



**RIELE**

# Operating Instructions

## Incubator *T20*



**Documentation Version 7.2017**



## SYMBOLS

The packaging material, the type plate on the instrument, and the manual may contain the following symbols or abbreviations:



Manufactured by:



This product is marked with the CE certification mark which is obligatory in European Economic Area.



Caution (refer to accompanying documents)!

Please refer to safety-related notes in the manual accompanying this device.



Please consult instructions for use



Biohazard

Samples containing material of human origin must be treated as potentially infectious. The relevant laboratory guidelines on safe use must be observed.

IP XO

No special protection against penetrating moisture (IP = International Protection)

REF

Order number

SN

Serial number

## SAFETY INSTRUCTION

This device was examined and left the factory in perfect technical condition. To preserve this and protect safe and faultless operation, the user has to follow the orders and remarks of this operating manual.

## PROTECTIVE GRADE

The Incubator *T20* complies with the safety rules according to DIN EN 61010-1.

The device fulfils the EMC immunity requirements for laboratory use equipment according to the EMC standard EN 61326.

## WASTE MANAGEMENT NOTE

At the end of the life or utilization time the device and the accessories can be given back with costs to the manufacturer to an environmentally just waste management. The previous professional decontamination has to be proved with a certificate.

Address of the manufacturer:



ROBERT RIELE GmbH & Co KG  
Kurfuerstenstrasse 75-79  
13467 Berlin  
Germany

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# QUALITY MANAGEMENT SYSTEM

ROBERT RIELE GmbH & Co KG maintains a quality management system according to ISO 13485, certified by mdc medical device certification GmbH.



## 1 INTRODUCTION TO INCUBATOR T20

To make laboratory work more efficient carrying out kinetic tests it is necessary to pre-incubate samples before measuring. Beside this also the reagents must be held at the incubation-temperature during a series of measuring.

For this purpose, a small and handy dry-incubator was designed as either a stand-alone system with external power supply or in direct connection to RIELE Photometers *4040, 5010 and 4040+*.

The features in detail are:

- Temperature unit for 37 °C with an accuracy  $\pm 0.2$  °C
- 20 positions for normal standard cuvettes or...  
...off which 16 positions for normal standard cuvettes  
and 4 positions for tubes 12 mm X 55 mm or 12 mm X 75 mm
- Indication of temperature control by LEDs
- Warming up in 5 min per cuvette or tube filled with 1000  $\mu$ l
- Optional: AC-Adapter: 12 V<sub>DC</sub> / 36 W

## 2 INSTALLATION

### 2.1 Delivery

After carefully unpacking the device, check whether it is in perfect condition. Check whether it is complete according to the delivery note. The box contains the following items:

- Incubator *T20*
- AC-Adapter, optional
- Manual

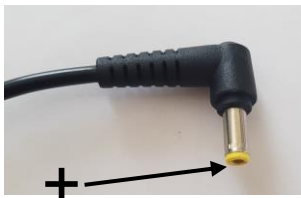


Store the packaging carefully for the case of a perhaps necessary return. If there were defects, inform your dealer immediately.

### 2.2 EXTERNAL POWER SUPPLY



When using the Incubator *T20* stand-alone model, at delivery the plug of the AC-adapter is correctly combined: The **plus terminal** is located inside the head of the plug.



The plug has to be put into the corresponding jack in the back plate of the device.

## 2.3 AC-Adapter

REF



## 2.4 INSTALLATION

Connect the AC-adapter to the mains.

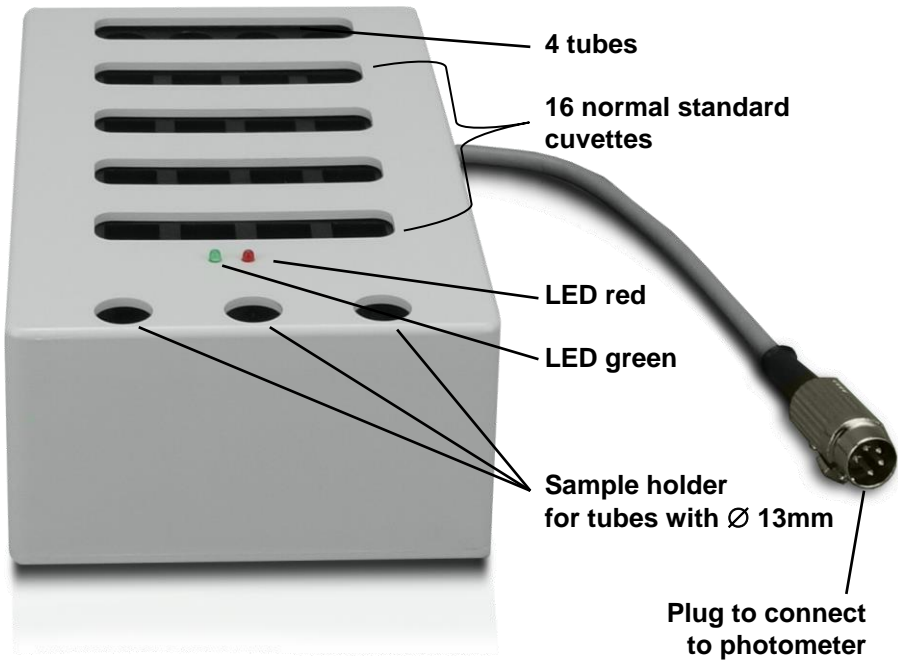
The operating voltage is 100 V<sub>AC</sub> up to 240 V<sub>AC</sub> at 50/60 Hz.

