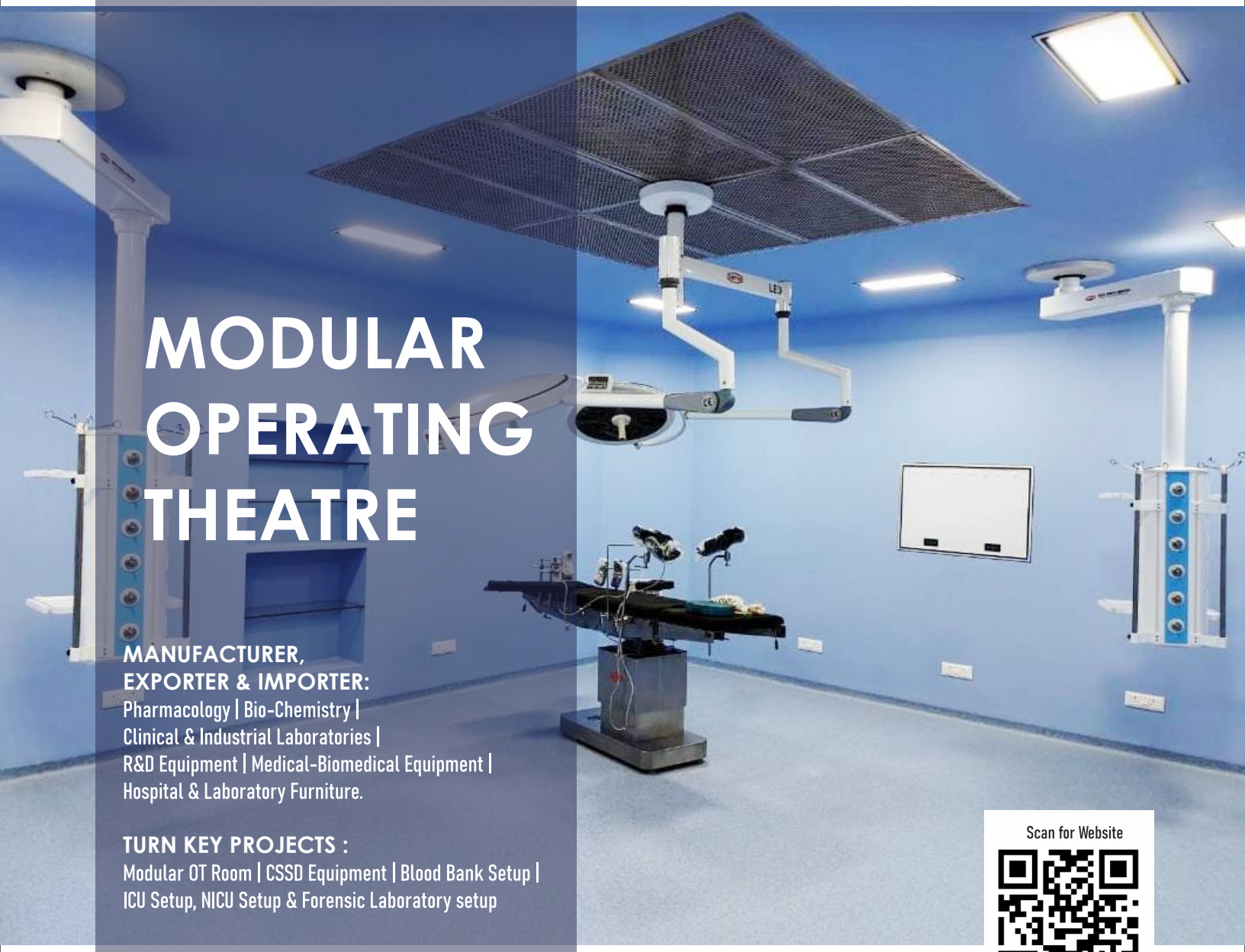
lms



MODULAR OPERATING THEATRE

MANUFACTURER, EXPORTER & IMPORTER:
Pharmacology | Bio-Chemistry | Clinical & Industrial Laboratories | R&D Equipment | Medical-Biomedical Equipment | Hospital & Laboratory Furniture.

TURN KEY PROJECTS :
Modular OT Room | CSSD Equipment | Blood Bank Setup | ICU Setup, NICU Setup & Forensic Laboratory setup

Scan for Website

LIFE LINE MEDICAL SYSTEMS

An ISO 9001:2015 | ISO 14001:2015 | ISO 13485:2016 Certified Company

Nagpur Office: Plot no 113, Pannase layout, Old Mokhare College Rd, Swavalambii Nagar, Nagpur - 440022. (MS) **Contact :** 8770530146 | 9881735077
Betul Office : Telephone colony Shankar ward ward no. 32,Betul 460001. (MP) **Contact :** 9806939806

Email : lifelinengp@gmail.com | **Web :** www.lifelinem.com

#startupindia


Ceiling
Wall Paneling
Windows
Doors
Flooring



LIFE LINE MEDICAL SYSTEMS

A leading name in modular operation theatres in Nagpur and central India

We offer complete tailor made solution to address your specie needs. We work with various health care providers, offering the most effcient and cut effective medical engineering, electro-mechanical and interior out Services.

