



POL-EKO®
Perfect Environment

 Made in Poland

Temperature Control Equipment



Compact size Ovens / Incubators

Large Capacity
Ovens / Incubators



Cooled Incubators



Climate Chambers



CO² Incubators



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Link to full catalog

Innovative Controllers

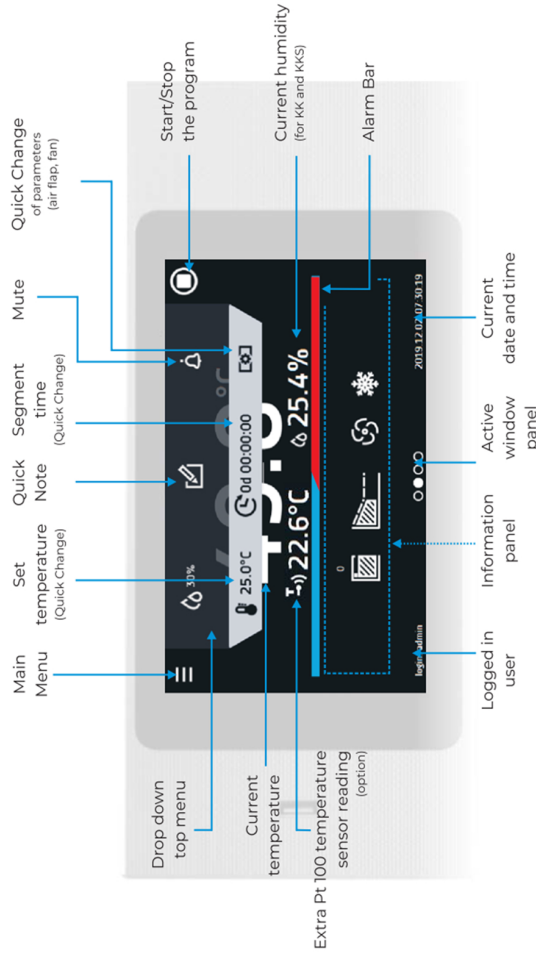
Smart PRO

Smart PRO controllers are direct followers to the TOP+ controllers and will be available for the KK climatic chambers, IL cooled incubators, SL drying ovens, CL laboratory incubators, as well as the ST cooled incubators, CHL laboratory refrigerators, ZL laboratory freezers and ZLN-UT ultra-low freezers. Smart PRO has a microprocessor-based PID temperature controller with a large (7") colour touch panel and intuitive and user-friendly software.



The software which allows to control our equipment is extremely important. Despite the deepest commitment of our engineers and workforce, we would never become successful if it failed. We are aware it must be flawless, extensively tested and validated. Our experienced IT staff deals with this kind of challenges very well.

7" colour touch panel Smart PRO guarantees intuitive and comfortable operation

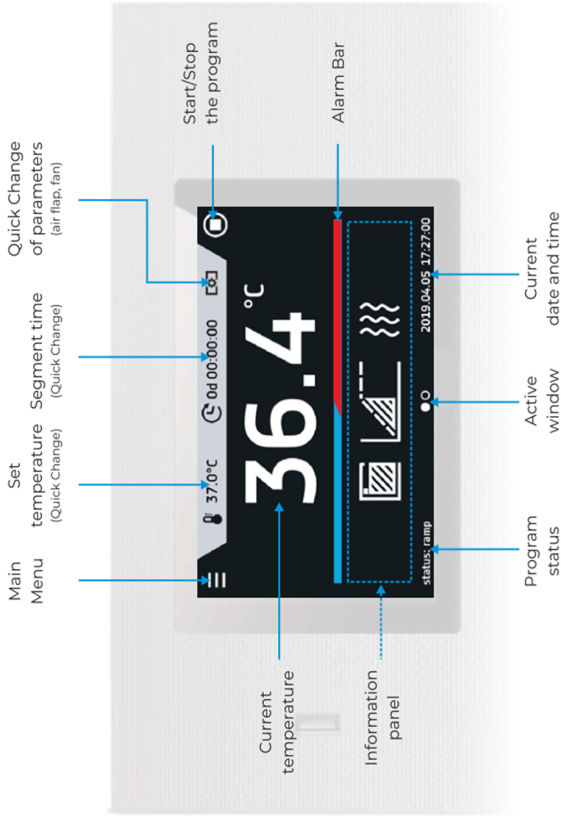


Advantages of the Smart PRO controller

- large (7"), clear, full colour touch screen
- LAN, USB ports and WIFI for communication and data transfer
- multi-segment time and temperature programs
- overview of data in tabular and graphic form
- visual and audible alarm
- administration functions for easy management
- password protected log-in
- internal memory for programs and data storage
- operating with gloves on
- event registry with user notifications
- LabDesk software and instruction manual for direct download
- Alarm Bar – instant visual information about chamber status
- Quick Note – user can save text notes (50 characters) in Smart PRO controller memory
- Quick Change of parameters: temperature, humidity, time, air flap and fan (according to model)

Smart - Smart PRO simplified version

In the 3rd quarter of 2019 we launched the Smart controller which is a direct successor of the BASIC and STD (standard) controllers, currently found in the ST cooled incubators, CHL laboratory refrigerators, ZL laboratory freezers, ZLN-UT ultra-low freezers, as well as the IL cooled incubators, CL laboratory incubators, SL drying ovens and SR laboratory sterilizers.



