Features & Benefits

Ergonomic design
At Telstar we strongly believe that on the comfort when using a BSC. With BiOptima x user centered cabinet has been developed. Standard features are designed to offer maximum comfort and make cabinet very easy to use.

- External armrest. Ergonomic epoxy coated stainless steel arm rest contributes to the comfortable working position of the operator.
- 7° sloped front window for ergonomic work position of the operator. With predefined working, open and close position.
- Electric driven laminated safety glass front window.
- Diffused and dimmable LED lighting for visual comfort.
- High working Area. (666 mm)
- Side glass.
- Initialize user interface.
- Superior Luminarity
- Low Operation cost
- Ergonomic lighting is positioned outside the work area. This does not disturb the disinfector, nor create inconvenient shades, nor create obstructions during cleaning.
- User-friendly LCD control panel, positioned at an angle, showing the operator all relevant functions and alarms at a glance.

Easy to clean
BiOptima cabinet characteristics make it extremely easy the cleaning of the working area
- Hinged front glass for backside access that allow complete opening of front window to easy access to all points in the working area. Additionally it will facilitate entering large equipment into the main cabinet chamber.
- One piece inner chamber. Standard-equipped with Stainless Steel chamber with rounded corners, allowing easy cleaning.
- Segmented working trays.
- The drip tray underneath the worktop collects spilled liquids up to 4 Litres (according to EN 12469), preventing these liquids from entering parts of the cabinet that are difficult to clean.

Easy to service & decontaminate
- G3 Pre-filter prevents dust, dirt and particles entering the HEPA filters, tremendously increasing HEPA filter lifetime. Rainbow pre-filter for extended HEPA filters life. (Up to 7 years)
- Innovative, unique and patented 4F System (Fast, Friendly and eFFicient) to replace the disposable filter. The filter is easily accessible from the front of the cabinet using a unique fast tightening/untightening device, reducing the time required to replace the filter within five minutes.
- All technical parts are easy accessible from the front of the cabinet HEPA filter quick release 4F system (Patented)
- Easy to upgrade
- Ready for accessory installation

Advanced safety features
Characteristics of BiOptima make it exceed the EN 12469 standards.
- Replacable CG screen for the best laminarity
- Dedicated exhaust fan and speed sensor
- High Efficiency EC fans (EBM-PAPST)
- TÜV Nord Certification for 4, According EN-12469 and Cyto 4, Cyto 6 (According Din 12980)
- Voltage inline-grille provides superior safety by preventing blocking the inflow and contamination from the operator’s sleeves
- Side glass for process supervision and better lighting
- Negative pressure in sides
- Controlled airflow

General Specifications
- Tubular EC fans
- Electrical automatic sliding front window
- Hinged full opening of frontal window
- 7° sloped front window for a better working position
- 304 stainless steel chamber with rounded angles and hardened security glass sides
- G3 prefilter & drip tray underneath working surface
- Sides with Negative pressure
- LED lighting
- Hermetically closable sealing around the front window
- Security antireflexive front window with LV protection, with no visual obstacles on the inner edge
- Interchangeable control filter loading interface
- Main screen showing the laminar flow speed and the filter clogging level
- Control panel with international colour code to indicate cabinet status
- UV light and fans with timer to be programmable
- Four preselected languages (Spanish, English, French and German)
- Access to all the maintenance areas via the front side of the cabinet.

Options and accessories
A full range of options and accessories to customise BiOptima cabinets available to fulfill any requirement:
- Support tables (available in various options)
- Gas & vacuum tap
- Solid side waste port
- Humidity sensor
- Temperature sensor
- IQ/OQ documentation
- Relay
- Cabling
- Exhaust transition
- USB Connector
- Heated surface
- External EC/AC fan
- Support tables (available in various options)
- Control panel with international colour code to indicate cabinet status
- Main screen showing the laminar flow speed and the filter clogging level
- Microprocessor control with filter-loading-self-compensation
- Security anti-reflective front window with UV protection, with no visual obstacles on the lower edge
- Hermetically closable sealing around the front window
- LED lighting
- Sides with Negative pressure
- G3 pre-filter & drip tray underneath working surface
- 304L stainless steel chamber with rounded angles and hardened security glass sides
- 7° sloped front window for a better working position
- Low maintenance

Class II Biological Safety Cabinet

Telstar reserves the right to improvements and specifications changes without notice.

