



The Global Scientific People

ESTEEM INDUSTRIES INC.

AN ISO 9001:2008, ISO 13485, CE, FDA, WHO - GMP, NSIC & DGS & D Registered

ESTEEM MEDINCEPTION LTD.

The Global Scientific Group

Laboratory & Medical

Equipment Manufacturers

ESTEEM
MODULAR O.T
CATALOGUE



CE FDA



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Certificates



company profile

*Esteem Industries Inc. incepted in the year **1984**. It was the vision of **Mr. Mahendra Pratap Tandon and late. Mrs. Rachna Tandon**. The slogan of MRV (Morality, reliability and vision) was the birth child of Mrs. Rachna Tandon. Since then it has been offering state-of-the-art products in the able leadership of Mahendra Pratap Tandon and equal hand of his son Mr. Vipul Tandon in ever expanding field of instrumental analysis.*

*Esteem, founded and established with native fund, actively operates in the laboratory, medical and industrial sectors since **1984** and with customers worldwide, **Esteem shares a favourable reputation in both Indian and international market place complete with numbers of distributors.***

Esteem has built its reputation on a commitment to providing quality products and services while rapidly responding to international needs for innovative and quality products. A primary strategy is superior customer satisfaction. Esteem constantly analyzes market needs in domestic market as well as around the world to develop a full range of products for healthcare, industry, education and business use.

*By widening its product range according to its research-development (R&D) studies and requests coming from the different sector. Today, due to quality and variety, Esteem products are in demand in both international and domestic markets. Definitely **ESTEEM** is leading in the **TRADE**.*

*Manufacturing by "Customer focused quality vision", Esteem obtained **ISO 9001:2008 and ISO 13485: 2003** international quality certificate. Additionally each of Esteem's CE certified products go through constant quality control. Esteem have obtained **CE 1984** certificate for medical equipments.. Esteem obtained **CE - 1023 certificate for medical equipments**. Esteem obtained **WHO-GMP& CE of Laboratory & Scientific Instruments, mortuary cabinets, Autoclaves** as well.*

*Esteem family is today having **more than 150 workers & office staff**. We welcome you for a good beginning with us and let us join hands for betterment of business relation and serve the nation and mankind.*

ESTEEM has started manufacturing of Surgical Instruments. For precision in quality we have all CNC machines & welding is being done by ROBOTS.

With an international concentration while maintaining an innovative approach toward products and solutions for its clients, Esteem welcomes you to come see what's new at Esteem!!!

Thank you for your valuable time and interest in Esteem's products!.....

**Mahendra Tandon
Vipul Tandon**

ESTEEM SEMI-MODULAR OPERATION THEATRE



With the stand alone steel support or wall - mounted system Theatre has been built to suit many modern operation theatre applications. The wall panel is made of top class Electro Galvanized Steel with "no joint" finish after installation.

All the edges and corners of the room are coved to avoid bacterial contamination and for better flow of air in the theatre.

The Sterilisable Coating finish along with Antistatic Flooring System has advantage over the conventional OT concepts. Provided with the Swiss made OT Lights, Energy Bridge and Laminar Flow System from our partner.

There are basic policy decisions required for the construction of an operation theatre department and it is imperative that a high standard of discipline be maintained to minimise the incidence of infection and cross-infection.

In order to determine this, the hospital department has been divided into zones as given below :

1. Protective Zone : The protective zone is the entrance

area for patients, staff and supplies where normal hospital standards of clean lines apply and where normal everyday clothes can be worn.

2. Clean Zone : In order to pass between the protective zone and the clean zone everything must undergo a system of transfer. This is the main area of the department and all patients, staff and supplies must be clean. A strict cleaning routine applies and everybody must undergo a complete changing routine to enter.

3. Aseptic Zone : The aseptic zone is the inner area where conditions are as near sterile as possible. It applies to two rooms in each suite: the theatre and the theatre supply room. All staff who might handle exposed instruments must be scrubbed and gowned.

4. Disposable Zone : In the disposable zone all exposed instruments (used or unused), pathological specimens, lotions, suction jars and soiled linen are passed from the theatre to a disposal corridor and returned for cleaning, sterilising or any other necessary process.



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Any hospital which has been a large operating department also has a great deal of traffic, to preserve the departmental character, a control system must be imposed over all people entering or leaving the hospital.

OPERATION THEATRE WALL PANEL :

DESCRIPTION : Special composite Operation Theatre Wall Panels are resistant against Moisture, Sound, Fire, High Load Bearing, and Impact.

WALLS (WALLS PANELS) : The steel profiles with the dimensions of 75 x 50 x 0.6 mm are fixed to ceiling and floor so that constitute the operation room profile.

One another profile with the dimension of 75 x 50 x 0.6 mm is installed over vertical with 600 mm distance between the floor and ceiling profile, then they are fixed to the steel profile at the floor.

The wall frame and rails are now constructed.

MTB cellulose fiber reinforces covered plates in the dimension of 1220 x 2440 mm and 12.5 thicknesses are fixed to the steel wall frame.

During the fixing procedure of the wall panels, special MTB fixing screws are used. Screwing procedure starts at a distance of 10 mm from the covers and ends with each 250 mm distance. The juncture between all of the plates and screw heads are filled with a special MTBfiller.

The specs which the wall panels comply with are as below; A fire resistance about "class 0" F60,Relative Humidity durability up to 80% Rh, Impact Resistant, Sound Insulating, High Load Bearing 50 kg from toggle bolt.

The wall must be left for 24 hours for drying of the filled joints.

After 24 hours any excess filler is removed from the walls.

