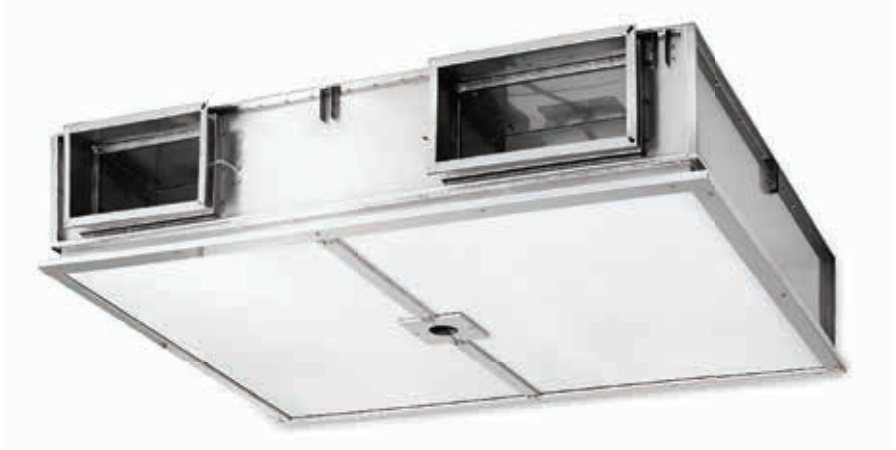
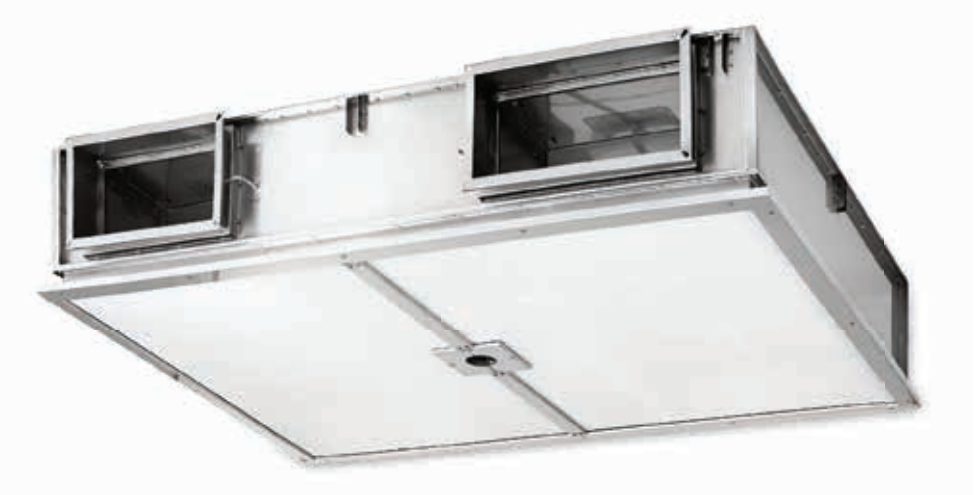
Envi Group
All about HVAC-R

