Laboratory cabinets and freezers at +4°C, -20°C and -30°C

X-COLD Series

ALS

ANGELANTONI

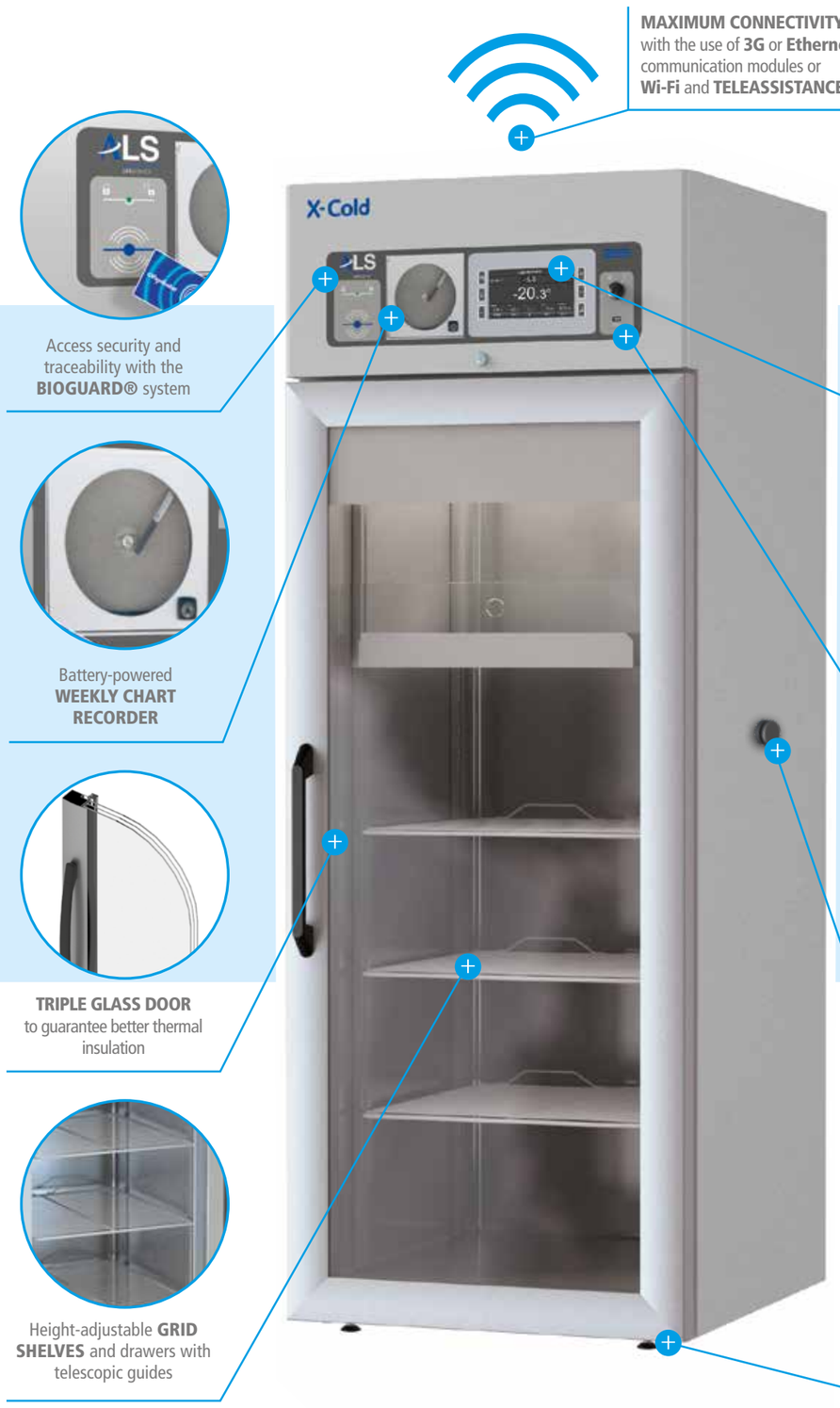
LIFESCIENCE

Our expeerience
in the freezing industry

For over 85 years, Angelantoni has produced a complete range of refrigerators/freezers for long-term preservation of biological samples used in scientific laboratories, pharmaceutical research, hospitals and any other application requiring material preservation at low temperatures.