The surface is hand finished to provide a smooth surface with all radius in the corners carefully finished.

CEILINGS: The construction of the ceilings is similar to the construction of the walls.

The difference is just that the ceiling must be supported by the building structure (structural ceiling).

Like the wall construction all of the joints and screw heads must be filled in with special filling material and all of the corners must be round.

FLOORING THE OPERATION ROOM THEATRE BY PVC:

PVC floorings are the most hygienic, longevity and as well as the most easy to clean and maintain flooring systems.

In the Modular Operation Theatre are homogenizes conductive, anti static and anti bacterial PVC Floorings used. On the Homogenizes conductive, anti static and anti bacterial PVC Floorings are PUR laminas or polishers which are saturated with special methods. Color is selected in accordance with the wall color from RAL catalogue

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Laboratory Equipment

ESTEEM STAINLESS STEEL WALL & CEILING PANEL



- a) These panels would have flame resistance. The operating room wall & ceiling panel would be steel PUF panel would have two independent steel surfaces, freestanding structure, constructed from composite, free standing insulated steel wall & ceiling panels shall be made of stainless steel SS304 material having thickness not less than 0.8mm thick. The core should consist of rigid polyurethane foam which has been injected under high pressure with a minimum for ceiling to achieve better thermal insulation.
- b) The wall and ceiling panel would be fixed on the floor, ceiling and wall with essential supports on plastered and smoothened applied with antiseptic surface. There should be minimum possible cavity/gap in between in inside and outside surface of the operating room should be variable to suit the approved layout, but would be sufficient for the flush mounting of equipment.
- c) The individual steel wall panels would be put together with the help of cam lock or spot welded together and stitch gap would not be more than 4 mm uniform at equal intervals to render equal support to the panels. Spot welding would be properly grinded to make the surface level. No joints would be more than 4 mm and to be filled with metal filler and sanded flush on site ready to receive the plastic finish hygiene liquid plastic coating with primer.
- d) Wall & Ceiling panel's joints should be invisible after the final STERILE coating is applied. The space between the inner and outer surface of wall panels should be used for conduits, pipes to enable services to run through within, the possible addition of equipment at a later date and to enable services, pipes, conduits etc. to be run within the cavity if available between main wall and panels. All wall mounted equipment should be flush mounted and sealed into theatre.
- e) The wall panels design and construction should allow for the installation and support of all equipment and the provision of opening required for the installation, without affecting rigidity and strength of the steel structure shell housing.
- f) Access boxes would be fitted to the rear of wall mounted equipment to enable maintenance to be carried out from inside/outside the operating room.
- g) All the sharp edges and corners should be in curve coved to avoid bacteria contamination no 90 degree corners should be allowed either wall to wall or wall to ceiling and also wall to floor on finishes after Installation and completion

ESTEEM STERILE WALL COATING SYSTEMS



- a) The internal surfaces of the room walls should be sprayed with water based liquid plastic ASEPTIC, wall glaze or equivalent Antimicrobial Coating System to a minimum dry film thickness of 300 microns with primer.
- b) The plastic coating should overlap the floor covering, ceiling system and doorframes minimum by 25 mm. to provide a continuous sealed surface. The plastic coating should be non-reflective and the colour should be submitted to the project in charge for approval. The color of the paint should be such that it does not alter the perception of skin and organ's color so as to maintain patient monitoring and management.
- c) **Anti-Microbial Protection:** The paint on all surfaces should prevent settling, accumulation and growth of microbes. The hygiene coatings should start the biocidal action as soon as the microorganism land on the surface, and prevent the growth of mould, bacteria and yeasts for at least 10 years. Government approved third party certification is required to demonstrate resistance to a wide range of mixed species, including stubborn pathogens such as MRSA (Methicillin Resistant Staphylococcus aureus). Other pathogens that can be present in hospital environment and to which resistance should be confirmed are: *Acinetobacter* sp, *Aerobacter aerogenes*, *Bacillus subtilis* (and other *Bacillus* sp) *Escherichia coli*, *Listeria monocytogenes*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Salmonella typhimurium*, *Serratia marcescens*, *Staphylococcus aureus* and commonly encountered fungi.
- d) **Chemical Resistance:** These hygiene coatings should be highly resistant to abrasives, detergents, disinfectants, fumigants and weak acids and alkalis used in cleaning regimes. Furthermore, they should tolerate regular steam cleaning without any loss of performance or adhesion to the substrate.
- e) **COSHH Regulations:** These should comply with the statutory requirements for the Control of Substances Hazardous to Health Regulations 1994 (COSHH).
- f) All the four corners of room should have return air duct outlets. Exceptional in case of physical / structural or site limitations, the grill of Return air risers should be made of Aluminum, duly powder coated PTF Coating with color choice to suit.

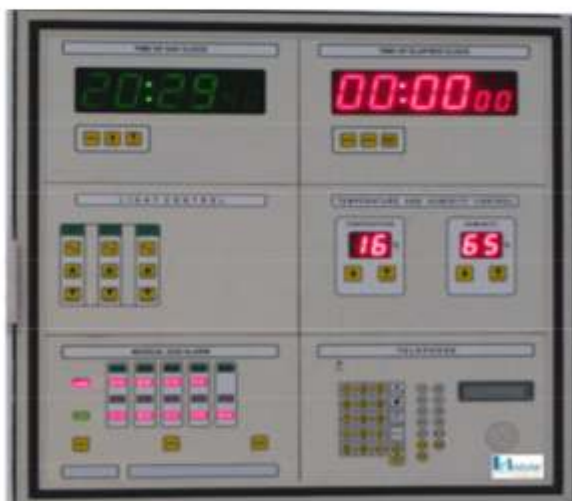
ESTEEM OPERATION THEATRE ANTI-STATIC FLOORING



Flooring seamless with perfectly curved flash-covings, resistance to mechanical stresses and dynamic loads and having ESD/ EMI (conductive) protection characteristics, 2 mm thick, washable.