15 years experience in the design, installation and commissioning of medical engineering works In hospitals & other specialized clinical department.

MODULAR OPERATING THEATRES

The construction is done with readymade prefab panels with speedy construction and high quality finishes and flexible to future expansions & maintenance without interrupting other functioning departments.

We offer turnkey engineering solutions for modular operating rooms which includes site survey, design, supply, supervision, Installation, Testing & commissioning. Operation & Maintenance of the system.



HIGH PRESSURE LAMINATED WALLS

- High wear-resistance -fewer scuffs and scratches
- Impact resistance -no denting
- UV-resistant
- Easy to maintain, clean and disinfect
- Resistant to heat and light
- Insensitive to spots
- Resistant to water, steam, solvents and largely to chemicals
- HPL is fire inhibiting and can be finished as flame retardant
- Available thickness-from 0.8mm to 13mm
- Antimicrobial Wall surface
- Superior static load capacity -no dimpling

SOLID MINERAL SURFACE WALLS

- Antibacterial Solid Mineral Surface
- Absolute flatnessof the surfaces to facilitate cleaning and the achievement of conditions of aseptic hygiene
- Wide range of colours coordinated among the various material
- Joints between self-loading panels, manufactured in full height with no horizontal seams, offer a perfectly airtight sea





PAINTED STAINLESS STEEL WALLS

- High corrosion resistance
- High mechanical resistance
- Ease of cleaning -smooth, non-porous surface
- Maintaining initial features at very low and very high temperatures (cryogenic features)

STAINLESS STEEL WALLS

- Powder coated antimicrobial paint
- Variety of design and pattern -any colour of the RAL palette
- High aesthetics (modern, light, prestigious) Attractive total investment cost 100% recyclable



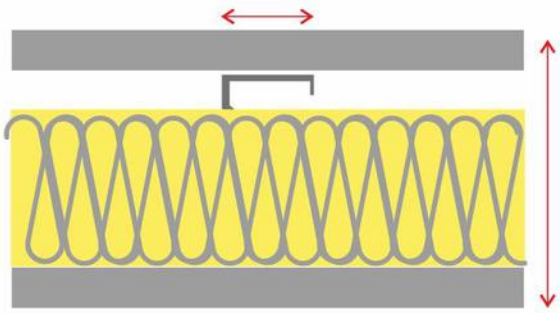
GLASS WALLS

- Mineral-acrylic material is a solid, non-porous, homogeneous surfacing
- Material composed of ±1/3 acrylic resin (also known as PolyMethyl, Methacrylate or PMMA) and ±2/3 natural minerals
- The main mineral is Aluminium TriHydrate(ATH) derived from bauxite, an ore from which aluminium is produced



