
MICROFILT YOUR HOSPITAL

MICROFILT

One stop solution for Operation Theatres

FOUR DECADES OF LEGACY IN HEALTH CARE

MicroFilt India was started by Mr. Jagdish Latey in 1978 in a small space of 200 sq. ft. mainly manufacturing Laminar Flow and Bio Safety Cabinets.

1982
We shifted to 400 sq. ft. facility. One of the first importers of HEPA Filters from USA.

1984
Mr. Latey visited Japan and took training in Clean Air Systems.

1984
Imported 'Rion' make particle counters and Photometers.

1986
Exported large consignment of Laminar flow to Russia through Larsen & Turbo.

1986
Shifted to 3,000 sq. ft. facility.

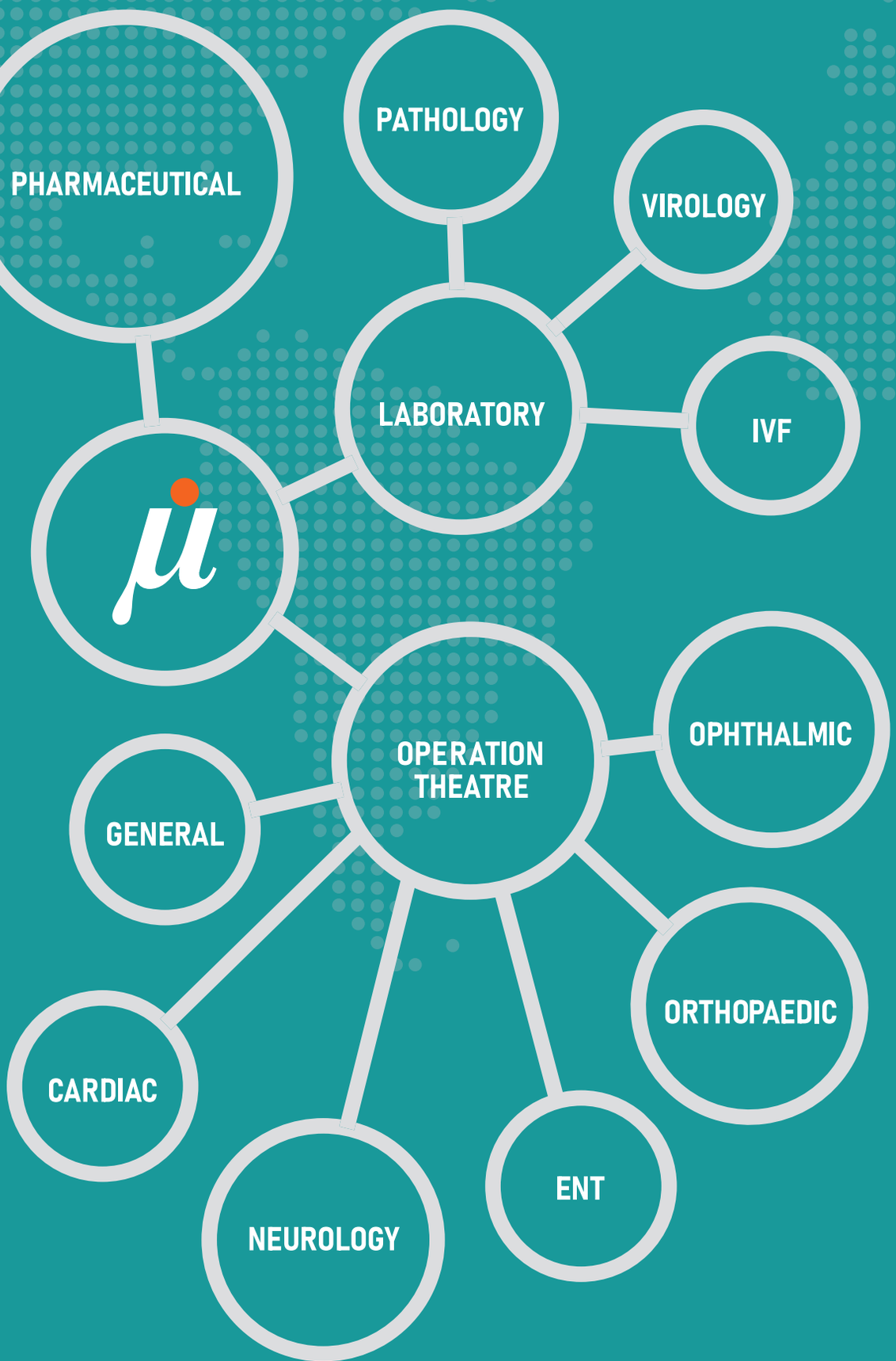
2001
Certification from Harvard School of Public Health, MIT, Houston (USA) for HEPA filter testing.

2004
Received an ISO 9001-2008 Certification.

2012
Shifted to state-of-the-art manufacturing facility of 30,000 sq. ft. near Pune.

2020
Many installations throughout the country.

WHO NEEDS OUR TECHNOLOGY ?



CLIENTS

Orthopaedic
Sancheti Hospital, Pune
Ramkrishna Hospital, Mumbai
Abane Hospital, Pune
Swasthya Hospital, Nagar
Sharad Hospital, Pune
Ozone Hospital, Akola
Lande Hospital, Ichalkaranji
Dakshata Hospital, Belgam
Kochar Hospital, Jalgaon
Sanjivani Hospital, Nashik
Kulloli Hospital, Sangli
Patil Multispeciality Hospital, New Mumbai
Sadasukh Hospital, Latur
Arvind Hospital, Akola
Siddhi Hospital, Latur
Yemul Hospital, Solapur
Krishna Centre For Joint Replacement, Vadodara
Shashwat Hospital, Pune
Gandhi Hospital, Panvel
Safalya Hospital, Ratnagiri
Ranka Hospital, Pune
Jubilant Kalpataru Hospital, Kolkata
Nerlikar Hospital, Nashik

Kidney
Chirayu Superspeciality Hospital, Mumbai
Sure Tech Hospital, Nagpur
Dr Raghoji Kidney Hospital, Solapur

General
Bhartiya Aarogyanidhi Hospital, Mumbai
Sujay Hospital, Mumbai
Upadhya Hospital, Mumbai
Pushpanjali Hospital, Agra
Laddhad Hospital, Buldhana
Santosh Hospital, Nashik
Aaditya Hospital, Indore

Ophthalmic
Asian Eye Hospital, Pune
Anuradha Superspeciality Eye Hospital, Sangli
Shanti Swarup Netralaya, Miraj
Birla Eye Hospital, Nashik
Disha Eye Hospital, Kolkata
B B Eye Foundation, Kolkata
Vision Eye Care, Shirur
Shahapure Hospital, Phandharpur