Advantages of the Smart controller

- 4,3", clear, full colour touch screen
- USB and LAN ports for data download
- multi-segment time and temperature programs
- internal memory for programs and data storage
- operating with gloves on
- event registry
- visual and audible alarm
- instruction manual for direct download
- Quick Change of program parameters: temperature, time, fan, air flap (according to model)
- Alarm Bar - instant visual information about chamber status



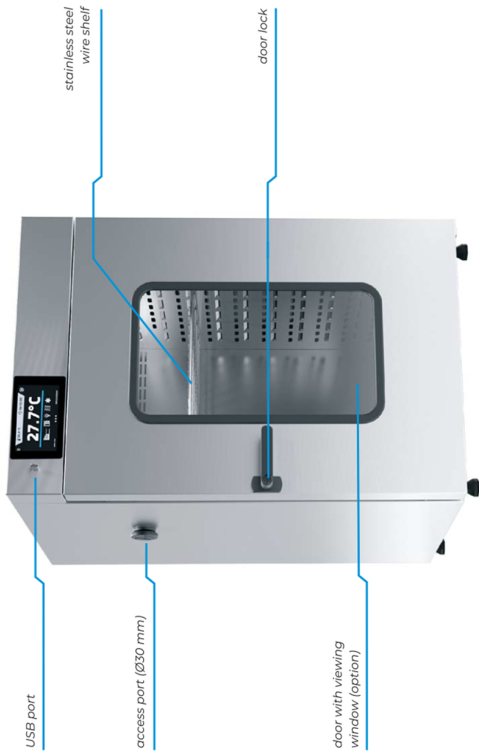
Touch screens of the Smart and Smart PRO controllers can be operated with latex gloves!



Laboratory Incubators / Drying Ovens

Laboratory incubators are perfect for incubation of samples at temperatures above ambient up to +100°C

Natural air convection: CLN series
Forced air convection: CLW series



CLN 180 IG Smart PRO laboratory incubator

Drying ovens are designed to provide high temperatures up to 300°C

Natural air convection: SLN series
Forced air convection: SLW series



Drying oven SLW 1000 IG Smart PRO



CLN 32 Incubator with natural air convection



CLW 115 Incubator with forced air convection



SLW 115 Oven

STANDARD FEATURES

- Incubator: temperature range 5°C above ambient temperature...+100°C
- Oven: temperature range 5°C above ambient temperature...+300°C
- quality control protocol (at +37°C)
- English instruction manual
- temperature protection class 2.0 (Smart) and 3.3 (Smart PRO) to DIN 12880
- open door alarm
- castors in standard for models CL SL 400, 750, 1000
- Ø40 mm air-flap for CL SL 15-180 and Ø60 mm for CL SL 240-1000
- LAN and USB ports
- access port: Ø30 mm for models 53-1000 or Ø9 mm for models 15, 32 on the left wall
- door lock
- stainless steel wire shelves (INOX)
- double door (external solid, internal glass)

AVAILABLE VERSIONS

- Smart
- Smart PRO
- reinforced
- with nitrogen blow (oven only)

SOFTWARE

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

EXTRA FOR SMART PRO

- Wi-Fi
- LAN cable
- LabDesk

Specification

Parameter	air convection										forced
	CL 15	CL 32	CL 53	CL 75	CL 115	CL 180	CL 240	CL 400	CL 750	CL 1000	
chamber capacity [l]	15	32	56	75	112	180	245	424	749	1005	
door type	solid										natural / forced
temperature range	Incubator: +5°C above ambient temperature...+100°C										Oven: +5°C above ambient temperature...+300°C
temperature resolution [°C]	every 0,1										
controller interior	microprocessor PID, 4,3 ¹ (Smart) / 7 ¹ (Smart PRO) full colour touch screen acid-proof stainless steel to DIN 1,4301										
housing	powder coated sheet										stainless steel linen finish
overall dims [mm]	IG (Inox/G)	590	590	590	590	660	660	820	1020	1260	1260
	A width	510	590	590	590	660	660	820	1020	1260	1260
	B height	550	640	710	850	850	1040	1140	1430	1600	2000
	C depth	470	520	620	620	710	820	770	880	880	880
	D width	320	400	400	400	460	470	600	800	1040	1040
internal dims [mm]	E height	230	320	390	530	540	720	800	1040	1200	1610
	F depth	200	250	360	360	450	560	510	510	600	600
max shelf workload [kg]	-	10	10	25	25	25	25	25	25	-	-
PW ¹ version	-	-	50	50	50	50	100	100	100	100	100
max unit workload [kg]	-	20	30	40	40	60	75	90	120	140	-
W ¹ version	-	-	80	80	120	120	300	300	300	300	300
over temperature protection	class 2.0 to DIN 12880 / class 3.1 (option) / class 3.1 in Smart PRO										
shelves fitted/max	1/2	1/3	2/5	2/5	2/7	3/9	3/10	3/14	5/16	6/22	6/22

