Bio-X

MODULAR OPERATION THEATRE
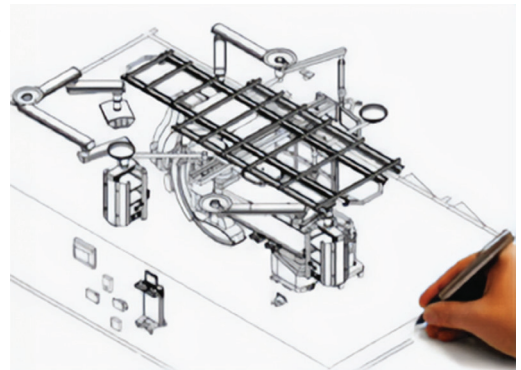
MODULAR OPERATION THEATRE

We would like to introduce ourselves as an ISO certified manufacturers of Modular Operation Theatres

Modular represents a unique combination of design, quality, innovation and flexibility which enable customised adaptations, upgrades and the integration of new devices to be carried out at any time.

The highest quality standards are met, prefabricated modules are tailor-made to the customers' requirements and the integration of new systems and devices for operating rooms, preparation rooms and scrub areas.

We are focused on providing ideal clinical conditions in operating rooms. An OR is a dynamic work environment in which its important to communicate, have a sterile, filtered air, flushed antibacterial surfaces and controlled conditions in the OR.

Planning:

The design of the modular system is carried out in accordance with technical building requirements. We are focused on planning, designing, providing 3D visualizations and simulations for our customers to provide the optimal solution.

Design:

We follow NABH, GMP and FDA guidelines while designing our customized solutions.

Construction:

Our turnkey OR solutions encompass everything from wall and ceiling panels to HVAC systems , laminar flow technology, antibacterial flooring, medical gas outlets, and integrated medical equipment , ensuring seamless operation.
The advantages of the modular systems are:
Quick installation
Easy to clean and disinfect
Ease to access to all equipment and wiring behind the wall panels
Easy dismantling for new construction, renovation and maintenance
Perfect integration with other equipment
Aesthetic and state-of-the-art

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The advantage of the modular systems are:

- ➲ Quick installation time.
- ➲ Surfaces easy to clean and disinfect..
- ➲ Ease of access to all equipments and wiring behind the wall panels..
- ➲ Easy dismantling for new construction, renovation and maintenance.
- ➲ Perfect Integration with other equipment's.
- ➲ Modern and aesthetic..

We offer the following solutions for the OR:

Wall Systems And Ceiling Systems :

- ➲ One can choose from the following options for the walls and ceilings
- ➲ Satinless-Steel puff panels
- ➲ Pre-painted Satinless-Steel panels
- ➲ GI panels with anti-microbial paint
- ➲ Antibacterial PU paint on brick wall
- ➲ Antibacterial PVC panels
- ➲ HPL puff panelling
- ➲ Glass Panelling
- ➲ Solid Mineral Surface
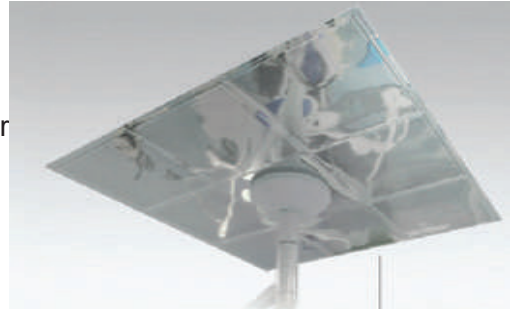
Along with or without Radio-opaque lining on walls.

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Laminar Ceiling with Air Diffusers :

Our Laminar ceilings are equipped with absoluter H14 filters with 99.99% filtration efficiency and provide balanced flow speed to 0.15-0.3m/s linear airflow within the operating table area, thus maintain a Class 100 type room. Each diffuser is made of a set of modular, tightly connected, standard stainless-steel or powder coated aluminium structure which precisely control the Air changes in the room.