Telstar BiOptima
A full range of options and accessories to customise BiOptima cabinets available to fulfill any requirement:

- Support tables (available in various options)
- Gas & vacuum tap
- Solid side waste port
- Humidity sensor
- Temperature sensor
- IQ/OQ documentation
- Relay
- Cabling
- Exhaust transition
- USB Connector
- Heated surface
- Weighting stone
- Monitoring in back wall
- Additional socket
- Particle counter

Advanced & ergonomic design
Comfortable and easy to use
Low energy consumption
Enhanced safety features
Low maintenance
Biological Safety Cabinet Class II for Cytotoxics

**BiOptima**

Series, our newest range of high quality Class II Biological Safety Cabinets ensures the highest level of protection for operator, product and environment, minimizing hazards inherent to working with agents assigned to biosafety levels 1, 2 and 3.

This series has been designed according to the highest standards of quality, biological safety, reliability, ergonomics and usability and meets the latest customer requirements such as low energy consumption and low sound level.

- Low energy
- Low sound level
- Superior quality
- High performance
- Ergonomic design
- Easy to operate
- Easy to clean
- Easy to decontaminate
- Low maintenance
- Easy installation
- According highest standards
- Microprocessor safety control
- C&IP and PIC's compliant
- Enhanced safety features

**Basic principle**

*BiOptima* provides operator protection by inflow, product protection by HEPA-filtered laminar downflow in the working area (30% exhaust; 70% recirculation) and environmental protection by HEPA-filtered exhaust air.

**Applications**

*BiOptima* is designed for microbiological research with biological agents (e.g. bacteria, viruses, etc.) and allergens.

**Available sizes**

*BiOptima* is standard available in 3, 4, 5 and 6 ft (90, 120, 150 and 180 cm) width.

**Certified Safety: EN 12469**

The *BiOptima* 4 & 6 and CyBio 4 & CyBio 6 cabinets are independently tested and certified by TÜV Nord, the main certification body in Europe, in guarantee conformity to standard EN 12469 for Class II biological safety cabinets (30% exhaust, 70% recirculation unit). The *BiOptima* is certified for working with levels 1, 2 and 3 pathogenic agents. It also conforms to the main requirements NSF/ANSI 49 (Class II A2), JS K3800, SFDA YY-0569 and AS2252.

**Basic principle**

*BiOptima Cyto* is equipped with additional V-shaped HEPA filters underneath the work surface, which filter the inflow air and keep the internal construction of the cabinet free of contamination and therefore ensures the topmost safety for high risk applications.

**Applications**

*BiOptima Cyto* is designed for high risk microbiological and high toxic applications, such as the production of cytotoxic medicines.

**Available sizes**

*BiOptima Cyto* is standard available in 4 and 6 ft (120 and 180 cm) width.

### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Units</th>
<th>BiOptima 4</th>
<th>BiOptima 6</th>
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<tr>
<td><strong>External dimensions (WxDxH) mm</strong></td>
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<tr>
<td><strong>Frequency Hz</strong></td>
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<td><strong>Vibration mm RMS</strong></td>
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**Filters**

- Pre Filter: G3
- Downflow HEPA Filter: H14
- Exhaust HEPA Filter: H14

Air Quality

ISO 4 in accordance with ISO CD 14644-1:

<table>
<thead>
<tr>
<th>≥ 0.5 µm/m³</th>
<th>≥ 0.1 µm/m³</th>
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</thead>
<tbody>
<tr>
<td>353 part.</td>
<td>10000 part.</td>
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</tbody>
</table>

## Certification

*Certified Safety: EN 12469*

*Certified by TÜV Nord, the main certification body in Europe, in guarantee conformity to standard EN 12469 for Class II biological safety cabinets (30% exhaust, 70% recirculation unit). The *BiOptima* is certified for working with levels 1, 2 and 3 pathogenic agents. It also conforms to the main requirements NSF/ANSI 49 (Class II A2), JS K3800, SFDA YY-0569 and AS2252.*
Biological Safety Cabinet Class II

BiOptima

Class II for Cytotoxics

Certified Safety: EN 12469

The BiOptima 4 & 6 and Cyto 4 & 6 cabinets are independently tested and certified by TÜV NORD, the main certification body in Europe, in accordance with the standard EN 12469 for Class II biological safety cabinets (30% exhaust, 70% recirculation unit). The BiOptima is specified for working with levels 1, 2 and 3 pathogenic agents. It also conforms to the main requirements NSF/ANSI 49 (Class II A2), JIS K3800, SFDA YY-0569 and AS2252.