Neuro
Yashwant Neuro Care Hospital, Satara
West Bank Hospital, Kolkata
Ashwini Neuro Care Hospital, Latur

Cancer
Tata cancer Centre, Mumbai
Kumthekar Hospital, Solapur
Horizon Hospital, Sangli

Multi Speciality
Shubh Sandesh Health Care Hospital, Amravati
Max Multi Speciality Hospital, Nagar
Hope Multispeciality Hospital, Indore

Cardiac
Platina Heart Institute, Nagpur
Avanti Cardiac Institute, Nagpur

IVF
Gupte Hospital, Pune
Barmade Hospital, Latur
Aashay Hospital, Jalgaon

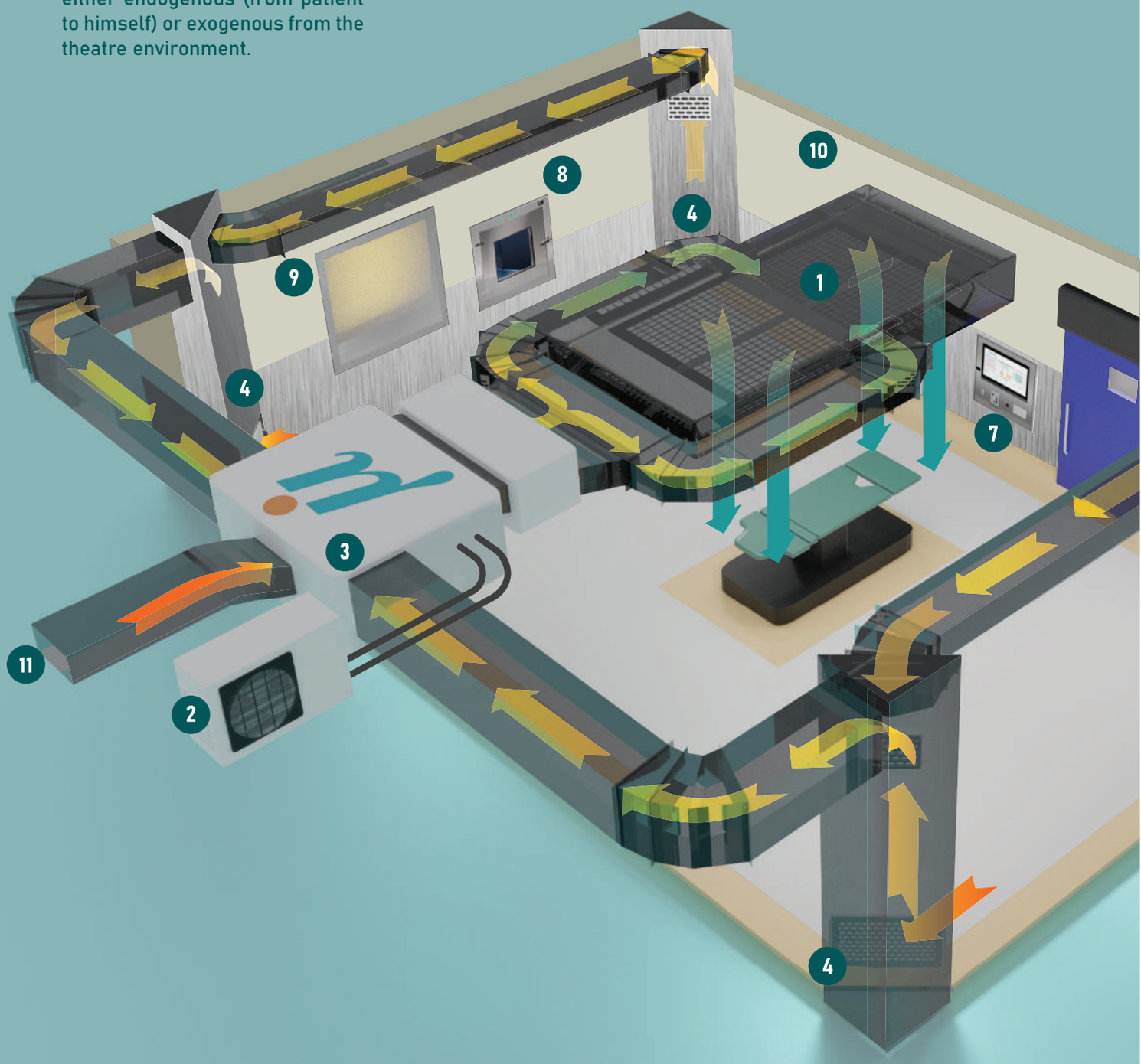
... & many more Operation Theatres throughout India.

OPERATION THEATRE

Modern Operation theatre must fulfill a standard of design and ventilation. The purpose of ventilation in the operation theatre is to minimize the risk of contamination from humans and other unsterile sources. Air Ventilation also removes any anesthesia gases that escape into the air. Bacterial Contamination of the air should be within acceptable limits. In the operation theatre, the sources of infection may be either endogenous (from patient to himself) or exogenous from the theatre environment.

Airborne contamination is mainly derived from the personnel in the operation theatre and their activities. The bacterial count in operation theatre is influenced by the number of individuals present, ventilation, and airflow. Studies in several operating theatres have suggested that there is a general relationship between total air count and risk of infection.

Proper design and ventilated theatres are the most important means of controlling airborne contamination and thus preventing airborne infection in the operation theatre. The operation theatre is divided into different types of zones and ventilation with humidity and temperature is controlled automatically through electronic systems.



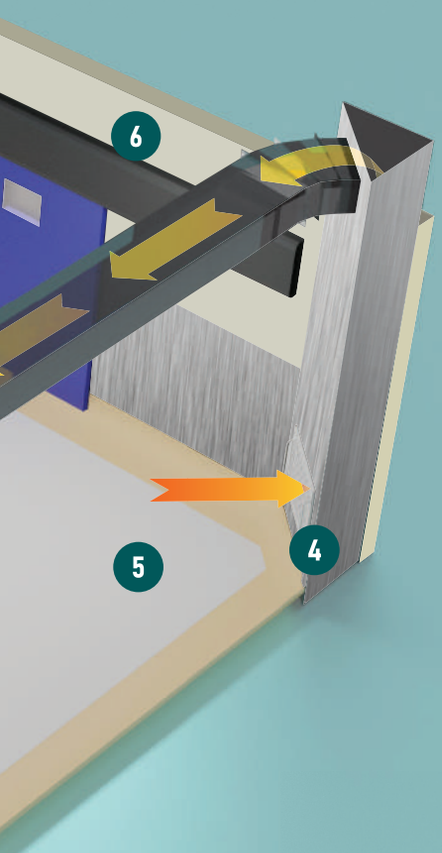
The most effective way to control microbe levels in the entire operation theatre is by using Vertical Laminar Airflow System.

