

 **Telstar** BioSTAR Plus

*Last Generation
Microbiological Safety Cabinet
Class II*



Telstar BioSTAR Plus *Class II Microbiological Safety Cabinet*

BioSTAR Plus is a class II cabinet particularly focused on ergonomics, simple operation and safety for the operator while offering product protection.

BioSTAR Plus is certified according to European Standard EN 12469-2000, and also meets NSF 49 (class II type A2), NF and BS 5726:2005 main requirements. It is suitable for handling pathogenic agents of levels 1, 2 and 3 in the fields of pharmaceutical, academic research centers, biotechnology, hospital and medical labs, QA control labs...

- Self-compensation for the clogging of filters optimizes filter life time and minimizes service.
- Strong, sealed and resistant epoxy coated frame minimizes vibration. Single piece work chamber with round corners allows easy cleaning.
- Comfortable stress free work for several hours is possible thanks to the sound level of the cabinet being below 58 dBA, several times lower than the limit requested by the standard (65 dBA).
- Manual lock system provides 100% sealing for decontamination and full chamber isolation purpose.
- Ergonomically Sloped window improves body position and reduces operator fatigue. Manual sliding window with predefined working position locking device. Sliding window up allows full access to the working chamber. Glareless safety glass window without any visual obstacle at the edge.
- Large divided work area with removable trays of high grade stainless steel is easy to handle by one operator for cleaning and autoclaving.



Ergonomic curved and wide armrest provides forearm comfort in all working positions. Located above the bench level allows air barrier to surround the operator's arms keeping the user protection.



Small details make big differences

Gas springs counter balance front panel which opens completely for easy window inner side cleaning and servicing. The filters are easily removable through the front of the cabinet using a unique fast tightening / untightening device, reducing the filters replacement time.



- Certification is delivered by authorized European entity TÜV. The complete certification process consists in more than just testing one unit:
 - Full check of the **BioSTAR Plus** features, including type testing, factory testing and routine maintenance testing.
 - Full check of the production installations and procedures to ensure a constant quality, including a yearly factory inspection.
 - Moreover the cabinet must comply with European directives about Electromagnetic Compatibility and Electrical Safety.
- Command/control panel visible and accessible front at seated position with LCD screen that displays all the safety and performance data. Very intuitive interface makes it accessible to everyone.
- Easy to clean high chemical resistant silicon gasket fixed around the chamber frame provides 100% sealing.
- Single piece stainless steel work chamber with round corners allows easy cleaning. Large capacity spill tray, easy to clean, under working surface. Optional side window.
- Stable and ergonomic support stand with large space to allow all operator working positions. Adjustable feet to adapt floor unevenness. Three different stand designs are available including one automatic support stand that allows work sit or stand at the cabinet.

Intuitive Controls

Two control systems: C-MAX and C-DELUXE which offers additional functions and more sophisticated display.

C-MAX

- Alphanumeric LCD screen.
- Key and status LED for: light, UV light, gas valve and socket.
- 3 position fan key: working speed, stand by speed and off.
- Scrolling/enter keys will allow access to different menus.
- Multilingual menu: English, Spanish, German, French.
- Maintenance menu: UV light timer, decontamination process, alarm report, maintenance history, components run time...
- Setup menu: to change or deactivate the password, lock the controls and get the emergency code.
- Audible and visual alarms with display of alarm conditions:
 - High and low laminar downflow.
 - Low inflow velocity / exhaust flow rate.
 - Front window out of working position.
 - UV light on (interlocked with close window position).
 - Stand-by downflow (interlocked with the light).
 - Failure on main control system.
- Two level password protection (operator and technical service) replaces - keyswitch to prevent non authorised use or service.
- Dry contact for remote alarm monitoring or connection to BMS.



C-MAX
Display of working parameters:
 - Downflow velocity
 - Inflow velocity
 - Exhaust flow
 - Chamber temperature

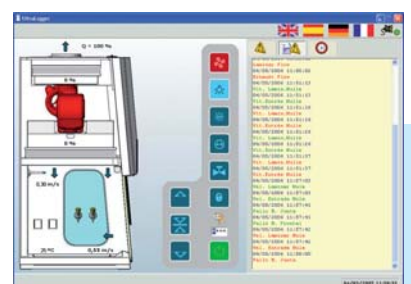
C-DELUXE



C-DELUXE
Simultaneous display of working parameters:
 - Downflow velocity
 - Inflow velocity
 - Exhaust flow
 - Chamber temperature
 - % clogging of filters

C-DELUXE offers additional functions:

- The unique turbo exhaust function which reinforces operator protection when window is above working position or manually operated.
- The filter clogging level display permits to forecast the filter replacement just when it is necessary. Thus reducing service expenses.
- Large graphic LCD screen with comprehensive display of parameters.
- Four “function” keys allow to choose the options in the different menus.
- PC connection for Ultralogger software for remote control and PC monitoring (optional).