Basic principle
BiOptima provides operator protection by inflow, product protection by HEPA-filtered laminar downflow in the working area (30% exhaust, 70% recirculation) and environmental protection by HEPA-filtered exhaust air.

Applications
BiOptima is designed for microbiological research with biological agents (e.g. bacteria, viruses, etc.) and allergens.

Available sizes
BiOptima is standard available in 3, 4, 5 and 6 ft (90, 120, 150 and 180 cm) width.

Biological Safety Cabinet Class II for Cytotoxics

Certified Safety: EN 12469

The BiOptima Cyto 4 & 6 cabinets are independently tested and certified by TÜV NORD, the main certification body in Europe, in accordance with the standard EN 12469 for Class II biological safety cabinets (30% exhaust, 70% recirculation unit). The BiOptima Cyto is specified for working with levels 1, 2 and 3 pathogenic agents. It also conforms to the main requirements NSF/ANSI 49 (Class II A2), JIS K3800, SFDA YY-0569 and AS2252.

Basic principle
BiOptima Cyto is equipped with additional V-shaped HEPA filters underneath the work surface, which filter the inflow air and keep the internal construction of the cabinet free of contamination and therefore ensures the topmost safety for high risk applications.

Applications
BiOptima Cyto is designed for high risk microbiological and high toxic applications, such as the production of cytotoxic medicines.

Available sizes
BiOptima Cyto is standard available in 4 and 6 ft (120 and 180 cm) width.
Biological Safety Cabinet Class II

Basic principle
BiOptima provides operator protection by inflow, product protection by HEPA-filtered laminar downflow in the working area (30% exhaust; 70% recirculation) and environmental protection by HEPA-filtered exhaust air.

Applications
BiOptima is designed for microbiological research with biological agents (e.g., bacteria, viruses, etc.) and allergens.

Available sizes
BiOptima is standard available in 3, 4, 5 and 6 ft (90, 120, 150 and 180 cm) width.

TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model</th>
<th>External dimensions (WxDxH) mm</th>
<th>Internal dimensions (WxDxH) mm</th>
<th>Shipping dimensions (WxDxH) (BOX1) mm</th>
<th>Weight Kg</th>
<th>Shipping weight (BOX 1) Kg</th>
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<td>BiOptima 6</td>
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<td>1800x548x666</td>
<td>2080x870x1770</td>
<td>285</td>
<td>320</td>
</tr>
</tbody>
</table>

- Low energy
- Low sound level
- Superior quality
- High performance
- Ergonomic design
- Easy to operate
- Easy to clean
- Easy to decontaminate
- Low maintenance
- Easy installation
- According highest standards
- Microprocessor safety control
- CVM and PIC's compliant
- Enhanced safety features

Certified Safety: EN 12469

The BiOptima 4 & 6 and Cyto 4 & 6 cabinets are independently tested and certified by TÜV Nord, the main certification body in Europe, to guarantee conformity to standard EN 12469 for Class II biological safety cabinets (30% exhaust, 70% recirculation unit). The BiOptima is certified for working with levels 1, 2 and 3 pathogenic agents. It also conforms to the main requirements NSF/ANSM 45 (Class II A2), JS/KSLB40, SFDA YY-0569 and AS2252.

Basic principle
BiOptima Cyto is equipped with additional V-shaped HEPA filters underneath the work surface, which filter the inflow air and keep the internal construction of the cabinet free of contamination and therefore ensures the topmost safety for high risk applications.

Applications
BiOptima Cyto is designed for high risk microbiological and high toxic applications, such as the production of cytotoxic medicines.

Available sizes
BiOptima Cyto is standard available in 4 and 6 ft (120 and 180 cm) width.
BiOptima makes it exceed the EN 12469 standards. Characteristics of Advanced safety features

- Easy to service & decontaminate
- Electric driven laminated safety glass front window.
- Diffused and demistable LED lighting for visual comfort.
- High working area (694 mm)
- Side glass
- Intuitive user interface
- Superior Laminarity
- Low Operation cost
- Ergonomic lighting is positioned outside the work area. This does not disturb the observer, nor create inconvenient shades, nor create obstructions during cleaning.
- User-friendly LCD control panel, positioned at an angle, showing the operator all relevant functions and alarms at a glance.

Features & Benefits

Ergonomic design
At Telstar we strongly believe that the comfort when using a BSC. With BiOptima a user centered cabinet has been developed. Standard features are designed to offer maximum comfort and make cabinet very easy to use.

