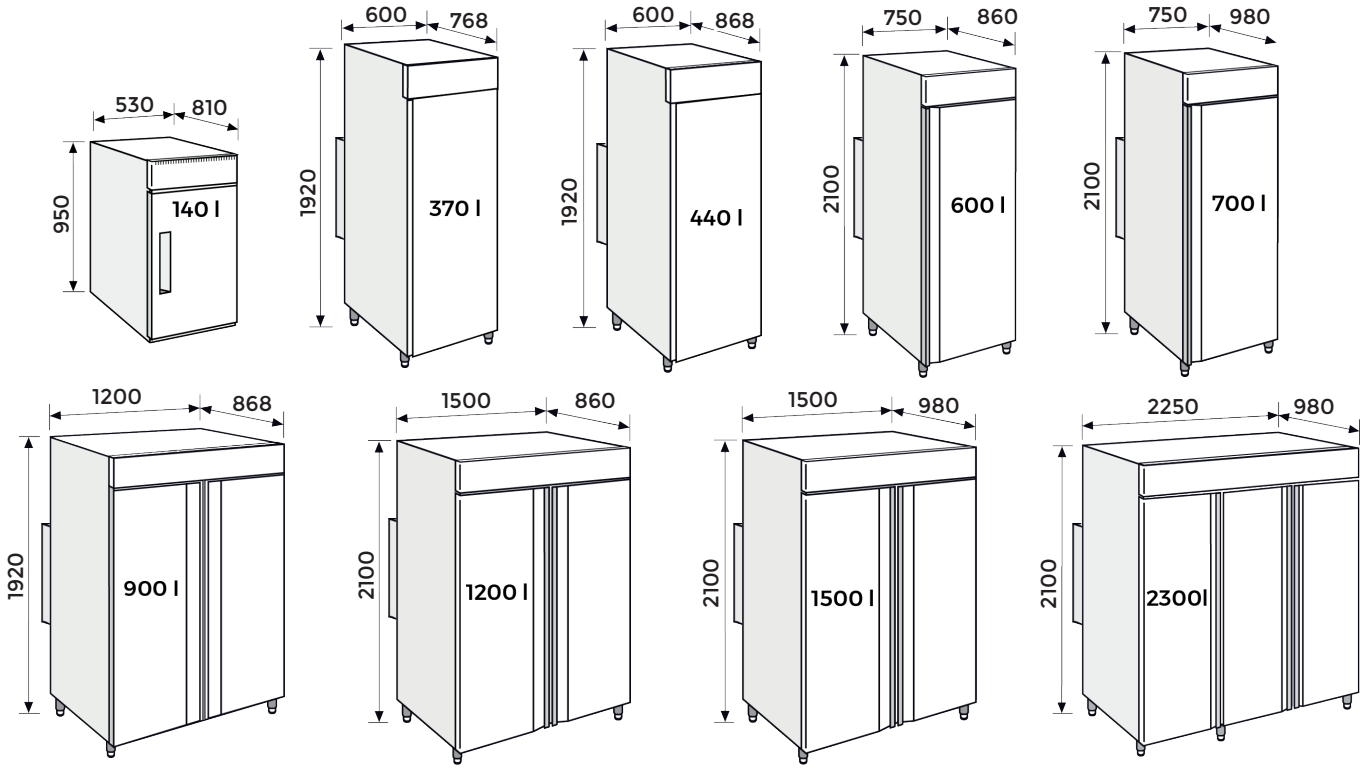
Chambers with Illumination

LCB-LCS Series



EQUIPMENT

Volumes

140...2300 liters

Temperature

0°C...+55°C (S)
-10°C...+55°C (B)

Humidity

10 to 80% r.h.