- a) The flooring would be smooth, non-slippery, impervious material conductive enough to dissipate the static electricity but not conductive enough to endanger the shock to the personnel.
- b) The flooring would either be inset mosaic with least possible joints and copper strips to carry away any static electricity produced. Conductive copper mesh would be done for tiles.
- c) A floor screed would be provided, flat to within a tolerance of ± 3 mm over any 3 meter area. Onto this sub-floor, a self-leveling compound would be laid prior to laying of the floor Finish, if the floor is uneven.
- d) Copper grounding strips (0.05 mm thick, 30-50 mm width) would be laid flat on the floor in the conductive adhesive and connect to copper wire of grounding.
- e) The floor finish in the operating room would be 2mm Conductive PVC rolls / tiles lay on a semiconductive adhesive base.
- f) The floor finish would terminate at the room perimeter passing over a concealed cove former and continuing up to the wall for 100mm.
- g) All joints would be welded with electrodes of the same compatible material to provide a continuous sealed surface.
- h) The floor would have an electrical resistance of 2.5×10^6 to 10^9 Ohms, as per DIN 51953 ATM F-150 or NFPA 99 or any other equivalent standard.
- i) The floor would be B1 class of fire resistance and would meet UL standard 779.
- j) The PVC tiles used would be CE marked and as per EU norms.

ESTEEM OPERATION THEATRE CONTROL PANEL



The Surgeon Control Panel meets Electrical Safety codes for high and low voltage system, wired to the current IEE regulations. The room Surgeon's Control Panel is designed to cope with changing technology and equipment in operating environments. Control Panel will be user friendly and ease of operating and maintaining purpose.

TOUCH SCREEN CONTROL PANEL

1. Using anti scratching glass providing easy cleaning.
2. Automatic adjustment, high response speed, reliability and stability without drift, more than 5 millions of times touch control in each point.
3. Available fingers, soft pen, can be used even wet.

FOLLOWING FEATURES:

- Digital clock:(hh:mm:ss)
- Elapsed Clock : (hh:mm:ss) Start-stop-reset
- Anesthesia Clock : (hh:mm:ss) Start-stop-reset – Reverse
- countdown
- Light Control with dimming

- Temp/humid indicator
- Hands free telephone
- Shadowless lamp control
- Music Player
- View box control
- Negative Pressure Indication
- Android Operating System
- External control board
- Computer parameters
- RS232 X1,RS485 X 3, 1000M Ethernet X1,USB
- X4,PCI Express×16 X1, PS/2 X1
- CPU:1.6MHZ, ROM:1G, SSD32G, SATA X4

SYSTEM enables to choose, save, preview, play and stop of the signal from cameras. The signal is recorded as per DICOM standard. System would allow access to the hospital Information system that stores information about patients (PACS, HIS).

ESTEEM X RAY VIEWING SCREENS



- The system should have electrical safety codes for high & low voltage system. The theatre is to be equipped with a 2-plate X-Ray viewing screen or in multiple of two screens; It should be designed to provide flicker free luminance for the film viewing purpose. It should be installed flushed with theatre wall for hygienic and ease of cleaning purpose. The X-ray viewing screen should be designed for the purpose of front access. The overall size of list board should: 948 x 648 x 110 mm.
- The X-ray viewing screen should be illuminated by high frequency fluorescent lamps or LED and the dimming is controlled by the usage of dimming control with the PCB that is mounted inside the box.
- The diffuser should be able to diffuse the light evenly and to provide enough luminance for film viewing. It should be made of high quality opaque acrylic sheet. The film should be held firmly by using spring-loaded clips for ease of mounting and dismounting. The body should be built by using electrolyzed steel with powder coating. It should work on PCB button control system

ESTEEM PRESSURE RELIEF DAMPERS



- Pressure relief dampers would be provided in each room to prevent contamination of air from clean and dirty areas. Suitably sized air pressure relief damper would be strategically placed, enabling differential room pressure to be maintained and ensured when doors are opened between clean and dirty areas. Counter-weight balancing system would be provided in the PRD to maintain positive pressure inside the operation room. Air pressure stabilizers would have unique capability of controlling differential pressure to close tolerance. The PRD would remain closed at pressure below the set pressure and would open fully at pressure only fractionally above the threshold pressure.
- The body would be epoxy powder coated as per standard BS colors on Aluminum grill.
- Stainless Steel 304 Grade Plate would be used for body and with high grade SS 304 stainless steel for blades
- Overall size of the P.R.D: 300 x 300 mm approx.

