



02

Thermostatic equipment options and accessories parameters description



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 (option factory preinstalled).



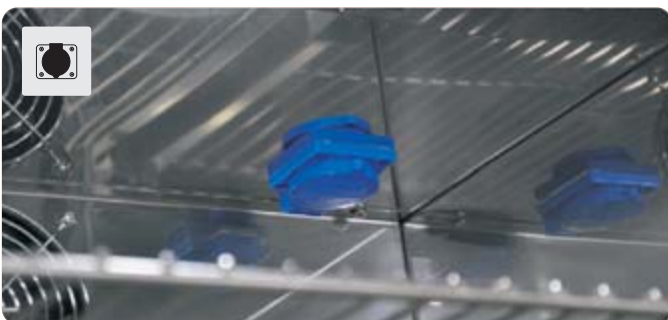
External glass door

This is an additional option available for ST/CHL ranges
and for KK 500, 700, 1200, 1450 models.
Order number: */A (option factory preinstalled).



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 (option factory preinstalled).
In case of SL range, maximum temperature is reduced to
+250°C.



Internal socket

This is an additional option available for ST/CHL/CL/IL/KK
ranges. In case of CL/IL maximum temperature is reduced to
+70°C.
Order number: GNZ (option factory preinstalled).
Internal socket allows to plug in additional equipment inside the
chamber, e.g. laboratory shaker.
Max socket peak load 200 W.



Interior lighting

This is standard equipment in ST/CHL ranges.
This is an additional option available for all products.
Order number: OWW (option factory preinstalled).
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.

Wire shelf

This is standard equipment in ST/CHL BASIC models.
This is an additional option available for ST/CHL BASIC models.

Order number: */P.

Wire shelf is made of steel and covered with plastic.
It is provided with slides set.



Perforated shelf

This is standard equipment in ZLW-T models.
This is an additional option available for ST/CHL/CL/IL/SL/SR/KK ranges and ZLN 85 model.

Order number: */PP.

Perforated shelf is provided with slides set.
Different depths of the shelf on request.



Full shelf with hole

This is standard equipment in ZLN-T models.

Order number: */P0.

shelf is provided with slides set.



Stainless steel wire shelf INOX

This is standard equipment in CL/IL/SL/SR/KK ranges,
ZLN 85 model and in ST/CHL COMF and PREM models.

This is an additional option for mentioned above products.

Order number: */P INOX.

INOX wire shelf is made of stainless steel.
It is provided with slides set.



Reinforced shelf

This is standard equipment in CL/IL/SL 750 and 1000 models and all CL/IL/SL models in the reinforced version (order number: */W). This is an additional option available for CL/IL/SL/SR/ST/CHL/KK ranges and ZLN-T models.

Order number: */PW.

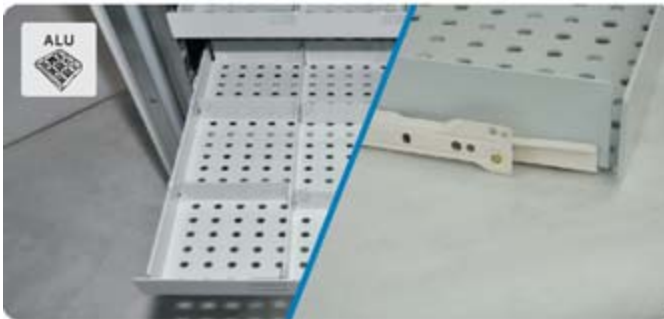
Reinforced shelf is provided with slides set.
Maximum shelf workloads and maximum unit workloads can be found in the tables with parameters for certain product ranges.



Reinforced version

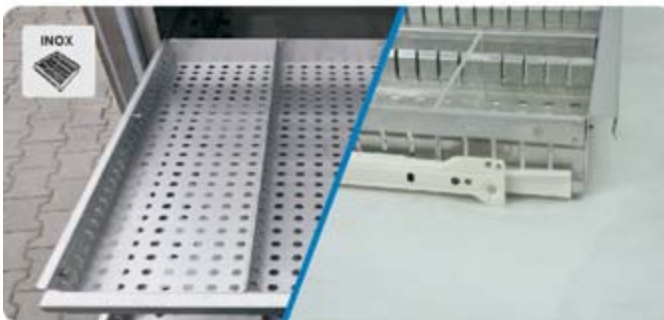


This is standard feature of CL/SL 1000 models. This is an additional option available for CL/IL/SL ranges and ZLN-T 200, 300 models. Order number: */W [option factory preinstalled]. Reinforced version of products allows to store heavy loads in the chamber. It consists of reinforced construction of the 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 wire 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 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.