Ultra Logger remote control PC screen display

Technical data

- The cabinet is only 795 mm deep (compatible with all lab door size).
- Stainless steel 304L single piece chamber with rounded corners (side windows as an option).
- Whole maintenance from the front.
- Double safety fan operation.
- Gas spring counter balance hinged front panel for servicing and window inner side cleaning.
- Reclined manual sliding window with predefined working position locking device.
- Glareless safety glass window without any visual obstacle at the edge.
- Light intensity higher than 1000 lux.
- 100% leaktight window position with sealing kit.
- Intuitive command/control panel with microprocessor.
- Close loop active control with thermoanemometric sensor.
- 4 languages predefined (English, Spanish, French and German).

TECHNICAL SPECIFICATIONS	UNIT	BioSTAR Plus 3	BioSTAR Plus 4	BioSTAR Plus 6
External dimensions (crated) DxWxH	mm	890 x 1030 x 1640	890 x 1480 x 1640	890 x 2090 x 1640
External dimensions (uncrated) DxWxH	mm	795 x 942 x 1450	795 x 1400 x 1450	795 x 2010 x 1450
Weight (crated / uncrated)	kg	200 / 180	274 / 240	369 / 310
Power	kW/A	1,2 / 5,2	1,8 / 7,8	2 / 8,7
Electrical supply	V/Hz	230 / 50 single ph (other supplies available)		
Chamber dimensions (DxWxH)	mm	560 x 732 x 650	560 x 1190 x 650	560 x 1800 x 650
Laminar downflow velocity "average"	m/s	0.40	0.40	0.40
Downflow	m ³ /h	610	995	1500
Exhaust flow (Ø 200 mm)	m ³ /h	350	540	815
Inflow velocity	m/s	0.60	0.60	0.60
Light intensity	lux	> 1000	> 1000	> 1100
Noise level	dBA	< 58	< 58	< 60
Filters HEPA/ULPA H14	%	Efficiency > 99.999% (Class 10) (Downflow and exhaust)		

Ordering information

STANDARD (includes 2 sockets)	BioSTAR Plus 3	BioSTAR Plus 4	BioSTAR Plus 6
BioSTAR Plus, 230V / 50Hz with SS sides C-MAX	44184	44582	N.A.
BioSTAR Plus, 230V / 50Hz with side windows C-MAX	44185	44583	44183
BioSTAR Plus, 230V / 50Hz with SS sides C-DELUXE	44656	44584	N.A.
BioSTAR Plus, 230V / 50Hz with side windows C-DELUXE	44657	44585	44182

ACCESSORIES (related to unit size)	BioSTAR Plus 3	BioSTAR Plus 4	BioSTAR Plus 6
Single piece stainless steel working surface	41512	41513	41515
Support stand, height 720 ± 22 mm (790 ± 22 mm*)	500034	500035	5000037
Support stand, height 850 ± 22 mm (920 ± 22 mm*)	500038	500039	5000041
Motorized support stand, adjustable height 700 – 1000 mm	47083	47085	37584
Canopy "thimble" exhaust transition	41522	41173	44588
UV germicide kit	45727	38252	45728
Front window sealing kit	47086	45407	47087

* working surface height

ACCESSORIES	Cat. No.
Gas and vacuum valve kit	43627
Gas and vacuum valve kit (side windows unit)	45723
Gas valve kit	44489
Gas valve kit (side windows unit)	45724
Vacuum valve kit	44490
Vacuum valve kit (side windows unit)	45725
Anti blow-back exhaust valve	20529
Activated charcoal exhaust filter box**	44659
External exhaust fan	12213
Formalin vaporiser with neutralization***	30318
Connection to VHP decontamination***	44658
Gas burner with IR sensor switch	39576+46377

OPTIONS	
Additional service valve	500009
Two additional electrical outlets	41524
Magnehelic gauge (inside the chamber)	41525
Stainless steel AISI 316 working trays	44661
Quality certification at Telstar (IQ, OQ)	500028

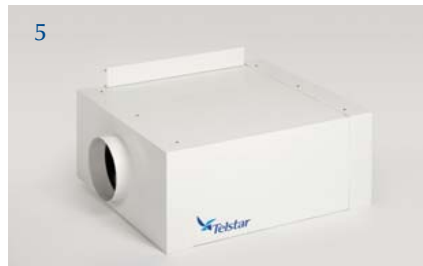
** Requires external exhaust fan

*** Requires front window sealing kit

Options and accessories

A complete range of options and accessories enables the **BioSTAR Plus** to meet all needs:

- Side windows to improve the illumination.
- Automatic support stand to adjust working bench height. (1)
- Antiblow back valve. (2)
- Programmable UV light for decontamination.
- Service valve kits.
- Formalin vaporizer for decontamination. (3)
- Formalin vaporizer with neutralization for decontamination. (4)
- C-DELUXE control system.
- Additional charcoal exhaust filter to trap smell or chemicals. (5)
- Canopy for a safe connection of exhaust to a duct. (6)
- Plain tray to prevent risk of spillage. (7)



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