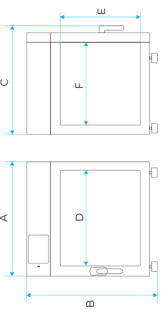
All the above technical data refer to standard units (without optional accessories)

1 - depth doesn't include 50 mm of power cable

2 - reinforced shelf

3 - reinforced version

4 - on uniformly loaded surface



Cooled Incubators

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



Cooled incubator ST 2 C Smart PRO

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 (optional) 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
- anchoring kit for ST 500, 700, 1200, 1450 and double/triple chambers

AVAILABLE VERSIONS

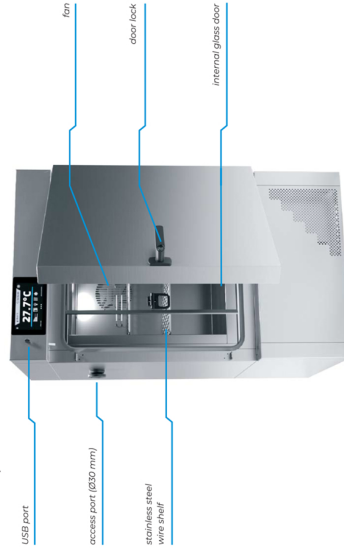
- Smart PRO
 - Smart PRO extended for FIT hybridation (for TR topic on request) for higher ambient temperatures
 - double/triple chamber
- ## SOFTWARE
- LabDesk for data download to a PC via LAN or Wi-Fi (optional for Smart version)

EXTRA FOR SMART PRO

- Wi-Fi
- LAN cable
- LabDesk

ILW Series

Cooled incubators are perfect for incubation of samples in a stable environment, regardless of ambient conditions, at temperatures from -10 up to +100°C



ILW IG Smart PRO cooled incubator

STANDARD FEATURES

- temperature range -10°C (option) / 0°C...+70°C (+100°C in Smart PRO)
- English instruction manual
- temperature protection class 2.0 (Smart) and 3.3 (Smart PRO) to DIN 12880
- castors in standard for models ILW 240, 400, 750
- LAN and USB ports
- access port (Ø30 mm) on the left wall
- door lock
- stainless steel wire shelves (INOX)
- double door (external solid, internal glass)

AVAILABLE VERSIONS

- Smart PRO
 - Smart PRO extended for FIT hybridation
 - reinforced
 - LabDesk for data download to a PC via LAN or Wi-Fi (optional for Smart version)
- ## EXTRA FOR SMART PRO
- Wi-Fi
 - LAN cable
 - LabDesk

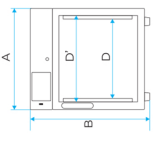
Specification

Parameter	ST 1	ST 2	ST 4	ST 5	ST 6	ST 500	ST 700	ST 1200	ST 1450
air connection									
chamber capacity [l]	70	150	200	250	300	400	500	1365	1540
working capacity [l]	55	122	163	203	243	324	469	611	1355
door type				solid / glass or double (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	stainless steel to DIN 14016								
CS (comfort/S)	stainless steel to DIN 14016								
P (premium)	acid-proof stainless steel to DIN 14201								
PS (premium/S)	acid-proof stainless steel to DIN 14201								
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	600	600	600	600	600	640	710	1440
B height	660	900	1100	1300	1500	1900	1990	1990	1940
C depth	660	650	650	650	650	650	680	960	1050
D width	430	480	480	480	480	540	540	1270	1270
D' width	470	520	520	520	520	510	600	1330	1340
E height	430	660	860	1060	1260	1650	1510	1510	1460
F depth	300	420	420	420	420	610	610	680	680
F' depth	360	480	480	480	480	480	-	-	-
G depth	-	320	320	320	320	320	-	-	-
H height	-	440	640	840	1040	1440	-	1380	1380
I height	-	-	-	-	-	-	-	30	30
PW version	10	10	10	10	10	10	20	30	30
max shelf workload [kg]	on request								
max unit workload [kg]	20	30	40	50	60	60	100	150	300
W' version	on request								
temperature fluctuation* at +37°C [1/°C]	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
temperature variation* at +37°C [1/°C]	0.5	0.5	0.5	0.6	0.6	0.6	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								
shelves fitted/max	2/2	3/4	3/4	4/6	4/7	4/10	3/1	3/1	2 x 3/1*
refrigerant	R232ze/ CWP41								
all the above technical data refer to standard units (without optional accessories)									
1 - fluctuation measured in centre of chamber; in space, variation (K) calculated for chamber as Kc +/- (T avg max - T avg min) / 2									
2 - depth does not include 50 mm of power cable, 4 - on uniformly loaded surface									
3 - reinforced shelf									
4 - on uniformly loaded surface									
5 - reinforced shelf									

