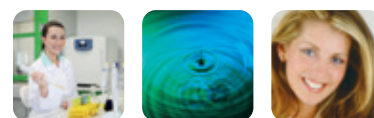# VENTICELL® IL EASY

Hot–Air Sterilization and Depyrogenation
in Laboratories, Pharmacy and Industry

MM

MMM Group

NEW

protecting human health

Tradition, Quality, Innovation

Since its establishment in 1921, BMT Medical Technology s.r.o., the traditional manufacturer of medical and laboratory technology, has been gradually transformed from a small regional company to an international corporation. In 1992, it became a member of the European MMM Group which has been operating on the world markets since 1954 as an important supplier of systems for the health care industry, science and research. With its comprehensive offer of products and services, sterilization and disinfection devices for hospitals, scientific institutes, laboratories and pharmaceutical industry, the MMM Group has established itself as an outstanding quality and innovations producer on the global markets.

The knowledge and experience gained during the implementation of individual supplies for our customers all over the world, and the technical innovations have been permanently and positively influencing the development, construction and production of our devices. High level of our work has also been confirmed by the number of patents and utility and industrial designs, sophisticated design as well as an easy implementation of individual device adjustments.

Technical Data

Inner volume: 55, 111, 222, 404, 707 litres
Temperature range: 250/300°C
Inner chamber: stainless steel DIN 1.4301 (AISI 304)

Individually Designed Laboratory Technology

VENTICELL® IL EASY is an economic modular-designed series of laboratory devices with the chamber volume of 55–707 litres. The device is used for items sterilization at the temperature of up to 180°C, or for items depyrogenation at the temperature of up to 300°C and in optional time mode. The devices can be used in laboratories, industry, pharmacy, and research. VENTICELL® IL EASY is intended for treatment of thermally resistant, inflammable materials, e.g.:

- empty glass products – glasses, ampoules, vials, bottles, vessels
- metal materials in pharmaceutical industry – trays, containers, accessories and device parts
- thermally stable basic pharmaceutical products and chemical substances (non-explosive, flameproof and non-toxic)

The extended functions of the device can be used for incubation or long-term heating of materials with bidirectional operation. These additional features allow you to make the most of a cramped space in a clean room, using one device instead of two previously used ones.

The safety of the device is based on the requirements of standards EN 61010-2-040, EN 61010-1 and is further adapted to the individual needs of individual workplaces. The device is designed and manufactured in a certified quality system according to the EN ISO 9001 standard.

General and Actively Provable Quality

The factory acceptance test (FAT) in the extent pursuant to client's requirements is taken for granted, upon the user's request even in his presence or in the site of the device installation (SAT) if possible. A 27-point measurement according to DIN 12880 can also be performed on the device during the output control. To prove the sustained sterilization quality by the manufacturer (importer) in accordance with the declared device parameters, the VENTICELL® IL EASY hot-air sterilizer users are provided with appropriate documents

IQ – installation qualification
OQ – operational qualification
PQ – procedural / function qualification (validation)
DQ – design qualification

Tests and validations according to standards are performed using the potential of our accredited testing laboratory.

Hot-Air Sterilization and Depyrogenation

Sterilization is a procedure killing all viable micro organisms including spores and leading to irreversible inactivation and killing of health-endangering worms and their eggs. The number of Bacillus subtilis microorganisms must be reduced during a sterilization cycle by six orders as a minimum. The sterilization effect in hot-air sterilizers is reached by the sterilized material heating to high temperatures (160-180°C).

Depyrogenation is a procedure reducing the number of bacterial endotoxins (pyrogens) by at least three orders by high temperature (250–300°C) acting for a given period of time.