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ESTEEM PLANAIR AIR CEILING SYSTEM - LAMINAR FLOW



- a. The treated / conditioned Air to the Operating Theatres to be supplied through an Air & Light Integrated Ceiling System through HEPA filters as per ISO 14644.
- b. The operating theatre shall be equipped with a supply air ceiling to the following specification.
- c. Would be CE certified.
- d. The air-supply ceiling would provide optimum air distribution over the patient area duly integrated with shadow less OT lights.
- e. The Plan air ceiling would be 2.40 meters x 2.40 meters minimum or as per Operating room size in accordance to HTM 2025 and space availability, would be integrated with that adjacent false ceiling.
- f. The ceiling would be constructed with a plenum box supplied with conditioned air from the central system via "S" class. HEPA filters & mounted on the exit from the supply ducting.
- g. The ceiling would include integral lighting and a composite air/light diffuser fitted with the anodized aluminum extrusion factory tested for leakage free. The HEPA filters would be factory tested and certified. Seals must be provided in the filter housing in accordance with DIN 1946 and DIN 4799.
- h. The ceiling would incorporate supports to secure it to the main structural frame of the modular operating theatre.
- i. The PLANAIR Plenum would be constructed from 1.5 mm thick SS304 Steel sheet frame painted. Air would be diffused into the Operation theatre uniformly over the total operating area.
- j. The Laminar flow ceiling would also have illumination across its total area.
- k. The lighting would be sufficient to provide an illumination level of 1500 Lux (Maximum up to 40nos. or less of Illumination lights) at all the sides and would be dimmable down to 3% of full lighting, without flicker. Lighting would be generated from high frequency electronic dimmable Ballast's complete with color corrected fluorescent tubes.
- l. The Air light diffusers would be fitted with the aluminum extruded frame with gasket to avoid leakages, Installed in a manner which allows them to be removed for access to the lamps and air filters for maintenance or replacement. Control equipment for the general lighting and the light dimming would be provided in the theatre control panel.
- m. The Air light diffusers would consist of one-two layers of monofilament precision woven polyester bonded to aluminum frames.
- n. The screens would have uniform porosity, with an open area of sufficient resistance to create laminar airflow from the diffuser face.
- o. The operating lamps would be secured directly to the framework of the supply ceiling in such a way as to minimize deflection. Further to take care of slab height in addition to the lighting in the central area, optional lighting channel would be constructed around the perimeter of the flat ceiling area.
- p. This would contain a ring of high frequency fluorescent tubes to provide additional lighting outside the operating area to provide a minimum lighting level of 1000 Lux throughout the operating theatre.
- q. Control equipment for the peripheral lighting would be provided in the theatre control panel to allow independent control of the lighting levels of both the central lighting and the peripheral lighting by the surgical team.
- r. The peripheral light diffusers would be constructed from opal prismatic diffuser material in aluminum frames. All aluminum used in the construction would be enameled white or anodized.

ESTEEM STORAGE UNIT



- a) The storage unit should be made with 1.0 mm thick SS304 Steel panels. The storage unit should be divided into 2 equal parts and each part should have individual glass doors with high quality locking system. Each part should be provided with glass racks.
- b) The Storage units to be made as per site condition and available space And requirements of user department of Surgery and Anesthesiology
- c) Overall size of the storage H 1666 x B 865 x D 350 mm.

HERMETICALLY SEALED OPERATION THEATRE MAIN DOOR



- a. To maintain sterility and the correct air pressure in the room, all doors into and out should be preferably sliding, hermetically sealing type or (swing one side Open able) swing door if site conditions demands. The door size should be for Main Door 1500 x 2100 mm or as per site conditions and clearance, the doors should meet following specifications:
- b. The doorframe should be made of high quality anodized aluminium and the door panel should be made of compact antimicrobial High Pressure laminate that can withstand high abrasion. To ensure efficient sealing of the doors frames should be provided. They should consist of reinforced

plaster board panels faced with the same laminate as the doors or steel panel incased in extruded anodized Aluminum profile.

- c. The door should seal on all four edges in the closed position & should be surface installed type.
- d. The track of the door should be constructed with high quality door lock with aluminum extrusion, fixed firmly to the walls.
- e. Nylon runner guides should be fixed to the door in such a way they do not obstruct trolley movement through the door.
- f. The door frames should be edged with an aluminum extrusion & with concealed fixings that are adjustable during installation to ensure that 100% hermetic seal is achieved.
- g. Vision panels, 300mm x 300 / 400mm should be provided
- h. The Door should be operable through auto controller should be capable of sensing either by hand movement/ elbow Switches / foot switches, radar switch (touch less sensor). All doors should be able to be operated easily manually in the event of failure of the power supply or the automation unit controller.

AUTOMATION CONTROLLER FOR DOORS



- Meets international quality & safety requirements.
- Doors would be wired to the current IEE regulation standard.
- Motor would be DC 24V 70 W brush less DC Motor
- Noise level of movement would not be more then 60 decibel.
- Controller would be microprocessor based and be CE marked.
- Power efficiency would be .95 (in AC 100V full load).
- The track would be made up of single piece extruded aluminum.
- Environment temperature would be -20°C to +55°C.
- Electrical safety codes for high & low voltage system
- Design would meet HTM 2020/2021 standards.
- The door controller would be sensing overload condition and in overload case the door would automatically stop & reverse the direction of travel.

HAND SWITCH FOR DOOR CONTROLLER



- Photo sensors for each automation in and outside the door frame
- Radar Hand switch to detect the person and activate movement.

FOOT SWITCHES FOR DOOR CONTROLLER



- Foot switch for movement and opening of door control for patient trolley.

STAINLESS STEEL SINGLE SWING DOOR



- Door Stainless Steel Sealed, inside open-able Flush Door of size 950 X 2150 mm having viewing window of sizes 300X300mm on both the shutters.
- The Door frame is made of Extruded Aluminum Profile having Gasket to provide Leak less mechanism on three sides; The SS Door should have drop seal to provide sealing against the floor.
- Door will have Dorma TS-68 door closer, D type Handle and Cylindrical Door lock System.
- The Door should be made of High Grade Stainless Steel 304
- The Door should be made of PUFF
- The Door should be of OR Compatible area as per requirements.