Angelantoni's experience in the freezing industry, combined with continuous search for solutions able to offer its customers quality products, has resulted in the creation of **X-COLD**, a new line of products characterized by functions developed and tested for professionals in the biomedical sector.

The wide range of machines of different volumes equipped with cutting-edge electronic controllers makes the **X-COLD** line one of the best laboratory products in the market in terms of flexibility and reliability.



MAXIMUM CONNECTIVITY
with the use of **3G** or **Ethernet** communication modules or **Wi-Fi** and **TELEASSISTANCE**

Access security and traceability with the **BIOGUARD®** system

Battery-powered **WEEKLY CHART RECORDER**

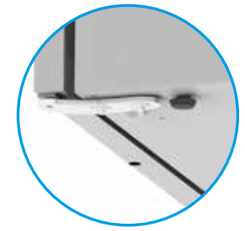
TRIPLE GLASS DOOR
to guarantee better thermal insulation

Height-adjustable **GRID SHELVES** and drawers with telescopic guides

Latest generation **ELECTRONICS** with **CAN-BUS** internal communication protocol

Real-time data download via integrated **USB** port and basic software included

PASSING HOLE
for inserting cables, probes, or other utilities



BALLS AND FEETS
for easy movement or parking

X-Cold700 TN-GL complete with accessories

X-COLD: Product features

Maximum protection
The internal AISI 304 stainless steel tank, combined with a load-bearing structure in hot-dip galvanized steel coated with PVC film, guarantee maximum protection against corrosion and a long service life.

Optimization of internal spaces
Each model is equipped with height-adjustable shelves (optional drawers), for efficient organization of internal spaces and adequate arrangement of material.

Uniform cooling
The internal compartment is cooled by a ventilation system that guarantees temperature uniformity. Fans stop turning when the door is opened, thus protecting the operator from exposure to low temperatures and reducing heat loss.

Easy and comfortable opening
New ergonomic handle designed for easy grip even with one hand.
Standard key lock or Bioguard® system (optional).

External communication
A 19, 23 or 50mm through-hole is provided on request, for inserting cables, probes or other utilities.

Environmentally friendly
We have always considered ourselves as "environmentally friendly" and for this reason all our products use natural gas or gas with very low environmental impact.

X-COLD from 700 to 1500 liters

Laboratory cabinets and freezers at +4°C, -20°C and -30°C
X-COLD Series

Easy cleaning
The structure of the internal AISI 304 steel tank is designed to minimize edges; full sealing of joints makes bacterial proliferation impossible, while allowing easy cleaning.

Easy handling
All products are equipped with balls, wheels and rollers to facilitate handling and with adjustable feet for stabilization.

Low noise levels
The structure and cooling system of the X-COLD line are designed to minimize noise. When installed in laboratories, this equipment does not disturb the people who work there.

Stored product visibility
These models are provided with glass door and internal led lighting for perfect product visibility including when the door is closed.

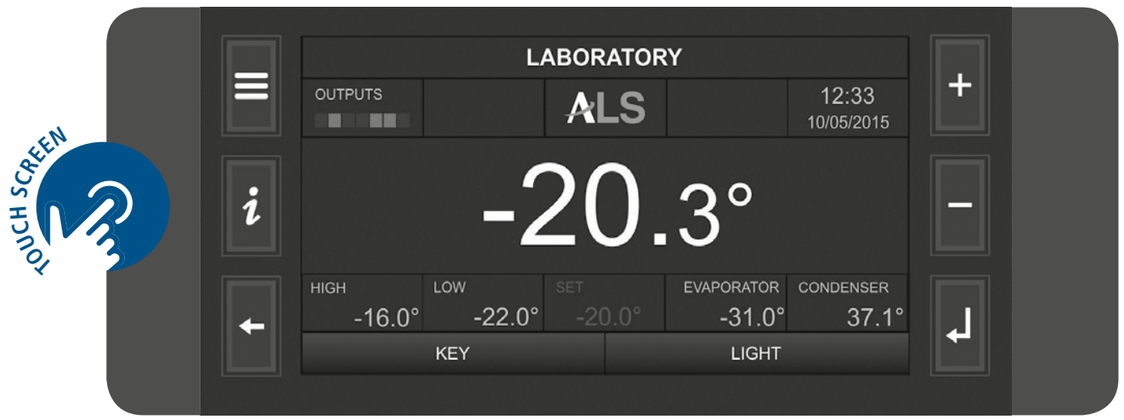
Increased access security
Sample security is increased by BIOGUARD®, an optional system that guarantees complete access control. With this accessory, the door is locked electrically, so that it may only be opened using authorized cards with total access traceability.