Light shelf

Removable and height-adjustable shelf

***still*FACE**

Controller for stability testing

***revo*FACE**

Programmer for dynamic testing

Fan

Forced ventilation

Alarms

High/low temperature and humidity

Electric power

220-240V ~ /50 Hz or
110-115V ~ /60 Hz

Positive Range (*S*)		**140*S***	**370*S***	**440*S***	**600*S***	**700*S***	**900*S***	**1200*S***	**1500*S***	**2300*S***
Negative Range (*B*)		**140*B***	**370*B***	**440*B***	**600*B***	**700*B***	**900*B***	**1200*B***	**1500*B***	**2300*B***
Temperature performance										
Temperature range without humidity [°C]	Light off	0...+55 (S) -10...+55 (B)								
	Light on	+5...+50 (S) -5...+50 (B)								
Temperature uniformity depending on setpoint [± K]		0.5..2.5								
Temperature fluctuation depending on setpoint [± K]		0.1..0.5								
Average heating-up rate according to EN 60068-3-5 [K/min]	Light off	+2								
Average cooling down rate according to EN 60068-3-5 [K/min]	Light off	-1								
Performance Data Climate										
Temperature range [°C] with humidity on		10/55								
Humidity range in according to Chart*[1] [% r.h.]	Light off	10/90								
	Light on	10/80								
Humidity fluctuation depending on setpoint [± %]		≤ 3								
Humidification system		Ultrasonic humidifcation system								
Water filter		Water softening filter and replaceable cartridge equipped*[2]								
Max Water hardness permitted		600 ppm $CaCO_3$								
Water inlet		Pressure 0.2÷5 BAR - Temperature 10÷40°C - Pipe connection 3/4"								
Outer dimensions										
Width net [mm]		530	600	600	750	750	1200	1500	1500	2250
Depth net [mm]		810	768	868	860	980	868	860	980	980
Height net [mm]		950	1920	1920	2100	2100	1920	2100	2100	2100
Doors										
Unit doors		1	1	1	1	1	2	2	2	3
Internal Dimensions										
Width [mm]		450	500	500	600	600	1090	1340	1300	2090
Depth [mm]		540	480	580	570	670	580	570	670	670
Height [mm]		520.5	1257	1257	1340	1340	1257	1350	1340	1340
Measures										
Interior net volume [L]		130	310	370	450	530	810	1020	1180	1830
Net weight of the unit (empty) [kg]		8	100	110	132	167	197	212	215	367
Permitted load per rack [kg]		20	20	20	20	20	20	20	20	20
*[3]**Fixtures**										
Number of shelves (std./max.)		2/3	3/5	3/5	3/6	3/6	6/10	6/12	6/12	9/14
Shelf Width [mm]		400	460	460	530	530	460	530	530	530
Shelf Depth [mm]		500	470	570	550	650	570	550	650	650
***still*FACE Controller**										
Controller		Constant monitoring temperature and humidity controllers								
Interface port		Optional: RS485								
***revo*FACE Programmer**										
Set-up DIsplay		Programme status, set up temperature and humidity, date, time and language								
Programmer		10 programs and 50 segments each, adjustable from 1 min. to 999 hrs.								
Calibration		Possibility to calibrate all parameters								
Interface port		Optional: RS485 - Optional: Ethernet - Wifi - Dedicated mobile app								

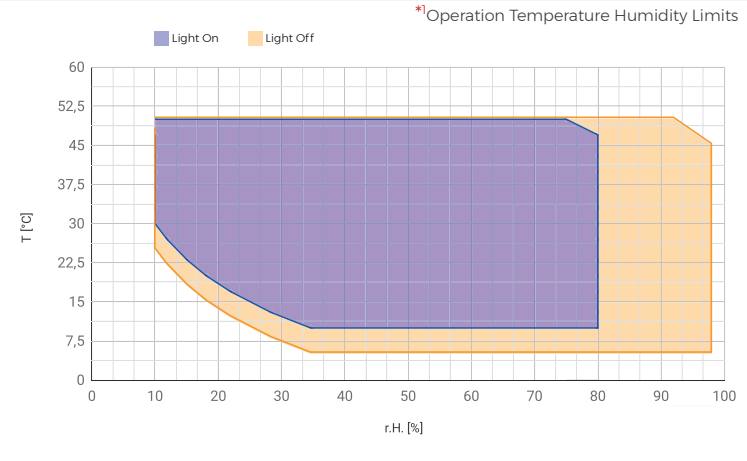
*[2]The cartridge should be change every 4÷6 months at most.

*[3]The installation of fluorescent walls illumination reduces the useful width of the shelves: for 140,370,440,900 liters size is reduced of 160 mm for 600, 700, 1200, 1500 liters volume size is reduced of 100 mm. The led walls illumination reduces the useful width of the shelves: for 370, 440, 900 liters is reduced of 40 mm.