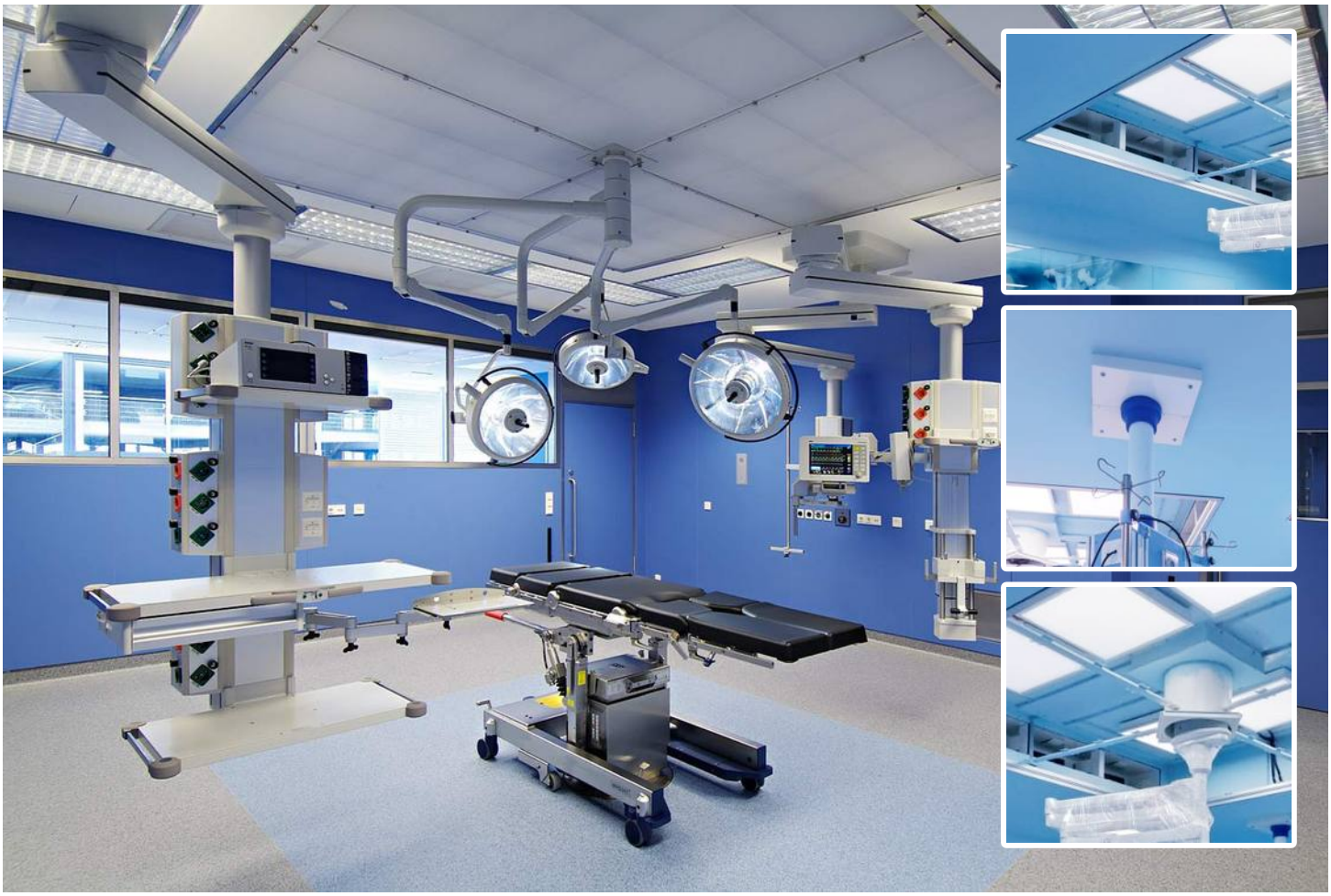
GYPSUM FIBER BOARD WALLS WITH HYGIENE COATING ANTI BACTERIAL, ANTI FUNGAL PAINT





1 S 21 = F60 + 52dB upto 10m high
Steel Stud - 0.6x75mm
Severe Duty Impact Rating

- High Performance Gypsum fiber Board walls as per HTM standards for firerating with acoustic, moisture, impact or load bearing performance
- Hygiene Coating is a paint finish with anti bacterial & anti fungal properties, is done on the gypsum fiber board walls for OT to get a seamless finish on the walls



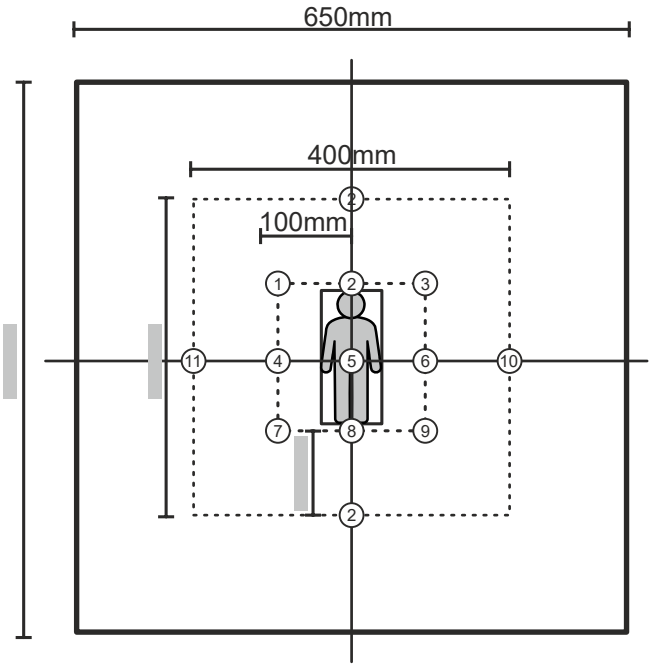
CELLING SYSTEMS WITH PERIPHERAL LIGHTS

CEILINGS SYSTEMS :

Normal purity luminaire lamps with high frequency ballast and special coating-resistant to oil vapours, chemical attack, disinfectants and cleaning agents. Lights are installed as recessed luminaries in Operation Theatre ceiling with amounting frame in cutout recess openings.

PERIPHERAL LIGHTS :

System ceiling enable installation of peripheral devices in the ceiling. Without limiting access to them whenever maintenance service is needed. Types recommended: Stainless Steel Ceiling, Fiber Board Ceiling



Lighting Distribution Systems	
01	1150
02	1245
03	1150
04	1245
05	1150
06	1245
07	1150
08	1245
09	1150
10	1000
11	1000
12	1000
13	1000



LED SURGICAL LIGHT

- Operating lamp must be ceiling model LED surgical lights having Focusmatic property for room height 2.80m to 3.00 m.
- Made of aluminium and a module consisting of individual segments, it must be ideal for operating rooms with laminar flow systems.