Pharma organizer

This is an additional option for ST/CHL 2/3/4/5/6. Consists of 4 drawers. **Order number: ORG-FARM**

Stainless steel cuvettes

This is an additional option available for all products ranges.

Order number: KUW.

Stainless steel cuvettes can be placed on the shelves.

Different sizes available.



Photoperiodic system

This is an additional option for the ST BASIC, COMF, PREM models and IL STD version.

Order number: */FOT (option factory preinstalled).

Photoperiodic system allows day and night simulation.

See pages 19 and 49 for more details.



Phytotron system

This is an additional option for the KK range, IL TOP+ version and ST 500-1450 PREM TOP+ models

Order number: */FIT (option factory preinstalled).

Phytotron system allows day and night simulation with smooth illumination control (each 1%)

See pages 20, 50 and 62-63 for more details.



Additional Pt 100 temperature sensor

This is an additional option available for CL/IL/SL/SR/KK ranges and ST/CHL PREM TOP+ version.

Order number: Pt 100 (option factory preinstalled).

This option consists of an additional temperature sensor and sensor's socket. Additional Pt 100 values are visible in the display. Additional Pt 100 sensor also allows to choose in the unit's menu which sensor should be used as primary and which as secondary. 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.



Wheels

This is standard equipment in ZLN-T 300, ST/CHL 1200, 1450; CL/IL/SL/SR 750, 1000; IL 400; and KK range.

This is an additional option available for all product ranges.

Order number: QLK*(option factory preinstalled).





EasyLab Professional software

This is an additional option available for all product ranges.

Order number: EasyLab Professional.

All the thermostatic products manufactured by POL-EKO-APARATURA are equipped with an RS232 interface and USB port and can be connected to a PC.

The EasyLab Professional software allows to record temperature and/or humidity values. The data (day, time, temperature/humidity values) can be transferred to a PC and displayed in a tabular form which can be also used to generate charts and statistical reports. It can be further stored or exported to the .xls format.

See page 68 for more details.



Dot printer

This is an additional option available for all product ranges.

Order number: EPSON.

DOT printer enables current temperature, time and date printing. Printing interval is to be set in the unit's menu. It is necessary to purchase RSK (PC and printer connection cable).



Thermal printer

This is an additional option available for all product ranges.

Order number: KAFKA.

Thermal printer enables current temperature, time and date printing. Printing interval is to be set in the unit's menu. It is necessary to purchase RSK (PC and printer connection cable).



HEPA-fresh air filter

This is an additional option available for CL/SL/SR ranges.

Order number: HEPA (option factory preinstalled).

HEPA filter is installed at the air inlet to the chamber.



Table with wheels

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 wheels provides you with the highest comfort of using our products. We offer a wide range of tables equipped with wheels.

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/SL 15, 32; CL/IL/SL/SR 53, 115, 240.

Order number: */ST, */ST INOX

Height and dimensions can be customized.



RS 232 cable/ RS 422/ RS 485

This is an additional option available for all product ranges.

Order number: RSK.

RS 232 cable is a connection cable for PC or printer.

RS 422 is a connection cable for PC.

This cable is indispensable in order to connect PC to the unit equipped with RS 485 interface

Standard cable length: 5m.



USB cable

This is an additional option available for all product ranges except TOP+ version.

Order number: USBK.

This cable is indispensable in order to connect PC to the unit via USB port. Standard cable length: 5m.



RS 422 interface / RS 485 interface

These are additional options available for all product ranges.

Order number: RS422 or RS485 (option factory preinstalled).

This option consists of a converter from RS 232 (standard built in the device) to RS 422 or RS 485.

It allows to plug a few pieces of equipment in-line to PC.