All technical data are specified for units with standard equipment at an ambient temperature of +24 °C and a voltage fluctuation of ±10 %.

Positive Range (S)		140S	370S	440S	600S	700S	900S	1200S	1500S	2300S
Negative Range (B)		**140B**	**370B**	**440B**	**600B**	**700B**	**900B**	**1200B**	**1500B**	**2300B**
Environment-specific data										
Sound-pressure level [dB(A)]						60				
Structure and insulation										
Exterior material						White coated galvanized steel or full Stainless steel AISI 304				
Internal material						AISI 304 Stainless Steel				
Insulation						CFC and HCFC free				
Shelf grill						Removable and height adjustable steel grid				
Ventilation										
Fan						forced ventilation				
Safety										
Temperature						Class 2 independent adjustable temperature safety devices (DIN 12880)				
Alarm						Audio-Visual				
Electrical data										
Rated Voltage [V]						220/240				
Power frequency [Hz]						50				
*4Nominal power [kW]	Light off (S)	1.4	1.5	1.4	1.8	1.8	2.2	2.4	2.6	4.1
	Light off (B)	1.6	1.7	1.7	2.2	2.3	2.6	2.7	2.9	4.7
Unit fuse [A]						16				
Phase (nominal voltage)						1 ~				

Charts



Main Options

- **MINI T-RH -** Temperature/humidity Datalogger
- **UDB100 -** USB port for storage data
- **ETH100 -** Ethernet interface for remote connection
- **SND20T -** Additional temperature sensor (Pt 100)
- **SND80H -** Additional humidity sensor
- **ASW00 -** Water filtration system
- **BDS020 -** Relative humidity decreasing up to 2% @ 20°C
- **CO200 -** CO2 Regulation System for EN 12390-10
- **PE100 -** Interior socket coverable universal 220-230 V
- **IR000 -** Interior neon lighting
- **IR000LED -** Interior LED lighting
- **IS200 -** Dimmable adjusting light for individual lamp
- **FP100 -** Photoperiod 24h control
- **IR000LED -** Interior LED lighting
- **GD100 -** Glass door
- **SP100 -** Internal compartments lexan door
- **GW100 -** Phorthole with anti-fogging glass (Ispection window)
- **UMS100 -** Sterilised flux vapor humidifier
- **SPS07 -** Pools system for EN1348-2007
- **PAC00 -** Wooden crate packaging
- **PAW00 -** Wooden boxes packaging
- **RT100 -** Castors kit
- **FD100 -** Access cables port with plug
- **GP100 -** Additional rack
- **GP100R -** Additional reinforced rack
- **TE110 -** Power supply 110 V 50-60 Hz

For the full options availability go to: bit.ly/2ItjSuP

For further information or to configure a New Chamber click or go to:

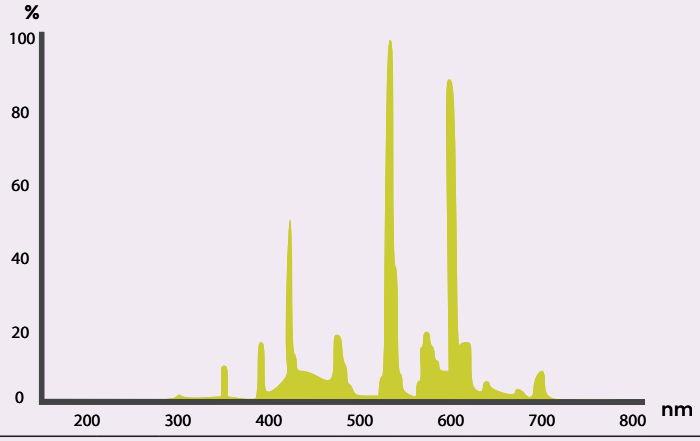
bit.ly/2O9U9rN

*4The nominal power with light ON varies, depending on the number and types of lamps installed.

All technical data are specified for units with standard equipment at an ambient temperature of +24 °C and a voltage fluctuation of ±10 %.

