

Cooled incubators (ST) can provide stable temperature between +3...+70°C regardless of ambient conditions



Cooled incubator ST 2 C Smart PRO



All thermostatic equipment manufactured by POL-EKO can be provided with Calibration Certificate issued by accredited Measurement Laboratory. Detailed information on accreditation is available on website: www.pol-eko.eu.

The wide range of our products requires specialisation in many fields. The production of each part involves complex sequence of technological processes, but modern machinery park comes to our aid. To achieve repeatability and highest quality of our components, most of the work is ensured by CNC machines and robots. We put our passion, heart and experience in every detail.



STANDARD FEATURES

- temperature range +3...+40°C (+70°C for Smart PRO)
- quality control protocol (at +37°C)
- English instruction manual
- temperature protection class 1.0 to DIN 12880 for B (basic) and C (comfort) versions, 2.0 for P (premium) version and 3.3 for Smart PRO
- open door alarm
- castors in standard for models ST 1200 and 1450
- LAN and USB ports
- internal LED light
- access port (Ø30 mm) on the left wall
- door lock
- wire shelves in B (basic) models, stainless steel wire shelves (INOX) in C (comfort) and P (premium) models
- solid door
- anchoring kit for ST 500, 700, 1200, 1450 and double/triple chambers

EXTRA FOR SMART PRO

- Wi-Fi
- LAN cable
- LabDesk

AVAILABLE VERSIONS

- Smart
- Smart PRO
- FOT photoperiod (see page 44)
- FIT phytotron (see page 45)
- TR tropic (on request) for higher ambient temperatures
- double/triple chamber
- combined with ZLN 85 or CHL

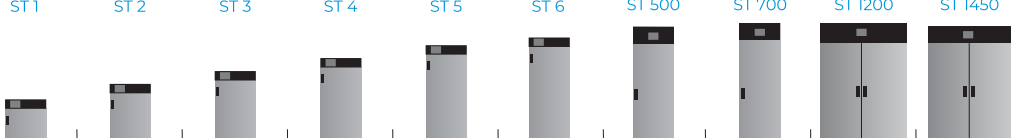
SOFTWARE

- LabDesk for data download to a PC via LAN or Wi-Fi (optional for Smart version)

Application

- BOD determination
- microbiological research
- plant growing and microorganisms breeding at specified temperature
- storage of liquids and samples for physicochemical analysis



	ST 1	ST 2	ST 3	ST 4	ST 5	ST 6	ST 500	ST 700	ST 1200	ST 1450	
Parameter											
air convection	forced										
chamber capacity [l]	70	150	200	250	300	400	500	625	1365	1540	
working capacity [l]	55	122	163	203	243	324	469	611	1355	1525	
door type	solid / glass or double ¹ (option)										
temperature range [°C]	+3...+40 / up to +70 (option) / +3...+70 in Smart PRO										
temperature resolution [°C]	every 0,1										
controller	microprocessor PID, 4,3" (Smart) / 7" (Smart PRO) full colour touch screen										
interior	B (basic)	aluminum									
	C (comfort)	stainless steel to DIN 1.4016									
	CS (comfort/S)	stainless steel to DIN 1.4016									
	P (premium)	acid-proof stainless steel to DIN 1.4301									
	PS (premium/S)	acid-proof stainless steel to DIN 1.4301									
housing	B (basic)	powder coated sheet									
	C (comfort)	powder coated sheet									
	CS (comfort/S)	polished stainless steel									
	P (premium)	powder coated sheet									
	PS (premium/S)	polished stainless steel									
overall dims [mm]	A width	550	600	600	600	600	600	640	710	1460	1440
	B height	660	900	1100	1300	1500	1900	1990	1990	1990	1940
	C depth	680	650	650	650	650	650	880	960	960	1060
internal dims ³ [mm]	D width	430	480	480	480	480	480	480	540	1270	1270
	D' width	470	520	520	520	520	520	510	600	1330	1340
	E height	430	660	860	1060	1260	1660	1510	1510	1510	1460
	F depth	300	420	420	420	420	420	610	680	680	780
	F' depth	360	480	480	480	480	480	-	-	-	-
	G depth	-	320	320	320	320	320	-	-	-	-
	H height	-	440	640	840	1040	1440	-	-	-	-
max shelf workload ⁴ [kg]	-	10	10	10	10	10	10	20	30	30	30
	PW ⁵ version	on request						100	100	100	100
max unit workload [kg]	-	20	30	40	50	60	60	100	150	300	300
	W ⁶ version	on request									
nominal power [W]	250	250	250	250	350	350	650	650	650	950	
weight ⁷ [kg]	37	54	61	69	75	90	105	121	185	200	
temperature fluctuation* at +37°C [± °C]	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3	
temperature variation* at +37°C [± °C]	0,5	0,5	0,5	0,6	0,6	0,6	1,0	1,0	1,0	1,0	
temperature protection	class 1.0 to DIN 12880 / class 3.3 (option) / class 2.0 in P version / class 3.3 in Smart PRO										
power supply**	230V 50-60Hz										
shelves fitted/max	2/2	3/4	3/4	4/6	4/7	4/10	3/11	3/11	2 x 3/11 ⁸	2 x 3/11 ⁸	
refrigerant	R1234ze / GWP=1						R290 / GWP=3				
warranty	24 months										
manufacturer	POL-EKO										