Important parameters of the processes are the following ones:

- accurate profile reached by sophisticated heated air flow system and perfect construction design of the sterilization chamber
- quick temperature rise and cooling
- compliance with the regulations on clean rooms

More than Can Be Seen at the First Glance

The economical variant of the VENTICELL® IL EASY hot air sterilizer corresponds to the conditions of installation in clean rooms. It meets the requirements of European Directives No. 2014/35 / EU and No. 2014/30 / EU. The design of the device is based on established and proven devices of heating technology MMM for long-term use in the processes of hot air sterilization and depyrogenation with the necessary technical modifications, which are:

- advanced EVO automation meeting the guidelines/directives for hot air sterilization, depyrogenation
- advanced user management, including user rights definitions and multi-level account management
- FDA CFR 21 Part 11 regulations for data protection in the pharmaceutical industry
- dustproof door design
- separate control panels on both sides of the device for separate wall mounting
- separate power electronics from the basic body of the device
- reinforced appliance door for less thermal expansion and better sealing at higher temperatures

- adjustable fixed legs for stable installation (optional equipment)
- modified control SW to minimize start-up times
- sealed exhaust extension and sealed port for validation (optional equipment)
- automatic door blocking, it prevents accidental or unauthorized opening of the door during the process
- painted or stainless steel cover strips on the clean side for building the device into the wall
- input HEPA inlet filter H13, meeting the purity class ISO class 7
- strong thermal insulation made of chloride-free mineral wool, preventing heat loss from the device

Design According to ISO Clean Room Class

VENTICELL® IL EASY ISO CLASS 7

- meets the regulations for clean rooms according to ISO 14644-1
- external HEPA filter at the input
- sophisticated solution for the construction of the sterilization chamber
- loading device (optional equipment)
- guarantee of compliance with ISO class 7 in all the zones of the sterilization chamber
- working temperature up to 300°C (optional equipment)
- different volumes of sterilization chambers, see table
- one-door and pass-through design
- stainless steel cladding sheets of the device (optional equipment) with the possibility of individual installation in a clean room

VENTICELL® IL EASY ISO CLASS 5

- meets the regulations for clean rooms according to ISO14644-1
- external HEPA filter at the input and special heat-resistant internal HEPA filters
- sophisticated solution for the construction of the sterilization chamber
- loading device
- guarantee of compliance with ISO class 5 in all the zones of the sterilization chamber
- working temperature up to 300°C
- different volumes of sterilization chambers, see table
- one-door and pass-through design
- stainless steel cladding sheets of the device (optional equipment) with the possibility of individual installation in a clean room

Supposed availability as from 2022!

ISO CLASS (N)	Maximum concentration limits particles m³ of air to ISO 14644-1					
	0,1 µm	0,2 µm	0,3 µm	0,5 µm	1 µm	5 µm
ISO CLASS 1	10	2				
ISO CLASS 2	100	24	10	4		
ISO CLASS 3	1 000	237	102	35	8	
ISO CLASS 4	10 000	2 370	1 020	352	83	
ISO CLASS 5 (CLASS 100)	100 000	23 700	10 200	3 520	832	29
ISO CLASS 6	1 000 000	237 000	102 000	35 200	8 320	293
ISO CLASS 7 (CLASS 10.000)				352 000	83 200	2 930
ISO CLASS 8				3 520 000	832 000	29 300
ISO CLASS 9				35 200 000	8 320 000	293 000

RS 232

USB Device

WiFi
(optional equipment)

USB Host
(optional equipment)

Ethernet / Internet
(optional equipment)

BMS remote alarm
(optional equipment)

Thanks to the use of modern and reliable electronic components, VENTICELL® IL EASY devices offer the possibility of connection to a wide range of communication interfaces. The basic configuration includes a traditional and reliable RS 232 interface and a USB Device. The device can be easily supplemented with another interface, see the table.

Basic equipment	
Interface	Use for
RS 232	PRINT, PrinterArchiv, WarmComm 4
USB Device	WarmComm 4
SD card	Export, Import*

Optional equipment	
Interface	Use for
WiFi – 802.11b/g	WarmComm 4 (remote diagnostics), web server, e-mail, android appl.- CLC EVO monitor.
USB Host	Export, Import* Flashdisk
Ethernet – RJ 45	WarmComm 4 (remote diagnostics), web server, e-mail, android appl.- CLC EVO monitor.