Daylamp

Sunlight Simulation

Positive Range (*S*)		LDC140*S*	LDC370*S*	LDC440*S*	LDC600*S*	LDC700*S*	LDC900*S*	LDC1200*S*	LDC1500*S*	LDC2300*S*
Negative Range (*B*)		**LDC140*B***	**LDC370*B***	**LDC440*B***	**LDC600*B***	**LDC700*B***	**LDC900*B***	**LDC1200*B***	**LDC1500*B***	**LDC2300*B***
***5Temperature performance Light on**										
At 0% light [°C]	*(S)*					0...+55				
	(B)					-10...+55				
At 100% light [°C]	*(S)*					5...+50				
	(B)					-5...+50				
***6Horizontal Shelf Illumination**										
Illumination on Shelf [W/m²]		45	52	43	39	47	43	47	47	47
Illumination on Shelf [LUX]		10.500	13.000	13.000	12.000	16.000	13.000	16.000	16.000	16.000
***7Vertical Walls Illumination**										
Lateral inner walls illumination [LUX]		10.000	12.000	15.000	15.000	18.000	15.000	15.000	18.000	18.000
Spectrum diagram lamp										

*5This data are specified with Fluorescent Lamps. With LED lamps installed the lux values could vary by ± 10%. The W/m² decrease around 20%.

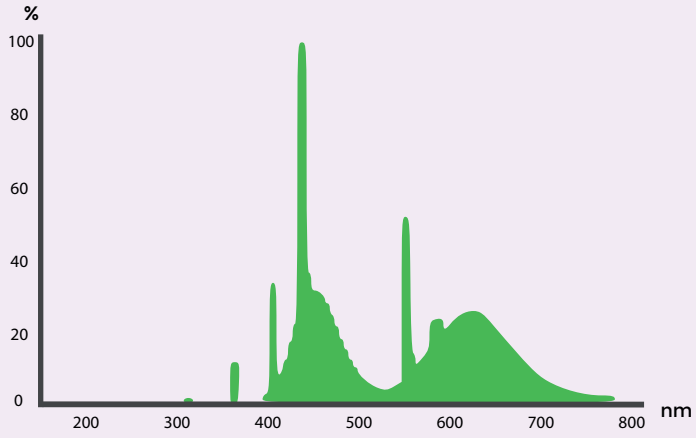
*6This data are for shelf illumination at a distance of 15 cm from the lamps. Data are valid for new lamps at a temperature of 20°C. Please consider that illuminance power of lamps will decrease over time.

*7The installation of fluorescent walls illumination reduces the useful width of the shelves: for 140,370,440,900 liters size is reduced of 160 mm for 600, 700, 1200, 1500 liters volume size is reduced of 100 mm. The led walls illumination reduces the useful width of the shelves: for 370, 440, 900 liters is reduced of 40 mm.

For all type of lamp the humidity data is: Humidity range [% RH] 10 to 80, Humidity fluctuation ≤ 3 ± % RH

Fluolamp

Plant Growth Acceleration

Positive Range (*S*)		LFC140*S*	LFC370*S*	LFC440*S*	LFC600*S*	LFC700*S*	LFC900*S*	LFC1200*S*	LFC1500*S*	LFC2300*S*
Negative Range (*B*)		**LFC140*B***	**LFC370*B***	**LFC440*B***	**LFC600*B***	**LFC700*B***	**LFC900*B***	**LFC1200*B***	**LFC1500*B***	**LFC2300*B***
*[5]**Temperature performance Light on**										
At 0% light [°C]	*(S)*					0...+55				
	(B)					-10...+55				
At 100% light [°C]	*(S)*					5...+50				
	(B)					-5...+50				
*[6]**Horizontal Shelf Illumination**										
Illumination on Shelf [W/m²]		45	52	43	39	47	43	47	47	47
Illumination on Shelf [LUX]		4.500	4.500	5.000	5.000	6.500	5.000	6.500	6.500	6.500
PPFD [µmol/m2s]		150	150	170	170	230	170	230	230	230
*[7]**Vertical Walls Illumination**										
Lateral inner walls illumination [LUX]		4.000	5.000	6.000	6.000	7.000	6.000	6.000	7.000	7.000
PPFD [µmol/m2s]		120	150	190	190	220	190	190	220	220
Spectrum diagram lamp										

*[5]This data are specified with Fluorescent Lamps. With LED lamps installed the lux and PPFD values could vary by ± 10%. The W/m² decrease around 20%.