GLC

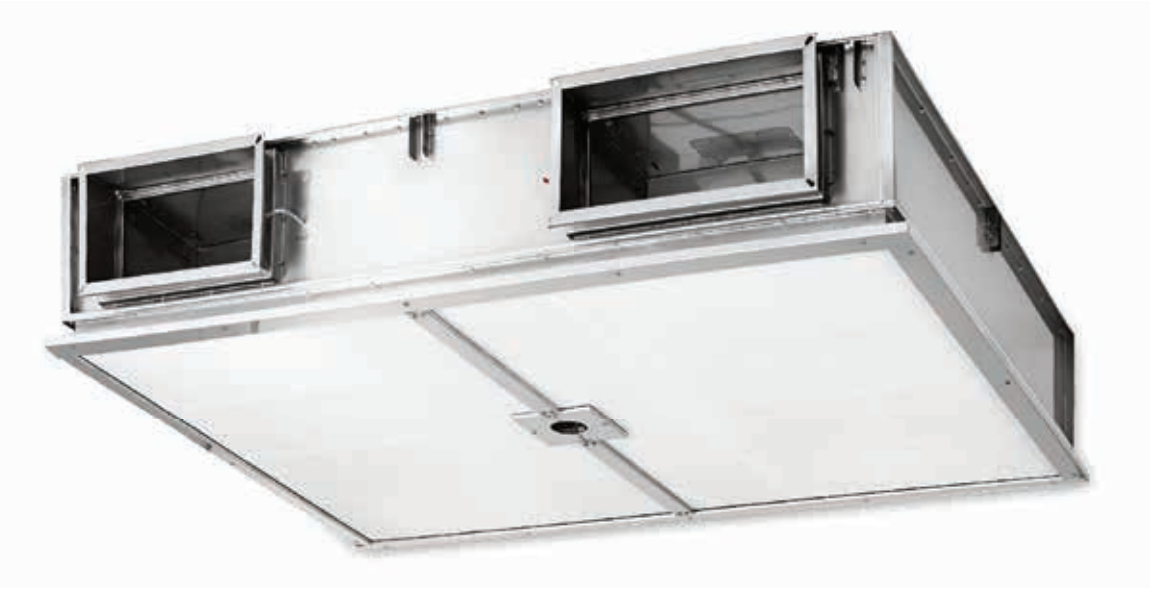
LAMINAR FLOW CEILING SYSTEMS





GLC - Laminar Flow Ceiling Systems

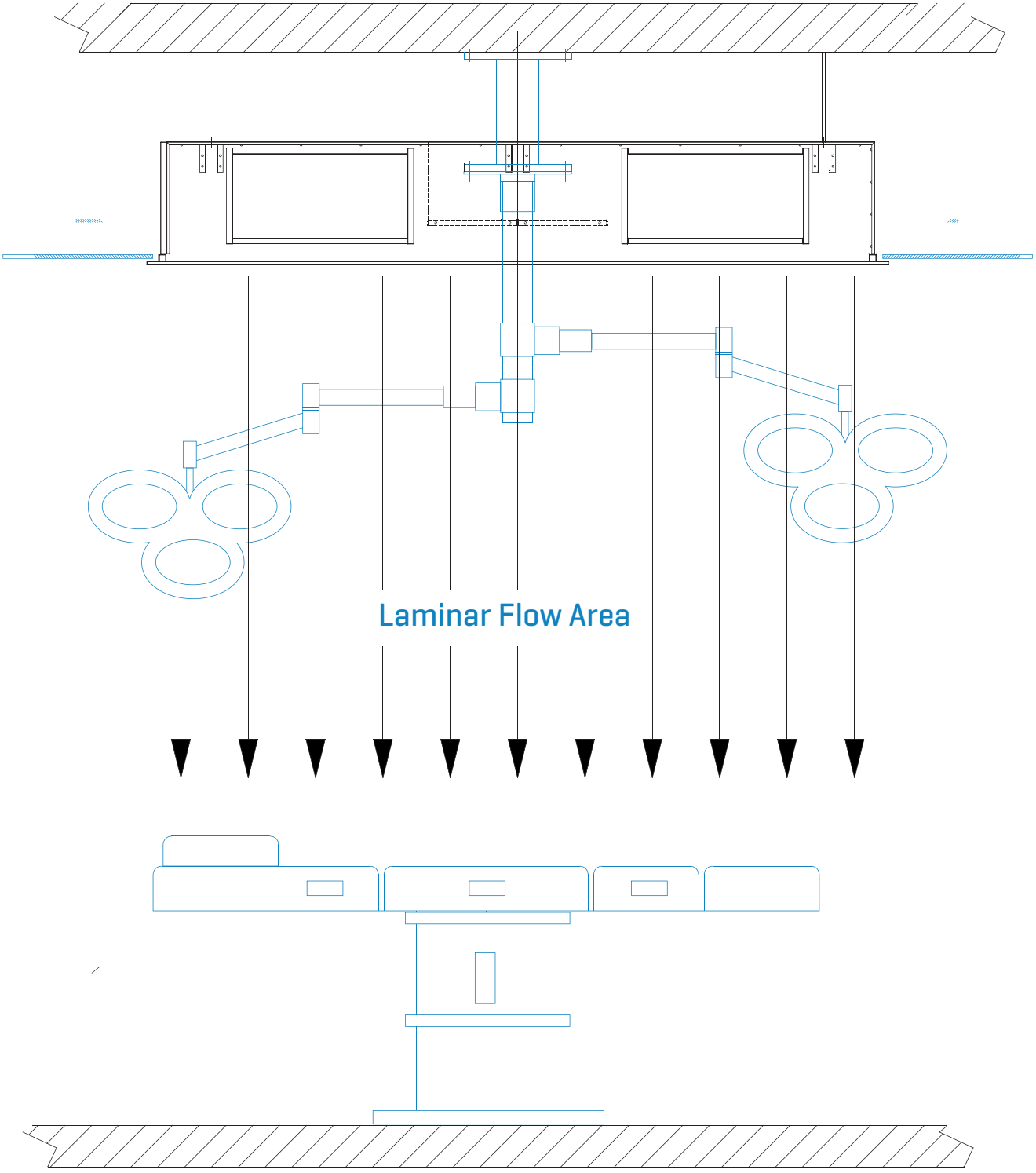
Contents



- Tested in accordance with DIN 1946/4 and DIN 25414 and provided with "100% Tightness Warranty".
- Intended to be used in operating rooms requiring constant and laminar air flow and industrial organizations making production in compliance with clean room standards.
- Protects the operating table and operating room against noxious agents thanks to airtight filter structure

Quick Selection

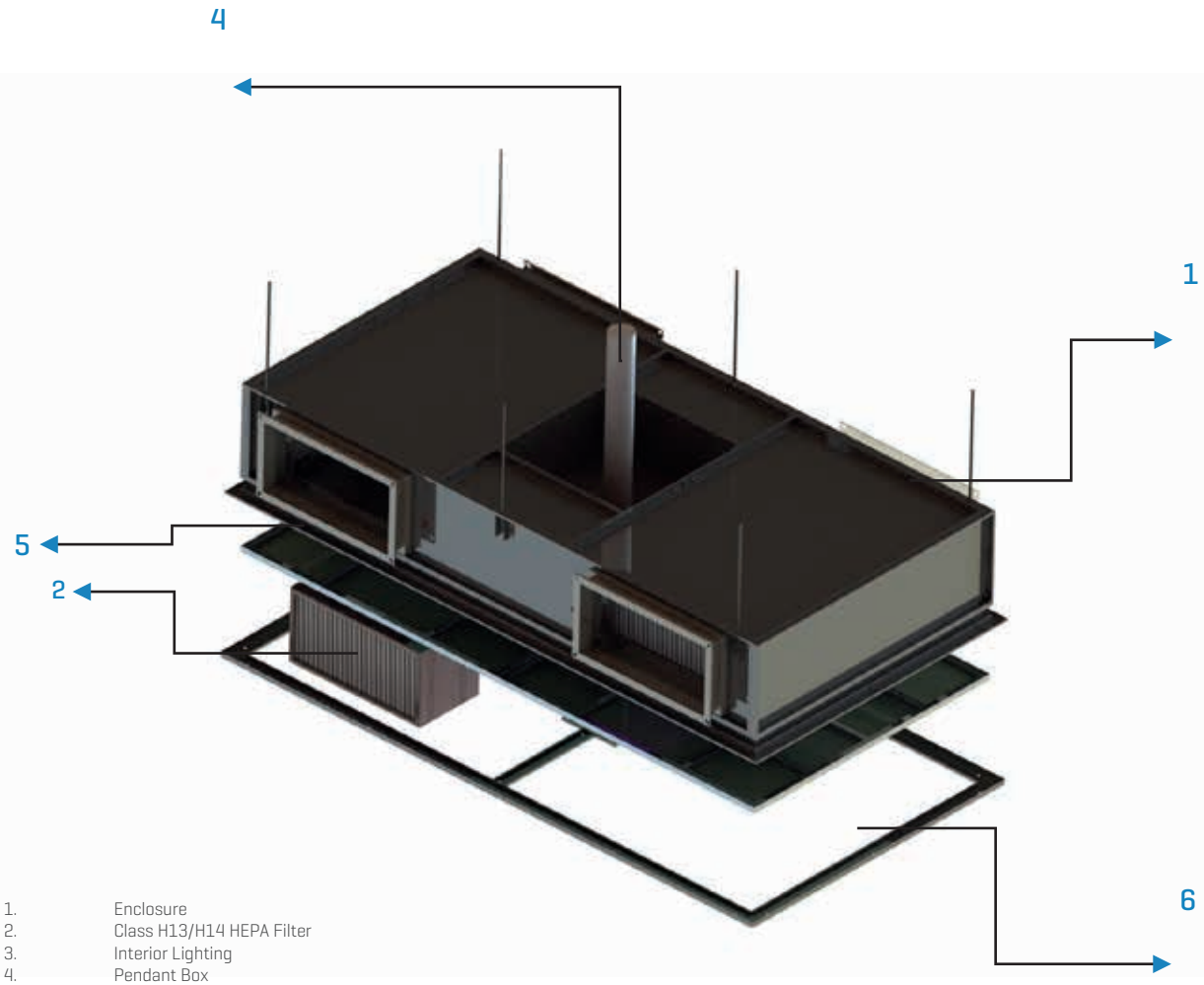
Product Code	Dimensions (mm)			At the rate of v=0,23 m/s With HEPA Filter and Diffuser			
	W	L	H	Air Flow Rate (m3/h)	Average Sound Level (dB)	Initial Pressure Loss (Pa)	Final Pressure Loss (Pa)
GLC - 1200x2400	1200	2400	450	2400	35	120	600
GLC - 1400x2400	1400	2400	450	2800	35	150	600
GLC - 1600x2400	1600	2400	450	3200	30	110	600
GLC - 1800x2400	1800	2400	450	3600	30	130	600
GLC - 2000x2400	2000	2400	450	4000	35	120	600
GLC - 2200x2400	2200	2400	450	4400	35	130	600
GLC - 2400x2400	2400	2400	450	4800	35	150	600
GLC - 2400x3000	2400	3000	450	6000	35	120	600
GLC - 2800x3000	2800	3000	450	7000	40	160	600
GLC - 3000x3000	3000	3000	450	7500	40	170	600