The diffuser is made out of SS 304 perforated sheet or two layer of mono-filament precision woven polyester for the plan-air ceiling to give a "LAMINAR FLOW" to the filtered air.

Ducting and Insulation :

Galvanized steel and aluminium are commonly used for HVAC ducts due to their non-porous surfaces, minimizing mold growth. Ducts are passages for air delivery and removal in HVAC systems, including supply, return, and exhaust air. Aluminium ducting in 22G provides durability. External thermal insulation is essential for temperature control and energy efficiency, offering benefits like reduced energy consumption and improved comfort. It also minimizes noise transmission and enhances safety with non-combustible materials like 13 & 19 mm thick class 'o' nitrile rubber with aluminium foil.

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Doors :

Our OR doors are designed for air tightness, noise reduction, stability, and safety, offering robust construction for reliability. With non-porous surfaces and high resistance to water vapor, scratches, impacts, and chemicals, they require minimal maintenance and maintain air tightness. Our flush doors, available in sliding and swing types, are 49mm thick and insulated for acoustic and thermal purposes, featuring 0.8mm thick SS, Powder coated GI, or Antibacterial PVC sheets with 4mm plain see-through glass. They include a high-quality rubber 4-sided EPDM Gasket for hermetic sealing. Additionally, we provide lead-lined doors for medical and nuclear radiation shielding projects.

Windows :

Our windows feature double-glazed glass flush-mounted in the walls, with options for manual, automatic, or electrically operated blinds and shutters. Additionally, they can be equipped with lead glass for radiation protection.

Flooring :

Our flooring consists of high-quality 2mm thick Flexible Homogeneous vinyl Floor covering with conductive carbon-coated PVC pellets for static-conductive properties, meeting EN 649 standards. The vinyl roll includes layers for stability, insulation, and resistance against spills and stains. Alternatively, epoxy flooring offers easy maintenance, seamless, liquid-tight surfaces for enhanced cleanliness and hygiene.

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Surgeon Control Panel :

Our control panels are CE marked and available in membrane, touch glass and touch screen. They are used for displaying the operation time, time of the day, controlling and displaying temp and humidity, medical gas alarm and telephone.

Surgeon Control Panel LCD Touch Screen :

- ⮌ Daytime Digital Clock Elapsed.
- ⮌ Time Digital Clock.
- ⮌ Anesthesia Countdown (Reverse Countdown).
- ⮌ Temperature & Humidity Indicator.
- ⮌ Peripheral & OT Light Controller.
- ⮌ Medical Gas Alarm (Hi/Low/Normal).
- ⮌ Hands Free Telephone.
- ⮌ Music System.
- ⮌ Room Differential Pressure.
- ⮌ HEPA Filter Status

SPECIFICATION:

Circuit Voltage	:	24V & 12V DC.
Digital Clock	:	(HH:MM:SS).
Elapsed Clock	:	(HH:MM:SS) (Start-Stop-Reset).
Anesthesia Clock	:	(HH:MM:SS) Reverse Countdown. Separate Switch For Display ON/OFF
Light Control	:	3 Channel (2 For Peripheral Light & 1 For Plan Air) 0-10V Dimming Range 2 Channel (2 For OT Light On/Off) and 2 OT Light.
Temp/ Humd.	:	Display Room Temp. & Humidity.
Gas Alarm	:	5 Channel (4 Gases + 1 Vacuum) (High/ Low/ Normal/ Indication).
Hands Free Phone	:	Dialing & Receiving Calls With Caller ID.
Hepa Filter	:	Shows Hepa Filter Status (Normal/Choke).
Music Player	:	Plays Mp3 & Other Supported Files Through Wired And Bluetooth Transmission.
Sizes Available	:	22 ″ 27 ″ 32 ″ 43 ″

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LCD Touch Screen Monitor :

Our LCD touch-sensitive 2 monitor has been designed with the following features :

- ➲ Daytime Digital Clock Elapsed.
- ➲ Time Digital Clock.
- ➲ Anesthesia Countdown
  (Reverse Countdown).
- ➲ Temperature & Humidity Indicator.
- ➲ Peripheral & OT Light Controller.
- ➲ Medical Gas Alarm (Hi/Low/Normal).
- ➲ Hands Free Telephone.
- ➲ Music System.
- ➲ Room Differential Pressure.
- ➲ HEPA Filter Status.