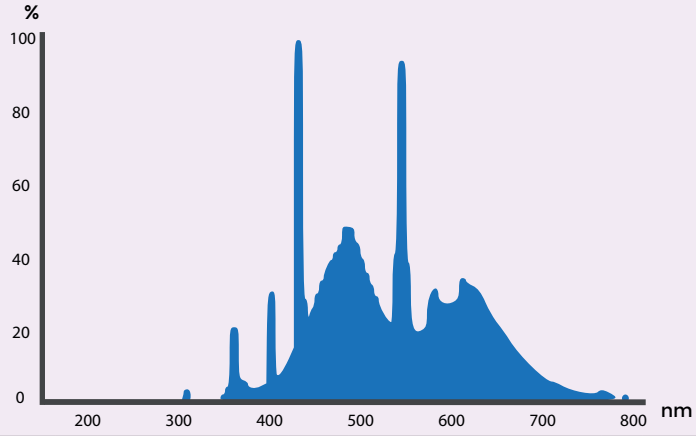
*[6]This data are for shelf illumination at a distance of 15 cm from the lamps. Data are valid for new lamps at a temperature of 20°C. Please consider that illuminance power of lamps will decrease over time.

*[7]The installation of fluorescent walls illumination reduces the useful width of the shelves: for 140,370,440,900 liters size is reduced of 160 mm for 600, 700, 1200, 1500 liters volume size is reduced of 100 mm. The led walls illumination reduces the useful width of the shelves: for 370, 440, 900 liters is reduced of 40 mm.

For all type of lamp the humidity data is: Humidity range [% RH] 10 to 80, Humidity fluctuation ≤ 3 ± % RH

Biolamp

Insect and Bacteria incubation

Positive Range (*S*)		LBC140*S*	LBC370*S*	LBC440*S*	LBC600*S*	LBC700*S*	LBC900*S*	LBC1200*S*	LBC1500*S*	LBC2300*S*
Negative Range (*B*)		**LBC140*B***	**LBC370*B***	**LBC440*B***	**LBC600*B***	**LBC700*B***	**LBC900*B***	**LBC1200*B***	**LBC1500*B***	**LBC2300*B***
*[5]**Temperature performance Light on**										
At 0% light [°C]	*(S)*					0...+55				
	(B)					-10...+55				
At 100% light [°C]	*(S)*					5...+50				
	(B)					-5...+50				
*[6]**Horizontal Shelf Illumination**										
Illumination on Shelf [W/m^2]		x	x	x	x	47	x	47	47	47
Illumination on Shelf [LUX]		x	x	x	x	12.000	x	12.000	12.000	12.000
*[7]**Vertical Walls Illumination**										
Lateral inner walls illumination [LUX]		7.000	8.000	10.000	10.000	13.000	10.000	10.000	13.000	13.000
Spectrum diagram lamp										

x = not available

*[5]This data are specified with Fluorescent Lamps. With LED lamps installed the lux values could vary by ± 10%. The W/m² decrease around 20%.

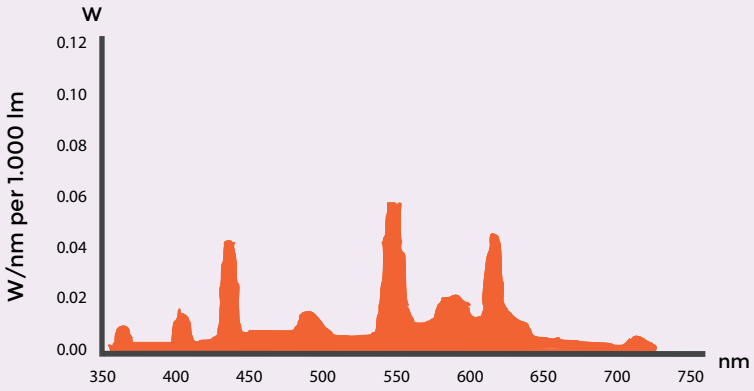
*[6]This data are for shelf illumination at a distance of 15 cm from the lamps. Data are valid for new lamps at a temperature of 20°C. Please consider that illuminance power of lamps will decrease over time.

