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ALVO PRODUCT GROUPS

MAREK MIĄDOWICZ, PhD

PROJECT DIRECTOR - OPERATING THEATERS, ALVO MEDICAL, POLAND



MODULAR WALLS

MODULAR CEILINGS

DOORS

SCRUB SINKS



OPERATING TABLES

OR INTEGRATION SYSTEM

MEDICAL FURNITURE

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PART OF THE TEAM IN YOUR OR

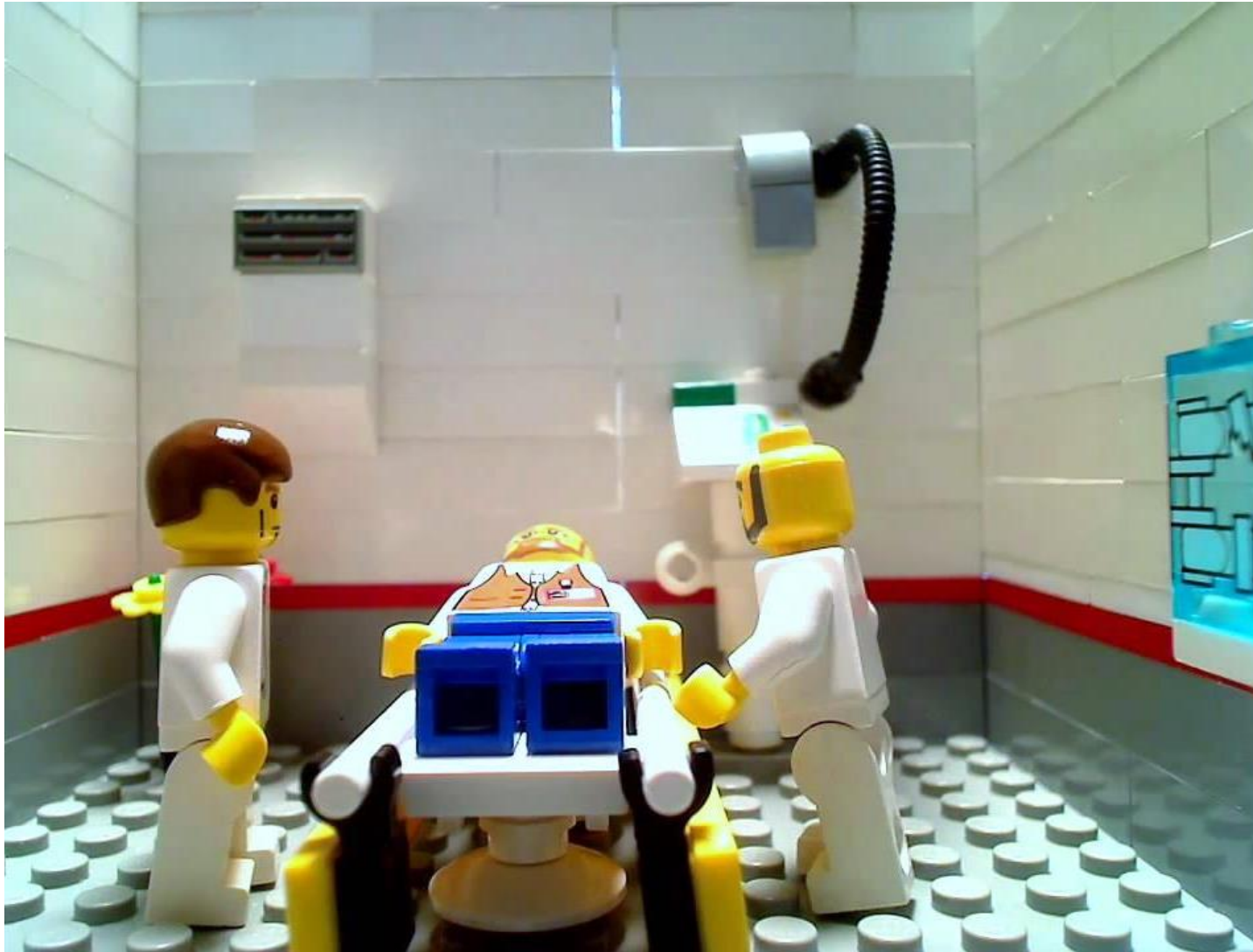
ALVO[®]
MEDICAL

WHAT IS THE MODULAR OR SYSTEM?

ADVANTAGES OF THE SYSTEM



ADVANTAGES OF THE SYSTEM



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What is the modular OR system

- All elements are prefabricated
- At the construction site the elements are only assembled together
- The elements of the system can be swapped, moved around.
- Damaged elements can easily be replaced
- INSTALLATION OF ELEMENTS PREFABRICATED AND TAILORED TO SPECIFIC NEEDS OF THE CUSTOMER



ADVANTAGES OF THE ALVO MODULAR WALL SYSTEM*

Ability to provide the customer with a dedicated modular products:

- that can be exchanged/replaced
- that can be fixed
- with an option to change color/design/material
- with a possibility to modify the construction of the walls (adding/expanding installations)
- offering a possibility to adjust the OR to the changing regulations (adding lead, moving the wall to increase the operating space)



FLEXIBILITY

All elements of the modular system work perfectly as a complete solution, yet they can easily be customized to suit the needs of the customer

* Compared to other solutions: corian, staron, PVC, painted gypsum board, ceramic tiles, painted wallpaper

ADVANTAGES OF THE ALVO MODULAR WALL SYSTEM*



CONSTRUCTION

- Modules are designed to match all standard devices used in the operating theater
- The system is resistant to the harmful effects of building movements (walls/ceilings don't crack)
- The elements are self-supporting (own construction) – the condition and quality of a building does not affect the quality and aesthetics of the modular system
- High mechanic and corrosion resistance

* Compared to other solutions: corian, staron, PVC, painted gipsum board, ceramic tiles, painted wallpaper

ADVANTAGES OF THE ALVO MODULAR WALL SYSTEM*



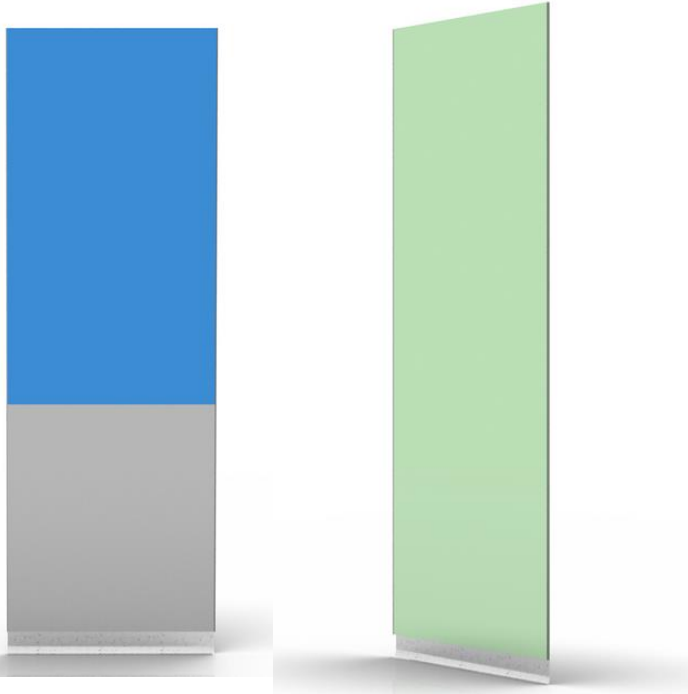
SAVINGS & DESIGN

- Short time of installation/changes/refurbishing of the OT (savings on the hospital downtime duration)
- Shorter time of preparation the OT between operations (sanitized®, easy cleaning/disinfection)
- Relatively high initial investment but lower running cost (longevity of materials)
- Lower overall cost in a longer perspective
- Lower occurrence of post-operation infection
- Modern design
- Environment friendly (fully biodegradable materials)

* Compared to other solutions: corian, staron, PVC, painted gipsum board, ceramic tiles, painted wallpaper

ALVO MODULAR WALL SYSTEM
CAN BE USED IN NEW FACILITIES
AS WELL AS REFURBISHED SPACES

ALVO MEDICAL MODULAR WALLS



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TECHNICAL DATA

Max height

- room – 4000 mm
- single panel - 2900 mm
- substructure - 4300 mm

Max width of a panel – 1450 mm (standard 1190 mm)

Standard thickness of a panel – 14 mm

Thickness of the wall:

- Double layered – standard 128 mm (min. 78 mm, max – unlimited)
- Single layered – standard 94 mm
(distance from existing wall – min. 30 mm, in the most sticking out point of the wall, profile 50 mm, panel 14 mm)



TECHNICAL DATA

structure

- Steel + filling component (standard – gypsum board)

material

- Galvanized steel
 - Stainless steel
 - Glass
 - HPL
- (for glass and HPL the thickness of panel 19 mm)

