

# Laboratory Deep-Freezer, Chest

**TC 901**



(Ill. similar)

**External Dimension:**  
**B = 725 mm**  
**D = 655 mm (plus handle and hinge)**  
**H = 865 mm**

**Inside Dimension:**

|                        |                        |
|------------------------|------------------------|
| <b>Utility Space 1</b> | <b>Utility Space 2</b> |
| <b>B = 320 mm</b>      | <b>B = 200 mm</b>      |
| <b>D = 450 mm</b>      | <b>D = 450 mm</b>      |
| <b>H = 650 mm</b>      | <b>H = 400 mm</b>      |

**Capacity:** 130 l

**Temperature Range:** -10°C to -45°C  
**Optional:** -10°C to -60°C

## Housing

galvanized sheet steel with white coating. Cover double-walled with door lock, adhesive band.

## Interior space

special aluminium with round edges

## Isolation

Polyurethane 100 mm, without space, free of CFCS

## Interior fittings

**Optional:** white coated wire baskets



(Ill. similar)

## High quality electronic temperature controller.

Actual and set value display digital.

Actual value permanently readable

Set value digital adjustable by switch. Ranges from 0°C to 30°C

Ranges from 0°C to -50°C / **Optional:** to -70°C

Working range from -10°C to -45°C / **Optional:** -10°C to -60°C

**Temperature irregularities are viewed acoustically**

**Optional:** Potential-free connection socket for extern alarm indication.

## Refrigerating unit

fully hermetically sealed fitted on vibration-absorbing mounts (ambient temperature 25°C), air cooled, low noise (45dBa/1m), energy saving compressor with high quality vaporisation system

Refrigerant: environment friendly R 404 a (at -45°C)

## Defrost

manually

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## Laboratory Deep-Freezer, Chest

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### Electrical dates

Power supply 230 V/50 Hz / single-phase  
Energy consumption 3,9 KW (24 Std.)  
Power cable 1,5 m with schuko plug

### Packing details (palletized)

Dimensions: approx. 80x80x110 cm  
Net weight: 48 kg  
Gross weight: 60 kg  
**Country of Origin: European Community**  
Customs clearance code: 8418 3080

## Special Equipment and Accessories:

### Optional:



**Cable port with cover** (approx. 40 mm Ø).

**Cable port with PG-gland arranged in the cover or bottom**  
for example to create access for operator measurement lines, etc.

**Optional:** with separate sensor kind and version as desired by the customer



## Wireless data logger, complete

For independent temperature recording

consisting of:

### Wireless data logger, SPY RF U1

1-channel for Pt100, 4-20mA / 0-1V / contact on-off, with display  
 measurement accuracy at 23°C: +/- 0,3°C  
 Resolution: 0,1°C  
 Battery: Lithium Battery  
 Recording interval: 1 sec. to 90 minutes  
 Internal memory: 10.000 measurements  
 Usable range: 1km LOS  
 Communication: via radio 868 Mhz  
 Power: 25 mW  
 incl. 1 pcs. Sensor of stainless steel, Ø 4,0mm L=30mm  
 Pt100 class A with plugged cable of PTFE  
 Measurement area: -200°C...+200°C  
**Length:** 3 meter **Optional: 8 meter**  
 Delivery contents: wall mounting holder and plug protection

### Software - Basic Version for single user

- Maintenance of multiple Wireless data logger
- collect the recorded data of the Wireless data logger
- Back up data (tamper-proof)
- Prepare the data in terms of graphics or charts
- Excel exportable
- Maintenance of alarms via potential free contact at the Modem
- or Alarmsystem (SMS, phone call, blinking light, buzzer)

### SPY RF USB-Modem for data transfer to the PC via USB-connector

- communication with infinite numbers of Wireless data logger
- remote alarm via integrated potential contact
- including wall mounting holder

## Optional:

**Sensor of stainless steel** Ø 4,0mm L=30mm Pt100 class A,  
with plugged cable of PTFE, Measurement area: -200°C...+200°C  
**Length: 8 Meter**

### **SPY RF Relay (Repeater)**

- Allows the data transfer of the data logger about bigger distances
- Can transfer dates of one or several SPY RF data logger
- Electricity supply about power supply unit and battery in case of power failure
- with 2 output ranges: 25mW to communicate with the data logger and 500mW to communicate with the modem.
- Delivered with wall mounting fixture
- Ambient temperature: from -10°C to +70°C

### **SPY RF Alarm - realtime alerting**

- i.e. by limit exceeded or power failure
- Local warning
- Integrated acoustical and optical Alarm
- Power supply via external power adapter and spare battery in case of power failure
- Button for local alarm quitt
- Relais output for remote alarm)  
(GSM-Modem, telephone dialer)
- including wall mounting holder

### **SPY RF Telephone dialer**

- In the speech modus it called up to 6 different subscriber and informed them about the kind of failure
- This ergonomically linguistic aid provides high operational ease.
- requires an analogue phone line
- Individual adjustment of identification, alarms and alarm quitt
- requires an external power supply (included)

### **GSM-Modem I for switch contact**

#### **For use with:**

#### **Software - Basic Version and SPY RF USB-Modem, or SPY RF Alarm**

- Enables to send SMS messages
- Modem registered also power failure and send SMS immediately.



## Qualifications

### DQ (Design Qualification)

*Definition: Documented proof that the quality-related, GMP-related requirements has been adequately addressed in the design of equipment, including buildings, premises and auxiliary equipment*

The user-requirement profiles (specifications) are documented and confirmed by us. On request, a specification can be created by us.

### IQ (Installation Qualification)

*Definition: Documented proof that critical equipment and systems have been delivered and installed in accordance with the set requirements and government regulations.*

The IQ documentation is worked out by us especially for the delivered machine and is made available to you. The IQ documentation has to be carried out by the customer itself.

### OQ (Operational Qualification)

*Definition: Documented proof that critical equipment and systems in accordance with the set requirements in the whole operating range are working as intended in accordance with predetermined limits.*

The OQ documentation is worked out by us especially for the delivered machine and is made available to you. The OQ documentation has to be carried out by the customer itself.

### CQ (Calibration Qualification)

*Definition: Documented proof that critical measuring equipment in the intended range in accordance with predetermined tolerances operate reliably under current operating conditions*

#### Checking the temperature in the cabinet

**1 Temperature on 3 different measuring points** (measured with calibrated PT 100 sensor) evenly located on the shelves. Inspection time 6 hours, open door after that of 30 seconds. The inside temperature of the cabinet must have been stabilized itself within 1 hour on the set point temperature.

The measurements are carried out in the empty state.

The temperature measures are carried out in our company, represented graphically and provided to you.

The values may not dropping below or above the tolerances given by us.

(Additional measuring points on request)

### PQ (Performance-Qualification)

*Definition: Documented proof that critical equipment and systems in accordance with the set requirements in the whole workspace under current working conditions (with product) provide the requested services*

The calibration described above is carried out under real conditions on site.

The values may not dropping below or above the tolerances given by us.