Made in Poland. Established 1990.

POL-EKO
Perfect Environment

PRODUCTS CATALOGUE 2024

POL-EKO has been present on the Polish market for almost 35 years.

Highest quality equipment and service we provide ensure your satisfaction.

Our wide range of products and professional solutions will suit the most demanding customers.

We remain open to assist in choosing the right product for your needs, as well as to provide you with customized solutions.

We are your partner in lab analysis and technological processes.

Thank you for your confidence.

POL-EKO team

www.pol-eko.com.pl

POL-EKO transferred from the past to the future...

2005-2022

SINCE 2023

1990-2005

Pand **E** letters are extremely significant for POL-EKO. These letters are an abbreviation of our name, they are part of our logo and our mission **"Perfect Environment"** which is their extension.

At our company, we are dedicated to creating a perfect environment not just for our products, but for everyone we interact with. This includes our employees, customers, partners, and the loca l community. We believe that a positive and supportive atmosphere fosters innovation, collaboration, and growth.

Furthermore, our equipment is meticulously designed to provide the ideał conditions for storing our clients' samples and facilitating their research. By ensuring optima l environments, we help our clients achieve accurate and reliable results in their scientific endeavours.

Through our commitment to excellence, we create a Perfect Environment.

Małgorzata Szafarczyk

Małgorzata Szafarczyk
CEO

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MILESTONES

1990
POL-EKO-APARATURA
compąny estąbłished

1990
Śtąrt of cooperątion with
WTW Germąny;
POL-EKO-APARATURA
ąs generął distributor
in Połąnd

2005
Moving the compąny
to the new heądquąrters
in Wodzisław Śląski

2002
Śtąrt of cooperątion
with foreign łąborątory
ąnd meąsuring equipment
producers:
KNICK ąnd HAMILTON

2006
Measurement
Laboratory
founded

2004
Implementing ISO 9001
and 18001 systems

2011
Śepąrątion of the
Meąsuring Łąborątory
ąs ą subsidiąry compąny

2008
Meąsurement Łąborątory
receives ąccreditątion
from the Połish Centre for
Accreditątion

2012
Graphite revolution

2009
1st production
hall completed

2018
Głobął export to over
90 countries

2013
2nd production
hąłł compłeted

2019
Smart & Smart PRO

2016
3rd production hall
completed

2021
4rd production hąłł
compłeted

2023
Rebranding
POL-EKO

DEVELOPMENT

1996 Start of production

1996 thermostatic cabinet and laboratory refrigerator

1997 waste water receipt station

2000 colony counter

2001 stationary sampler

2002 pH and dissolved oxygen on-line meters

2003 homogenizer

2004 drying oven, incubator and cooled incubator

2005 stainless steel drying oven, incubator and cooled incubator

2006 laboratory sterilizer

2006 instruments in TOP+ version with Ethernet connection

2008 climatic chambers and climatic chambers with phytotron system

2009 laboratory shaker

2010 laboratory furniture and fume hoods

2010 pass - through drying oven

2011 CALDERA

2012 graphite revolution new design of POL-EKO-APARATURA equipment

2014 temperature and humidity data logger RT 2014

2015 SIMPLE drying oven

2015 climatic chambers KKS

2015 cooled incubators with Peltier element ILP

2015 hydromat

2015 ultra-low freezer ZLN-UT

2017 RT2014 data logger with WI-FI

2017 EuroDrop station

2018 pass - through sterilizer

2018 dry-aging chambers

2019 technological revolution Smart & Smart Pro

2020 ozone generators

2022 CO_2 incubators Peltier climatic chambers KKP

QUALITY POLICY

The company is committed to maintaining the highest standard of quality, encompassing not only products but also actions in the context of the global community and the natural environment. We make every effort to ensure that our products are innovative and state-of-art. We create an excellent working environment for our employees, and in the devices we produce, we provide ideal conditions for storing, researching, and incubating our clients' materials. Every day, our partners and clients can rely on our help and support. We express this commitment in our Mission, which states:

We create a perfect environment

We believe that fulfilling this declaration and our set goals will aid us in our continued growth.

The vision of our company is contained in the six letters forming our name. The expansion of these letters defines the philosophy of POL-EKO. This is how we want to be perceived, this is what we strive for, and this is our goal.

PRACODAWCA EMPLOYER	Respected in the region as **an employer**, valuing human rights in all areas of its operations, providing opportunities for the professional development of its employees, and fostering a friendly atmosphere in the workplace. Committed to taking decisive actions against all forms of discrimination and intolerance.
OSOBOWOŚĆ PERSONALITY	A company enjoying **the reputation** of a competitive firm in global markets, solid in its customer relationships, unafraid of new challenges, and financially stable.
LUDZIE PEOPLE	A team of excellent **professionals** driving innovation in products and processes, and nurturing excellent relationships with customers and business partners.
EKOLOGIA ECOLOGY	An actively engaged company in **pro-environmental** activities, promoting energy efficiency, supporting the development of environmentally friendly technologies, recognizing the value of water as a limited natural resource, and committed to actions aimed at reducing waste.
KREATYWNOŚĆ CREATIVITY	A leader in **creating** new technologies, products, and services that transform the industry, tailored to the specific needs of each customer.
ODPOWIEDZIALNOŚĆ RESPONSIBILITY	An engineering company taking **responsibility** for its solutions and products, offering professional post-sales service.

Through continuous improvement of processes and the Quality Management System, employee education, collaboration with business partners, and ensuring adequate resources, the management and owners of POL-EKO commit to implementing this quality policy and sustainable development policy. Our goal is not only to achieve business success but also to create a positive impact on the world and the environment in which we live

EMPLOYER TOLERANCE

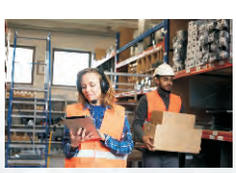
At POL-EKO, we believe that diversity and equality are the foundations of our success. As an employer, we are committed to treating all our employees equally, regardless of gender, belief, religion, nationality, skin color, sexual orientation, or disability.

Working with POL-EKO means more than just accessing high-quality products and maintaining a professional employer-employee relationship. We feel a deep sense of responsibility towards society, especially within our workplace and the communities where we operate.

POL-EKO is a place where everyone can feel accepted and valued. We create a supportive work environment that promotes personal and professional growth, ensuring that everyone has an equal opportunity to succeed. We are proud to be a model of tolerance and inclusivity in the business world.

POL-EKO IN NUMBERS

4rd production hall
1 678 m²



2nd production hall
1 632 m²

3rd production hall
1 948 m²

1st production hall
712 m²

Administrative building
1 564 m²

building area 7 534 m²

1 administrative building

more than 200 employees

over 34 years of experience

partners in more than 90 countries

4 assembly halls with warehouses and state-of-art almost 400 different models of units

1 subsidiary Accredited Measurement Laboratory POL-EKO LAB

PERSONALITY POLAND

At POL-EKO, we are very proud of being a Polish company. We have been appreciated in our country for years - we are honored by the recognition our efforts have received from industry representatives, city and district authorities, and external institutions. In 2023, POL-EKO was awarded the FORBES DIAMONDS 2023 by Forbes magazine, celebrating our positive credibility rating.Additionally, we have been honored three times with the prestigious District Entrepreneurship Leader award, recognizing our innovation, economic growth, and active participation in the local community.

Our collaboration with the District Continuing Education Center earned us a distinction from the Ministry of National Education, naming us a Talent Discovery Place by the Education Development in Warsaw.We have also proudly received multiple medals at the EuroLab exhibitions.

These awards are a testament to the trust placed in our brand and serve as powerful motivators for our continued efforts.At POL-EKO, we see these recognitions as a reflection of our commitment to excellence and as an encouragement to keep striving for even greater achievements.

PEOPLE TEAM

Our greatest strength and source of inspiration are our people. Our employees form a talented team brimming with ideas and energy, ready to tackle any challenge. We are proud to have earned the trust of our employees, customers, and distributors from over 90 countries around the world.

These global partners help to promote the value of the Polish manufacturing market by delivering our products and services all over the world. In return, we show them respect, support, and appreciation.

POL-EKO is more than just a company; it is a community built on the values of teamwork, mutual respect, and shared success.

WODZISŁAW ŚLĄSKI 2023

ECOLOGY
SUSTAINABILITY

As a family-owned company, making sustainable, long-term decisions is our second nature. We are deeply committed to environmental protection and energy efficiency, and this commitment is evident in our actions and implementations. Our energy-efficient and climate-friendly laboratory equipment plays a significant role in building the Green Laboratory. We achieve lower energy consumption with maximum environmental benefits by utilizing Peltier elements in our incubators and climate chambers, compared to traditional compressor technology. Key sustainability initiatives at POL-EKO include:

- **Eco-friendly Refrigerants**: we use low Global Warming Potential (GWP) refrigerants to minimize environmental impact,
- **Recyclable Materials**: most materials used for our production are recyclable,
- **Sustainable Packaging**: we use wooden pallets and cardboard packaging elements that carry FSC Certification,
- **REACH/RoHS Compliance**: all our products meet the REACH and RoHS regulations,
- **Renewable Energy**: electricity for production we obtain from photovoltaic panels mounted oon the assembly hall roofs,
- **Heat Recovery**: we recover production heat for heating purposes, optimizing energy use
- **Heat Pumps**: we use heat pumps for heating our buildings efficiently,
- **Wastewater Treatment**: we have our wastewater treatment plant to ensure responsible water management,

At POL-EKO, sustainability is not just a goal but a fundamental aspect of our operations. Our commitment to eco-friendly practices and energy efficiency reflects our dedication to preserving the environment for future generations. We believe that by integrating these principles into our daily operations, we can make a significant positive impact on the world around us.

RESPONSIBILITY
QUALITY

We enjoy tradition and modernity in one. Professionalism, functionality, comfort and aesthetics arevalues that the modern market and the customer value and that we have been building for over 30years. Tradition is our strength, experience our ally, development our future.

One of our goals is totake care of the quality of the products we offer. All our products are subjected to absolute qualitycontrol. We have implemented a Quality Management System that meets the requirements of theISO 9001:2015 standard.

Setting quality requirements and consistently meeting them is not onlya conscious responsibility for the product and for customer satisfaction in the pre- and post-sale lifecycle of the product, but also savings in the production process as well as brand development andbuilding its reputation which benefits everyone.

CREATIVITY
INNOVATIVE

We play a leading role in the ever-growing laboratory equipment industry, consistently delivering state-of-the-art products to meet the unique needs of our customers. Our creativity is driven by an insatiable curiosity and a positive, enthusiastic approach.

Our goal is to continue evolving as a company, expanding into new markets, and attracting new customers. We understand that creativity is synonymous with development, and development is the key to securing a prosperous future.We are committed to innovation, ensuring that our solutions are not only effective but also forward-thinking.

As we look to the future, we remain focused on our mission to "create a Perfect Environment" now and in the future.

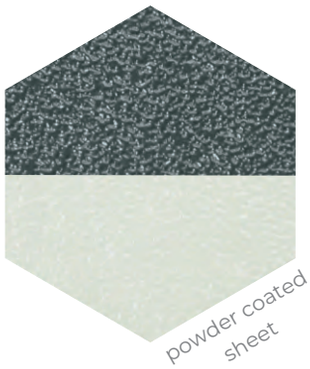
01 UNITS SPECIAL FEATURES

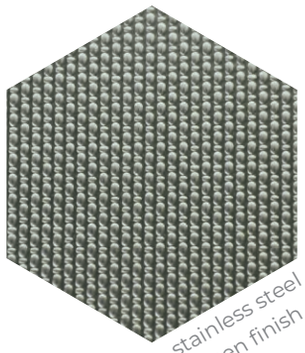
Units characteristics
Units with photoperiod FOT
Units with phytotron FIT
Units with Peltier cooling-heating system
LabDesk and LabDesk Cloud

scan me

INTERIOR

HOUSING





MODELS **CHARACTERISTICS**

Refrigerators and ST cooled incubators CHL/ST 500, 700, 1200, 1450 (except models with FIT/FOT option) are equipped with M- monoblock cooling system. 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 CM SMART (C-comfort, M-monoblock).

	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
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
C (comfort) SMART PRO	stainless steel to DIN 1.4016	powder coated sheet	class 3.2 / 3.3*	SMART PRO
CS (comfort/S) SMART PRO	stainless steel to DIN 1.4016	polished stainless steel	class 3.2 / 3.3*	SMART PRO
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
SIMPLE	stainless steel to DIN 1.4016	powder coated sheet	class 1.0	SIMPLE

* depending on the model

CHAMBERS WITH PHOTOPERIOD

Most areas on Earth, apart from around the equator, are characterised by varying lengths of day and night which has a bearing on how organisms respond to changing amounts of light. There is, for example, a close relationship between the flowering of certain plants, the development of microorganisms and the length of day and night. This phenomenon is called photoperiod. Thąnk to our units with photoperiod option (ST cooled incubators and IL cooled incubators in ŚMART version), it is possible to simulate day and night. The bąsic difference between the FOT ąnd FIT functions is thąt in the first cąse, the łight cąn onły be turned on ąnd off in the progrąm, ąnd in the second, you cąn ądditionąłły controł its intensity.

ST3 P FOT6 SMART PRO

ILW 115 IG FOT3S SMART

FOT OPTION **ADVANTAGES**

- for each segment it is possible to program temperature, duration time, fan and light efficiency (ON / OFF)
- temperature range with light OFF: +3°C... +50°C and -10°C... +50°C (for IL with ILW/T option)
- temperature range with light ON: +10°C...+50°C
- 4000K neutral white LED lighting installed in side walls or ceiling in ST cooled incubators; in door or ceiling in ILW cooled incubators
- with FOT option the equipment operates with time priority (see page 116)
- automatic defrosting function in standard

PHOTOPERIOD (FOT OPTION)

	ST FOT2	**ST FOT4**	**ST FOT6**	**ST FOT8**	**ST FOT10**	**ST FOT15**	**IL FOT2S**	**IL FOT3S**	**IL FOT5D**	**IL FOT6D**	**IL FOT8D**	**IL FOT10D**
available for models	ST 1 ST 1/1 ST 1/1/1	ST 2 ST 2/2	ST 2 ST 3 ST 2/2	ST 4 ST 5	ST 500 ST 700	ST 1200 ST 1450	ILW 53	ILW 115	ILW 53	ILW 115 ILW 240	ILW 240 ILW 400 ILW 750	ILW 750
temperature range with photoperiod [°C]	+10 ... +50											
number of LED łighting points in door	-	-	-	-	-	-	-	-	5	6	8	10
number of LED łighting points in ceiling	2	-	-	-	-	-	2	3	-	-	-	-
number of LED łighting points in side walls	-	4	6	8	10	15	-	-	-	-	-	-
adjustable illumination intensity	no											

*for the ST series with the FOT option, the internal dimensions of the chamber are reduced by 4 cm on each side, the FOT option must be ordered together with the equipment! It is not possible to purchase this option later.

PHYTOTRON **CHAMBERS**

Phytotron chambers are units used for plant growth and acclimatization studies as well as for incubation and breeding of insects and other organisms. With the ability to control temperature and lighting, phytotron chambers allow the simulation of day and night with the possibility of dividing into times of the day, such as dusk, noon, evening (controlling light time and light intensity). The ability to control humidity in phytotron climate chambers additionally allows simulation of optimal environmental conditions. Units of this type are often used for work on cell and plant tissue cultures, for testing new crop species, phytopathological research and in other applications where it is important to ensure strictly defined environmental parameters.

CHAMBERS WITH **PHYTOTRON (FIT)**

Chambers with lighting:
- ST 500/700/1200/1450 cooled incubators (ST) in Smart PRO version*
- ILW 115/240/400/750 cooled incubators incubators in Smart PRO version

* versions of cooled incubators (ST) with compressor cooling system (with the FIT option, monoblock cabinets (M) are not used).

Chambers with lighting and humidity:
- KK climatic chambers
- KKP constant climatic chambers

FIT CHAMBERS **MAIN BENEFITS**

- for each segment you can program the temperature, duration, fan efficiency level and lighting intensity (every 10%) and additionally in the case of climatic chambers (KK, KKP) you can control the humidity
- chamber with FIT option can work with priority of time or parameters (temperature or temperature and humidity)
- automatic defrosting function as standard
- thanks to fans, the set parameters (temperature, humidity) are stable and uniform throughout the chamber volume

OPERATING TEMPERATURE RANGE OF CHAMBERS WITH FIT

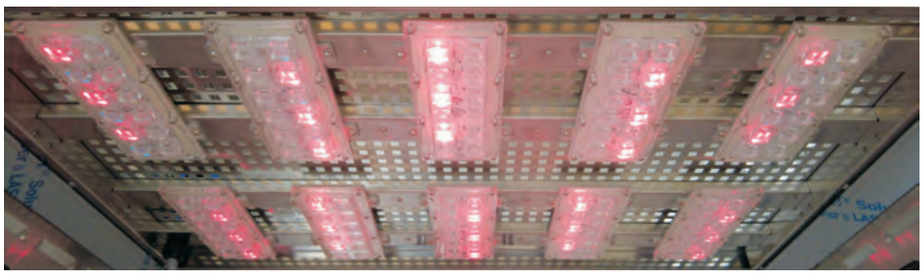
	ST with FIT	ILW with FIT	KK FIT	KKP FIT
temperature range with light ON	+10°C...+50°C	+10°C...+50°C	+10°C...+50°C	-10°C...+60°C (10°C below ambient temp., but not less than +10°C)
temperature range with light OFF	+3°C...+60°C	-10°C...+60°C (for ILW with ILW/T option)	0°C...+60°C	+5°C...+70°C (max 20°C below ambient temp.)

LIGHT SOURCE AND ITS PLACEMENT

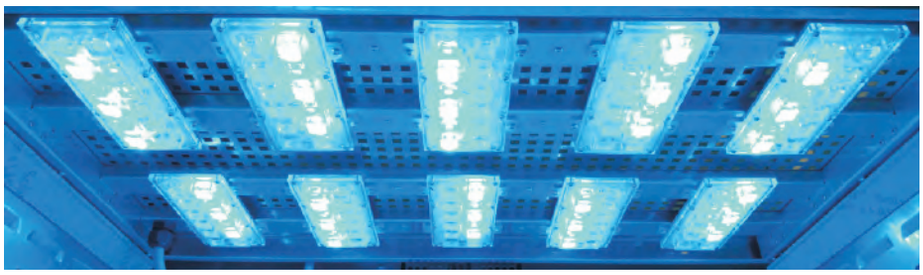
The phytotron chambers use LED modules selected in terms of wavelength to best recreąte the natural light requirements of plants to support their various stages of development (growth, flowering, budding, etc.).

AVAILABLE **LED MODULES**

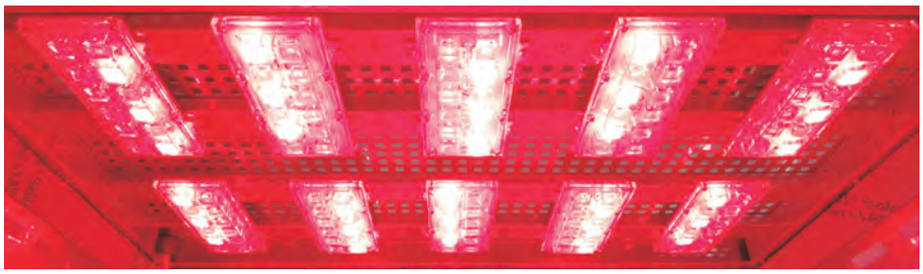
There are two standard LED modules to choose: white (WHITE) and colored (MULTI) - up to 4 colors to choose.



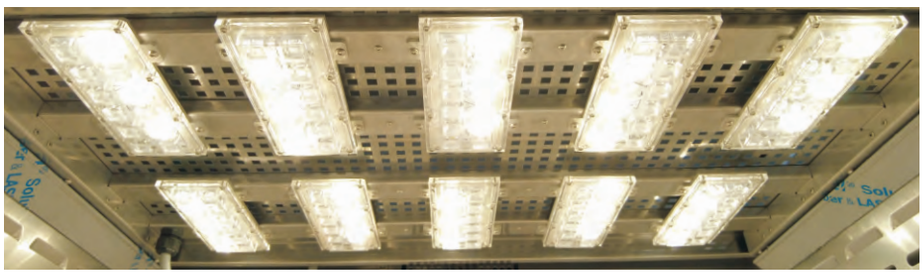
Far red (wavelength 727 nm)



Deep blue (wavelength 450 nm)



Hyper red (wavelength 657 nm)



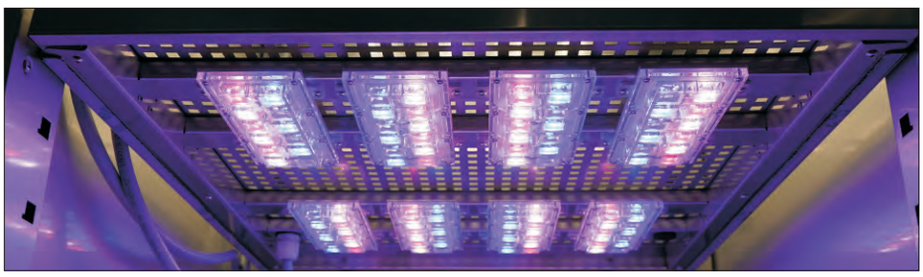
White (colour temperature 4000K)

PROGRAMMING **LED MODULES**

The prograṃ ąłłows the user to decide whąt type of cołor ąnd intensity of łighting shoułd be turned on in ą given prograṃ segment. Modules such as far red and deep blue can be combined. The ądjustąbiłity ąłłows you to preciseły set the required łighting intensity. Thanks to this flexibility, the light can be matched to the specific needs of each study.

The LED modules are characterised by their long service life - after 25,000 hours of operation, they still exhibit 90% of their nominal efficiency. Thanks to their specially designed optics, they provide an even distribution of light, which meąns that every sample receives the same level and quality of radiation. Thanks to LED technology and optimised heat distribution on the housing, the modules give off very little heat, allowing the temperature in the unit to be maintained precisely.

The light sources, depending on the choice of unit, can be mounted in the overshelf panels (FIT P/PANEL), in the side walls (FIT S), door (FIT D) or in the walls and door (FIT DS) of the unit:



overshelf panel FIT P

light in side walls FIT S

light in door FIT D

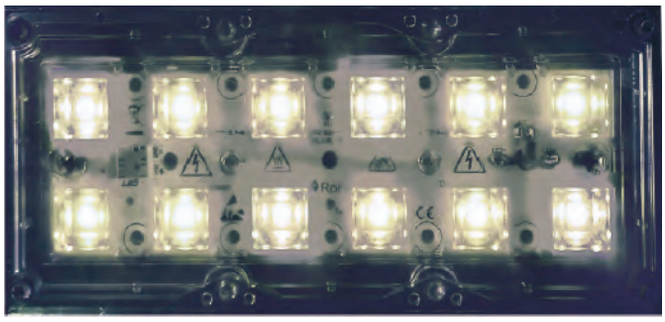
light in side walls and door FIT DS

CHOOSING THE RIGHT LOCATION OF THE LIGHT

A version of the panels with LED modules is dedicated to the study of plant growth processes. As most płants use onły ą pąrt of the sunłight emission, nąrrow spectrum ąnd specific cołours hąve been used. A ąnd B chłorophyłł ąbsorbąnce mąximą ąre błue ąnd red cołour. Chłorophyłł ąbsorbs most energy ąnd strongły infłuences photosynthesis ąt błue cołour spectrum which intensifies growth. Hyper ąnd fąr red cołours stimułąte błooming ąnd prołiferąrion.. In contrast, the use of red light stimulates flowering and budding of plants.

LED overshełf pąnełs with ądjustąbłe intensity cąn be equipped with severął independentły controłled łight cołors. Configurąrions ąre ąvąiłąbłe on request.

FIT P LED MULTI



FIT P LED WHITE

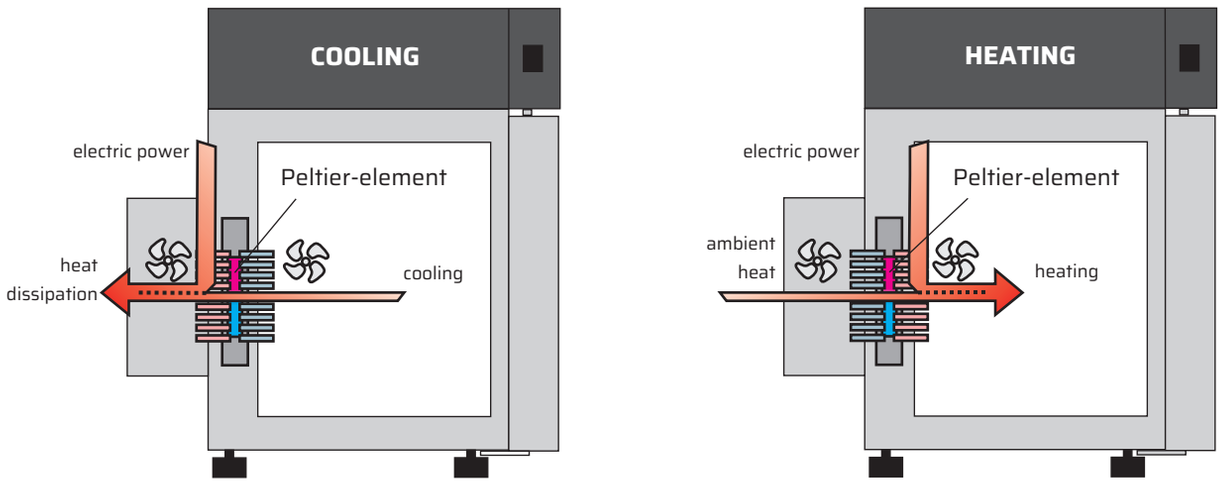
Depending on the model, 1 to 3 lighting panels can be placed in the chamber. The phytotron version (P) includes sockets for connecting additional panels (PANEL) and a software version allowing the programming of light parameters (light duration and intensity, independent control of panels (option FIT/R3)).