The lamp yoke must have a controller with:

- Lighting level adjustment
- Endoscopic mode
- Selection of temperature colour
- Focal electronic lighting level
- Battery indicator
- Cupola selection
- On/off switch

The main army and satellite arm must have the following property :

- Light intensity for main arm 160,000 Lux
- Light intensity satellite arm 100,000 Lux
- Colour temperature in Kelvin 4500°K
- Colour Rendering Index, CRI (Ra) >95
- LED life time >40000 h
- Feeding unit 100 to 240 V
- Frequency 50/60





HERMETICALLY SEALED DOORS



STAINLESS STEEL DOORS

HINGED DOORS

FEATURES :

- Stainless Steel & painted stainless steel Automated doors
- Track system including all necessary running gear Door guidance
- Hermetically sealed gaskets and handles
- Various option to accommodate lead through rail system
- Micro processor controlled electric automation
- Fire rated, fully assembled door kits

SLIDING DOORS

FEATURES :

- Sliding door- offers a greatly reduced movement/turbulent of air.
- Hermetic seal on all sides; airtightness Class D as per DIN EN 1026.
- Door blade hangs by means of two hard plastic rollers with double bearing to provide smooth & silent running.
- Various options available like Micro processor controlled & regulated electromechanical sliding doors, switches & locks.



SLIDING DOORS

AUTO-MATICALLY OPERATED DOORS

WINDOWS





Window and glass elements are made from high quality painted stainless steel and are integral element

STATIC CONDUCTIVE FLOORING



- Compacted floor covering for the better hygiene, maintenance & traffic resistance
- Available in 15 shades of colour
- Thickness 2mm, tile size 608*608 mm.
- Electrical resistance, point to ground -2.5*100000 to 5*10000000 OHMS[Ω].
- This does not allow generation of charges over 100 volts
- Manufactured under hydraulic pressure result in no change in surface pattern, quality, smoothness even after heavy duty abrasion
- Due to lack of porosity, chemical spills rest on the surface & can be easily removed with conventional cleaning methods.
- All joints between tiles are welded & Poor finish terminates the rum porimeter over a concealed cove former & continuing up the wall for 100mm to give continuous sealed surface. urface.
- Confirms to NFPA 99, DIN51953 & EN 1081 standards.



HYGIENE AIR-CONDITIONING

- Designing and integration of purified HVAC system is the internal part of building modular operation theatre.
- These systems are according to international standards of purified HVAC system
- Tasks of Hygienic Air Conditioning
- To control the temperature and humidity of the space.
- To assist in the removal and dilution of waste anaesthetic gases.
- To dilute airborne bacterial contamination
- To control the movement of air within the department, such that the transfer of airborne bacteria from clean to sterile areas is minimised

LAMINAR FLOW UNIT



AIR HANDLING UNIT

- Air Handling Unit
- Duct work
- Duct components
- Ultra clean ventilation canopy



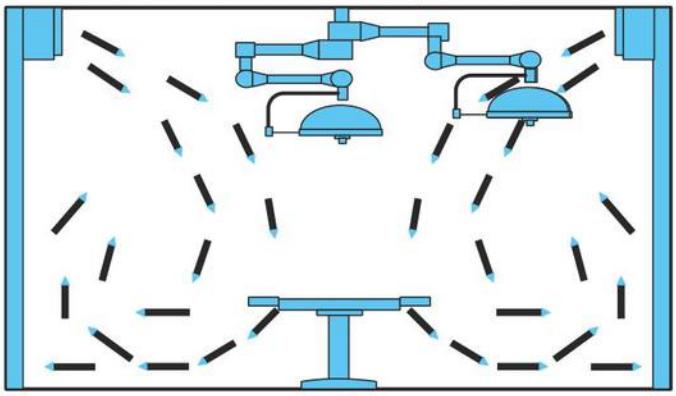
PERFECT HYGIENE AIR-CONDITIONING FOR ALL HOSPITAL DEPARTMENTS

We provide new generation compact air conditioning units which are developed for universal use in all hospitalepartments and meets the requirements of International standards. Compact construction and innovative technology ensure operating cost benefits extending well into the future. The optimised arrangement of mechanical and dynamic-low components ensure low speeds and internal pressure losses.