GLC Laminar Flow Ceiling Systems are used in operating rooms requiring constant and laminar air flow and industrial organizations making production in compliance with clean room standards. Human body may be affected negatively by constant air flow at a rate higher than 0,18-0,40 m/s. There is no doubt that inpatients are disturbed by higher rates. However medical operating team needs to work comfortably. Long-term practice in the operations taking hours requires only one-way and low-rate air flow. Such air flow is called as laminar flow.

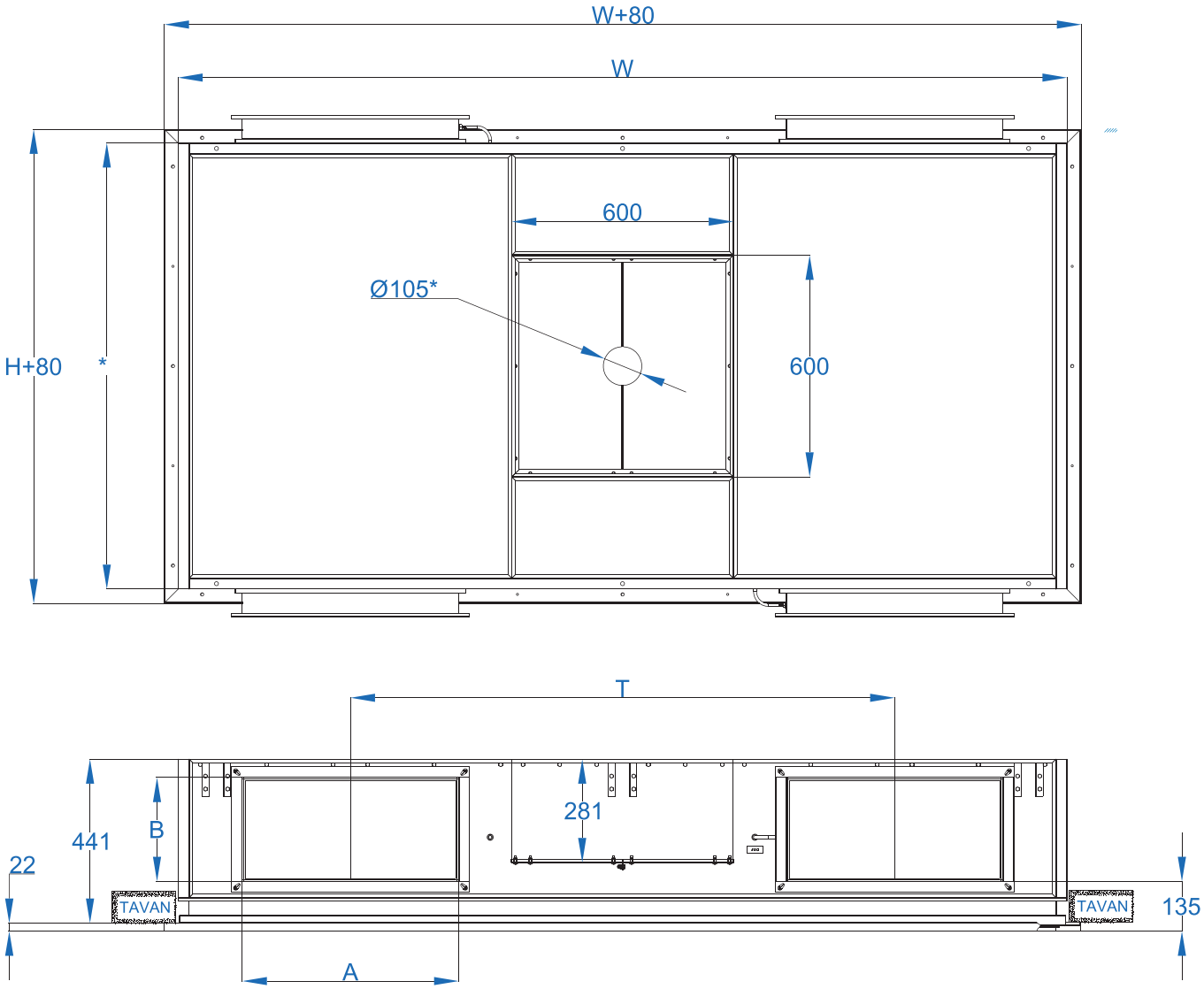
Material and Covering

GLC-Laminar Flow Ceiling Systems are made up of 6 main parts. These parts are Enclosure, H13 HEPA Filter, Interior Lighting, Pendant Box, Diffuser and Mounting Frame. Enclosure (1) is made of AISI 304 stainless steel. Inner surface of enclosure is smooth, easy-cleanable and air-tight. HEPA Filters (2) are suitable for H13 Class. They are selected for higher flow rates and lower initial pressure loss. They may be produced with Class H14 HEPA filter upon the request of customer. Filter