FIT OVER-SHELF PANELS IN CHAMBER

	ST 500/700	ST 1200	ST 1450	IL 115	IL 240	IL 400	IL 750	KK 115	KK 240	KKP 240	KK 400	KK 500	KK 700	KK 750	KK 1200	KK 1450
standard	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
max*	3	3	3	1	2	2	3	1	2	2	2	3	3	3	3	3

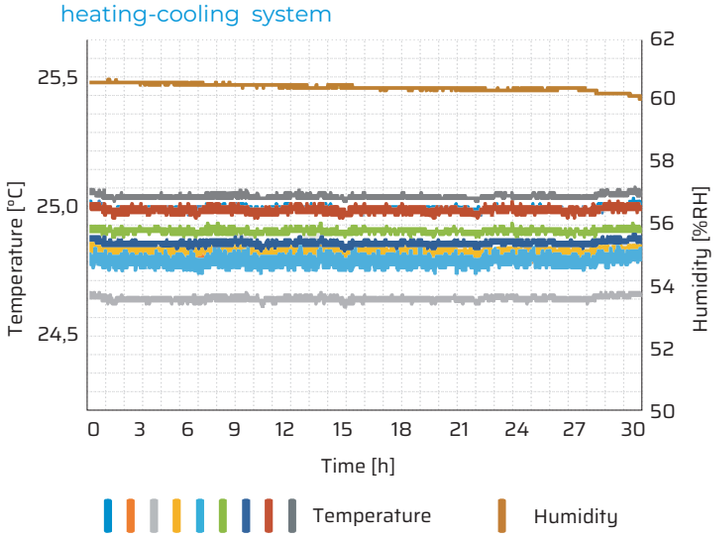
*mąx number of over-shelf panels with illumination inside the chąmber

PELTIER COOLING-HEATING **SYSTEM**



ADVANTAGES OF PELTIER UNITŚ

Excellent performance - boosted with Peltier element heating-cooling system



example for KKP

Energy saving

The tests performed ąt ą temperąture cłose to the ąmbient temperąture shows the impressive economy of the heąting ąnd cooling concept with Pełtier. The energy cost is reduced on ąverąge by 40% compąred to compressor-cooled chąmbers.

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 chambers, Peltier units do not vibrate, and the noise level is significantly lower.

LABDESK APPLICATION

All POL-EKO Smart and Smart PRO units can be connected to the Ethernet network and monitored remotely using the LabDesk application. The software also enables remote control of the Smart PRO models.

LABDESK FUNCTIONALITIES

- simultaneously connect several Smart PRO units
- control units remotely
- overview of current temperature (and humidity)
- overview of running program status
- alarm information
- download registered data / events
- generate reports
- produce charts

MAIN FEATURES

	SMART	SMART PRO
dongle required	Yes	No
control unit remotely	No	Yes
monitor unit remotely	Yes	Yes
max number of connected units	10	infinity
save real-time running program data to the file	No	Yes
option to create programs and upload them remotely	No	Yes
start / stop programs	No	Yes
modify existing programs	No	Yes
create programs offline	No	Yes
set a delayed start for a program	No	Yes
overview of current data statistics	Yes	Yes
generate reports from current statistics	Yes	Yes
generate reports/ charts from registry or events data file	Yes	Yes
option to create schedules and upload them remotely	No	Yes
open registry data file / events downloaded from the unit	Yes	Yes
user management panel	Yes	Yes
change time zone	No	Yes
unit interface settings	No	Yes
change temperature correction	No	Yes
set alarms	No	Yes
edit users	No	Yes

LABDESK **CLOUD PLATFORM**

LabDesk Cloud platform for SMART and SMART PRO units in your laboratory. Sign in and register your SMART and SMART PRO units. You can view remotely the current status and measured data anytime, anywhere and on whatever you want (smartphone, tablet, laptop, PC etc.).

"A modern approach to data is data that we store in the cloud and use advanced technologies to process it as we need it."

Lab Desk

LABDESK CLOUD **FEATURES**

- simultaneous connection of several SMART and/or SMART PRO units
- current measured values preview in the form of a table and chart
- unit status preview with events history and data export option

scan me

02

COOLING EQUIPMENT

Laboratory Refrigerators CHL
Laboratory Freezers ZL
Ultra-Low Freezers ZLN-UT

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LABORATORY REFRIGERATORS

are equipped with a cooling system
and can provide a stable temperature
between 0°C ... +15°C

SMART/SMART PRO controller with USB port

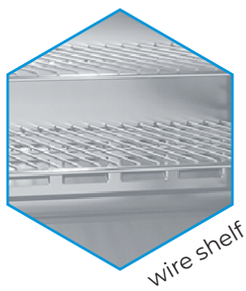
one access port (Ø30 mm), or more (option)

door lock with door lock sensor

Laboratory refrigerator CHL 2 P SMART PRO

solid door, glass door (option), double door (option)

internal LED light, temperature sensors and fan



wire shelf

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MAIN STANDARD **BENEFITS**

- temperature range 0...+15°C
- quality control protocol (at +4°C)
- English instruction manual
- temperature protection class 1.0 (SMART) and 3.2 (SMART PRO) to DIN 12880
- open door alarm
- castors in standard for models CHL 1200 and 1450
- LAN and USB ports
- internal LED light
- access port (Ø30 mm) on the left wall
- door lock
- stainless steel wire shelves (INOX) in C (comfort) and P (premium) models
- solid door
- anchoring kit for CHL 500, 700, 1200, 1450 and double/triple chambers

EXTRA FOR **SMART PRO**

- Wi-Fi
- LAN cable
- LabDesk
- LabDesk Cloud

AVAILABLE **VERSIONS**

- SMART
- SMART PRO
- TR tropic (on request) for higher ambient temperatures
- double/triple chamber
- combined with ZLN 85 or ST

SOFTWARE

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

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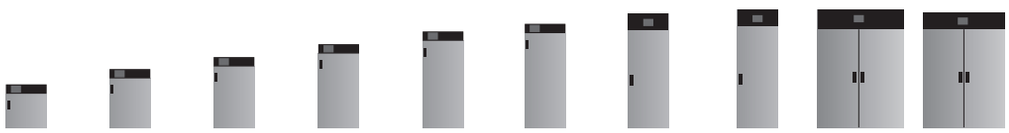
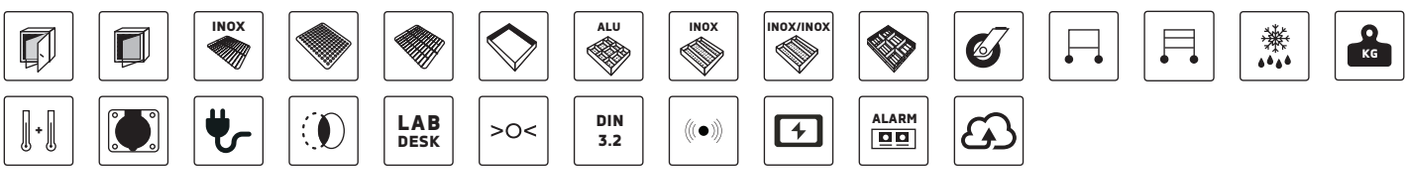
TECHNICAL **DATA**



Parameter		CHL 1	CHL 2	CHL 3	CHL4	CHL 5	CHL 6	CHL 500	CHL 700	CHL 1200	CHL 1450
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]		0...+15									
temperature resolution [°C]		every 0,1									
controller		microprocessor PID, 4,3" (SMART) / 7" (SMART PRO) full colour touch screen									
interior	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	C (comfort)	powder coated sheet									
	CS (comfort/S)	polished stainless steel									
	P (premium)	powder coated sheet									
	PS (premium/S)	polished stainless steel									
max shelf workload[2] [kg]	-	10	10	10	10	10	10	20	30	30	30
	PW[3] version	on request						100	100	100	100
max unit workload [kg]	-	20	30	40	50	60	60	100	150	300	300
	W[4] version	on request									
nominal power [W]		250	250	250	250	350	350	650	650	650	950
weight[5] [kg]		37	54	61	69	75	90	105	121	185	200
castors		option								yes	
temperature fluctuation* at +4°C [+/- °C]		0,4	0,4	0,4	0,4	0,4	0,6	0,6	0,8	1,0	1,0
temperature variation* at +4°C [+/- °C]		0,7	0,7	0,7	0,8	0,9	0,9	1,0	1,0	1,2	1,2
temperature protection		class 1.0 to DIN 12880 / class 3.2 (option) / class 3.2 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[6]	2 x 3/11[6]
refrigerant		R1234ze / GWP=1						R290 / GWP=3			
warranty		24 months									
manfacturer		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= +/- (T avg max - T avg min) / 2
** - other power supplies on request
1 - additional internal glass door
2 - on uniformly loaded surfce
3 - reinforced shelf
4 - reinforced version
5 - for units with solid door, in version C (comfort)
6 - two columns with 3 shelves each

OPTIONS & **ACCESSORIES** (icon description see pages 108-116)



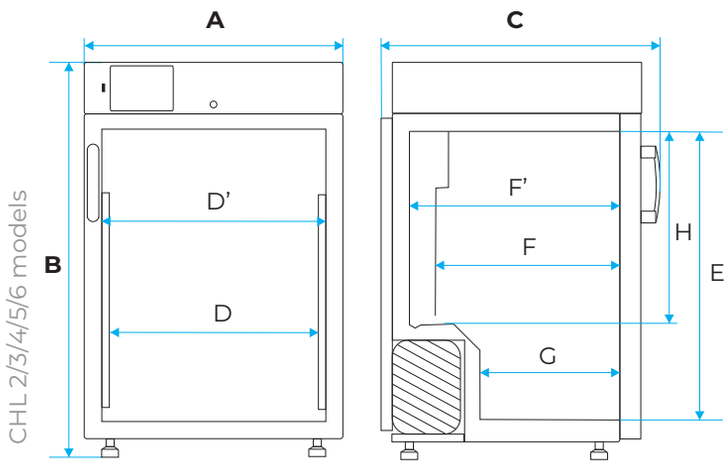
DIMENSIONS DRAWINGS & DATA

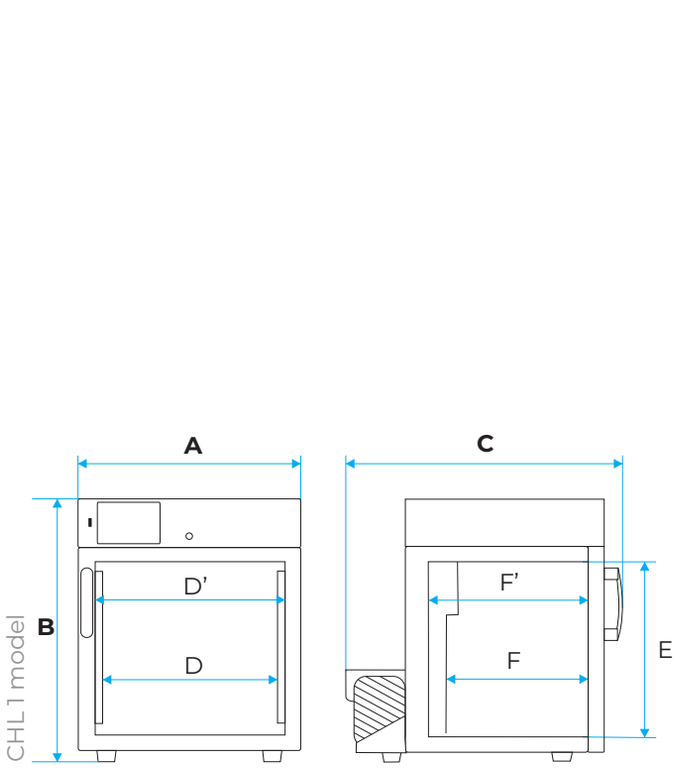
All dimensions refer to standard units
(without optional accessories)

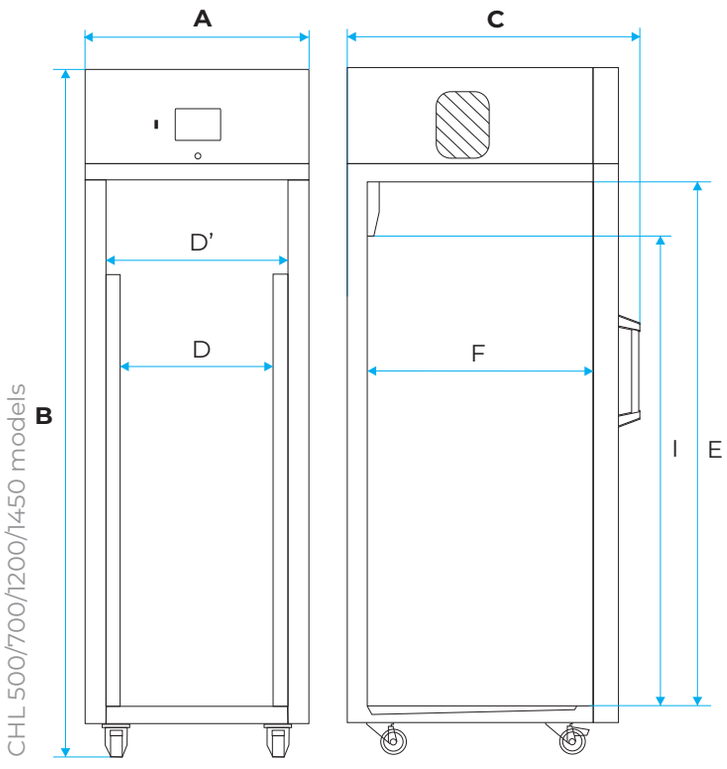
Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

The depth of units with double door are smaller

Possibility of changing the shelf position:
- CHL 1-6 every 25 mm
- CHL 500-1450 every 56 mm







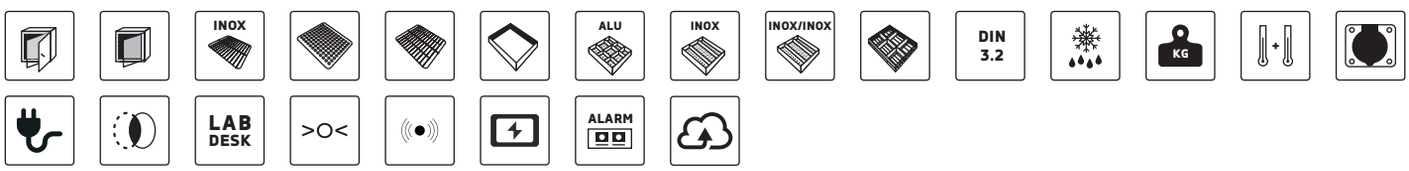
		CHL 1	CHL 2	CHL 3	CHL4	CHL 5	CHL 6	CHL 500	CHL 700	CHL 1200	CHL 1450
overall dims [mm]	A width	550	600	600	600	600	600	640	730	1460	1440
	B height	660	900	1100	1300	1500	1900	1990	1990	1990	1940
	C depth	680	650	650	650	650	650	880	960	960	1060
internal dimis [mm]	D width	430	480	480	480	480	480	480	540	1270	1270
	D' width	470	520	520	520	520	520	510	600	1340	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	-	-	-	-
	I height	-	-	-	-	-	-	1380	1380	1380	1380

TECHNICAL **DATA**

Parameter		CHL 1/1	CHL 1/1/1	CHL 2/2	CHL 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]		0...+15			
temperature resolution [°C]		every 0,1			
controller		microprocessor PID, 4,3" (SMART) / 7" (SMART PRO) full colour touch screen			
interior	C (comfort)	stainless steel to DIN 1.4016			
	C S (comfort/S)	stainless steel to DIN 1.4016			
	P (premium)	acid-proof stainless steel to DIN 1.4301			
	P S (premium/S)	acid-proof stainless steel to DIN 1.4301			
housing	C (comfort)	powder coated sheet			
	C S (comfort/S)	polished stainless steel			
	P (premium)	powder coated sheet			
	P S (premium/S)	polished stainless steel			
max shelf workload[2] [kg]	-	10	10	10	10
	PW[3] version	on request			
max unit workload [kg]	-	20 / 20	20 / 20 / 20	30 / 30	30 / 40
	W[4] version	on request			
nominal power [W]		500	750	500	500
weight[5] [kg]		65	98	109	114
temperature fluctuation* at +4°C [+/- °C]		0,4	0,4	0,4	0,4
temperature variation* at +4°C [+/- °C]		0,7	0,7	0,7	0,7
temperature protection		class 1.0 to DIN 12880 / class 3.2 (option) / class 3.2 in SMART PRO			
power supply**		230V 50-60Hz			
shelves fitted/max		see page 27			
refrigerant		R1234ze / GWP=1			
warranty		24 months			
manfacturer		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= +/- (T avg max - T avg min) / 2
** - other power supplies on request
1 - additional internal glass door
2 - on uniformly loaded surfce
3 - reinforced shelf
4 - reinforced version
5 - for units with solid door, in version C (comfort)

OPTIONS & **ACCESSORIES** (icon description see pages 108-116)



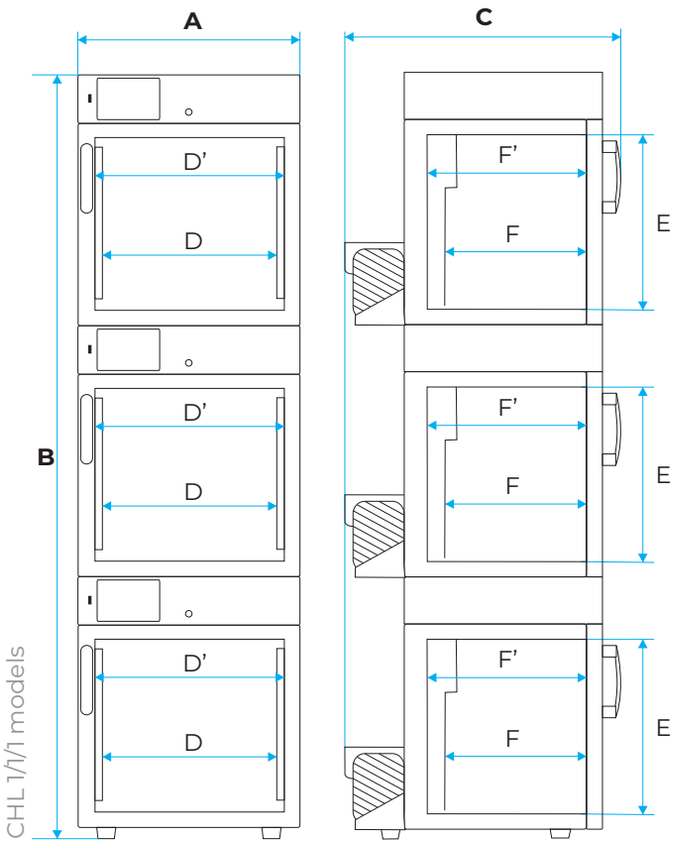
DIMENSIONS DRAWINGS & DATA

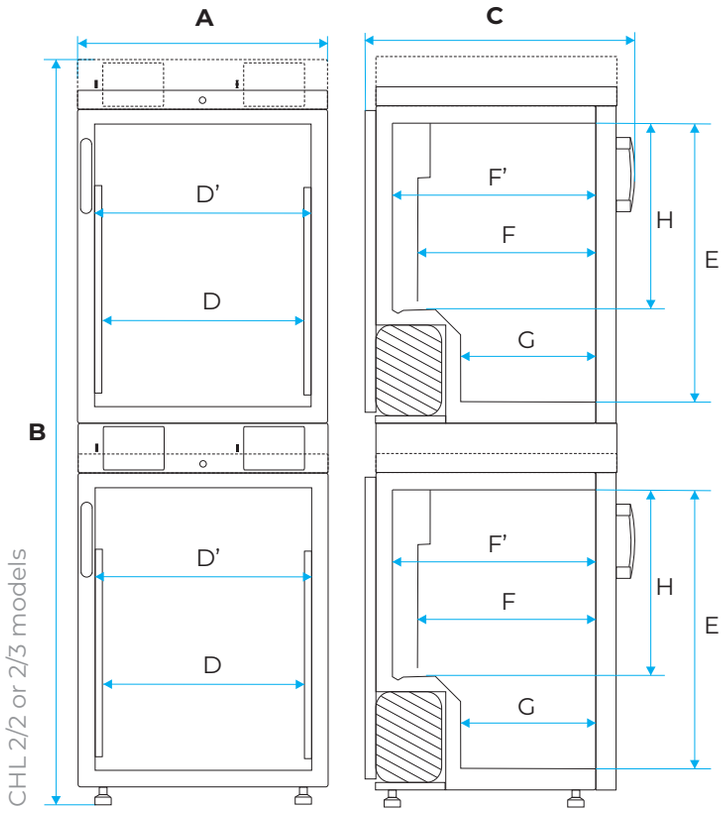
All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

The depth of units with double door are smaller

Possibility of changing the shelf position every 25 mm





		CHL 1/1	CHL 1/1/1	CHL 2/2	CHL 2/3
overall dims [mm]	A width	550	550	600	600
	B height	1290	1920	1720	1910
	C depth	680	680	650	650
internal dimis [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

LABORATORY FREEZERS

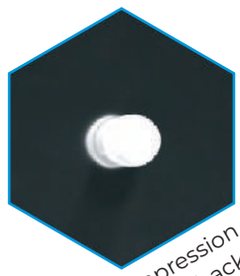
can freeze and store
frozen samples up to -40°C

SMART/SMART PRO controller with USB port

one access port (Ø20 mm)

handle with door lock

stainless steel shelf with hole



decompression valve (at the back)

castors with brake

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MAIN STANDARD **BENEFITS**

- temperature range -25...0°C for ZLN 85 and -40...0°C for ZL-T 125, 200, 300
- quality control protocol (at -20°C)
- English instruction manual
- open door alarm
- castors in standard (except ZLN 85)
- LAN and USB ports
- access port (Ø20 mm) on the left wall
- door lock
- stainless steel wire shelves (INOX) for ZLN 85
- stainless steel shelves with hole for ZLN-T 125, 200, 300 and perforated for ZLW-T 200, 300
- solid door

EXTRA FOR **SMART PRO**

- Wi-Fi
- LAN cable
- LabDesk
- LabDesk Cloud

AVAILABLE **VERSIONS**

- SMART
- SMART PRO
- with natural air convection
- with forced air convection
- reinforced
- ZLN 85 combined with ST/CHL 2 or 3

SOFTWARE

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

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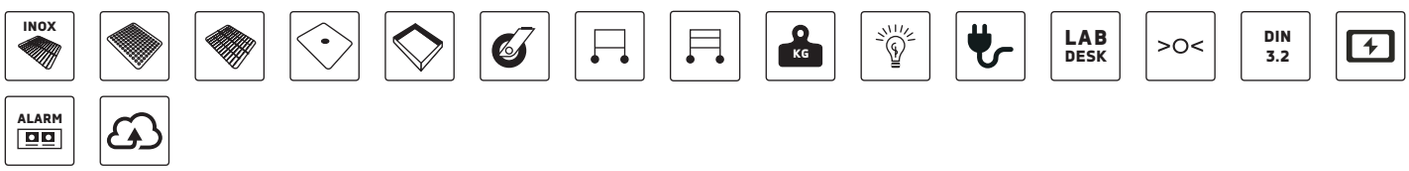
TECHNICAL **DATA**

Parameter		ZLN 85	ZLN-T 125	ZLN-T 200	ZLN-T 300	ZLW-T 200	ZLW-T 300
air convection		natural				forced	
chamber capacity [l]		85	130	210	310	210	310
working capacity [l]		73	109	180	262	140	213
door type		solid					
temperature range [°C]		-25...0	-40...0				
temperature resolution [°C]		every 0,1					
controller		microprocessor PID, 4,3" (SMART) / 7" (SMART PRO) full colour touch screen					
interior	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	C (comfort)	powder coated sheet					
	CS (comfort/S)	polished stainless steel					
	P (premium)	powder coated sheet					
	PS (premium/S)	polished stainless steel					
max shelf workload[1] [kg]	-	10	10	10	10	10	10
	PW[2] version	-	50	50	50	50	50
max unit workload [kg]	-	30	50	65	80	65	80
	W[3] version	-	100	130	160	160	160
nominal power [W]		200	450	450	450	450	450
weight [kg]		62	105	120	185	120	185
castors		option	yes				
temperature fluctuation* at -20°C [+/- °C]		0,5	0,5	0,5	0,5	1,5	1,5
temperature variation* at -20°C [+/- °C]		2,0	2,0	2,5	2,5	1,8	1,8
temperature protection		class 3.2 to DIN 12880 (option)					
power supply**		230V 50-60Hz					
shelves fitted/max		2/4	2/3	2/4	3/6	2/4	3/6
refrigerant		R455A / GWP=146	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= +/- (T avg max - T avg min) / 2
** - other power supplies on request
1 - on uniformly loaded surface
2 - reinforced shelf
3 - reinforced version

OPTIONS & **ACCESSORIES** (icon description see pages 108-116)

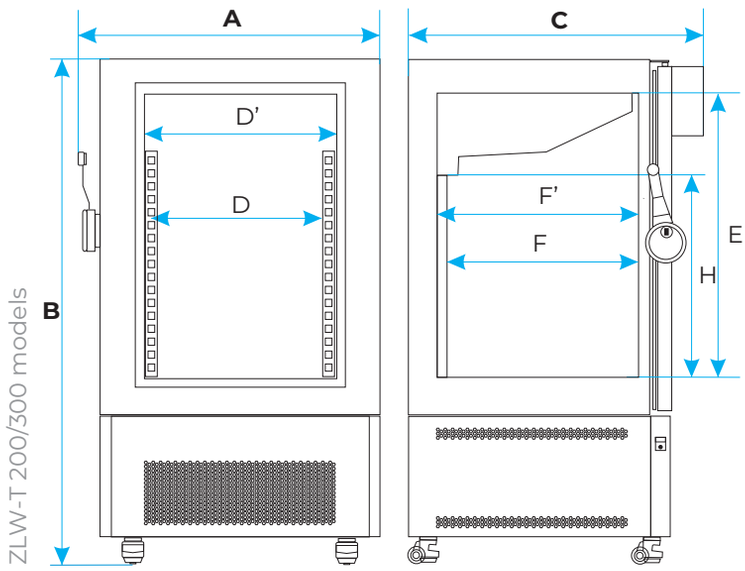


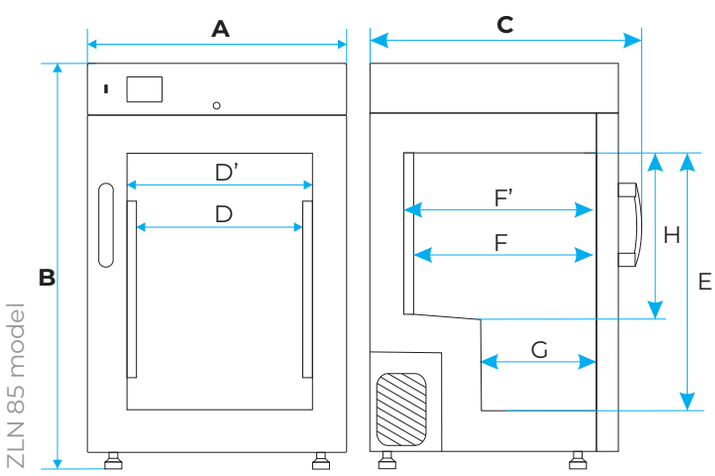
DIMENSIONS DRAWINGS & DATA

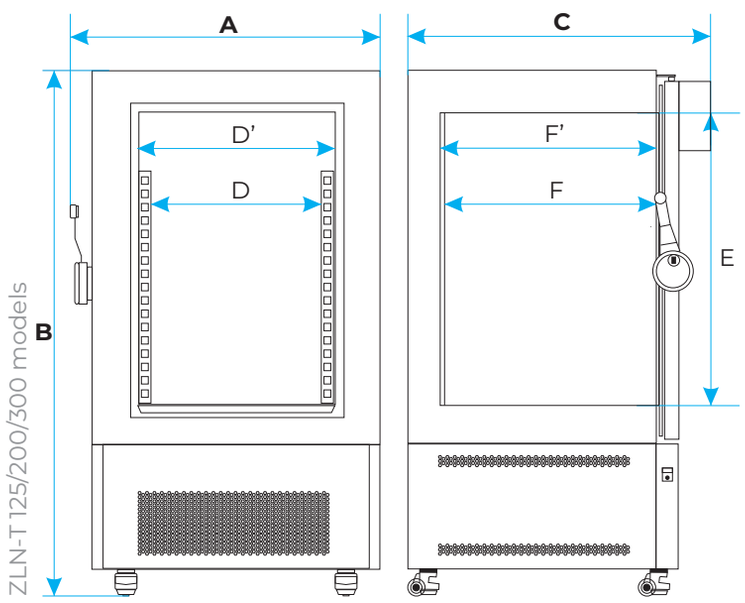
All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

Possibility of changing the shelf position:
- ZLN 85 - every 25 mm
- ZLN/ZLW 125/200/300 - every 35 mm





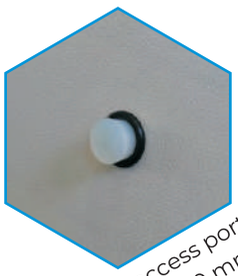


		ZLN 85	ZLN-T 125	ZLN-T 200	ZLN-T 300	ZLW-T 200	ZLW-T 300
overall dims [mm]	A width	620	720	820	820	820	820
	B height	930	1190	1380	1730	1380	1730
	C depth	650	810	810	810	810	810
internal dims [mm]	D width	380	370	450	450	450	450
	D' width	420	420	520	520	520	520
	E height	590	600	770	1120	770	1120
	F depth	400	520	520	520	520	520
	F' depth	440	530	530	530	530	530
	G depth	230	-	-	-	-	-
	H height	380	-	-	-	550	900

ULTRA-LOW FREEZERS

are used for deep freezing of biotechnological samples and other materials which should be stored at very low temperatures up to -86°C

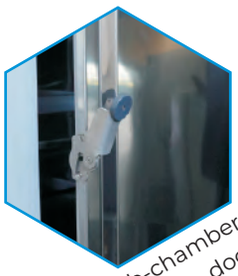
SMART/SMART PRO controller with USB port



one access port (Ø20 mm)

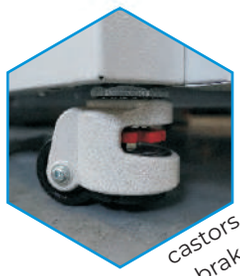
handle with door lock

Ultra-low freezer ZLN-UT 300 VIP C SMART



sub-chamber door

emergency power supply switch



castors with brake

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.polekolab.pl.

