Edmund Bühler GmbH
Since 1880

Bedienungsanleitung
Infrarotbrenner
Operating Instructions
Infrared Heaters
Mode d'emploi
Brûleur Infrarouge

Edmund Bühler GmbH
Since 1880

www.edmund-buehler.de

MADE IN GERMANY

Edmund Bühler GmbH
Schindäckerstraße 8
72411 Bodelshausen / Germany
Tel.: +49 7471 9864-0
Fax: +49 7471 9864-75
info@edmund-buehler.de

VERSION 12 / 2017

IRB 1 IRB 2 IRB 6

Art.-Nr. 0091006

Operating Instructions

Infrared Heater

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IRB 1 IRB 2 IRB 6

Thank you for having chosen an original Bühler product.

Contents

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1. General Notes

Thank you for choosing a Bühler product for supporting you in your work. The Bühler Infrared Heaters were developed for the use in laboratories in neutral atmospheres. If you pay attention to the following points, the device will reward you with long life and optimal operation.

Read the operating instructions carefully before initial operation.

The user must acquaint himself with the safety instructions and operating conditions in order to avoid damage / injuries to material and personnel.

Liability and all claims under warranty end immediately in case of damages which result from misuse and / or abuse.

The devices were carefully checked for perfect functioning and condition before delivery.

Necessary servicing or repair work may only be done by:

- personnel of the manufacturer (Edmund Bühler GmbH)
- their authorized agents
- personnel trained by Bühler

For shipping, the device must be adequately and safely packed.
If possible, use the original packing.

If the device is returned to Bühler for repair, it should be cleaned and free from any harmful substances or residues.

1.1 General Notes concerning areas of application and mode of operation of the Infrared Heaters

1.1.1 IRB 1

The infrared heater IRB 1 is a compact laboratory heater for contactless heating tasks in laboratories, factories and schools. It is especially well suited for hydrous solutions, which have a high absorbancy in the infrared range. They can be heated fast and efficiently.

1.1.2 IRB 2

Laboratory heater with integrated power control for fast heating of larger volumes. Thanks to its high safety standard it can be used in laboratories where traditional heaters with open flame cannot be employed.

1.1.3 IRB 6

Modular laboratory heater with 6 x IRB 1 in a housing with 6 power control units.
Each heater can be individually used and controlled.

1.2 Appropriate Use

Large flat-bottomed – heat resistant – vessels (generally Duran glass, glass etc.) can be placed directly on the upper heat shield for heating up the filled-in liquid.

Small vessels or round-bottom vessels have to be mounted on a stand, in appropriate distance above the radiator.

For special applications, the infrared heater itself can also be fixed in a stand by means of the support rod (see accessories).

Only connect resistive loads up to max. 600 W (LR 1 and LR 6)

If you have any questions, please do not hesitate to contact our export sales department:

Phone: +49 7471 9864-0, Fax: +49 7471 9864-75

1.3 Safety Instructions

While the device is switched on, but also the first 15 minutes after the system has been switched off (cooling off), the upper part (infrared radiator and stainless steel sheets) may not be touched, nor be brought close to objects which can catch fire (paper, cloth, fabric, etc.). In a distance of approx. 1-2 cm from the ceramic radiator temperatures are reached that can inflame the above mentioned objects.

Do not heat up objects or vessels in direct contact with the ceramic heating element. Use the support cross and place the vessel on the cross.

Empty vessels with little distance to the ceramic heating element risk to break.

The IRB 2 has an excess temperature protection. If the bottom of the housing reaches temperatures above 60°C, the system is switched off automatically. For safety reasons, the device should be switched off completely for some time. When it has cooled down, it can be heated up again as usual

1.4 Special Features

- The electronic parts are shielded against spilling liquids.
- Additional lateral safety shields for the heating element.
- Touch-proof housing during operation. Built-in handles for safe transportation even when the heater is hot. (IRB 2)

2. Transportation

Sicherer Transport der Geräte kann nur in der Original-Verpackung gewährleistet werden. Hartes Anstoßen oder Aufsetzen kann zu Beschädigungen führen.

3. Operation of the Infrared Heaters

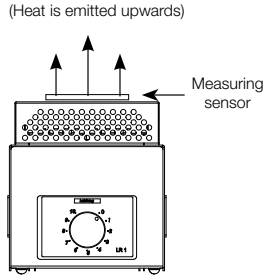
3.1 IRB 1

After connection to a 230 V or 115 V mains the system is ready for operation and can be switched on by actuating the rocker switch at the front. (The switch illuminates).

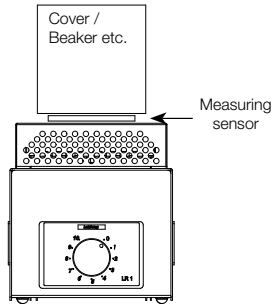
3.2 IRB 2

After connection to a 230 V mains the system is ready for operation and can be switched on by actuating the rocker switch at the back (LED at the front illuminates). The power can be steplessly adjusted with the rotary switch at the front between 60 W (position 1) and 800 W (position 10).

ATTENTION:
In order to avoid flaking at the heating element heat the unit up only gradually.