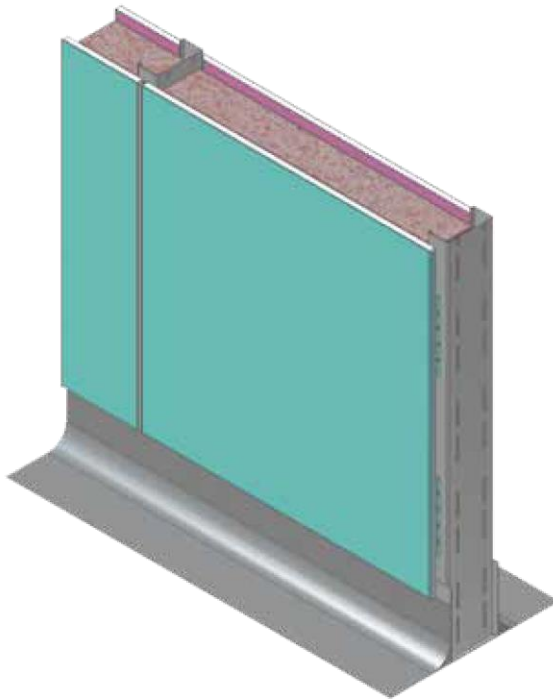
Weight per m²:

- Steel (14mm) ~ 17kg/m²
- Glass (19mm) ~ 30kg/m²
- HPL (14mm) ~ 19kg/m²

ALVO MEDICAL MODULAR WALLS



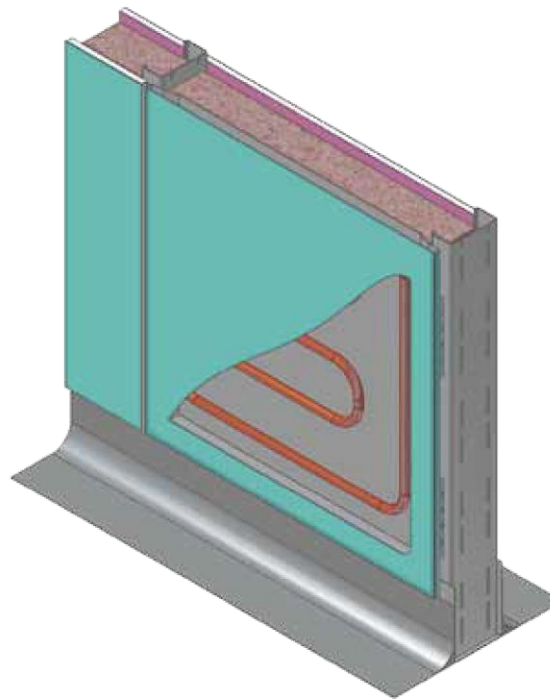
VARIATIONS



Stainless steel wall panel

STAINLESS STEEL WALL PANELS

- stainless steel
- stainless steel with powder coating and BioCote®
- galvanized steel with powder coating and BioCote®



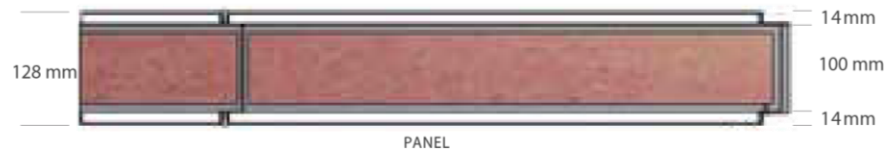
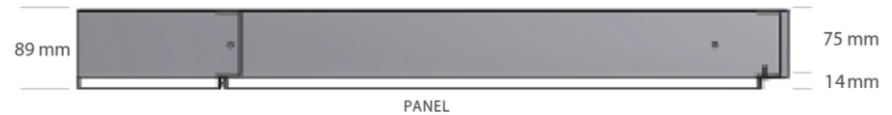
Stainless steel wall with heating panel

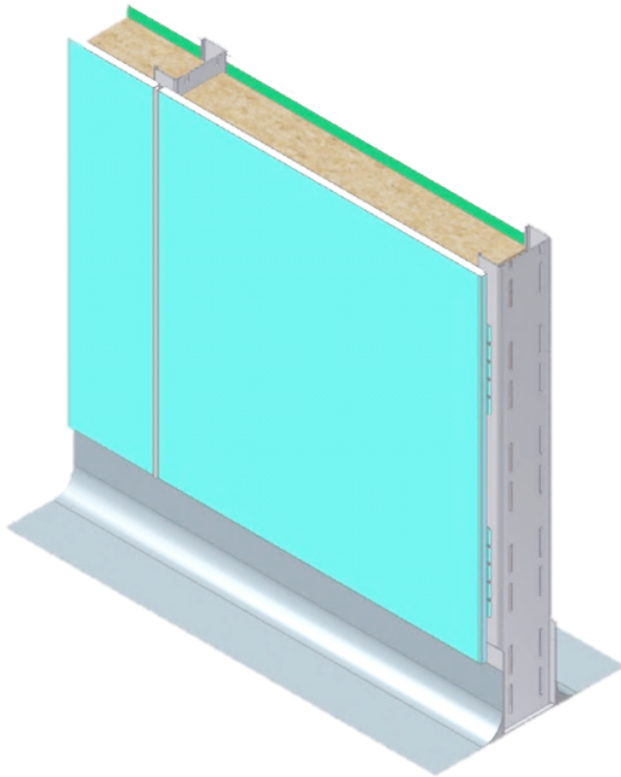


WALL THICKNESS IN VARIOUS VERSIONS

Single or double-layered wall with stainless steel panel – minimum 34 mm thick

STAINLESS STEEL WALL PANEL – TOP VIEW





STAINLESS STEEL – WHY?

- high mechanical endurance
- high corrosion resistance
- easy to clean – smooth, non-porous, surface
- maintain its features in low and high temperatures
- high aesthetics (modern, light, prestigious)
- highest hygienic safety and up to 99,9% bacteria reduction with the sanitized technology

STAINLESS STEEL WALL PANELS



MANDALA BEAUTY CLINIC, Poznań, Poland



STAINLESS STEEL WALL PANELS



TRAUMA CENTER, Cracow, Poland



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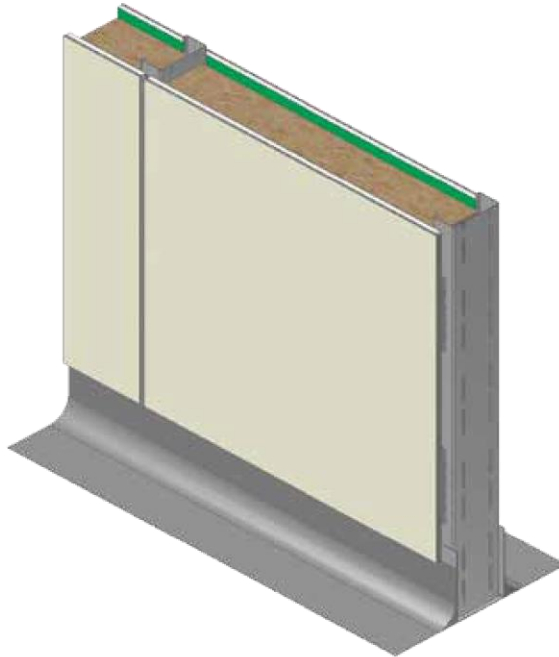
ALVO MEDICAL MODULAR WALLS



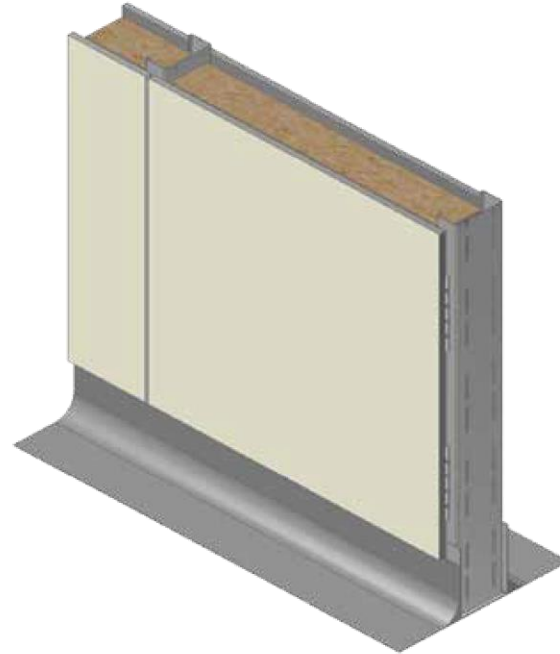
HPL WALL PANELS

VARIATIONS:

- HPL lamination
- HPL monolithic boards



Stainless steel laminated with HPL



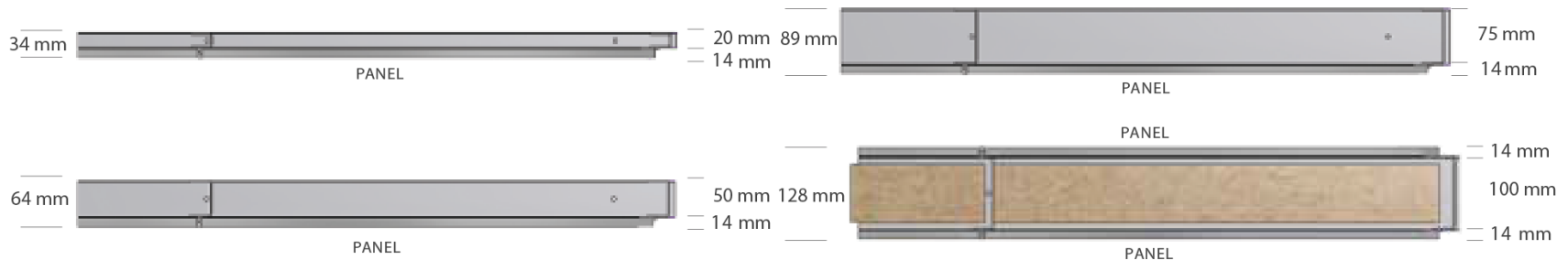
HPL as monolith

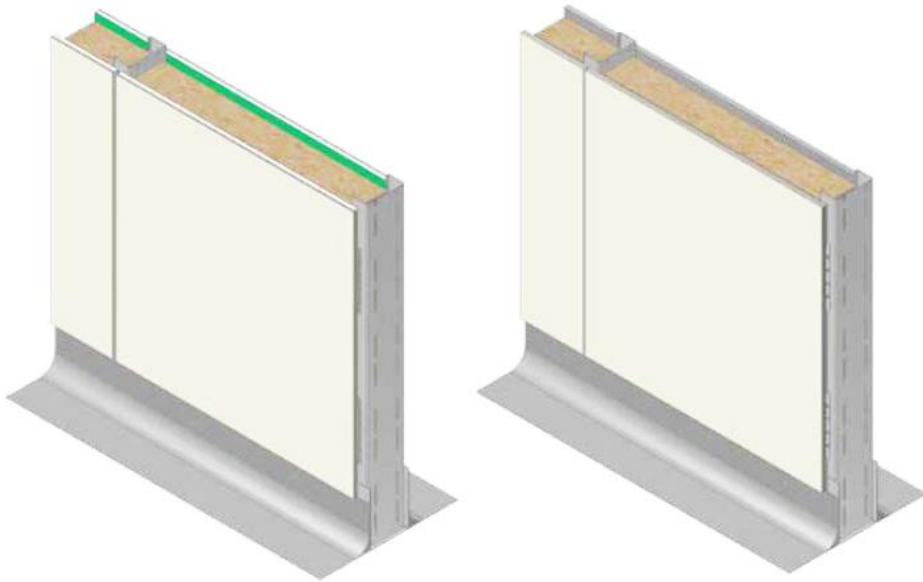


WALL THICKNESS IN VARIOUS VERSIONS

Single or double-layered wall with HPL panels – minimum thickness 34 mm

HPL WALL PANEL – TOP VIEW





HPL – WHY?

- high surface hardness, high resistance to bending, high tearing strength
- high chemical and biological resistance
- high impact strength
- resistant to rot and biological corrosion
- easy to process and assemble
- easy to clean and sterilise
- insensitive to water and steam
- available also with antimicrobial protection

ALVO MEDICAL MODULAR WALLS



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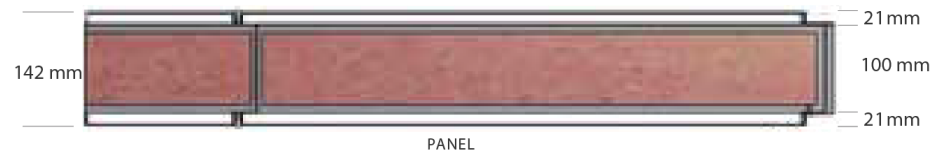
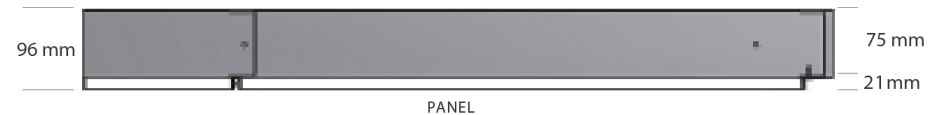
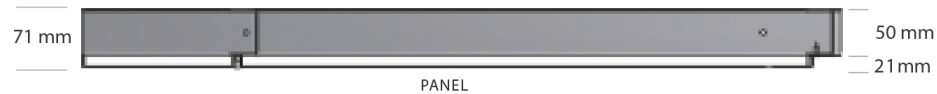
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WALL THICKNESS IN VARIOUS VERSIONS

single or double-layered wall with glass panel – min. thickness 41

GLASS PANEL – TOP VIEW





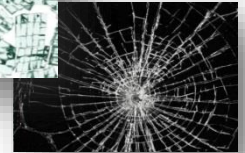
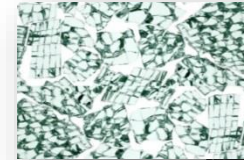
GLASS – WHY?

- plain, smooth, easy to clean
- resistant to bacteria and chemicals
- modern, high aesthetics
- available with graphics



Types of glass:

- Tempered
- Safe (laminated)



Glass with single color

- Glass + ceramic paint
- Glass + spray paint
- Laminated glass (glass + interlayer of plastic foil)

Glass with graphics

- Laminated glass (glass + interlayer of plastic foil)

Types of glass color

- Regular
- Optiwhite



ART. GLASS WALL PANELS



LS 339297



LS 322755



LS 366022



LS 368710



LS 212561



LS 359455



LS 322887



LS 336031



LS 360938



LS 1420-07



LS 300918



LS 157002



LS 323803



LS 254894



LS 1452-08



LS 360930



LS 360148



ART. GLASS WALL PANELS



REGIONAL HOSPITAL in Poznań, Poland



ART. GLASS WALL PANELS



CADOLTO SHOWROOM, CADOLTZBURG, GERMANY



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PRICING

(entire wall – panel + substructure)

- Galvanized steel – 85%
- HPL – 95%
- Stainless steel – 100%
- Glass – 180% (can vary depending on the design)

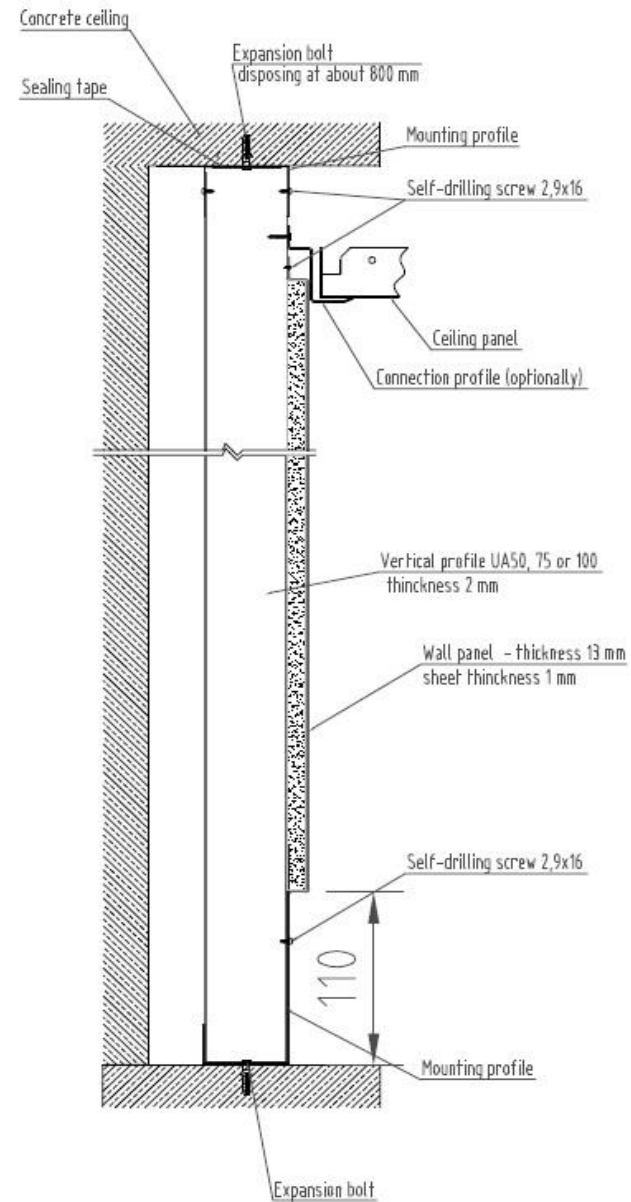
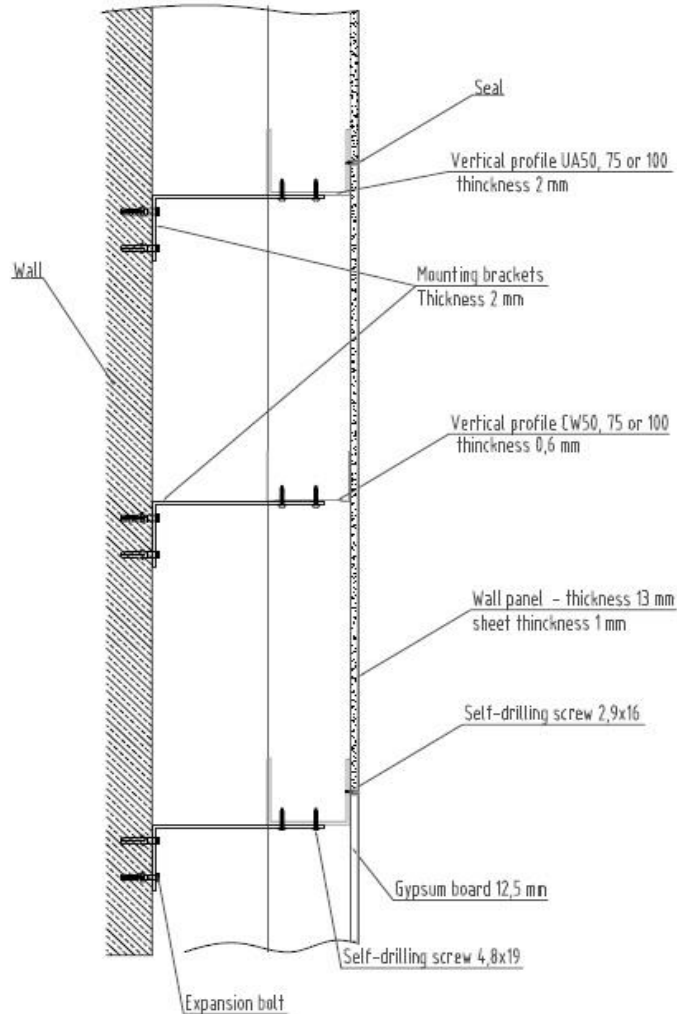
INSTALLATION TIME

