

Laboratory freezers

Application

- long-term storage of samples and biological material for research
- storage of easily decomposing material (e.g. solid state)
- freeze resistance tests (e.g. of building materials: concrete, wood etc.)
- pre-freezing
- plasma storage

Laboratory freezers can freeze and store frozen samples.

-40/-25...0 °C



Calibration



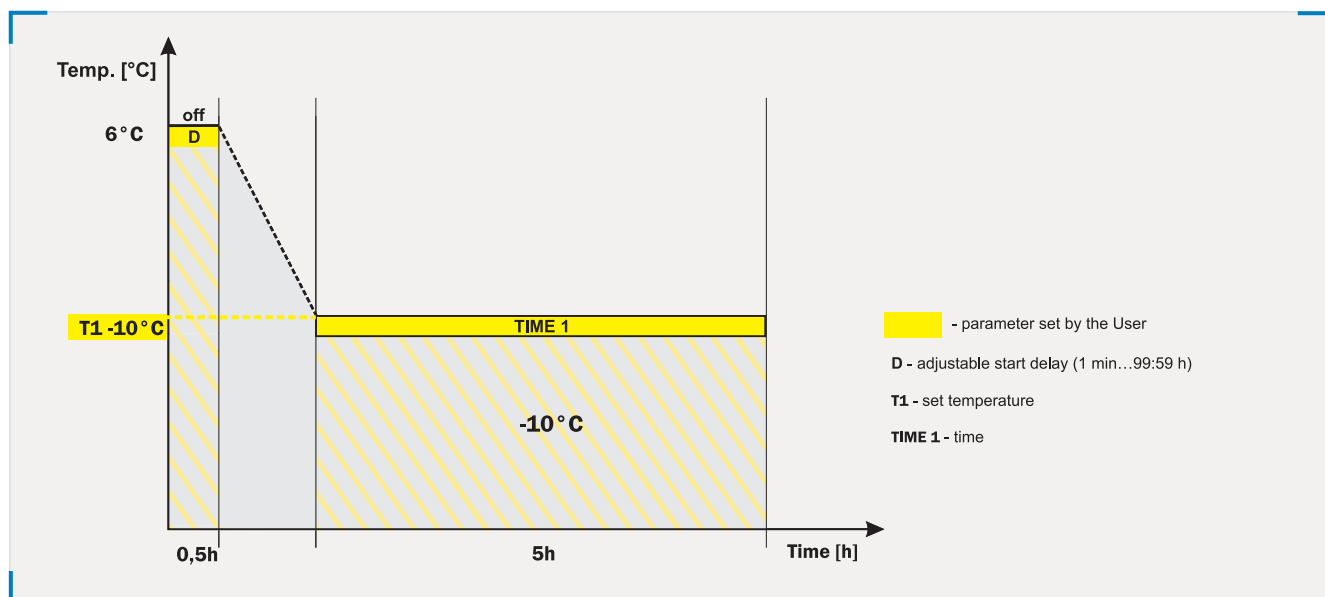
All thermostatic equipment manufactured by POL-EKO-APARATURA can be provided with Calibration Certificate issued by accredited Measurement Laboratory. Detailed information on accreditation of POL-EKO Laboratorium Pomiarowe is available on website: www.polekolab.pl.

COMFORT and PREMIUM models are equipped with a PID microprocessor controller with an LCD graphic display and illuminated touch buttons.

