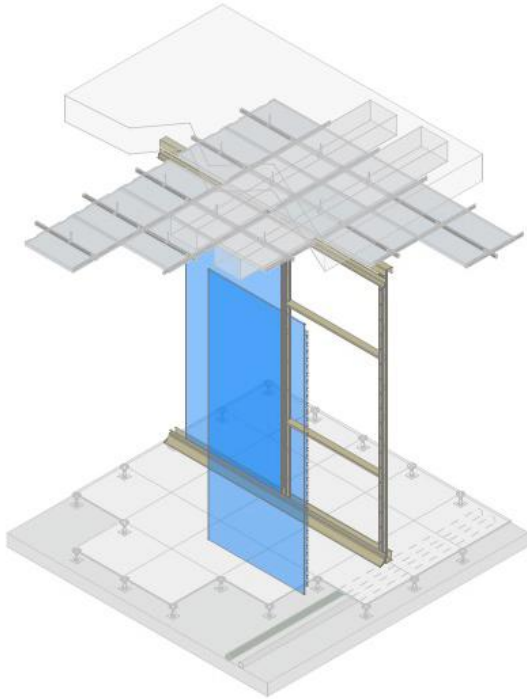




Turnkey solutions for critical areas

MODULAR CLADDING _ Technical Specs

WALLS CLADDING SYSTEM



The Wall and Ceiling Panels based on a modular technology are designed to clad and partition controlled bacterial contamination specialised hospital departments in a flexible and functional manner. The design ensures that the unique self-loading and free standing substructure can be clad with all types of engineered finishing panels without use of screws and any other fixed mechanical joints (SREWLEES TECHNOLOGY).

The Panel System has been engineered to offer total hygienic and easy cleaning surfaces providing absence of live corners and the fact that the surfaces are perfectly co-planar without protrusions. The floor-standing and suspended ceiling wall cladding can be equipped with wide radius connecting profiles that ensure a perfectly flush join with the finishing panels.

The Modular System offers enormous versatility in the design phase, operational flexibility during execution of works, guaranteeing the facility for future updates and/or maintenance thanks to the ease with which individual finishing panels can be removed with no need to undo screws or bolts and with no work to be performed on the sub-frame.

Even after the areas are handed over and become fully operational, the Wall Cladding System allows the flexibility to integrate and implement new systems and/or update the existing ones without generating major impacts to the medical activities due to limited constructions activities. The clean and dry installation system of the Wall Cladding System makes it possible to plan the various working stages in accordance with the maximum flexibility required in medical critical areas construction. The substructure, with its FREE-STANDING technology, minimise the interference with all electro mechanical systems to be installed, reducing the interferences and the need of site meeting to coordinate the different design and installation activities. Ensuring the maximum independence from the surrounding structures, the system is designed to create the necessary technical voids to house technical and medical elements guaranteeing easy access for future maintenance. The Wall Cladding System is designed and engineered to solve all problems of the controlled bacterial contamination environments in which it is installed, and it is suitable to perform in accordance with GMP standards for BLS3 and BLS4 requirements and all relevant EUROPEAN Standards applicable to such product.

Wall Cladding System is composed by two main elements:

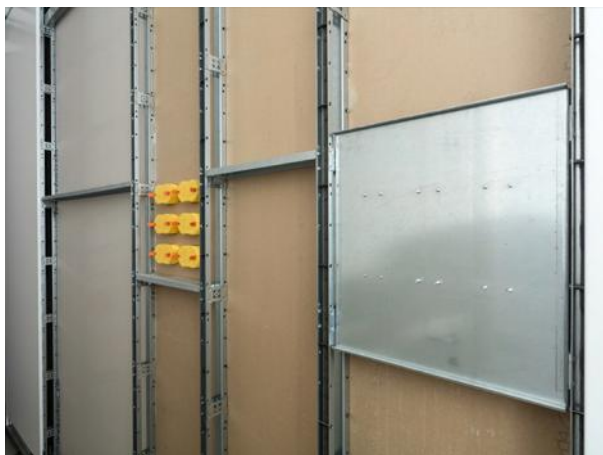
- FREE-STANDING SUPPORTING STRUCTURE;
- FINISHING PANEL and ACCESSORIES.