SPECIFICATION:

Cut-out Dimension	:	700 mm X 700 mm X 165 mm.
Circuit Voltage	:	24V & 12V DC.
Digital Clock	:	(HH:MM:SS).
Elapsed Clock	:	(HH:MM:SS) (Start-Stop-Reset) Separate Switch for Display ON/OFF.
Light Control	:	3 Channel (2 For Peripheral Light & 1 For Plan Air) 0-10V Dimming Range 2 Channel (2 For OT Light On/Off).
Temp/ Humd.	:	Display Room Temp. & Humidity.
Gas Alarm	:	5 Channel (4 Gases + 1 Vacuum) (High/ Low/ Normal/ Indication)..
Hands Free Phone	:	Dialing & Receiving Calls With Caller ID.
Hepa Filter	:	Shows Hepa Filter Status (Normal/ Choke).

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10" Industrial Touch Screen :

The touch sensitive monitor 10" industrial touch panel is extremely robust.

We have incorporated the following features in the control panel:

- ➲ Daytime Digital Clock Elapsed.
- ➲ ElapsedTime Digital Clock.
- ➲ Anesthesia Countdown (Reverse Countdown).
- ➲ Temperature & Humidity Indicator.
- ➲ Peripheral & OT Light Controller.
- ➲ Medical Gas Alarm (Hi/Low/Normal).
- ➲ Hands Free Telephone.
- ➲ Music System.
- ➲ Room Differential Pressure.
- ➲ HEPA Filter Status.
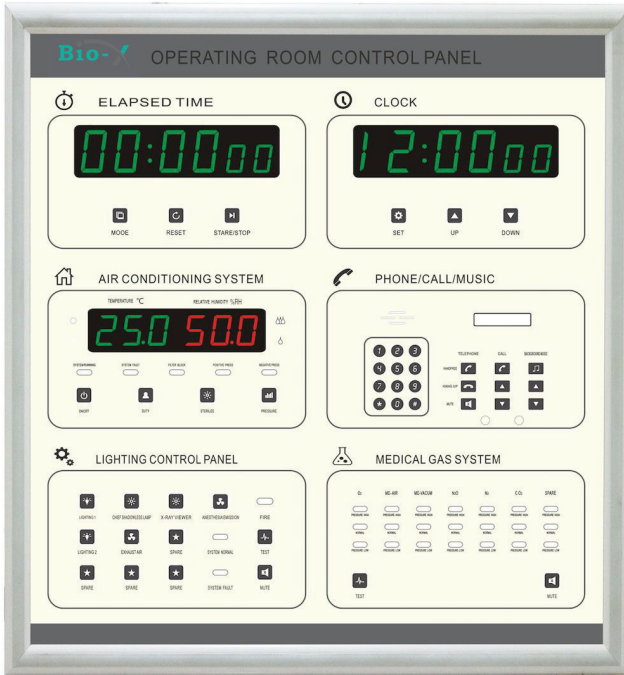- ➲ IPS and UPS alarm.

SPECIFICATION:

Cut-out Dimension	:	245 mm X 155 mm X 150 mm.
Circuit Voltage	:	24V & 12V DC.
Digital Clock	:	(HH:MM:SS).
Elapsed Clock	:	(HH:MM:SS) (Start-Stop-Reset) Separate Switch for Display ON/OFF.
Temp/ Humd.	:	Display and control of Room Temperature & Humidity.
Light Control	:	2 Channel (2 For Peripheral Lights with 0-10V Dimming Range) 2 Channel (2 For OT Lights On/ Off).
Gas Alarm	:	5 Channel (4 Gases + 1 Vacuum) (High / Low / Normal Indication).
Hands Free Phone	:	Dialing & Receiving Calls With Caller ID.
HEPA Filter	:	Shows Hepa Filter Status (Normal/ Choke).
Room Pressure	:	Displays Differntial Room Pressure.
IPS and UPS Alarm	:	Displays IPS and UPS Alarm.
Music	:	Option of Local and Bluetooth.