Compared to conventional turbulent ventilation, vertical laminar flow can decrease the number of operative infections substantially. The advantages of an air exchange system for the entire operating theatre have been established conclusively in several studies. In laminar airflow, the air mass circulates in one direction and displaces the existing air in the operating area. The first crucial step in vertical laminar flow takes place when incoming air is blown straight down through HEPA filters above the operating table (the downward airflow prevents air masses from mixing in the work area).

About 10% to 20% of the total air is vented out of the room and replaced by fresh air. The rest of the air in the room is circulated, and filtered with the replacement air. In this way, an increased amount of fresh air is not needed, which keeps energy costs less compared to conventional systems.

When operations requiring extreme sterile conditions are performed everyday in such modern operation theatres, effective air conditioning in operation theatres pays for itself quickly. MicroFilt's modern operation theatre technology improves hygiene standards, lowers infections, thereby improving the success of every operation. It reduces the health care costs, lowers overheads, and also increases the overall efficiency of the surgeon to perform long hours on multiple surgeries on different patients.

All these health and commercial aspects can increase your return-on-investment faster in a new modern operation theatre.



1. Ceiling Laminar Flow with HEPA filter and Grill
2. Air Conditioning
3. Air Handling Unit
4. Riser Unit with Dual Pre-Filters on top & bottom
5. Anti-Bacterial, Anti-Static PVC Flooring
6. Hermetically Sealed Door or Stainless Steel Door
7. Surgeon Control Display
8. Pass Box
9. Automatic Shade Control
10. Wall
11. Fresh Air Intake

MODULES OF OPERATION THEATRE

1

Ceiling Laminar Flow with HEPA filter and Grill

The system gives Class 100 / ISO Class 5 Cleanliness near Grill.

Mini Pleat Media is Anti-Microbial treated thereby killing bacteria when it comes in contact, thereby no growth of any fungi behind media.

It is cladded with thermo break insulation system.

Ceiling Suspended Plenum is Compact and has a Sleek Design.

MATERIAL

1.2mm thickness S.S. grade 304 sheets. S.S. Grill having holes with max. opening with Peripheral Lighting.

CLEANLINESS

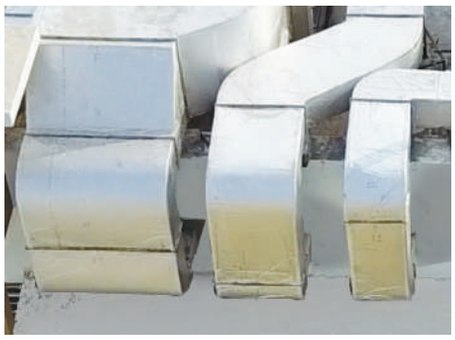
Class 100 / ISO Class 5 Cleanliness near grill.

AIR VELOCITY

90 - 125 FPM near grill.

FILTER DESIGN

Complete HEPA Filter full size Grid with Mini Pleat HEPA Filters. Each HEPA of 1000CFM. Mini Pleat HEPA filters are compact & separator less. Mini Pleat made from Borosilicate Glass Fibre Media (Imported from Europe/US) with 99.995% efficiency down to 0.3µ Grade H14 (EN 1822).



2

Air Conditioning

Incorporates imported scroll compressor Copland/Manurop/ equivalent.

Consumes 20% less power. It comes with Condenser Coil, Condenser Fan, proper Copper Piping, Expansion Valve, Dryer, Thermostat and powder coated bracket.

4 Tr (2 + 2 Ton - 2 units)
6 Tr (3 + 3 Ton - 2 units)
8 Tr (4 + 4 Ton - 2 units)

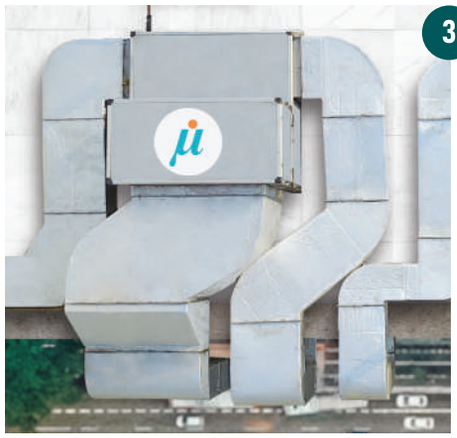
Ducting

Proper curves & bends for smooth airflow. It will be tailor-made to match your OT's construction & ceiling suspended with hangers. It will be made leak proof by sealing with silicon sealant.

Made GI/Aluminium sheet 22/24g. It has 13mm thick insulation laminated with 30µ thick aluminium foil. The supply ducting is also cladded with thermo break insulation system.

Ceiling

Ceiling cladding panel fabricated out of 0.6 mm thick S.S. grade 304/G.I. powder coated sheet mounted on specially designed aluminium sections & back cladding of 0.6mm G.I. sheet. Panels are insulated with PUF 50 mm thickness.



3

Air Handling Unit

Capacity up to 6000 CFM
This system gives 25-30 air changes & 10-20 % fresh air with adjustable damper.

It comprises of return air plenum section, cooling / moisture draining section & fan section. It has all necessary controls & accessories for air & refrigerant side.

It's elegant design ensures low vibration, noise level & power consumption. Since it is compact & ceiling mounted, it saves floor space.

Dimensions (ft)
Panel Size 4' x 4' x 2'
5' x 5' x 2'
6' x 5' x 2'

MATERIAL

Rigid S.S. grade 304 45 mm thick double skin PUF Panels thickness fitted on thermal break rigid aluminium profile.

FILTER DESIGN

Micro V Filter of 5µ in S.S. grade 304 frame, S.S. grade 304 Drain Tray for efficient condensate removal.

UV TUBE

30 Watt G30 T8 lamp which inhibits microbial growth, due to moisture content present in the cooling coil.

AIR VELOCITY

Carrier's suitable Row DX coil. Air velocity across coil & filter won't exceed 500 FPM.

MOTOR BLOWER

Variable speed motor blower assembly. (German make Kruger, Max 1.5 H.P.)

4

Riser Unit

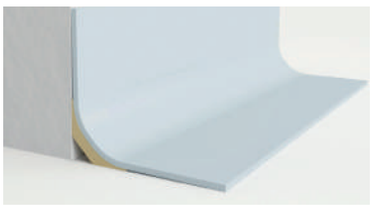
Return air rises sterile air to AHU through return Air Riser. Return Air Metallic Grill is perforated with elegant finish. It uses S.S. grade 304 - 1.2 mm thickness with 8 Pre filters. Light weight & washable (4 for Return Air & 4 for Stale Air) Filter Design : 10µ Pre-filters made from HDPE Media in S.S. grade 304 frame.