FREE-STANDING SUPPORTING STRUCTURE

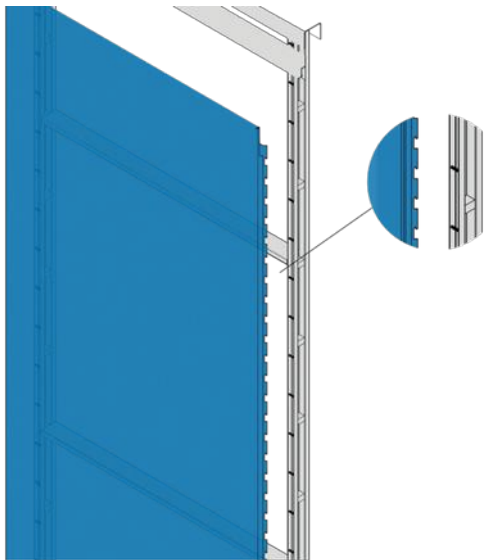
The modular cladding **SUPPORTING STRUCTURE** is composed of:



- "U" shaped upper and lower track profile suitably sized. The lower "U" profile 15/10 mm thick, mechanically fixed to the floor, is designed to allow the installation of floor finishing cove base which will be co-planar to the wall cladding. The lower profile is also pre-arranged with ma
- The upper "U" track profile is suitably shaped to give exceptional stiffness and designed to generate a free-standing solution once the installation is completed.
- The bearing structure is made up of vertical elements placed at modular distances, sliding on upper and lower tracks. They are made by two C 15/10 tick galvanised steel profiles rigidly connected by galvanised steel spacers. Each C profile is designed to accommodate diam. 6mm steel pivot placed at sequential distance of 160mm. This allows the perfect hooking of the finishing panels and accessories. The supporting profiles are also equipped with internal vertical gasket which, combined with the external one, ensure perfect sealing of the partition.
- The upright elements are connected each other by two horizontal profile precisely manufactured in accordance with specific project cut-out; these elements, placed at lower and upper position, once correctly adjusted, make it possible to achieve very precise horizontal modular centre-distances and perfect vertical alignment of the modules, thus ensuring the maximum rigidity and self-loading performance of the system. All vertical elements are equipped with lower screw-adjustable feet and spring clamps. This system has been designed to correct imperfections or slopes of slab/floor screed up to 20/30 mm and allow for very fast and precise installation of panels.
- Suspended ceiling perimeter support profile made of aluminium and equipped with a horizontal hidden gasket ensure perfect alignment of the false ceiling, fast installation, sealing of the corner element with no need of extra accessories and, moreover, allows the fast removal of the wall panels with no need of tools and dismantling activities.



FINISHING PANELS



The modular cladding system is designed to use the same supporting structural elements allowing the installation of different finishing materials without the need of adapting or modifying the fixing system.

The scope is to obtain a durable and uniform bacteriostatic finishing surface designed for an easy cleaning and extremely hygienic. All wall panels are provided with protective removable plastic film over the finishing side. Internally balanced and reinforced with fire-retardant plasterboards 12.5mm thick to ensure the maximum rigidity. The panel provides optimal structural properties in terms of flatness, low weight, and rigidity. To achieve the same performances of rigidity different material can be used such as aluminium honeycomb panels upon specific request.

Wall panels are available in a 1200mm standard width module of full floor-to-ceiling height (max height single piece is 3400mm). All the wall panels are specifically designed per size, numbered, coded according to the specific installation position and no cut-outs and/or modifications are carried out on site.

The Wall cladding system guarantee continuous electrical conductivity for the purposes of earth bonding or to create a Faraday cage effect. Additional noise and thermal insulation can be achieved using specifically designed insulation panels.