*[7]The installation of fluorescent walls illumination reduces the useful width of the shelves: for 140,370,440,900 liters size is reduced of 160 mm for 600, 700, 1200, 1500 liters volume size is reduced of 100 mm. The led walls illumination reduces the useful width of the shelves: for 370, 440, 900 liters is reduced of 40 mm.

For all type of lamp the humidity data is: Humidity range [% RH] 10 to 80, Humidity fluctuation ≤ 3 ± % RH

Arablamp

Arabidopsis Growth Acceleration

Positive Range (*S*)		LAC140*S*	LAC370*S*	LAC440*S*	LAC600*S*	LAC700*S*	LAC900*S*	LAC1200*S*	LAC1500*S*	LAC2300*S*
Negative Range (*B*)		**LAC140*B***	**LAC370*B***	**LAC440*B***	**LAC600*B***	**LAC700*B***	**LAC900*B***	**LAC1200*B***	**LAC1500*B***	**LAC2300*B***
[*5]Temperature performance Light on										
At 0% light [°C]	*(S)*					0...+55				
	(B)					-10...+55				
At 100% light [°C]	*(S)*					5...+50				
	(B)					-5...+50				
[*6]Horizontal Shelf Illumination										
Illumination on Shelf [W/m^2]		x	x	x	x	44	x	44	44	44
Illumination on Shelf [LUX]		x	x	x	x	12.000	x	12.000	12.000	12.000
PPFD [µmol/m2s]		x	x	x	x	440	x	440	440	440
[*7]Vertical Walls Illumination										
Lateral inner walls illumination [LUX]		8.000	10.000	12.000	12.000	14.000	12.000	12.000	14.000	14.000
PPFD [µmol/m2s]		230	280	350	350	420	350	350	420	420
Spectrum diagram lamp										

x = not available

[*5]This data are specified with Fluorescent Lamps. With LED lamps installed the lux and PPFD values could vary by ± 10%. The W/m² decrease around 20%.

[*6]This data are for shelf illumination at a distance of 15 cm from the lamps. Data are valid for new lamps at a temperature of 20°C. Please consider that illuminance power of lamps will decrease over time.

[*7]The installation of fluorescent walls illumination reduces the useful width of the shelves: for 140,370,440,900 liters size is reduced of 160 mm for 600, 700, 1200, 1500 liters volume size is reduced of 100 mm. The led walls illumination reduces the useful width of the shelves: for 370, 440, 900 liters is reduced of 40 mm.

For all type of lamp the humidity data is: Humidity range [% RH] 10 to 80, Humidity fluctuation ≤ 3 ± % RH

ICHlamp



Photostability Test

Positive Range (S)	LHT140S	LHT370S	LHT440S	LHT600S	LHT700S	LHT900S	LHT1200S	LHT1500S	LHT2300S
*[5]**Temperature performance Light on**									
At 0% light [°C] (S)					0...+55				
At 100% light [°C] (S)					5...+50				
*[6]**Horizontal Shelf Illumination**									
Illumination on Shelf for UV-A lamps [W/m²]	130	140	110	100	100	110	100	100	100
Illumination on Shelf for White lamps [LUX]	8.000	8.000	10.000	10.000	13.000	10.000	13.000	13.000	13.000
Exposition time to reach 1,2 million of lux [Hours]	153	157	118	122	92	118	92	92	92
Exposition time to reach 200 W/m² of UV-A [Hours]	1,3	1,4	1,7	1,9	1,9	1,7	1,9	1,9	1,9

*[5]This data are specified with Fluorescent Lamps. With LED lamps installed the lux values could vary by ± 10%. The W/m² decrease around 20%.

*[6]This data are for shelf illumination at a distance of 15 cm from the lamps. Data are valid for new lamps at a temperature of 20°C. Please consider that illuminance power of lamps will decrease over time.

For all type of lamp the humidity data is: Humidity range [% RH] 10 to 80, Humidity fluctuation ≤ 3 ± % RH

	Chamber 700 liters chawith *FLUORESCENT lamp*	Chamber 700 liters with *LED lamp*
Vertical Walls lamp	