* Export –recording of data, programs, user interface (users administration), communication settings, audit trail
 Import – of programs, user interface (users administration), communication settings

Connection of software
WarmComm 4.0

Local

Remote (Internet)

Integrated data
logger, USB Device

Compatible thermo–
printer via RS 232

Smartphones
CLC monitor

WarmComm 4.0

Universal data administration for BMT/MMM heating technology devices

Internet

Messages

GSM

- Compatible with EVO line and ECO line devices
- Backward compatible with older heating technology series
  (Standard, Comfort - all except CO2CELL)
- Stable platform of the SQL library
- User-friendly environment
- Connection via Ethernet, RS 232 and USB
- Two-way communication – data monitoring and device control
- Client-Server architecture
- Three levels of the program depending on client's requirements (Basic-Professional-FDA)
- In compliance with FDA CFR 21 Part 11 (version FDA)
- Web support, on–line updating
- Protected licence policy
- Compatible with MS Windows XP / 7/8/10 operating systems
- Validation documentation IQ/OQ

P1 test

test
Cycle length: 19h 0min   Cycles: 1
Parameters
Safety termostat: 0°C, 50°C

The new control system offers:

- Intuitive control
- Microprocessor control of the Fuzzy logic process
- Multilingual communication
- Acoustic and visual alarm
- LED function indicator of the device
- 5.7-inch (14.5 cm) LCD colour touch screen
- Graphic representation of the new program

- Control via coloured icons
- Touch screen lock against unauthorized access by password
- Multi-level user management (FDA CFR 21 Part 11 compliant)
- Data encryption and non-manipulation (according to FDA CFR 21 Part 11)
- Up to 100 programs and up to 100 segments for each program, a total of a maximum of 500 segments in the device
- Programming of temperature ramps, real time and cycling

- Annual data recording in graphical and numerical form
- Export data in online and offline mode
- Preset service programs for quick fault diagnosis
- SD memory card, USB Device and RS 232 interface
- WiFi, USB Host and Ethernet (RJ 45) as a part of the communication module (optional equipment)

