Cooled incubators

Application

- microbiological tests
- plant growing, microorganisms breeding at precisely controlled environment
- BOD determination
- incubation of samples at specified temperature

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

Parameter	Model	ILW 53	ILW 115	ILW 240	ILW 400	ILW 750
air convection		forced				
chamber capacity[1] [l]		56	112	245	424	749
door type		double / door with viewing window (option)				
temperature range [°C]		-10 (option) / 0...+70°C (+100°C for TOP+ version)				
controller		microprocessor with external LCD graphic display				
interior		acid-proof stainless steel to DIN 1.4301				
housing	-	powder coated sheet				
	INOX/G	stainless steel				
overall dims[2] [mm]	width	590	650	815	1015	1260
	height	960	1100	1430	1680	1890
	depth	620	710	770	770	870
internal dims [mm]	width	395	460	600	800	1040
	height	395	540	800	1040	1200
	depth	360	450	510	510	600
max shelf workload [kg]	-	10	10	10	10	10
	PW[3] version	50	50	100	100	100
max unit workload [kg]	-	40	60	90	120	140
	W[4] version	80	120	300	300	300
nominal power [W]		400	400	800	1200	1800
weight [kg]		69	90	140	185	275
temperature resolution [°C]		every 0,1				
temperature fluctuation[5] at +37 °C [°C]		±0,2	±0,2	±0,2	±0,2	±0,2
temperature variation[6] at +37 °C [°C]		±0,4	±0,6	±0,3	±0,3	±0,3
over temperature protection		class 2.0 to DIN 12880 / class 3.3 (option) / 3.3 in TOP+				
voltage*		230V 50Hz				
shelves fitted		2	2	3	3	5
warranty		24 months				
manufacturer		POL-EKO-APARATURA				

* - 230V 60Hz, 115V 60Hz also available
1 - working capacity of chamber can be smaller
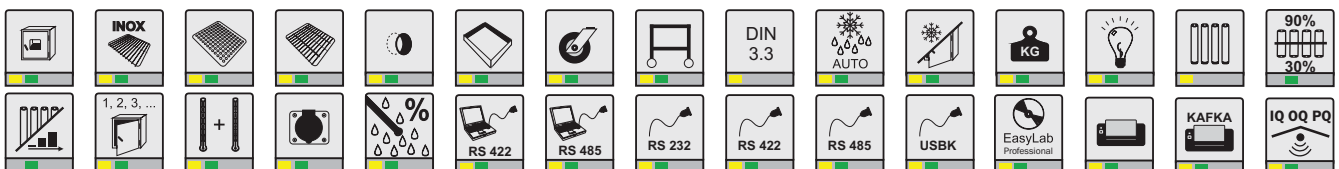2 - depth doesn't include 50mm of power cable
3 - reinforced shelf
4 - reinforced version
5 - fluctuation measured in centre of the chamber
6 - in space

Options and accesories (icon description see page 55)