all the above technical data refer to standard units (without optional accessories)

* - fluctuation measured in centre of chamber; in space, variation (K) calculated for chamber as: $K = \pm (T_{avg\ max} - T_{avg\ min}) / 2$

** - other power supplies on request

1- additional internal glass door

2- depth does not include 50 mm of power cable, the width does not include the 20 mm of rubber plug

3- dims of units with double door are smaller

4- on uniformly loaded surface

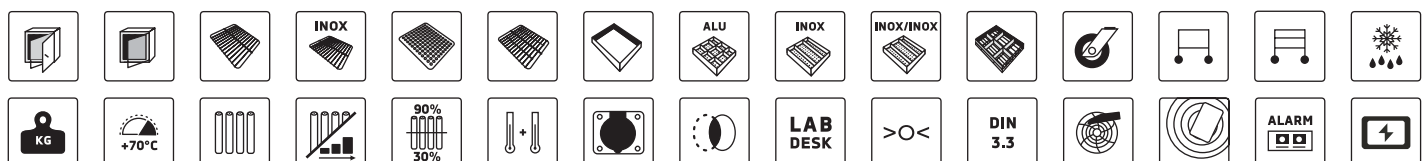
5- reinforced shelf

6- reinforced version

7- for equipment with solid door, in version B (basic)

8- two columns with 3 shelves each

Options and accessories (icon description see pages 80-86)





Parameter	ST 1/1	ST 1/1/1	ST 2/2	ST 2/3	
air convection	forced				
chamber capacity [l]	70 / 70	70 / 70 / 70	150 / 150	150 / 200	
working capacity [l]	55 / 55	55 / 55 / 55	122 / 122	122 / 163	
door type	solid / glass or double ¹ (option)				
temperature range [°C]	+3...+40 / up to +70 (option) / +3...+70 in Smart PRO				
temperature resolution [°C]	every 0,1				
controller	microprocessor PID, 4,3" (Smart) / 7" (Smart PRO) full colour touch screen				
interior	B (basic)	aluminum			
	C (comfort)	stainless steel to DIN 1.4016			
	CS (comfort/S)	stainless steel to DIN 1.4016			
	P (premium)	acid-proof stainless steel to DIN 1.4301			
	PS (premium/S)	acid-proof stainless steel to DIN 1.4301			
housing	B (basic)	powder coated sheet			
	C (comfort)	powder coated sheet			
	CS (comfort/S)	polished stainless steel			
	P (premium)	powder coated sheet			
	PS (premium/S)	polished stainless steel			
overall dims ² [mm]	A width	550	550	600	600
	B height	1290	1920	1720	1930
	C depth	680	680	650	650
internal dims ³ [mm]	D width	430	430	480	480
	D' width	470	470	520	520
	E height	430	430	660	660 / 860
	F depth	300	300	420	420
	F' depth	360	360	480	480
	G depth	-	-	320	320
	H height	-	-	440	440 / 640
max shelf workload ⁴ [kg]	-	10	10	10	10
	PW ⁵ version	on request			
max unit workload [kg]	-	20 / 20	20 / 20 / 20	30 / 30	30 / 40
	W ⁶ version	on request			
nominal power [W]	500	750	500	500	
weight ⁷ [kg]	65	98	109	114	
temperature fluctuation* at +37°C [± °C]	0,3	0,3	0,3	0,3	
temperature variation* at +37°C [± °C]	0,5	0,5	0,5	0,5	
temperature protection	class 1.0 to DIN 12880 / class 3.3 (option) / class 2.0 in P version / class 3.3 in Smart PRO				
power supply**	230V 50-60Hz				
shelves fitted/max	see page 36				
refrigerant	R1234ze / GWP=1				
warranty	24 months				
manufacturer	POL-EKO				

all the above technical data refer to standard units (without optional accessories)

