

Laboratory Refrigerator/Deep Freezer

TC 802



External Dimension:
 B = 600 mm
 D = 615 mm
 H = 2000 mm

Inside Dimension:	Useful space on top	Useful space at the bottom
	B = 440 mm	B = 431 mm
	D = 435 mm	D = 435 mm
	H = 1105 mm	H = 597 mm

Capacity:	254 l	107 l
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Temperature range:	3°C to 16°C	-9°C to -30°C
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Housing

galvanized sheet steel with white coating. 2 isolated doors supplied as standard with right hand hinge (reversible), Including 2 pcs. door locks. Grease resistant magnetic seal.

Interior space

of high quality plastic. Cleaning friendly by rounded corners, slippery surface in the interior, meets highest hygiene requirements

Isolation

Polyurethane, free of CFCS

Circulating air cooling in the refrigeration unit

for rapid and uniform temperature control, reducing temperature gradients to a minimum. When the door is "open" the circulating fan is switched off automatically by a micro switch in order to prevent warmer ambient air being drawn in.

Interior fittings

On top: 3 pcs. glass shelves (440 x 420 mm)
 max. load per shelf: 40 kg

At the bottom: Plastic drawers, white with transparent front
 with two permanently mounted contact evaporator plates
 2 pcs. (425x395x180 mm)
 1 pcs. (425x225x190 mm)
 max. load per drawer: 24 kg

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Control system located above door.



2 pcs. High quality electronic temperature controller.

Actual and set value display digital.

Actual value permanently readable

Set value digital adjustable by switch

Working range from 3°C to 16° (+/- 2°C) and -9°C to -30°C (+/-3,5°C)

- **Temperature differences are displayed visually and acoustically,**
- **Door open Alarm**
- **Potential free alarm output for remote transmission**
- **Power failure alarm when mains power returns (optical)**
- **RS 485 interface**
- **Min/max temperature**

Product protection against low temperatures.

By dropping below 2°C, the cooling machine will automatically switched off

Refrigerating unit

2 separate Refrigerating unit fully hermetically sealed, forced ventilation, fitted on vibration - absorbing mounts (ambient temperature max. 32°C), low noise (52 dBa/1m), energy saving compressor with high quality vaporisation system.

Refrigerant: R600a

Defrost

Automatic defrost in the refrigeration unit, manual defrost in the freezer unit

Electrical dates

Power supply 230 V/50 Hz / single-phase

Absorption 1,5 A

Energy consumption 1,8 KW (24 Std.)

Power cable 1,5 m with Schuko plug

Packing details (palletized)

Dimensions: approx. 70x70x210 cm

Net weight: approx. 85 kg

Gross weight: approx. 91 kg

Country of Origin: European Community

Customs clearance code: 8418 1080

Special Equipment and Accessories:

Cable port

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 U2

2-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: 20.000 measurements
 Usable range: 1km LOS
 Communication: via radio 868 Mhz
 Power: 25 mW
 incl. 2 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 with ATEX Exi certification 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 immediatly.



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.