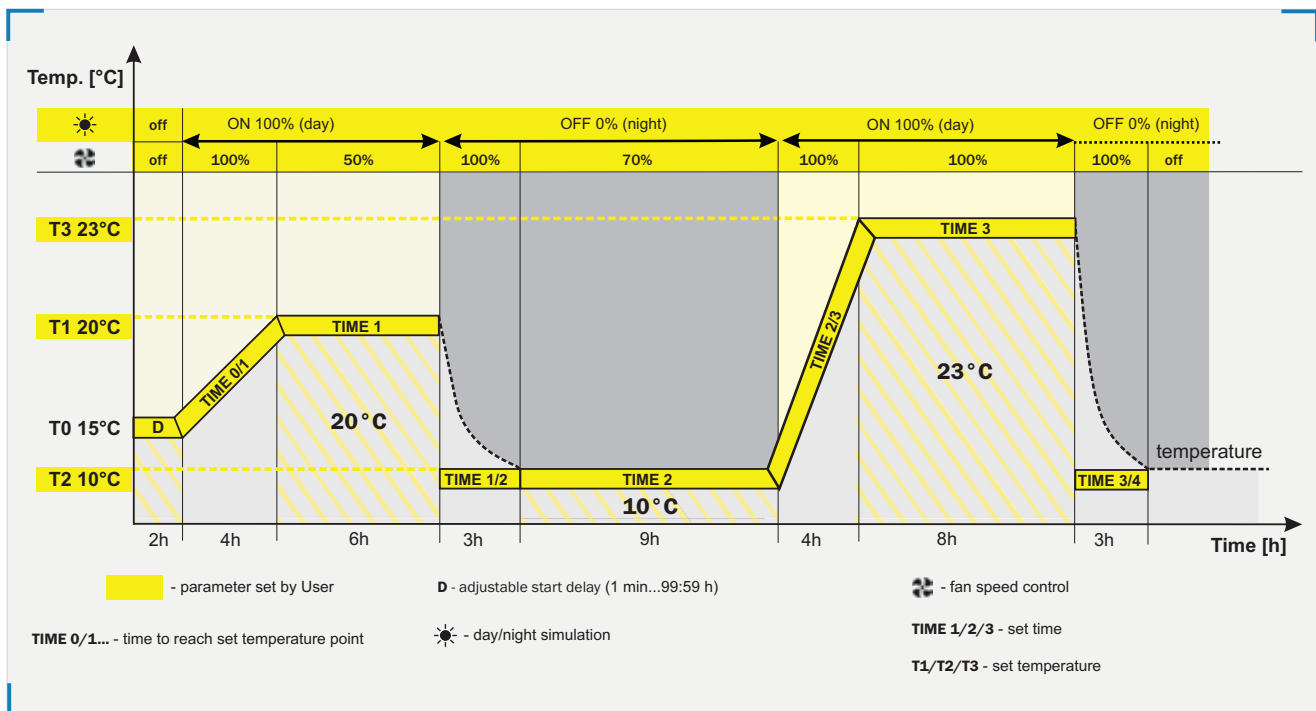STD   TOP+

Cooled incubators (IL) with photoperiodic system

The photoperiodic (FOT) and phytotron (FIT) systems allow day and night simulation. While the FOT option enables to turn the light on and off in a program, the FIT option can additionally control the light intensity. The photoperiodic system is designed for cooled incubators in the STD version and the phytotron system for the TOP+ version.

Program possibilities with FOT option:

- day and night simulation software to control light (on/off), time and temperature separately for each segment
- temperature range for "night": -10°C up to +60°C (with IL/T option)
- temperature range for "day": +10°C up to +50°C
- lamps installed in the door or ceiling
- fluorescent lamp 840 type (daylight) used as standard
- operating with time priority (see page 56)

photoperiodic system (*/FOT option) for cooled incubators (IL)**

Option	IL/FOT2S	IL/FOT3S	IL/FOT5D	IL/FOT6D	ST/FOT8D	ST/FOT10D
available for models	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°C					
number of lamps in door	-	-	5	6	8	10
number of lamps in ceiling	2	3	-	-	-	-
adjustabe illumination intensity	no	no	no	no	no	no