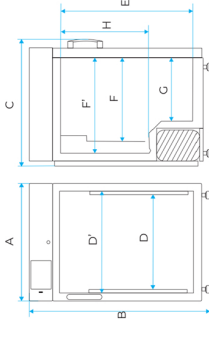
Specification

Parameter	ILW 53	ILW 115	ILW 240	ILW 400	ILW 750
air connection					
chamber capacity [l]	56	112	245	424	749
door type			double / door with viewing window (option)		
temperature range [°C]	-10 (option) / 0...+70 (in Smart PRO version)				
temperature resolution [°C]	every 0.1				
controller	microprocessor PID, 4.3" (Smart) / 7" (Smart PRO) full colour touch screen				
interior	acid-proof stainless steel to DIN 14201				
housing	powder-coated sheet				
IG	stainless steel flake finish				
overall dims [mm]	A	590	660	820	1020
B height	1000	1140	1430	1730	1910
C depth	630	720	780	780	890
D width	400	460	600	600	1040
E height	390	540	800	1040	1200
F depth	350	450	510	510	600
F' depth	25	25	25	25	25
PW version	50	50	100	100	100
max unit workload [kg]	40	60	90	120	140
W' version	80	120	300	300	300
temperature fluctuation* at +37°C [1/°C]	0.2	0.2	0.2	0.2	0.2
temperature variation* at +37°C [1/°C]	0.3	0.3	0.3	0.3	0.3
temperature protection	class 2.0 to DIN 12880 / class 3.3 (option) / class 3.3 in Smart PRO				
shelves fitted/max	2/5	2/7	3/10	3/14	5/16
refrigerant	R232ze/ CWP41				
all the above technical data refer to standard units (without optional accessories)					
1 - fluctuation measured in centre of chamber; in space, variation (K) calculated for chamber as Kc +/- (T avg max - T avg min) / 2					
2 - depth does not include 50 mm of power cable					
3 - reinforced shelf					
4 - reinforced version					
5 - on uniformly loaded surface					

Dimensions ST



Dimensions ST 25/4/5/6



ST 500 PS Smart

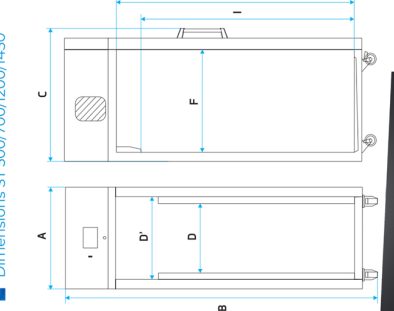


ST 1200 CM Smart



P4

Dimensions ST 500/700/1200/1450



NEW Peltier-Cooled Incubators!

Ecological and economic alternative to ILW cooled incubators

NEW innovative and ecological incubators **ILP series** with cooling system based on the Peltier cell technology.

The most important advantages of incubators with ILP Peltier modules are:

No vibrations - through the use of Peltier cells, vibrations previously generated by the compressor are eliminated

Less fluctuation and variation - the cooling system based on Peltier cells allows to achieve excellent fluctuation and variation additionally the time of reaching the set temperature, e.g. after opening the door, is much shorter

Lighter and smaller design - Peltier cell cooling system reduces the size of the device and its weight

Environmentally friendly - removing the compressor eliminates the use of refrigerant gases that have a negative impact on the environment

Available sizes:
from 56 litres to 749 litres

For further information,
please contact our sales
department!



KK & KKS Climate Chambers

Climatic chambers with phytotron system can control temperature, humidity and light to create a stable environment



Climate chamber KK 500 Smart PRO FIT DS

Quality control must be ensured during the whole production process. Final testing process can prove that all the required technical parameters have been met. Highest quality of our products has always been our top priority. Customers are obviously very demanding, as they require state-of-the-art equipment which is so important for their research. It is our passion and devotion to deliver a product we would recommend to ourselves.