STAINLESS STEEL DOUBLE SWING DOOR



- Double Door Stainless Steel Sealed inside Open able Flush Door of size 1600 X 2150 mm having viewing window of sizes 300X300mm on both the shutters.
- The Door frame is made of Extruded Alumunium Profile having Gasket to provide Leak less mechanism on three sides.
- The SS Door should have drop seal to provide sealing against the floor.
- Door will have Dorma TS-68 door closer or equipment, D type Handle and Cylindrical Door lock System.
- The Door should be made of High Grade Stainless Steel 304
- The Door should be made of PUFF

OPERATING LIST BOARD



One operating list board should be provided in each operating theatre should be made of ceramic having Magnetic properties and should be flushed to the wall of the operating room.

The overall size of list board should: 948 x 648 x 60 mm.

CLEAN ROOM LUMINAIRES PERIPHERAL LIGHTING



- The recessed clean room luminaires for ceiling shall be suitable for use in operation theatre.
- The Housing shall be made of welded sheet steel with white coating resistant to oil, vapors, chemical substances, disinfectants and cleaning agent.
- It shall be complete with the internal catch locks; semi matt specular high purity aluminum optics, asymmetrical & surface coated with high reflective material.
- The toughened safety glass panel of 4mm thickness fixed in anodized aluminum frame is open able by suction cup and smooth transitions between glass and frame making cleaning easier. It shall be certified by third party institute for purity class as per DIN EN ISO 14644-1 Class 3-
- The fixture shall be with electronic ballast suitable for 2 x 54W T5 lamps.
- The normal purity luminaries shall be OT Compatible CLEAN ROOM ADVANCED 2/54W, for T16 lamps, with high frequency ballast mounted in sheet steel recessed housing in white coated finish which shall be resistant to oil vapors, chemical attack, disinfectants and cleaning agents.
- The 5-pole connector terminal The Aluminum asymmetric reflector shall be in matt finish with cover made of anodized aluminum section fitted with embedded 4 mm ESG panel and internal snap-fit fasteners.
- It shall be mounted on 4-point attachment using level- adjustment kit should be included with luminaries. Luminaries wired with halogen-free leads.
- Luminaries dimensions : 1198 mm x 298 mm x 106mm
- Weight not more than 10 Kg's for each module. Degree of protection: IP65 (ceiling side: IP54)
- Lamps: 2 x T16 / 54W
- Total luminous flux: 8900 lm
- Luminaries light output: 55 lm/W
- Color Rendering Index min.: 80
- Ballast: EVG Tridonic PC PRO Lp and Equipment
- Connected Load: 114,5 W Lambda = 0,99
- CELMA EEI: A2

SINGLE ARM CEILING SUSPENDED PENDANT-ANAESTHETIST



Equipment would be CE-certified as per European standard. Would have the approval of the European Regulatory Authority. Would have a Quality Management System as per ISO and 13485. The supply unit must meet the high standards for a safe and reliable open Media column with terminal units for medical gas supply / gas evacuation High- and low voltage power supply according to specification Minimum Basic Standards requirement. The Equipment would be as per European Norm ISO, EN 11197 Directive (93 /42/ EEC) Medical. Device Directive annex 2 article 3. Ceiling Suspended units System would be having following.

- Supply unit with two arms
- Swivel range of arms 320° - 330° min. at each joint
- End stop adjustable at site according to customer requirements

- Easy arm positioning in horizontal level, also with maximum load
- Mounting system for attachment of workplace components, e.g. shelves, drawers, side arms, equipment holders
- Surfaces resistant against disinfectants
- The System would consists of Workstation Component
- CVP Pole Support tube with height adjustable
- Accommodation of infusion bottles
- Having Horizontal Movement, Pneumatic / mechanical Locks, Arm length would be 600 plus 800 mm. Weight taking capacity up to 160 Kgs,
- 02 nos. shelf tray
- 01 no. shelf with 02 drawers
- Medical Gas Out lets as per EN and British standard
- Oxygen x 02 nos.
- Air 4 Bar x 02 nos.
- Nitrous Oxide x 02 nos.
- Vacuum x 02 nos.
- AGSS x 01 nos.
- 8 nos. x electrical 6 /16 Amp as per local supply i/p
- 02 nos. x RJ 45 Socket.
- 02nos.x BNC socket / Telephone / Data.

DOUBLE ARM CEILING SUSPENDED PENDANT



Equipment should be CE-certified as per European standard. Would have the approval of the European Regulatory Authority. Would have a Quality Management System as per ISO and 13485. The supply unit must meet the high standards for a safe and reliable open Media column with terminal units for medical gas supply / gas evacuation High- and low voltage power supply according to specification Minimum Basic Standards requirement. The Equipment would be as per European Norm ISO, EN 11197 Directive (93 /42/ EEC) Medical. Device Directive annex 2 article 3. Ceiling Suspended units System would be having following.