** FOT option is factory preinstalled. There is no possibility to order it separately.
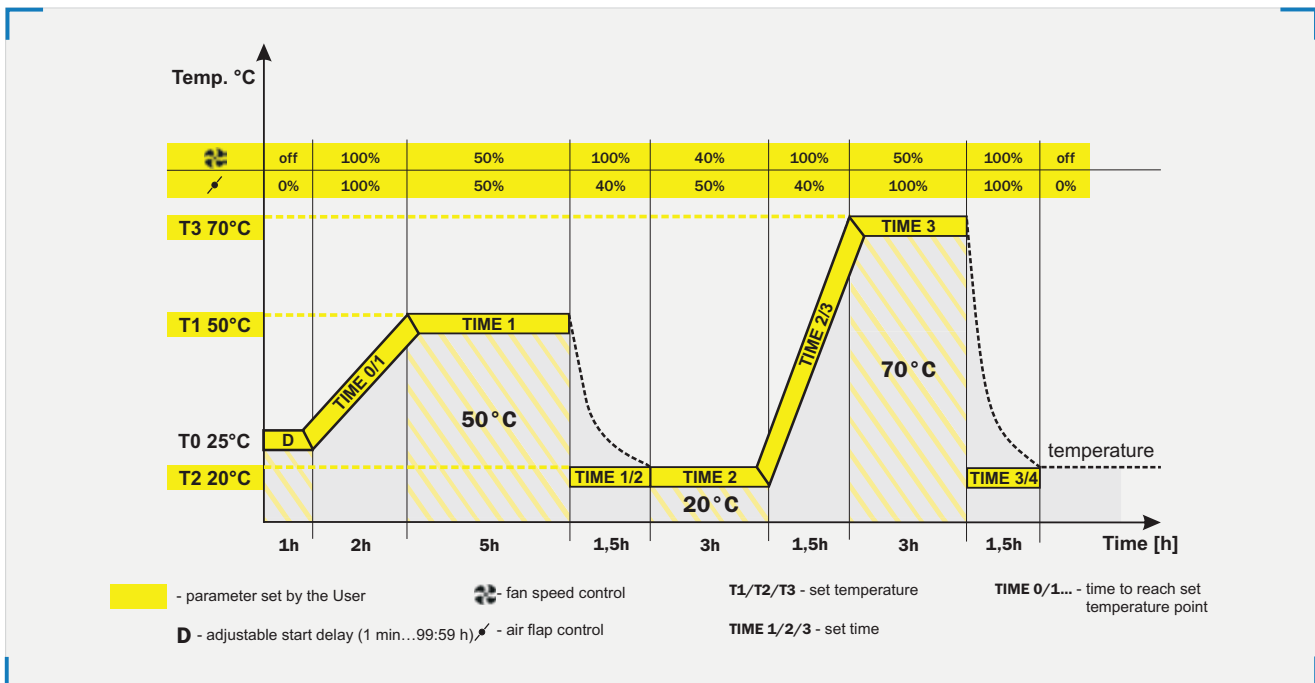
Drying ovens, incubators, cooled incubators

STD version

All the units in the STD version are equipped with a PID microprocessor controller with an LCD graphic display and illuminated touch buttons.
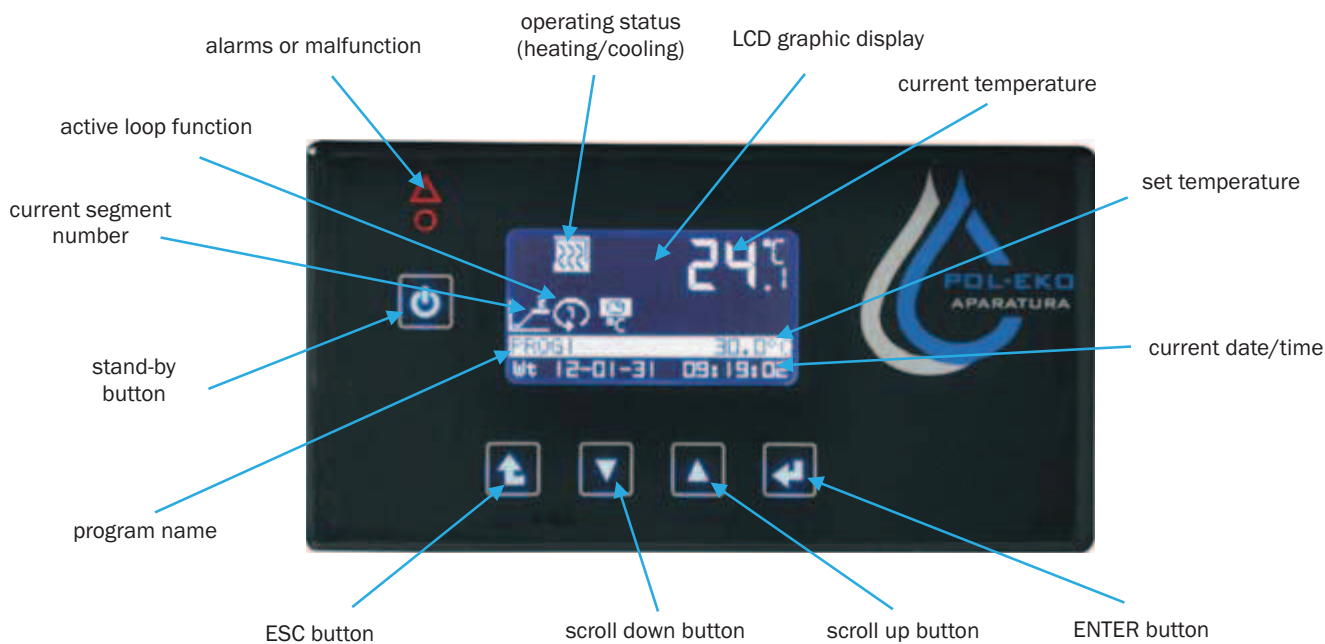
Controller advantages