STANDARD FEATURES

- temperature range: 0...+60°C (KK) and 0...+100°C (KKS), +10...+50°C (FIT option with light on)
- quality control protocol (at +25°C, 60%rH)
- English instruction manual
- temperature protection class 3.3 to DIN 12880
- open door alarm
- castors
- LAN and USB ports
- access port (Ø30 mm) on the left wall (at the back in FIT S/DS)
- automatic defrosting function
- deionized water container (for KK)
- door lock
- stainless steel wire shelves (INOX)
- double door (external solid, internal glass)
- Wi-Fi
- LAN cable
- LabDesk software

AVAILABLE VERSIONS

- Smart PRO
 - KK with ultrasonic humidifier
 - KKS with steam humidifier
 - FIT phytotron
- LabDesk for downloading data to a computer (via LAN or Wi-Fi)

SOFTWARE

Climatic chambers

Climatic chambers with an ultrasonic humidifier are professional and reliable equipment to guarantee stable and precise conditions. They can be used for seed germination, fungus and plant growing or food tests. Perfect climatic conditions allow you to perform stability tests of pharmaceuticals and cosmetics, as well as packaging and electronics.

The ultrasonic humidifier uses piezo-electric generators which convert electrical energy into mechanical vibrations energy. The generators are immersed in deionized water and smash it into very small drops which are consequently sprayed uniformly inside the chamber.

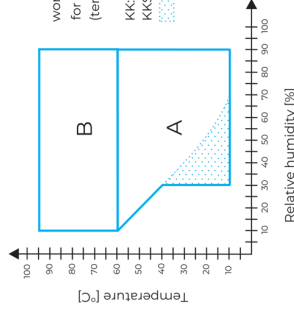
The KKS climatic chambers with a steam humidifier do not emit ultrasounds and therefore allow insects breeding (e.g. Drosophila melanogaster). Compared to the KK chambers, they feature an extended temperature and humidity range and can be used for tests of electronics, plastic or building materials.

The steam humidifier (steam generator) is a closed boiler that produces steam with higher pressure than atmospheric. The heat required to produce steam is obtained by a heater placed in a boiler. Much higher temperature and humidity range is used in more applications in comparison to KK units.

The KK and KKS climatic chambers can be used for pharmaceutical stability tests according to ICH Q1A.



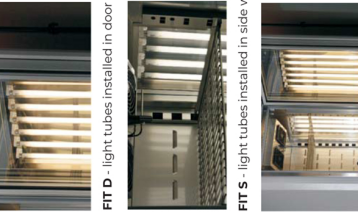
Parameter	Climatic chamber KK with ultrasonic humidifier	Climatic chamber KKS with steam humidifier
temperature range	0°C...+60°C 0°C...+60°C (+10°C...-50°C with light on)	0°C...+100°C
relative humidity range	field "A" field "A+B"	field "A+B"
water supply (conductivity)	deionized (1 µS/cm)	tap water (125-1250 µS/cm)
water source	deionized water container (included) internal deionized water network deionizer	water supply system
outflow	drain system	drain system
power supply	230V 50-60Hz	230V 50-60Hz 400V 50-60Hz



working temperature and humidity range for KK and KKS (temperature and humidity control)

KK: field A
KKS: field A+B
short-term work area (max.24h)

Overview drawing

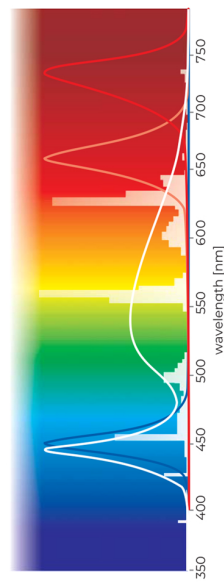


Climatic chambers with phytotron system (*/FIT option) except KKS models

- temperature, humidity and light control
- day/night simulation with light intensity control
- LED modules located in:
 - over-shelf panels
 - side walls
- temperature range with light OFF: 0°C ... +60°C
- temperature range with light ON: +10°C ... +50°C
- light colour selection:
 - door and side walls
 - side walls
 - door
 - over-shelf panels
- max light intensity 15000 lx per FIT P panel (measured 25 cm under the light source)

Climatic chambers equipped with phytotron system can control temperature and humidity, as well as light intensity to simulate day and night conditions. Standard light colour is 840 type and the tubes can be installed in the door, side walls or over-shelf panels.

There are also special LED panels designed for plant growing. As most plants use only a part of the sunlight emission, narrow spectrum and specific colours have been used. A and B chlorophyll absorbance maxima are blue and red colour. Chlorophyll absorbs most energy and strongly influences photosynthesis at blue colour spectrum, which intensifies growth. Hyper and far red colours stimulate blooming and proliferation.