5

Flooring

Anti Static & Conductive 2mm PVC (Poly Vinyl).

All Poly Vinyl (PVC) Tarkett-Made in Sweden.



Perfect coving for easier cleaning.

6

Hermetically Sealed Door

The Door Panel is 60mm thick confirming to 438-3:2005 on both sides of 52mm thick pressure injected with noise insulation of 28db as per ISO 717-1:1996. The door blade comes with a vision panel tempered glass IG unit size 300 x 300 mm flushed with the surface of the door blade. Besides EPDM sealing gasket, a special lower sealing gasket with the lip facing the floor is fitted on the bottom profile of the door leaf to ensure 100% hermetic sealing.

S.S. Sealed Door

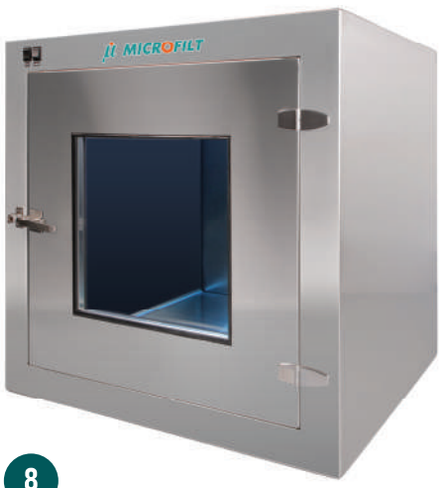
Double S.S. grade 304 flushed complete with air tight door frame 1.2 mm thick and shutters 0.8 mm thick S.S. grade 304 in double skin construction duly insulated with infill material.

Digital Control Panel has 2 pressure indicator gauges, one for room's positive pressure & other for laminar flow system.

It is made in 1.2 mm thick S.S. grade 304 sheets. Control switches are Touch Control embedded within the user interface of the Digital Display. Shows elegant Digital Display of temperature, humidity, elapsed time and dimmable light control for ceiling lights.

7

Surgeon Control - Touch Control



8

Pass Box

Complete in S.S. grade 304
1.2 mm thickness double skin.
Size :2'x2'x2' internal.

9

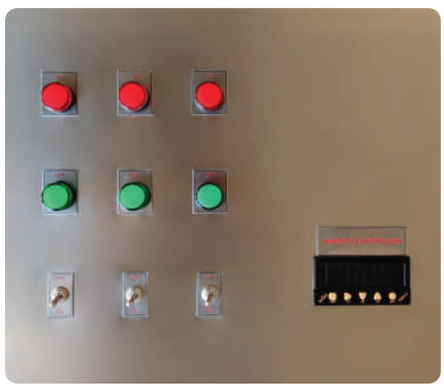
Automatic Shade Control

Motorised Venetian blinds to control external natural light.

10

Wall

Powder coated panel, S.S. grade 304 panel, half powder coated half S.S. & P.V.C vinyl.



Humidity Controller

Heater bank packed in AHU Duct with control panel integrated in S.S. grade 304 box.

Air Shower

Garment Cubicle

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CASE STUDIES

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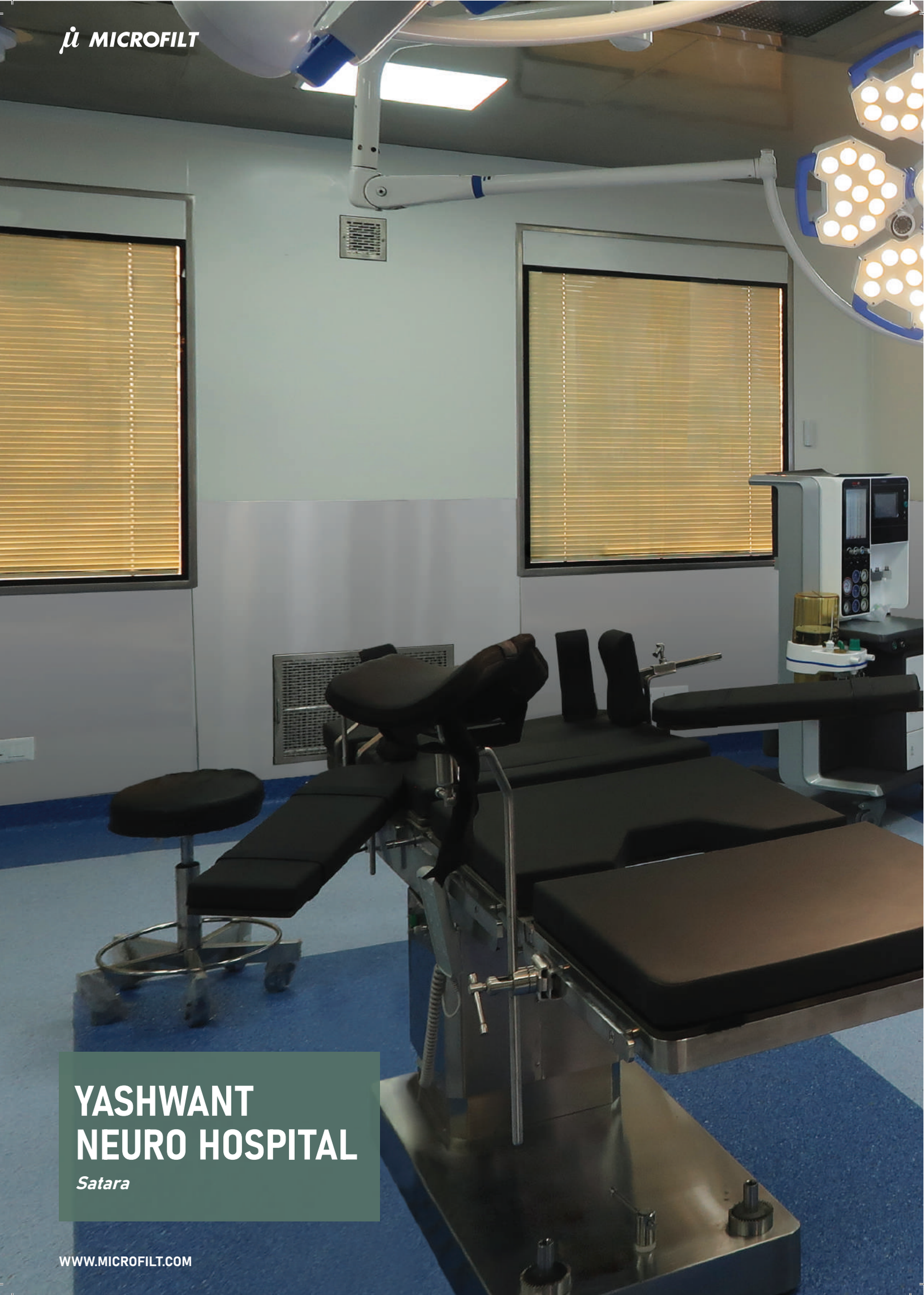