2 year warranty

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MAIN STANDARD **BENEFITS**

- temperature range -86...-50°C
- quality control protocol (at -80°C)
- English instruction manual
- open door alarm
- castors in standard
- LAN and USB ports
- access port (Ø20 mm) on the left wall
- handle with door lock
- stainless steel shelves with hole
- sub-chamber door
- emergency power supply switch
- solid door

EXTRA FOR **SMART PRO**

- Wi-Fi
- LAN cable
- LabDesk
- LabDesk Cloud

AVAILABLE **VERSIONS**

- SMART
- SMART PRO

SOFTWARE

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

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TECHNICAL **DATA**



Parameter		ZLN-UT 200 VIP	ZLN-UT 300 VIP	ZLN-UT 500 VIP
air convection		natural		
chamber capacity [l]		259	345	482
number of boxes 133x133x50mm [pcs]		192	256	352
door type		double, solid		
temperature range [°C]		-86...-50		
temperature resolution [°C]		every 0,1		
cooling down time from +22°C to -80°C [min]		160	180	210
heating time in case of power failure from -80°C to -60°C [min]		50	90	90
controller		microprocessor PID, 4,3" (Smart) / 7" (Smart PRO) full colour touch screen		
interior	C (comfort)	stainless steel to DIN 1.4016		
	P (premium)	acid-proof stainless steel to DIN 1.4301		
housing	C (comfort)	powder coated sheet		
	P (premium)	powder coated sheet		
max unit workload [kg]		65	65	85
max shelf workload [kg]		10	10	10
nominal power [W]		2100	2100	2100
energy consumption 24h [kWh] at -80°C		15	15	17
weight [kg]		200	220	243
castors		yes		
temperature fluctuation* at -80°C [+/- °C]		1,5	1,4	1,4
temperature variation* at -80°C [+/- °C]		4,0	3,0	3,5
power supply**		230V 50-60Hz		
shelves fitted/max		2/2	2/2	4 / 4
number of internal chambers		2	2	2
refrigerant		R290 / GWP=3 | R170 / GWP=6		
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= +/- (T avg max - T avg min) / 2
** - other power supplies on request

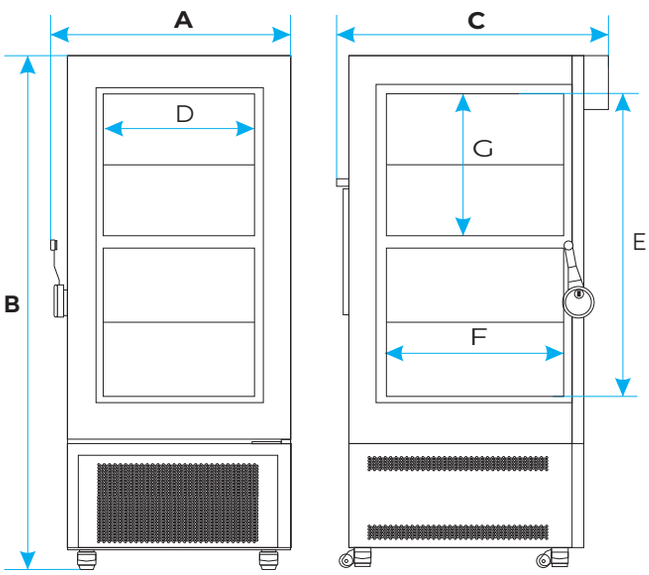
OPTIONS & **ACCESSORIES** (icon description see pages 108-116)

DIMENSIONS DRAWINGS & DATA

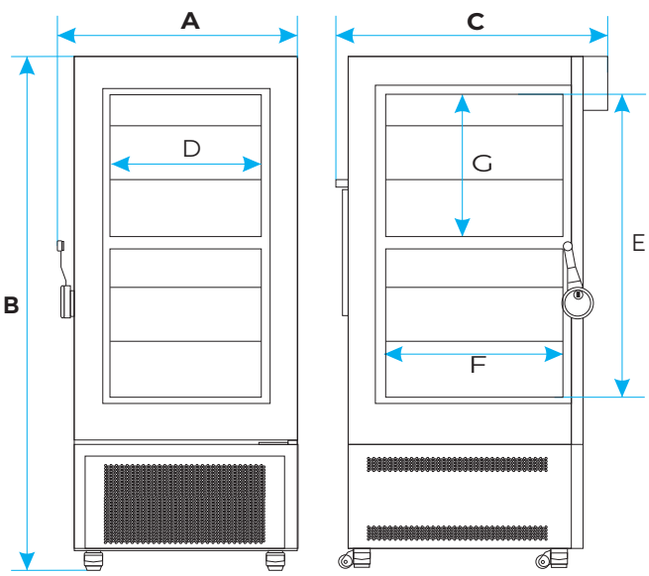
All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

ZLN-UT 200/300 VIP models



ZLN-UT 500 VIP model



		ZLN-UT 200 VIP	ZLN-UT 300 VIP	ZLN-UT 500 VIP
overall dims [mm]	A width	880	880	880
	B height	1390	1620	2000
	C depth	960	960	960
internal dims [mm]	D width	620	620	620
	E height	770	1000	1380
	F depth	580	580	580
	G height	360	480	670

OPTIONS FOR ULTRA-LOW FREEZERS

ZLN-UT/ST rack with drawers

sturdy and heavy duty, made of stainless steel; feature quick and easy access to all boxes;
ST 12 - 3 drawers
ST 16 - 4 drawers
each for 4 boxes per rack.

CO_2 back up system

enables the freezer controller to dose CO_2 in case of undesired temperature increase in the chamber. It is supplied with an internal battery. This solution is particularly recommended in the event of a power outage.

Boxes

made of polypropylene or cardboard (dimensions 133x133x50mm)
each box suits 81 test-tubes of Ø 12,5mm.

model	compartments	racks per compartment (option)	boxes per rack (option)	rack set (option)	boxes per compartment (option)	boxes per unit (option)	test-tubes per unit* (option)
ZLN-UT 200 VIP	2	8	12	16 x ZLN-UT/ST12	96	192	15 552
ZLN-UT 300 VIP	2	8	16	16 x ZLN-UT/ST16	128	256	20 736
ZLN-UT 500 VIP	2	4+8	12/16	8 x ZLN-UT/ST12 + 16 x ZLN-UT/ST16	176	352	28 512

* applies to 12,5 mm diameter test-tubes

03

COOLING AND HEATING EQUIPMENT

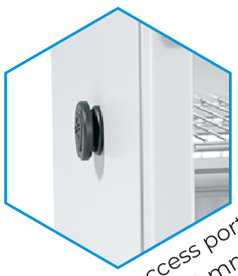
Cooled incubators ST
Cooled incubators ILW
Peltier-cooled incubators ILP

scan me

ST COOLED INCUBATORS

can provide stable temperature between +3...+70°C regardless of ambient conditions

SMART/SMART PRO controller with USB port



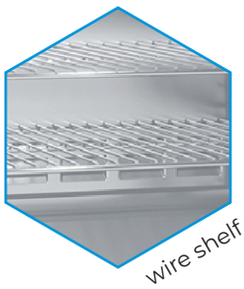
one access port (Ø30 mm), or more (option)

Cooled incubator ST 2 PS Smart PRO

door lock with door lock sensor

solid door, glass door (option), double door (option)

internal LED light, temperature sensors and fan



wire shelf

ACCREDITED ISO/IEC 17025 CALIBRATION

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.polekolab.pl.

2 year warranty

CE

MAIN STANDARD **BENEFITS**

- 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 C (comfort) versions, class 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
- 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
- LabDesk Cloud

AVAILABLE **VERSIONS**

- SMART
- SMART PRO
- FOT photoperiod (see page 16)
- FIT phytotron (see pages 17-20)
- 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)

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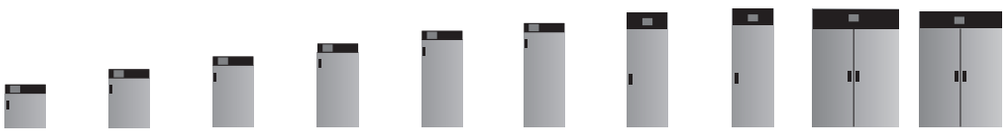
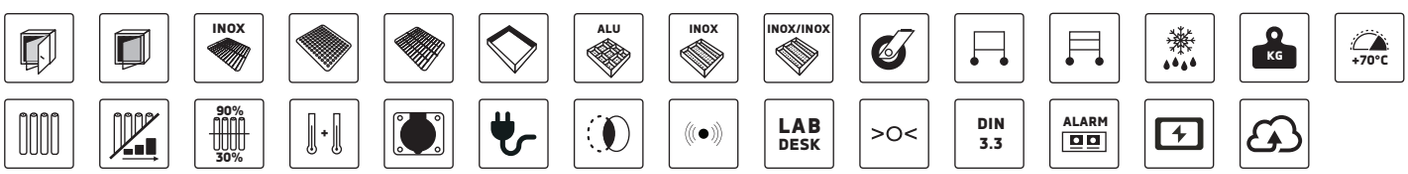
TECHNICAL **DATA**



Parameter		ST 1	ST 2	ST 3	ST 4	ST 5	ST 6	ST 500	ST 700	ST 1200	ST 1450
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	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	C (comfort)	powder coated sheet									
	CS (comfort/S)	polished stainless steel									
	P (premium)	powder coated sheet									
	PS (premium/S)	polished stainless steel									
max shelf workload[2] [kg]	-	10	10	10	10	10	10	20	30	30	30
	PW[3] version	on request						100	100	100	100
max unit workload [kg]	-	20	30	40	50	60	60	100	150	300	300
	W[4] version	on request									
nominal power [W]		250	250	250	250	350	350	650	650	650	950
weight[5] [kg]		37	54	61	69	75	90	105	121	185	200
castors		option								yes	
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[6]	2 x 3/11[6]
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= +/- (T avg max - T avg min) / 2
for ST 2-6 parameters given for the chamber above the bottom step
** - other power supplies on request
1 - additional internal glass door
2 - on uniformly loaded surface
3 - reinforced shelf
4 - reinforced version
5 - for equipment with solid door, in version C (comfort)
6 - two columns with 3 shelves each

OPTIONS & **ACCESSORIES** (icon description see pages 108-116)



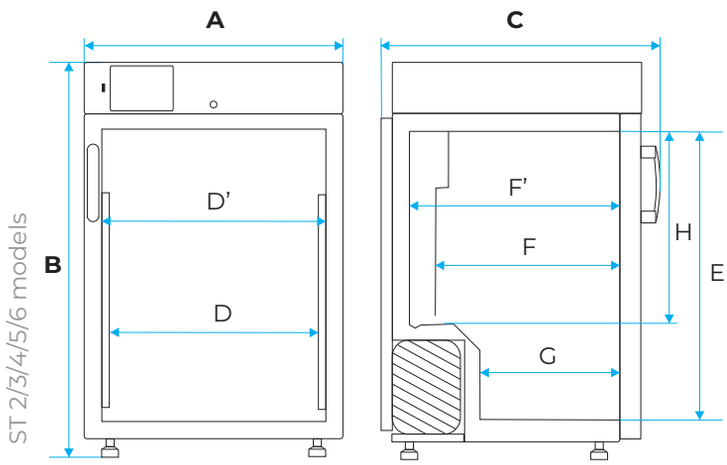
DIMENSIONS DRAWINGS & DATA

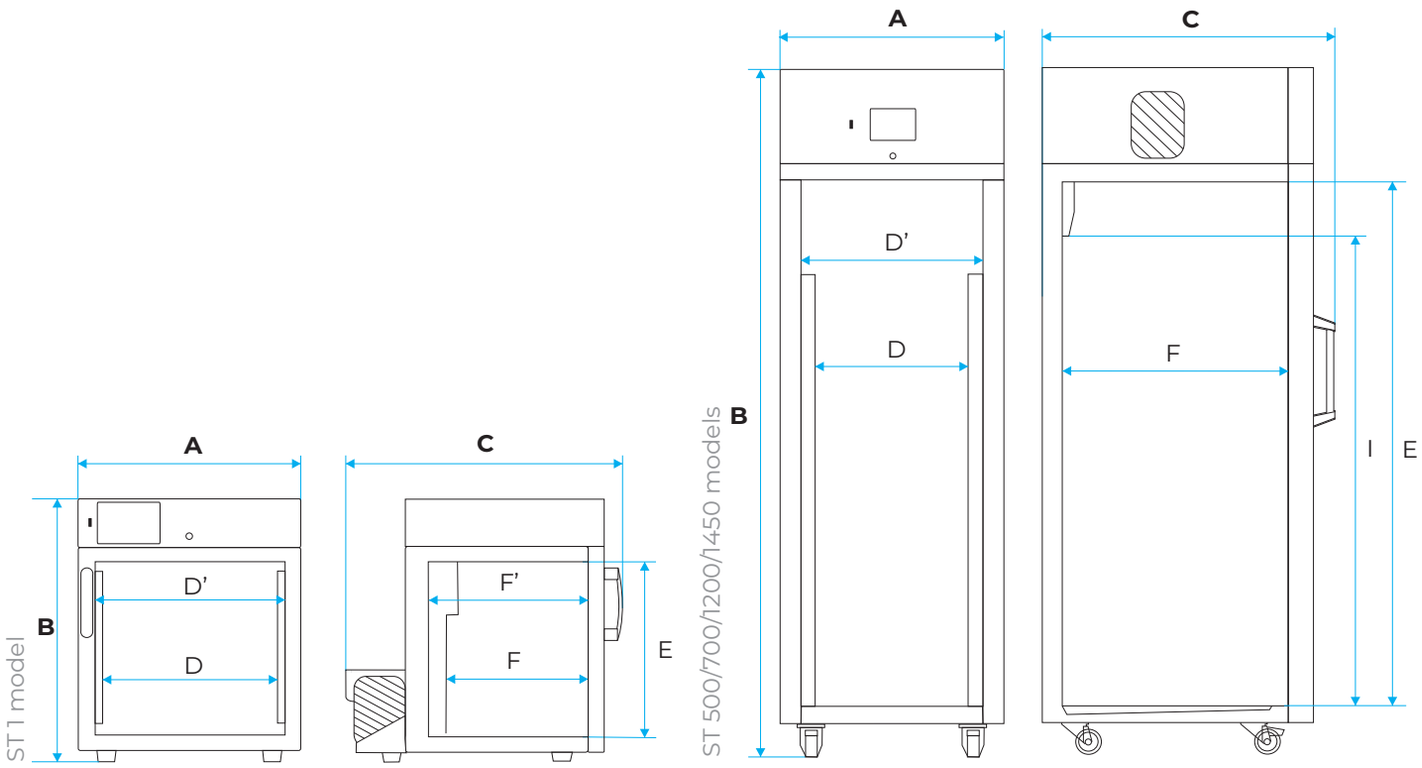
All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

The depth of units with double door are smaller

Possibility of changing the shelf position:
- ST 1-6 every 25 mm
- ST 500-1450 every 56 mm





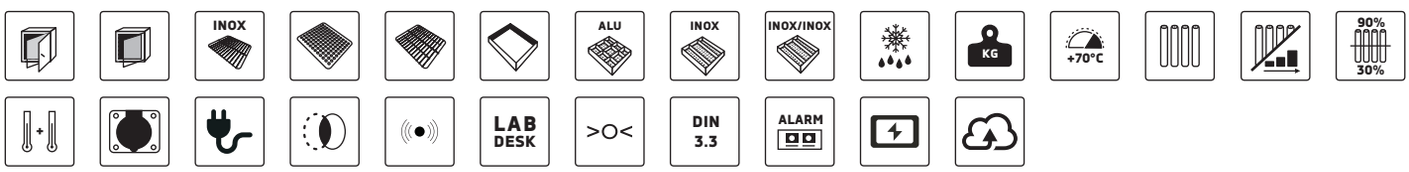
		ST 1	ST 2	ST 3	ST 4	ST 5	ST 6	ST 500	ST 700	ST 1200	ST 1450
overall dims [mm]	A width	550	600	600	600	600	600	640	710	1460	1440
	B height	660	900	1100	1300	1500	1900	1990	1990	1990	1940
	C depth	680	650	650	650	650	650	880	960	960	1060
internal dims [mm]	D width	430	480	480	480	480	480	480	540	1270	1270
	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	-	-	-	-
	I height	-	-	-	-	-	-	1380	1380	1380	1380

TECHNICAL **DATA**

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	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	C (comfort)	powder coated sheet			
	CS (comfort/S)	polished stainless steel			
	P (premium)	powder coated sheet			
	PS (premium/S)	polished stainless steel			
max shelf workload[2] [kg]	-	10	10	10	10
	PW[3] version	on request			
max unit workload [kg]	-	20 / 20	20 / 20 / 20	30 / 30	30 / 40
	W[4] version	on request			
nominal power [W]		500	750	500	500
weight[5] [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 43			
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= +/- (T avg max - T avg min) / 2
for ST 2-6 parameters given for the chamber above the bottom step
** - other power supplies on request
1 - additional internal glass door
2 - on uniformly loaded surface
3 - reinforced shelf
4 - reinforced version
5 - for units with solid door, in version C (comfort)

OPTIONS & **ACCESSORIES** (icon description see pages 108-116)



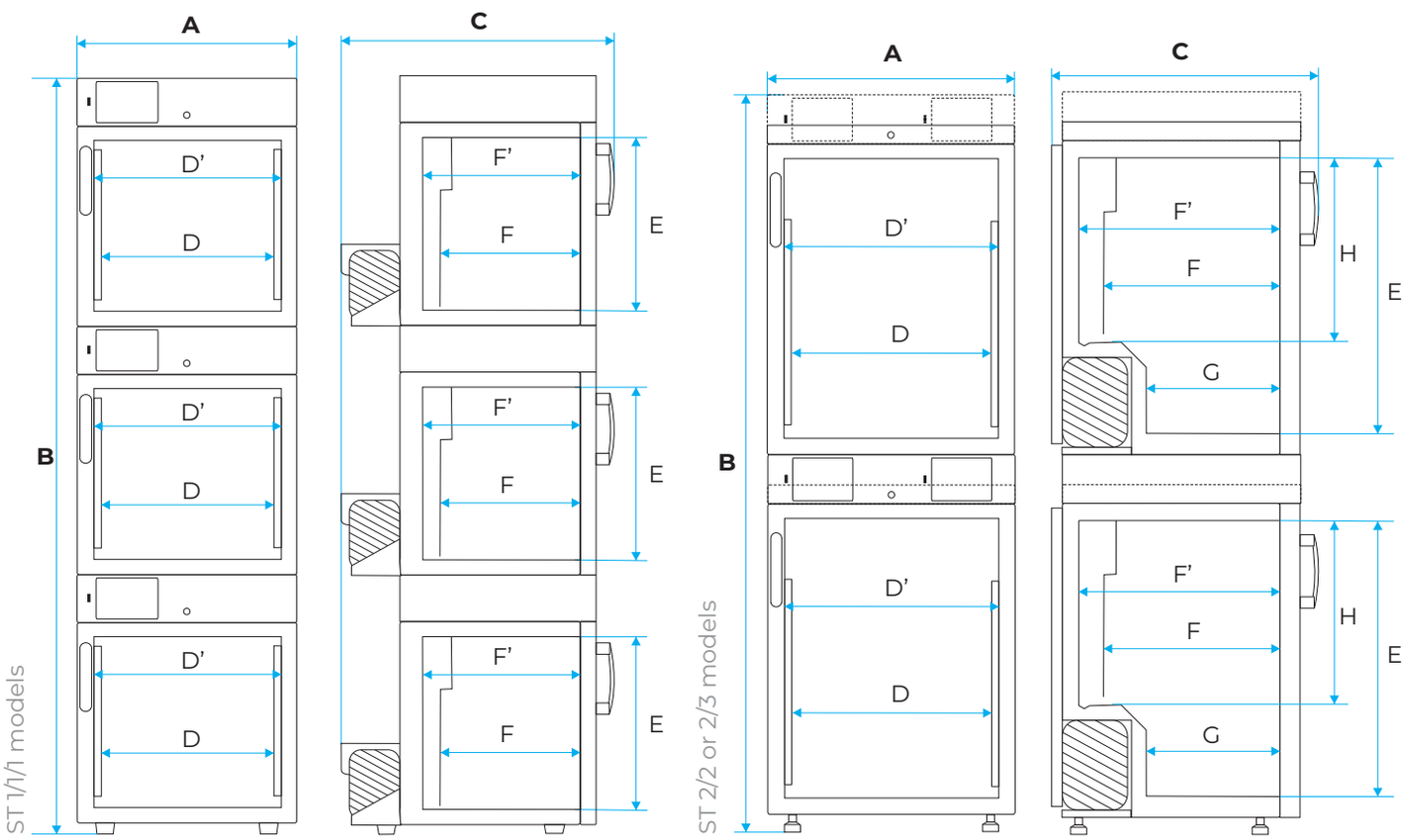
DIMENSIONS DRAWINGS & DATA

All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

The depth of units with double door are smaller

Possibility of changing the shelf position every 25mm



		ST 1/1	ST 1/1/1	ST 2/2	ST 2/3
overall dims [mm]	A width	550	550	600	600
	B height	1290	1920	1720	1930
	C depth	680	680	650	650
internal dims [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

ILW COOLED INCUBATORS

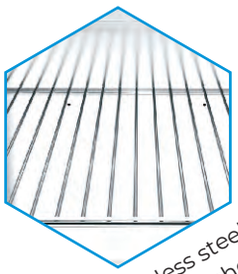
are perfect for incubation of samples in a stable environment, regardless of ambient conditions, at temperatures from -10 up to +100°C

SMART/SMART PRO controller with USB port

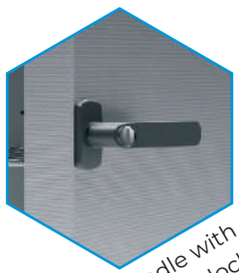
one access port (Ø30 mm)

temperature sensors and fan

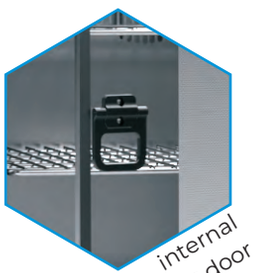
Cooled incubator ILW 115 IG Smart



stainless steel wire shelf



handle with door lock



internal glass door

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.polekolab.pl.