Or connect the Incubator *T20* directly to the photometer while the photometer is OFF.

After some seconds the green LED is flashing. The red LED shows a continuous light.

### 3 CONNECTION TO PHOTOMETER

#### 3.1 FRONT INCUBATOR T20



#### 3.2 CONNECTOR AT PHOTOMETER





## 4 OPERATING

After switching ON the device the Incubator T20 heats up to a temperature of 37 °C.

The device needs about 20 minutes for warming up.

After the warming up time the **GREEN LED** shows a continuous light. At this state the system is ready for use.

The status of the device is shown by two LEDs (Light Emitting Diode):

### **GREEN LED** (used for stability control)

- |                                     |                                    |
|-------------------------------------|------------------------------------|
| • The LED is flashing:              | The temperature is not stabilized. |
| • The LED shows a continuous light: | The temperature is stabilized.     |

### **RED LED** (used for heating power)

- |                                     |   |
|-------------------------------------|---|
| • The LED is flashing:              | The heating is switched on and off.           |
| • The LED shows a continuous light: | The heating is switched on during heating up. |

## 5 MAINTENANCE

This chapter provides necessary information concerning general maintenance by the user.



If any faults should occur which cannot be remedied, then service should be contacted. Repairs at the device may be carried out only by authorized specialist staff. Through improper repairs the warranty extinguishes, and the user can be heavily jeopardized.

### 5.1 CLEANING INSTRUCTION



Liquid waste is potentially biologically hazardous. Always wear gloves if handling those materials. Do not touch parts of the device other than those specified. Consult the laboratory protocol for handling biohazardous materials.



Take care that no liquid enters the device! There is no protection against penetrating of liquids (Code IP X0).

For device cleaning and surface decontamination purposes use commercial decontaminating solution which are usually available in clinical chemistry laboratories like Mikrozyd® AF Liquid, BacilloI® plus, 3 % Kohrsolin® or similar solutions. Switch off the device and disconnect it from the mains voltage. Then clean the device with soft cloth and decontaminating solution.

### 5.2 CALIBRATING OF TEMPERATURE

The temperature of Incubator T20 can be calibrated. The adjusting is done equally to the temperature calibration of the photometer. Please contact the service partner.

## 6 TECHNICAL DATA

### 6.1 ENVIRONMENTAL CONDITIONS

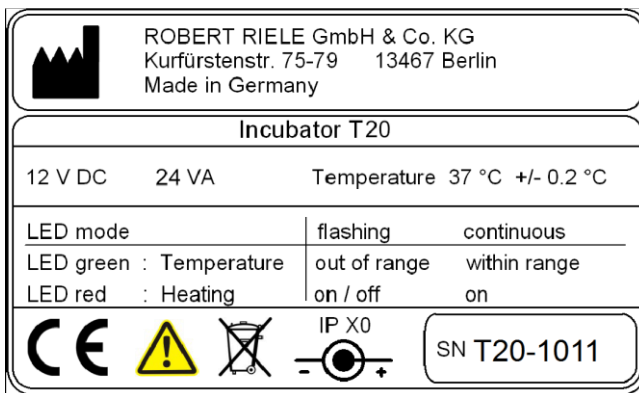
Climatic conditions for storage and transport of the packed device:

- Temperature: -25 °C to +70 °C
- Relative humidity: 20 % to 85 %

The device must be used in an environment that meets the following conditions:

- Temperature: +15 °C to +35 °C
- Relative humidity: 20 % to 85 %
- Not exposition to direct sunlight or other source of direct thermal radiation
- Well-ventilated area
- Free from excessive dust
- Free from combustible gasses
- Free from vibrations
- Free from electromagnetic wave interference
- Well-distanced from a machine generating a high frequency voltage (e.g. a centrifuge)

### 6.2 TYPE PLATE



## 6.3 SHORT SPECIFICATION

### MEASURING SYSTEM

- Microcontroller based temperature unit
- Temperature: 37 °C with an accuracy  $\pm 0.2$  °C

### POWER SUPPLY

- Supply voltage: 12 VDC
- Supply current maximal: 2 ADC
- Power consumption: < 24 VA
- External mains adapter  
Output: 12 V<sub>DC</sub>  
Input: 100 V<sub>AC</sub> up to 240 V<sub>AC</sub>  
50/60 Hz 0.8 A max.
- Driving with 12 V<sub>DC</sub> (car-)battery is possible

### DIMENSIONS

- Dimension (L/W/H): 190 mm / 110 mm / 57 mm
- Weight 1.4 kg