* - fluctuation measured in centre of chamber; in space, variation (K) calculated for chamber as: $K = \frac{T_{avg\ max} - T_{avg\ min}}{2}$

** - other power supplies on request

1- additional internal glass door

2- depth does not include 50 mm of power cable, the width does not include the 20 mm of rubber plug

3- dims of units with double door are smaller

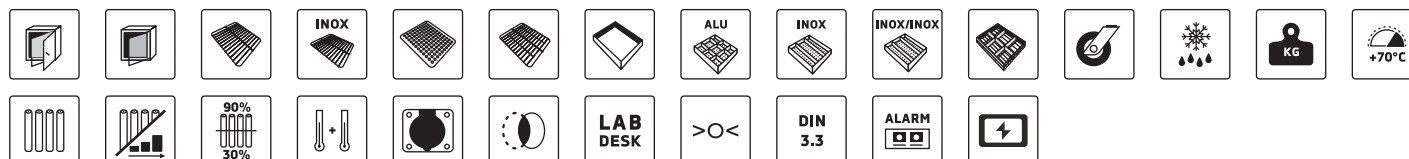
4- on uniformly loaded surface

5- reinforced shelf

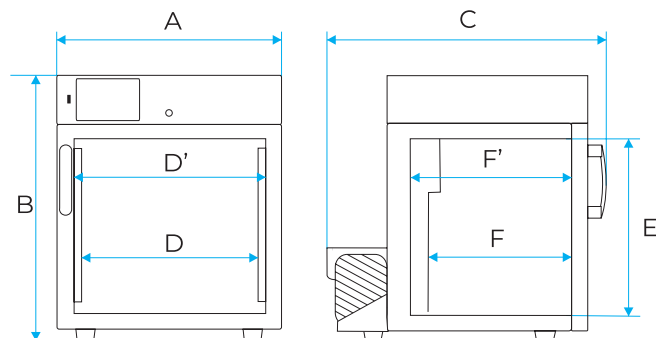
6- reinforced version

7- for units with solid door, in version B (basic)

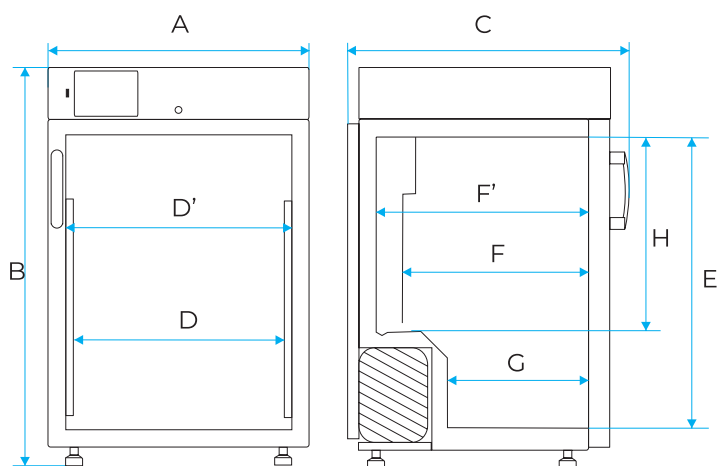
Options and accessories (icon description see pages 80-86)