Installation/dismantling time per m² (Wall panels + substructure)

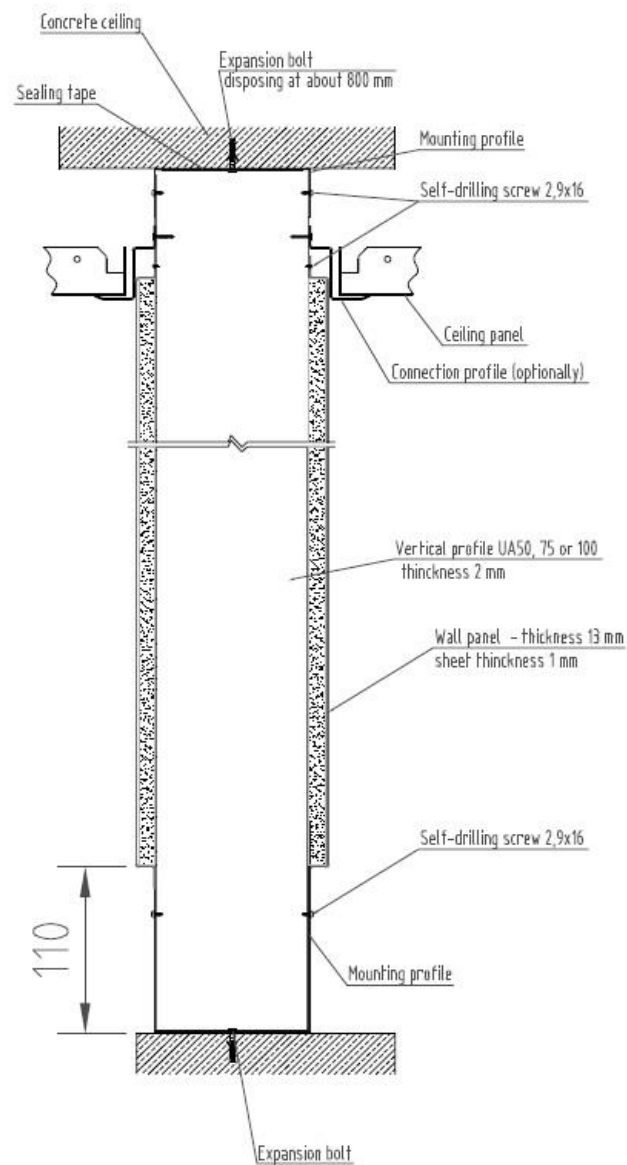
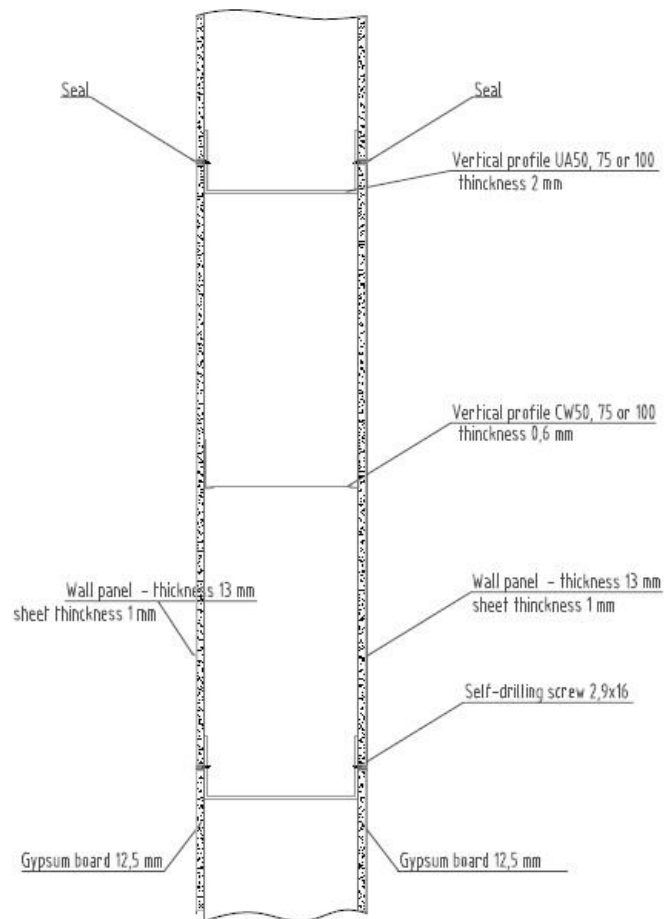
- Installation – 2,5 h
- Dismantling and reinstallation – 10–30 minutes (depending on additional work)

Average installation time of entire operating theater - 3h per m²

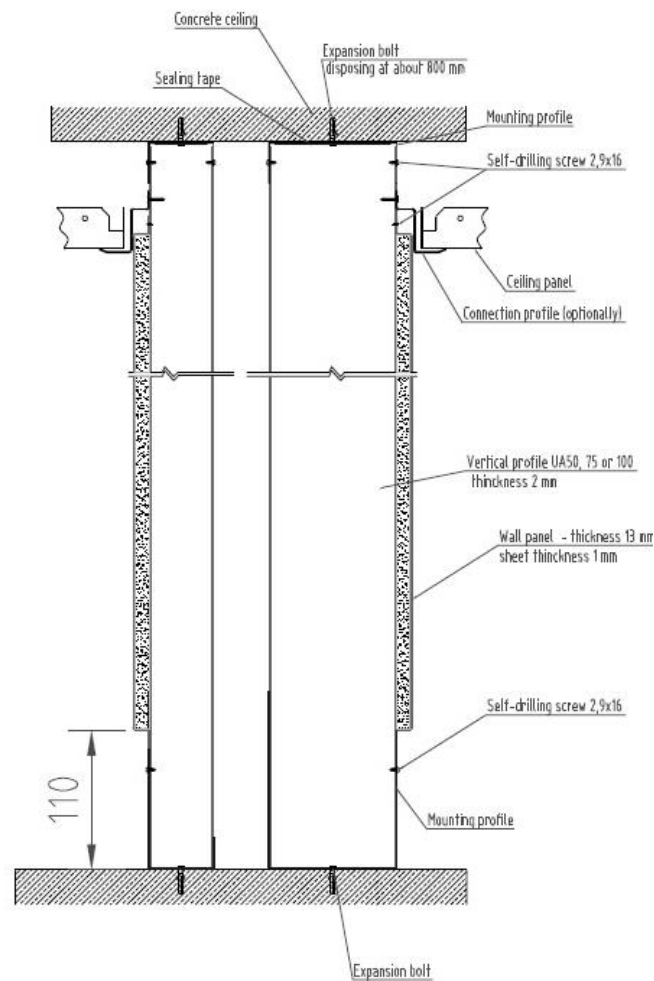
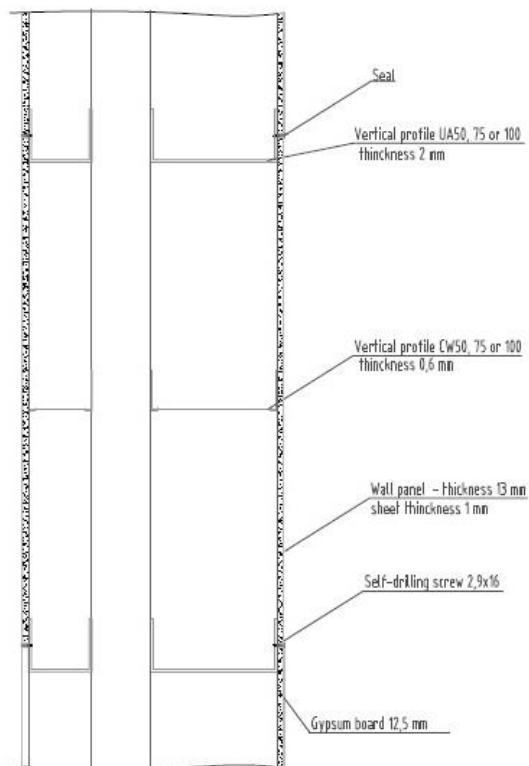
ALVO MEDICAL MODULAR WALLS