Heating Power IRB 2
Power control at position 10,
without vessel on the support cross
Temperature measurement at the level of the support cross:
Start: 20°C
After 10 min: 520°C
Max. Temp.: 520°C



Heating Power IRB 2
Power control at position 10,
with vessel on the support cross
Temperature measurement at the level of the support cross:
Start: 20°C
After 10 min: 800°C
Max. Temp.: 900°C

3.3 IRB 6

After connection to a 230 V mains the device is ready for operation and can be switched on by actuating the rocker switch (the switch illuminates). The single units can be switched on (LED illumiates) and their power steplessly adjusted with the rotary switches.

4. Technical Data

	IRB 1	IRB 2	IRB 6
Article number	6060 000	6063 000	9066 000
Max. temperature	700°C	900°C	each 700°C
Heating power	250 W	800 W	each 250 W
Heating area	60 x 60 mm	100 x 100 mm	each 60 x 60 mm
Power control	-	stepless control between 0 – 100%	6 stepless controls between 0 – 100%
Max. ambient temperature	30°C	30°C	30°C
Electrical supply	230 V, 50/60 Hz	230 V, 50/60 Hz	230 V, 50/60 Hz
Sicherung	1,25 AM	4,0 AM	----
Dimensions (w x d x h)	100 x 105 x 105	150 x 150 x 170	697 x 305 x 122
Weight	0,7 kg	2,5 kg	9 kg

5. Accessories for Infrared Heaters

5.1 IRB 1

Power control LR 1

Stepless control of the current consumption between 0 - 100%.
Dimensions (w x d x h): 80 x 100 x 100 mm
(Operation see Point 6.1)
Order No. 6070 000

Support rod for stand connection

Stainless steel rod for integration of the heater into a support stand. Lenght approx. 13 cm
Order No. 0012 164

5.2 IRB 2

Support rod for stand connection

Stainless steel rod for integration of the heater into a support stand. Lenght approx. 13 cm
Order No. 0012 164

5.3 IRB 6

Support base

Base with 6 support rods (staindless steel). Lenght of the rods approx. 75 cm (without PVC rod and clamps for vessels)
Order No. 0052 060

Horizontal PVC rod for support base

For fastening clamps for glass vessels
Order No. 0052 091

Clamps for PVC rods

D50 (NS 45) with distance, e.g. for Soxeleth
Order No. 0001 140

D32 (NS 29) with distance
Order No. 0001 138

D20 (NS 19) with distance
Order No. 0001 136

D25 (NS 15) with distance
Order No. 0001 137

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6. General Notes concerning areas of application and mode of operation of the Power Controls

6.1 LR 1

The power control LR 1 consists of a compact housing with mains socket and power output socket for connection of heating devices up to max. 370 W, e. g. the Bühler Infrared Heater IRB 1.

The power of the connected device can be regulated between 0% and 100% (maximum power) by means of a regulating rotary switch at the front side.

6.2 LR 6

The power control LR 6 consists of a housing with fixed mains cable. At the back of the housing there are 6 normed plugs (power output) and enough space to directly plug in up to 6 Infrared Heaters IRB 1 by means of their IEC power sockets to complete the series heater IRB 6.

At the front of the device there are 6 regulating rotary switches so that each power output can be regulated independently between 0 - 100 % of the maximum power, or switched off completely. A mains switch with control lamp connects or disconnects the LR 6 from mains power.

7. Maintenance and Servicing Instructions

The heaters, especially the infrared radiator, is maintenance-free. Appropriate use ensures extremely long life of the heating element (approx. 7.000 h).

In case of failure, please contact the Technical Service Department of the Edmund Bühler GmbH.

Edmund Bühler GmbH
Technical Service Department
Schindäckerstraße 8
72411 Bodelshausen
Phone: 07471 / 9864-0
Fax: 07471 / 9864-75
e-Mail: info@edmund-buehler.de

7.1 Exchange of the Fuse

The Infrared Heaters are protected against overload by means of a fine fuse (see technical data).

The fuse holder is located at the back of the device underneath the mains plug. Pull out the fuse insert and exchange the fuse.

Before removal of the fuse insert disconnect the mains plug!

8. CE Declaration of Conformity

Hiermit erklärt der Hersteller

Edmund Bühler GmbH
Schindäckerstraße 8
72411 Bodelshausen

Manufacturers of this product, declare under our sole responsibility that this product corresponds to the EC directives 89/336EEC and 73/23EEC und

The following harmonised standards apply:

Infrared Heaters - EN 61 010 und VDE 700 Teil 1

Power Controls - EN 61 010, EN 50 082, EN 55 014, EN 60 204, EN 60 555, EN292 und EN414

Responsible for the documentation:
Dipl.-Ing. (FH) Michael Schlecht

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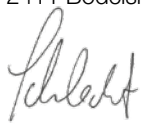

Edmund Bühler GmbH
The Technical Director

9. Warranty

The Edmund Bühler GmbH warrants that this device has the properties guaranteed by contract and that it does not have any defects which rescind its value or its use for customary and usual applications or applications foreseeen by the contract. (See General Terms and Conditions of the Edmund Bühler GmbH).

The warranty period ends 24 months after delivery (date of invoice). The warranty does not include wear parts. Excluded from warranty are malfunctions caused by misuse or improper use, installation, or maintenance.

Warranty ends immediately if the device is subjected to technical modifications which are not authorized **in advance** by Edmund Bühler GmbH.