enclosure is made of anodized aluminum profile as an anti bacterial material. Interior lighting is provided in a Standard way with GLC. Interior lighting is operated in addition to operating light. It allows that operating room is enlightened regularly during operation. Pendant box is located at the center of GLC. This box is intended to be used to hide the flange of operating light and to intervene in it when necessary. Diffuser (5) is made of stainless steel profile. It is covered with a silk cloth ensuring laminar flow. It is fastened to enclosure by stainless screws. Mounting Frame (6) brings an aesthetic appearance to GLC by covering the gap between diffuser and enclosure.



1. Enclosure
2. Class H13/H14 HEPA Filter
3. Interior Lighting
4. Pendant Box
5. Diffuser
6. Mounting Frame

Sizes



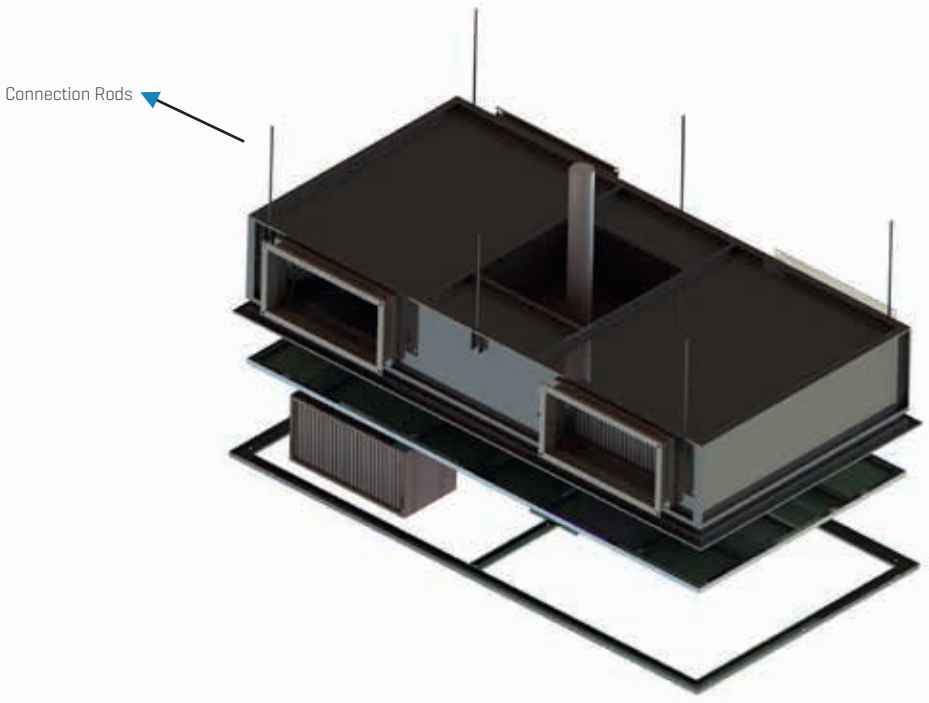
- Product is delivered with a set of filters.
- Necessary Filter Sizes: 305x610x292 mm. It is “high-capacity type”.
- Filter Seal should be EPDM or gel type
- Pendant Arm Diameter (Ø105mm) may be changed upon the request of customer.