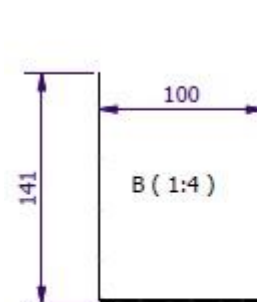
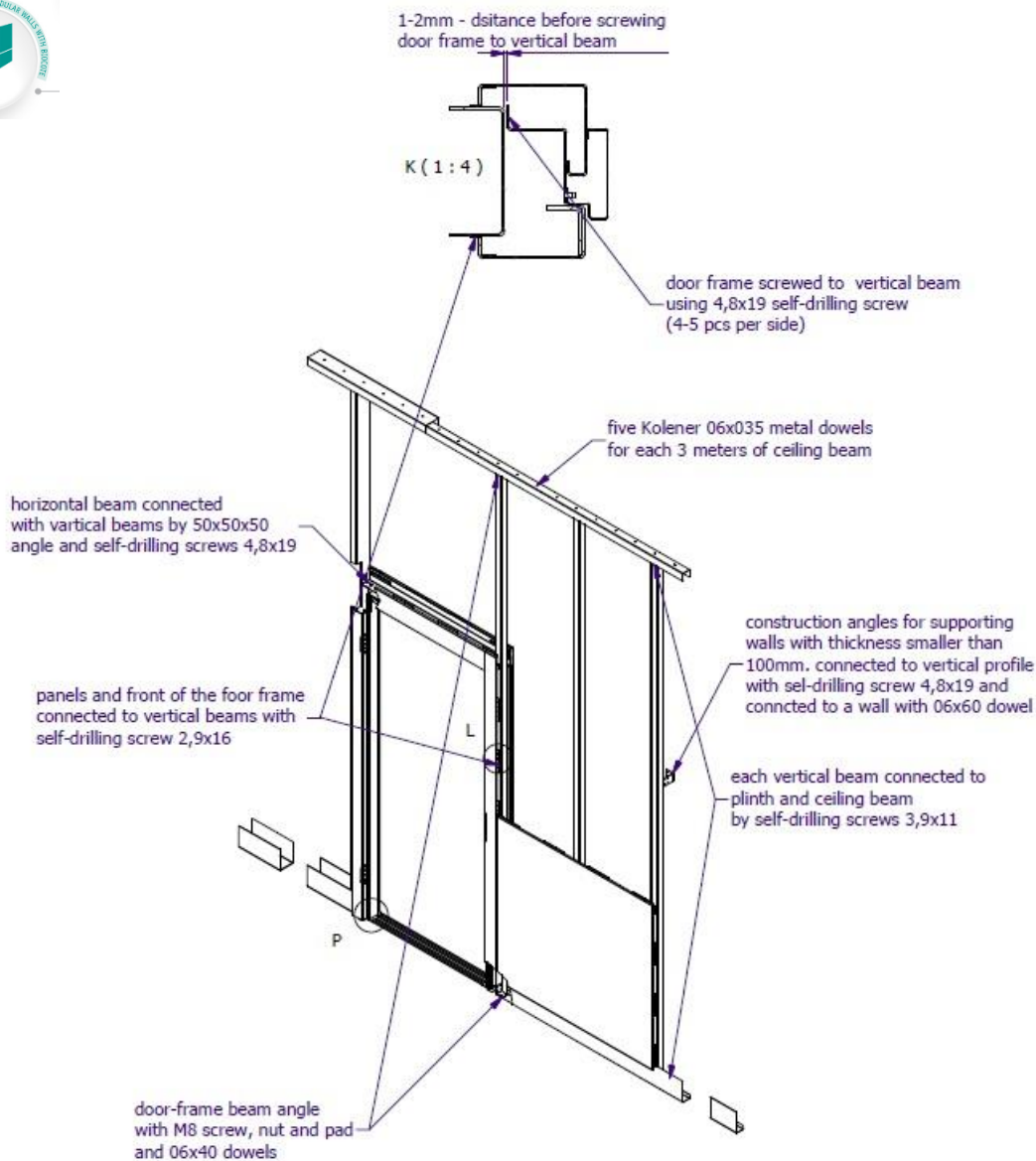
DOUBLE-SIDED PANELS



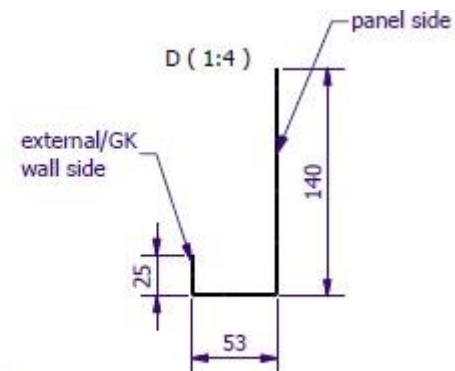
DOUBLE-SIDED PANELS (DOUBLE FRAME)



ASSEMBLY & INSTALLATION



plinth for 100mm thick wall



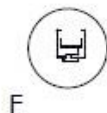
plinth for 50mm thick wall

ASSEMBLY & INSTALLATION

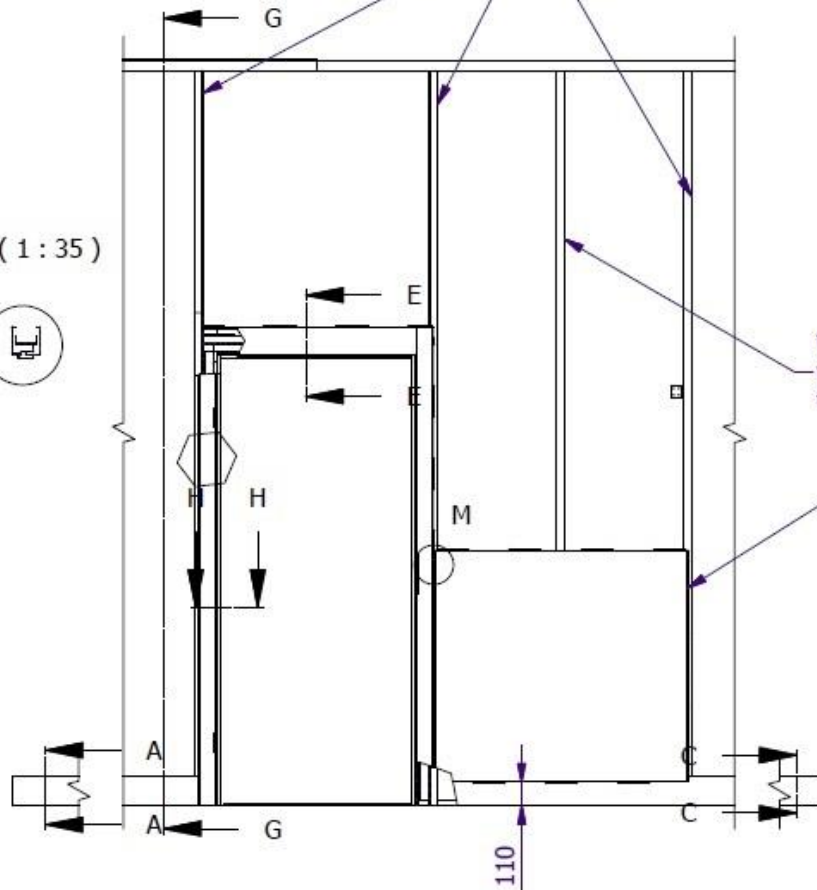


door frame profile/beam (~2mm thick wall)
width 50, 75 or 100mm

E-E (1 : 35)



F



thin profile/beam (~0,6mm thick)
width 50, 75 or 100mm behind
the middle of a panel

panel

C-C (1 : 35)



D

1-2mm - distance before screwing
door frame to horizontal beam



OTHER PARAMETERS

Acoustic insulation - 55dB (double layered panel wall, 127 mm)

Air tightness

- $(0,67\text{m}^3/\text{hm}^2)$ – for pressure difference 250Pa per m^2
- $(0,1\text{m}^3/\text{hm}^2)$ – for pressure difference 50Pa per m^2 .