Passthrough Design

This version is available as an optional equipment for VENTICELL® 111 devices up to 707 litres. The passthrough design allows the material to be loaded from one side of the device (loading side) and removed after sterilization from the other side (unloading side, e.g. clean rooms).
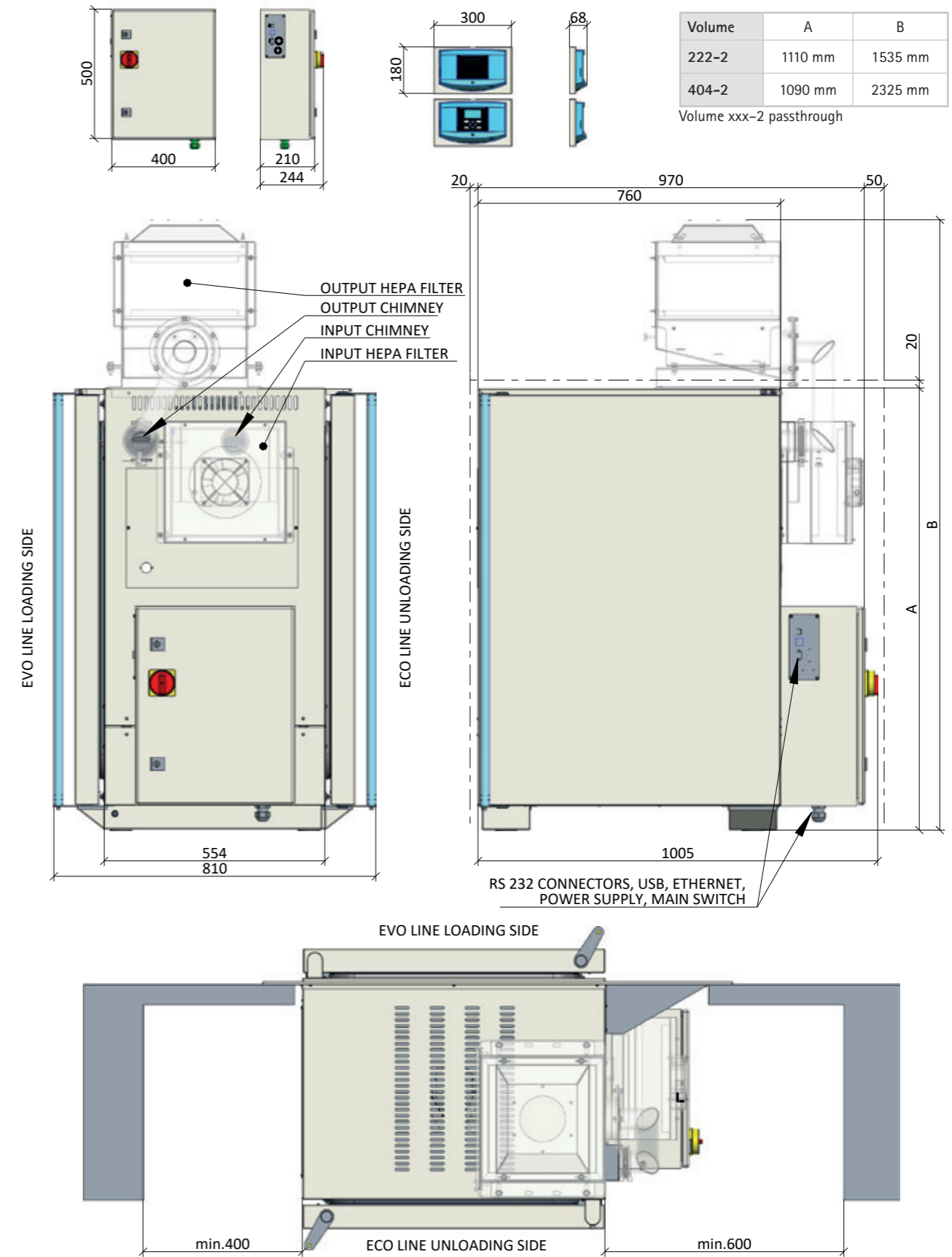
This solution can therefore be used to incorporate the device, for example, into pharmaceutical partitions, which separate rooms with different cleanness classes. The control panels on both sides of the sterilizer inform about the ongoing process and the status of the device.

Depending on the design, the devices also allow the material to be dried before the actual heat treatment.
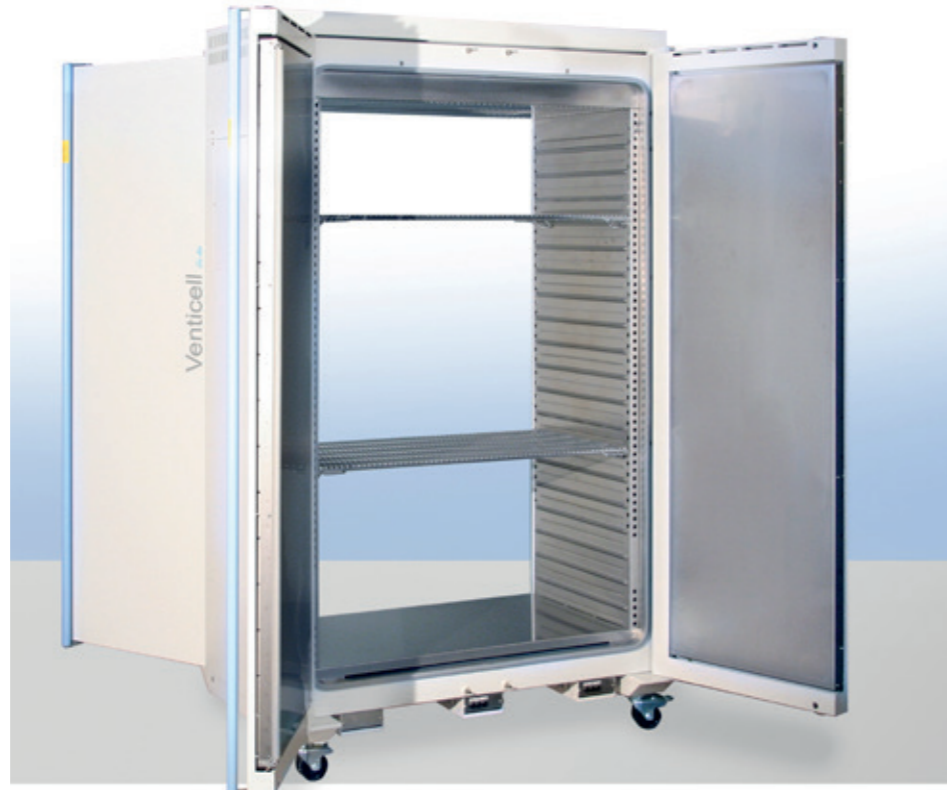
Stainless Steel Design (Optional equipment)