- six-segment temperature-time profile
- 3 user programs memory
- loop function up to 99 times or endless
- adjustable start delay feature (from 1 min to 99:59 h)
- adjustable hold at set point time for temperature and lighting (for IL/FOT) from 1 min to 999 h, or continuous operating
- adjustable ramps
- overview of set and current parameters while operating
- recording of min, average and max temperature value for each segment
- possibility of temperature calibration by the user
- 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
- automatic fan shut-down after completing the program
- automatic air-flap control (CL/SL)
- natural (SL/CL) or forced (SL/CL/IL) air convection with fan speed control

Detailed description of parameters on page 56.

Control Panel

alarms or malfunction

operating status (heating/cooling)

LCD graphic display

current temperature

active loop function

current segment number

set temperature

stand-by button

program name

current date/time

ESC button

scroll down button

scroll up button

ENTER button

Standard features

- solid door
- internal glass door for CL and IL
- temperature range: SL (+5°C above ambient temp. ... 300°C), CL (+5°C above ambient temp. ... +100°C), IL (0°C up to 70°C / optionally -10°C up to 70°C)
- RS232 and USB interface allow to download relevant program data with the free EasyLab Basic software available on the website or the EasyLab Professional software (see page 68); cables to be ordered separately (RSK or USBK option)
- wire stainless steel shelves
- quality control protocol
- English instruction manual
- available menu languages: Czech, English, Estonian, French, German, Italian, Polish, Portuguese, Russian, Spanish
- temperature protection class 2.0 to DIN 12880
- door lock
- open door alarm
- access port: Ø30 mm for models 53-1000 or Ø9 mm for models 15-32
- wheels in standard for models 750-1000

RS 232 and USB interface

door lock

access port

internal glass door

TOP+ version

All the units in the TOP+ version are equipped with a PID microprocessor controller with a large (5,7") full colour touch screen, intuitive menu and user friendly software. They can be connected to Ethernet network for remote control from any computer, being one of the greatest advantages.
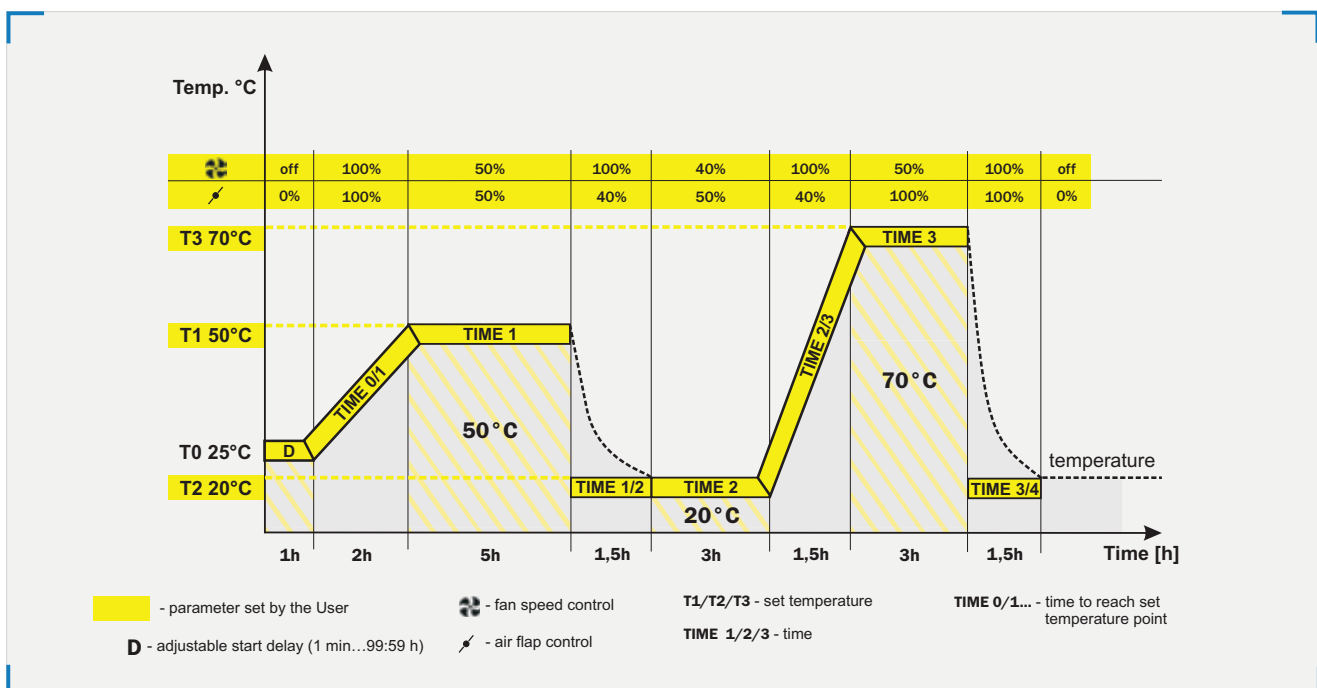
Controller advantages

