



## FDM Environment Makers Products

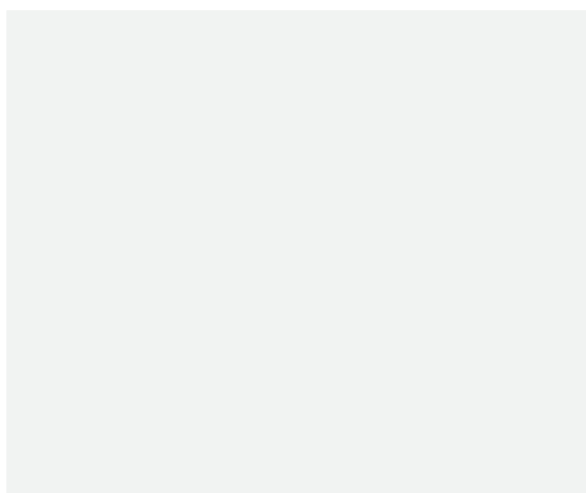
Climatic and Thermostatic Chambers

Growth Chambers

Environmental Chambers

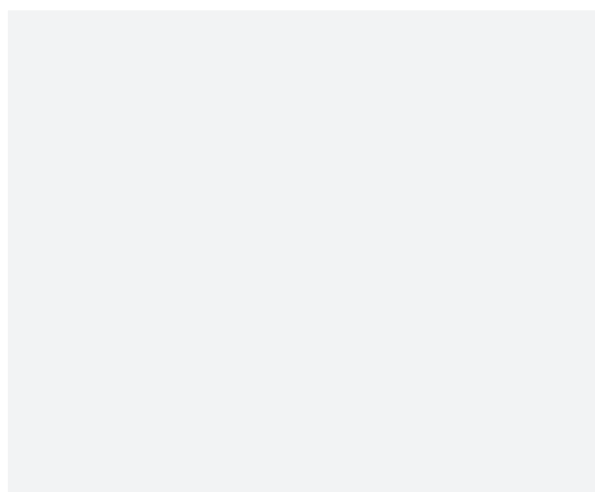
Ultrafreezers

Custom Products



# Thermostatic Chamber

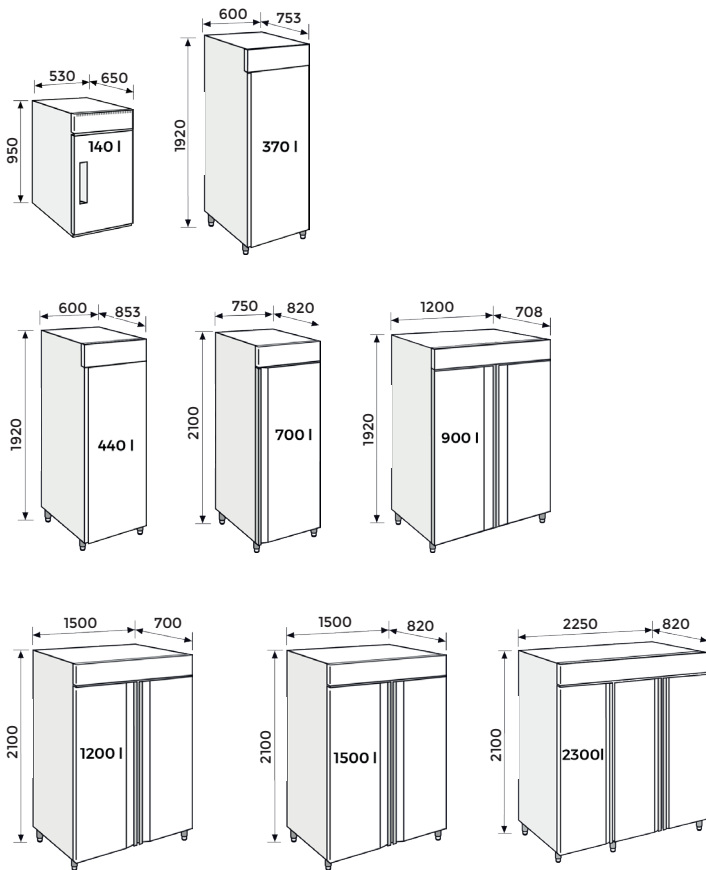
TB-TS Series



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Technical specifications are subject to change

## Sizes



The TB-TS series is FDM's standard thermostatic chamber category: you can choose different temperature and volume parameters.

The thermal tests are used to determine the quality, reliability and resistance of the samples to the various real external factors they may have to deal with in their life cycle.

The thermostatic chamber is a fundamental instrument for the laboratory, also and above all because the various tests to be carried out are regulated by the various standards established by official research bodies.

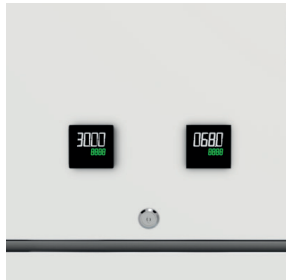
The types of products to be tested are practically infinite, here are some of the most common sectors of application:

- cosmetic and pharmaceutical
- food
- textile
- military/aerospace
- electronic components
- automotive
- building materials

According to the type of test, cyclic or constant, we will distinguish the type of controller or temperature controller, respectively revoFACE and stillFACE.