Predicted lifetime of system components – 30 years (typically replaced earlier for technological reasons (modifications/development) or mechanical damage)

Non-flammable materials

Fire resistance – EI30 (can be increased by building a wall inside the system wall)

Radiological protection – any range (lead is fixed on the wall behind the substructure)

Antibacterial characteristic – saintized® (Infinite lifetime –does not wear off)



OTHER PARAMETERS

substructure

- Material – galvanized steel
- Mounting – fixed to floor and ceiling
when required also to the wall (for single-layered walls)
- Weight of entire double-layered wall (approx.36kg/m²) for 100 mm substructure and stainless steel panels

panels with division – characteristics and benefits:

- Bottom panel of brushed steel, not painted
- Revision panel - middle panel
- no horizontal seals
- Division at any height
- Combination of different materials (steel + glass)



OTHER PARAMETERS

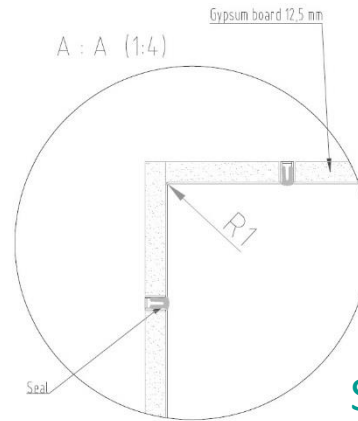
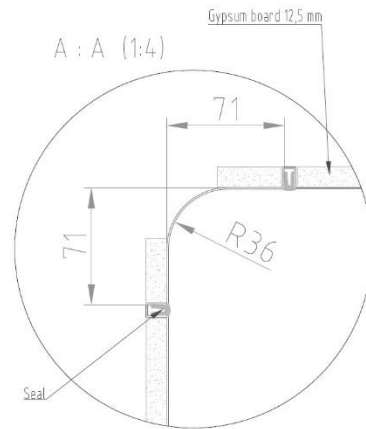
Gaskets

- Seal up the system – need not to be removed during cleaning of the OT
- Contain saintized®
- Don't change color, don't crumble
- Standard colors – white, grey
- Thickness 5-7 mm inside, 12 mm outside

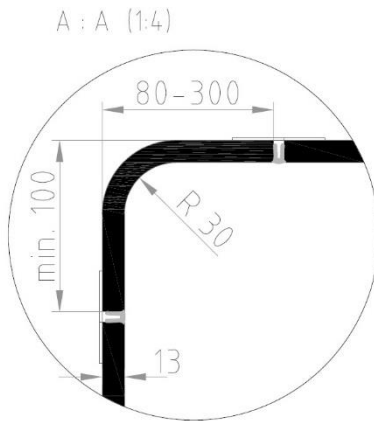
Cuts, holes and openings

- In steel – if necessary, possible during installation
- In glass – possible only during manufacturing process

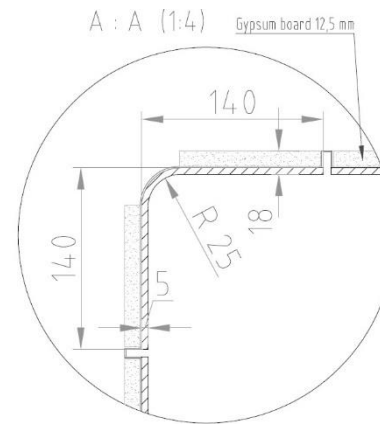
TYPES OF CORNERS



Stainless steel



HPL



glass

MODULAR CEILING SYSTEM



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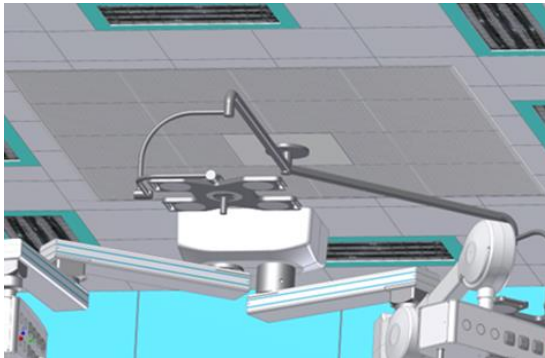
MODULAR CEILING SYSTEM



AIR RETURN VENTS



ROOM LIGHTING



SPEAKERS, CAMERAS etc...



LAMINAR FLOW

MODULAR CEILING SYSTEM



Compatible with walls and entire system

Material

- substructure – galvanized steel
- panels – 0,8 mm stainless steel (brushed, powder coated), galvanized steel (powder coated)

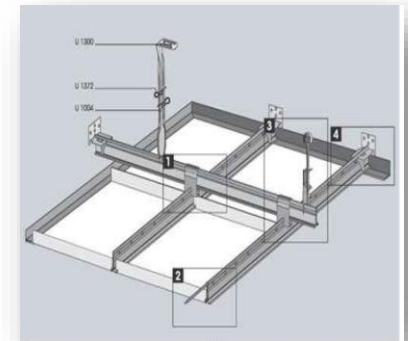
Dimensions - 600 x 600 mm, optionally 600 x 1200 mm

CLIP-IN system

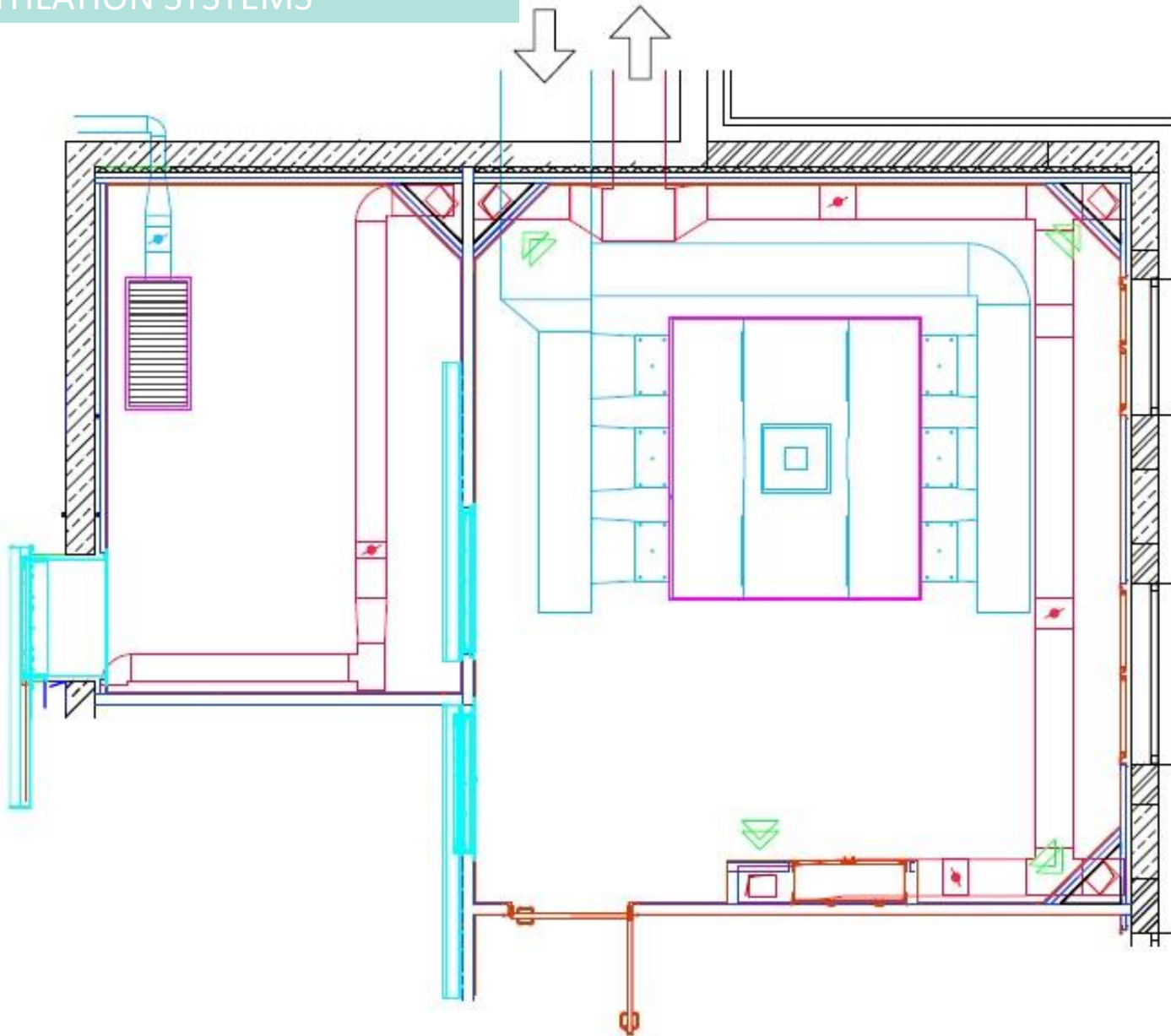
min. space above false ceiling – 200 mm

Interactions with other elements of OT installation

- ventilation system – potential problems with hanging the ceiling structure; potential problem with placement of general lighting
- local lowering of ceiling (around girders, beams)
- too much space above false ceiling (hanging rods up to 1500 mm)
- for hybrid OTs – slide rails of ceiling equipment (necessary to plan a combined installation point)