- Use in the air-conditioning central unit
- Flexible duct connection
- 4-way hot gas switching for optimum energy use
- Built-in safeguard with 100% air capacity redundancy
- Outer air filter with anti-freeze protection
- Interior outer air damper
- Thermally insulated corner profiles
- Mirror-image designs available
- Refrigeration circuit and heat recovery tested in the factory

TURNKEY DESIGN & SUPPLY OF HVAC SYSTEM INCLUDING:

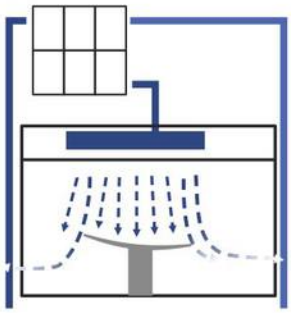
Conventional Ventilation Systems



Traditional Turbulent Flow Air Distribution Systen

OLD METHOD - TURBULENT FLOW, NOT RECOMMENDED

Air Conditioning Concept acc. DIN 1946-4 (Remote plant system acc. HTM 03-01]



Advantage:

- Service and Maintenance outside OT
- Better Control of the Sound level
- Better mixing possibilities of fresh
- air and return air

Disadvantage:

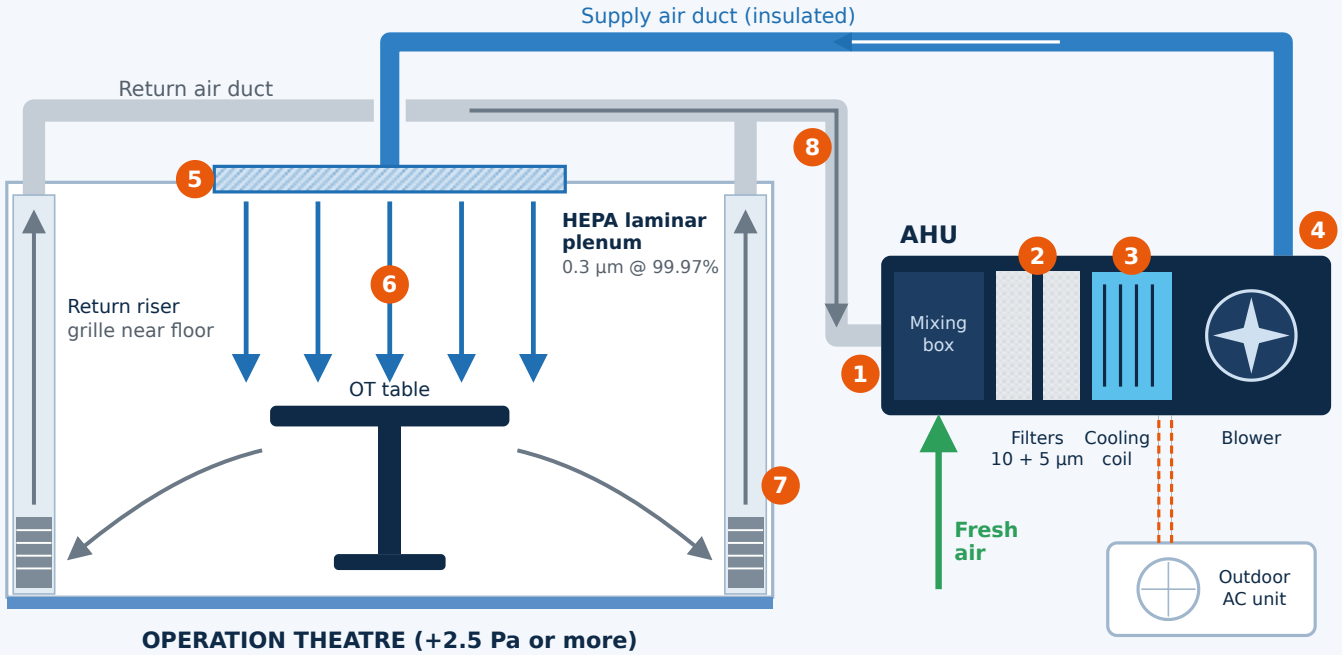
- Requires space for duct system
- Requires a large technical room

Ideal solution - from technical-hygienic view

LMS LAMINAR FLOW - RECOMMENDED

HOW CLEAN AIR WORKS IN AN OT

Air is filtered three times, delivered straight down over the OT table, and returned at floor level from the corners, while the OT stays at a higher pressure than the corridor.



1 Mixing box
Used air coming back from the OT mixes with filtered fresh outside air (at least 4 of the 20 air changes).

2 Pre-filter and fine filter
10 micron and 5 micron filters inside the AHU take out dust, fibres and most particles.

3 Cooling coil
The coil, connected by refrigerant pipes to the outdoor AC unit, cools and dehumidifies the air.

4 Blower and supply duct
The blower pushes the conditioned air through the insulated supply duct above the ceiling.

5 HEPA laminar plenum
Final HEPA filters above the OT table remove 99.97% or more of particles down to 0.3 micron.

6 Straight down over the table
Clean air falls in a steady curtain at 25–35 feet per minute, washing particles away from the wound.