External armored. Ergonomic epoxy coated stainless steel armrest contributes to the comfortable working position of the operator.

- 7” sloped front window for ergonomic work position of the operator. With predefined working, open and close position.
- Electric driven laminated safety glass front window.
- Diffused and demistable LED lighting for visual comfort.
- High working area (694 mm)
- Side glass
- Intuitive user interface
- Superior Laminarity
- Low Operation cost
- Ergonomic lighting is positioned outside the work area. This does not disturb the observer, nor create inconvenient shades, nor create obstructions during cleaning.
- User-friendly LCD control panel, positioned at an angle, showing the operator all relevant functions and alarms at a glance.

BiOptima cabinet characteristics make it extremely easy the cleaning of the working area.

- Hinged front glass for backside access that allow complete opening of front window for easy access to all points in the working area. Additionally it will facilitate entering large equipment into the main cabinet chamber.
- One piece inner chamber - Standard equipped with Stainless Steel chamber with rounded corners, allowing easy cleaning.
- Segmented working trays.
- The drip tray underneath the worktop collects spilled liquids up to 4 Litres (according to EN 12469), preventing these liquids from entering parts of the cabinet that are difficult to clean.

Ergonomic & Safety Design

- The Advanced & ergonomic design
- Comfortable and easy to use
- Enhanced safety features
- Low energy consumption
- Low maintenance
- Energy efficiency
- Advanced safety features

Features & Benefits

- Controlled airflow
- Side glass for process supervision and better lighting
- V-shape inflow grille provides superior safety by preventing blocking the inflow and contamination from the operator’s sleeves
- Side glass for process supervision and better lighting
- Negative pressure in sides
- Controlled airflow
- Recessed button for front window opening
- 7° sloped front window for a better working position
- Hinged full opening of front window
- 7” sloped front window for a better working position
- 304L stainless steel chamber with rounded edges and hardened security glass sides
- G3 pre-filter & drip tray underneath working surface
- Sides with Negative pressure
- LED lighting
- Hermetically closable sealing around the front window
- Security anti-reflection front window with UV protection, with no visual obstacles on the inner edge
- Interoperator control with front handwheel compensation
- Main screen showing the laminar flow speed and the filter clogging level
- Control panel with international colour code to indicate cabinet status
- UV light and fans with timer to be programmable
- Four preselected languages (Spanish, English, French and German)
- Access to all the maintenance areas via the front side of the cabinet.

Easy to clean
BiOptima cabinet characteristics make it extremely easy the cleaning of the working area.

- Hinged front glass for backside access that allow complete opening of front window for easy access to all points in the working area. Additionally it will facilitate entering large equipment into the main cabinet chamber.

- Easy to service & decontaminate

- G3 Pre-filter prevents dust, dirt and particles entering the HEPA filters, tremendously increasing HEPA filters lifetime.Bag-in pre-filter for extended HEPA filters lifetime. (Up to 7 years)
- Innovative, unique and patented 4F System (Fast, Friendly and eFFicient) to replace the downflow filter: the filter is easily accessible from the front of the cabinet using a unique fast tightening/untightening device, reducing the time required to replace the filter within five minutes.
- All technical parts are easy accessible from the front of the cabinet HEPA filter quick release 4F system (Patented)
- Easy to upgrade
- Ready for accessory installation

Advanced safety features
Characteristics of BiOptima make it exceed the EN 12469 standards.

- Replaceable G3 prefilter for the best laminarity
- Dedicated exhaust fan and speed sensor
- High Efficiency EC fans (EBM-PAPST)
- TÜV Nord Certification for 4, 6 (According EN-12469) and Cyto 4, Cyto 6 (According Din 12980)
- Voltage inline grille provides superior safety by preventing blocking the inflow and contamination from the operator’s sleeves
- Side glass for process supervision and better lighting
- Negative pressure in sides
- Controlled airflow

General Specifications
- Tubular EC fans
- Electrical automatic sliding front window.
- Hinged full opening of front window
- 7” sloped front window for a better working position
- 304L stainless steel chamber with rounded edges and hardened security glass sides
- G3 pre-filter & drip tray underneath working surface
- Sides with Negative pressure
- LED lighting
- Hermetically closable sealing around the front window
- Security anti-reflection front window with UV protection, with no visual obstacles on the inner edge
- Interoperator control with front handwheel compensation
- Main screen showing the laminar flow speed and the filter clogging level
- Control panel with international colour code to indicate cabinet status
- UV light and fans with timer to be programmable
- Four preselected languages (Spanish, English, French and German)
- Access to all the maintenance areas via the front side of the cabinet.