- Administrator function to manage User accounts
- access control via login
- 7 days programming
- multi-segment temperature-time profile (up to 100)
- loop function up to 99 times or endless
- adjustable start delay feature (from 1 min to 99:59 h)
- adjustable hold at set point time for temperature and lighting (for IL/FOT) from 1 min to 999h, or continuous operating
- adjustable ramps
- overview of set and current parameters while operating
- recording of min, average and max temperature value for each segment
- possibility of temperature calibration by the User
- audible and visual temperature alarm
- operating in temperature or time priority mode
- defrosting function (for IL)
- temperature sensor fail alarm
- power failure control system (program continued after restoring power)
- digital timer
- real time clock
- auto-diagnostic function
- automatic fan shut-down after completing the program
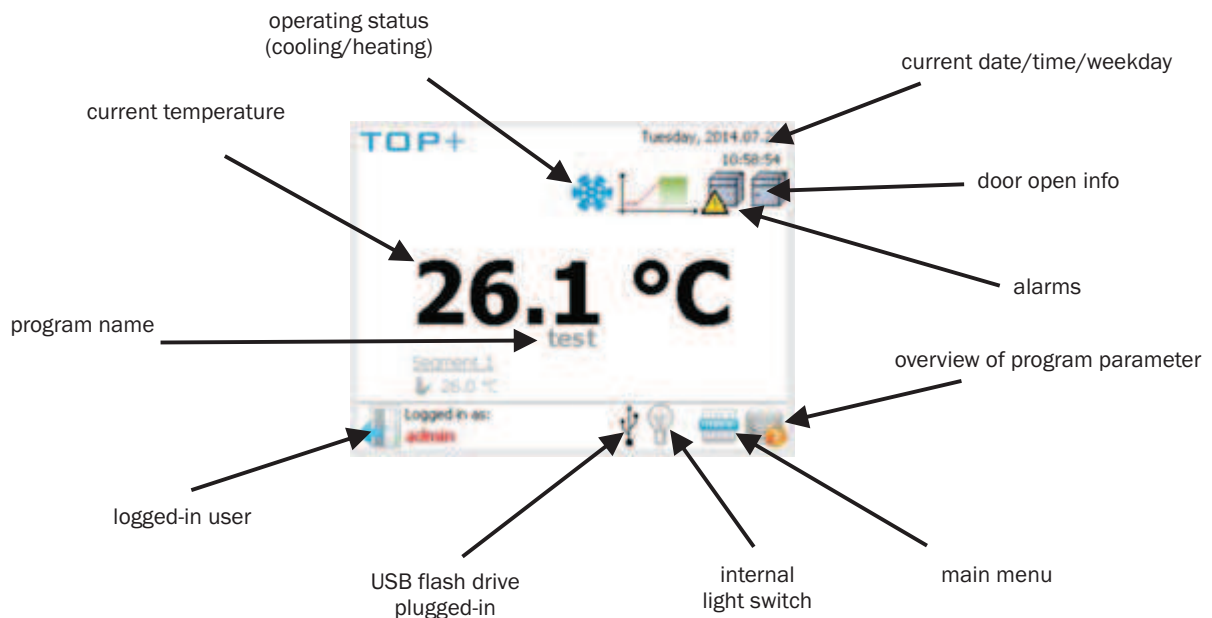- automatic air-flap control (CL/SL)