YASHWANT NEURO HOSPITAL

Satara

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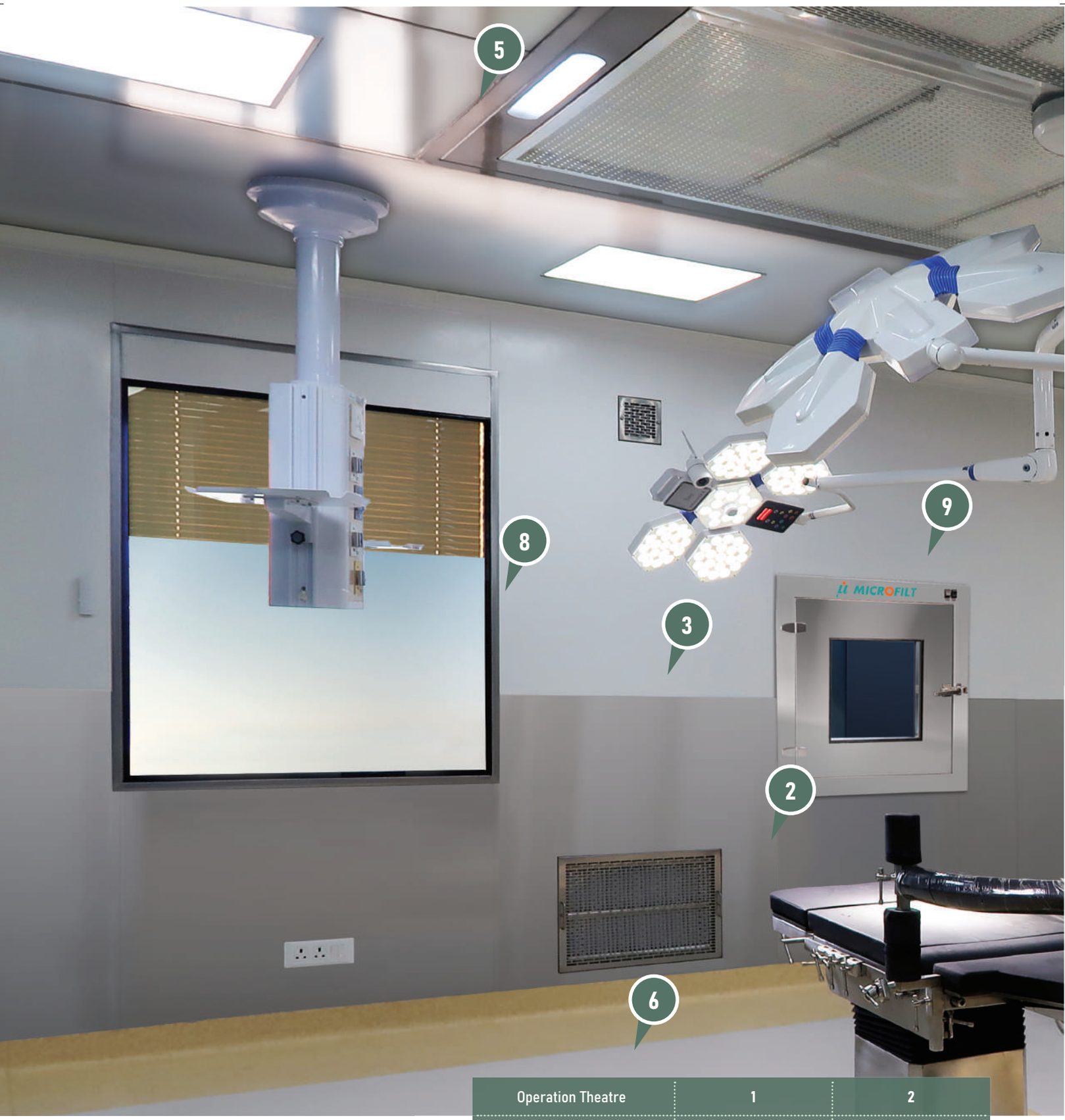


	Operation Theatre	1	2
	Dimension	300"x193"x108"	203"x178"x96"
	Volume	3600 cubic feet	3148 cubic feet
	Tonnage	8.5 TR	8.5 TR
	Air handling Unit	8.5 TR	8.5 TR
1	Main-Filter	HEPA Filter 8'x6'	HEPA Filter 8'x6'
2	Pre-Filter	12 nos.	12 nos.
	Humidity	Humidity Controller	Humidity Controller
	Customization	Glass Design	Glass Design

YASHWANT NEURO HOSPITAL

Dr. Anil Patil
M.S., M.Ch. (Neuro Surgery)
Neurosurgeon & Founder

"Quality and finish of MicroFilt equipment is excellent"