WALL PANEL in GALVANIZED STEEL WITH HOT LAYING OF ANTI- BACTERIAL PVC FILM 100-200micron

The solid modules are made of micronized and galvanized steel sheet, standard thickness 8/10 mm, with rounded edges, especially shaped to allow for the coupling with the track hooks placed on the vertical elements of the supporting structure. The shells are internally plated with fire-retardant plasterboards 12.5 mm thick or other optional material available. The low carbon hot dip galvanized steel finishing 8/10 thick for cold forming with hot application of 100-200µ stiff film in phthalates-free antibacterial polyvinyl chloride (PVC) with self-adhesive protective polyester film. Gloss 30 non-glare smooth surface. Reaction to fire class B s1-do, based on European directive 98/48/EC in compliance with standard EN 13501-1:2009

WALL PANEL in 8/10 ANTIBACTERIAL PAINTED AISI 304 STAINLESS STEEL 65/80micron

The solid modules are made of steel sheet, with rounded edges, especially shaped to allow for the coupling with the track hooks placed on vertical elements of the supporting structure. The shells are internally plated with fire-retardant plasterboards 12.5 mm thick or other optional material available. The low carbon cold-rolled nickel-chrome steel finishing, 8/10 thick, covered by a layer of "TGIC FREE" powder paint suitable for electrostatic application, thickness 80micron, designed to have an antibacterial film according to international standard JISZ 2801, counter-plated by a plasterboard 12.5 mm thick with self-adhesive protective polyester film. Gloss 30 non-glare smooth surface Reaction to fire class Bs1-do based on European directive 98/48/EC in compliance with standard EN 13501-1:2009

WALL PANEL in SOLID MINERAL SURFACE 3mm counter-plated with 6/10 steel support internally plated with fire-retardant plasterboards 9mm. Other options are available such as back plated with 15mm aluminium panel or full body Solid Mineral Surface 12mm panel.

Panel in SOLID MINERAL SURFACE, thickness 30/10, GLOSS 30 non-glare smooth finishing counter-plated on panel in low carbon hot dip galvanized steel panel for cold forming covered by an 8micron primer on both faces to favour adhesion in face n.1 of SOLID MINERAL SURFACE finishing and in face n.2 of counter-plating of a plasterboard, 9 mm thick as standard configuration, or different optional solutions. Smooth surface. Cuts, scratches, or stains can be easily removed simply by sanding. Reaction to fire class Bs1-do, based on European directive 98/48/EC in compliance with standard EN 13501-1:2009.

WALL PANEL in LAMINATED SAFETY GLASS (3+3+0.38pvb) framed within an aluminium structure positioned flush with the wall with insertion of CLEAR PVB FILM inside the glass coupling (available also coloured and or designed printed)