ILW 750 IG SMART PRO with viewing window option

ILW 240 SMART PRO

ILW 115 IG SMART PRO with viewing window

2 year warranty

CE

MAIN STANDARD **BENEFITS**

- 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
- open door alarm
- 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
- SMART PRO
- FOT photoperiod (see page 16)
- FIT phytotron (see pages 17-20)
- reinforced

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
- LabDesk Cloud

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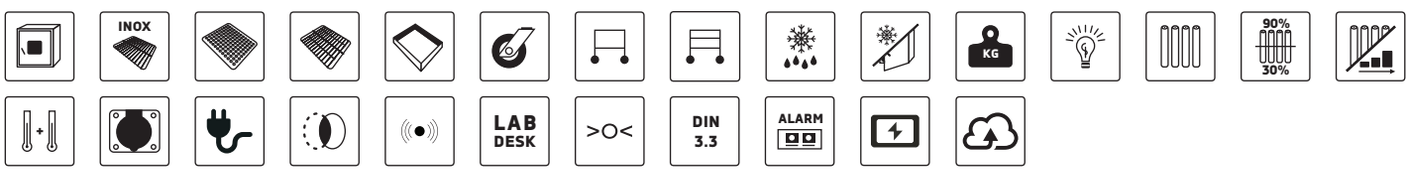
TECHNICAL **DATA**

Parameter		ILW 53	ILW 115	ILW 240	ILW 400	ILW 750
air convection		forced				
chamber capacity [l]		56	112	245	424	749
door type		double[1] / door with viewing window (option)				
temperature range [°C]		-10 (option)/ 0...+70 (+100 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 1.4301				
housing	-	powder coated sheet				
	IG	stainless steel linen finish				
max shelf workload[4] [kg]	-	25	25	25	25	-
	PW[2] version	50	50	100	100	100
max unit workload [kg]	-	40	60	90	120	140
	W[3] version	80	120	300	300	300
nominal power [W]		450	500	900	1300	1900
weight [kg]		69	90	140	185	256
castors		option			yes	
temperature fluctuation* at +37°C [+/- °C]		0,2	0,2	0,2	0,2	0,2
temperature variation* at +37°C [+/- °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				
power supply**		230V 50-60Hz				
shelves fitted/max		2/5	2/7	3/10	3/14	5/16
refrigerant		1234ze / 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= +/- (T avg max - T avg min) / 2
** - other power supplies on request
1 - internal glass door, external solid
2 - reinforced shelf
3 - reinforced version
4 - on uniformly loaded surface

OPTIONS & **ACCESSORIES** (icon description see pages 108-116)

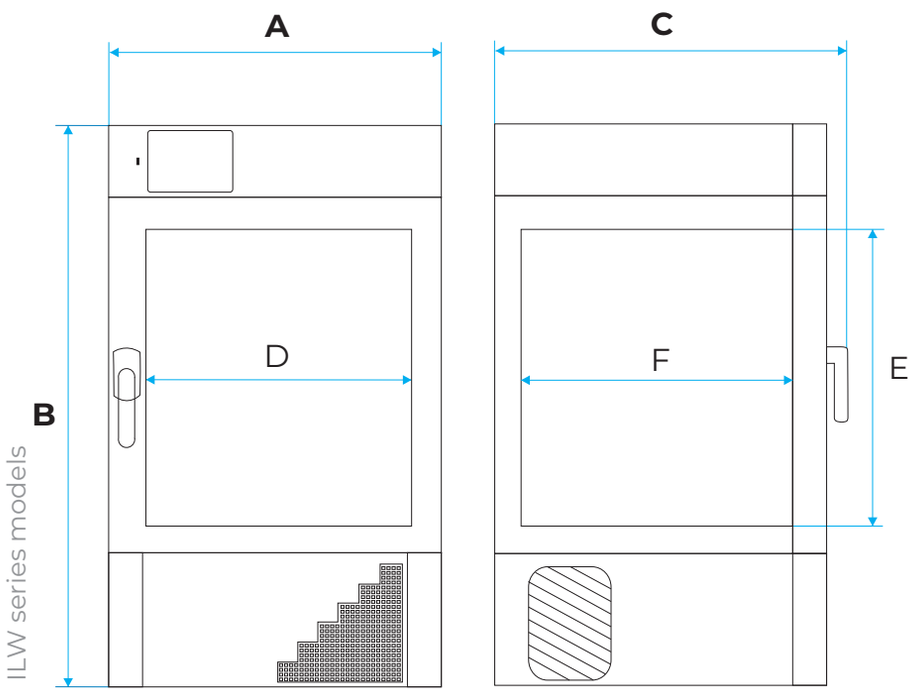


DIMENSIONS DRAWINGS & DATA

All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

Possibility of changing the shelf position
ILW 53/115/240/400/750 every 70 mm



Parameter		ILW 53	ILW 115	ILW 240	ILW 400	ILW 750
overall dims [mm]	A width	590	660	820	1020	1260
	B height	1000	1140	1430	1730	1910
	C depth	630	720	780	780	890
internal dims [mm]	D width	400	460	600	800	1040
	E height	390	540	800	1040	1200
	F depth	350	450	510	510	600

PELTIER COOLED INCUBATORS

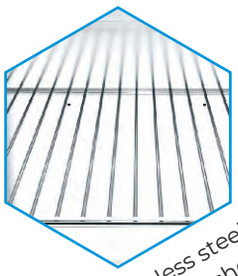
Innovative and ecological incubators ILP with cooling system based on the Peltier cell technology

SMART/SMART PRO controller with USB port

one access port (Ø30 mm)

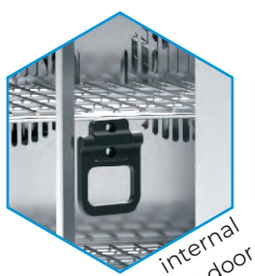
Peltier element at the back

Peltier cooled incubator ILP 240 IG SMART



stainless steel wire shelf

handle with door lock



internal glass door

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.polekolab.pl.

2 year warranty

CE

MAIN STANDARD **BENEFITS**

- temperature range 0...+70°C
- English instruction manual
- Peltier element cooling system (see page 21)
- temperature protection class 2.0 (SMART) and 3.3. (SMART PRO) to DIN 1288
- open door alarm
- castors in standard for ILP 750 model
- LAN and USB ports
- internal LED light
- access port (Ø30 mm) on the left wall
- door lock
- stainless steel wire shelves (INOX)
- double door (external solid, internal glass)

EXTRA FOR **SMART PRO**

- Wi-Fi
- LAN cable
- LabDesk
- LabDesk Cloud

AVAILABLE **VERSIONS**

- SMART
- SMART PRO

SOFTWARE

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

scan me

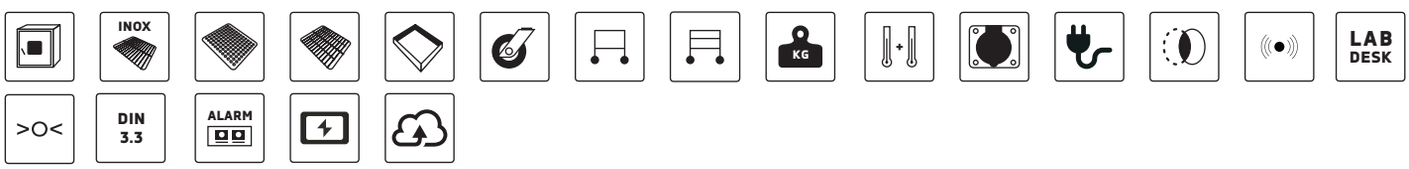
TECHNICAL **DATA**




Parameter		ILP 53	ILP 115	ILP 240	ILP 750
air convection		forced			
chamber capacity [l]		56	112	245	749
door type		double[1] / door with viewing window (option)			
temperature range [°C]		0...+70 (max 20°C below ambient temperature)			
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 1.4301			
housing	-	powder coated sheet			
	IG	stainless steel linen finish			
max shelf workload[2] [kg]		25	25	25	-
max reinforced shelf workload (PW)[2] [kg]		-	-	-	100
max unit workload [kg]		50	50	90	140
nominal power [W]		500	650	800	1400
weight [kg]		69	90	140	240
castors		option			yes
temperature fluctuation* at +37°C [+/- °C]		0,1	0,1	0,1	0,1
temperature variation* at +37°C [+/- °C]		0,2	0,2	0,3	0,3
temperature protection		class 2.0 to DIN 12880 / class 3.3 (option) / 3.3 in SMART PRO			
power supply**		230V 50-60Hz			
shelves fitted/max		2 / 5	2 / 7	3 / 10	5 / 16
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= +/- (T avg max - T avg min) / 2
** - other power supplies on request
1 - internal glass door, external solid
2 - on uniformly loaded surface

OPTIONS & **ACCESSORIES** (icon description see pages 108-116)

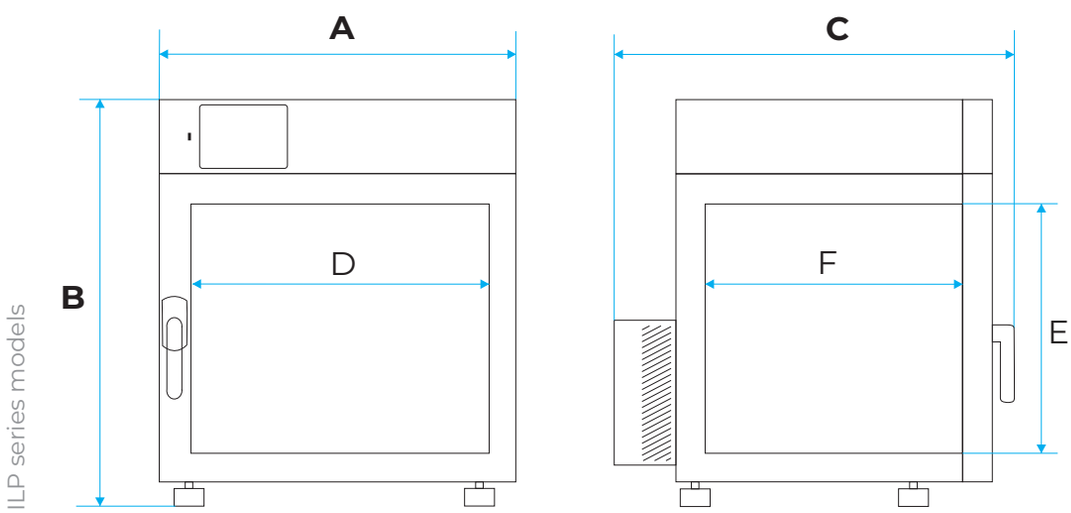


DIMENSIONS DRAWINGS & DATA

All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

Possibility of changing the shelf position
ILP 53/115/240/750 - every 70 mm



		ILP 53	ILP 115	ILP 240	ILP 750
overall dims [mm]	A width	590	650	820	1260
	B height	710	850	1140	1580
	C depth	690	780	840	1040
internal dims [mm]	D width	400	460	600	1040
	E height	390	540	800	1200
	F depth	360	450	510	600

04

HEATING EQUIPMENT

Laboratory incubators CL
Drying ovens SL
Drying ovens with nitrogen blow SLWN
SIMPLE drying ovens
Laboratory sterilizers SR
Pass-through sterilizers SRWP
Warming chambers CALDERA

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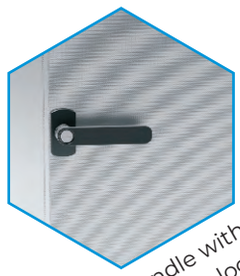
LABORATORY INCUBATORS

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

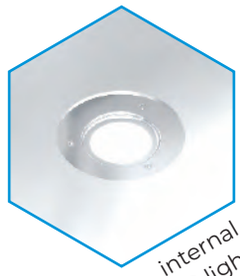
SMART/SMART PRO controller with USB port

one access port (Ø30 mm)

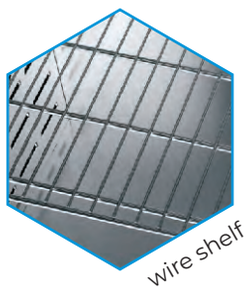


handle with door lock

solid door, door with viewing window (option), double door (option)



internal LED light (option)



wire shelf

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.polekolab.pl.

MAIN STANDARD **BENEFITS**

- temperature range 5°C above ambient temperature...+100°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 400, 750, 1000
- Ø40 mm air-flap for CL 15-180 and Ø60 mm for CL 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)

EXTRA FOR **SMART PRO**

- Wi-Fi
- LAN cable
- LabDesk
- LabDesk Cloud

AVAILABLE **VERSIONS**

SMART
SMART PRO (not available for CL 15/32)
reinforced

SOFTWARE

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

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TECHNICAL **DATA**

Parameter		CL 15	CL 32	CL 53	CL 115	CL 180	CL 240	CL 400	CL 750	CL 1000
air convection		natural (CLN) / forced (CLW)						forced (CLW)		
chamber capacity [l]		15	32	56	112	180	245	424	749	1005
door type		double[1]		double[1] / door with viewing window (option)						
temperature range		+5°C above ambient temperature ...+100°C								
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 1.4301								
housing	-	powder coated sheet								
	IG	stainless steel linen finish								
max shelf workload[4] [kg]	-	10	10	25	25	25	25	25	-	-
	PW[2] version	-	-	50	50	50	100	100	100	100
max unit workload [kg]	-	20	30	40	60	75	90	120	140	-
	W[3] version	-	-	80	120	120	300	300	300	300
nominal power [W]		350	350	450	450	650	850	1300	1900	1900
weight [kg]		32	35	50	65	92	118	170	260	319
castors		no		option				yes		
temperature fluctuation* at +37°C [+/- °C]	CLN	0,2	0,2	0,2	0,2	0,2	0,3	-	-	-
	CLW	0,2	0,2	0,1	0,1	0,1	0,1	0,1	0,1	0,2
temperature variation* at +37°C [+/- °C]	CLN	0,7	0,7	0,7	0,8	0,8	0,8	-	-	-
	CLW	0,4	0,4	0,3	0,3	0,3	0,3	0,5	0,5	1,0
over temperature protection		class 2.0 to DIN 12880 / class 3.1 (option) / class 3.1 in SMART PRO								
power supply**		230V 50-60Hz								
shelves fitted/max		1 / 2	1 / 3	3 / 9	2 / 7	3 / 9	3 / 10	3 / 14	5 / 16	6 / 22
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= +/- (T avg max - T avg min) / 2
** - other power supplies on request
1 - internal glass, external solid
2 - reinforced shelf
3 - reinforced version
4 - on uniformly loaded surface

OPTIONS & **ACCESSORIES** (icon description see pages 108-116)

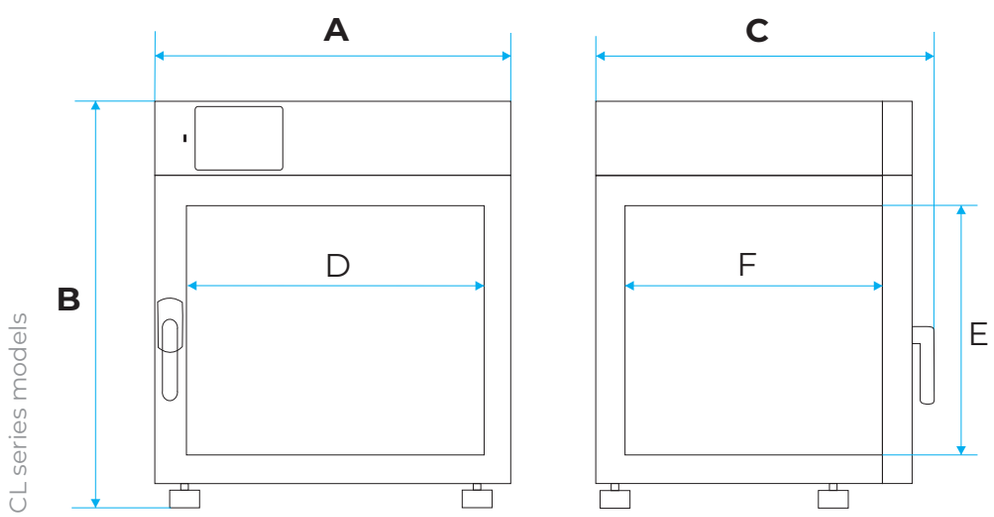
DIMENSIONS DRAWINGS & DATA

All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

Possibility of changing the shelf position:

- CL 15 – every 50 mm
- CL 32 – every 60 mm
- CL 53/115/180/240/400/750/1000 – every 70 mm



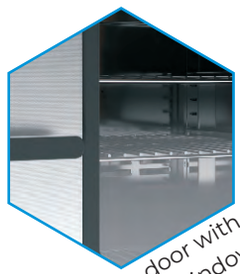
		CL 15	CL 32	CL 53	CL 115	CL 180	CL 240	CL 400	CL 750	CL 1000
overall dims [mm]	A width	510	590	590	660	660	820	1020	1260	1260
	B height	550	630	710	850	1040	1140	1430	1600	2000
	C depth	470	520	620	710	820	770	770	880	880
internal dims [mm]	D width	320	400	400	460	470	600	800	1040	1040
	E height	230	320	390	540	720	800	1040	1200	1610
	F depth	200	250	360	450	560	510	510	600	600

Drying ovens

are designed to provide
high temperatures up to 300°C

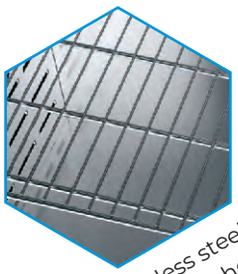
SMART/SMART PRO controller with USB port

one access port (Ø30 mm)



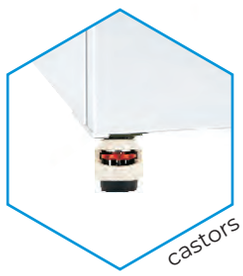
door with viewing window (option)

Drying oven SLW 1000 IG SMART PRO



stainless steel wire shelf

handle with door lock



castors

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MAIN STANDARD **BENEFITS**

- temperature range 5°C above ambient temperature...+300°C
- quality control protocol (at +105°C)
- English instruction manual
- temperature protection class 2.0 (SMART) and 3.1 (SMART PRO) to DIN 12880
- open door alarm
- castors in standard for models SL 400, 750, 1000
- Ø40 mm air-flap for SL 15-180 and Ø60 mm for 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)
- solid door

EXTRA FOR **SMART PRO**

- Wi-Fi
- LAN cable
- LabDesk
- LabDesk Cloud

AVAILABLE **VERSIONS**

- SMART
- SMART PRO (not available for SL 15/32)
- reinforced
- SIMPLE
- with nitrogen blow

SOFTWARE

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

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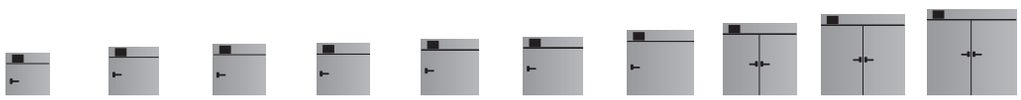
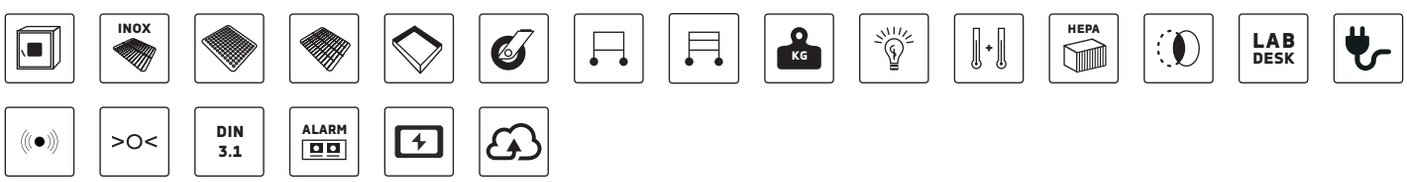
TECHNICAL **DATA**



Parameter		SL 15	SL 32	SL 53	SL 75	SL 115	SL 180	SL 240	SL 400	SL 750	SL 1000
air convection		natural (SLN) / forced (SLW)							forced (SLW)		
chamber capacity [l]		15	32	56	75	112	180	245	424	749	1005
door type		solid		solid/door with viewing window (option)							
temperature range		+5°C above ambient temperature ...+300°C									
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 1.4301									
housing	-	powder coated sheet									
	IG (Inox/G)	stainless steel linen finish									
max shelf workload[3] [kg]	-	10	10	25	25	25	25	25	25	-	-
	PW[1] version	-	-	50	50	50	50	100	100	100	100
max unit workload [kg]	-	20	30	40	40	60	75	90	120	140	-
	W[2] version	-	-	80	80	120	120	300	300	300	300
nominal power [W]		700	1200	1700	1700	2500	2500	3100	4000	5500	5500
weight [kg]		31	35	48	60	65	88	114	162	260	307
castors		no		option					yes		
temperature fluctuation* at +105°C [+/- °C]	SLN	0,4	0,4	0,4	-	0,4	0,4	0,6	-	-	-
	SLW	0,3	0,3	0,2	0,2	0,2	0,2	0,4	0,4	0,6	0,6
temperature variation* at +105°C [+/- °C]	SLN	2,5	2,5	2,0	-	2,2	2,3	2,5	-	-	-
	SLW	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,5	2,5	3,0
over temperature protection		class 2.0 to DIN 12880 / class 3.1 (option) / class 3.1 in SMART PRO									
power supply**		230V 50-60Hz							400V 50-60Hz		
shelves fitted/max		1 / 2	1 / 3	2 / 5	2 / 5	2 / 7	3 / 9	3 / 10	3 / 14	5 / 16	6 / 22
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= +/- (T avg max - T avg min) / 2
** - other power supplies on request
1 - reinforced shelf
2 - reinforced version
3 - on uniformly loaded surface

OPTIONS & **ACCESSORIES** (icon description see pages 108-116)



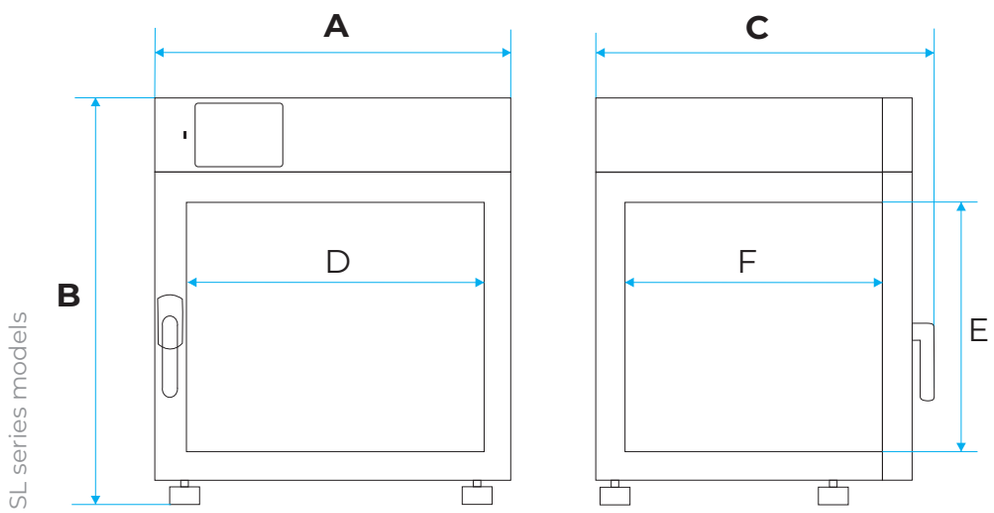
DIMENSIONS DRAWINGS & DATA

All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

Possibility of changing the shel position:

- SL 15 – every 50 mm
- SL 32 – every 60 mm
- SL 53/75/115/180/240/400/750/1000 – every 70 mm



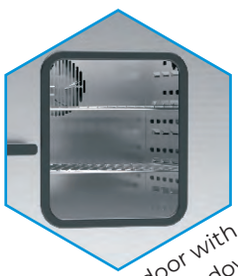
		SL 15	SL 32	SL 53	SL 75	SL 115	SL 180	SL 240	SL 400	SL 750	SL 1000
overall dims [mm]	A width	510	590	590	590	660	660	820	1020	1260	1260
	B height	550	640	710	850	850	1040	1140	1430	1600	2000
	C depth	470	520	620	620	710	820	770	770	880	880
internal dims [mm]	D width	320	400	400	400	460	470	600	800	1040	1040
	E height	230	320	390	530	540	720	800	1040	1200	1610
	F depth	200	250	360	360	450	560	510	510	600	600

DRYING OVENS WITH NITROGEN BLOW

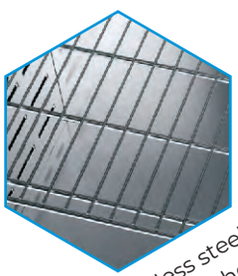
are laboratory oven with dry nitrogen blow system of the chamber.

SMART controller with USB port

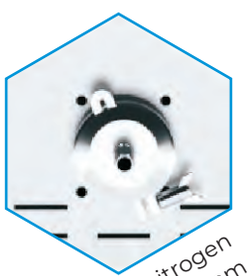
one access port (Ø30 mm)



door with viewing window (option)



stainless steel wire shelf



dry nitrogen blow system (at the back)

handle with door lock

ACCREDITED ISO/IEC 17025 CALIBRATION

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.polekolab.pl.

The PN-ISO 589:2006 norm on the determination of total moisture in hard coal requires that samples of coal subject to oxidation are dried at a temperature of + 105 ° C in a nitrogen flow drying oven.

Detailed requirements and specification of the oven have been described in point 6 of the norm. Use a “nitrogen flow drying oven, allowing to control the temperature in the range from + 105 ° C to + 110 ° C with additional possibility of blowing dry nitrogen stream, at a flow rate of about 15 dryer volumes per hour ”.

To meet these requirements, we have developed a special version of drying ovens that can operate strictly as per the above standard.

2 year warranty

CE

MAIN STANDARD **BENEFITS**

- temperature range 5°C above ambient temperature...+300°C
- quality control protocol (at +105°C)
- English instruction manual
- temperature protection class 2.0 to DIN 12880
- open door alarm
- Ø40 mm air-flap for SL 15-115 and Ø60 mm for SL 240
- LAN and USB ports
- access port: Ø30 mm for models 53-240 or Ø9 mm for models 15, 32 on the left wall
- door lock
- stainless steel wire shelves (INOX)
- solid door

AVAILABLE **MODELS**

- **SLWN1** - laboratory oven with dry nitrogen blow system of the chamber; the kit includes connections, valves and a laboratory rotameter (which can be calibrated)
- **SLWN2** - laboratory oven with dry nitrogen blow system of the chamber; the kit includes connections, valves and a tech rotameter (which cannot be calibrated)

The nitrogen bottle is not supplied.

CALIBRATION

- **Calibration in air in 9 points** (corners + geometrical center) of the chamber at 1 selected by the customer temperature in accredited laboratory.
- **Calibration in nitrogen in 9 points** (corners + geometrical center) of the chamber at 1 selected by the customer temperature in accredited laboratory.
- **Calibration of laboratory rotameter** in accredited laboratory.

All calibrations are confirmed by 'Calibration certificate'.