Sizes

No	WSizes (mm)					Number of Filters	Lighting 2x18Watt IP65 Waterproof Armature
	W	H	Channel Width "A"	Channel Width "B"	Filter Axis "T"		
1	2400	1200	586	281	1474	2	2 pcs. - 3600 Lumen
2	2400	1400	586	281	1474	2	2 pcs. - 3600 Lumen
3	2400	1600	586	281	1474	4	4 pcs. - 7200 Lumen
4	2400	1800	586	281	1474	4	4 pcs. - 7200 Lumen
5	2400	2000	586	281	1474	4	4 pcs. - 7200 Lumen
6	2400	2200	586	281	1474	4	4 pcs. - 7200 Lumen
7	2400	2400	586	281	1474	4	6 pcs. - 10800 Lumen
8	3000	2400	586	281	2074	4	6 pcs. - 10800 Lumen
9	3000	2800	586	281	2074	4	6 pcs. - 10800 Lumen
10	3000	3000	586	281	2074	4	6 pcs. - 10800 Lumen

Erection

GLC Laminar Flow Ceiling System should be erected precisely. An erection manual is provided with product. Enclosure part is fixed to ceiling with rods through hangers. Cover of pendant box is opened and lighting flange is attached. If filter deposits would be checked over an automation system, differential pressure switch should be attached to the ends of "Filter Deposits Differential Pressure" Manometer. Following the cleaning of operating room, GLC is cleaned with a disincentive solution and HEPA Filters are placed to their slots. Tightness test should be made in accordance with DIN 1946/4. If DOP test would be made, diffuser should be attached following test. Parts of diffuser are attached to their places. Finally mounting frame is fastened by screws



Technical Features

• Laminar Flow Ceiling System to be mounted at the ceiling of operating room is intended to provide convenience in disinfection, erection, maintenance and service.
• Manufacturing Firm shall certify that it has established and implemented a quality system and fulfilled the requirements of it pursuant to DIN EN ISO 9001:2008.
• Diffuser box shall be made of Class V2A stainless steel in accordance with DIN 1.4301 and have a testing channel for testing tightness. A Test report in accordance with DIN 1946/4 and a warranty certificate issued by manufacturer should be available.
• Specific diffuser elements made of micro networks shall be available, which ensure air distribution in air blowing, may be disinfected by wiping and are non-degradable and fire resistant.
• Front surfaces of laminar flow ceiling systems shall be easily removable to replace HEPA filters in the room and to ensure the disinfection of body.
• Differential pressure manometer connection ends shall be available to observe the operating conditions of HEPA filters.
• Laminar Flow Ceiling System shall have a pendant light connection detail for operating room.
• Nozzles to apply test aerosol in accordance with the standards of EN 1882 shall be available.
• Class H13 filters to be used shall achieved at least 99.95% productivity in accordance with the standards of EN 1822. A test report shall be available pursuant to EN 1822 standards. Filters shall be certified by Eurovent. Class H14 filter may be produced upon the request of customer. Productivity in such kind of filters shall be 99,995 %
• Laminar Flow Ceiling System and filters shall be erected in accordance with the related standards. Tightness test and particle count test for filters following erection shall be performed by third parties.

DOP Testing End

Filter Deposits Differential Pressure End

Device Coding

Laminar Flow Ceiling System

GLC	33	C4	L	H3	0003	0000
W x L x H 0000.0000.0000	STAINLESS	4 INLETS	WITH RODS	CLASS H13 HEPA FILTERS	NAKED	DYED
	43	C2		H4	0001	XXXX
	GALVANIZED	2 INLETS		CLASS H14 HEPA FILTERS	STAINLESS	RALXXXX

Coding Example

GLC.1800.2400.0450.C4.L.H3.0001