Maximum connectivity
A latest-generation electronic controller optimizes both performance and functions and allows the user to adjust and monitor the refrigerator remotely with extreme ease.

X-COLD from 100 to 500 liters

Cutting-edge **controller**

ACP7: TOTAL CONTROL AT A GLANCE



The **X-COLD** range includes two graphic controllers differing in display size: 2.5 or 7 inches.

The cutting-edge **ACP7** controller, developed over the years with the support of the latest technologies, can ensure high performance, maximum safety and ease of use.
Control electronics are based on three separate processors: one is dedicated to the control system, one is for the alarm section and one for communicating collected data. Access to parameters is protected by passwords with 3 privilege levels: users, service and administrator.

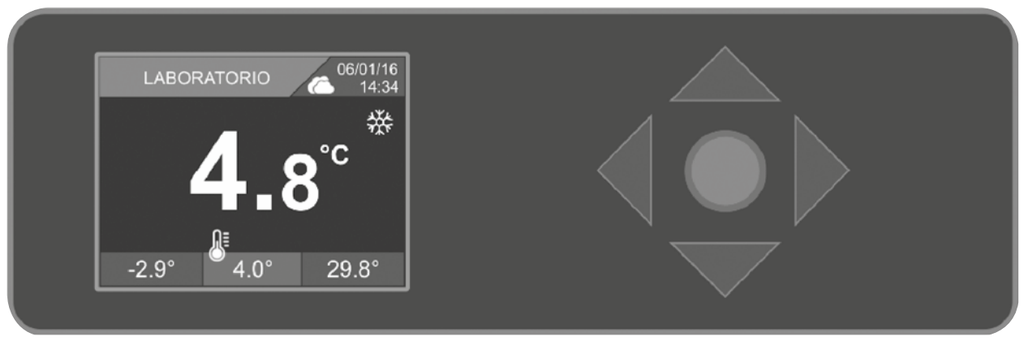
A **7-inch display** shows all basic data on one screen, allowing real-time evaluation of the operating status.
The **ACP7 controller** has innovative functions optimizing consumption and allowing parameters to be continuously monitored thanks to 3 separate microprocessors for ADJUSTMENT, ALARM and CONNECTIVITY.

The aim of the **REAL-TIME function** is to display daily temperatures on the screen. This function adds to event listing and to the recording of working temperatures and variables that are sampled every 30 seconds for **10 years.** All values can be stored and event log files can be downloaded to the local PC via an **integrated USB port** in the controller.

The aim of the **ECOMODE function** is to operate the machine in an energy-saving mode.
A PERSONAL PASSWORD is required to access the controller and to enable the functions that change user parameters.

Laboratory cabinets and freezers at +4°C, -20°C and -30°C
X-COLD Series

ACP3: LEADER IN RELIABILITY, PERFORMANCE AND EASE OF USE



The 2.5" display of the **ACP3** controller is backlit and color-coded, with variable color touch key controls. The display shows the operating temperature, alarm limits and temperature chart.

The command key changes color according to the machine status:

Green display:
All operating parameters are correct, no faults worth reporting;

Orange display:
The machine is signaling an alert situation, which can normally be resolved by the operator;

Red display:
Critical condition, immediate user intervention or technical assistance is required.