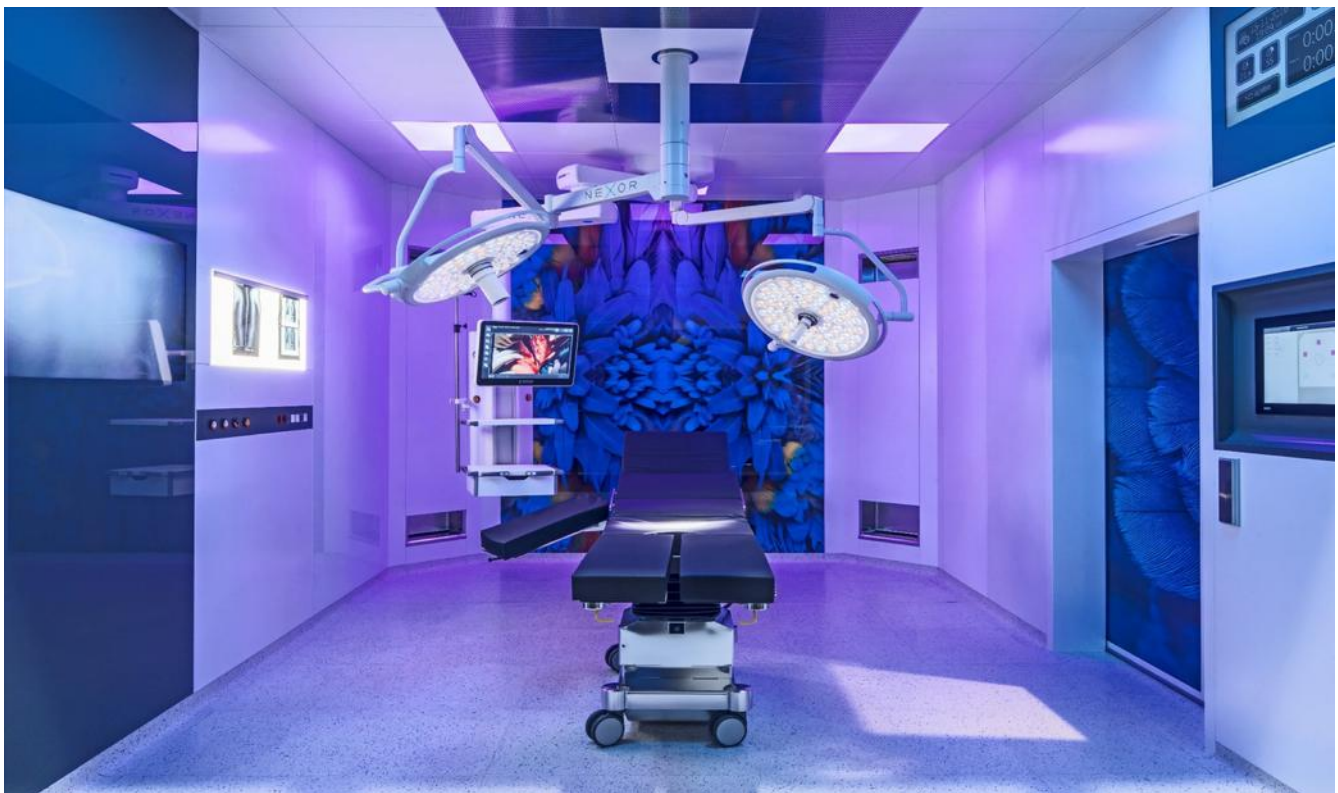
The glazed modules are made up of a bearing frame made of extruded aluminium profiles (painted with polyester paints or anodized) where a safety glass 6 mm thick layered with 0.38 PVB (POLYVINIL BUTYRAL) (clear or coloured). The frames are hooked on the structural vertical elements through the same rack connection of the solid panels and are perfectly level and allow for the insertion of blinds, decorative films for a better harmonization of settings with chromatic effects. The glazed modules can be at full height, half height, both vertically and horizontally based on the technical specifications.

CLADDING SEALING

The sealing between each wall panel is performed, vertically and horizontally:

- by pressure sealing gaskets in non-toxic Sh55/65 silicone rubber around all the contact perimeters between the various materials and hermetic sealing of vertical joints between finishing panels. The specifically designed gaskets is antibacterial certified for specific application in contamination controlled areas, being immune to microorganism attack.
- with specific materials, such as Solid Mineral Surface, it is possible to provide a continuous welding of the joints by using specific adhesives;
- by industrial antibacterial silicon.

All technologies guarantee the optimal compartmentation ensuring that sterile air pressure values are maintained without risk of contaminations and lack of sterility.



ACCESSORIES and COMPLEMENTS

The WALL CLADDING SYSTEM is designed to allow for the perfect flush integration with all the necessary elements to complement settings, such as for example:



ANGULAR 135° AIR EXTRACTION MODULE - Angular air intake element made with a 135° angular modular element with the same finish of the wall panels. Such unit is internally completed by a stainless-steel recovery duct formed by a single INOX sheet, perfectly integrated and shelled in order to allow the correct element sanitization. A removable front panel allows both access to the canal behind either the regulation of the air flow between the lower and upper opening (adjusting dampers excluded)



ADJUSTABLE AIR EXTRACTION MODULE - Air intake element made with a modular element with the same finish of the wall panels. Such unit is internally completed by a stainless steel recovery duct formed by a single INOX sheet, perfectly integrated and shelled in order to allow the correct element sanitization. A removable front panel allows both access to the canal behind either the regulation of the air flow between the lower and upper opening (adjusting dampers excluded)



INTEGRATED STORAGE CABINET inside the modular walls with melamine body or stainless steel. Shelves in stainless scotch-brite or painted steel with doors in painted galvanized steel or galvanized steel covered in white antibacterial PVC film or stainless steel, complete with stainless steel handles and sealed gaskets spanning the perimeter.