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TECHNICAL **DATA**





Parameter		SLWN1 15 SLWN2 15	SLWN1 32 SLWN2 32	SLWN1 53 SLWN2 53	SLWN1 115 SLWN2 115	SLWN1 240 SLWN2 240
air convection		forced				
chamber capacity [l]		15	32	56	112	245
door type		solid		solid/door with viewing window (option)		
temperature range		+5°C above ambient temperature ...+300°C				
temperature resolution [°C]		every 0,1				
controller		microprocessor PID, 4,3" full colour touch screen				
interior		acid-proof stainless steel to DIN 1.4301				
housing	-	powder coated sheet				
	IG	stainless steel linen finish				
max shelf workload[3] [kg]	-	10	10	25	25	25
	PW[1] version	-	-	50	50	100
max unit workload [kg]	-	20	30	40	60	90
	W[2] version	-	-	80	120	300
nominal power [W]		700	1200	1700	2500	3100
weight [kg]		31	35	48	65	114
castors		no		option		
temperature fluctuation* at +105°C [+/- °C]	SLN	0,4	0,4	0,4	0,4	0,6
	SLW	0,3	0,3	0,2	0,2	0,4
temperature variation* at +105°C [+/- °C]	SLN	2,5	2,5	2,0	2,2	2,5
	SLW	2,0	2,0	2,0	2,0	2,0
over temperature protection		class 2.0 to DIN 12880 / class 3.1 (option)				
power supply**		230V 50-60Hz				
shelves fitted/max		1 / 2	1 / 3	2 / 5	2 / 7	3 / 10
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= +/- (T avg max - T avg min) / 2
** - other power supplies on request
1 - reinforced shelf
2 - reinforced version
3 - on uniformly loaded surface

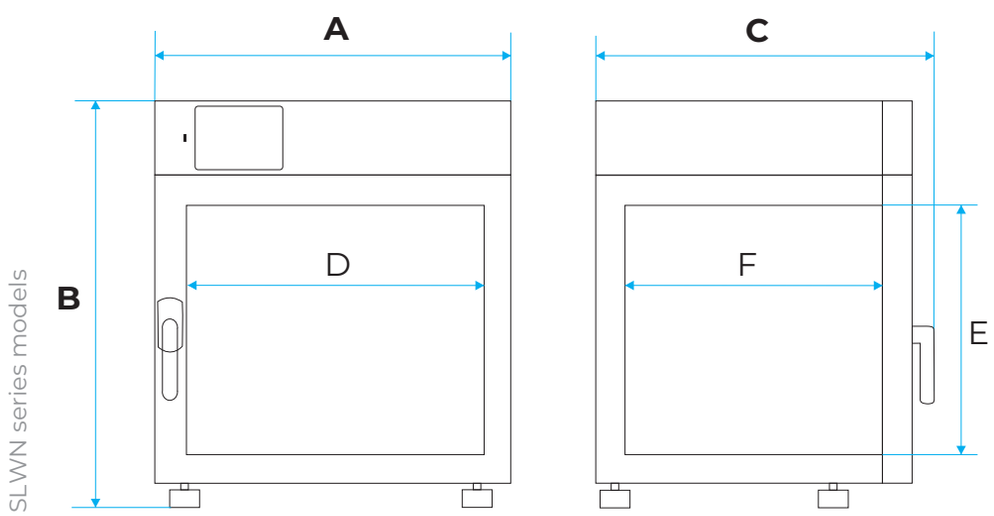
OPTIONS & **ACCESSORIES** (icon description see pages 108-116)

DIMENSIONS DRAWINGS & DATA

All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

Possibility of changing the shel position:
- SLWN 15 – every 50 mm
- SLWN 32 – every 60 mm
- SLWN 53/115/240 – every 70 mm



		SLWN1 15 SLWN2 15	SLWN1 32 SLWN2 32	SLWN1 53 SLWN2 53	SLWN1 115 SLWN2 115	SLWN1 240 SLWN2 240
overall dims [mm]	A width	510	590	590	660	820
	B height	550	640	710	850	1140
	C depth	470	520	620	710	770
internal dims [mm]	D width	320	400	400	460	600
	E height	230	320	390	540	800
	F depth	200	250	360	450	510

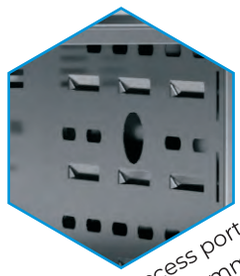
SIMPLE
DRYING OVEN

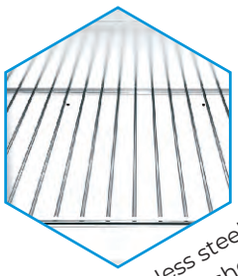
Simple in operation laboratory drying oven – convenient unit for customers who do not require advanced programming.
The equipment is based on a simple controller that allows you to set only the temperature.

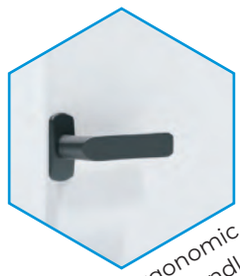
SIMPLE controller


air-flap at the back


SIMPLE drying oven SLW 115 SIMPLE


one access port (Ø30 mm) on the right wall


stainless steel wire shelf


ergonomic handle


solid door

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.polekolab.pl.

SLW 115 SIMPLE

SLN 53 SIMPLE

2 year warranty

CE

MAIN STANDARD **BENEFITS**

- temperature range: +5°C above ambient temperature... +250°C
- quality control protocol (at +105°C)
- English instruction manual
- temperature protection 1.0 class to DIN 12880
- access port (Ø30 mm) on the right wall
- stainless steel wire shelves (INOX)
- solid door
- continuous operating

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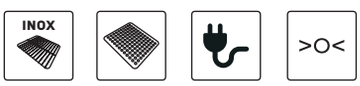
TECHNICAL **DATA**




Parameter	**SLN 53 SIMPLE**	**SLN 115 SIMPLE**	**SLW 53 SIMPLE**	**SLW 115 SIMPLE**
air convection	natural	forced	natural	forced
chamber capacity [l]	56	109	56	109
door type	solid			
temperature range	+5°C above ambient temperature ...+250°C			
temperature resolution [°C]	every 0,1			
controller	microprocessor PID, 4,3" (Smart) / 7" (Smart PRO) full colour touch screen			
interior	stainless steel to DIN 1.4016			
housing	powder coated sheet			
max shelf workload [kg]	10	10	10	10
max unit workload [kg]	40	60	40	60
nominal power [W]	1700	2500	1700	2500
weight [kg]	46	64	46	64
temperature fluctuation* at +105°C [+/- °C]	0,3	0,3	0,3	0,3
temperature variation* at +105°C [+/- °C]	2,5	2,5	1,5	1,5
time to reach set temperature [min]	99	88	19	23
energy consumption at 105°C [Wh/h]	185	247	305	301
over temperature protection	class 1.0 to DIN 12880			
power supply**	230V 50-60Hz			
shelves fitted/max	2/5	2/7	2/5	2/7
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= +/- ($T_{avg\ max}$ - $T_{avg\ min}$) / 2
** - other power supplies on request

OPTIONS & **ACCESSORIES** (icon description see pages 108-116)



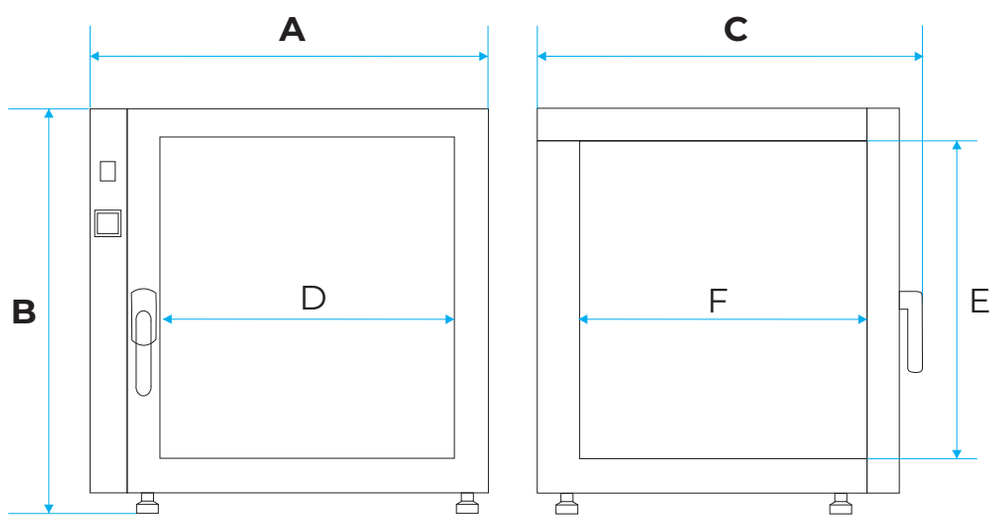
DIMENSIONS DRAWINGS & DATA

All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable

Possibiity to change the position of shelf SL 53/115 every 70 mm

SL SIMPLE series models



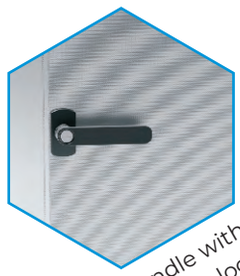
		SLN 53 SIMPLE	SLN 115 SIMPLE	SLW 53 SIMPLE	SLW 115 SIMPLE
overall dims [mm]	A width	660	720	660	720
	B height	590	730	590	730
	C depth	620	710	620	710
internal dims [mm]	D width	390	460	390	460
	E height	390	540	390	540
	F depth	350	440	350	440

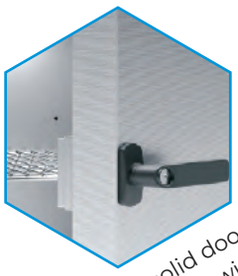
HOT-AIR STERILIZERS

have been equipped with a couple
of additional functions that protect samples.
They can sterilize at temperatures of up to 250°C

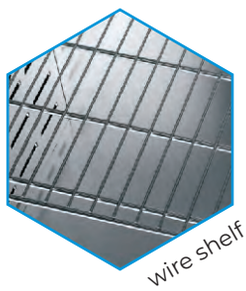
SMART controller with USB port


one access port (Ø30 mm)


handle with door lock


solid door, door with viewing window (option)


electromagnetic lock


wire shelf

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.polekolab.pl.

MAIN STANDARD **BENEFITS**

- temperature range 5°C above ambient temperature...+250°C
- quality control protocol (at +105°C)
- English instruction manual
- temperature protection class 2.0 to DIN 12880
- open door alarm
- castors in standard for models SR 400, 750, 1000
- Ø40 mm air-flap for SR 53-115 and Ø60 mm for SL 240-1000
- LAN and USB ports
- access port: Ø30 mm for models 53-1000 on the left wall
- door lock
- stainless steel wire shelves (INOX)
- solid door

AVAILABLE **VERSIONS**

- SMART
- Pass-through sterilizers

SOFTWARE (OPTIONAL)

- LabDesk for data download to a PC via LAN

ADVANTAGES OF SR HOT-AIR STERILIZERS

- pre-set sterilization programs (including mask sterilization program)
- automatic door lock during the sterilization program
- automatically closed air-flap after starting the sterilization program
- 5 user programs and 3 pre-set programs

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TECHNICAL **DATA**

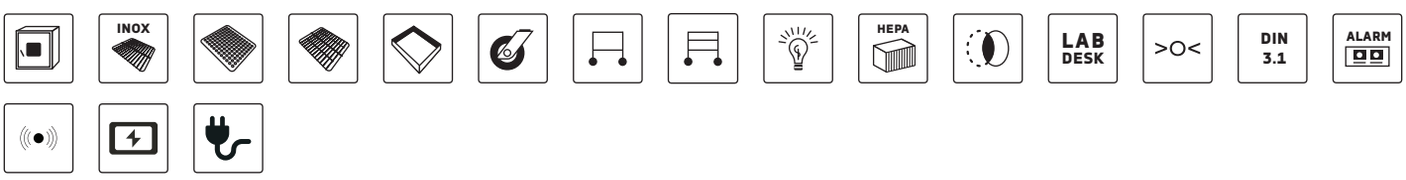





Parameter		SR 53	SR 115	SR 240	SR 400	SR 750	SR 1000
air convection		natural (SRN) / forced (SRW)			forced (SRW)		
chamber capacity [l]		56	112	245	424	749	1005
door type		solid/door with viewing window (option)					
temperature range		+5°C above ambient temperature ...+250°C					
temperature resolution [°C]		every 0,1					
controller		microprocessor PID, 4,3" full colour touch screen					
interior		acid-proof stainless steel to DIN 1.4301					
housing	-	powder coated sheet					
	IG	stainless steel linen finish					
max shelf workload[2] [kg]	-	25	25	25	25	-	-
	PW[1] version	50	50	100	100	100	100
max unit workload [kg]		40	60	90	120	140	300
nominal power [W]		1700	2500	3100	4000	5500	5500
weight [kg]		48	65	114	162	260	307
castors		option			yes		
temperature fluctuation* at +105°C [+/- °C]	SRN	0,4	0,4	0,6	-	-	-
	SRW	0,2	0,2	0,3	0,4	0,6	0,6
temperature variation* at +105°C [+/- °C]	SRN	2,0	2,2	2,5	-	-	-
	SRW	2,0	2,0	2,0	2,5	2,5	3,0
over temperature protection		class 2.0 to DIN 12880 / class 3.1 (option)					
power supply**		230V 50-60Hz			400V 50-60Hz		
shelves fitted/max		2 / 5	2 / 7	3 / 10	3 / 14	5 / 16	6 / 22
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= +/- (T avg max - T avg min) / 2
** - other power supplies on request
1 - reinforced shelf
2 - on uniformly loaded surface

OPTIONS & **ACCESSORIES** (icon description see pages 108-116)

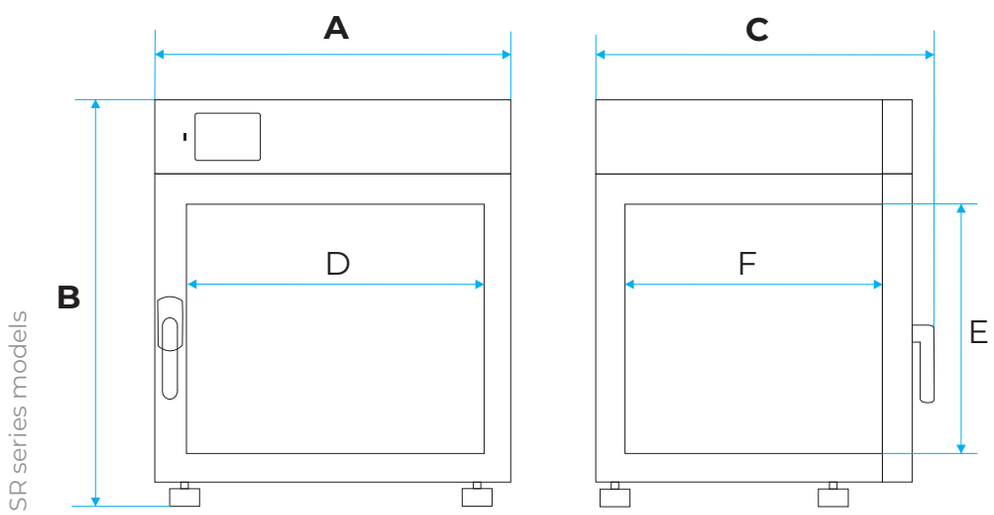


DIMENSIONS DRAWINGS & DATA

All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

Possibility to change the position of shelf:
SLWN 53/115/240/400/750/1000 – every 70 mm



		SR 53	SR 115	SR 240	SR 400	SR 750	SR 1000
overall dims [mm]	A width	590	660	820	1020	1260	1260
	B height	710	850	1140	1430	1600	2000
	C depth	620	710	770	770	880	880
internal dims [mm]	D width	400	460	600	800	1040	1040
	E height	390	540	800	1040	1200	1610
	F depth	360	450	510	510	600	600

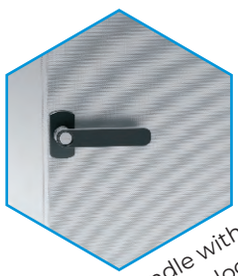
PASS-THROUGH STERILIZERS

are made on the basis of standard laboratory sterilizers. They are used on production lines as well for sterilization between clean and dirty areas.

SMART controller with USB port

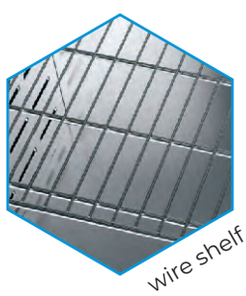

one access port (Ø30 mm)

Pass-through sterilizer SRWP 240 SMART


handle with door lock


solid door, front and back


sterilization status indicator lights


wire shelf

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.polekolab.pl.

MAIN STANDARD **BENEFITS**

- temperature range: +5°C above ambient temperature... +250°C
- quality control protocol (at +105°C)
- English instruction manual
- temperature protection class 2.0 (Smart), 3.1 (option) to DIN 12880
- open door alarm
- LAN and USB ports
- access port: Ø30 mm on the left wall
- door lock
- stainless steel wire shelves (INOX)
- solid door on both sides
- pre-set sterilization programs
- automatic door lock during the sterilization program
- automatically closed air-flap after starting the sterilization program
- 5 user programs and 3 pre-set programs

AVAILABLE **VERSIONS**

- SMART

SOFTWARE (OPTIONAL)

- LabDesk for data download to a PC via LAN

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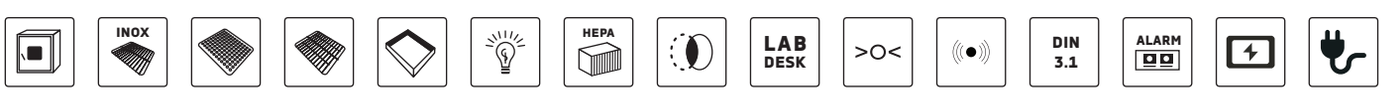
TECHNICAL **DATA**


Parameter	SRWP 115	SRWP 240
air convection	forced	forced
chamber capacity [l]	105	240
door type	solid	
temperature range	+5°C above ambient temperature ...+250°C	
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 1.4301	
housing	powder coated sheet	
max shelf workload [kg]	10	10
PW version [kg]	50	100
max unit worklad [kg]	60	90
nominal power [W]	2500	3000
weight [kg]	65	126
over temperature protection	class 2.0 to DIN 12880 / class 3.1 (option)	
power supply**	230V 50-60Hz	
shelves fitted/max	2 / 7	3 / 10
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= +/- (T avg max - T avg min) / 2
** - other power supplies on request

OPTIONS & **ACCESSORIES** (icon description see pages 108-116)

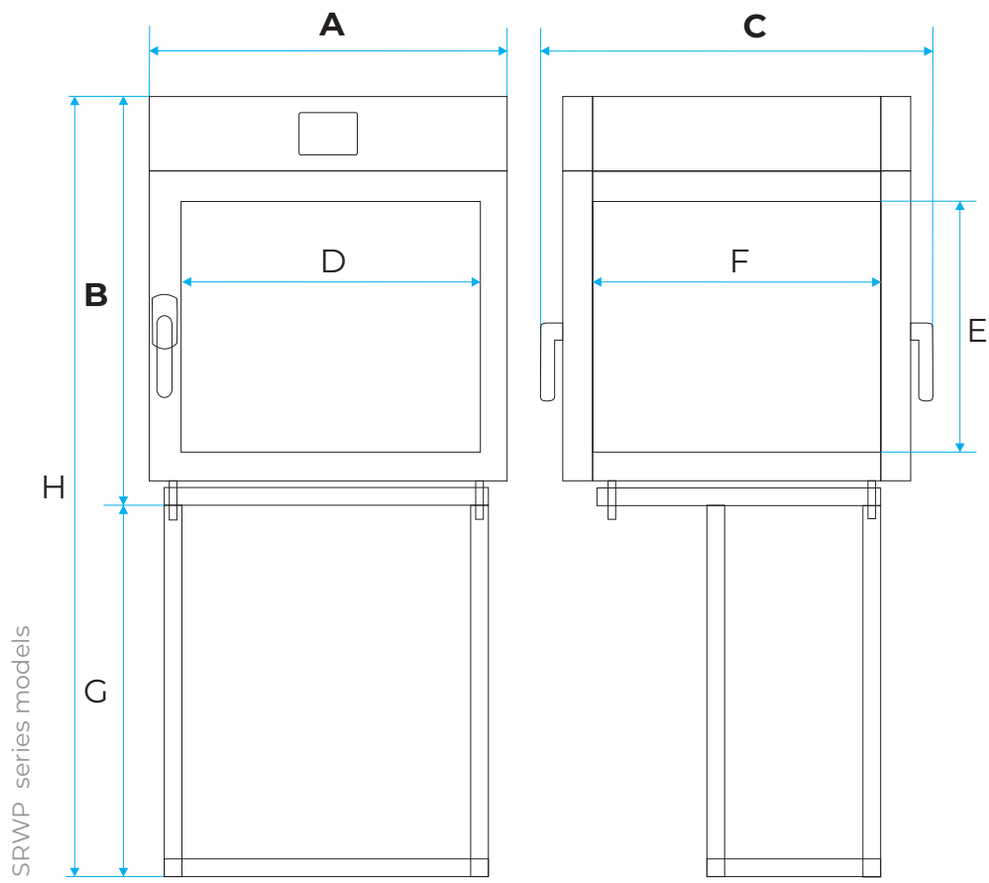


DIMENSIONS DRAWINGS & DATA

All dimensions refer to standard units
(without optional accessories)

Width does not include the 20 mm of rubber plug

Possibility to change the position of shelf: SRWP 115/240 - every 70mm



		SRWP 115	SRWP 240
overall dims [mm]	A width	700	840
	B height	910	1170
	C depth	700	770
	G height	595	335
	H height	1500	1505
internal dims [mm]	D width	460	600
	E height	530	800
	F depth	430	500

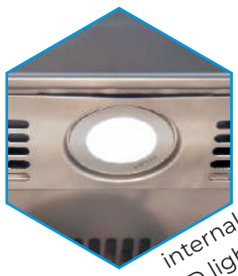
CALDERA

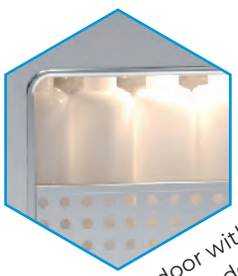
is a warming chamber
for fluids and blankets

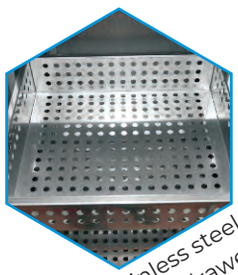

door lock

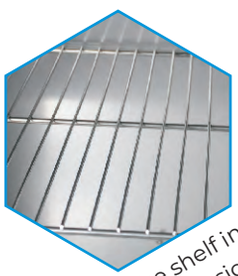

service key

CALDERA 250


internal
LED light


door with
viewing window


stainless steel
telescopic drawer


wire shelf in
TERM version

ACCREDITED ISO/IEC 17025 CALIBRATION

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.polekolab.pl.

2 year warranty

CE

FUNCTIONALITY

- capacities: 70, 150, 200, 250, 300l – dimensions and load examples are specified in the table with technical data
- fast heating-up of the load due to forced air convection
- polished stainless steel housing, stainless steel interior
- bright, energy saving LED internal lighting and tempered glass of the door assure an excellent visibility of the interior
- stainless steel telescopic drawers to prevent the load falling or stainless steel wire shelves in TERM version
- optional stainless steel table

SAFETY

- safe temperature range: +35°C ... +42°C or +35°C ... +70°C in TERM version, temperature regulation every 1°C
- visual and audible alarm in case set temperature is exceeded for 2°C
- independent temperature protection over 45°C (over temperature protection); 3.1 class according to DIN 12880
- open door alarm (the alarm goes off in case the door is opened for over 1 minute)
- LED display
- door lock – load protection against unauthorized use
- service settings protection against unauthorized use
- internal memory for data storage

CALDERA was designed according to PN-EN 60601-1-2:2002 EMC – Medical norm for electrical equipment (it does not interrupt the work of the other medical instruments).

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TECHNICAL **DATA**

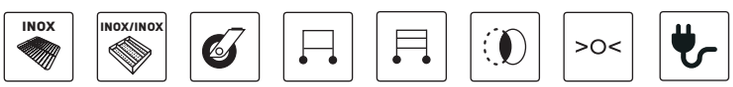




Parametr	CALDERA 70	CALDERA 150	CALDERA 200	CALDERA 250	CALDERA 300
air convection	forced				
chamber capacity[1] [l]	70	150	200	250	300
door type	door with viewing window				
temperature range [°C]	+35...+42 (**+35...+70 in TERM version**)				
temperature resolution [°C]	every 1,0				
controller	microprocessor with external LED display				
interior	acid-proof stainless steel to DIN 1.4301				
housing	polished stainless steel				
examples of fluid bags configurations bottle x bottle capacity [l] (per drawer)	20 x 1 or 30 x 0,5 or 4 x 3				
alarm	visual and sound after exceeding the set temperature by 2°C				
lighting	energy-saving LED chamber lighting				
maximum number of drawers (without shelves)	1	2	2	3	4
maximum drawer load [kg]	20	20	20	20	20
max unit workload [kg]	20	40	40	60	80
nominal power [W]	250	250	250	250	250
weight [kg]	32	54	59	69	75
castors	option				
temperature fluctuation* at +37°C [+/- °C]	0,3	0,3	0,3	0,3	0,3
temperature variation* at +37°C [+/- °C]	0,5	0,5	0,5	0,5	0,5
time required to achieve 37°C of the load, at set 37°C (40% load)	4,5 ... 6 h				
time required to achieve 37°C of the load, at set 37°C (70% load)	10 ... 15 h				
over temperature protection	temperature protection over 45°C (class 3.1 to DIN 12880)				
power supply**	230V 50-60Hz				
number of shelves in TERM version	1	2	2	3	4
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= +/- (T avg max - T avg min) / 2
** - other power supplies on request
1 - working capacity of chamber can be smaller

OPTIONS & **ACCESSORIES** (icon description see pages 108-116)



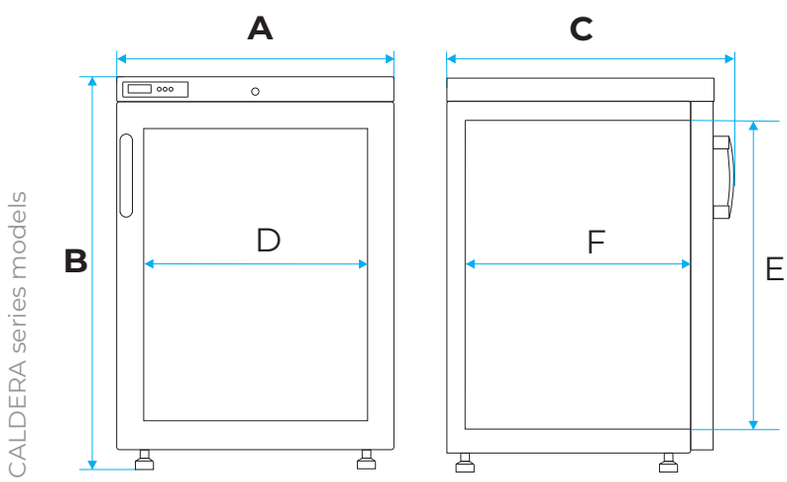
DIMENSIONS DRAWINGS & DATA

All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

Possibility to change the position of shelf in TERM version:
- Caldera 70 – every 80 mm
- Caldera 150 – every 145 mm
- Caldera 200 – every 193 mm
- Caldera 250/300 – every 163 mm

There is no option to change the position of the drawer.