Container for waste water

This is standard equipment in KK range.

This is an additional option available for KK range.

Order number: KK/K.

This is a plastic container for waste water coming from the chamber. The container is indispensable when it is not possible to connect the unit directly to a drain system.





Container for deionised water

This is standard equipment in KK range.
This is an additional option available for KK range.

Order number: KK/Z.

This plastic container is for deionised water which is indispensable for a proper KK performance.
The container is not necessary in case the chamber is plugged directly to a deionizer.



Low water level sensor

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



Chart recorder

This is an additional option available for ST/CHL 500, 700, 1200, 1450 models.

Order number: */RK (option factory preinstalled).

Built in chart recorder with constant temperature registration is equipped with battery back-up, therefore it keeps temperature registration even in case of power shortage. It comes with 100 pieces of registration papers as a start kit.



Magnetic door lock

This is an additional option available for ST/CHL 500, 700, 1200, 1450 models.

Order number: */ZKM (option factory preinstalled).

Magnetic door lock comes with the set of access cards – 5 pcs.
RFID card reader enables quick access to the chamber (the reader must be touched with the card in order to open the door).
The access is reserved only for authorized Users (card holders).



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.

Order number: FIT/R3 (option factory preinstalled).

This option consists in possibility to control each of 2 or 3 over-shelf illumination panels (their intensity) independently (e.g. one panel intensity can be set at 100%, the other one at 50%).



Automatic defrosting function

This is standard feature of KK range.

This is an additional option available for ST/CHL/IL ranges.

Order number: * PLUS (option factory preinstalled).

Defrosting in this case is programmable (the User sets periodicity and duration). This function is carried out while the unit is working. This advanced technology holds the temperature stable, allowing only a minor increase in the chamber (considerably higher temperature rise is caused by opening the door).



Extended temperature range ST/70

This is standard feature of ST PREM TOP+ models. This is an additional option available for ST BASIC, COMF and PREM version.

Order number: ST/70 (option factory preinstalled).

It consists of extended temperature range up to +70°C (standard temperature range in ST BASIC, COMF and PREM: +3°C...+40°C).



Low temperature version

This is an additional option available for CHL 500, 700, 1200 models and IL range.

Order number: */T (option factory preinstalled).

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 (option factory preinstalled).

This option consist of measurements 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.

IQ, OQ, PQ qualification is available for each chamber as well (see page 10 for more details).



Humidity measurement

This is an additional option available for CL/IL/KK ranges and ST/CHL PREM TOP+ models.

Order number: PHR (option factory preinstalled).

This option is not humidity control but humidity measurement. The user can browse humidity values in the unit's display.



Fan speed control

This is standard feature of ST/CHL PREM TOP+

This is an additional option available for ST/CHL BASIC, COMF, PREM models.

Order number: ST/CHL WENT (option factory preinstalled).

It allows to control the fan speed in the range of 50% to 100%. Different fan speed can be set for each program segment separately.



Door openings counter

This is an additional option available for all product ranges.

Order number: LOD (option factory preinstalled).

This function counts door openings (how many times the door was opened during the program cycle).



