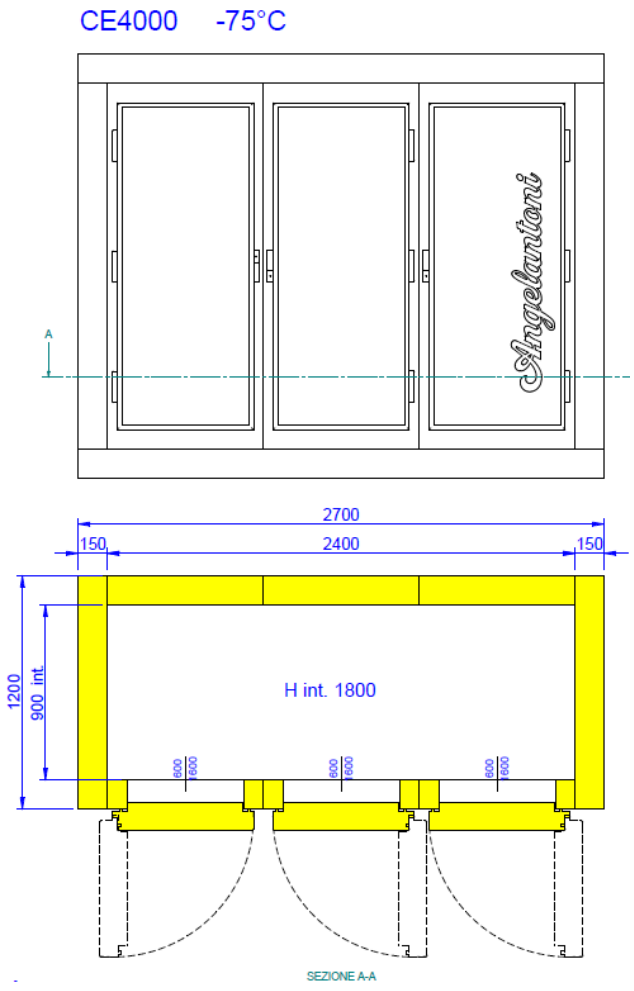
Angelantoni Life Science S.r.l.
Loc. Cimacolle, 464 - 06056
Massa Martana (Pg) Italy

Ph. (+39) 075.8955.1
Fax (+39) 075.8955.312
biomedical@angelantoni.it
www.angelantonilifescience.it

C.f./P.iva/R.i. 03216320543
R.e.a. c.c.i.a.a. PG 272576
Cap. soc. 900.000,00 euro i.v.

TECHNICAL DATA: **CE 4000 3/ULT DI**

CAPACITY': 4000 liters
TEMPERATURE RANGE: from -20°C to -75°C
PRECISIONE +/-5°C (in sbrinamento +10°C)
OPERATING ENVIRONMENT TEMPERATURE: from 10 to 32 ° C
CABINET DIMENSIONS
External, mm WxDxH: 2700x1300x2408
Internal, mm WxDxH: 2400x900x1800
Empty cabinet weight: 350 kg
Remote condensing unit dimensions, WxDxH in mm: 846x1750x980
To consider 2 condensing units for each room.
Single condensing unit weight: 130 kg
POWER SUPPLY: 400 V + 6% -10% / 3 (Three-phase) / 50 Hz + Neutral + Earth.
POWER COMMITTED FOR EACH SINGLE SYSTEM: 6KW, for each system
ENGAGED POWER: 13 A, for single system
AVERAGE ENERGY CONSUMPTION: 3 Kw / h, for a single system
THERMAL DISSIPATION IN THE ENVIRONMENT: 2,800 kCal / h, for a single system



Società soggetta all'attività di direzione e coordinamento di Angelantoni Industrie S.r.l. con sede in Massa Martana (Pg) C..f./R.i. 01678030543

STRUCTURE:
A load-bearing structure consisting of prefabricated panels, assembled together, in pre-painted galvanized steel sheet, interior in AISI 304 steel sheet.
No. 3 service doors with locks and special rubber seals.
Electric heating elements placed on the gasket and doorstop to prevent ice formation on the gaskets.
It is recommended to open one door at a time for product withdrawal for a time not exceeding 30 ".
To reopen a door again, it is advisable to wait until the temperature inside do has reached -70 ° C

THERMAL INSULATION:
Obtained by injection of polyurethane foams under high pressure ("sandwich" technique).
Insulation thickness: 150 mm.