		CALDERA 70	CALDERA 150	CALDERA 200	CALDERA 250	CALDERA 300
overall dims [mm]	A width	550	600	600	600	600
	B height	640	840	1040	1240	1440
	C depth	530	630	630	630	630
internal dims [mm]	D width	450	490	490	490	490
	E height	410	650	850	1050	1250
	F depth	380	480	480	480	480

05

CLIMATIC AND PHYTOTRON CHAMBERS

Climatic chambers KK
Climatic chambers KKS
Constans Climatic chambers KKP
Climatic chambers with phytotron system FIT

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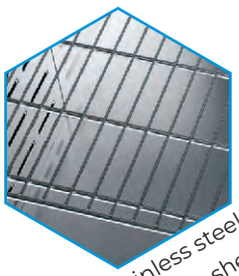
CLIMATIC CHAMBERS

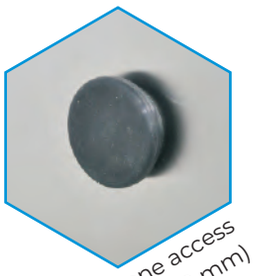
with an ultrasonic humidifier
can control temperature and humidity
to create a stable environment

SMART PRO controller with USB port


stainless steel wire shelf


door lock

Climatic chamber KK 1450 IG SMART PRO


one access port (Ø30 mm)


double door (external solid, internal glass)


ultrasonic humidifier

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2 year warranty

CE

MAIN STANDARD **BENEFITS**

- temperature range: 0...+60°C
- 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
- automatic defrosting function
- deionized water container 20l
- shelf for deionised water container
- cuvette with pump for waste water
- door lock
- stainless steel wire shelves (INOX)
- double door (external solid, internal glass)
- Wi-Fi
- LAN cable
- LabDesk
- LabDesk Cloud

AVAILABLE **VERSIONS**

- SMART PRO
- KK FIT with phytotron system

SOFTWARE

- LabDesk for data download to a PC via LAN or Wi-Fi

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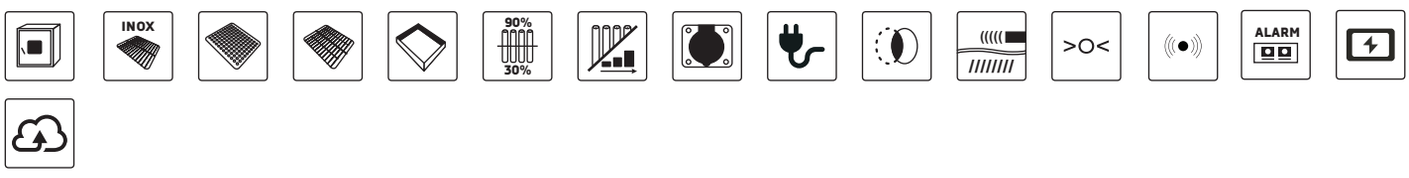
TECHNICAL **DATA**

Parameter		KK 115	KK 240	KK 350	KK 400	KK 500	KK 700	KK 750	KK 1200	KK 1450
air convection		forced								
chamber capacity [l]		109	240	322	416	470	600	749	1330	1485
working capacity [l]		109	240	283	416	392	485	749	1132	1264
door type		double (external solid, internal glass) / external glass (option)								
temperature range [°C]		0...+60								
temperature resolution [°C]		every 0,1								
relative humidity range [%]		30...90 (see working temperature and humidity chart for details on page 101)								
humidity resolution [%]		every 1								
controller		microprocessor PID with external 7" full colour touch screen								
interior		acid-proof stainless steel to DIN 1.4301								
housing	-	powder coated sheet								
	IG	stainless steel linen finish								
max shelf workload[1] [kg]	-	10	10	10	10	20	30	-	30	30
	PW[2] version	50	100	100	100	100	100	100	100	100
max unit workload [kg]		60	90	100	120	100	150	140	300	300
nominal power [W]		1350	1550	1850	2250	1850	1850	2850	3450	3450
weight [kg]		90	170	125	185	130	170	275	220	230
castors		yes								
temperature variation* at +25°C iand 60%rH [+/- °C]		2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0
relative humidity variation* at +25°C and 60%rH [+/- %rH]		5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0
temperature protection		class 3.3 to DIN 12880								
power supply**		230 V 50-60Hz								
shelves fitted/max		2 / 7	3 / 10	3 / 11	3 / 14	3 / 11	3 / 11	5 / 16	2 x 3 / 11	2 x 3 / 11
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)
* - variation (K) calculated for chamber as: K= +/- (T avg max - T avg min) / 2
** - other power supplies on request
1 - on uniformly loaded surface
2 - reinforced shelf

OPTIONS & **ACCESSORIES** (icon description see pages 108-116)

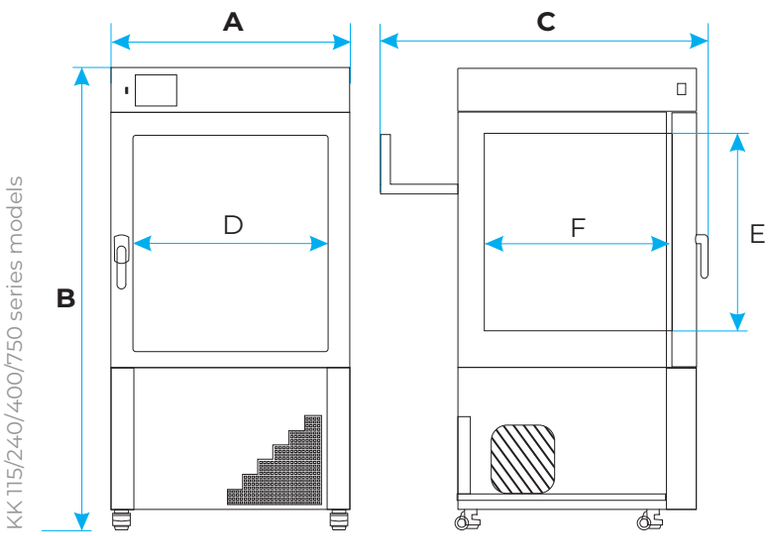


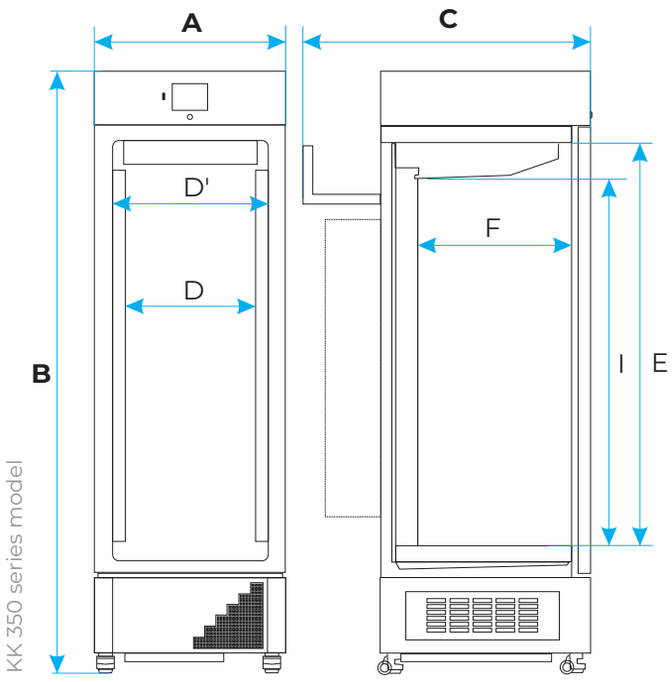
DIMENSIONS DRAWINGS & DATA

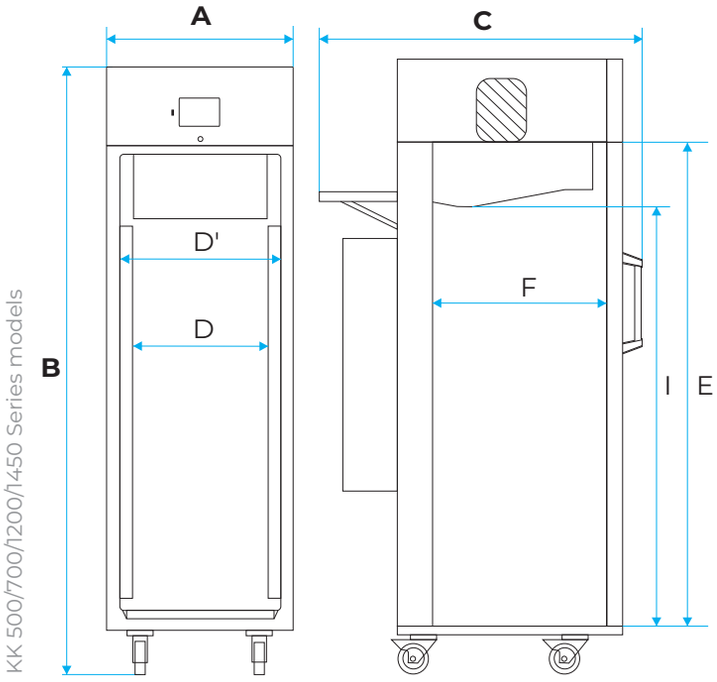
All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

Possibility of changing the shelf position:
- KK 115/240/400/750 – every 70 mm,
- KK 350/500/700/1200/1450 – every 56 mm





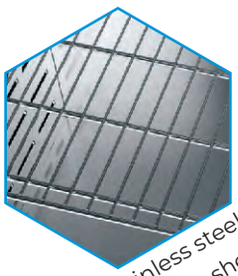


		KK 115	KK 240	KK 350	KK 400	KK 500	KK 700	KK 750	KK 1200	KK 1450
overall dims [mm]	A width	670	830	660	1030	660	750	1270	1480	1460
	B height	1340	1600	2000	1850	1990	1990	2010	1990	1940
	C depth	950	1010	990	1010	1080	1140	1120	1130	1240
internal dims [mm]	D width	460	600	470	800	470	530	1040	1270	1270
	D' width	-	-	510	-	510	600	-	1330	1340
	E height	530	800	1340	1040	1510	1510	1200	1510	1460
	F depth	440	500	500	500	600	650	600	650	750
	I height	-	-	1180	-	1360	1350	-	1330	1270

CONSTANT CLIMATIC CHAMBERS

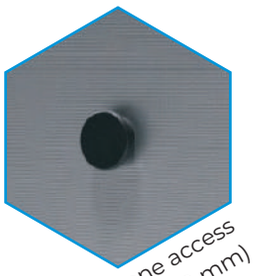
with Peltier cooling system

SMART PRO controller with USB port



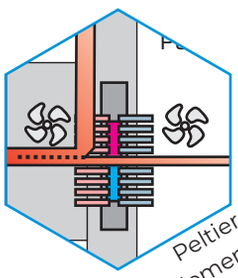
stainless steel wire shelf

handle with door lock



one access port (Ø30 mm)

double door (external solid, internal glass)



Peltier element

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.polekolab.pl.

2 year warranty

CE

MAIN STANDARD **BENEFITS**

- temperature range:
  - without humidity: 0...+70 (max 20°C below ambient temp.)
  - with humidity: +5...+70 (max 20°C below ambient temp.)
- Peltier element cooling system (see page 21)
- 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
- door lock
- stainless steel wire shelves (INOX)
- double door (external solid, internal glass)
- external 6 L water tank (on the left or right side of the unit)
- Wi-Fi
- LAN cable
- LabDesk
- LabDesk Cloud

AVAILABLE **VERSIONS**

- SMART PRO
- KKP FIT with phytotron system (see page 93)

SOFTWARE

- LabDesk for data download to a PC via LAN or Wi-Fi

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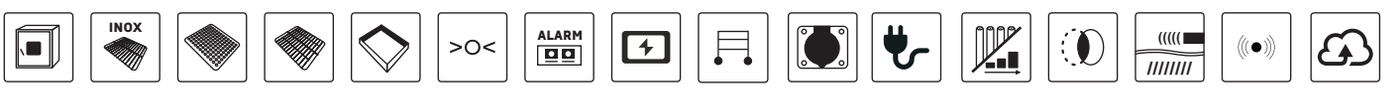
TECHNICAL **DATA**


Parameter		KKP 240	KKP 750
air convection		forced	
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	
interior		stainless steel to DIN 1.4301	
housing	-	powder coated sheet	
	IG	stainless steel (linen finished)	
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]		±0,2	±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[1] [kg]		25	100
max unit workload [kg]		90	140
nominal power [W]		2300 W	2700 W
weight [kg]		117	233
castors		yes	
temperature protection		class 3.3 to DIN 12880	
power supply**		230V 50Hz	
shelves (fitted/max)		3/10	3/16
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= +/- (T avg max - T avg min) / 2
** - other power supplies on request
1 - on uniformly loaded surface

OPTIONS & **ACCESSORIES** (icon description see pages 108-116)



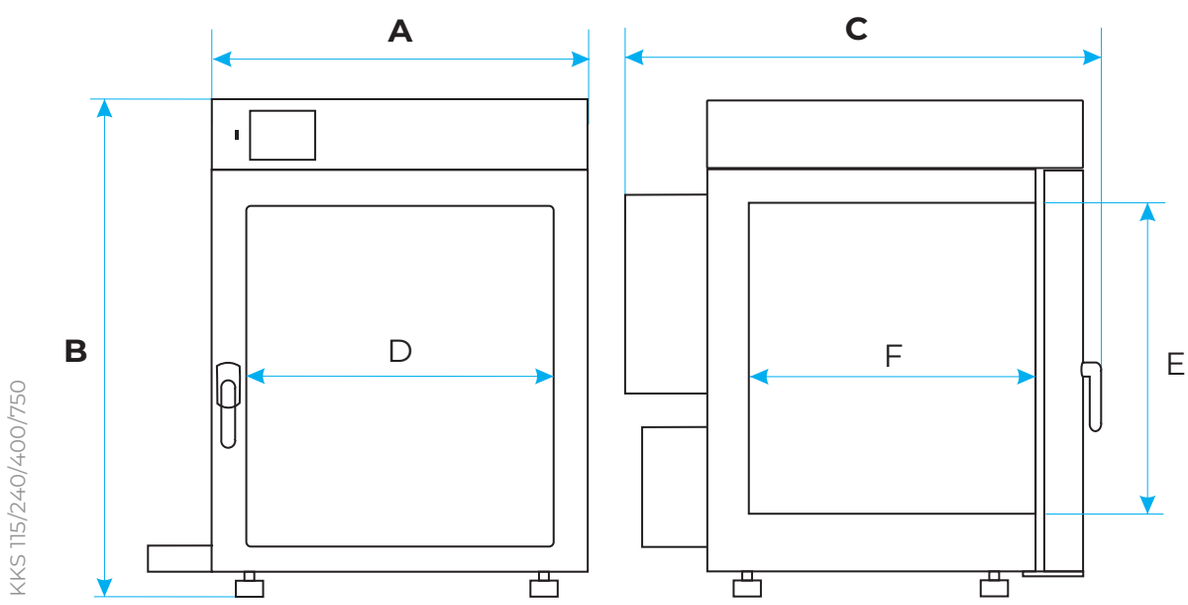
DIMENSIONS DRAWINGS & DATA

All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

Width doesn't include shelve for water tank - 140mm

Possibility of changing shelf position - KKP 240/750 – every 70 mm

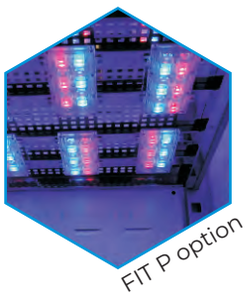


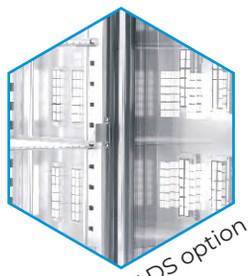
		KKP 240	KKP 750
overall dims [mm]	A width	960	1400
	B height	1140	1580
	C depth	840	1040
internal dims [mm]	D width	600	1040
	E height	800	1200
	F depth	510	600

PHYTOTRON CHAMBERS

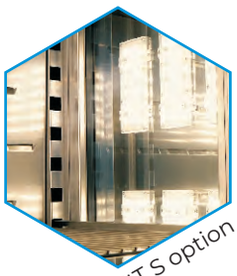
can control temperature, humidity and light
to create a stable environment

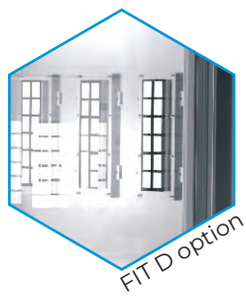
SMART PRO controller with USB port

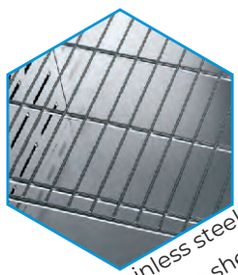

FIT P option


FIT DS option

Phytotron chamber KK 700 FIT DS SMART PRO


FIT S option


FIT D option


stainless steel wire shelf

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.polekolab.pl.

2 year warranty

CE

MAIN STANDARD **BENEFITS**

- temperature range: 0...+60°C / +10...+50°C (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
- container for deionised water 20l (for KK), 6l (KKP)
- shelf for deionised water container (KK)
- cuvette with pump for waste water (KK)
- door lock
- stainless steel wire shelves (INOX)
- double door (external solid, internal glass)
- phytotron system FIT P - as over-shelf panels, FIT in door or FIT DS in door and side walls (detailed information see page 17-20)
- Wi-Fi
- LAN cable
- LabDesk
- LabDesk Cloud

AVAILABLE **VERSIONS**

- SMART PRO
- KK/KKP FIT P phytotron system as over-shelf panels
- KK FIT D phytotron system in door
- KK FIT S phytotron system in side walls
- KK FIT DS phytotron system in door and side walls

(detailed information, see pages 17-20)

SOFTWARE

- LabDesk for data download to a PC via LAN or Wi-Fi

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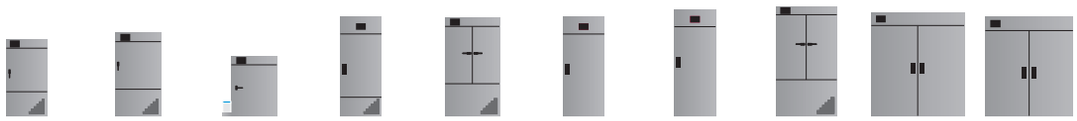
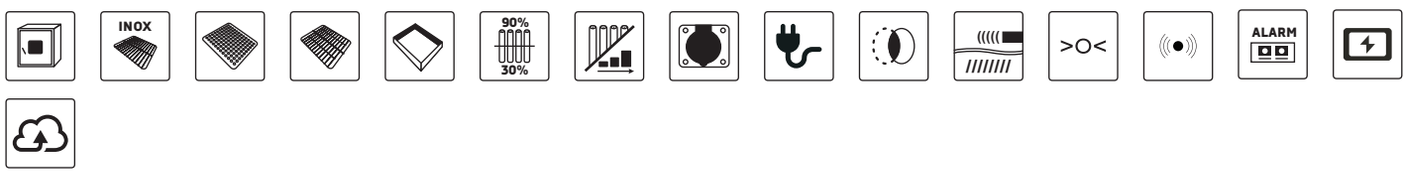
TECHNICAL **DATA**



Parameter		KK 115 FIT	KK 240 FIT	KKP 240	KK 350 FIT	KK 400 FIT	KK 500 FIT	KK 700 FIT	KK 750 FIT	KK 1200 FIT	KK 1450 FIT
air convection		forced									
chamber capacity [l]		109	240	245	322	416	470	600	749	1330	1485
working capacity [l]		109	240	245	283	416	392	485	749	1132	1264
door type		double (external solid, internal glass) / external glass (option)									
temperature range[1] [°C]	light OFF	0...+60		0...+70	0...+60						
	light ON	+10...+50									
temperature resolution [°C]		every 0,1									
relative humidity range[2] [%]		30...90		10...90	30...90						
humidity resolution [%]		every 1									
controller		microprocessor PID with external 7" full colour touch screen									
interior		acid-proof stainless steel to DIN 1.4301									
housing	-	powder coated sheet									
	IG	stainless steel linen finish									
max shelf workload[3] [kg]	-	10	10	25	10	10	20	30	-	30	30
	PW[4] version	50	100	-	100	100	100	100	100	100	100
max unit workload [kg]		60	90	90	100	120	100	150	140	300	300
nominal power [W]		1350	1550	2300	1850	2250	1850	1850	2850	3450	3450
weight [kg]		90	170	117	125	185	130	170	275	220	230
castors		yes									
temperature variation* at +25°C iand 60%rH [+/- °C]		2,0	2,0	0,2	2,0	2,0	2,0	2,0	2,0	2,0	2,0
relative humidity variation* at +25°C and 60%rH [+/- %rH]		5,0	5,0	0,8	5,0	5,0	5,0	5,0	5,0	5,0	5,0
temperature protection		class 3.3 to DIN 12880									
power supply**		230 V 50-60Hz									
shelves fitted/max		2 / 7	3 / 10	3 / 10	3 / 11	3 / 14	3 / 11	3 / 11	5 / 16	2 x 3 / 11	2 x 3 / 11
refrigerant		R1234ze GWP=1	R290 GWP=3	Peltier element	R290 / GWP=3						
warranty		24 months									
manufacturer		POL-EKO									

all the above technical data refer to standard units (without optional accessories)
* - variation (K) calculated for chamber as: K= +/- (T avg max - T avg min) / 2
** - other power supplies on request
1 - for KKP max 20°C below ambient temperature without humidity, with humidity +5...+70 (max 20°C below ambient temperature) working temperature range with humidity and light (10°C below ambient temperature but not less than +10°C)
2 - see working temperature and humidity chart for details on page 101
3 - on uniformly loaded surface
4 - reinforced shelf

OPTIONS & **ACCESSORIES** (icon description see pages 108-116)

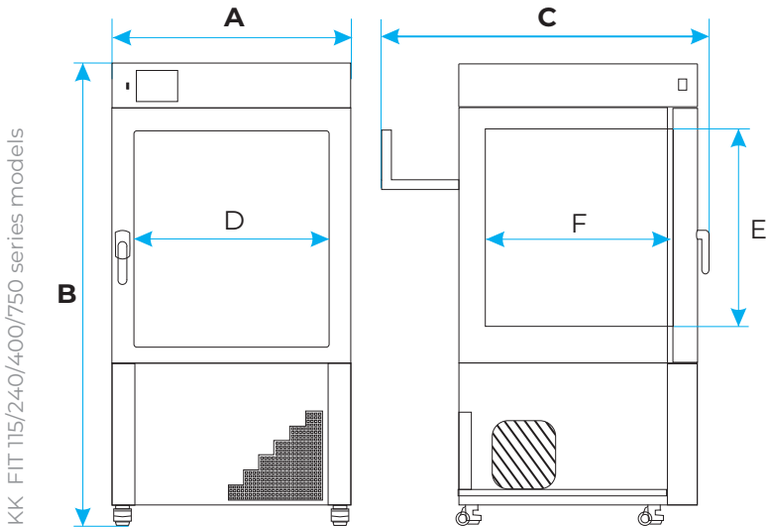


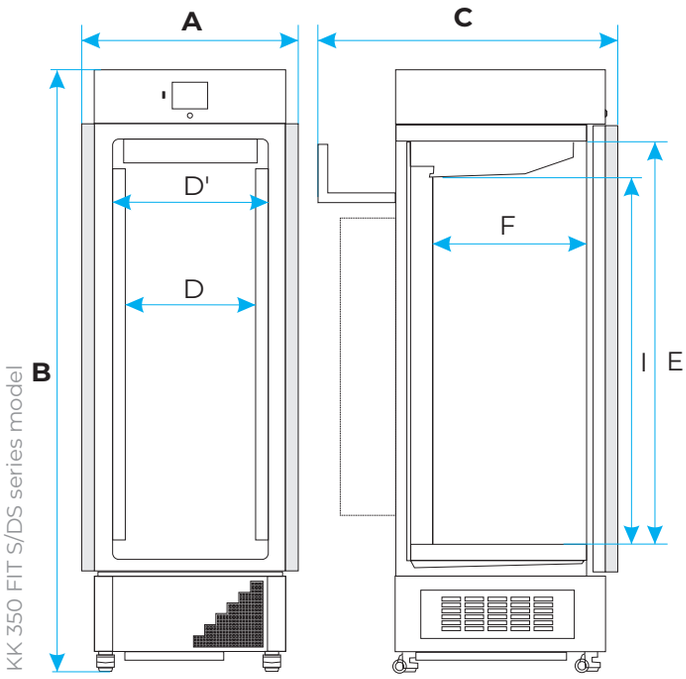
DIMENSIONS DRAWINGS & DATA

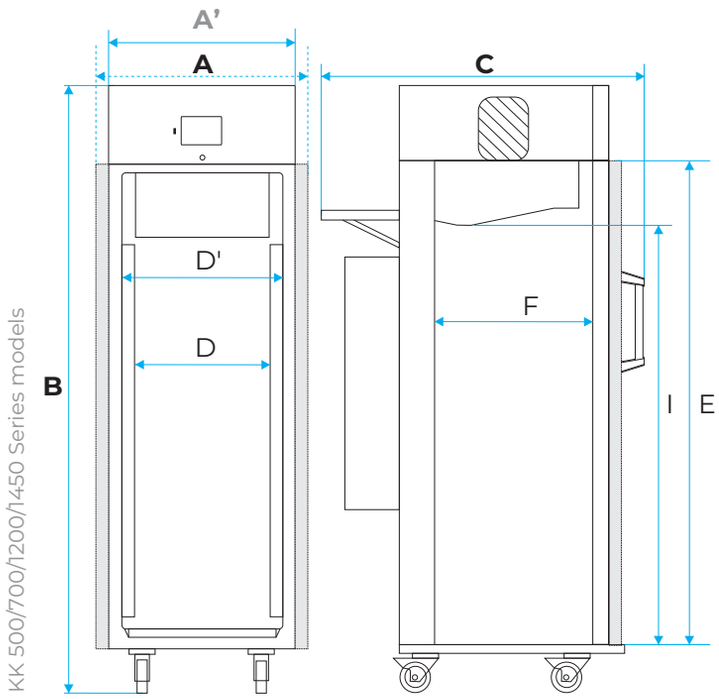
All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

Possibility of changing the shelf position:
- KK 115/240/400/750 – every 70 mm
- KKP 240 - every 70 mm
- KK 350/500/700/1200/1450 – every 56 mm