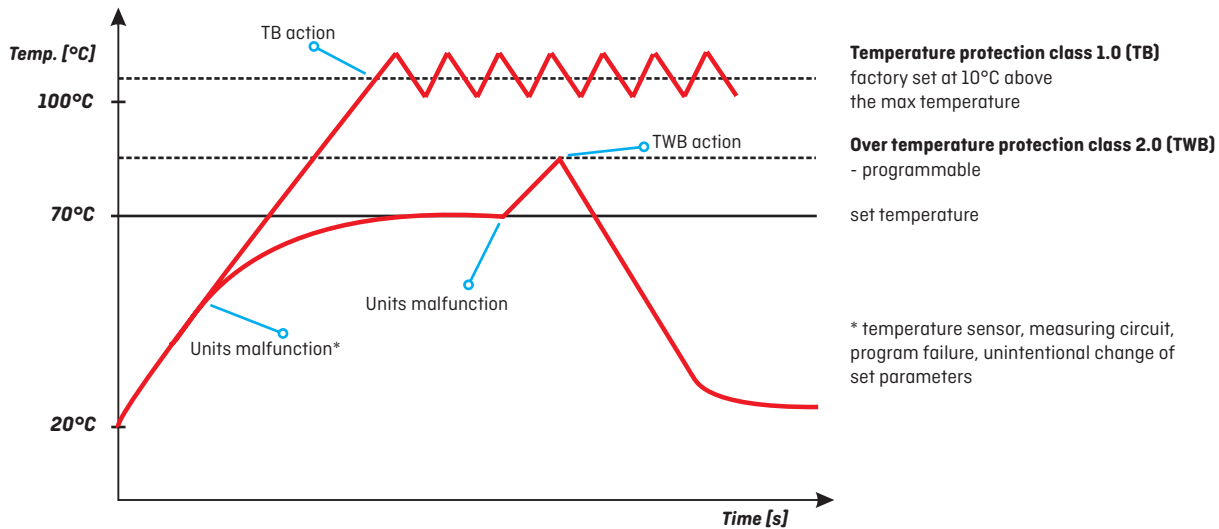
Non-standard access port

This is an additional option available for all product ranges.

Order number: OCZ/N (option factory preinstalled).

Diameter and location on request.

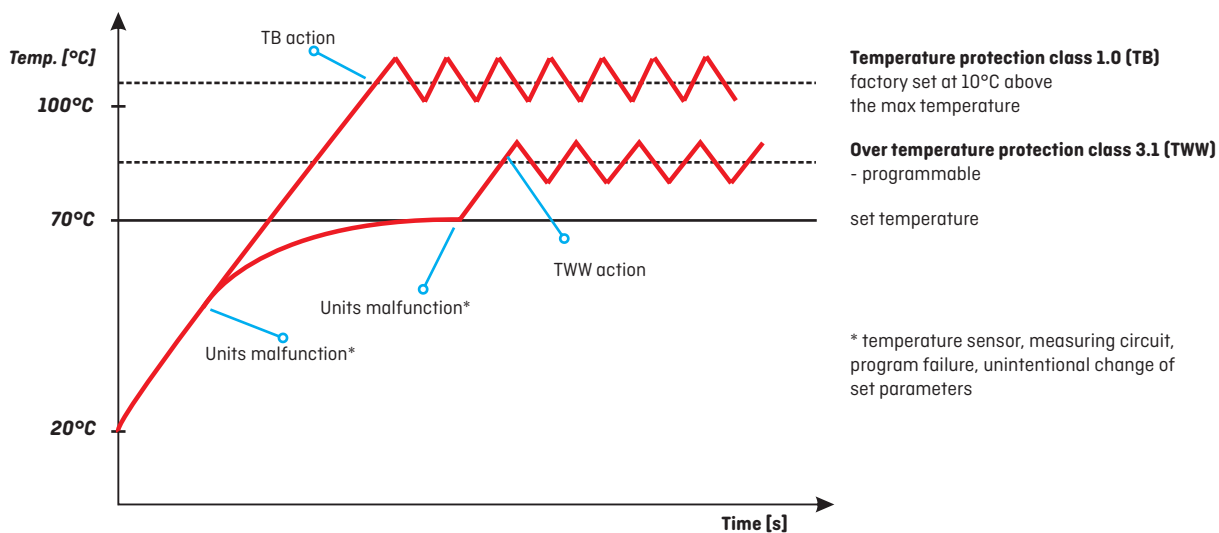
Over temperature protection class 1.0 and class 2.0 according to DIN 12880



Over temperature protection class 1.0 to DIN 12880 is a standard function for the ST/CHL/CL/IL/SL/SR/KK 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 STD version and ST/CHL PREM models. 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 operating, 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