Options and accessories
A full range of options and accessories to customise BiOptima cabinets available to fulfill any requirement:

- Support tables (available in various options)
- Easy & carve shape
- Solid side waste port
- Humidity sensor
- Temperature sensor
- IQ/OQ documentation
- External EC/AC fans
- Relay
- Connect
- Exhaust transition
- USB connector
- Printed surface
- Weighting stone
- Monitor in back wall
- Additional socket
- Particle counter
- Accessory kit
- External EC/AC fan
- IQ/OQ documentation
- Temperature sensor
- Humidity sensor
- Solid side waste port
- Weighting stone
- Connect
- USB connector
- Printed surface
- Monitor in back wall
- Additional socket
- Particle counter
- Electrical automatic sliding front window
- Hinged full opening of front window
- 7” sloped front window for a better working position
- 304L stainless steel chamber with rounded edges and hardened security glass sides
- G3 pre-filter & drip tray underneath working surface
- Sides with Negative pressure
- LED lighting
- Hermetically closable sealing around the front window
- Security anti-reflection front window with UV protection, with no visual obstacles on the inner edge
- Interoperator control with front handwheel compensation
- Main screen showing the laminar flow speed and the filter clogging level
- Control panel with international colour code to indicate cabinet status
- UV light and fans with timer to be programmable
- Four preselected languages (Spanish, English, French and German)
- Access to all the maintenance areas via the front side of the cabinet.

Advanced & ergonomic design

- Comfortable and easy to use
- Enhanced safety features
- Low energy consumption
- Low maintenance
Class II Biological Safety Cabinet

Features & Benefits

Ergonomic design
At Telstar we strongly believe that on the comfort when using a BSC. With BiOptima a user centered cabinet has been developed. Standard features are designed to offer maximum comfort and make cabinet very easy to use.

- External armrest. Ergonomic armrests provide a safe and comfortable working position of the operator.
- Electric driven ventilation system.
- Side-by-side powered filters for easy cleaning.

Advanced safety features
Characteristics of BiOptima make it exceed the EN 12469 standards.

- Easy to clean & decontaminate
- BiOptima’s advanced characteristics make it extremely easy the cleaning of the working area
- Easy to service & decontaminate
- Column characteristics make it extremely easy the cleaning of the working area

BiOptima Options and accessories
- A full range of options and accessories to customize BiOptima cabinets available to fulfill any requirement:
  - Support tables (available in various options)
  - Canopy
  - Support tables (available in various options)
  - Support tables (available in various options)

Specifications

- Tubular DC fans
- Electrical automatic sliding front window
- Hinged full opening of frontal window
- 7° sloped front window for a better working position
- 304 stainless steel chamber with rounded corners and hardened security glass sides
- G3 prefilter & drip tray underneath working surface
- Sides with Negative pressure
- LED lighting
- Horizontally closable sealing around the front window
- Security anti-reflection glass with UV protection, with no visual obstructions on the lower edge
- Intergration with an external HEPA filter-loading system
- Main screen showing the laminar flow speed and the filter clogging level
- Control panel with international color code to indicate cabinet status
- UV light and fans with timer to be programmable
- Four preselected languages (Spanish, English, French and German)
- Access to all the maintenance areas via the front side of the cabinet.

Options and accessories
- A full range of options and accessories to customize BiOptima cabinets available to fulfill any requirement:
  - Support tables (available in various options)
  - Canopy
  - Support tables (available in various options)
  - Support tables (available in various options)

General Specifications

- Replacing C3 Pre-filter prevents dust, dirt and particles entering the HEPA filters, tremendously increasing HEPA filter lifetime.
- Bifurcal prefilter for extended HEPA filter life: (Up to 7 years)
- Innovative, unique and patented 4F System (Fast, Friendly and eFFicient) to replace the downflow filter: the filter is easily accessible from the front of the cabinet using a unique fast tightening/untightening device, reducing the time required to replace the filter within five minutes.
- All technical parts are easy accessible from the front of the cabinet HEPA filter quick release 4F system (Patented)
- Easy to upgrade
- Ready for accessory installation

Advanced & ergonomic design
Comfortable and easy to use
Low energy consumption
Enhanced safety features
Low maintenance