The stainless steel design of the AISI 304 or AISI 316 housing optically unifies the built-in instrumentation in your laboratory and it ensures the highest standards of cleanliness.

Example of installation dimensions for sizes 222 and 404

Volume	A	B
222-2	1110 mm	1535 mm
404-2	1090 mm	2325 mm

Volume xxx-2 passthrough

OUTPUT HEPA FILTER
OUTPUT CHIMNEY
INPUT CHIMNEY
INPUT HEPA FILTER

EVO LINE LOADING SIDE

ECO LINE UNLOADING SIDE

RS 232 CONNECTORS, USB, ETHERNET, POWER SUPPLY, MAIN SWITCH

EVO LINE LOADING SIDE

ECO LINE UNLOADING SIDE

min.400   min.600

Installation plans, including detailed dimensions, are available for each VENTICELL® IL EASY size - for one-door and passthrough versions. An installation plan is available on request.
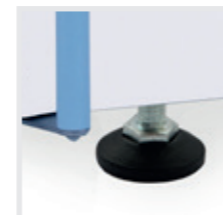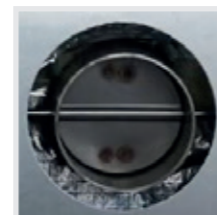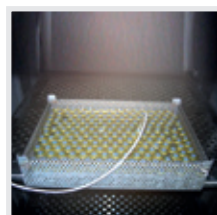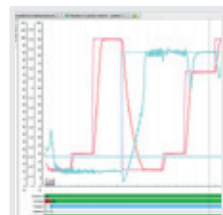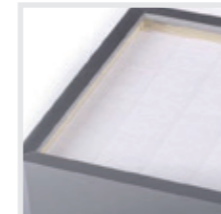
Transport and Loading System

For easy handling of sterilized material, a loading system is available as an option for 404 and 707 litre volumes, consisting of a transport and loading cart. The construction of the transport cart is designed for stable handling of the load even with high weight.

The loading cart with shelves for storing standardized material cassettes is equipped with wheels with heat-resistant bearings for safe handling and long service life. This also ensures that the charge is placed in the device without the risk of particles being released from the cart.

The design of the loading device enables a smooth flow of air in the chamber and thus also contributes to shortening the working cycle time and increasing the temperature homogeneity in the sterilization chamber.

Optional Equipment, Accessories

Thanks to the modular design of our devices, the VENTICELL® IL EASY can also be retrofitted with a number of optional equipment according to your preferences.