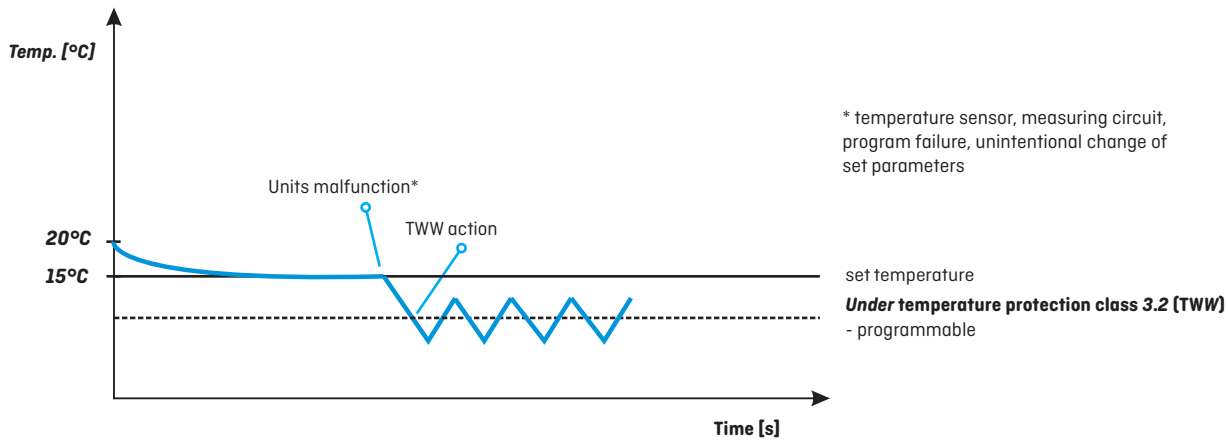
Over temperature protection class 3.1 to DIN 12880 is a standard function for the CL/SL equipment in the TOP+ version, and optional for the CL/SL/SR ranges in the STD version.

Order number: */3.1 (option factory preinstalled).

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 operating automatically.

DIN 3.2

Under temperature protection class 3.2 according to DIN 12880



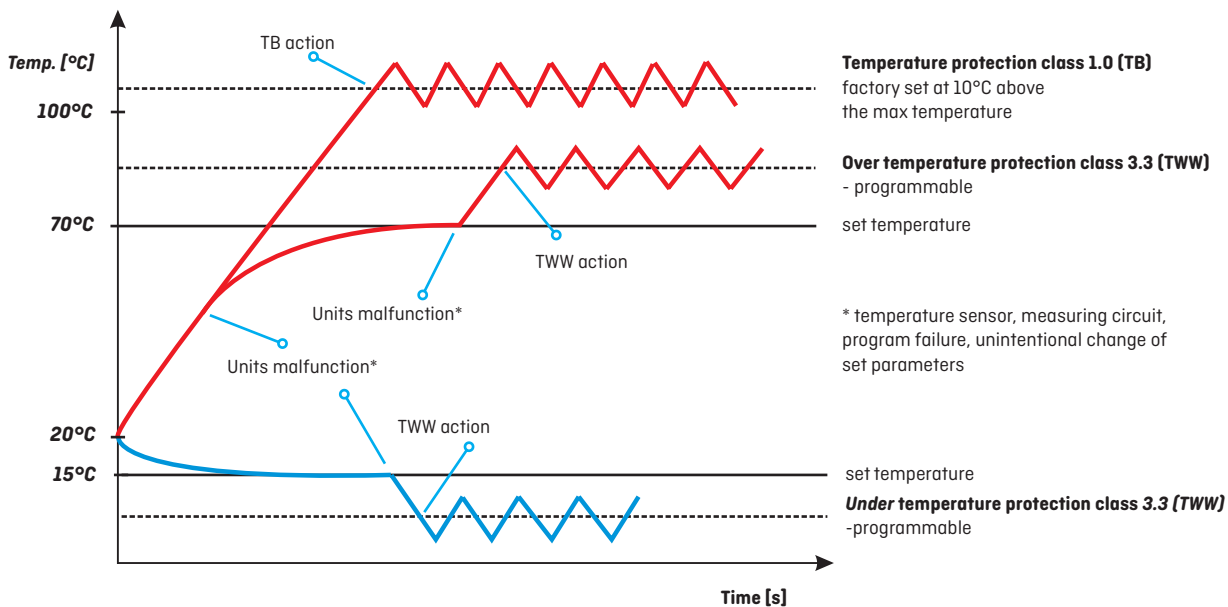
Under temperature protection class 3.2 to DIN 12880 is a standard function for CHL PREM TOP+ version and optional for CHL BASIC, COMF, PREM; ZL COMF and PREM models.