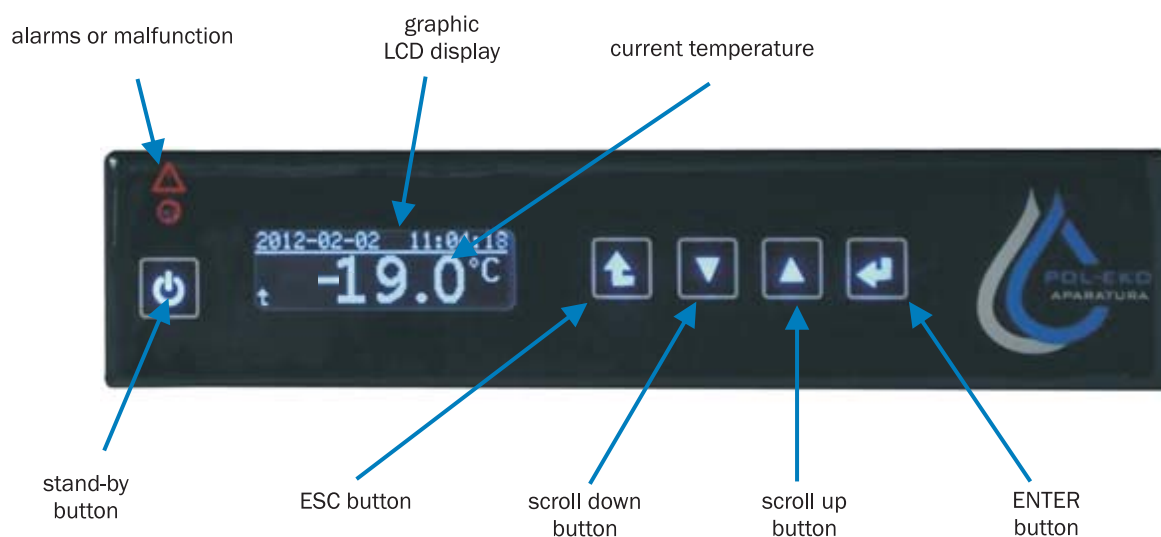
Controller advantages

- temperature control
- adjustable start delay feature (1 min...99:59 h)
- loop function up to 99 times or endless
- overview of set and current parameters while operating
- recording of min, average and max temperature value for each segment
- audible and visual temperature alarm
- operating with temperature priority
- temperature sensor fail alarm
- power failure control system (program continued after restoring power)
- digital timer
- real-time clock
- auto-diagnostic function
- internal memory to store up to 2046 data records

Detailed description of parameters on page 56.

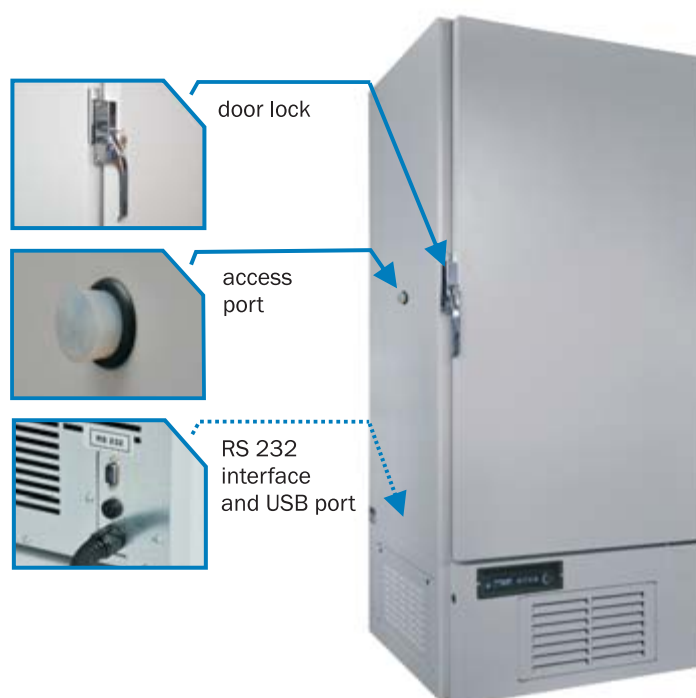






Control panel



Standard equipment

- solid door
- temperature range -25...0°C for ZLN 85 and -40...0°C for ZLN-T 125, 200, 300
- RS 232 and USB interface allow to download relevant program data with the free EasyLab Basic software available on the website or with the EasyLab Professional software (see page 68); cables to be ordered separately (RSK or USBK option)
- wire stainless steel shelves for ZLN 85 and perforated stainless steel for ZLN-T 125, 200, 300
- quality control protocol
- English instruction manual
- available menu languages: Czech, English, Estonian, French, German, Italian, Latvian, Polish, Portuguese, Russian, Spanish
- door lock
- open door alarm
- access port: Ø20 mm
- wheels in standard for ZLN-T 300



| | | Model | ZLN 85 | ZLN-T 125 | ZLN-T 200 | ZLN-T 300 |
|---|-------------------------|--|---|---|---|---|
| Parameter | | |  |  |  |  |
| air convection | | natural | | | | |
| chamber capacity ¹ [l] | | 86 | 125 | 200 | 299 | |
| door type | | solid | | | | |
| temperature range [°C] | | -25...0°C | | -40...0°C | | |
| controller | | microprocessor with external LCD graphic display | | | | |
| interior | COMF | stainless steel to DIN 1.4016 | | | | |
| | COMF/S | stainless steel to DIN 1.4016 | | | | |
| | PREM | stainless steel to DIN 1.4301 | | | | |
| | PREM/S | stainless steel to DIN 1.4301 | | | | |
| housing | COMF | powder coated sheet | | | | |
| | COMF/S | stainless steel polished | | | | |
| | PREM | powder coated sheet | | | | |
| | PREM/S | stainless steel polished | | | | |
| overall dims ² [mm] | width | 620 | 675 | 775 | 775 | |
| | height | 885 | 1170 | 1385 | 1735 | |
| | depth | 640 | 800 | 800 | 800 | |
| internal dims [mm] | width | 420 | 396 | 496 | 496 | |
| | height | 590 | 600 | 770 | 1120 | |
| | depth | 395 | 524 | 524 | 524 | |
| max shelf workload ³ [kg] | - | 10 | 10 | 10 | 10 | |
| | PW ⁴ version | - | 50 | 50 | 50 | |
| max unit workload [kg] | - | 30 | 50 | 65 | 80 | |
| | W ⁵ version | - | 100 | 130 | 160 | |
| nominal power [W] | | 200 | 450 | 450 | 450 | |
| weight [kg] | | 60 | 90 | 120 | 185 | |
| temperature resolution [°C] | | every 0,1 | | | | |
| temperature fluctuation ⁶ at -10°C [°C] | | ±0,4 | ±0,4 | ±0,4 | ±0,5 | |
| temperature variation ⁷ at -10°C [°C] | | ±1,1 | ±1,5 | ±1,6 | ±1,7 | |
| voltage* | | 230V 50Hz | | | | |
| shelves fitted | | 2 | 2 | 2 | 3 | |
| warranty | | 24 months | | | | |
| manufacturer | | POL-EKO-APARATURA | | | | |