7 Corner return risers
Used air moves to low-level grilles in the four corners and rises inside the risers.

8 Back to the AHU
The return duct takes the air back to the AHU intake to be mixed, filtered and cooled again: at least 20 air changes per hour (NABH), or 25–30 on request.

THREE-STAGE FILTRATION

STAGE 1
Pre-filter
10 micron @ 90%
Where: In the AHU
Stops: Dust, hair, fibres, insects

STAGE 2
Fine filter
5 micron @ 99%
Where: In the AHU
Stops: Fine dust, pollen, mould spores

STAGE 3
HEPA filter
0.3 micron @ 99.97%+
Where: In the laminar plenum, right above the table
Stops: Bacteria-carrying particles, smoke, the finest dust

NABH GUIDELINES FOR OT AIR-CONDITIONING

Values from the NABH guideline for operation theatres. LMS designs every OT to at least these values, with 25 or 30 air changes on request.

Parameter	Super-specialty OT (Type A)	General OT (Type B)
Air changes	Min. 20 / hour, at least 4 fresh air	Same
Positive pressure	Min. 2.5 Pa, at all times	Same
Temperature	21 ± 3 °C (joint replacement 18 ± 2 °C)	21 ± 3 °C
Relative humidity	20–60%	20–60%
AHU filters	10 µm @ 90% + 5 µm @ 99%	Same
HEPA filter	99.97% @ 0.3 µm, to be provided	May be provided
Laminar velocity	25–35 FPM, 1 ft beyond table	Same
Air quality at rest	ISO Class 5	ISO Class 6
AHU	Dedicated AHU per OT; no window / split AC	Same
Validation	Every 6 months (ISO 14644)	Same

Source: NABH Guidelines for Air Conditioning in Operation Theatres (2018), read with NABH Hospital Accreditation Standards, 6th edition (2025).

READY FOR NABH ASSESSMENT

OT zoning in the layout

Protective, clean, sterile and disposal zones with one-way movement of patients, staff, instruments and waste.

Validation report at handover

Particle count, air changes, HEPA air velocity, pressure difference, temperature, humidity and HEPA integrity test (ISO 14644). Repeated every 6 months under AMC.

Records the assessor asks for

HVAC maintenance and filter-cleaning logs, medical gas alarm tests, IPS / electrical safety and UPS tests, as-built drawings.

WHAT NABH ASSESSORS CHECK IN THE OT

Positive pressure

Pressure gauge outside the OT and pressure records; PRDs keep the OT above the corridor at all times.

Temperature and humidity

Display on the surgeon control panel; values logged and kept within range.

Dedicated AHU

One AHU per OT, no window or split AC, blower running even in non-operating hours.

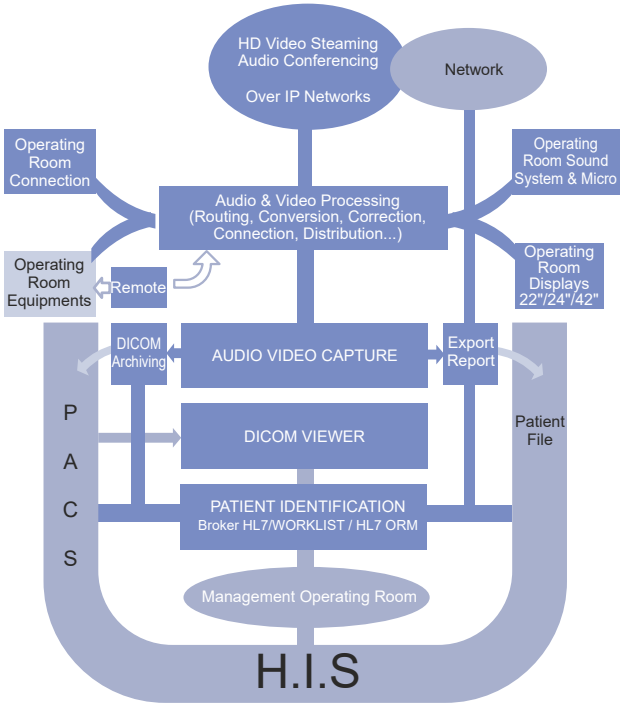


SURGICAL MULTIMEDIA SYSTEM [SMS] IMAGING STATION FOR SURGICAL UNIT



The S.M.S system allows the review of exams of the patient, from a CD, in direct consultation of P.A.C.S. or postponed (by prior preparation) with an ergonomics adapted to the personnel and to the conditions of use in a surgical unit.

Integrated into your Information System, SMS is an intuitive application suite for capturing video sequences, creating operating reports and remotely checking numerous essential functions in the operating theatre. Thanks to its ease of use, its DICOM compatibility, simple setup and openness to other software applications, SMS is a central solution that combines reliability, efficiency and ease of use.



