GLD

Laminar Flow Ceiling Systems (Horizontal Filter Type)

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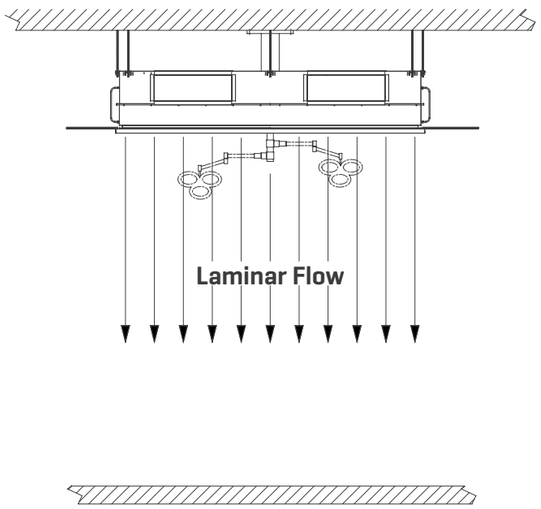
DOĞU

GLD – LAMINAR FLOW CEILING SYSTEMS

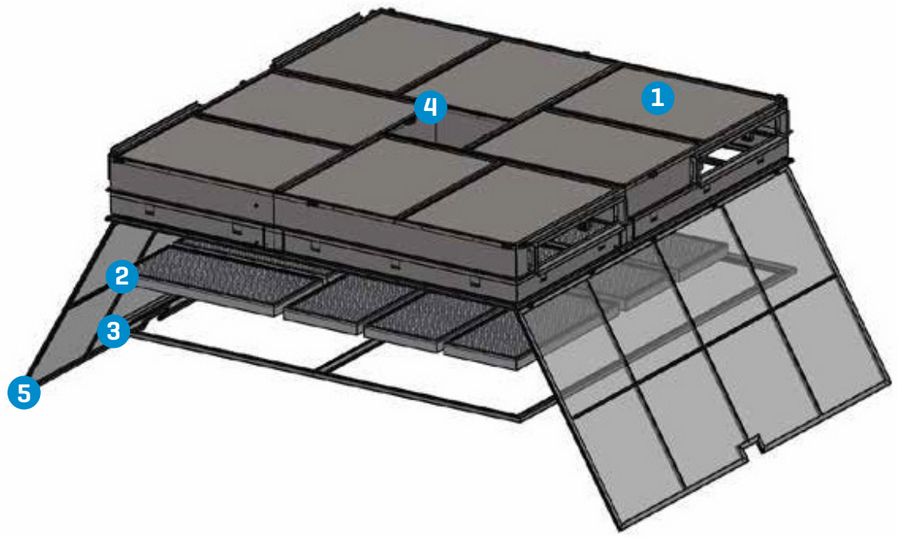
- GLD – Laminar Flow Ceiling Systems with Horizontal Filter, are used in operating theaters, intensive care units and industrial facilities which are producing clean room standards.
- Every manufactured Laminar Flow Ceiling System is tested according to DIN 1946/4 and DIN 25414, and ensured to costumer with “100% Leak Proof Warranty”.
- H13/H14 class gel seal hepa filter is used in the system. Thanks to its gel seal structure, a high level of leak proofis provided between the filter and the main case. Thus, it provides protection against harmful particles that may spread into the environment.
- H13/H14 class aluminum frame and gel seal filter has at tested in EN 1822 standards and it has at least 99.995% efficiency according to the related standard.

OPERATION

- GLD – Laminar Flow Ceiling Systems with Horizontal Filter creates turbulent airflow over the patient and operating room personnel and protects against bacteria, viruses and microbes by pushing the air. This reduces the risk of infection for the occupied zone.
  In terms of comfort, the human body is adversely affected by constant velocity air flows higher than 0.18-0.40 m/s. If the velocity of air exceeds 0.18-0.40 m/s, no doubt, the high speed will be disturb the patient. Nonetheless, the medical team which are performing surgery should also be able to work comfortably. For long hour surgery conditions,the occupied zone needs to be have low velocity airflow and this conditions can be achieved with Laminar Flow Ceiling System.



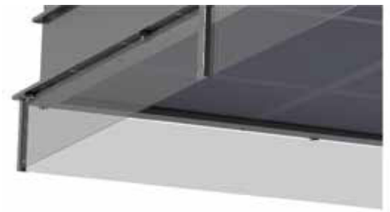
MATERIALS AND COATING



GLD – Laminar Flow Ceiling Systems with Horizontal Filter consists of main parts. These parts are Main Case, H14 Gel Seal Hepa Filter Set, Pendant Box, Laminarizer and Laminarizer Frame.