GLP supporting functions:

- password protected settings
- 20 user programs memory
- internal memory to store up to 4100 data records for each User, possibility to overview the values on the display or a PC computer in tabular or graphic form
- USB port to allow direct data recording or transfer onto a flash drive
- events registry
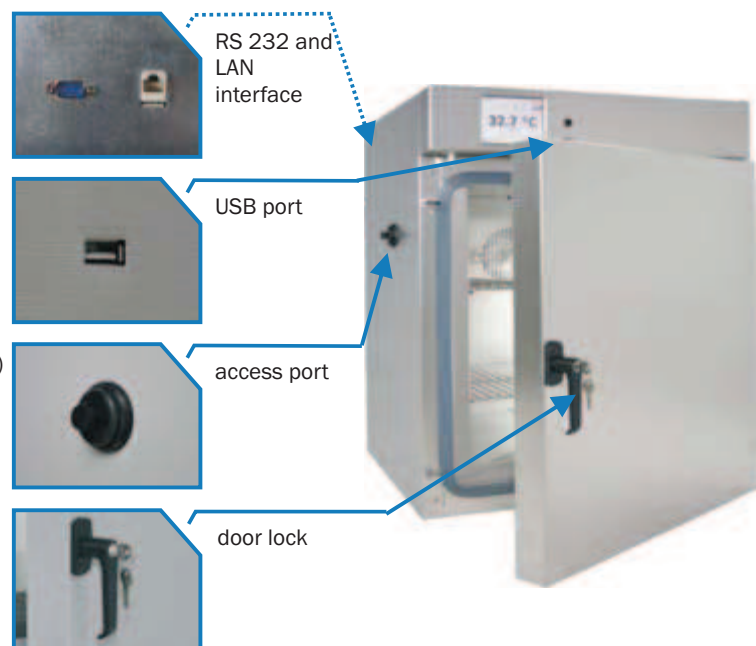- TOP+ control software (see page 69)

- parameter set by the User
- fan speed control
- air flap control

D - adjustable start delay (1 min...99:59 h)

T1/T2/T3 - set temperature
TIME 1/2/3 - time

TIME 0/1... - time to reach set temperature point

Control panel

operating status
(cooling/heating)