3 WALLS
PUF Wall Half Powder Coated Half S.S.

4 LIGHTING
LED Panel 2'×2'

5 CEILING
S.S. Puff 50mm thick

6 FLOORING
P.V.C Vinyl Conductive 2mm thick

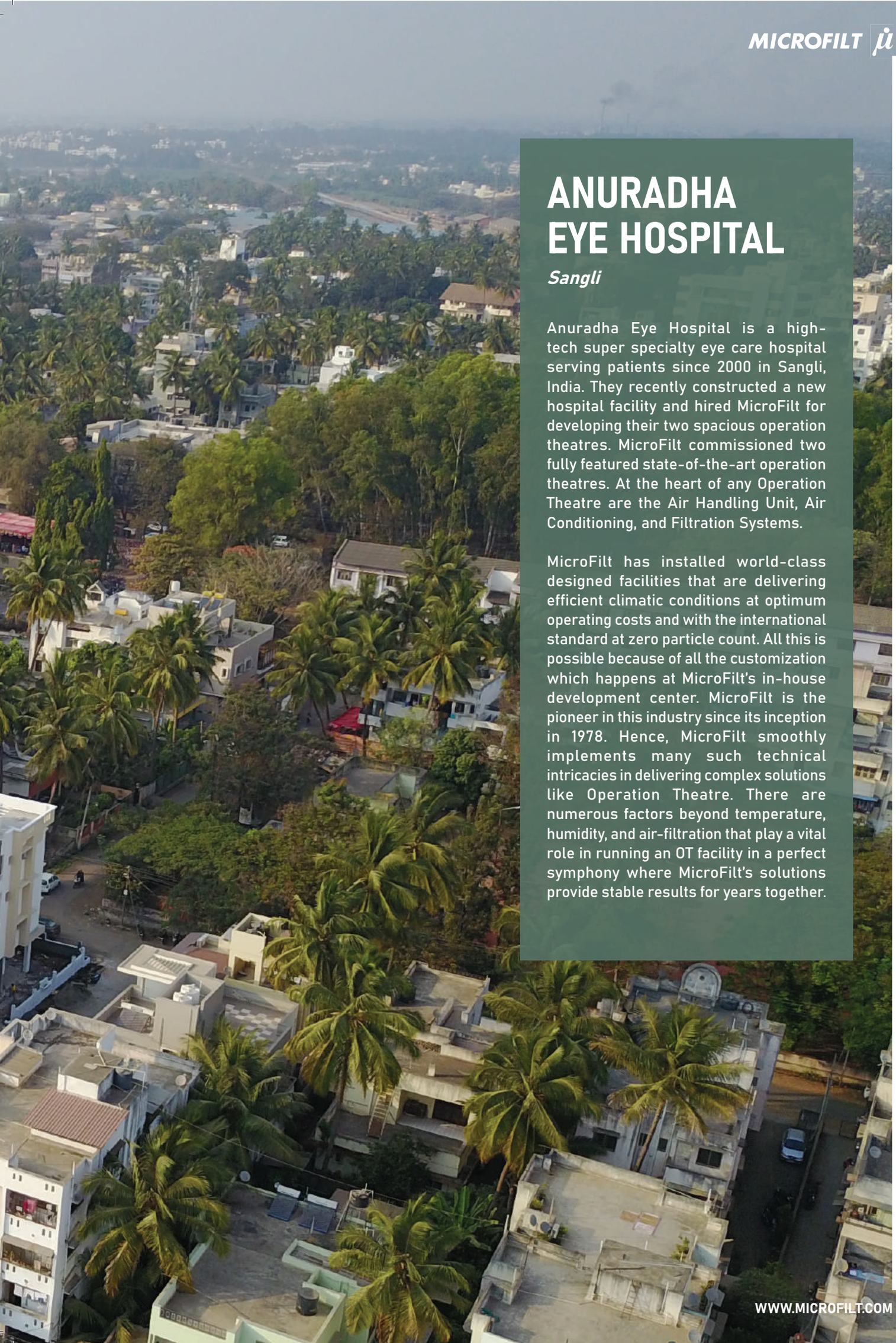
7 DOORS
Hermetically Sealed Sliding

8 WINDOWS
Motorised Venetian blinds to control external natural light

9 PASS BOX
S.S. grade 304 2'×2' - 2 nos.

10 CONTROL PANEL
Digital Display with touch control for temperature, humidity, elapsed time and dimmable light control for ceiling lights


AMBAL
EYE HOSPITAL



ANURADHA EYE HOSPITAL

Sangli

Anuradha Eye Hospital is a high-tech super specialty eye care hospital serving patients since 2000 in Sangli, India. They recently constructed a new hospital facility and hired MicroFilt for developing their two spacious operation theatres. MicroFilt commissioned two fully featured state-of-the-art operation theatres. At the heart of any Operation Theatre are the Air Handling Unit, Air Conditioning, and Filtration Systems.

MicroFilt has installed world-class designed facilities that are delivering efficient climatic conditions at optimum operating costs and with the international standard at zero particle count. All this is possible because of all the customization which happens at MicroFilt's in-house development center. MicroFilt is the pioneer in this industry since its inception in 1978. Hence, MicroFilt smoothly implements many such technical intricacies in delivering complex solutions like Operation Theatre. There are numerous factors beyond temperature, humidity, and air-filtration that play a vital role in running an OT facility in a perfect symphony where MicroFilt's solutions provide stable results for years together.

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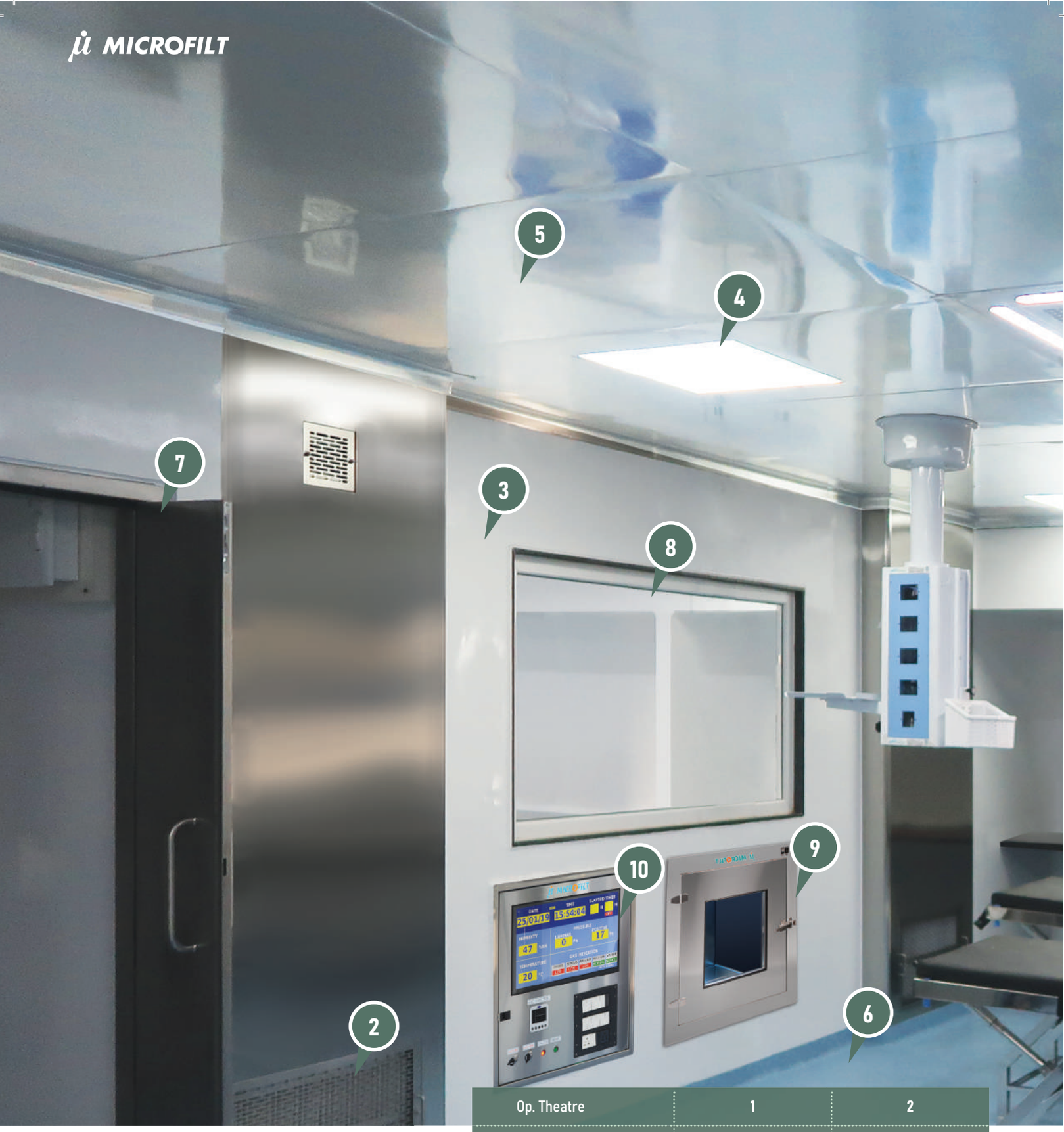