Surgical Medical System

- Excellent Full HD & SD audio/video capturing
- Multi-functional Image Preview & Display
- IP-Router maned video streaming
- Multi Functional DICOM Interface to optimize workflow in and outsid the OR
- Easy DICOM implementation thanks to Proprietary patient Data Management System Broker Interface
- OR Equipment Remote Control functions



MEDIA BRIDGE

- Media Bridge is a medical supply unit & substitute for pendants.
- Trolley system is movable on an internal rail system along the entire width by providing 360 degree
- Large-sized air-supply system
- Complies with the latest air conditioning medical guideline and norms
- All-round air supply apron made of VSG-Glass
- Required care fed in through the feed-in column via the interim coiling

Side facing away from the OT-area: Can be equipped on two levels
Side facing the OT-area: plain and vertical

Advantages | Features:

Disruption and turbulence-free Laminar-Air-Flow
from the ceiling air supply system up to a height of 2,100 mm from the Door

Options

- Movable on four sides thanks to rotating points
- Movable on an internal rail-systems along the entire width

Medical gas connection points incorporated Nurse Call provisions and Electrical power sockets included The ceiling pillars contain aintenance panels to allow for future expansions Equipment trolleys for monitoring and infusion side designed project-related for Modular Design. This makes it possible to arrange the workstation Individually

- Also available as L or U Shaped unit
- Lighting possibilitios
- Non-glare, indirect room lighting
- Dimmable lighting [e.g. for minimal-invasive surgery]
- Dynamically controllable RGB-lights (e.g. for endoscopic use]







PENDANT

LMS supplies & installs a complete range of clinical pendants/beams. These are ceiling mounted systems that provide simple and convenient access to multiple gas, electrical and data outlets at a safe height wherever they are needed. The range includes fully-flexible multi-movement pendants and beams specifically designed for use in critical care and operating theatres and rigid and retractable pendants designed for operating, anesthetic and ancillary rooms.

Pendant Arms are of various types consist of single arm, double arms & multi movement arms. The moveable pendant arms of the supply units offer an optimum in freedom of movement in the workplace and can have, depending on the requirements, one or two-arm, be height adjustable and also come in a wide range of sizes.

The pendant arm system can be positioned correctly using just a small amount of hand strength. This can then be secured in position using pneumatic brakes. Cushioned end stops prevent hard impacts".



Rigid & Retractable Pendants

Rigid and retractable pendants provide simple and convenient access to electrical and data services, medical gases and AGSS in the operating theatre, anesthetic or ancillary room.

Retractable pendant offers 300-400mm of vertical movement via a remote control, to bring services to the ideal height. A maximum of nine medical gas and 32 electrical/dat outlets can be mounted onto the retractable pendant.

ISOLATED POWER SYSTEM [IPS]



Isolated power provides two types of salety:

1. Continuity of supply i.e. the isolated supply removes the possibly of earth faults therefore there is no need to blow a fuse or trip a breaker to protect against earth leakage currents that could cause electrical shock.

2. Isolation from earth allows only negligible electrical current to flow though body -even an RCD will allow up to a 30mA-not sensitive enough for a medical environment.

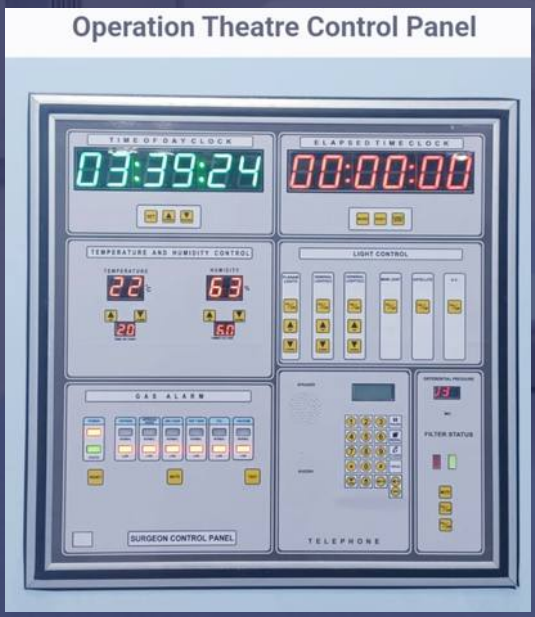
A Typical System for an Operating Theatre will include Floor standing Enclosure Containing:

- 8 Kva Medical Grade Isolation Transformer
- Medical Grade Line Insulation Monitor
- X 16 Double Pole mcbs
- Earth Fault Detection System to (IEC615557-8/9)
- 1 Remote Alarm Unit
- UPS by-pass Switch
- 10 Kva UPS with a 10 minutes autonomy

Features

- Multi-bladed units, specifically designed control O.T room air pressures.
- Unit comprises of carbon steel housing with grade 304 stainless steel blades
- Balancing is carried out utilizing a proven balance weight assembly
- Accurate to range of 1 pascal over their working range of 5-35 Pa.
- Adjustment can easily be carried out on site, should the need arise.