current date/time/weekday

current temperature

door open info

alarms

TOP+

Tuesday, 2014.07...
10:58:54

26.1 °C
test

Segment 1
26.0 °C

program name

overview of program parameter

Logged in as:
admin

logged-in user

USB flash drive
plugged-in

internal
light switch

main menu

Standard features

- solid door
- internal glass door for CL and IL
- temperature range: SL (+5°C above ambient temp. ... 300°C), CL (+5°C above ambient temp. ...+100°C), IL (0°C up to 100°C / optionally -10°C up to 100°C)
- RS232 interface, USB port to allow direct recording and data transfer onto a flash drive; data can also be downloaded with the free TOP+ Control software (see page 69) or the EasyLab Professional software (see page 68); cables to be ordered separately (RSK or USBK option)
- Ethernet port for remote control, Ethernet cable
- TOP+ Control software
- wire stainless steel shelves
- quality control protocol
- English instruction manual
- available menu languages: English, Estonian, French, German, Hungarian, Italian, Latvian, Polish, Portuguese, Romanian, Russian, Spanish
- temperature protection class 3.3 (IL), class 3.1 (CL/SL) to DIN 12880
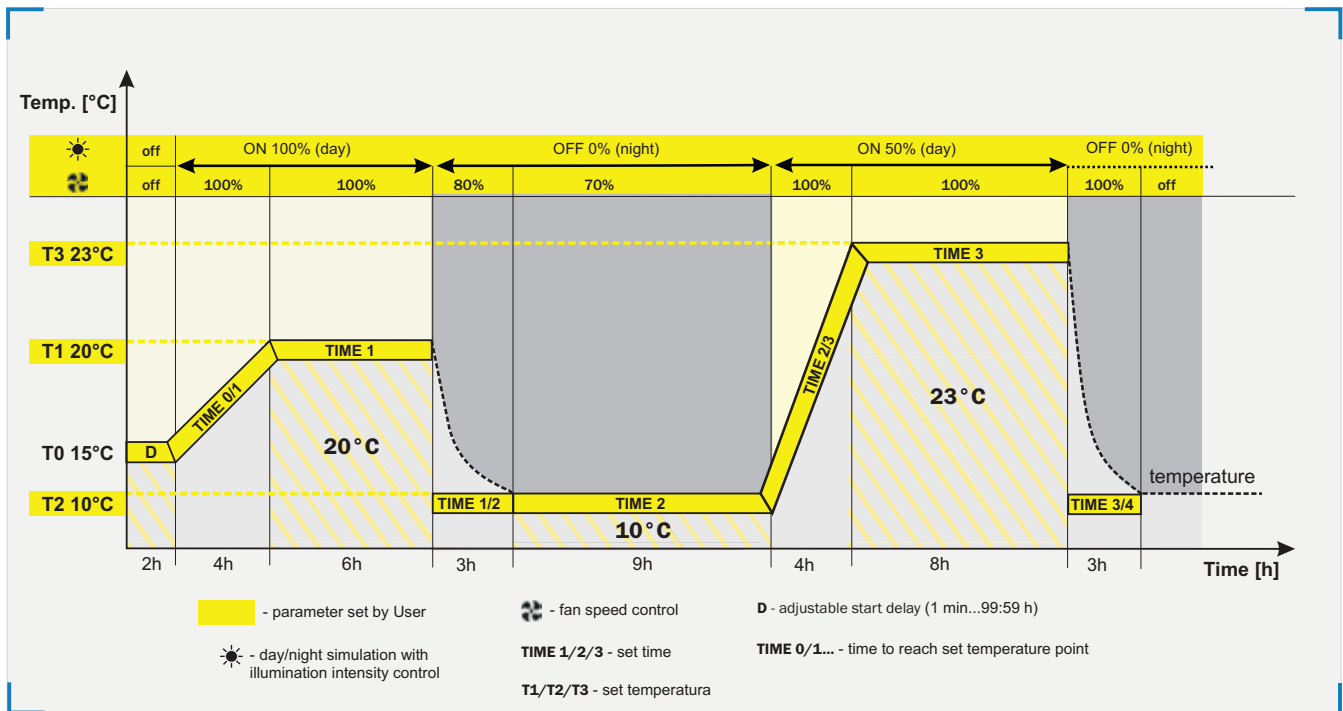- door lock
- open door alarm
- access port: Ø30 mm

RS 232 and
LAN
interface

USB port

access port

door lock

Cooled incubators with phytotron system

The TOP+ version of cooled incubators (models ILW 115, 240, 400,750) can be equipped with the FIT system.

Program possibilities with FIT option

*available for TOP+ version only, for models from 115 to 750

- day and night simulation software to control light intensity [%], time, temperature and fan speed separately for each segment
- temperature range for "night": -10°C up to +60°C (with IL/T option)
- temperature range for "day": +10°C up to + 50°C
- lamps installed in over-shelf panels
- fluorescent lamp 840 type (daylight) used as standard
- operating with temperature or time priority (see page 56)

Phytotron system (*/FIT option) for cooled incubators in TOP+ version.

Option	IL/115/FIT P	IL/240/FIT P	IL/400/FIT P	IL/750/FIT P
temperature range with phytotron ON [°C]	+10 ... +50°C	+10 ... +50°C	+10 ... +50°C	+10 ... +50°C
number of over-shelf panels with illumination std/max	1/1	1/2	1/2	1/3
adjustable illumination intensity	yes	yes	yes	yes