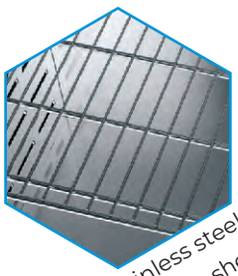


		KK 115 FIT	KK 240 FIT	KKP 240 FIT	KK 350 FIT	KK 400 FIT	KK 500 FIT	KK 700 FIT	KK 750 FIT	KK 1200 FIT	KK 1450 FIT
overall dims [mm] **FIT P models**	**A'** width	660	820	960	-	1020	640	730	1260	1470	1450
	B height	1340	1600	1140	-	1850	1990	1990	2000	1990	1940
	C depth	960	1000	840	-	1000	1080	1140	1140	1060	1170
overall dims [mm] **FIT D models**	A width	660	820	-	-	-	-	-	1260	-	-
	B height	1340	1600	-	-	-	-	-	2000	-	-
	C depth	980	1020	-	-	-	-	-	1160	-	-
overall dims [mm] **FIT S models**	A width	-	-	-	-	-	710	810	-	-	-
	B height	-	-	-	-	-	1990	2040	-	-	-
	C depth	-	-	-	-	-	1080	1140	-	-	-
overall dims [mm] **FIT DS models**	A width	-	-	-	710	-	710	810	-	-	-
	B height	-	-	-	2000	-	1990	2040	-	-	-
	C depth	-	-	-	1010	-	1130	1180	-	-	-
internal dims [mm]	D width	460	600	600	470	800	470	530	1040	1270	1270
	D' width	-	-	-	510	-	510	600	-	1330	1340
	E height	530	800	800	1340	1040	1510	1510	1200	1510	1460
	F depth	440	500	510	500	500	600	650	600	650	750
	I height	-	-	-	1180	-	1360	1350	-	1330	1270

CLIMATIC CHAMBERS

with a steam humidifier
can control temperature, humidity
to create a stable environment

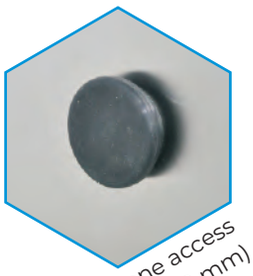
SMART PRO controller with USB port



stainless steel wire shelf

handle with door lock

Climatic chamber KKS 115 IG SMART PRO



one access port (Ø30 mm)

double door (external solid, internal glass)

steam humidifier

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2 year warranty

CE

MAIN STANDARD **BENEFITS**

- temperature range: 0...+100°C
- 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
- automatic defrosting function
- reverse osmosis system
- door lock
- stainless steel wire shelves (INOX)
- double door (external solid, internal glass)
- Wi-Fi
- LAN cable
- LabDesk
- LabDesk Cloud

AVAILABLE **VERSIONS**

- SMART PRO

SOFTWARE

- LabDesk for data download to a PC via LAN or Wi-Fi

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TECHNICAL **DATA**




Parameter		KKS 115	KKS 240	KKS 400	KKS 750
air convection		forced			
chamber capacity [l]		109	240	416	749
working capacity [l]		109	240	416	749
door type		double (external solid, internal glass) / external glass (option)			
temperature range [°C]		0...+100			
temperature resolution [°C]		every 0,1			
relative humidity range [%]		10...90 (see working temperature and humidity chart for details on page 101)			
humidity resolution [%]		every 1			
controller		microprocessor PID with external 7" full colour touch screen			
interior		acid-proof stainless steel to DIN 1.4301			
housing	-	powder coated sheet			
	IG	stainless steel linen finish			
max shelf workload[1] [kg]	-	10	10	10	-
	PW[2] version	50	100	100	100
max unit workload [kg]		60	90	120	140
nominal power [W]		2900	3250	3650	4250
weight [kg]		122	140	185	275
castors		yes			
temperature variation* at +25°C and 60%rH [+/- °C]		2,0	2,0	2,0	2,0
relative humidity variation* at +25°C and 60%rH [+/- %rH]		5,0	5,0	5,0	5,0
temperature protection		class 3.3 to DIN 12880			
power supply**		230V 50-60Hz		400V 50-60Hz	
shelves fitted/max		2 / 7	3 / 10	3 / 14	5 / 16
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= +/- ($T_{avg\ max}$ - $T_{avg\ min}$) / 2
** - other power supplies on request
1 - on uniformly loaded surface
2 - reinforced shelf

OPTIONS & **ACCESSORIES** (icon description see pages 118-116)

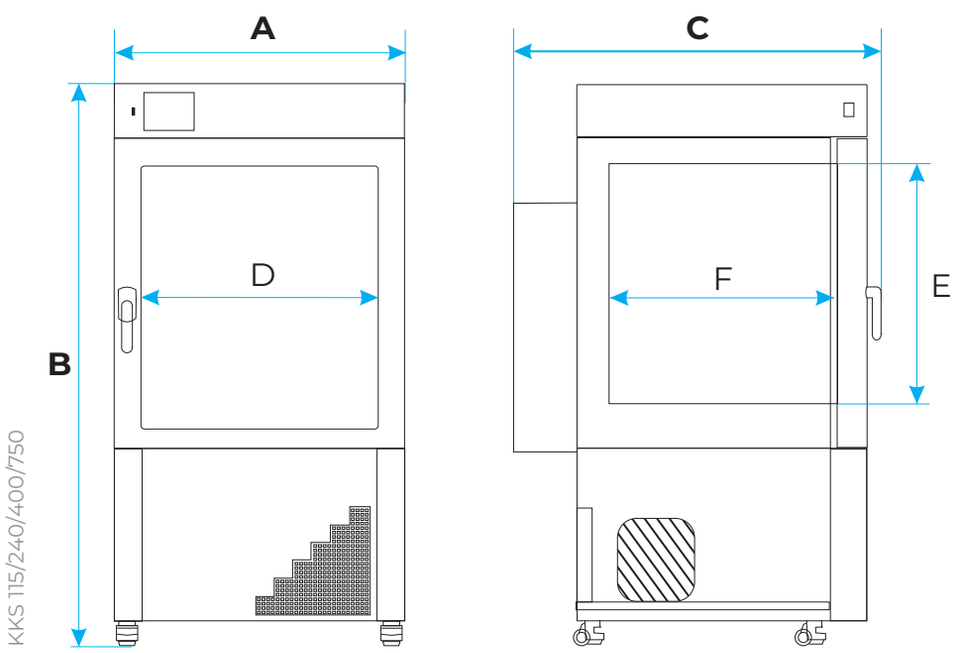
DIMENSIONS DRAWINGS & DATA

All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

External dimensions of the unit do not include
the reverse osmosis system (14 kg).

Possibility of changing the shelf position KKS 115/240/400/750 – every 70 mm



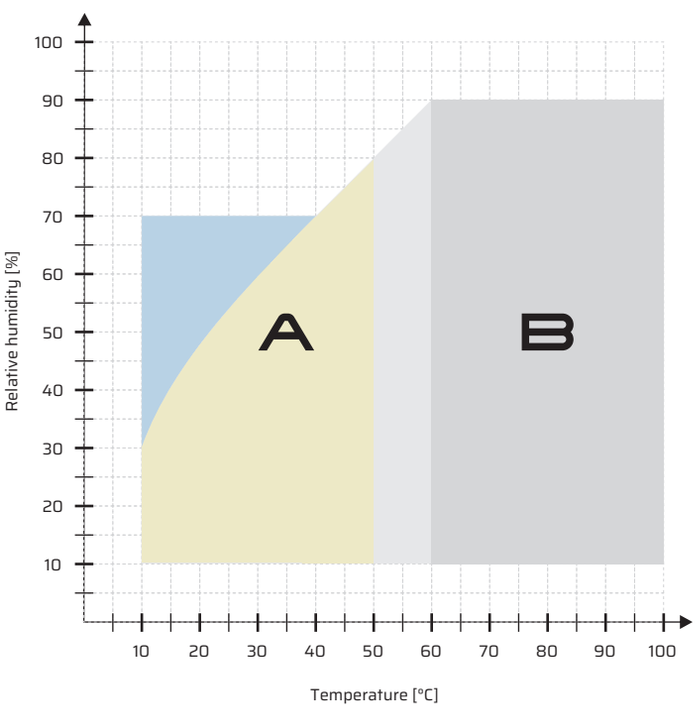
		KKS 115	KKS 240	KKS 400	KKS 750
overall dims [mm]	A width	670	830	1030	1270
	B height	1340	1600	1850	2010
	C depth	820	880	880	990
internal dims [mm]	D width	460	600	800	1040
	E height	530	800	1040	1200
	F depth	440	500	500	600

COMPARISON TABLE OF CLIMATE CHAMBERS

Parameter	Climatic chamber KK with ultrasonic humidifier	Constant Climatic Chambers KKP with Peltier cooling system	Climatic chamber KKS with steam humidifier
temperature range	0°C... +60°C	0°C... +70°C +5°C...+70°C (with humidity) (max 20°C below ambient temperature)	0°C... +100°C
temperature range FIT	0°C... +60°C (+10°C...+50°C with light on)	0°C... +70°C +10°C...+50°C (with light on and humidity) (10°C below ambient temp. not less than +10°C)	FIT not available
relative humidity range	30...90%	10...90%	10...90%
water supply (conductivity)	deionized (<1 µS/cm)	deionized (<1 µS/cm)	tap water (125-1250 µS/cm)
water source	- deionized water container (included) 20l - internal deionized water network - deionizer	deionized water container (included) 6l	water supply system
outflow	drain system	drain system	drain system
humidifier	ultrasonic	steam	steam
power supply	230V 50-60Hz	230V 50-60Hz	230V 50-60Hz, 400V 50-60Hz

TEMPERATURE-HUMIDITY RANGE (OVERVIEW DRAWINGS)

KK / KKS / KK FIT

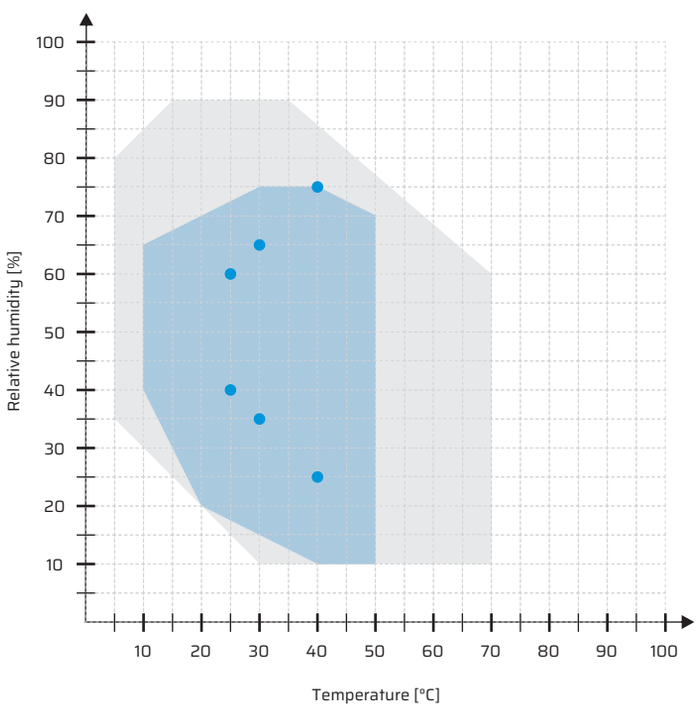


KK: field A; **KKS**: field A+B

short-term work area (max 24h)

KK FIT

KKP / KKP 240 FIT



without light

with two WHITE LED over-shelves panels set to 100%:

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/35 ±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 ±25%RH	6 months	minimum three time points

06

CO_2 INCUBATORS

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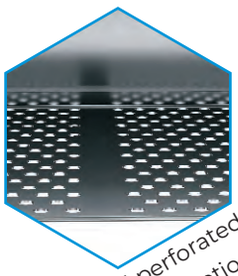
CO_2 Incubators ILC

CO_2 INCUBATORS

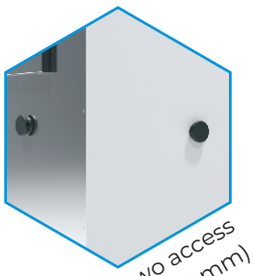
offers optimum growth conditions for cell cultures. Very precise temperature control, optimal humidity and CO_2 concentration are undeniable advantages of this product

SMART PRO controller with USB port



reinforced perforated shelf (option)

handle with door lock



two access ports (Ø30 mm)

stacking adaptor (option)

water pan

ACCREDITED ISO/IEC 17025 CALIBRATION

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.polekolab.pl.

ILC 180 SMART PRO

ILC 260 SMART PRO

2 year warranty

CE

MAIN STANDARD **BENEFITS**

- temperature range +5°C...+50°C
- quality control certificate (at +37°C, 5% CO_2)
- English instruction manual
- temperature protection class 3.2 to DIN 12880
- open door sensor & open door alarm
- LAN and USB ports
- height adjustable feets
- two access ports (Ø30 mm) on the left wall and on the rear, both secured with silicone plugs
- water pan to provide optimal humidity
- door lock
- perforated shelves and rack for them to optimal shelf positioning
- silicone gasket
- magnetic handle for ergonomic internal door opening
- main power switch in housing prevents unintentional switch off
- CO_2 gas-mixing jet with Venturi effect to ensure quicker atmosphere mixing and more homogeneous distribution
- multiple temperature sensors for accurate measurement
- Wi-Fi
- LAN cable
- LabDesk & LabDesk Cloud

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 CO_2 sensor
- Inner glass door for sample viewing without changing the conditions in the chamber
- No hidden spaces

SOFTWARE

- LabDesk for data download to a PC via LAN or Wi-Fi

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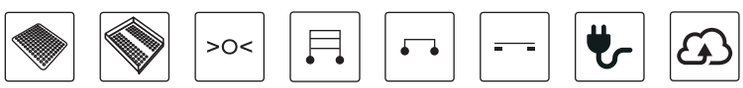
TECHNICAL **DATA**


Parametr	ILC 180	ILC 260
air convection	natural (fam less)	
chamber capacity[1] [l]	182	262
working capacity[1] [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[%]	0-20	
CO_2 resolution [%]	every 0,1	
CO_2 measurement	IR	
controller	microprocessor with a large 7" full colour touch screen	
interior	acid-proof stainless steel to DIN 1.4301	
housing	powder coated sheet	
maximum drawer load [kg]	10	30
max unit workload [kg]	30	50
nominal power [W]	1700	1700
weight [kg]	96	118
temperature fluctuation* at 37°C [°C]	< ± 0,1	< ± 0,1
temperature variation* at 37°C [°C]	< ± 0,3	± 0,4
time required to achieve 37°C of the load, at set 37°C (40% load)	6	5
time required to achieve 37°C of the load, at set 37°C (70% load)	10	10
energy cinsumption at 37°C [Wh/h]	66	97
temperature protection	class 3.1 to DIN 12880	
power supply **	230V 50-60Hz	
sound levels [db(A)]	42	44
shelves (fitted./max.)	3/6	3/8
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= +/- (T avg max - T avg min) / 2
** - other power supplies on request
1 - doesn't include rack for shelves space

OPTIONS & **ACCESSORIES** (icon description see pages 108-116)

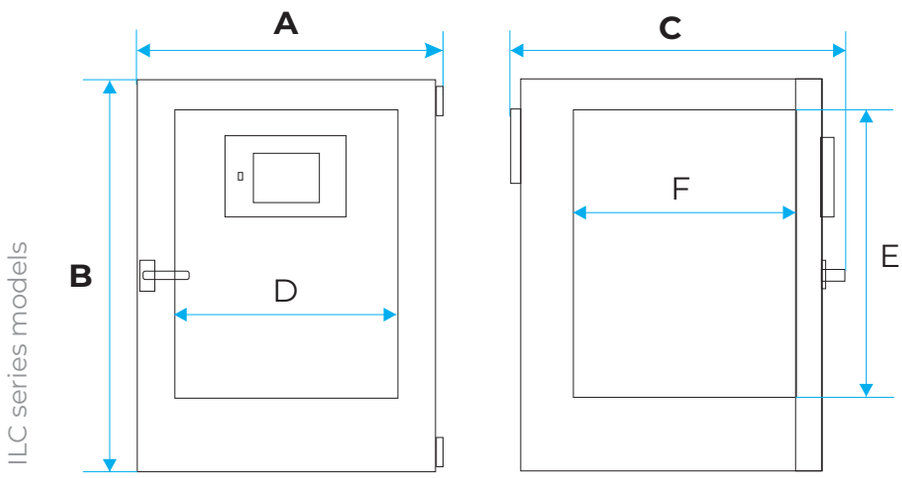


DIMENSIONS DRAWINGS & DATA

All dimensions refer to standard units
(without optional accessories)

Depth doesn't include 50 mm of power cable,
the width does not include the 20 mm of rubber plug

Possibility to change the position of shelf:
- ILC 180 - every 87mm
- ILC 260 - every 84 mm



		ILC 180	ILC 260
overall dims [mm]]	A width	700	740
	B height	920	1070
	C depth	780	840
internal dims [mm]	D width	560	600
	E height	650	800
	F depth	500	550

07

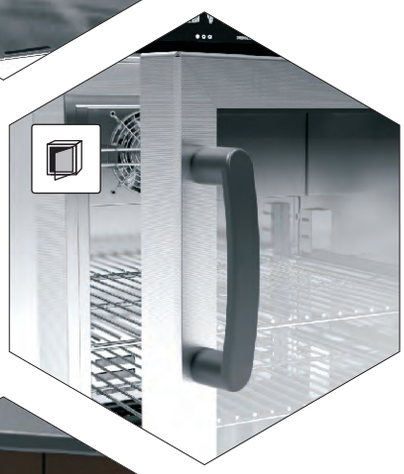
OPTIONS AND ACCESSORIES

Options and accessories
Temperature protection

scan me

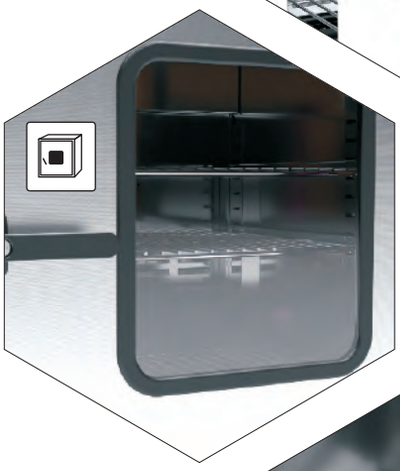
Internal glass door

This is standard equipment in CL/IL/KK ranges.
This is an additional option available for ST/CHL ranges.
Order number: */C (factory fitted).



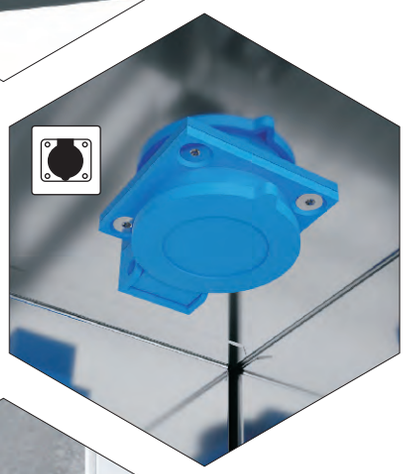
External glass door

This is an additional option available for ST/CHL ranges and for KK 500, 700, 1200, 1450 models.
Order number: */A (factory fitted).
In case of ST models in Smart PRO version, maximum temperature is reduced to 40°C.



Door with viewing window

This is an additional option available for CL/IL/SL/SR ranges (except CL/SL 15, 32) and for KK 115, 240, 400, 750 models.
Order number: */A (factory fitted).
In case of SL range, maximum temperature is reduced to +250°C.



Internal socket

In this additional option we distinguish sockets with IP54 and IP66.
Sockets with grounding IP54: option available only for ST, CHL, ILW; option NOT available for ZL, CL, SL, SR, KK, KKS, KKP, ILC, on request: ILP. Sockets with grounding IP66: option available only for KK, KKS; option NOT available for ZL, CL, SL, SR, ILC; option on request for ST, CHL, ILW, KKP, ILP
Order number: GNZ/* (factory fitted).
In case of internal socket, temperature range is limited to +70°C, maximum permissible load of all sockets built into the unit (max. 3 pcs) is 200 W. Different sockets available depending on country and power supply.

Plug

For the units with power supply 230V 50-60Hz, standard plug: (type E/F) Uni-Schuko.
Other plug: on request
The units with power supply 115V 50-60Hz are delivered in standard with plug B.
Order number: PLG/* (factory fitted)

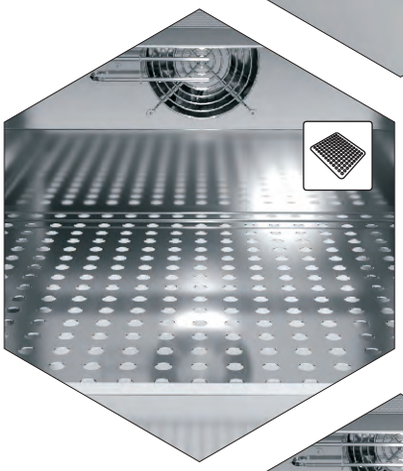
*all images are only for visual purposes and the real appearance of accessories may differ from the pictures presented.

Interior lighting

This is standard equipment in ST/CHL ranges.
This is an additional option available for ZL/ILW/CL/SL/SR ranges (except CL/SL 15, 32).
Order number: OWW/OWW LED (factory fitted).
Interior lighting features 1 light point. The user switches it on with enter button located in the front panel.
This option does not allow day/night simulation (see FIT and FOT options). Max working temperature of the unit is reduced to +70°C, for SL/SR ranges to +250°C and for ZL-T range to -35°C.

Perforated shelf

This is standard equipment in ZLW-T models.
This is an additional option available for ST/CHL/ZL/CL/IL/SL/SR/KK ranges.
Order number: */PP.
Perforated shelf is made of stainless to DIN 1.4301 steel and provided with slides.
Different depths of the shelf on request.

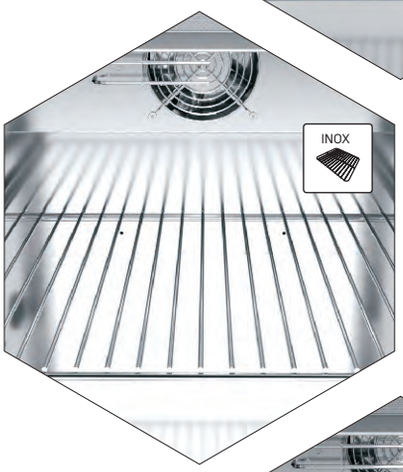


Full shelf with hole

This is standard equipment in ZLN-T models.
Order number: */PO.
Shelf is made of stainless steel and provided with slides.

Stainless steel wire shelf (INOX)

This is standard equipment in CL/IL/SL/SR/KK ranges, ZLN 85 model and in ST/CHL C (comfort) and P (premium) models.
Order number: */P INOX.
INOX wire shelf is made of stainless steelto DIN 1.4301 and provided with slides.



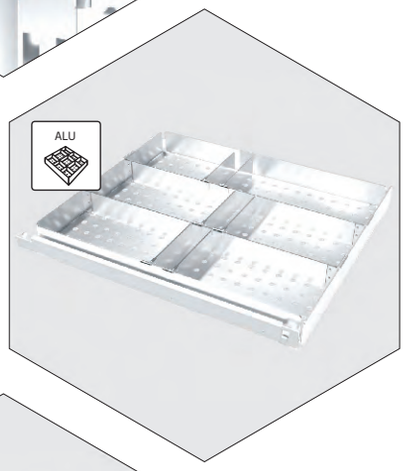
Reinforced shelf

This is standard equipment in CL/IL/SL/SR/KK 750 and 1000 models and all CL/ILW/SL models in the reinforced version **(order number: */W)**.
This is an additional option available for CL/ILW/SL/SR/ST/CHL/KK ranges and ZL-T models.
Order number: */PW.
Reinforced shelf can be wire, perforated or with a whole.
It is provided with slides.
Maximum shelf workloads and maximum unit workloads can be found in tables with parameters for certain product ranges.

*all images are only for visual purposes and the real appearance of accessories may differ from the pictures presented.

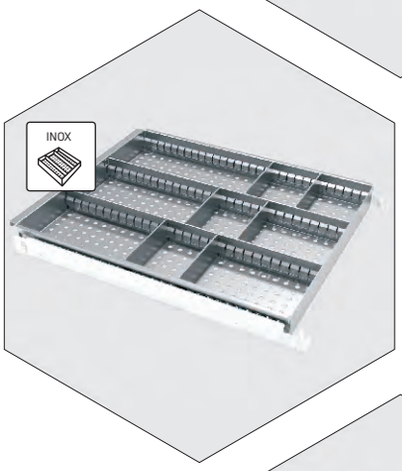
Reinforced version

This is a standard feature of CL/SL/SR 1000 models.
This is an additional option available for CL/ILW/SL ranges and ZL-T 125, 200, 300 models. **Order number: */W** (factory fitted).
Reinforced version of products allows to store heavy loads in chamber. It consists of reinforced construction of the chamber and reinforced shelves. In this way we prevent damage to the unit caused by heavy loads. Maximum shelf workloads and maximum unit workloads can be found in the tables with parameters for certain product ranges.
When a unit in reinforced version is purchased, the reinforced shelves are supplied instead of standard shelves.



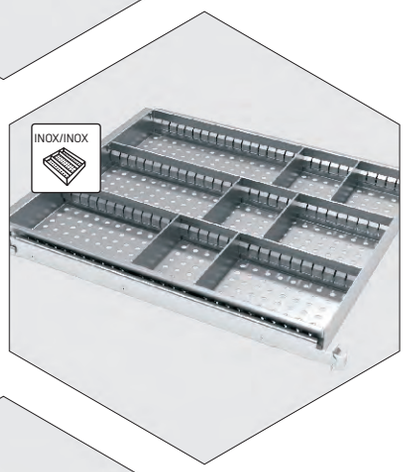
Aluminum drawer with powder coated slides

This is an additional option available for ST/CHL ranges.
Order number: ST/CHL SWP ALU.
The drawer is aluminum, 6 cm deep, provided with a pull out powder coated slides set, with 2 compartments longways + 2 across in each section.



Stainless steel drawer with powder coated slides

This is an additional option available for ST/CHL ranges.
Order number: ST/CHL SWP INOX.
The drawer is stainless steel, 6 cm deep, provided with pull out powder coated slides set, with 2 compartments longways + 2 across in each section.



Stainless steel drawer with stainless steel slides

This is an additional option available for ST/CHL ranges.
Order number: ST/CHL SWPN INOX.
The drawer is stainless steel, 6 cm deep, provided with pull out stainless steel slides set, with 2 compartments longways + 2 across in each section.

Stainless steel cuvettes

This is an additional option available for all products ranges.
Order number: KUW.GN */*
Stainless steel cuvettes can be placed on the shelves.
Different sizes available.