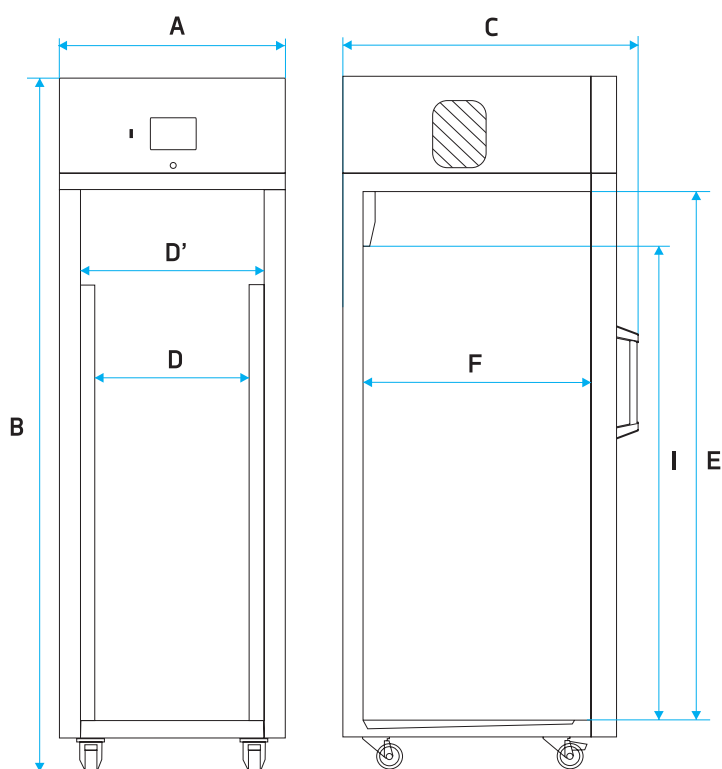
■ Dimensions ST 1



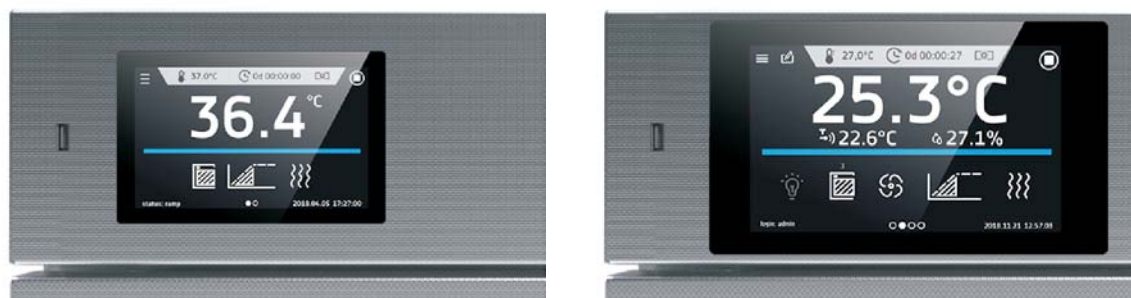
■ Dimensions ST 2/3/4/5/6



■ Dimensions ST 500/700/1200/1450



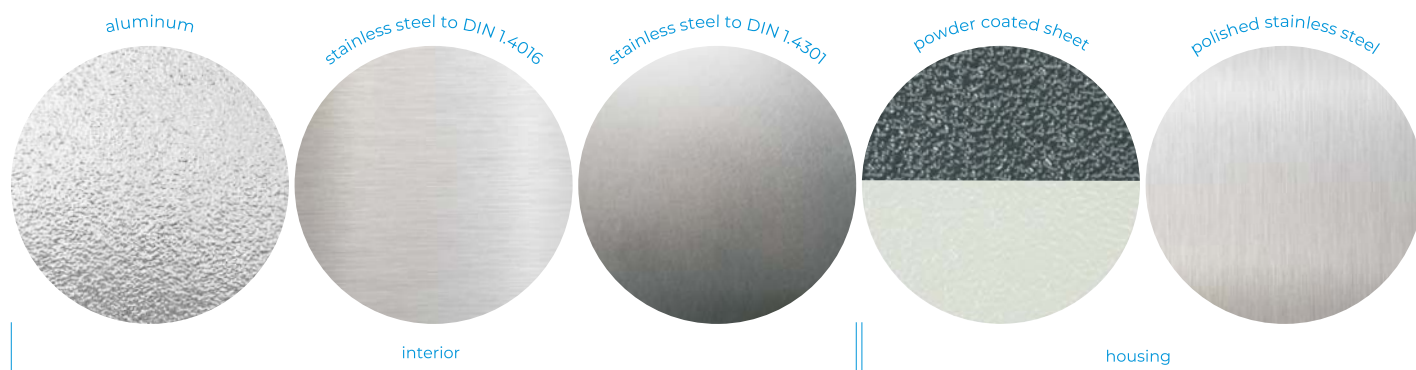
Smart vs. Smart PRO comparison



Controller	Smart	Smart PRO
Display	4.3" + touch screen	7" + touch screen
Network	LAN	LAN and Wi-Fi
USB	YES saving registration data saving events	YES saving registration data saving events uploading programs
Keypad	Numeric	Alphanumeric
Languages	PL, EN, RU, CZ, IT, PT, UA, FR, ES	PL, EN, RU, CZ, IT, PT, UA, FR, ES
Main Screen	Dashboard (all relevant data visible from one main window)	Dashboard (all relevant data visible from one main window)
Users	-	5
Users account types	-	User / Admin / Super Admin
Programs	5	40
Program name	Free number assigned	Any
Priority	Parameters	Parameters, time
Segments	6	100
Light control	Only ON/OFF (FOT)	YES (FIT)
Schedule	-	10 schedules
Data registry	max. 10,000 measurement data stored for a maximum of 6 months	max. 10,000 measurement data stored for a maximum of 12 months
Events registry	YES	YES
Statistics	YES - only the current cycle	YES - from every segment and program cycle
Temp. protection class	1.0 or 2.0 (3.1, 3.2, 3.3 - option)	3.1 or 3.2 or 3.3
Quick Note	-	Ability to enter user text notes
Graph	-	YES
Mail notifications	-	Alarm notifications
Unit name	Fixed (serial number)	Editable
Alarm Bar	YES	YES
Quick Change	YES	YES
Software for PC	LabDesk (option)	LabDesk

There is a wide selection of models depending on capacity, basic or more advanced controllers and material of construction.