Order number: */3.2 (option factory preinstalled).

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 operating 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 PREM TOP+ and IL in the TOP+ version. It is an additional option for ST BASIC, COMF, PREM and IL in the STD version.

Order number: */3.3 (option factory preinstalled).

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 compressor. When the temperature goes back to the permitted range, the unit will resume operating automatically.

Options and accessories

		ST		CHL		ZL	CL		IL		SL		SR	KK
		P	TOP+	P	TOP+	P	STD	TOP+	STD	TOP+	STD	TOP+	STD	TOP+
	Internal glass door Order number: */C	✓	✓	✓	✓	–	S	S	S	S	–	–	–	S
	External glass door Order number: */A	✓	✓	✓	✓	–	–	–	–	–	–	–	–	✓
	Door with viewing window Order number: */A	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓
	Wire shelf Order number: */P	✓	–	✓	–	–	–	–	–	–	–	–	–	–
	Stainless steel wire shelf Order number: */P INOX	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Perforated shelf Order number: */PP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Full shelf with hole Order number: */PO	–	–	–	–	✓	–	–	–	–	–	–	–	–
	Reinforced shelf Order number: */PW	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Stainless steel cuvettes Order number: KUV GN*/*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	ALU Aluminum drawer with powder coated slides Order number: ST/CHL/SWP ALU	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–
	INOX Stainless steel drawer with powder coated slides Order number: ST/CHL/SWP INOX	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–
	INOX/INOX Stainless steel drawer with stainless steel slides Order number: ST/CHL/SWP INOX	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–
	Pharma organizer Order number: ORG-FARM	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–
	Wheels Order number: QLK*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	S
	Table with wheels Order number: */S or */S INOX	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Base on castors Order number: */ST or */ST INOX	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Automatic defrosting function Order number: *PLUS	✓	✓	✓	✓	–	–	–	✓	✓	–	–	–	S
	Low temperature version Order number: */T	–	–	✓	✓	–	–	–	✓	✓	–	–	–	–
	Extended temperature range to 70°C Order number: ST/70	✓	S	–	–	–	–	–	–	–	–	–	–	–
	Reinforced version Order number: */W	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	–
	Interior lighting Order number: OWW/LED	S	S	S	S	✓	✓	✓	✓	✓	✓	✓	✓	–
	Fan speed control Order number: ST/CHLWENT	✓	S	✓	S	–	S	S	S	S	S	S	S	S
	Phytotron system Order number: */FIT	–	✓	–	–	–	–	–	–	✓	–	–	–	✓
	Photoperiodic system Order number: */FOT	✓	–	–	–	–	–	–	✓	–	–	–	–	–
	90% 30% FIT panels independent control Order number: FIT/R3	–	✓	–	–	–	–	–	–	✓	–	–	–	✓
	1, 2, 3, ... Door opening counter Order number: LOD	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

	ST		CHL		ZL	CL		IL		SL		SR	KK
	P	TOP+	P	TOP+	P	STD	TOP+	STD	TOP+	STD	TOP+	STD	TOP+
 Additional temperature sensor Order number: PT 100	-	✓	-	✓	-	✓	✓	✓	✓	✓	✓	✓	✓
 Internal socket Order number: GNZ	✓	✓	✓	✓	-	✓	✓	✓	✓	-	-	-	-
 HEPA - fresh air filter Order number: HEPA	-	-	-	-	-	✓	✓	-	-	✓	✓	✓	-
 Humidity measurement Order number: PHR	-	✓	-	✓	-	✓	✓	✓	✓	-	-	-	✓
 Non-standard access port for external sensor Order number: OCZ/N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
 Container for deionized water Order number: KK/Z	-	-	-	-	-	-	-	-	-	-	-	-	✓
 Container for waste water Order number: KK/K	-	-	-	-	-	-	-	-	-	-	-	-	✓
 Low water level sensor Order number: KK/CP	-	-	-	-	-	-	-	-	-	-	-	-	✓
 RS 422 interface (instead of RS 232) Order number: RS422	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
 RS 485 interface (instead of RS 232) Order number: RS485	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
 RS 232 cable Order number: RSK	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
 RS 422 cable Order number: RSK/422	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
 RS 485 cable Order number: RSK/485	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
 USB cable Order number: USBK	✓	-	✓	-	✓	✓	-	✓	-	✓	-	✓	-
 Dot printer Order number: EPSON	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
 "Kafka" thermal printer Order number: KAFKA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
 EasyLab - Professional software Order number: EasyLab Professional	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
 Calibration and IQ, OQ, PQ qualification Order number: BRT*/L or IQ/OQ/PQ	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
 Over temperature protection 3.1 class according to DIN 12880 Order number: */3.1	-	-	-	-	-	✓	S	-	-	✓	S	✓	-
 Over temperature protection 3.2 class according to DIN 12880 Order number: */3.2	-	-	✓	S	✓	-	-	-	-	-	-	-	-
 Over temperature protection 3.3 class according to DIN 12880 Order number: */3.3	✓	S	-	-	-	-	-	✓	S	-	-	-	S
 Chart recorder Order number: */RK	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-
 Magnetic door lock Order number: ZKM	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-