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Surgeon Control Panel Touch Glass :

Our Touch Glass Surgeon Control Panel, utilizing capacitive touch sensing, is crafted from glass or acrylic, ensuring exceptional hygiene and effortless cleaning, unlike membrane panels. They are designed with the following customizable features:

- Daytime Digital Clock Elapsed.
- Time Digital Clock.
- Temperature & Humidity Indicator and Controlling.
- Peripheral & OT Light Controller.
- Medical Gas Alarm (Hi/Low/Normal).
- LCD Hands Free Telephone
- Music System.
- Room Differential Pressure.
- HEPA Filter Status.

SPECIFICATION:

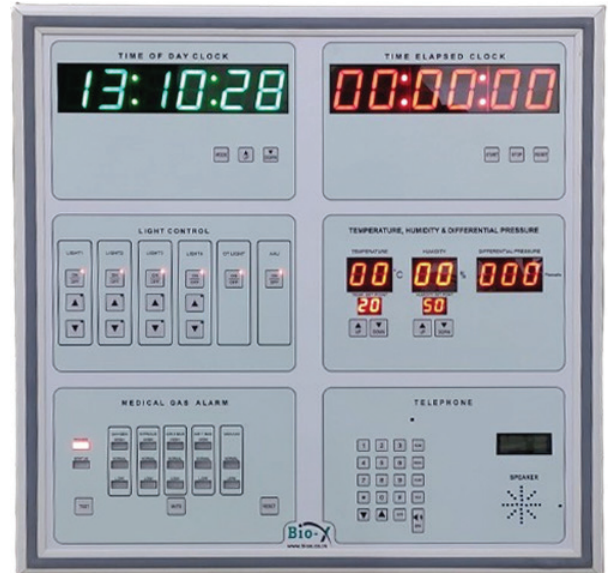|		
Cut-out Dimension	:	685 mm X 745 mm X 120 mm.
Circuit Voltage	:	12 and 24 V AC/DC.
Digital Clock	:	Green Color Display (1.8" Character HH:MM:SS) (Set-Up-Down).
Elapsed Clock	:	Red Color Display (1.8 "Character HH:MM:SS) (Start-Stop-Reset) Light Control.
Temp/ Humd.	:	Display Room Temp. & Humidity With Controlling Outputs For Both Temp. & Humd.
Light Control	:	3 Channel (2 For Peripheral Light & 1 For Plan Air) 0-10V Dimming Range And 2 Surgical Light.
Gas Alarm	:	5 Channel (4 Gases + 1 Vacuum) (High / Low / Normal Indication).
Hands Free Phone	:	Dialing & Receiving Calls With Caller ID.
Music	:	Which Can Play Music If Required
Optional Features Include	:	HEPA Filter Status Indicator Differential Room Pressure Reading.

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Surgeon Control Panel Membrane :

Our PCB-based Membrane Surgeon Control Panels have been designed to cope with the operating theatre environment. They are extremely durable and user-friendly and are designed with the following customizable features:

- ➲ Daytime Digital Clock Elapsed.
- ➲ Time Digital Clock.
- ➲ Temperature & Humidity Indicator
- ➲ Peripheral & OT Light Controller.
- ➲ Medical Gas Alarm (Hi/Low/Normal).
- ➲ LCD Hands Free Telephone
- ➲ Music System.
- ➲ Room Differential Pressure.
- ➲ HEPA Filter Status.