COMPLETE BACKUP REFRIGERATOR AND ELECTRIC SYSTEM:
The cabinet is equipped with a redundant electrical and refrigeration system that will alternate the operation to ensure constant and equal operation over time.
Two control and monitoring boards will alternate the activation and generation of alarms of the two redundant refrigeration units
When the system is switched on, the system-defined as primary will be operating while the secondary system remains on hold. They will exchange the task at each thermostat, sending status signals to each other. If the status signals are not sent or received correctly, the exchange does not take place and therefore an alarm is triggered.

The exchange of devices takes place:
- At each thermostat
- Each time the entire device is turned off and on again

The automatic exchange is interrupted (only the device deemed capable of carrying out the task without alarms remains in operation) if
- High condensation failure
- High-pressure protection
- High-temperature alarm (not for an open door or power failure)
- Missing power supply to only one unit

In these cases, the panel will show a message that the alternation of the regulation is suspended until the system is restarted
The alternation is also temporarily suspended (and automatically restored) for the following events:
- Probe failure
- High compressor usage warning
- Maximum defrost time exceeded

CONDENSER UNITS
Installed next to the chamber(one on the right and one on the left)
Each unit consists of a special cascade cycle that uses two 2.9 HP, 400v / 50hz semi-hermetic compressors and an air condensation system

ANGELANTONI GROUP MORE THAN YOU THINK
www.angelantoni.it

The condensing units are also equipped with:
Maximum pressure switch
Minimum pressure switch
Variable Speed device for condensing temperature control.
Dehydrate filter for dehydration of the coolant
Visual indicators of the passage of coolant
Solenoid valve for interception of liquid refrigerant
Taps and fittings for connection and exclusion between the components of the refrigeration system.
Copper and steel pipes for connecting the various parts of the refrigeration system
The first charge of the refrigerant and non-freezing oil, in the quantities necessary for the perfect functioning of the system
Insulation for cold pipes with elastomer material such as "Armaflex"
Cables and electrical connections inside the refrigeration system.
Insulated pipes for connecting the evaporator to the refrigeration system.

REFRIGERANT:
High stage R 452 A, Low stage R23

INTERNAL AIR TREATMENT:
With internal forced ventilation evaporators, anchored inside the cabinet, one on the right and one on the left.
The evaporator is made with a finned copper tube coil, aluminum body, and stainless steel condensate water collection tray.
Ventilation inside the compartment is guaranteed by two external motors passing through each evaporator.
Internal ventilation will be stopped when any door is opened.

DEFROST
Electric defrost
NTC probe (protection: IP68) to control the temperature inside the evaporator to manage the duration of the defrost and the start of the ventilation.

ANGELANTONI GROUP MORE THAN YOU THINK
www.angelantoni.it

ACP7 controller: consumption optimisation and continuous monitoring

ACP7 state-of-the-art controller with built-in electronic temperature register guarantees top performance, ultimate safety and ease of use:

✓ Simple, practical interface
✓ Access protected by a password with 3 privilege levels: USER, SERVICE and ADMINISTRATOR

✓ Three separate processors that communicate with each other via a CAN-BUS connection

✓ Internal microSD card (not removable) for recording operating data for 10 years (every 30 seconds)

✓ Integrated USB port on the front for:
- downloading registered temperature data
- configuring the devices connected
- updating the firmware

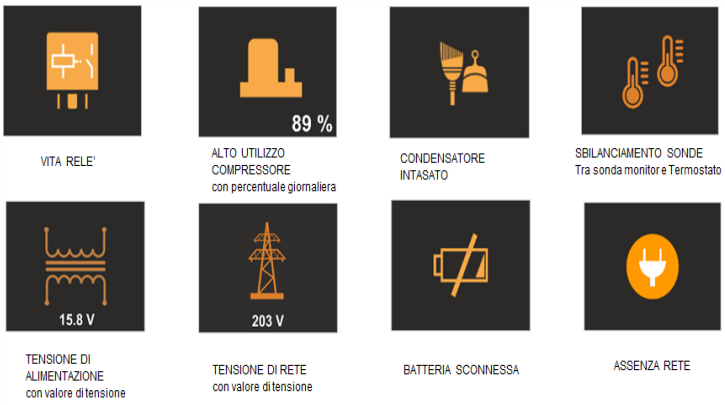
✓ 7" touch screen with simplified vision or graphic screen page that simultaneously shows:
- the device ID
- the system date and time
- the set temperature (0.1°C resolution)
- the operating temperature (0.1°C resolution)
- the alarm setting
- the temperature chart

✓ User-friendly navigation with ideograms for quickly and easily viewing the menu steps, and a colour code for identifying the alarms

ANGELANTONI GROUP MORE THAN YOU THINK
www.angelantoni.it

Innovative functions:

SMART DIAGNOSTIC function to constantly monitor the degree of wear of the main components. When the maximum pre-set wear threshold is reached, a WARNING will appear on the display reminding the user to replace it and thereby reduce the risk of machine downtime.