- inlet HEPA filter H13 active in combination with overpressure measurement in the chamber (without regulation)
- external independent pressure sensor (indicator–type)
- inlet HEPA filter H14 (instead of H13)
- outlet HEPA filter H13
- device on adjustable legs instead of castors
- stainless steel shell (volume 404 and 707 litres in combination with 300°C is MANDATORY)

- increase of operating temperature to 300°C
- stainless steel design AISI 316 L chamber - only in combination with shelves (trays not available)
- loading equipment
- temperature sensor PT 100, max. 4 pcs
- ports (limited placement depending on volume)
- "Emergency stop" button with key for authorized restart
- chamber frame for increased load

- communication module (USB Host, WiFi, Ethernet)
- lacquered or stainless steel cover strips on the loading side, for mounting the device in the wall
- extension chimneys for connection to external air conditioning
- WarmComm 4.0 data management software
- automatic inlet and outlet flap
- perforated stainless steel cassettes according to customer specifications

Technical Parameters

VENTICELL® IL EASY (VC E) 55, 111, 222, 404, 707			55	55–2	111	111–2	222	222–2	404	404–2	707	707–2
Inner space	volume	l	55	55–2	111	111–2	222	222–2	404	404–2	707	707–2
	width	mm	400	400	540	540	540	540	540	540	940	940
	depth	mm	390	390	390	390	540	540	540	540	540	540
	height	mm	350	350	530	530	760	760	1410	1410	1410	1410
External dimensions ((including door, handle, legs N or casters K)	width	max. mm	620	620	760	760	760	760	760	760	1160	1160
	depth	max. mm	640	660	640	660	790	806	790	806	790	806
	height	max. mm	680	680	860	860	1110	1090	1910	1910	1910	1910
	ventilation neck diameter – internal / external	mm	52/49	52/49	52/49	52/49	52/49	52/49	52/49	52/49	52/49	52/49
Package – basic package	width	approx mm	1100	1100	1230	1230	1260	1260	1230	1230	1630	1630
	depth	approx mm	730	730	730	730	860	860	860	860	860	860
	height (including palette)	approx mm	875	875	1060	1060	1260	1260	2085	2085	2085	2085
Package – case	width	approx mm	1180	1180	1210	1210	1320	1320	1310	1310	1735	1735
	depth	approx mm	800	800	910	910	960	960	970	970	1060	1060
	height (including palette)	approx mm	900	900	1085	1085	1310	1310	2123	2123	2163	2163
Package – wooden crate	width	approx mm	1180	1180	1300	1300	1300	1300	1310	1310	1710	1710
	depth	approx mm	800	800	800	800	940	940	940	940	940	940
	height (including palette)	approx mm	870	870	1090	1090	1270	1270	2120	2120	2120	2120
Trays / shelves	maximal number	pc	4	4	7	7	10	10	19	19	19	19
	standard equipment	pc	2	2	2	2	2	2	2	2	2	2
	minimal distance between trays/shelves	mm	70	70	70	70	70	70	70	70	70	70
	usable area	mm	380×335	380×335	520×335	520×335	520×485	520×485	520×485	520×485	920×485	920×485
Maximal allowed loading of trays *)	per 1 tray	kg	20	20	20	20	30	30	30	30	50	50
	per 1 shelf	kg	20	20	20	20	30	30	30	30	20	20
	inside the device – in total	kg	50	50	50	50	70	70	100	100	130	130
Number of external metal door		pc	1	2	1	2	1	2	2	4	3	6
Weight	net	approx kg	55	60	75	80	100	105	150	160	215	230
	brut (cartoon)	approx kg	66	71	87	92	116	121	175	185	240	255
Electric data – mains 50/60 Hz	max. input	kW	1,3	1,9	1,9	2,5	1,9	3,7	3,7	5,5	4,9	7,3
	stand by input	W	5	5	5	5	5	5	5	5	5	5
	current for voltage 230V **)	A	5,6	8,3	8,3	10,6	8,3	5,6	5,6	8,3	7,8	15,6
		V	230	230	230	230	230	400/3NPE	400/3NPE	400/3NPE	400/3NPE	400/3NPE
	current for voltage 115 V**)	A	11,3	16,6	16,6	21,2	16,6	19	19	28	28	42
		V	115	115	115	115	115	115/3PE	115/3PE	115/3PE	115/3PE	115/3PE
IP Code			IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20
Temperature data												
Operation temperature	from 10°C above ambient temperature	to°C	250/300	250/300	250/300	250/300	250/300	250/300	250/300***	250/300***	250/300***	250/300***
Variations from operation temperature with closed flap and door (DIN 12 880 part 2)	space	± % temp.	1	2	1	1	1	1,2	1,5	1,8	2,5	2,5
	time	±°C	0,3	1,2	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,74
Time to reach temperature of 250°C with closed flap and voltage 230 V		min	49	–	53	–	70	33	58	43	64	50
Number of air exchanges at 250°C		per hour	45	45	49	49	24	24	18	18	12	12
Heat losses	at 250°C	W	590	590	760	760	990	990	1940	1940	2550	2550
Device noise level		dB	<55	<55	<55	<55	<55	<55	<58	<58	<58	<58