1. Main Case: Manufactured from AISI 304 stainless steel with V2A class, which convenient to DIN 1.4301 standard. Main case does not contain indentations, by this way it is easy to clean and becomes leak-proof. It is produced in a modular structure for ease of assembly and shipment. The casing has manometer terminals for the examination of pressure difference of HEPA filters.
2. HepaFilters: H14 class, and it has high flow rate and low initial pressure loss values. Filter case is made of anodic oxidation coated aluminum, for preventing the microorganism activity. To prevent damage to the filter during assembly, protection wire shall be provided on both sides of filter. Thanks to its gel seal structure, a high level of sealing is provided between the filter and the main case.
3. Laminarizer Frame: It closes the gap between the laminarizer and the main case, gives the GLD an aesthetic appearance.
4. Pendant Box: Located in the center of GLD, because of to hide the flange of the surgery lamp and for interfering if it needs.
5. Laminarizer: The frame is made of stainless steel profile. Covered with special silk cloth made of non-decay and fire resistant micro nets which develops the laminar flow and it can be disinfected by wiping. The laminarizer is attached to the case with torque hinges and clips. Torque hinges system provides easeness for changing the filters.

GLD



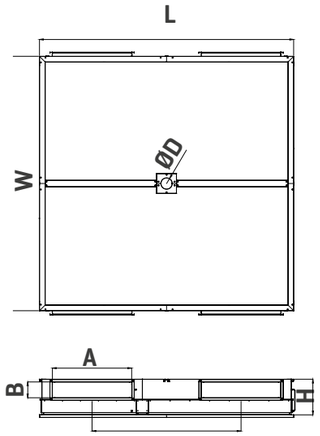
Soft Wall: To decrease turbulence effect on the laminar flow zone edges, a soft wall that made of PET-G can be integrated on the entire circumference of the unit as an accessory.

QUICK SELECTION

Product Code	Dimensions (mm)			v=0,23 m/s Hepa Filter and with		
	Width	Length	Height	Air Volume (m3/h)	Average Sound Pressure Level (dB)	Initial Pressure Loss(Pa)
GLD - 1400x2400	1400	2400	450	2600	35	90
GLD - 1600x2400	1600	2400	450	3200	35	90
GLD - 1800x2400	1800	2400	450	3600	35	90
GLD - 2400x2400	2400	2400	450	4800	40	95
GLD - 2400x3000	2400	3000	450	6000	40	95
GLD - 3000x3000	3000	3000	450	7500	40	95
GLD - 3200x3200	3200	3200	450	8500	40	95
GLD - 3800x3800	3800	3600	450	12000	40	97

Note: Recommended final pressure loss level is maximum 250 Pa.