X-RAY VIEWER dim.970x430 - X-RAY VIEWERS with LED technology installed flush with the wall, complete with 24V power unit, button or touchscreen power on system and complete with X-ray supporting track and built in the MLS wall corner posts

“GLASS-MONITOR” GLAZED MODULE for 42-49inch monitor: safety glass element (3+3+0.38pvb) positioned flush with the wall with RAL rear lacquering and development of a clear shaped area for monitor housing, including monitor internal structural supports.

TECHNICAL UNIT - L=1100mm: flush wall mounted unit in extruded aluminium epoxy painted in RAL colouring
- n.4 x gas outlet (Pre-piping, installation and testing of Gas outlet with copper pipe for wall mounted)



- n.2 Gas outlet DIN/BS/US standard- O2
- n.1 Gas outlet DIN/BS/US standard- AIR4
- n.1 Gas outlet DIN/BS/US standard- VAC
- n.4 x Electrical socket 16A in accordance with local specific standards
- n.4 x Equipotential ground sockets
- n.1 x Double data sockets RJ45 cat. 6 UTP (cabling excluded)



SCRUB STATION – AUTOMATIC or MANUAL: Suspended AISI 304 polished stainless steel scrub station, each position made up of one sink and joint-less rear shelf. The basin is specifically designed in order to prevent squirts. The sink is equipped with automatic or elbow controlled water tap and mixer for each position.

Scrub units are provided with brush and soap dispenser

Standard dimensions

Scrub unit n.1 position – 800 x 550 x1200 (l x d x h)

Scrub unit n.2 position – 1200 x 550 x1200 (l x d x h)

Scrub unit n.3 position – 1800 x 550 x1200 (l x d x h)



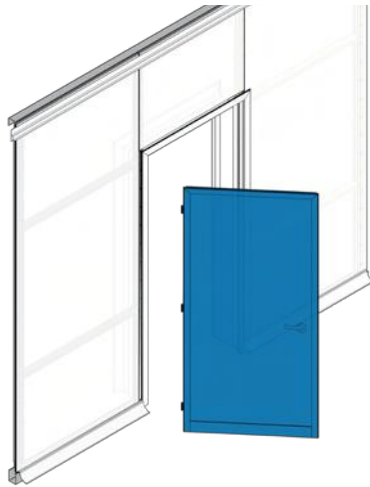
DIRTY PASS THROUGH CABINET electrical interlocking in AISI 304 stainless steel with RAL painted doors. Folding double door on both sides with manual deflector and emergency handle for manual unlocking in case of power shut-down. Adjustable feet for perfect levelling and prepared for level installation with the MLS prefabricated wall

PASS-THROUGH WINDOW made in AISI 304 stainless steel, scotch-brite finishing, 10/10 thick, complete with clear toughened glass, complete with 8mm thick counterweight rise and fall system, complete with sealed gaskets, front and side panels in stainless steel and handle, all perfectly built in the prefabricated wall



VIEW WINDOW - GLAZED MODULE (INTERNAL WINDOW)- framed structural safety glass (3+3+0.38pvb) positioned flush with the wall and/or with flush aluminium frame RAL 9010-9003. Accessories such as Venetian blinds (manual or electrical), privacy smart glass, lead shielded glass can be integrated into the element. Upon customer request the glazed element can be provided with opening mechanism once installed on the perimetral cladding to provide access to hidden windows.