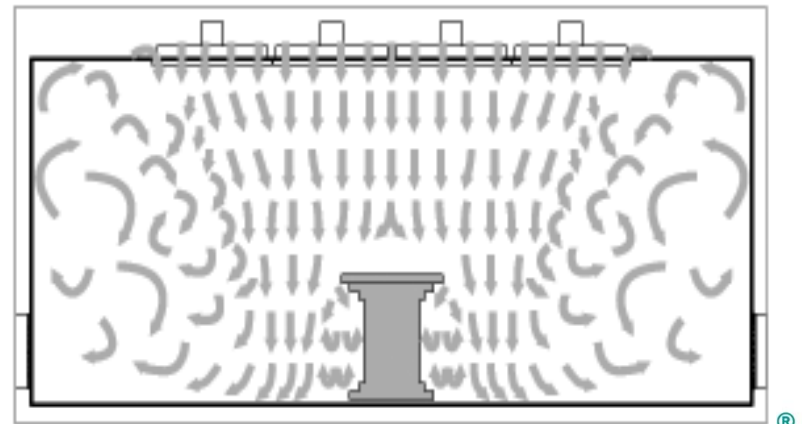
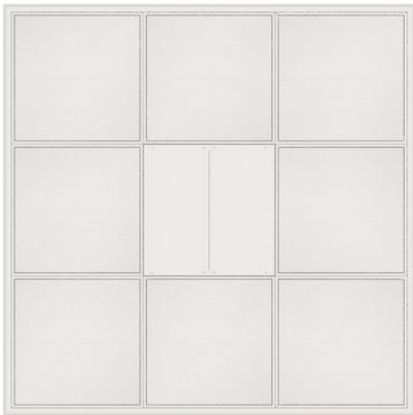
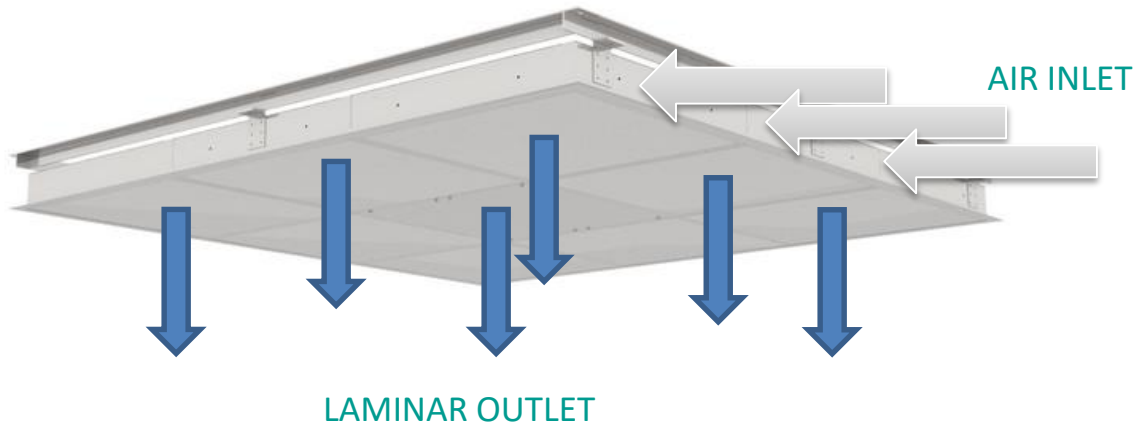
VENTILATION SYSTEMS



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LAMINAR FLOWS





Dimensions of modules

650x650mm (3x3, 5x5)

Hepa filters

H13/H14

How often replaced?

- Ventilation system (Presostat) reads the level of contamination from the pressure difference above and below the filter and signals the need of exchanging filters to a chosen system (can be monitored from Integra)
- No suggested replacement cycle



Calculating the air flow – how do we select the size of LF and ventilation grills?

- cleanliness class defines the air change rate per hour (max. 50 changes per hour, typically for Ots – 10 changes per hour)
- We provide LF that guarantees the required change rate
- Size of ventilation shafts and grids must guarantee the air speed less than 2m/s to avoid excessive noise.

Advantages of ALVO laminar flow

- Compatible with ALVO modular system
- Price competitive
- Standard functionalities with all required tests and approvals

Required space above false ceiling – 450 mm

ALVO MODULAR CABINETS



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ALVO MODULAR CABINETS



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ALVO MODULAR CABINETS



2-254
Medical cabinet
with upper glass door



2-260
Medical cabinet
with two wings door



2-265
Medical cabinet
with two wing glass doors



2-270
Medical cabinet
with two wing upper part glass doors

ALVO MODULAR CABINETS



2-282
Wall mounted cabinet
with glass door



2-284
Wall mounted cabinet with two
wings door



2-285
Wall mounted cabinet
with two wings glass door

WINDOWS AND GLASS ELEMENTS



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WINDOWS AND GLASS ELEMENTS



7-013
Tilting, single wing window



7-014
Tilting, double wing window



7-015
Window

WINDOWS AND GLASS ELEMENTS



7-016
Vent, guillotine window



7-017
Tilting, sending-receiving window

DOORS



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Types:

- sliding / hinged / swing
(Why sliding?)
 - take least space when opened
 - very useful when pushing a cart or a bed.but
 - require more free space on the adjacent wall;
- Manual / automatic
(Why automatic?)
 - Comfort/ease of use
 - Hygiene – touchless activation
 - Safety of usage
- Single wing / double wing
 - Single wing hinged door – max width 1200 mm
 - Single wing sliding door – max width 1800 mm
 - Double wing door – max width 2200 mm

MANUAL DOORS



7-01-100-0001000
Single-wing door



7-01-220-0000200
Double-wing door



7-01-300-0001000
Double-wing door (non-symetric)



7-01-100-0011000
Single-wing door with glass



7-01-220-0010200
Double-wing door with glass



7-01-300-0011000
Double-wing door (non-symetric) with glass

MANUAL DOORS



7-01-625-0000200
Double-wing sliding door



7-01-625-0010200
Double-wing sliding door with glass



7-01-505-0000200
Sliding door



7-01-505-0010200
Sliding door with glass

AUTOMATIC DOORS



7-01-102-0001000
single-wing door



7-01-222-0000200
double-wing door



7-01-302-0001000
single-wing door, asymmetric



7-01-102-0011000
single-wing door with glass



7-01-222-0010200
double-wing door with glass



7-01-302-0011000
single-wing door with glass, asymmetric

AUTOMATIC DOORS



7-01-502-0000200
single-wing sliding door



7-01-622-0000200
double-wing sliding door



7-01-502-0010200
single-wing sliding door with glass



7-01-622-0000200
double-wing sliding door with glass

DOORS



Materials

- stainless steel, glass, HPL
- can be mixed

Standard height – 2100 mm (min 2000 mm, max 2500 mm)

Glazing

- Circular – fi 490 mm (standard)
- Rectangular – 400 x 600 mm (standard)
- other
- Benefits of choosing standard solutions (price, delivery time)
- Lead possible for all shapes

Blinds (automatic), milky glass

Drives

- Besam
- Dorma
- Geze

DOORS



Buttons and activators

- Elbow
- Proximity magic switch
- Buttons on door frame

Types of handles

- Recessed
- outside

Door frame compatible with the wall panel system (flushed – one surface)

Doors infill:

- Honeycomb,
- Honeycomb / OSB / polyurethane / styrodur / cork
- Honeycomb is a standard

DOORS



ADDITIONAL OPTIONS

Fire resistance

- EI30 sliding
- EI30 hinged

Radiation shield (0,5 mm to 2mm of lead) – the limit is the weight of the door leaf (size)

Hermetic

- hinged
- Sliding (50Pa, average value 0,74 m3/hm2)

Safety features

- Infrared curtains
- IRS (infrared safety sensor)
- Infrared barriers
- Possibility to connect to fire alarm system

Can be operated from Integra system

SURGICAL SCRUB SINKS



TYPE OF SCRUB SINKS:

1, 2, 3 - STATIONS

- with wall panel
- with knee operated dispenser and water tap
- with infra red soap dispenser and water tap
- made of corian

TYPES OF BATTERIES:

- elbow operated water tap mounted on the wall
- infra red, mounted to the sink
- infra red mounted on the wall
- infra red with infra red fluid dispenser