## Advantages

Volumes from 140 up to 2300 liters
Adjustable temperature -25°C...+70°C
Stability range $\pm 0.1...0.5^\circ\text{C}$
Internal shelves adjustable in height
Programmable controller revoFACE or for stillFACE stable tests
Internal forced and homogeneous ventilation
High and low temperature and humidity alarms
Electrical power 220-240V /50Hz or 110V



The stillFACE controller is designed for stability testing.



The revoFACE programmer is designed for cycle testing.

## Configuration examples



Positive Range (S)	T140S	T370S	T440S	T700S	T900S	T1200S	T1500S	T2300S
Negative Range (B)	T140B	T370B	T440B	T700B	T900B	T1200B	T1500B	T2300B
Temperature range [°C]	(S) 0...+70							
	(B) -20...+70							
<b>Temperature performance</b>								
Temperature uniformity depending on setpoint [± K]	0.5..2.5							
Temperature fluctuation depending on setpoint [± K]	0.1..0.5							
Average heating-up rate according to EN 60068-3-5 [K/min]	+2							
Average cooling down rate according to EN 60068-3-5 [K/min]	-1	-0.6	-1	-0.6	-1	-0.6	-1	-1
<b>Outer dimensions</b>								
Width net [mm]	530	600	600	750	1200	1500	1500	2250
Depth net [mm]	650	753	853	820	708	700	820	820
Height net [mm]	950	1920	1920	2100	1920	2100	2100	2100
<b>Doors</b>								
Unit doors	1	1	1	1	2	2	2	3
<b>Internal Dimensions</b>								
Width [mm]	450	500	500	600	1090	1340	1300	2090
Depth [mm]	540	480	580	670	580	570	670	670
Height [mm]	520.5	1257	1257	1340	1257	1350	1340	1340
<b>Measures</b>								
Interior net volume [L]	130	310	370	530	810	1020	1180	1830
Net weight of the unit (empty) [kg]	70	93	103	160	190	205	208	360
Permitted load per rack [kg]	30	30	30	30	30	30	30	30
<b>Fixtures</b>								
Number of shelves (std./max.)	3/5	3/5	3/5	3/6	6/10	6/12	6/12	9/14
Shelf Width [mm]	400	460	460	530	460	530	530	530
Shelf Depth [mm]	500	470	570	650	570	550	650	650
<b>stillFACE Controller</b>								
Controller	Constant monitoring temperature controller							
Interface port	Optional: RS485							
<b>revoFACE Programmer</b>								
Set-up Display	Programme status, set up temperature and humidity, date, time and language							
Programmer	10 programs and 50 segments each, adjustable from 1 min. to 999 hrs.							
Calibration	Possibility to calibrate all parameters							
Interface port	Optional: RS485 - Optional: Ethernet - Wifi - Dedicated mobile app							
<b>Environment-specific data</b>								
Sound-pressure level [dB(A)]	60							

All technical data are specified for units with standard equipment at an ambient temperature of +24 °C and a voltage fluctuation of ±10 %.

Positive Range (S)	T140S	T370S	T440S	T700S	T900S	T1200S	T1500S	T2300S	
Negative Range (B)	T140B	T370B	T440B	T700B	T900B	T1200B	T1500B	T2300B	
<b>Structure and insulation</b>									
Exterior material	White coated galvanized steel or full Stainless steel AISI 304								
Internal material	AISI 304 Stainless Steel								
Insulation	CFC and HCFC free								
Shelf grill	Removable and height adjustable steel grid								
<b>Ventilation</b>									
Fan	forced ventilation								
<b>Safety</b>									
Temperature	Class 2 independent adjustable temperature safety devices (DIN 12880)								
Alarm	Audio-Visual								
<b>Electrical data</b>									
Rated Voltage [V]	220/240								
Power frequency [Hz]	50								
Nominal power [kW]	(S)	1,4	1,4	1,4	1,8	2,2	2,3	2,5	2,7
	(B)	1,5	1,6	1,6	2,2	2,6	2,7	2,8	3,1
Unit fuse [A]	16								
Phase (nominal voltage)	1 ~								

## Main Options

- ETH100 - Ethernet interface for remote connection
- RS485 - Interface port RS485
- PG50200 - Upgrade. 50 program 200 step for revofACE
- PE100 - Interior socket coverable universal 220-230 V
- SPS100 - Interior compartment glass doors
- SPS07 - Flooding system for EN1348-2007
- BDS020 - Relative humidity decreasing up to 2% @ 20°C
- TE110 - Power supply 110 V 50-60 Hz
- CO200 - CO2 Regulation System for EN 12390-10



- FD100  
Cable hole installed on the side of the chamber that allows the passage of cables inside without loss of performance.



- UDB100  
USB port for downloading test data with the possibility of viewing them on a PC in Excel format.



- GP100R  
The reinforced stainless steel shelf differs from the standard one (pictured above) in that it has a higher supported load capacity.



- RT100  
Swivel castors with chamber lock for easy movement.



- PV101  
Double tempered glass door for a complete visibility of the environment and stability of the climatic conditions inside the chamber.

All technical data are specified for units with standard equipment at an ambient temperature of +24 °C and a voltage fluctuation of ±10 %.

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