Operation Theatre Control Panel



SURGEONS CONTROL PANELS

Each Control Panel Will Contain:

- Time elapse clock
- Standard clock
- Control for temp/Humi
- Touch screen
- Control for peripheralVO.T light
- IPS alarm
- Medical gas alarm & IPS alarm - Visual & Audio

Electronic touch screen panel (eTCP)

- Wipe clean for excellent infection control
- Flexibility to accommodate design changes with case
- Easy update to accommodate future services

Proven reliability

- Compact size where operating romance is at a premium
- Modern appearance complements today's high tech operating rooms
- Ability to incorporate third party interfaces



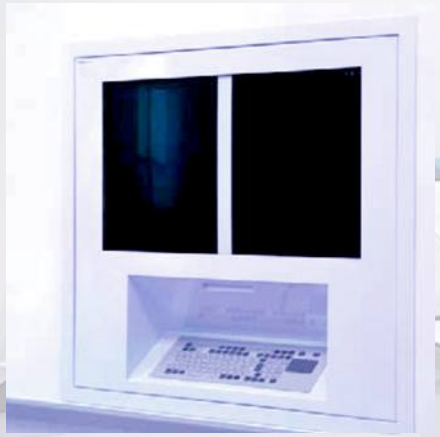


Pressure Relief Dampers

PRD's are Pressure Stabilizer fixed inside the OT to maintain a positive pressure inside the Operation Theatre

Features

- Multi-bladed units, specifically designed control O.T room air pressures.
- Unit comprises of carbon steel housing with grade 304 stainless steel blades
- Balancing is carried out utilizing a proven balance weight assembly
- Accurate to range of 1 pascal over their working range of 5-35 Pa.
- Adjustment can easily be carried out on site, should the need arise.



X-ray Viewer

- Twin plate X-ray viewing screen
- High frequency fluorescent lamps controlled by dimming ballasts
- Control luminance without flicker
- Uniform level of illumination across the entire front panel
- Sealed flush with the inside face of the operating theatre wall
- Spring loaded clips to secure the X-ray



OPERATION THEATRE TABLE

Mechanical and hydraulic operating tables are designed for all surgical operations and treatments. They ensure ease and comfort of usage and safeness for patient and medical staff, the design is ergonomical and osthetic. They can be equipped in wide range of adational accessories, which supports safe placement of the patient in order to use exceptional technical parameters.

OUR MODULAR OT PROJECTS

Operation theatres designed, supplied and installed by the LMS team.



Complete modular OT with laminar airflow, pendants and LED lights



Laminar plenum, anaesthesia pendant and surgeon panel



Twin pendants, LED light and OT table



HPL walls with flush glass storage



Anaesthesia pendant and sealed door



Hermetic sliding door and storage

OT ACCESSORIES

Fittings supplied and installed with every LMS modular OT, chosen for your room, budget and NABH needs.



Scrub sink – automatic

SS 304, 2 taps, infrared sensor taps, digital scrub timer and water temperature display.



Scrub sink – manual

SS 304, 2 taps, foot / knee operated; instrument-washing option.



Storage cabinets

Flush SS cabinets with glass vision panels, glass-door and powder-coated units.



View window with blinds

Flush double-glazed window, blinds sealed between the glass; switchable glass option.



Pass box

SS 304, door interlock and UV-C lamp: material passes without opening the OT door.



Surgeon control panel

Clocks, case timer, temperature / humidity, light control, gas pressure and IPS alarms.



Touch-screen control panel

Wipe-clean touch panel; optional hands-free phone, music, HEPA status.



Pressure relief damper

SS 304 blades, 5–35 Pa range: keeps the OT at positive pressure.



Differential pressure gauge

Shows OT pressure against the corridor; record for NABH validation.

Our Services

DESIGN CONSULTANCY	SITE ASSESSMENT	SUPPLY
INSTALLATION	TESTING & COMMISSIONING	MAINTENANCE SERVICE

Certified quality systems

ISO 9001:2015
ISO 14001:2015
ISO 13485:2016

CDSCO registered



OTHER MEDICAL ENGINEERING SYSTEMS


Piped Medical Gas Systems


Pneumatic Tube Systems


Bed Head Units



Nurse Call Systems


Radiation Shielding


Pendants


Interior Fit-out Works


Electromechanical Works


Hygiene Bath Support Systems

LIFE LINE MEDICAL SYSTEMS

Nagpur Office: Plot no 113, Pannase layout, Old Mokhare College Rd, Swavalambii Nagar, Nagpur - 440022. (MS) **Contact : 8770530146 | 9881735077**

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Email- lifelinengp@gmail.com | **Web-**www.lifelinem.com

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