DOORS and AUTOMATIC DOORS



DOOR FINISHING: HPL or ANTIBACTERIAL GALVANISED STEEL or STAINLESS STEEL or SOLID MINERAL SURFACE or GLASS with aluminium profile

HINGED DOORS: The blind doors are complete with door frame on three sides in galvanized polyester-powder painted steel, subject to prior antioxidant treatment, supplied with adequate door striker seal, high-performance hinges and matching lock, made in stainless steel, both equipped with an adjustment system to ensure the right adjustment of the door panel. Blind door panels of thickness 60 mm, flush mounted on internal side and are made with double shell of steel 0.8 mm thick with a high-density resin-coated mineral wool core for excellent noise isolation. At the bottom of the door panel there is a special sealing element especially made to secure overpressure resistance when the door is locked. All door modules may be equipped with interlocking systems with electrical lock. The door modules are prepared for the insertion of see-through windows with double glazing flush on both sides, supplied with

lock and aluminium lever handle. The door modules are available with one or double door, hinged or sliding.



AUTOMATIC SLIDING DOOR semi-hermetic or hermetic 60mm thick with external handles including programmer, safety sensors, foot and/or elbow-operated buttons - h=2200 - HPL or ANTIBACTERIAL GALVANISED STEEL DOOR or STAINLESS STEEL or SOLID MINERAL SURFACE or GLASS with aluminium profile

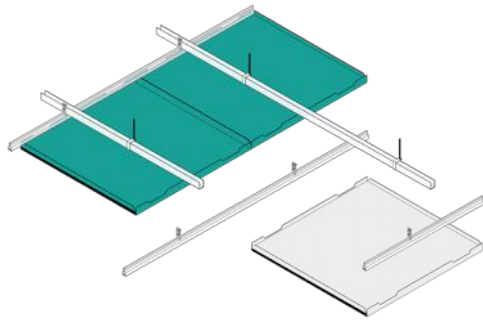
Door panel consisting of internal fire retardant MDF and solid wood frame with a layer of self-extinguishing polystyrene plate covered with laminate or antibacterial galvanized sheet steel or stainless steel or Solid Mineral Surface or Glass, colour can be personalized. Frame made of extruded aluminium profile with a sealing gasket. Handle on the outer side. Automatic sliding system constituted by automatism for sliding door, fixed on anti-noise rubber profile, sliding track aluminium, motion transmission system

with antistatic reinforced belt, double unit of cart wheel, 230V power supply protected against short circuit with DC motor high performance and low electrical consumption. Electronics controls with simple set-up and self-diagnosis for the detection of possible errors. Adjustable door open time, opening and closing speed, panic emergency opening function with emergency battery monitored, electric lock management function, safety sensors. Various automatic or manual adjustable using programs through digital programmer with bright display. The sliding motor unit and all electronics is protected by an aluminium cover.

Doors can be equipped with several accessories such as door plank, see through window (350x700) with or without blind, key lock, touchless controller, etc.



AIR-TIGHT FALSE CEILING and LAMIAR FLOW



AIR TIGHT FALSE CEILING - STEEL

Dimensions (mm): 600 x 600mm

Material: Galvanised steel

Surface: Antibacterial powder coated



Clip-in System with ceiling panels format 600 x 600mm, electro galvanized steel, thickness mm. 0.5, boxed on all four sides with sharp seals, appropriately levelled before moulding, with a smooth surface without pores.

Cycle epoxy painted in white RAL 9010 with 70-80 microns thick paint guaranteed.

Reflected light calculated with an angle of incidence of 60 degrees with reference colour RAL 9010 is about 22% according to the standards "Gardner" and DIN 67530.

Gasket mono-adhesive neoprene seal, to be fixed on one of the internal ribs of the panel to protect the underlying environments from dust.

The support structure is constituted by cross-primary framework in profiles "U" arranged with a distance of 1700mm, and secondary profiles arranged at a distance of 600mm, including all fixing accessories. Suspension system drive adjustable threaded rods "M6" attached to the structural slabs with a distance of 1200mm, as standard.

This system guarantees the perfect flatness of the panels and does not allow any movement to the false ceiling in case of opening of doors that can cause depression in the environment.