- deep (far) red LED (730 nm)
- red (hyper red) LED (660 nm)
- deep blue LED (445 nm) or blue LED (475 nm)
- white LED (4000 K)
- 840 daylight tube

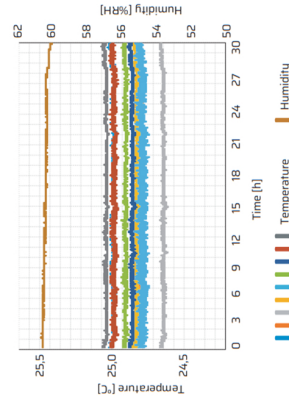
	KK 115	KK 240	KK 350	KK 400	KK 500
FIT P	+	+	+	+	+
FIT D	+	+	+	+	+
FIT S	+	+	+	+	+
FIT DS	+	+	+	+	+

	KK 700	KK 750	KK 1000	KK 1450
FIT P	+	+	+	+
FIT D	+	+	+	+
FIT S	+	+	+	+
FIT DS	+	+	+	+

Climatic and phytotron chambers can be adapted to individual customer requirements. A wide range of additional equipment and the possibility of implementing non-standard solutions makes these units satisfy even the most demanding users.

Latest KKP Constant Climate Chamber

Excellent performance - boosted with Peltier-element cooling system



As smart as your smartphone

Highly advanced SMART PRO controller, managing the KKP family, combined with a large 7-inch touch screen, makes easy and intuitive operation of the unit.

Energy saving

The tests performed at a temperature close to the ambient temperature shows the impressive economy of the heating and cooling concept with Peltier. The energy cost is reduced on average by 40% compared to compressor-cooled chambers.

Perfect performance

The cooling system based on the Peltier element features excellent temperature variation and fluctuation. It also improves the temperature recovery time (e.g. after door opening). The humidity inside the chamber is extremely stable.

Environmentally friendly

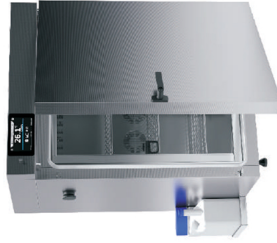
Elimination of compressor and refrigerants ensures environmental protection.

Lighter and smaller

The cooling system based on Peltier modules allows reducing the dimensions of the unit and its weight (compared to compressor-cooled chambers).

No vibration and more quiet operation

Compared to compressor-cooled climate chambers, the KKP SMART PRO units do not vibrate, and the noise level is significantly lower.



Low water consumption

The external 6 L water tank is factory mounted on the left side wall for easy access, but may be placed on the right side of the climatic chamber.

Water consumption is only 90 ml per day for KKP 240 and 290 ml per day for KKP 750 (at 40°C, 75% RH). Water consumption is so low that the tank only needs to be refilled every second month. Thanks to the installation of a heater in the wastewater pan, the chamber is maintenance-free and can be used in any location.

How does work Peltier cooling-heating system?

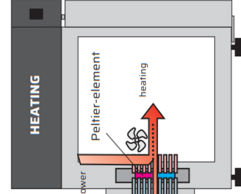
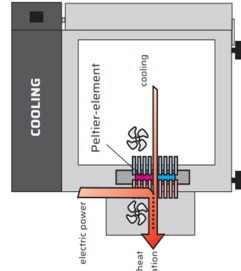
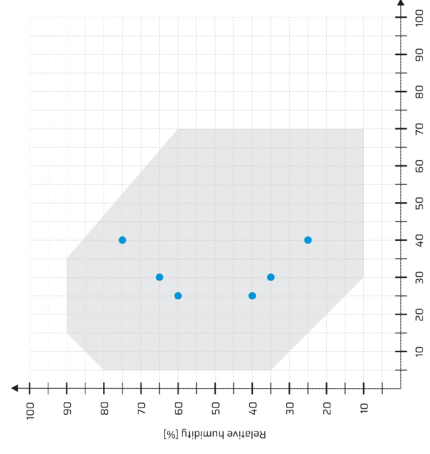


Diagram temperature-humidity range

Climate testing points according to ICH Q1A (R2) guidelines



Humidification with a steam generator

The KKP constant climatic chambers with a steam humidifier do not emit ultrasonids and therefore allow insects breeding (e.g. *Drosophila melanogaster*). Compared to the KK chambers, they feature an extended temperature and humidity range and can be used for tests of electronics, plastic or building materials.



Steam humidifier in the KKP models is an energy-saving solution based on an aluminum heating block and a peristaltic pump controlled by a stepper motor. This humidifier has a very fast heating time and enables the dosing of precisely measured amounts of water. Operation in ECO mode (the block heats up only when it detects the need for dosing moisture to the chamber) saves energy.

FIT P LED phytotron system

The Climatic Chamber KKP 240 can be equipped with phytotron system, in the form of over-shelf panels with LED modules, which can control temperature and humidity as well as light intensity to simulate day and night conditions. LED panels are useful in research on plant growth processes and since most plants use only a part of the sunlight emission, narrow spectrum and specific colours have been used.