* 230V 60Hz, 3P 230V 60Hz also available

1 - working capacity of chamber can be smaller

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

3 - on uniformly loaded surface

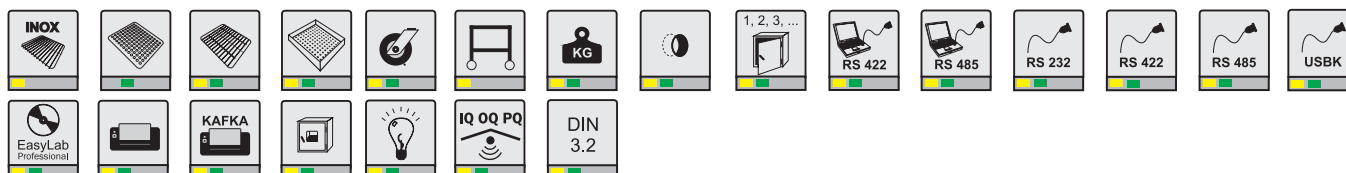
4 - reinforced shelf

5 - reinforced version

6 - fluctuation measured in centre of the chamber

7 - in space

Options and accesories (icon description see page 55)



■ ZLN 85 ■ ZLN-T

| Options and accessories | ZL | Order number |
|--|-----|------------------|
| internal glass door ¹ | | */C |
| external glass door ^{1,8} | | */A |
| door with viewing window ^{4,7} | | */A |
| internal socket ^{1,5} | | GNZ |
| internal lighting ^{4,5} | • | OWW/OWW LED |
| wire shelf ^{1,3} | | */P |
| stainless steel wire shelf ^{1,9} | • | */P INOX |
| perforated shelf ¹ | • | */PP |
| reinforced shelf | • | */PW |
| extended temperature range to +70 °C ¹ | | ST/70 |
| reinforced version | • | */W |
| low temperature version ^{1,10} | | */T |
| photoperiodic system - FOT ¹ | | */FOT |
| phytotron system - FIT ¹¹ | | */FIT |
| automatic defrosting function | | *PLUS |
| over temperature protection system to DIN 12880 ¹ | 3.2 | */** |
| stainless steel cuvettes | • | KUW GN */* |
| aluminum drawer with powder coated slides | | */SWP ALU |
| stainless steel drawer with powder coated slides | | */SWP INOX |
| stainless steel drawer with stainless steel slides | | */SWPN INOX |
| humidity measurement ⁵ | | PHR |
| door openings counter ¹ | • | LOD |
| fan speed control | | ST/CHL WENT |
| additional Pt 100 temperature sensor | | PT100 |
| HEPA - fresh air filter | | HEPA |
| RS 422 interface (instead of RS 232) ¹ | • | RS422 |
| RS 485 interface (instead of RS 232) ¹ | • | RS485 |
| wheels | • | QLK* |
| table with wheels ² | • | */S, */INOX |
| RS 232 cable ¹ | • | RSK |
| RS 422 cable ¹ | • | RSK/422 |
| RS 485 cable ¹ | • | RSK/485 |
| USB cable ¹ | • | USBK |
| EasyLab Professional software | • | EasyLab Profess. |
| dot printer ¹ | • | EPSON |
| thermal printer ¹ | • | KAFKA |
| chamber calibration ¹ | • | BRT/L |
| IQ, OQ, PQ qualification ¹ | • | IQ/OQ/PQ |
| container for deionized water | | KK/Z |
| container for waste water | | KK/K |
| water level sensor | | KK/CP |
| FIT panels independent control ¹¹ | | FIT/R3 |
| magnetic door lock ¹² | | */ZKM |
| chart recorder ¹² | | */RK |

* - model (e.g. ST1, IL 53)

** - over temperature protection system (e.g. 3.1)

1 - for double chamber units, the option available for both chambers separately

2 - unavailable for 400, 500, 700, 750, 1200, 1000 and 350/350 models, ST/CHL 4 and 5

3 - only for BASIC models

4 - in case of SL range, maximum temperature is reduced to +250°C

option unavailable for CL/SL 15/32

5 - in case of CL/IL in TOP+ version, maximum temperature is reduced to +70°C

6 - models BASIC, COMFORT and PREMIUM

7 - for KK 115, 240, 400, 750

8 - for KK 500, 700, 1200, 1450

9 - for ZLN 85

10 - for CHL 500, 700, 1200, 1450, 350/350

11 - thermostatic cabinets ST 500, 700, 1200, 1450

12 - for ST/CHL 500, 700, 1200, 1450

s - standard equipment

• - available option