ST/CHL/ZL/CALDERA model characteristics

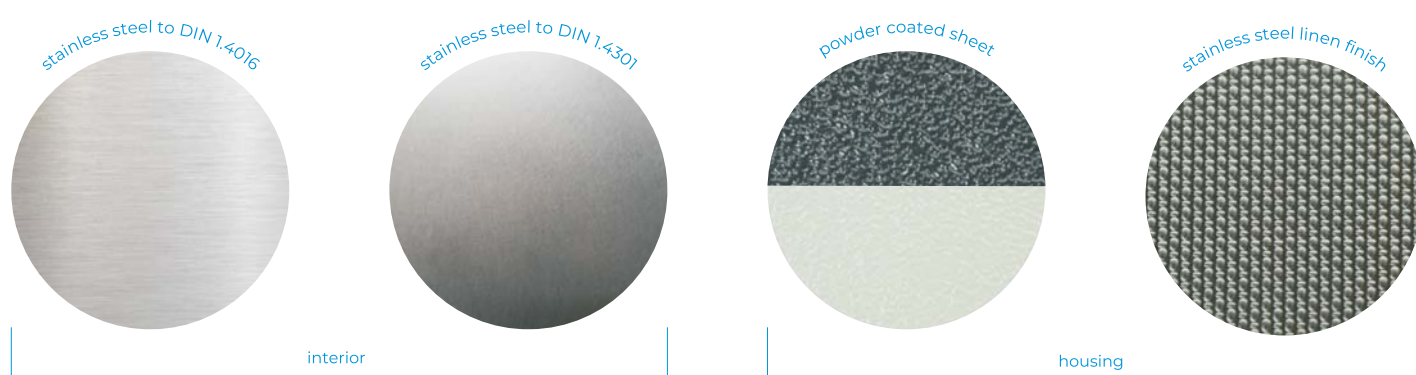


Refrigerators and ST cooled incubators CHL/ST 500, 700, 1200, 1450 (except models with FIT/FOT option) are equipped with a new cooling system M- monoblock. It provides more space in the upper part of the chamber and eliminates condensate tray on the unit's back. Automatic defrosting function is supplied in standard. They are "no frost" units. Letter "M" appears in the model name eg. ST 500 BM SMART (B-basic, M-monoblock).

	interior	housing	temperature protection	controller
B (basic) Smart	aluminum	powder coated sheet	class 1.0	Smart
C (comfort) Smart	stainless steel to DIN 1.4016	powder coated sheet	class 1.0	Smart
CS (comfort/S) Smart	stainless steel to DIN 1.4016	polished stainless steel	class 1.0	Smart
P (premium) Smart	stainless steel to DIN 1.4301	powder coated sheet	class 2.0	Smart
PS (premium/S) Smart	stainless steel to DIN 1.4301	polished stainless steel	class 2.0	Smart
P (premium) Smart PRO	stainless steel to DIN 1.4301	powder coated sheet	class 3.2 / 3.3*	Smart PRO
PS (premium/S) Smart PRO	stainless steel to DIN 1.4301	polished stainless steel	class 3.2 / 3.3*	Smart PRO
CALDERA	stainless steel to DIN 1.4301	polished stainless steel	class 3.1	CALDERA

* depending on the model

CL/IL/SL/SIMPLE/SR/KK model characteristics



	interior	housing	temperature protection	controller
Smart	stainless steel to DIN 1.4301	powder coated sheet	class 2.0	Smart
IG* Smart	stainless steel to DIN 1.4301	stainless steel linen finish	class 2.0	Smart
Smart PRO	stainless steel to DIN 1.4301	powder coated sheet	class 3.1 / 3.3**	Smart PRO
IG* Smart PRO	stainless steel to DIN 1.4301	stainless steel linen finish	class 3.1 / 3.3**	Smart PRO
SIMPLE	stainless steel to DIN 1.4016	powder coated sheet	class 1.0	SIMPLE

* INOX/G symbol has been replaced by the IG symbol, stainless steel linen finish housing

** depending on the model