White (colour temperature 4000K)

Deep blue (wavelength 450 nm)

Hyper red (wavelength 657 nm)

Far red (wavelength 727 nm)

STABILITY STUDY	STORAGE CONDITIONS	MINIMUM TIME PERIOD	TESTING FREQUENCY
Long term (choice of storage conditions)	25 ±2°C/60 ±5%RH or 30 ±2°C/65 ±5%RH	12 months	each 3rd month 1st year each 6th month 2nd year, annually thereafter
Intermediate (if long term conditions is 25 ±2°C/60 ±5%RH)	30 ±2°C/ 65 ± 5%RH	6 months	minimum three time points
Accelerated	40 ±2°C/ 75 ±5%RH	6 months	minimum three time points
Long term (only semi-permeable containers)	25 ±2°C/ 40 ± 5%RH or 30 ±2°C/55 ±5%RH	12 months	each 3rd month 1st year, each 6th month 2nd year, annually thereafter
Accelerated (only semi-permeable containers)	40 ±2°C / not more than ±5%RH	6 months	minimum three time points

Specification

KKP 240 SMART PRO

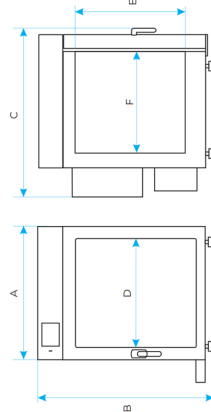
FIT P LED option available

KKP 750 SMART PRO

		forced	
Air convection			
Chamber capacity [l]	245	749	
Door type	1 external solid door, 1 internal glass door	2 external solid door, 2 internal glass door	
Controller	microprocessor with a large 7" full colour touch screen stainless steel to DIN 14301		
Interior	powder coated sheet		
Housing	stainless steel (linen finished)		
IG			
A width	960	1400	
B height	1140	1580	
C depth	840	1040	
D width	600	1040	
E height	800	1200	
F depth	510	660	
Working temperature range without humidity [°C]	0...+70 (max 20°C below ambient temp)		
Temperature variation (spatial) at 40°C [°C]	±0.3	±0.2	
Temperature fluctuation (time) at 40°C [°C]	±0.1	±0.1	
Working temperature range with humidity [°C]	+5...+70 (max 20°C below ambient temp)		
Temperature resolution [°C]	every 0.1		
Temperature variation (spatial) at 40°C, 75% RH [°C]	±0.3	±0.2	
Temperature fluctuation (time) at 40°C, 75% RH [°C]	±0.1	±0.1	
Temperature variation (spatial) at 25°C, 60% RH [°C]	±0.2	±0.2	
Temperature fluctuation (time) at 25°C, 60% RH [°C]	±0.1	±0.1	
Humidity range [%]	10 to 90		
Humidity resolution [%]	every 0.1		
Humidity variation (spatial) at 40°C, 75% RH [%RH]	±1.0	±1.0	
Humidity fluctuation (time) at 40°C, 75% RH [%RH]	±0.3	±0.3	
Humidity variation (spatial) at 25°C, 60% RH [%RH]	±0.8	±0.8	
Humidity fluctuation (time) at 25°C, 60% RH [%RH]	±0.4	±0.4	
Recovery time humidity (min) after 30 sec door open at 40°C, 75% RH	10	23	
External water tank [l]	6	6	
Max shelf workload [kg]	25	100	
Max unit workload [kg]	90	140	
Shelves (fitted/max)	3/10	3/16	