SPECIFICATION:

Cut-out Dimension	:	640 mm X 640 mm X 110 mm.
Circuit Voltage	:	24V DC.
Digital Clock	:	Green Color Display (1.8 "Character HH:MM:SS) (Set-Up-Down).
Elapsed Clock	:	Red Color Display (1.8 "Character HH:MM:SS) (Start-Stop-Reset).
Temp/ Humd.	:	Display Room Temperature & Humidity With Controlling Outputs For Both Temperature & Humidity.
Light Control	:	3 Channel (2 For Peripheral Light & 1 For Plan Air) 0-10V Dimming Range. (Can Be Customized To Maximum Of 6 Channel).
Gas Alarm	:	5 Channel (4 Gases + 1 Vacuum) (High / Low / Normal Indication).
Hands Free Phone	:	Dialing & Receiving Calls With Caller ID.
Optional Features Include	:	Measurement And Display Of Differential Room Pressure Music System. Display HEPA Filter Status.

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Sensors:

Temperature And Humidity Sensor- *Honeywell*

To measure the temperature and humidity inside the OR (0-50 – °C/0-100%)

2 X Analog Output 0-10V

Room Pressure Sensor -*HK Instruments*

To measure the differntial pressure between the or and the external environment.

Analog ourput – 0-10V or 4-20mA.

With reset button.

Medical Gas Sensor-*Ma-TER*

For pressure switch caliberated 3.2V (low level) for O2, Air 4, Air 7, N2O, CO2.

For pressure switch caliberated -0.4bar (low level) for vacuum.

Hepa Filter Sensor-*Beck*

Pressure switch to measure the differntial pressure bettern the inlet and outlet of the hepa filter.

Pendants:

We manufacture Single and double arm anaesthesia and surgical horizontal and vertical pendants. The Pendant is made up of 3 mm thick high strength Aluminium Extrusion with option of having gas outlet and electrical outlets. It also consists of IV pole which are made up of stainless steel 304 grade. The trays are made up of High Strength Aluminium Alloy. High quality imported Steel bearing is used for the rotation. The pendants are capable of a 330° rotation. The pendant is designed to be ceiling-mounted ensuring best possible ergonomics. All pendants have a High strength Aluminium Extrusion Arm with stainless steel fasteners. PVC ducting is used to isolate the internal wiring.

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Magnetic Writing Board :

The magnetic writing board, installed flush into clean room walls, allows doctors and technicians to write down information. Coated with antimicrobial material, it's suitable for all clean room environments.

SIZE   : 845 X 550 X 29 mm
CUTOUT : 825 X 530 mm

Static Pass Box :

Our Static Pass Boxes come with the following features :

⮑ Outer Dimension : 570 x 500 x 600 mm
   Working Area : 450 x 450 x 450 mm
   (The size s can be customized as per users' requirements).

⮑ SS 304/316 1.2 mm Double Skinned Door with Matte Finishing.

⮑ Equipped with 4 mm Thick Toughened Glass.

⮑ Protected With Electr o-Mag netic interlocking system on both sides.

⮑ LED Light/ UV Light.

Scrub Sink :

Our scrub sinks, available in Single , Double, and Triple stations, offer versatility in various combinations. Crafted from high-quality Stainless Steel 304 or Corian material, they features electronic or manual taps with thermostatic controllers, suitable for floor or wall mounting. Accessories like automatic, electrical, and manual soap dispensers, paper towel dispensers, endoscope cleaning trays, and catheter washing trays with hooks can be added for enhanced functionality.

Pressure Relief Damper :

Bio-X supplies SS 304 grade Pressure Relief Dampers with SS blade to maintain +ve pressure inside the OT Ideal for maintaining differential room pressure.
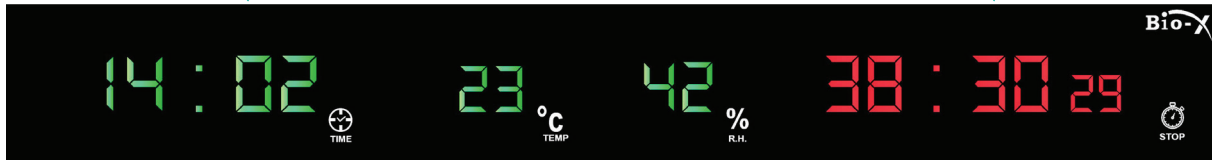Cutout Dimension: 325 (H) X 300 (W) X 100 (D)

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Surgeon Information Display :

Bio-X Surgeon Information Display provides a comprehensive and real-time overview of vital room parameters including time, temperature , humidity , differential pressure and elapsed time.