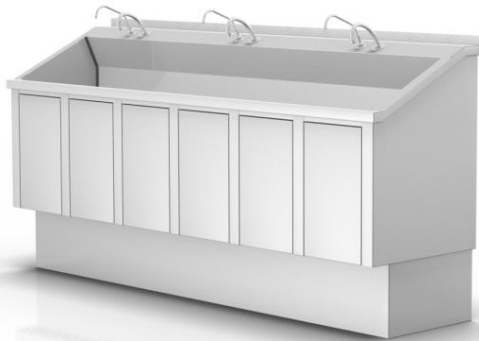
SURGICAL SCRUB SINKS



SCRUB SINK WITH WALL PANEL



SCRUB SINK



SCRUB SINK WITH KNEE OPERATED
SOAP DISPENSER AND WATER TAP



SCRUB SINK WITH INFRARED SOAP
DISPENSER AND WATER TAP

SURGICAL SCRUB SINKS



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SURGICAL SCRUB SINKS



CORIAN



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MEDICAL FURNITURE



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ALVO OPERATING TABLES

OPERATING TABLES

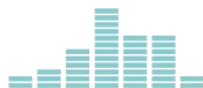
ALVOMENUET 4-00



ALVOSONATA 4-03



ALVOPRELUDIUM 4-01



ALVO SERENADA 4-04



ALVO ETIUDA 4-02



ALVO SERENADA - C





SALMED 2014 Gold Medal Award for Best Product

ALVO Patient positions

ALVO[®]
MEDICAL



GENERAL SURGERY



POSITIONING WITH KIDNEY ELEVATOR



ENDOSCOPY



TRENDELENBURG



NEUROSURGERY | OPHTHALMOLOGY



PRONE POSITION



THORAX | KIDNEY SURGERY



ARTHROSCOPY



REVERSE TRENDELENBURG



STRUMA | ENT SURGERY



SIDE POSITIONING



UROLOGY | GYNAECOLOGY



SPINAL SURGERY



NEUROSURGERY, ENT
OPHTHALMIC HEADREST



TABLETOP EXTENSION FOR OPTIMAL
IMAGING AREA



ORTHOPAEDIC SHOULDER SURGERY



RECTAL SURGERY



LATERAL POSITIONING



HAND SURGERY



ARM EXTENSION



LOWER LIMB SURGERY | EXTENSION OF LOWER LEG



LOWER LIMB SURGERY | EXTENSION OF LOWER LEG



TRAUMATOLOGY, SURGERY OF THE FEMUR NECK

ALVO[®]
MEDICAL

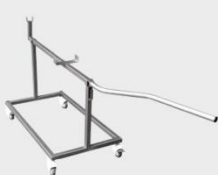
OPERATING TABLES – ACCESSORIES



4-09-000 Mobile holder for additional equipment



4-09-001 Mobile holder for orthopedic attachment



4-09-002 Trolley for installing orthopedic attachment



4-09-004 Transport trolley for table tops and table ALVO Sonata 4-03



4-09-017 Attachment for meniscus operation



4-09-018 Side support



4-09-019 Pubic support



4-09-020 Leg strap



4-09-005 Transport trolley for table tops



4-09-006 Transport trolley for table tops, with height adjustment



4-09-007 Transport trolley for table tops, with height adjustment and tilts



4-09-010 Knee support



4-09-022 Abdominal strap



4-09-023 Wrist strap



4-09-024 Hand strap for anesthetic frame



4-09-030 Attachment for knee operations



4-09-011 Angle hand support



4-09-011 v2 Hinged arm support



4-09-012 Arm support



4-09-013 Hand holder



4-09-032 Urological bowl



4-09-033 Proctological attachment



4-09-034 Thigh Attachment for hand operating



4-09-035 Holder for arm operations



4-09-014 Thigh holder



4-09-015 Shank holder



4-09-016 Side support



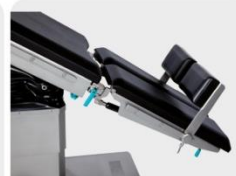
4-09-016 Shoulder support



4-09-036 Hinged pubic support



4-09-037 Leg support



4-09-038 Leg support divided



4-09-040 Specialistic head rest with adjustable track

OPERATING TABLES – ACCESSORIES



4-09-042 Specialistic head rest with adapter



4-09-046 Shoulder arthroscopy attachment



4-09-047 Extension section



4-09-050 Anesthetic frame



4-09-100 Element of orthopedic attachment – with equipment



4-09-100 Element of orthopedic attachment – bar support



4-09-100 Element of orthopedic attachment – extension device



4-09-100 Resistance roll for orthopedic attachment



4-09-051 Anesthetic frame with adjustable width



4-09-052 Infusion holder



4-09-054 Holder for tubes



4-09-055 Tray for additional accessories



4-09-110 Knee operation attachment for orthopedic attachment



4-09-120 Hip support for side position



4-09-121 Knee support for side position



4-09-122 Support for orthopedic attachment arms



4-09-056 Tray for additional accessories with angular support



4-09-060 Multiposition clamp



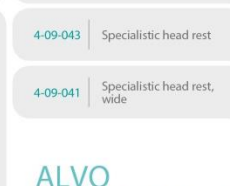
4-09-061 One-position clamp



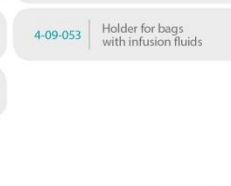
4-09-062 X-ray tray



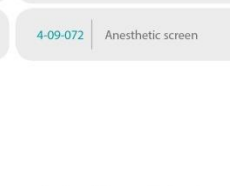
4-09-044 Operator's hands support



4-09-043 Specialistic head rest



4-09-053 Holder for bags with infusion fluids



4-09-072 Anesthetic screen



4-09-063 Side rail



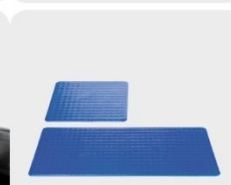
4-09-070 Special mattresses



4-09-071 Gel mattresses

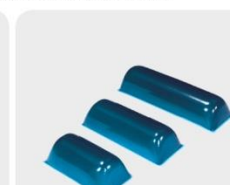
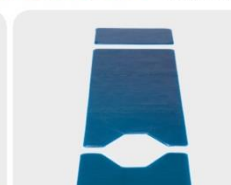


4-09-072 Heated mattresses



ALVO Gel Mattresses

Additional accessories for tabletop which protects patient against decubitus. Made of silicone gel covered with antistatic polyurethane foil.









INTEGRATION SYSTEM

CLINICAL IMAGE MANAGEMENT

ALVO Integra



INTRODUCTION



ALVO INTEGRA

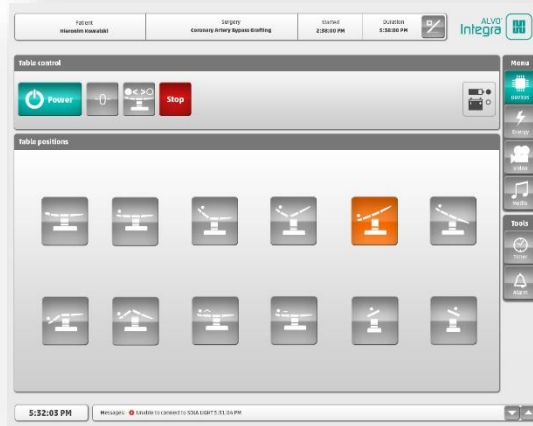
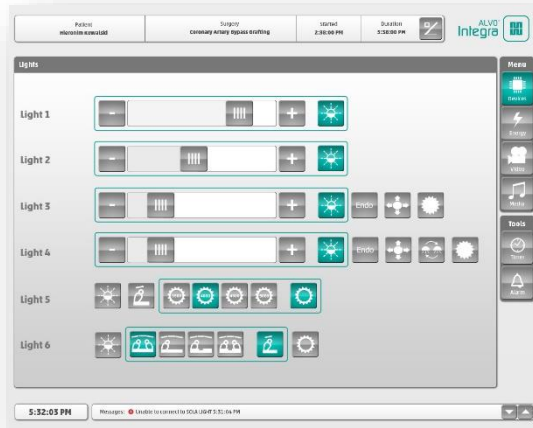
- ALVO Integra system is designed exclusively for medical use and digital OR solutions
- ALVO Integra is an innovative, open architecture management system that integrates operating room devices, data and image management based on the needs of the surgical department

ARCHITECTURE



• ALVO Integra DIVICES

ALVO INTEGRA CONTROLS ANY MANAGEABLE DEVICES LIKE :



- Room lights
- Surgical lights
- Cameras
- Doors
- Blinds
- Operating tables
- Airconditioning systems
- Other devices open for integration

ALVO INTEGRA User Interface

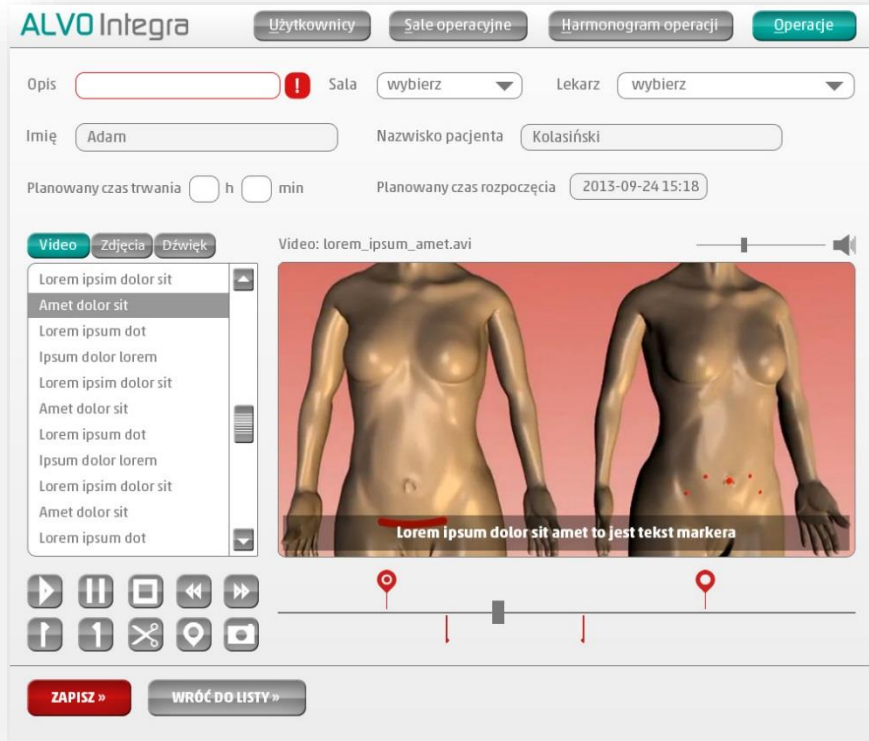


ARCHIVE SERVER



ARCHIVE SERVER

- Main database for the ALVO Integra system
- Video storage
- Image storage
- Voice notes storage



DOCTOR'S OFFICE

- Surgeries schedule
- Surgeries data access (video, pictures, voice notes)
- Video editing (cutting, tagging, descriptions)
- System configuration (ORs, users, archiving, etc.)
- Video conference configuration
- Integration with HIS

ALVO INTEGRA WEB

All functions of ALVO Integra
available via mobile devices
(phones, tablets)