LAMINAR FLOW SYSTEM FOR OPERATING THEATRES – Compliance with EUROPEAN, DIN and SWISS standards

Plenum-type laminar flow unidirectional diffuser for clean air supply in operating rooms duly filtered through H14 HEPA filters allowing airborne contamination dilution, moving contaminants from cleaner to less clean areas, reducing the risk of contamination over the surgical table and dilution and removal of waste anaesthetic gases from the operating area. Product compliance with all EUROPEAN, DIN STANDARD (DIN 1946-2008) and SWISS STANDARD (SWKI 99-3 2004 and VDI 2167 2004)

The **DIFFUSER STRUCTURE** can be provided either totally made of AISI 304 stainless steel or anodized aluminium, for easy cleaning and corrosion-free long operating life. The diffuser has been designed as a modular system to simplify installation

The **HEPA FILTERS** are H14 class according to EN 1822-2009 Standard, with a minimum efficiency 99.995% MPPS; each filter is manufactured, tested and packaged in a controlled clean environment. The filtering media is protected by a double protective grid, upstream and downstream, made of epoxy painted aluminium. To avoid air leakage, a seamless polyurethane dry gasket is factory applied along the aluminium frame of the filters. Each filter is supplied with its own test report in a sealed plastic bag, to protect it from contamination. The system is suitable to operating rooms ISO 5 class and lower (ISO 7 and ISO 8) in accordance with ISO 14644. HEPA filters pressure drop and DOP test are easily carried out by the room side, by means of the two dedicated ports factory mounted by two opposite sides of the plenum.

The **AIR DIFFUSER** consists of either stainless steel AISI 304 perforated panels or monofilament polyester precision fabric. Both solutions provide a uniform, vertical and unidirectional air flow. They are easily removable for easy and quick access to the HEPA filters for their testing or replacement. Flush to the structure and without any sharp profile or corner, they can be deeply, easily and safely cleaned.

CLEAN ROOM LUMINAIRES

LED Cleanroom luminaries 600x600

LED hospital luminaries 1200x600



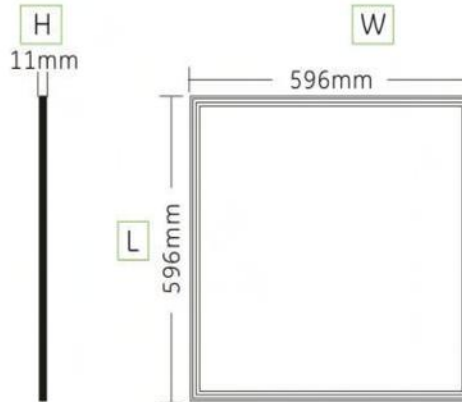
Products Description

The Hugens Panel Series is designed to be a good energy saving panel with 100lm/w, 65,000 hours long life, and 90% uniformity across the emitting surface.

Hugens panels enable customers to recover initial investment quickly and greatly reduce the maintenance cost.

The Hugens Panel is ideal for EMC energy-saving projects in places of work and educational locations, healthcare and retail environments.

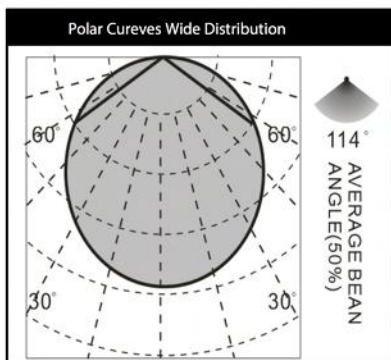
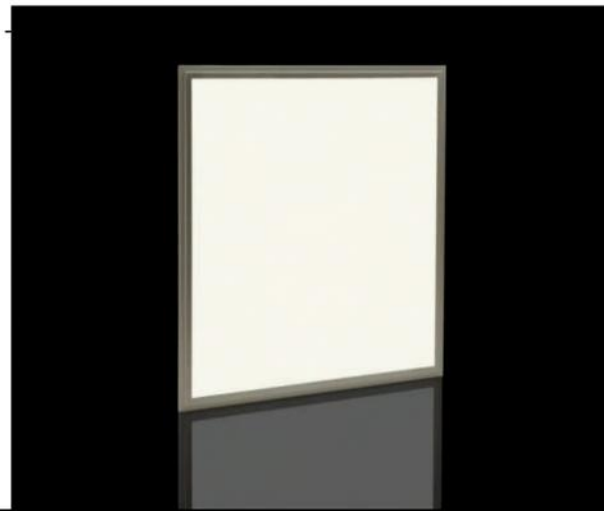
Products Dimens