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- Easy arm positioning in horizontal level, also with maximum load
- Mounting system for attachment of workplace components, e.g. shelves, drawers, side arms, equipment holders
- Surfaces resistant against disinfectants
- The System would consist of Workstation Component
- CVP Pole Support tube with height adjustable
- Accommodation of infusion bottles
- Having Horizontal Movement,
- Pneumatic / mechanical Locks,
- Arm length would be 800 plus 800 mm.
- Weight taking capacity upto 150 Kgs,
- 02 nos. shelf try
- 01 no. shelf with drawers
- Gas Out lets as per EN and British standard
- Oxygen x 02 nos.
- Air 4 Bar x 01 nos.
- Vacuum x 02 nos.
- Air 7 Bar x 01 nos
- 08 nos. x electrical 6/16 Amp as per local supply i/p
- 02 no. RJ 45 Sockets
- 02 nos. x BNC socket / telephone / Data

CLEAN ROOM LUMINARIES

RGB 2 NOS. FOR EACH OT



- a. Luminaires for surface or recess mounting in operation theatres should flush with the ceiling, for 2 or 3 T5 fluorescent lamps (24 or 54 W), Ø 16 mm.
- b. With highly specular, anodized aluminium reflectors and optical anti-glare system for individually adjustable light distribution.
- c. Luminaires cover made of highly-resistant, disinfectant-proof laminated safety glass with stylish fine grained surface, glass pane with white coated steel frame.
- d. Closing devices are integrated automatically in the electrical safety control without lines having to be connected to the luminaire housing.
- e. Luminaire body made of sheet steel, white, powder-coated, supplied ready for connection optionally for individual or series circuit, with digital, electronic control gear in Multi-Lamp technology.
- f. Mains supply and further wiring by means of Pg 16 screw glands. With four-pole connection terminal and earth connection terminal for wires up to 2.5 mm² for mains supply 230 V, 50 Hz.
- g. Frame made of extruded aluminium profile, white, powdercoated, able to be put together to form a rigid, continuous frame by means of plug and screw connections, Clean-Room Luminaires for RGB control (CE MARK).

CAMERA



- a. Image Device - 1/2.8 type Exmor™ CMOS sensor
- b. Effective Pixels - Approx. 2 million
- c. Digital Zoom 20x - 20x (200x with optical zoom)
- d. Horizontal Viewing Angle - 54.1° (wide end) to 2.9° (tele end)
- e. Sync System - Internal
- f. Electronic Shutter - 1/2 to 1/10,000 s, 21 steps
- g. White Balance - Auto
- h. Focus System - Auto

LED O.T. LIGHT DOUBLE DOME



- a. The surgical light unit shall incorporate the LED technology for homogenous and shadow less Operating light field with the following specifications.
- b. It shall be extremely flat, compact and aerodynamical Dual Dome surgical pure white light based on innovative White LED technology
- c. The each light head should consist of several, symmetrically arranged light emitting modules, using LEDs to form a multilens matrix on a single light head for a shadow free and homogeneous illumination of the surgical field.
- d. Surgical light should be consisting of one central axis and four rotatable extension arms. It shall have two arms (approx. 700mm to 1000mm) to hold two equal size domes namely main & satellite. Third arm shall hold LCD monitor and fourth height adjustable spring arm shall have provision for electrical connect system with electrical 220V(50Hz) power sockets/Video HDMI input and other suitable connections to connect AV and electrical points of other OT devices such as Anaesthesia Machine with Patient monitor, video-scopes, C-arm etc.
- e. All horizontal arms should be freely rotating (without stops) at all vertical joints.
- f. Aerodynamic designed dome of the light head should not obstruct effect of laminar air flow systems. Each Light head (diameter not above 700mm) shall be made of power-coated aluminum die cast with smooth and clean surfaces that are easy and safe to clean with dimming facility of light in levels without change of color temperature
- g. The switching off/on and light intensity of both domes should be adjustable from wall control unit having LCD display and also from light handle on the dome. There shall be no heat emission through IR spectrum.
- h. The optical light system should be consisting of between 70 to 100 LED's, with its own lens. In case of failure of one light source (LED), the illumination of the light field should not be affected.
- i. It should have provision of ambient (Endo) Green Light so that during usage of Scopes, lights can be switched off and operations can be carried out in ambient light. Other functions like Camera switching Off/On and zoom should be also be controllable from LCD control center by the surgical team.



ESTEEM INDUSTRIES INC.

AN ISO 9001:2008, ISO 13485, CE, FDA, WHO - GMP, NSIC & DGS & D Registered

Endo Mode:

- An "Endo" mode is offered with the unique capability of color control of the light while in Endo mode.

LCD Display

- A backlit LCD screen shows all the control parameters of the light in a crisp and orderly display.

Hands-free Sensor

- All the parameters of the light head can also be controlled by gestures alone through our unique touch-free control system which not only allows the light to be controlled in a sterile fashion but also adds redundancy to the system.

Top/Bottom

- For Mode Selection
- Intensity, Color, ON/OFF, Endo Mode ON/OFF

Left/Right

- Scale / Levels of Modes

Technical Data:

Intensity (LUX)	160000 + 160000 + 160000
Colour Temperature (K)	3500 - 5000
Colour Rendering index (CRI)	95
Light Field Diameter (mm)	150-300
Main Power Supply (V)	220
Led Life (hours)	40000
No. of LED	18 + 18 + 18
Dia. of Lamphead (mm)	500 + 500 + 500

33 Years of Excellence

Creating The Finest Range
of High Precision

Laboratory Equipment

ELECTRICAL SAFETY PANEL AND ISOLATION TRANSFORMER



- Single phase or Three phase connection
- Supply Voltage from 85V to 265Volts.
- Communication and display mode
- Software available for configuration and historical alarms download through an external PC (output RS485)
- LCD Display monitoring visualization (K Ω and mA)
- Visualization: alarms and consumptions
- Temperature (°C, or F)
- Key for testing and stopping acoustic alarm
- Input for Intensity transformer connection
- The external sizes / measurements would be 144x96x55mm With recessing cut out: 140x91mm.
- The compatible alarm repeater for this monitor to be used.
- The unit would also have a real-time clock which would allow the user to adjust the system's time and date and allows alarms, with their dates and times of occurrence, to be saved in the memory.
- Would also have two RS-485 communication ports for communication with a MULTIREPEATER and PC respectively.
 - Would have Communication up to 32 units.
 - Possible configuration through external PC
 - Would have Up to 32 monitor status visualization
 - Would have Bus connection RS485