INCREASED SECURITY FOR YOUR SAMPLES

The **SMART DIAGNOSTIC** function ensures constant monitoring of key component wear. Once the preset limit wear threshold is reached, an alarm will prompt for replacement, reducing the risk of machine downtime.

The technical chamber temperature is constantly monitored, alerting the user as soon as the safety threshold is reached.

The machine includes a charging circuit for the **BACK-UP BATTERY** featuring periodic test, charge status and replacement alert. In the event of loss of power, the battery can work autonomously for 30 hours.

A reliable **SMART CONTROL SYSTEM** maintains the set temperature even in the event of probe failure.

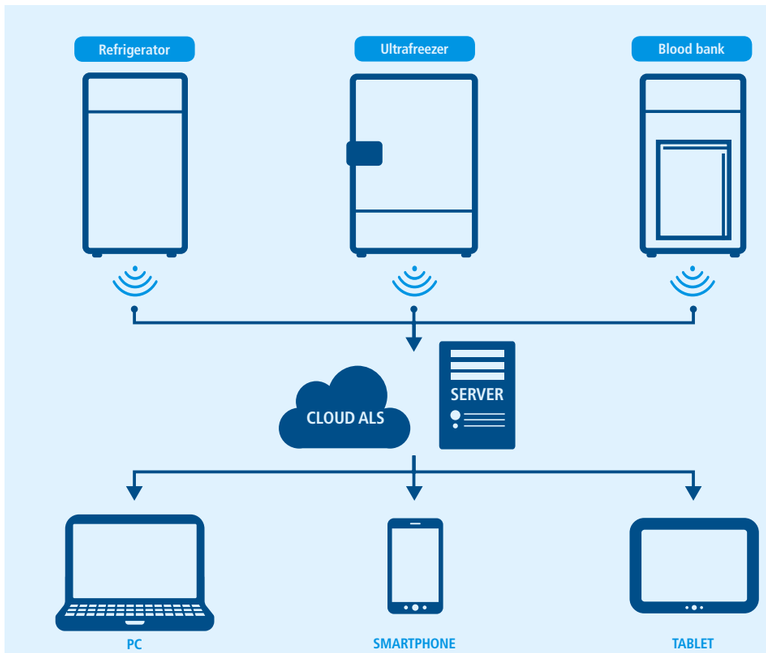
Your device in one click

CONTROL ANYTIME ANYWHERE

The controller guarantees maximum connectivity and constant monitoring thanks to the **CloudALS** infrastructure or **local storage server** (Proprietary Server), easily accessible from PC, Smartphone and Tablet.

This function allows users to monitor the trend of the refrigerator's storage temperatures in real time and maintenance personnel can promptly access detailed information on the operation of the refrigeration unit and its components.

The possibility of choosing between **3G** coverage or the use of an **Ethernet** or **Wi-Fi** communication module facilitates any type of connection in the user environment. This feature also allows one or more Angelantoni machines (refrigerators, freezers, etc ...) to be remotely controlled, if they are equipped with the latest-generation controller (ACP series) and located in different laboratories.



Remote control of refrigeration units from your Smartphone

REMOTE FUNCTIONS

USER

- Master Management
- Multitrack Real-Time Graphs
- Event notification E-mail
- Real-Time variable consultations

SERVICE

- Configuration Parameter Reading
- Configuration Parameter Writing
- Firmware Update
- Remote assistance

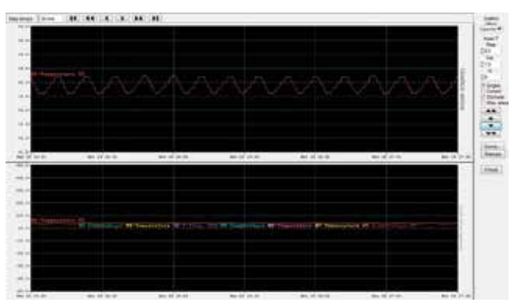
Laboratory cabinets and freezers at +4°C, -20°C and -30°C
X-COLD Series

