, the heater is ready for normal operation. The materials of the heater may discolor slightly due to heating, especially during the initial startup,

which may vary depending on environmental substances at the installation site. This is typical for infrared heaters and is not harmful.
The **3.0R** model may emit a faint humming sound due to its two heating elements connected in parallel. In very quiet rooms, some people may find this noise bothersome.

Cleaning
Clean the infrared heater as needed, but only when it is cool. Clean the housing and reflectors with compressed air, a soft cloth, or a soft brush. Handle the reflectors carefully to avoid damage or scratches.

Replacing the Infrared Element
A certified electrical installer should replace a broken infrared element. First, power off the device (using a main switch or by removing fuses). Remove both end caps, slide the flat connectors off the contacts of the infrared element, and remove the mounting screw from the element's bracket. The infrared element can then be removed and replaced with a new one. Reassemble everything in reverse order.

Packaging
The packaging (cardboard) used for the infrared heater is recyclable. Please dispose of it at certified waste processing facilities for a cleaner environment.
End-of-Life Disposal of the Infrared Heater
The infrared heater is made from valuable, recyclable materials. Recycling conserves natural resources and reduces the global footprint. Do not dispose of the heater with general household waste; instead, bring it to a certified recycling facility at the end of its lifespan for environmentally responsible recycling. This prevents uncontrolled release of materials into the environment. Contact local authorities for information on the nearest collection points.

Corrosive Environments
The infrared heater is unsuitable for use in corrosive environments. When used near the coast, in salty surroundings, in areas with high humidity, or in environments containing corrosive vapors, gases, or substances, no guarantee on the elements' or housing's lifespan can be provided.
Declaration of Conformity
We, Alke B.V., based in Scherpenzeel, the Netherlands, hereby declare that the AlkElec series complies with the following EU legislation:

- **LVD Directive 2014/35/EU**
- **EMC Directive 2014/30/EU**

- **Ecodesign Directive 2009/125/EU**