- Power supplies through the first connected monitor.
 - For security reasons, alarms cannot be disconnected from the multi-repeater
- All high voltage equipment would be installed in a separate enclosure.
 - Would have Electrical distribution equipment & circuit protection equipment for all circuits within the operating theatre.
 - All internal wiring would terminate in connectors with screw & clamp spring connections of the clip-on type mounted, on a DIN rail & labeled with indelible proprietary labels. Individual fuse or miniature circuit breakers would protect all internal circuits and Equipment.
 - Electrical safety system CE mark - EU (EN 11197 and EN ISO)

ELECTRICAL WIRING AND CONDUITING OF OT



ELECTRICAL CONDUITING OF OT:

- The electrical conduiting inside Operating Theatre Room would be done as per requirement of OT equipment.

ELECTRICAL WIRING OF OT

- The electrical wiring inside Operating Theatre Room should be done as per requirement of OT equipment should be able to stand flow of current up to 10Amps and supply 240 V
- Should have necessary potential, neutral and earthing with standard color codes
- Switch sockets to be provided of 5/15 Amperes to suite Indian Electrical supply and distribution system which is based on 50 Hz.

HVAC DUCTING INSIDE OT's



(a) ALUMINIUM DUCTING

- The Ducting should be made of aluminium material 18-20 Gauges without sharp edge
- Should be provided and RA riser should terminate at four corners of OT.
- There should be a gasket of 3mm FOOD grade between the joints



(b) RETURN AIR RISER WITH GRILL

- The Return air riser should be made of aluminium material 20 Gauges without sharp edge
- RA riser should terminate at four corners of OT.
- There should be a gasket of 3mm FOOD grade between the joints
- Aluminium powder coated Grill for Each Return Air Riser Duct inside the Operating Room
- Return air Grill made of Aluminium powder coated (4nos) with damper and Filters. Inside Operating theatres.



(c) INSULATION

- The Ducting should be insulated with Nitrile Rubber cover having thickness of 16 mm class O. (For supply air duct)
- The Return air and Riser should be insulated with Nitrile Rubber cover having thickness of 9 mm class O. (For return air riser).

MEDICAL GAS PIPE LINE INSIDE OT



(a) COPPER PIPE LINE INSIDE OT

- Medical Grade Copper Tube /Piping:
- All Copper Pipes must be duly Medical Grade, seamless, fully degreased and half hard (designated to R 250).
- It should confirms and meets with the latest BS,EN13348:2001 standard. Chemical Composition as per CU.DHP to 1190-1 and CW024A to EN 1412. Maximum total carbon content 0.20mg/dm².
- It should be third party certified from Lloyd or SGS ormetallurgy lab
- Degreasing: All pipes, fittings and valves shall be degreased, steam cleaned internally, dried, shot blasted and blown through with medical quality air and individually capped at both ends after passing a visual internal inspection.
- Pipe sizes should be used as mentioned below: 15mm OD X 0.9 mm thickness and 22 mm OD X 0.9 mm thickness and 28mm OD x 0.9 mm thickness,
- The MGPS should be done as per HTM 20 22&02-01.

(b) MEDICAL GAS PIPE LINE FITTINGS INSIDE OT



- Medical Grade Copper Fittings:
- All Copper Pipes Fittings must be duly Medical Grade, seamless, fully degreased
- Copper Fittings shall be wrought copper, brass or bronze conforming to BS: 864 or EN standard and suitable for a steam working pressure of 15 bar and especially made for brazed socket type of connections. Pipe Fittings should be suitable for the pipes used as mentioned below: 15mm OD X 0.9 mm thickness and 22 mm OD X 0.9 mm thickness and 28mm OD x 0.9 mm thickness.

(C) OXYGEN FLOW METER WITH HUMIDIFIER BOTTLE:



- It should be duly CE marked and comply with 93/42/EEC Medical Devices: General and should have CE no.
- It should be pressure compensated prevents back pressure build up on flow indicator, Durable Polycarbonate flow tube with cover. It should be made up of anodized metallic body and control knob. Flow meter should have twin graduated scale.
- The BPC flow meter should be supplied with humidifier Bottle.

(d) THEATRE VACUUM UNIT (IMPORTED)



- It should be duly CE marked and comply with 93/42/EEC Medical Devices: General and should have CE no.
- It would be mounted on a trolley. It must consists of the following :-1no.

- Suction Regulator and 2nos.4000ml polysulphone collection jar and both to be mounted on a trolley.
- Suction Regulator: The unit would include one suction regulator. Suction regulator would be supplied with a safety jar, including and antibacterial filter and an anti overflow safety device. Would have wide membrane continuous suction controller with reliability & fine adjustment. Would have plastic body and cover, preventing risk of corrosion. Would have vacuum levels: 0- 1000mbar/hPa.
- Would have Vacuum gauge fitted with a protective bumper device. Would have on/off knob allowing for the quick restoration of a readjusted vacuum level. Must have central adjustment knob with a color coded for 0-1000 mbar/hPa. Would have polycarbonate 150cc safety jar, autoclavable at 121o C,unbreakable, fitted with an anti overflow safety device and equipped with a plastic antibacterial Filter. With an extremely simple anti overflow safety Device, thereby ensuring easy maintenance and would be totally transparent.