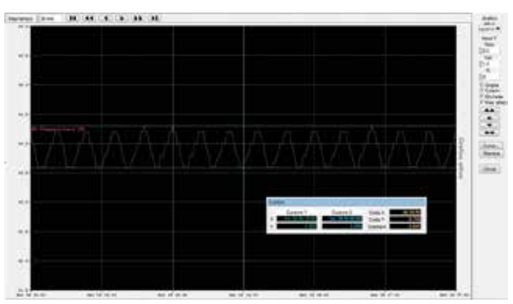
MONITORING FROM A SINGLE LOCATION

Cryolog is a monitoring system that combines robust technology with ease of use, an ideal system for remote supervision of machines in different rooms.
Up to 32 units can be connected simultaneously and the operating parameters of each machine can be displayed.

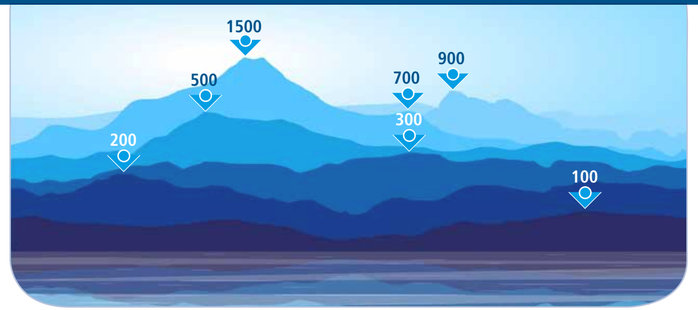
The monitored parameters are:
- Working temperature
- Door status
- Alarms

Monitored parameters are also displayed in graphic form and stored in a destination folder.





A complete range from 100 to 1500 liters



The **X-COLD** series is a very comprehensive range of refrigerators and freezers meeting all requirements in terms of volumes and control electronics.

The full series includes machines from 100 to 1500 liters with glass or blind doors and with storage temperatures ranging from +4°C to -20°C.

The series is completed by the following models and formats:
- 300 liters **combined**, with one chamber of 200 liters at +4°C and one chamber of 100 liters at -20°C (mod. 300/2 TN / 2TS)
- 700 liters **combined**, with two chambers of 350 liters each, one at +4°C and one at -20°C (mod. 700/2 TN / 2TS)
- 1500 liters **combined**, with two chambers of 700 liters each, one at +4°C and one at -20°C (mod. 1500/2TN / 2TS)
- 700 liters, with a storage temperature of **-30°C** (mod. 700/1 liter)
- 900 liters, with a storage temperature of **-30°C** (mod. 900/1 liter)

Controlled access

The **BIOGUARD®** system allows keyless opening with a personal RFID ID card. Each machine equipped with Bioguard® is supplied with 3 ID cards. The BIOGUARD® lock increases the safety of stored products. In the event of damage to the ID cards or electronic malfunctions, the door can be opened manually with a special emergency key.