Note:
All the technical data apply to 22°C
Chamber xxx–1 single door, Chamber xxx–2 passthrough
*) The trays may be covered to approximately 50% of their surface and if possibly in such a way so as the air may evenly flow inside the chamber space.
**) Parameters of loading cart can be modified individually
***) The 300°C vision is possible only in combination with stainless steel shell of the device.
The values may differ depending on specific charge and media parameters.
Changes in the desing and make reserved

CE

Unique Line... Cell

Designation	Type marking	Laboratory case type	ECO line / EVO line	Linie Standard / Linie Comfort	Natural air circulation	Forced air circulation	Temperature range in °C (Optional equipment)	Volume 22 (l)	Volume 50 (l)	Volume 55 (l)	Volume 111 (l)	Volume 190 (l)	Volume 222 (l)	Volume 404 (l)	Volume 707 (l)	Volume 1,212 (l)
drying, tempering, sterilization	ECOCELL®	drying oven	ECO		●		5*–250/300	ECO		ECO	ECO		ECO	ECO	ECO	
	DUROCELL	drying oven with protective layer of inner space EPOLON	ECO		●		5*–125	ECO		ECO			ECO			
	VENTICELL®	drying oven	ECO / EVO			●	10*–250/300	ECO/EVO		ECO/EVO	ECO/EVO		ECO/EVO	ECO/EVO	ECO/EVO	ECO/EVO
	VENTICELL® IL EASY	drying oven	EVO			●	10*–250/300			EVO	EVO		EVO	EVO		
	STERICELL® ***	hot-air sterilizer	ECO			●	10*–250	ECO		ECO	ECO		ECO			
	VACUCELL®	drying oven with vacuum	ECO / EVO				5*–250/300	ECO/EVO		ECO/EVO	ECO/EVO					
incubation	INCUCELL®	incubator / biological thermostat	ECO / EVO		●		5–100	ECO/EVO		ECO/EVO	ECO/EVO		ECO/EVO	ECO/EVO	ECO/EVO	
	INCUCELL® V	incubator / biological thermostat	ECO / EVO			●	10–100	ECO/EVO		ECO/EVO	ECO/EVO		ECO/EVO	ECO/EVO	ECO/EVO	
	FRIOCELL®	incubator with cooling	ECO / EVO			●	0–100 (-20)			ECO/EVO	ECO/EVO		ECO/EVO	ECO/EVO	ECO/EVO	
	CLIMACELL®	incubator with cooling and controlled humidity	ECO / EVO			●	0–100 (-20)				ECO/EVO		ECO/EVO	ECO/EVO	ECO/EVO	
	CO2CELL**	incubator with CO₂ atmosphere		Standard / Comfort	●		5*–60		Standard/Comfort			Standard/Comfort				

* above the exterior temperature
** manufacturer MMM Medcenter Einrichtungen GmbH, Semmleweisstrasse 6, D-82152 Planegg / Munich, tel.:+49 89 89 92 26 20, e-mail: medcenter@mmmgroup.com
*** the STERICELL® line also meets European Directive 2017/745 (MDR) for medical devices CE 0123

Make acquaintance with our further offers...

VENTICELL® IL depyrogenation cabinets

Steam sterilizers

Laboratory drying devices and incubators

Washer Disinfectors for Medical Usage

youtube.com/bmtbrno

facebook.com/bmt.cz