*all images are only for visual purposes and the real appearance of accessories may differ from the pictures presented.

Photoperiodic system

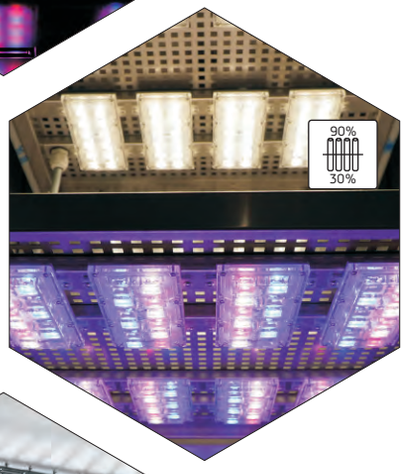
This is an additional option for ST and ILW in Smart version
Order number: */FOT (factory fitted).
Photoperiodic system allows day and night simulation.
See page 16 for more details.

Phytotron system

This is an additional option for the KK range, ILW Smart PRO version and ST 500-1450 Smart PRO models.
Order number: */FIT (factory fitted).
Phytotron LED system allows day and night simulation with smooth illumination control (each 1%).
See pages 17-20 for more details.

FIT panels independent control

This is an additional option available for the units equipped with FIT option – at least two (2) over-shelf illumination panels. Possibility of independent over-shelf lighting control.
Order number: FIT/R3 (factory fitted).
It allows to control the light intensity independently for each of 2 or 3 over-shelf panels (e.g. the light intensity above one of the shelves can be set to 100%, and above the other to 50%).



Additional Pt 100 temp. sensor

This is an additional option available only for SMART PRO version units (except for KK/KKS and units equipped with automatic defrosting function -PLUS or FOT/FIT option).
Order number: Pt 100 (factory fitted).
This option consists of an additional temperature sensor and a sensor's socket. The additional temperature values can be shown in the display. The user can set the main and additional sensor. This way unit can work according to the sample temperature in which additional Pt 100 sensor is placed.
The sensor may be supplied with a calibration certificate.

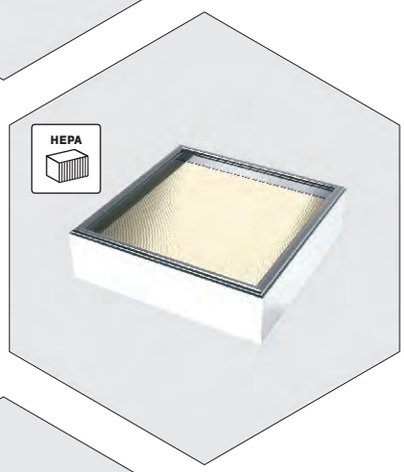
Castors

This is a standard equipment in ST/CHL 1200, 1450, CL/SL/SR 400, 750, 1000, ILW/ILP 750, ILW 1000, KK, ZLN-UT, ZL-T except for ZLN 85 ranges.
This is an additional option available for all product ranges.
Order number: QLK*(factory fitted).
Large size units have been equipped with castors as standard to facilitate transport. For other units castors can be fitted on request.

*all images are only for visual purposes and the real appearance of accessories may differ from the pictures presented.

Container for deionized water

This is standard equipment in KK range (except KKS).
This is an additional option available for KK range.
Order number: KK/Z.
This plastic container is for deionized water which is indispensible for a proper KK performance.
The container is not necessary in case the chamber is plugged directly to a deionizer.



HEPA-fresh air filter

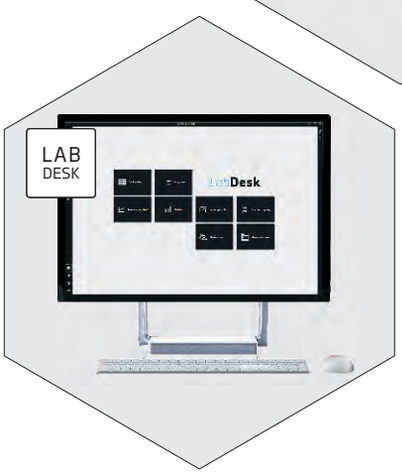
This is an additional option available for CL/SL/SR ranges.
Order number: HEPA (factory fitted).
HEPA filter is installed at the air inlet to the chamber

Table on castors

This is an additional option available for ST/CHL 1-3, ZLN 85, CL/SL 15, 32, CL/IL/SL/SR 53-240 models.
Order number: */S (powder painted) or ***/S INOX** (stainless steel).
Table with castors provides you with the highest comfort of using our products. We offer a wide range of tables equipped with castors.
Different sizes of the tables are available on request.
The user can choose the most suitable height.

Base on castors

This is an additional option for ST/CHL 1, 2, 3, ZLN 85, CL/IL/SL/SR 53-240, KKP 240 models.
Order number: */ST, */ST INOX.
Height and dimensions can be customized.



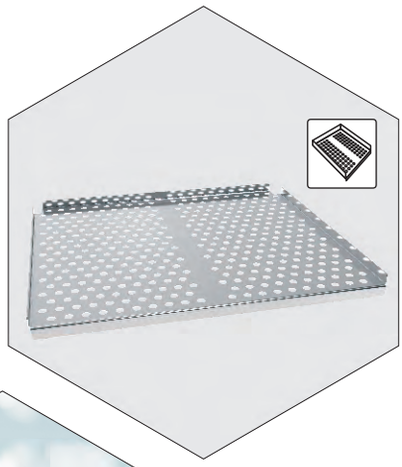
LabDesk application

This is a standard application for all Smart PRO units.
This is an additional option for Smart units.
Order number: LabDesk.
See page 22 for more details.

*all images are only for visual purposes and the real appearance of accessories may differ from the pictures presented.

Reinforced perforated shelf

This is an additional option available for ILC range.
Order number: */PPW
Reinforced perforated shelf is provided with slides set.
Different depths of the shelf on request.



RFID LOCK

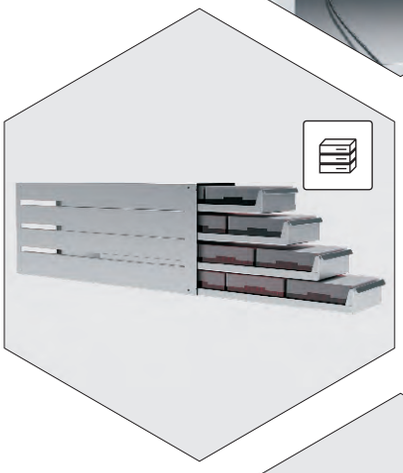
This is an additional option for equipment in SMART and SMART PRO version (except ILC range).
Order numer: RFID LOCK (Smart) (factory fitted).
electromagnetic lock with RFID cards for SMART - allows access to the interior of the unit (opening the door) only after tapping the RFID card/fob to the reader or using key. The option contains electromagnetic lock, RFID reader, 5 cards (increased number of cards for request).
For ST/CHL/KK 1200 and 1450 option for request
Order numer: RFID LOCK (Smart Pro) (factory fitted).
electromagnetic with RFID cards for SMART PRO - allows to log in to the Smart PRO controller and open doors by tapping the RFID card to the reader.The option contains electromagnetic lock, RFID reader, 5 cards (increasing number of users for request).
For ST/CHL/KK 1200 and 1450 option for request

CO_2 back up system

This is an additional option available forZLN-UT range.
Order number: ZLN-UT/CO2 (factory fitted).
Enables the freezer controller to dose CO_2 in case of undesired temperature increase in the chamber. It is supplied with an internal battery. This solution is particularly recommended in the event of a power outage.

ZLN-UT/ST rack with drawers

This is an additional option available forZLN-UT range.
Order numbers: ZLN-UT/ST12, ZLN-UT/ST16
Sturdy and heavy duty, made of stainless steel; feature quick and easy access to all boxes; 3 or 4 drawers (each for 4 boxes) per rack.



Boxes

This is an additional option available forZLN-UT range.
Order number: ZLN-UT/STP12 ZLN-UT/STP16
Boxes set (12 or 16) made of polypropylene (dimensions 133x133x50mm;each box suits 81 test-tubes of Ø 12,5mm) or made of cardboard.

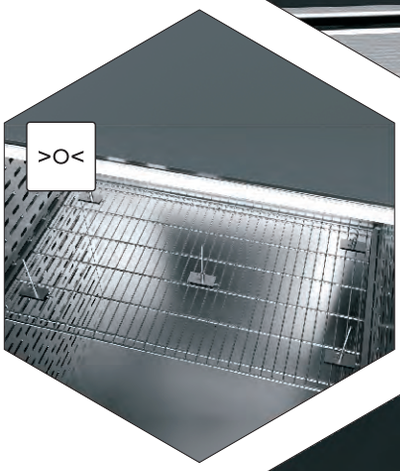
*all images are only for visual purposes and the real appearance of accessories may differ from the pictures presented.

Non-standard access port

This is an additional option available for all product ranges.
Order number: OCZ/20, OCZ/30, OCZ/60, OCZ/100 (factory fitted).
The orifice is made in addition to the standard access port.
Available diameters: 20 mm, 30 mm, 60 mm, 100 mm.
The diameter of the orifice and its location must be agreed with the manufacturer before placing an order.

Low temperature version

This is an additional option available for ILW range.
Order number: */T (factory fitted).
It extends temperature range down to -10°C (standard temperature range starts from 0°C).



Calibration of the chamber

This is an additional option available for all product ranges.
Order numbers: BRT/9/L, BRT/1P/L, BRT/2P/L, IQ, OQ, PQ.
Measurements are performed at 9 points of the chamber (corners + geometric center) or at 5 points on the shelf (corners + geometric center) at the temperature selected by the user. Moreover, IQ, OQ, PQ complete qualification procedure are available for each unit.

Alarm port – signaling (NC-NO)

This is an additional option available for all product ranges (except SL SIMPLE and CALDERA).
Order number: PORT ALARM (factory fitted)
A potential free alarm port intended to inform on units state. It can be connected to any external monitoring system/unit with digital/binary input. The alarm port is a relay type output with NC-COM-NO contacts. They are switched when an alarm occurs or there is a power outage.
Active output: correct operation, inactive output: alarm

Extended temperature range ST/70

This is a standard feature of ST Smart Pro models.
This is an additional option available for ST models with solid door.
Order number: ST/70 (factory fitted).
This is an extended temperature range up to +70°C (standard temperature range in ST models is +3°C...+40°C).

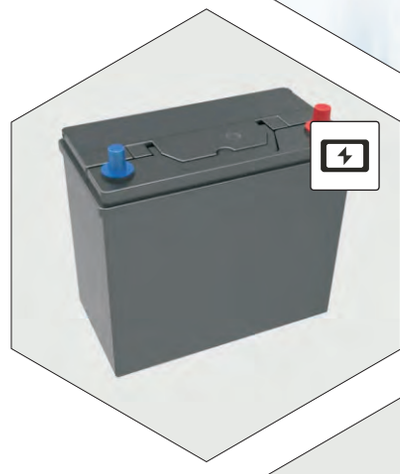
*all images are only for visual purposes and the real appearance of accessories may differ from the pictures presented.

Automatic defrosting function

This is a standard feature for KK and ST/ILW models with FOT and FIT illumination. This is an additional option available for ST/CHL/ILW models.
Order number: * PLUS (factory fitted).
The automatic defrosting function is performed while the unit is running. Used technology causes only a slight increase in temperature in the chamber (slight peak). Default settings - 2 minutes defrosting every 2 hours, causes a temporary increase in temperature in the chamber by approx. 3°C. Defrosting parameters can be changed by the User depending on the application - test type (wet / dry), door opening frequency, etc.

Display battery backup 12h

This is a standard feature for ZLN-UT range.
This is an additional option available for all product ranges (except SL SIMPLE and CALDERA).
Order number: BPP 12 (factory fitted).
Battery backup for display up to 12 h
(only data registration, no parameters control)

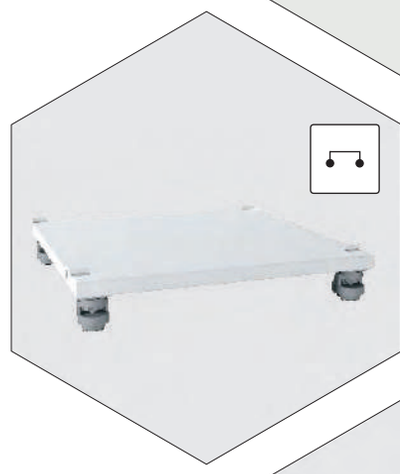


Low water level sensor

This is an additional option available for KK range (except KKS).
Order number: KK/CP (factory fitted).
An alarm goes off when the water level is low.

Base on castors

This is an additional option for ILC 180.
Order number: */STN
Base on castors for ILC 180, height 118 mm, powder coated.



Stacking adaptor

This is an additional option for ILC 180.
Order number: */AD
Stacking adaptor for ILC 180, height 90 mm, powder coated.

*all images are only for visual purposes and the real appearance of accessories may differ from the pictures presented.

Defrosting function

This is a standard feature for CHL models without automatic defrosting function. Defrosting is performed automatically but it has to be launched manually by the user at the most suitable time (e.g. when there are no samples in the chamber). Defrosting involves temporary heating inside the chamber by approx. 20-30°C. Therefore it can't be implemented during its operation (to not to disturb temperature fluctuation).

Over/under temperature (and humidity in KK/KKS) alarm

In the menu, you can set the permissible value of exceeding the set temperature (and humidity in KK/KKS). If the temperature or humidity in the chamber rises beyond the acceptable limit, an audible alarm will sound and the ALARM icon will appear on the display.

Temperature (and humidity in KK/KKS) sensor fail alarm

When the temperature (and/or humidity in KK/KKS) sensor does not work properly, the display shows information about the error.

E-mail reports

This is a standard feature of all units in Smart PRO version.
This feature involves sending e-mail messages (up to 3 addresses) in the event of alarms, events in the program or events related to editing users. The function can be configured according to individual requirements. The condition for sending the message is connection to the Ethernet network.

Ethernet connection and remote control via Internet

This is a standard feature for Smart and Smart PRO models.
Each unit can be connected to the Ethernet network or directly to the computer with a LAN cable (optional for Smart and standard for Smart PRO). LabDesk software (optional for Smart and standard for Smart PRO) is needed to read data (saved data and event log). With this feature, equipment can be controlled and monitored via Internet. It is also possible to connect several units at the same time and control them from one computer.

Measurement data memory

All the units (except SL SIMPLE) are equipped with the measurement data memory function as standard. It allows you to store 10,000 measurement results which are stored in the memory of Smart units for 6 months, and in Smart PRO for 12 months.
You can download them to USB flash drive or transfer them to your computer at any time. The data can be opened in LabDesk or MS Excel.

Standard access port for external sensor

All the units are equipped with a standard access port. It is placed in the left side of the chamber (in case of SL SIMPLE – in the right). Access port which has been secured with a silicone plug can be used to insert an external temperature sensor.

Open door alarm

All units (except SL SIMPLE) are equipped with an open door alarm. Upon opening the door the alarm goes off (sound alarm and message appears on the display) according to the set by the user alarm delay.

Wi-Fi communication

Equipment with Smart PRO controllers are equipped with a Wi-Fi communication module. It enables wireless communication and data transfer to LabDesk software.

Door lock

All the units (except SL SIMPLE) are equipped with the door lock.

Parameters priority

Equipment which features parameters priority works according to the following rule: the unit achieves set parameter first (temperature, humidity) and then starts time countdown.
In this case the set parameter is important.

Time priority

Equipment operating with time priority operates according to the following principle: the unit simultaneously starts counting the time and the process of achieving the set parameters.
Time is the main parameter in this case.

Power failure control

A temporary power failure during program operation would be unnoticeable to the user, as the program continues after power is restored. Therefore, if a power failure occurs while a program is running, a message appears in the display. The information also appears in the event log.

Administrator function

This is a standard feature for all devices in Smart PRO version.
It allows to manage user accounts and supports GLP.

Schedules

It's possible to schedule programs for all units in Smart PRO version. This feature allows you to create a list of programs to be run at the set time. Several different schedules can be created.

USB port

All the units (except SL SIMPLE and CALDERA) are equipped with a USB port. It´s used to transfer data from the internal memory of the unit to the flash memory. The data saved in the *.csv file can be opened in Notepad. Data saved as *.plkx can be opened in LabDesk.

Audible alarm

This function activates an audible alarm at a time specified by the user.

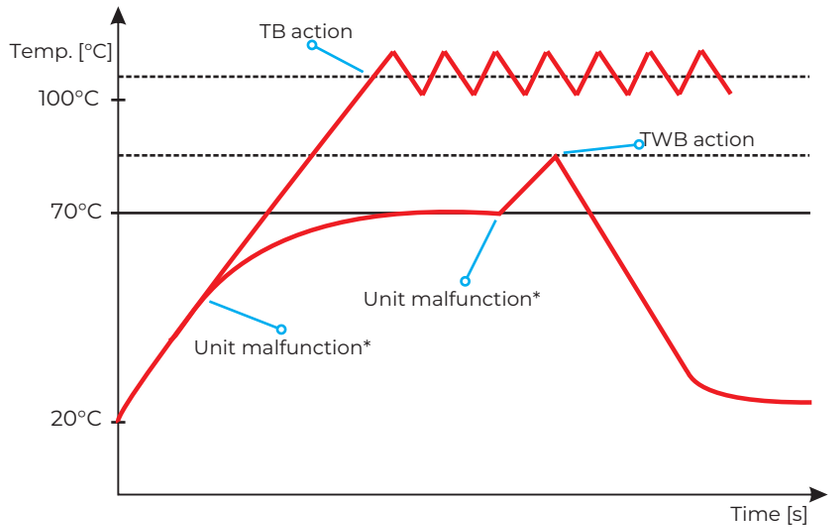
Temperature (and humidity in KK/KKS) calibration

Each equipment is calibrated by the manufacturer in accordance with applicable standards. The temperature displayed corresponds with high accuracy to the temperature in the geometric center of the chamber. User calibration is not necessary for the correct operation of the unit. However, the user has the option of calibrating the chamber (Smart and Smart PRO) on his own responsibility and must be aware of the consequences of changing the factory parameters of the equipment. If the unit has been calibrated, the calibration certificate becomes invalid after the new correction is made.

Fan speed control

This is a standard feature for SL/CL/ILW/KK Smart, Smart PRO and ST/CHL 1-6 Smart PRO. It allows you to control the fan speed in the range 0/10/50 ... 100% (depending on the model).
Different fan speed can be set for each program separately.

Over temperature protection class 1.0 and class 2.0 according to DIN 12880



Temperature protection class 1.0 (TB)
factory set at 10°C above
the max temperature

Over temperature protection class 2.0 (TWB)
- programmable

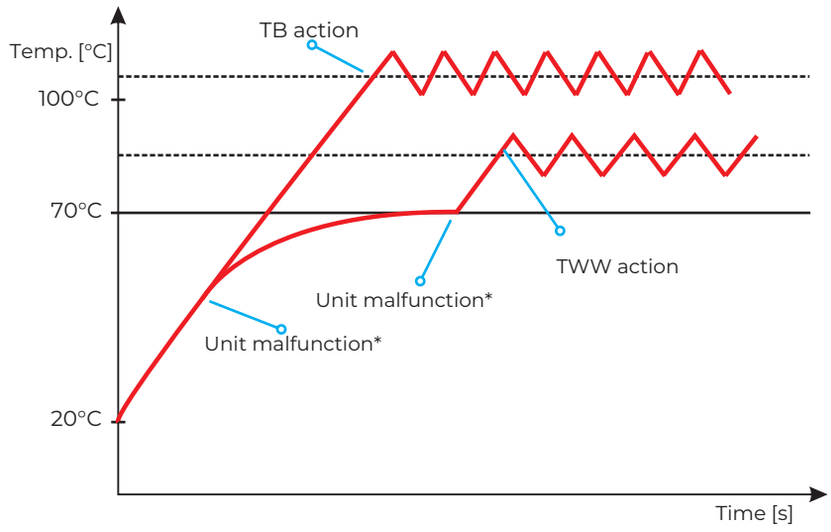
set temperature

* temperature sensor, measuring circuit, program failure, unintentional change of set parameters

Over temperature protection class. 1.0 to DIN 12880 is a standard function for the ST/CHL/CL/IL/SL/SR/KK/CALDERA and SIMPLE equipment. It is factory set at approx. 10°C above the max temperature. Over temperature protection class 2.0 to DIN 12880 is a standard function for the CL/IL/SL/SR equipment in the Smart version.
It features a sample protection function: the user can set the protection temperature and once it has been exceeded, the program will cut off the heaters. To resume operation, the user has to switch the unit off and turn it on again

DIN 3.1

Over temperature protection class 3.1 according to DIN 12880



Temperature protection class 1.0 (TB)
factory set at 10°C above
the max temperature

Over temperature protection class 3.1 (TWW)
- programmable

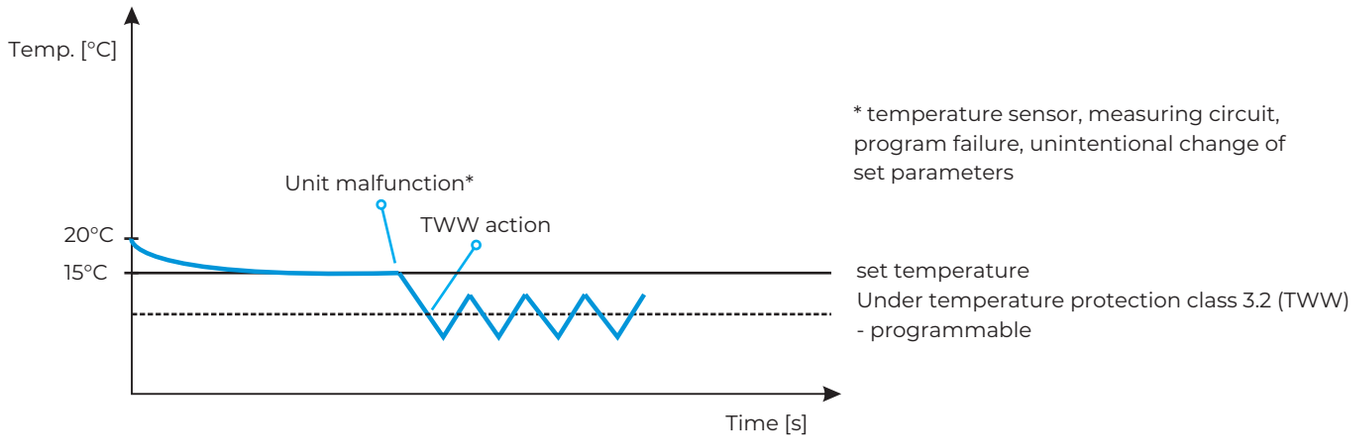
set temperature

* temperature sensor, measuring circuit, program failure, unintentional change of set parameters

Over temperature protection class 3.1 to DIN 12880 is a standard function for the CL/SL and CALDERA equipment in the Smart PRO version, and optional for the CL/SL/SR ranges in the Smart version.
Order number: */3.1 (factory fitted).
It features a sample protection function: the user can set the protection temperature and once it has been exceeded, the program will cut off the heaters. When the temperature falls down below the set limit, the unit will resume operation automatically.

DIN 3.2

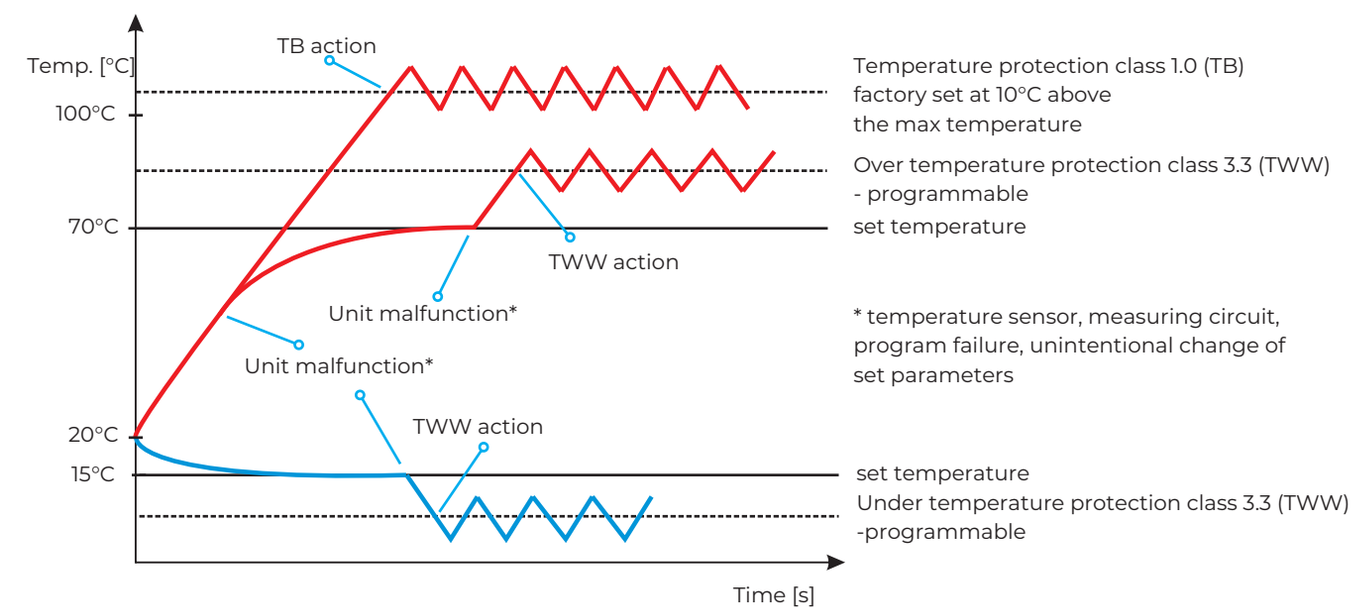
Under temperature protection class 3.2 according to DIN 12880



Under temperature protection class 3.2 to DIN 12880 is a standard function for CHL Smart PRO version and optional for CHL in Smart version.
Order number: */3.2 (factory fitted).
It features a sample protection function: the user can set the protection temperature and once it has been exceeded, the program will cut off the compressor. When the temperature goes above the set limit, the unit will resume operation automatically.

DIN 3.3

Over/under temperature protection class 3.3 according to DIN 12880



Over/under temperature protection class 3.3 to DIN 12880 is a standard function for the KK, ST and IL in the Smart PRO version.
It is an additional option for ST and IL in the Smart version.
Order number: */3.3 (factory fitted).
It features a sample protection function: the user can set the over/under protection temperature and once it has been exceeded, the program will cut off the heaters or the compressor. When the temperature goes back to the permitted range, the unit will resume operation automatically.

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2024

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