Laboratory cabinets and freezers at +4°C, -20°C and -30°C
X-COLD Series

Models and technical specifications

MODELS		100/1				200/1				300/1				500/1				300/2	
		100/1 TN	100/1 TN-GL	100/1 BT	100/1 BT-GL	200/1 TN	200/1 TN-GL	200/1 BT	200/1 BT-GL	300/1 TN	300/1 TN-GL	300/1 BT	300/1 BT-GL	500/1 TN	500/1 TN-GL	500/1 BT	500/1 BT-GL	300/2 TN/2TS	
DIMENSIONS																			
Internal size (LxWxH)	mm	480X500X450				480X500X815				480X500X1385				605X690X1355				480X500X845	480X500X495
External size (LxWxH)	mm	600X615X850				600X615X1425				600X615X1995				685X805X1835				600X635X1995	
Liters	l	95				176				303				528		500		184	100
Weight	Kg	85				100				115				130				120	
TECHNICAL FEATURES																			
																		1° VANO	2° VANO
Temperature range	°C	0/+15	0/+15	-10/-23	-10/-23	0/+15	0/+15	-10/-23	-10/-23	0/+15	0/+15	-10/-23	-10/-23	0/+15	0/+15	-10/-23	-10/-23	0/+15	-10/-23
Climate class		CLASS SN/ST				CLASS SN/ST				CLASS SN/ST				CLASS SN/ST				CLASS SN/ST	
Supply voltage		208-252 VAC / 50 (60) Hz / 1 + T (G)				208-252 VAC / 50 (60) Hz / 1 + T (G)				208-252 VAC / 50 (60) Hz / 1 + T (G)				208-252 VAC / 50 (60) Hz / 1 + T (G)				208-252 VAC / 50 (60) Hz / 1 + T (G)	
Noise level	dB	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50	<50	
Max. absorbed current	A	1,5	1,5	3	3	2	2	4	4	2	2	4	4	3	3	6	6	6	
Thermal dissipation	kcal/h	170	170	400	400	215	215	430	430	215	215	430	430	400	400	700	700	700	
Refrigerant gas		R 290				R 290				R 290				R 290				R 290	
FRAME																			
External finishes		Epoxy powder coating				Epoxy powder coating				Epoxy powder coating				Epoxy powder coating				Epoxy powder coating	
Internal material		AISI 304 Stainless steel				AISI 304 Stainless steel				AISI 304 Stainless steel				AISI 304 Stainless steel				AISI 304 Stainless steel	
Insulation	mm	60 (PU)				60 (PU)				60 (PU)				60 (PU)				60 (PU)	
Shelves	Nr.	2				2				3				3				3	2
Max load per shelf	Kg	30				30				30				30				30	

MODELS		700/1				900/1				1500/2			700/2 T - 1500/2 T			
		700/1 TN	700/1 TN-GL	700/1 BT	700/1 LT	900/1 TN	900/1 TN-GL	900/1 BT	900/1 LT	1500/2 TN	1500/2 TN-GL	1500/2 BT	700/2 TN / 2 TS		1500/2 TN / 2 TS	
DIMENSIONS																
Internal size (LxWxH)	mm	590X675X1500				660X875X1510				1330X675X1500			590X650X720	590X650X720	635X675X1500	635X675X1500
External size (LxWxH)	mm	740X815X1998				810X1010X1998				1480X815X1998			710X800X1998		1480X815X1998	
Liters	l	600				870				1400			300	300	600	600
Weight	Kg	170				180				230			160		250	
TECHNICAL FEATURES																
													1° VANO	2° VANO	1° VANO	2° VANO
Temperature range	°C	0/+15	0/+15	-10/-23	-10/-30	0/+15	0/+15	-10/-23	-10/-30	0/+15	0/+15	-10/-23	0/+15	-10/-23	0/+15	-10/-23
Climate class		CLASS SN/T		CLASS SN		CLASS SN/T		CLASS SN		CLASS SN/T		CLASS SN	CLASS SN/T		CLASS SN/T	
Supply voltage		208-252 VAC / 50 (60) Hz / 1 + T (G)				208-252 VAC / 50 (60) Hz / 1 + T (G)				208-252 VAC / 50 (60) Hz / 1 + T (G)			208-252 VAC / 50 (60) Hz / 1 + T (G)		208-252 VAC / 50 (60) Hz / 1 + T (G)	
Noise level	dB	≤ 50	≤ 50	≤ 50	≤ 50	≤ 43	≤ 43	≤ 45	≤ 50	≤ 50	≤ 50	≤ 55	≤ 60		≤ 60	
Max. absorbed current	A	4	4	5,5	6	5,5	5,5	5,8	6	5	5	3,8	7		8	
Thermal dissipation	kcal/h	180	180	210	345	215	260	320	430	220	225	345	320		430	
Refrigerant gas		R 290			R452A	R 290			R452A	R 290			R 290		R 290	
FRAME																
External finishes		Epoxy powder coating				Epoxy powder coating				Epoxy powder coating			Epoxy powder coating		Epoxy powder coating	
Internal material		AISI 304 Stainless steel				AISI 304 Stainless steel				AISI 304 Stainless steel			AISI 304 Stainless steel		AISI 304 Stainless steel	
Insulation	mm	75 (PU)				75 (PU)				75 (PU)			75 (PU)		75 (PU)	
Shelves	Nr.	3				3				6			2		3	
Max load per shelf	Kg	40				40				40			40		40	

Because of continuous and improvement of the product and its accessories, the images reproduced in the catalog may be slightly different.