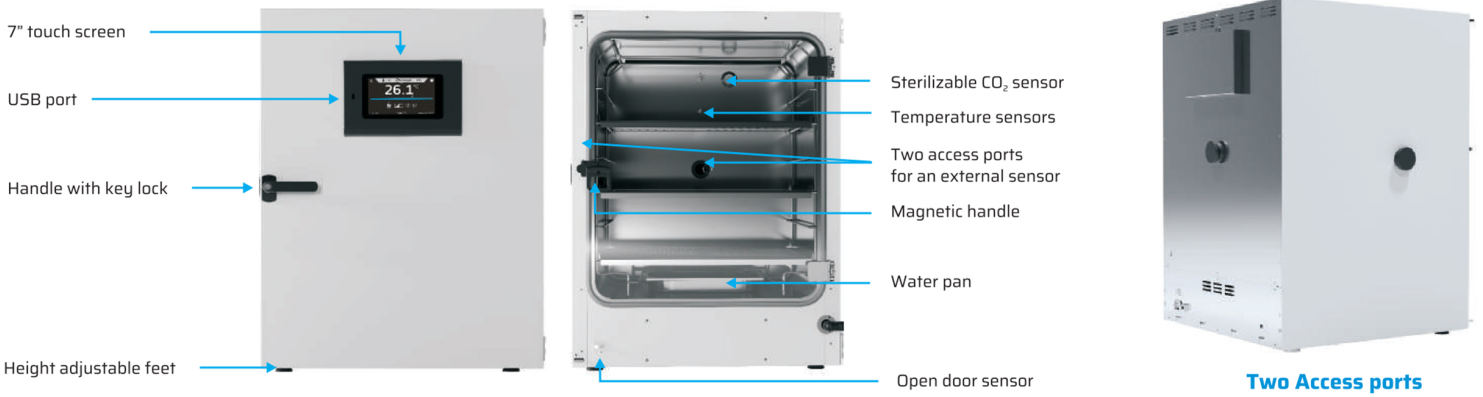


Dimensions drawing KKP



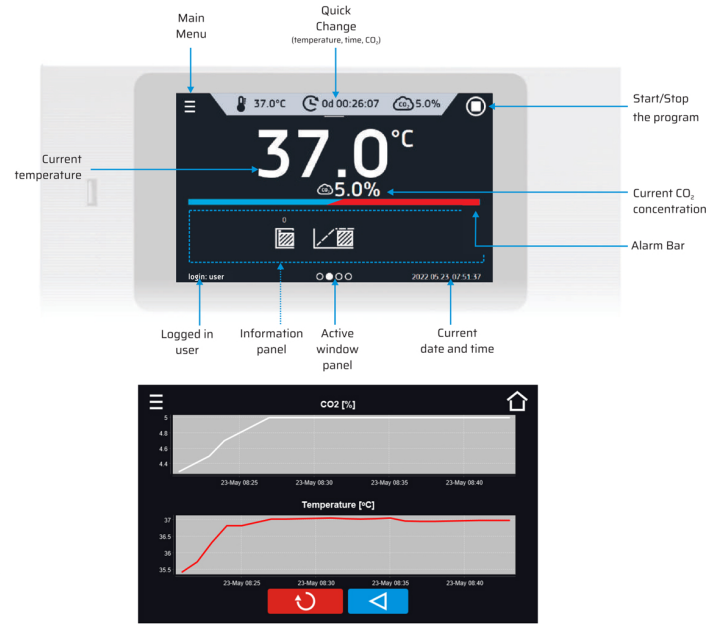
1) width doesn't include shelve for water tank - 140mm
2) fluctuation measured in centre of the chamber
3) in space, variation (K) calculated for chamber as: $K = \frac{1}{2} \cdot (T_{max} - T_{min}) / 2$

ILC 180/260 Smart PRO



Features:

- Handle with key lock
- Main power switch flush with the housing prevents unintentional switch off
- CO₂ gas-mixing jet with the Venturi effect to ensure quicker atmosphere mixing and more homogeneous distribution
- Multiple temperature sensors for accurate measurement
- Magnetic handle for ergonomic internal door opening
- Rack with perforated shelves for optimal shelf positioning
- Two access ports (Ø30 mm) for inserting an external sensor, the first on the left wall and the second on the rear, both secured with silicone plugs
- Silicone gasket
- Water pan to provide optimal humidity
- Open door sensor
- Height adjustable feet
- Contamination protection:
 - Hot-air sterilization at 180°C
 - Fan-less construction
 - Smooth, easy to clean stainless steel interior with rounded corners
 - Sterilizable, drift-free infrared CO₂ sensor
 - Inner glass door for sample viewing without changing the conditions in the chamber
 - No hidden spaces



Sizes of stacked ILC 180/260

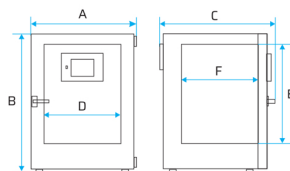
ILC 180 / 260 SMART PRO



Technical Specification



Air convection	natural (fan-less)	
Chamber capacity [l]	182	262
Working capacity [l]	135	205
Door type	double (external solid, internal glass)	
Temperature range [°C]	+5°C above ambient temperature...+50	
Temperature resolution [°C]	every 0,1	
Humidity range [% rH]	90-95	
CO ₂ range [Vol.-% CO ₂]	0-20	
CO ₂ resolution [Vol.-% CO ₂]	every 0,1	
CO ₂ measurement	IR	
Controller	microprocessor with a large 7" full colour touch screen	
Interior	stainless steel to DIN 1.4301	
Housing	powder coated sheet	
Overall dims [mm]	A width	700
	B height	920
	C depth	780
	D width	560
Internal dims [mm]	E height	650
	F depth	500
Max shelf workload [kg]	10	30
Max unit workload [kg]	30	50
Temperature fluctuation ³⁾ at 37°C [°C]	< ± 0,1	< ± 0,1
Temperature variation ⁴⁾ at 37°C [°C]	< ± 0,3	± 0,4
Temperature recovery time after 30 seconds door opening at 37°C [min]	6	5
CO ₂ recovery time after 30 seconds door opening at 5 Vol.-% CO ₂ [min]	10	10
Noise level [db(A)]	42	44
Shelves (std./max.)	3/6	3/8



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1) doesn't include rack for shelves
 2) depth doesn't include 50 mm of power cable
 3) fluctuation measured in the centre of the chamber
 4) in space, variation (K) calculated for chamber as: K= +/- (T avg max - T avg min) / 2