Parameters

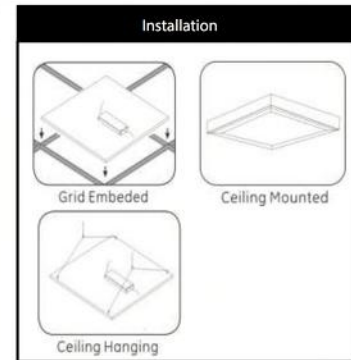
Optical Parameters			
CCT	6000K/5000 K	4000K	3000K
Lumen Output(lm)±5%	3600	3380	3040
Lumen Efficacy(LPS)±5%	100	93.9	84.4
LED Type/Qt'y	SMD2835 / 108pcs		
CRI/SDCM	Ra>90/<6		
Electrical Parameters			
Rated Power(w)±5%	36		
Rated/Actual input Voltage	180-260Vac/100~240Vac 50/60Hz		
Driver Output Data	25-38Vdc / 1030ma / 36W		
Power Factor/THD/PE	>90%/<19/87%		
Driver/Connection	Removable Driver / PIP Meanwell		
Over Load/Short Circuit	Protection		
Surge/protection Class IEC	>1KV / Class II		
Hi-pot Test Range	SELV Isolated Driver, 3750V dc/5mA/60S		
Life			
Warranty	3 years		
Lumen Maintenance 70%	65,000hrs		
LM80	>97.1% lumen maintance @ 6,000hrs		
Others			
Dimmable Solution	Dali/0~10V/PWM/Traic Optional		
Frame Color RAL	Pure white/RAL9016		
IP/IK/Glow-wire	IP65/IK06/650°C		
Temp./Humidity	Working:-20°C~40°C Storage:<60°C		
Net/Gross Weight	4.2kg /5.5kg		

Panel: L=596mm W=596mm H=11mm



AVERAGE AND CENTER E Figure

1.0 m	1355.02 lx	2.88 m
1.5 m	602.23 lx	4.35 m
2.0 m	311.08 lx	5.80 m
2.5 m	216.81 lx	7.28 m
3.0 m	150.56 lx	8.75 m
High illuminance		Diameter



OR TOUCH PANEL



OT TOUCH PANEL

The operating theatre monitoring and control equipment enables operating theatre medical personnel quick and simple access to control and monitor operating theatre illumination, ventilation system, isolation transformer, medical gases distribution system, nurse call, video management system and much more from a single standing point.

Touch screen provides real-time visual information about the status of the monitored operating theatre systems and

allows controlling and setting of the essential physical ambient values through a large touch screen PC, installed on a most convenient location in the operating theatre. Intuitive and understandable high-resolution graphic offers clear and comfortable use by medical personnel wearing medical gloves.

The 21" Panel PC is a new generation Full HD (1920 x 1080) screen. The large panel helps display more important information in one screen. System is equipped with high performance Intel Core i CPU but the heat can be dispatched easily by high efficiency fan-less thermal design. This is a big step forward to consolidate performance and reliability in one system.

With rich I/O as 5xCOM, 5xUSB and dual Gigabit Ethernet it makes it easier to connect to devices and to integrate into building management system. The multi touch screen makes the HMI more intuitive, which brings you the best operate experience.

The standard version controls and monitor the following systems:

- Digital Time of Day and Elapsed Time
- Temperature and Humidity Indicators
- IPS System Alarms and Test button
- General Lighting Switches / Dimmers
- Operating Lighting Switches
- Medical Gas Alarms
- Operating theatre overpressure alarm
- Door opening
- Alarm History

The system can be configured to communicate with the following additional systems:

- HVAC Control and Monitoring
- AGSS Control and Monitoring
- DALI Light Communication
- RGB DMX Control
- UPS Alarm
- Night / Sleep mode
- Power supply information
- Nurse Call