Laboratory cabinets and freezers at +4°C, -20°C and -30°C

X-COLD Series

ACCESSORY AND OPTIONS
Weekly chart recorder
BIOGUARD, door opening with badge for X-COLD 200, 300, 500, 700, 900, 1500 and 1500 2T (requires ACP7 controller)
Additional user badge for BIOGUARD system (in combination with optional BIOGUARD)
Ø19 mm through-hole with closing cap for X-COLD 100, 200, 300, 500 and 300 2T
Ø23 mm through-hole with closing cap
Ø50 mm through-hole with closing cap
Stainless steel sliding and pull-out drawer
Plastic coated grid shelf
Stainless steel perforated shelf
Stainless steel grid shelf
Wheel mounting
External stainless steel cladding
Additional PT 100 class A probe (complete with calibration certificate)
Additional PT 100 class A probe with 4-20mA signal converter (complete with calibration certificate)
Additional PT 100 class A probe calibrated for 3 specific temperatures (complete with calibration certificate)
Integrated safety thermostats to prevent freezing
IQ-OQ qualification protocols (ALS standard)
Packaged in a wooden case/box
Model with 230V / 60Hz supply voltage
Model with 115V / 60Hz supply voltage

CONNECTIVITY ACCESSORY AND OPTIONS
GSM dialer for alarm signaling (SIM card not included)
Wi-Fi module for Cloud monitoring and control (requires Wi-Fi router + PC or Smartphone or Tablet)
Ethernet module for Cloud monitoring and control (network cable, hub / switch + PC are required)
3G-GSM module for SMS alarms (SIM card not included)
Ethernet module for Cryolog monitoring (network cable, hub / switch + PC are required)
RS485 module for Cryolog monitoring (serial cable, Hub / switch + PC are required)
CLOUD license for remote control and monitoring (in combination with Wi-Fi or Ethernet module)
CRYOLOG software for monitoring up to 32 units from a remote PC (in combination with Ethernet or RS485 module)

ANGELANTONI LIFESCIENCE

Angelantoni Life Science (ALS), a sub-holding fully owned by Angelantoni Industrie, is one of the leading international companies in the supply of refrigerating equipment and the design of technological solutions in the biomedical industry, with a constant commitment to biological and environmental innovation and safety.

Research centers, hospitals, laboratories, universities and industrial companies in the pharmaceutical and chemical industry are the recipients of ALS production, which covers all the needs for refrigeration, infection control and microbiological safety with a wide range of standard and special products. With its agents and distributors in over 40 countries, Angelantoni Life Science is the ideal partner in the healthcare sector and scientific research.

Our strength comes from the skills of our engineers and the experience they have gained in design, from the professionalism of our technicians in production and service and the coordination of experienced managers supporting our staff.
Each team member contributes their enthusiasm and scientific and industrial knowledge to a work environment that stimulates innovation and development. Angelantoni Life Science invests more than 10% of its turnover in Research and Development, involving a multidisciplinary team of technicians and researchers.

Founded in 1932, Angelantoni Industrie is an industrial group with 4 plants and over 500 employees. It is one of the world's leading companies in the production of environmental and space simulation chambers (ATT Angelantoni Test Technologies), cold technology applications in pharmaceutical and hospital research (ALS Angelantoni Life Science), Energy Efficiency (Cold Energy) and Solar Thermodynamic Energy (Archimede Solar Energy receiver tubes).

Angelantoni Plants

Angelantoni Life Science S.r.l.
MASSA MARTANA HEADQUARTERS
Località Cimacolle, 464 - 06056 Massa Martana (PG)
tel. (+39) 075.89551 - fax (+39 075.8955312
MILANO HEADQUARTERS
viale Monza, 291 - 20126 Milano (MI)
tel. (+39) 02.939701.1

biomedical@angelantoni.it **www.angelantonilifescience.it**

ANGELANTONI GROUP
MORE THAN YOU THINK