✓ - available

- - unavailable

S - standard equipment

P - BASIC, COMFORT, PREMIUM

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). It consists in a temperature increase in the chamber by about 20-30°C, therefore it cannot be turned on during regular work (so not to disturb temperature stability in the chamber).

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

It is possible to set temperature (and humidity in KK) offset in the program menu. If the temperature or humidity exceeds or falls beyond the set point, the alarm will go off and the "ALARM" message will appear on the display.

Temperature (and humidity in KK) sensor fail alarm

If the sensors are not working correctly, an error message appears on the display.

Sound alarm

This function sounds the alarm at a time specified by the user.

E-mail info

This is standard feature of all products in TOP+ version. It consists of e-mail notifications about set temperature (and humidity in KK) values exceeding on max 2 e-mail addresses. Internet connection is necessary in order to use this feature.

Ethernet connection and remote control via Internet

This is standard feature of all products in TOP+ version. The units can be both controlled and monitored via Internet. It is also possible to connect several units at the same time and control them from one PC.

Test results memory

All the products except SL SIMPLE ovens are equipped with test results memory. It features memory module that allows to store 2046 data records (in case of TOP+ version: 4100 for each User) and send it to a PC at any time (EasyLab Basic, TOP+ Control or EasyLab Professional software are necessary along with RSK or USBK cables).

Access port for external sensor

All the products are equipped with standard access port. It is placed in the left side of the chamber (in case of SL SIMPLE – in the right). Different dimension and location of the access port on request.

Door lock

All the products except SL SIMPLE ovens are equipped with the door lock.

Temperature program priority

Equipment which feature temperature program priority work according to the following rule: the unit achieves set temperature first and then starts time countdown. In this case primary parameter is temperature.

Time program priority

Equipment which feature time program priority work according to the following rule: the unit starts the process of achieving set temperature simultaneously with time being countdown. In this case primary parameter is time.

Power failure control system

A temporary power failure while running the program is unnoticeable due to autoresume function but the time of power shortage is displayed on the screen.

Administrator function

This is standard feature of all products in TOP+ version. It allows to manage user accounts and supports GLP.

7 days programming

This is standard feature of all products in TOP+ version. It allows user to set independent program for each day of the week (e.g. Monday, 9.00-15.00, at 37°C).

Open door alarm

All the products are equipped with an open door alarm. After the door is being opened the alarm goes off (sound alarm and message appears on the display) according to the set by the User alarm delay.

RS 232 interface / USB port (N/A TOP+)

All the products are equipped with RS 232 and USB ports. This feature enables on-going data transmit to the PC and its registration, e.g. temperature and/or humidity values. For this reason, it is necessary to purchase a connection cable (RSK or USBK) and EasyLab Professional software. Only TOP+ version products feature direct USB flash drive data saving facility.

Temperature (and humidity in KK) calibration

This is standard feature of all products in TOP+ version and CL/IL/SL in STD version. Thanks to this feature the User has got a possibility to calibrate the temperature (and humidity in KK).