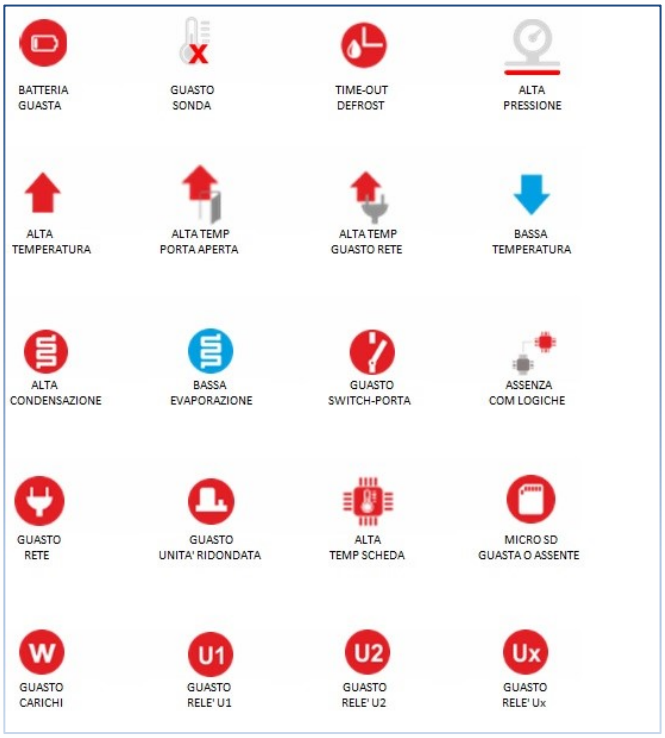


The freezer has a BACK-UP BATTERY that regularly tests the charge status. In the event of a mains failure, the battery has an autonomy of 36 hours if in perfect condition.

EVENT ICONS

List of alarms:

- High or low temperature (adjustable setting)
- Prolonged "door open" condition
- No power supply, or voltage outside the permitted range
- Compressor malfunction
- Relay malfunction
- Buffer battery dead
- Sensor malfunction
- Condenser dirty
- 12V AC power supply outside range
- Mains voltage outside range



Option of configuring an e-mail to be sent automatically in the event of an alarm.
In this case, the freezer must be equipped with one of the internet connection modules (refer to the list of accessories).

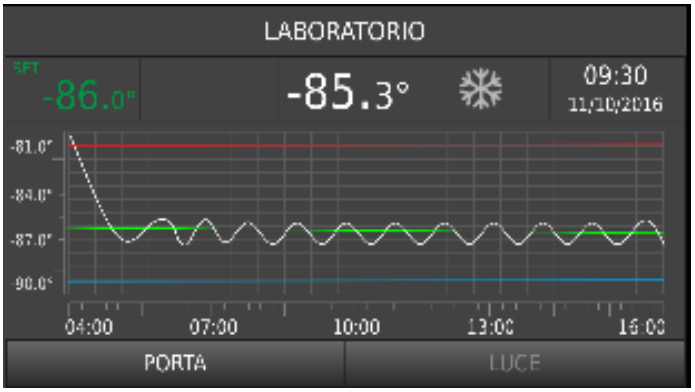
The freezer has a smart control system that maintains the set temperature even if the sensors malfunction

ANGELANTONI GROUP MORE THAN YOU THINK
www.angelantoni.it

Built-in graphic register

Graphic registration incorporated in the ACP7 controller with sampling of the following parameters every 30 seconds:

1. Internal compartment temperature
2. Evaporator temperature
3. Condenser temperature
4. Set-point
5. Set temperature limits (high/low)



The parameters can be shown on the screen according to the operator's needs.

There are two visualisation modes:

-REAL TIME, showing the internal compartment temperature, the set-point and the temperature limits

-LOG, showing all five parameters over a time range defined by the operator

The operator can select a maximum period of 6 hours, using the ZOOM IN function to focus on a shorter period, and then ZOOM OUT to return to the max period.

ELECTRICAL SYSTEM

The electrical system will be carried out in full compliance with the laws and regulations in force. The flame-retardant cables, multipolar, sized for the load they must guarantee, electrical components will be positioned on the upper part of the cabinet.

The activation of a front panel is foreseen where the ACP7 panel will be positioned to display the temperature and the alarms.