Always displays the precise time using different types of synchronisation.

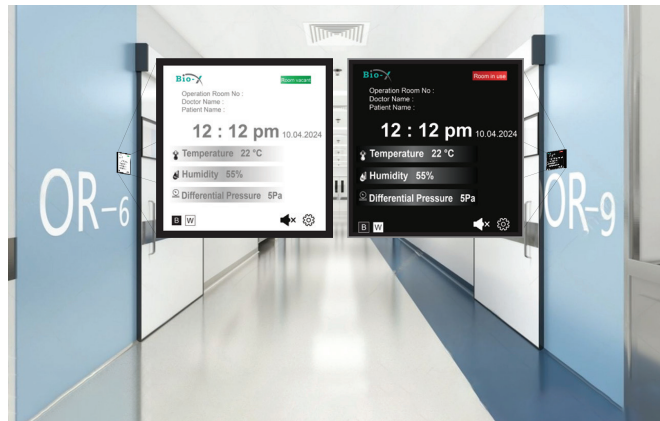The integrated stopwatch enables precise time measurement.

Displays the temperature and humidity. The data from the sensors is transferred without loss over a distance of up to 100 metres.

The Surgeon Information Display can be flush mounted above on the opertation theatre room wall mounted above a door, for example .

Clean Room Monitor :

The Bio-X manufacture Clean Room Monitor is designed to measure the vital parameters of Temperature, Humidity and Differential pressure for Pharma Clean Rooms, AHUs, biotechnology, HVAC, Blood banks, operation theatre etc .The sensors for all 3 parameters are integrated inside for ease of use & installation .

LED Peripheral Ceiling Light :

FEATURES :

➲ Bio-X Luminaries Are Designed To Avoid Reflections (Anti-Glare).

➲ Bio-X Luminaries Are Designed Specially To Facilitate The Seamless Design Of The Modular Operation Theatre In Hospitals.

➲ Bio-X Luminaries Are Ip54 Grade Suited Ideally For Clean Room.

➲ Sizes available 300 mm x 600 mm , 600 mm x 600 mm also can make customized sizes by your requirement.

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Flush Mounted LED X-Ray Viewer :

We have developed the Flush Mounted LED X-Ray Viewer which can be concealed into the wall of the operation theatre especially incase of modular operation theatres. This ensures a seamless design hence maintaining clean and sterile environment.

SPECIFICATION:

PARAMETER		SINGLE SCREEN	DUAL SCREEN	TRIPLE SCREEN	FOUR SCREEN
Dimensions (mm)	Frame (L x H x T)	470 x 550 x 29 mm	825x530x29 mm	1220x 550 x 29 mm	1595 x 550 x 29 mm
	Cutout Size (L x H x T)	450 x 530 x 29 mm	825x530x29 mm	1200x 530 x 29 mm	1575 x 530 x 29 mm
Viewing Area (W x H)		360 x 440 mm	736 x 440 mm	1112x 440 mm	1488x 440 mm
Power Consumption		15W	30W	45W	60W
Light Source		LED	LED	LED	LED
Power Supply Input		AC100-240V 50 Hz	AC100-240V 50 Hz	AC100-240V 50 Hz	AC100-240V 50 Hz
Surface Brightness (LUX)		>10,000	>10,000	>10,000	>10,000
Colour Temperature		6500K	6500K	6500K	6500K

CE

CDG
CABINET DE GESTION

ISO 13485:2016
REGISTERED