	Op. Theatre	1	2
	Dimension	307" x 181" x 96"	203" x 178" x 96"
	Volume	3088 cubic feet	2007 cubic feet
	Tonnage	8.5 TR	5.5 TR
	Air handling Unit	8.5 TR	-
1	Main-Filter	8' x 4' and 4' x 4'	8' x 4'
2	Pre-Filter	12 nos.	8 nos.
	Humidity	Humidity Controller	Humidity Controller

ANURADHA EYE HOSPITAL

Dr. Milind Killedar
M.B.B.S, M.S. (Ophthalmology),
D.N.B Opthal, F.P.O.S.
Director

"The particle count in our OT is practically zero"

Scan to watch video

3 WALLS
PU coated

4 LIGHTING
LED Panel 2'×2'

5 CEILING
S.S. PUF 50mm thick

6 FLOORING
P.V.C Vinyl Conductive
2mm thick

7 DOORS
S.S. grade 304 Double Door

8 WINDOWS
Double Walled

9 PASS BOX
S.S. grade 304 - 2'×2' - 2 nos.

10 CONTROL PANEL
Digital Display with touch control for temperature, humidity, elapsed time and dimmable light control for ceiling lights

MICROFILT

	Op. Theatre	1
	Dimension	220" x 205" x 112"
	Volume	2920 Cubic Feet
	Tonnage	8.5 TR
	Air handling Unit	8.5 TR
1	Main-Filter	6'x6'
2	Pre-Filter	8 nos.

VISION CARE SUPERSPECIALITY EYE HOSPITAL

Dr. Swapnil Bhalekar
M.B.B.S, M.S. (Ophthalmology),
Eye Surgeon and Founder

"In the era of NABH , importance of laminar flow is obvious to maintain sterile air during the transplant surgeries."

3 WALLS
P.V.C Vinyl 1.3mm thick

4 LIGHTING
LED Panel 2'x2'

5 CEILING
S.S. PUF 50mm thick

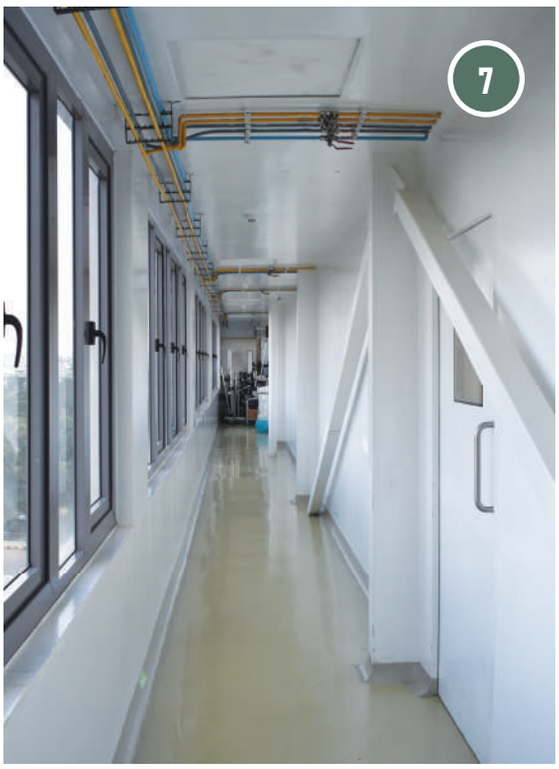
6 FLOORING
P.V.C Vinyl Conductive 2mm thick

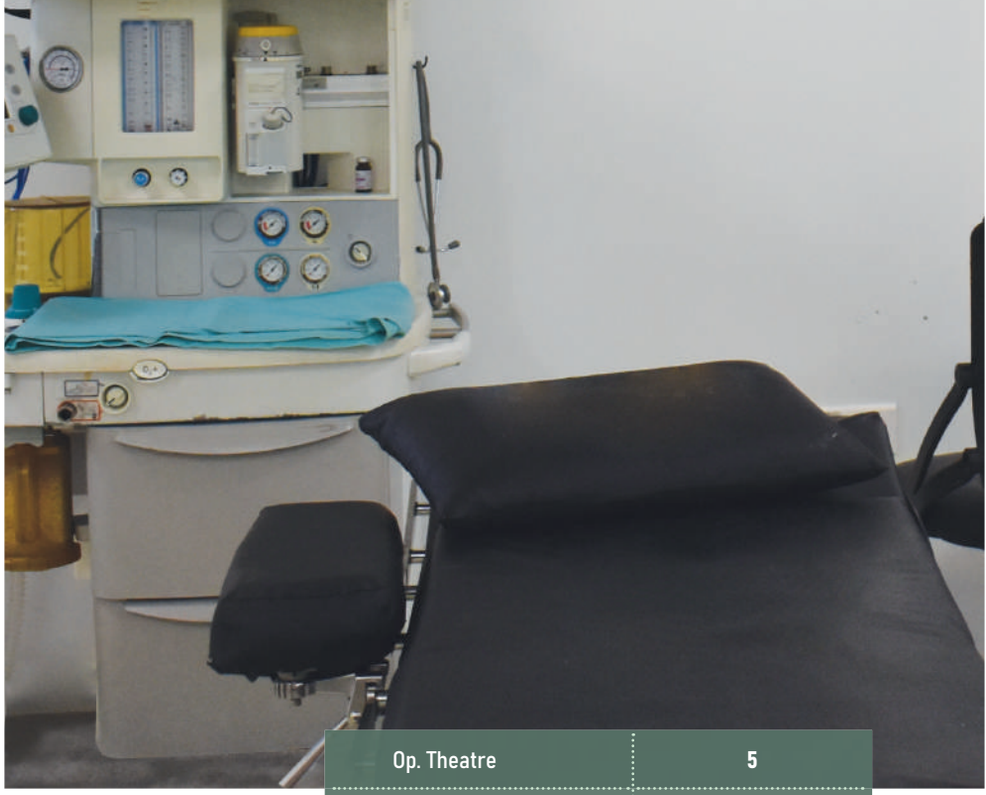
7 DOORS
S.S. grade 304 5'×7'