HIGH PRESSURE ANTISTATIC RUBBER TUBE (IMPORTED):For



For Oxygen, N2O, Air and Vacuum: It should be duly CE marked. It should be EN 739certified. Duly color coded for individual services i.e. white for Oxygen, Blue color for N2O, Black color for Air and Yellow color for Vacuum, antistatic rubber tube

LOW FLOW VACUUM UNIT



It would be duly CE marked and comply with 93/42/EEC Medical Devices: General and would have CE no. Low Flow Vacuum Unit consists of two parts:

- a. Suction Regulator and b. Jar of 1 liters with lid.
- b. Suction Regulator: Suction regulator would be supplied with a safety jar, including and antibacterial filter and an anti- overflow safety device. Would have wide membrane continuous suction controller with reliability & fine adjustment. Would have plastic body and cover, preventing risk of corrosion.
- c. Would have vacuum levels: 0-250mbar/hPa.
- d. Would have vacuum gauge fitted with a protective bumper device. Would have on/off knob allowing for the quick restoration of a readjusted vacuum level. Must have central adjustment knob with a color coded for 0-1000 mbar/hPa.
- e. Would have polycarbonate 150cc safety jar, autoclavable at 121o C,
- f. Unbreakable, ensuring easy maintenance and would be totally

OPERATING TABLE HAVING FOLLOWING FEATURES



- a. Powered by hydraulic system, operated via foot position selector and foot levers
- b. Total length of the table with 6 sections tabletop - 2200 mm
- c. Tabletop width - 500 mm
- d. Standard height adjustment, with mattress (hydraulic) - 700 mm -1000 mm
- e. Lateral tilts adjustment (hydraulic) - $\pm 30^\circ$
- f. Trendelenburg / reverse-Trendelenburg adjustment (hydraulic) - $\pm 30^\circ$.
- g. Table mass - 240 kg.
- h. Maximum working load - 200 kg Design
- a. Standard "T" base with 3 antistatic castors, with foot operated central brake.
- b. Optionally available base for enhanced maneuverability and better access to the operating field, thanks to 4 antistatic castors diam. 125 mm. Driving system with foot operated central brake and directional castor.
- c. The elements of the table top, base and column covers are made of mat polished stainless steel, which makes the surfaces smooth and hygienic.
- d. The covers are impact resistant, easy to clean, prevent fluid ingress, minimizing infection risk. High quality, molded antistatic mattresses made of polyurethane foam of thickness 50 mm.
- e. Easy removable, seamless ensure maximum hygiene and prevent against cross contamination.

PASS / HATCH BOX:



- A hatch should be provided in each operation theater to remove waste materials from the operation theater to dirty linen area/corridor just adjacent to Operation Theater.
- Each hatch box should be equipped with two doors and the door should be operated electrically / motorised.
- The hatch should be designed in such a way that only one door should be opened at one time.
- The UV light should be so installed that it is kept on while both the doors are closed. This UV light has to be automatically turned off in case of opening of either of the doors. Indicators should be provided on both sides of the OT so that door open / close status can be monitored from both sides.

BAY SCRUB SINK SS GRADE 304 (IMPORTED): For



- A compact surgical scrub sink should be designed for use in OT complex providing surgeons with a convenient sink for Pre-OT scrub up. Each fixture should be fabricated out of heavy gauge stainless steel grade 304 and should be seamless welded construction, polished to a satin finish. The scrub sink should be provided with a front access panel which should be easily removed for access to the water controlled valve, waste connections, stoppers and strainers. Hands free operation should include infra red sensors.
- A thermostatic mixing & valve control should be located behind the access panel and maintain constant water temperature with user defined setting of time from 1 to 10 min. should be available. This timing should be adjustable to meet individual application requirement. It shall be provided with infrared sensors, thermostatic control taps with fail safe temperature controls. All units should have reduced antisplashfronts. With knee/Foot operated switch.
- Overall size of the storage L 1600 x W 450 x mm.

PRODUCT RANGE

All types of Autoclave

- Portable Autoclave
- Vertical Autoclave
- Horizontal Rectangular Autoclave
- Horizontal Cylindrical Autoclave
- Sliding Single Door Autoclave
- Double Door Autoclave
- Sliding Double Door Autoclave
- Front Loading Autoclave
- Flash Autoclave
- Table Top Autoclave
- Plasma Sterilizer
- ETO Sterilizer

All types of Incubators

- BOD Incubators
- Bacteriological Incubator
- Walk in chamber/ incubator
- CO₂ Incubator

Mobile Van Services

- Mobile Medical Unit
- Critical Care Ambulance
- Refrigerated Van
- Plant Health Clinic Van
- Mobile Dental Clinic
- Mobile Ambulance
- Mobile Health Care system
- Mobile Service Van
- Mobile HIV/STD & Viral Hepatitis Prevention
- Mobile Clinic

Laboratory & Medical Products

- Hot Air Oven
- Hot Air Sterilizer
- Growth Chamber
- Fume Hood
- Humidity Chamber
- Biosafety Cabinet
- Stability Chamber
- Laminar Air Flow Vertical & Horizontal
- Serological Water Bath
- Refrigerated Water Bath
- Deep Freezer ambient to -86 deg C
- Chest Freezer
- Muffle Furnace
- De- humidifier
- Lypholizer
- Mortuary Chamber
- Drying Oven
- Distillation Plant
- Lab Freezer
- Ultra Low Freezer (Vertical & Horizontal)
- Blood bank Refrigerator
- Bio-safety Cabinet
- Tissue Processor
- Plasma Thawing Water Bath



NOTES



Medical Mobile Unit

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