8 TV SCREEN
To view live surgery

9 PASS BOX
S.S. grade 304 2'×2' - 1 no.

10 CONTROL PANEL
Digital Display with touch control for temperature, humidity, elapsed time and dimmable light control for ceiling lights





SANCHETI HOSPITAL

Dr. Sancheti K. H.
Founder Director
Sancheti Hospital

"MicroFilt has built multiple operation theatres at our hospital. Their tailor-made designing and manufacturing in SS is of high standards"

Op. Theatre	5
Dimension	216"x 216"x 108"
Volume	2916 Cubic Feet
Tonnage	8.5 TR
Air handling Unit	8.5 TR
1 Main-Filter	8'x6'
2 Pre-Filter	8 nos.
Humidity	Humidity Controller

3 WALLS
PU Painted

4 CEILING
PU Painted

5 FLOORING
Epoxy Coated

6 DOORS
Automatic Hermetically Sealed Doors

7 DIRTY CORRIDOR
Separate doors for exit to dirty corridors

8 CONTROL PANEL
Digital Display with touch control for temperature, humidity, elapsed time and dimmable light control for ceiling lights

MICROFILT

GUPTE IVF HOSPITAL

Dr. Sanjay Gupte
M.D., D.G.O., F.I.C.O.G., L.L.B., F.R.C.O.G.
Gynecologist

" MicroFilt delivered more than what they promised ! "

The MicroFilt India make IVF workstation is specially designed for use in fertility laboratories for research work in the fields of human reproduction. A controlled work environment is of high priority due to the complexity of the process, which requires hygienic conditions. To minimize microbial contamination, a warmed temperature controlled work surface is provided for the sustenance of biological matter. Provision for the use of a microscope is made with a laser-cut tabletop. Air is taken in from above the workstation and passed through an ULPA filter through the front opening.

Integrated System

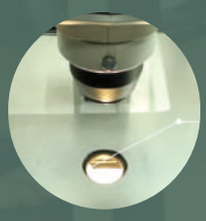
Has an easily accessible Control Panel. Most Microscope can be incorporated on the table. The light base is mounted below the table plate transmitting light, ensuring smooth work flow.

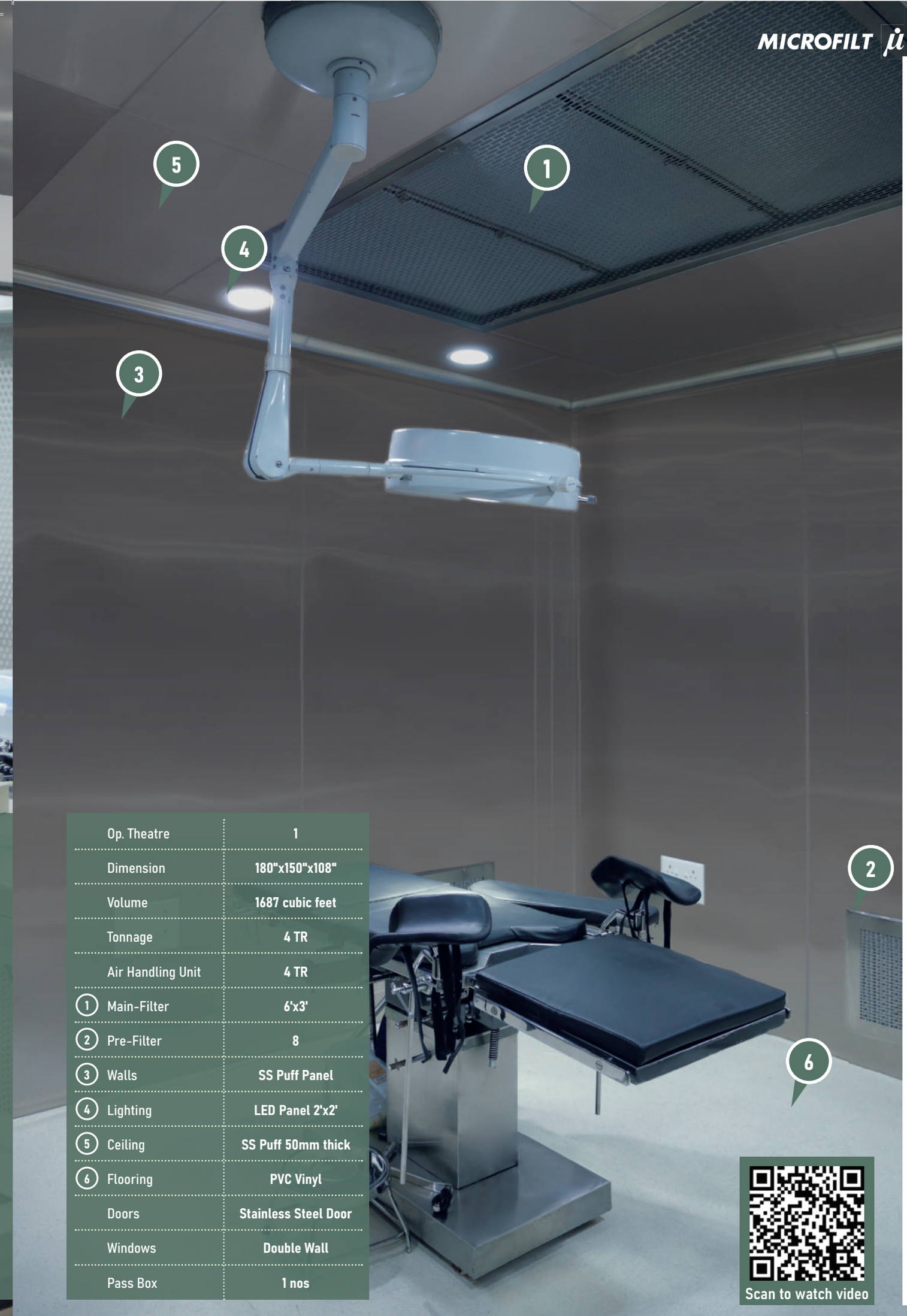
Temperature Controlled Area

There are three different displays for three different areas made of 2mm S.S. grade 304, with temperature consistency of 37°C

- **A** Under Microscope
- **B** Near Incubator
- **C** Open Area

Custom Laser Cut for Microscope





Op. Theatre	1
Dimension	180"x150"x108"
Volume	1687 cubic feet
Tonnage	4 TR
Air Handling Unit	4 TR
(1) Main-Filter	6'x3'
(2) Pre-Filter	8
(3) Walls	SS Puff Panel
(4) Lighting	LED Panel 2'x2'
(5) Ceiling	SS Puff 50mm thick
(6) Flooring	PVC Vinyl
Doors	Stainless Steel Door
Windows	Double Wall
Pass Box	1 nos

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MICROFILT®

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