DIMENSIONS

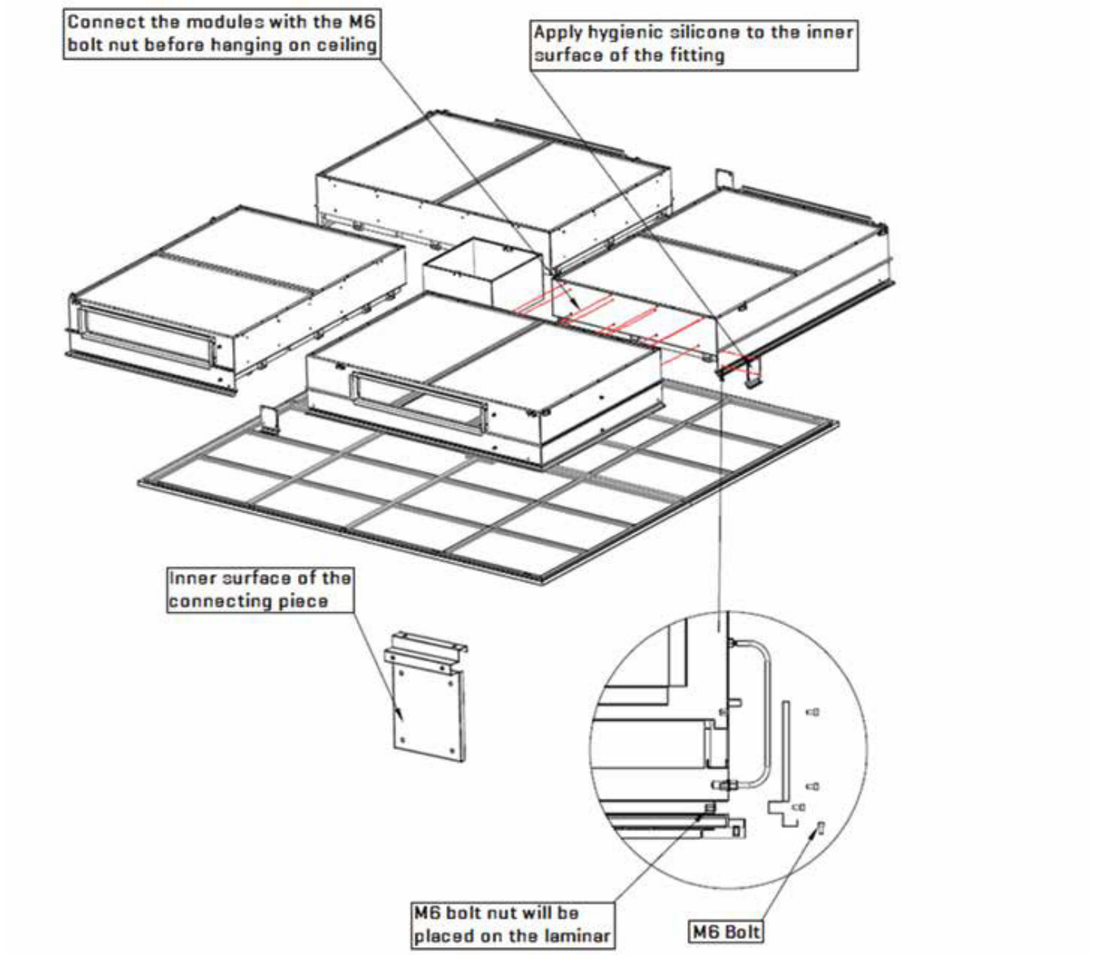


1- If the dimensions are only 1400x2400 mm, it has 2 ducts placed by crossed on the long edge. Another dimensions of the module will have 4 ducts.
2- "ØD" Pendant diameter will be given by the customer at the time of order.
3- The number and size of the hepa filters are varying from different global dimensions. Changes can be seen from the table below.

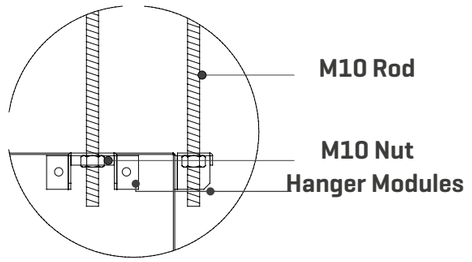
Product Code	Dimensions (mm)						Filter Number Quantity and Size Dimensions of Filter
	W mm	L mm	H mm	A mm	B mm	T mm	
GLD - 1400x2400	1400	2400	450	600	200	-	850x465x80 / 2 Pieces 720x350x80 / 6 Pieces
GLD - 1600x2400	1600	2400	450	600	200	1192	850x465x80 / 2 Pieces 720x450x80 / 6 Pieces
GLD - 1800x2400	1800	2400	450	600	200	1192	850x465x80 / 2 Pieces 720x550x80 / 6 Pieces
GLD - 2400x2400	2400	2400	450	600	200	1192	804x530x80 / 10 Pieces
GLD - 2400x3000	2400	3000	450	900	200	1446	1104x530x80 / 2 Pieces 804x530x80 / 10 Pieces
GLD - 3000x3000	3000	3000	450	1000	200	1778	1092x532x80 / 12 Pieces
GLD - 3200x3200	3200	3200	450	1000	200	1878	1192x565x80 / 12 Pieces
GLD - 3800x3800	3800	3800	450	1200	200	2180	1470x670x80 / 12 Pieces

ASSEMBLY

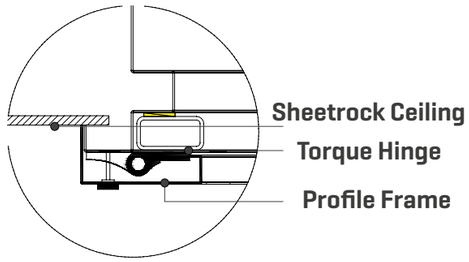
Stage 1: Connect the modules with the M6 bolt nut before hanging on the ceiling. (There is gasket on the module joining surfaces.)
Stage 2: Apply hygienic silicone to the inner surface of the fitting.
Stage 3: Fix the modules connected with the M6 bolt nut to each other with the coupling piece. (2 and 4 laminar flow modules will combined in the same way.)
Stage 4: Before hanging on the ceiling, use the hygienic silicone between the assembled modules.



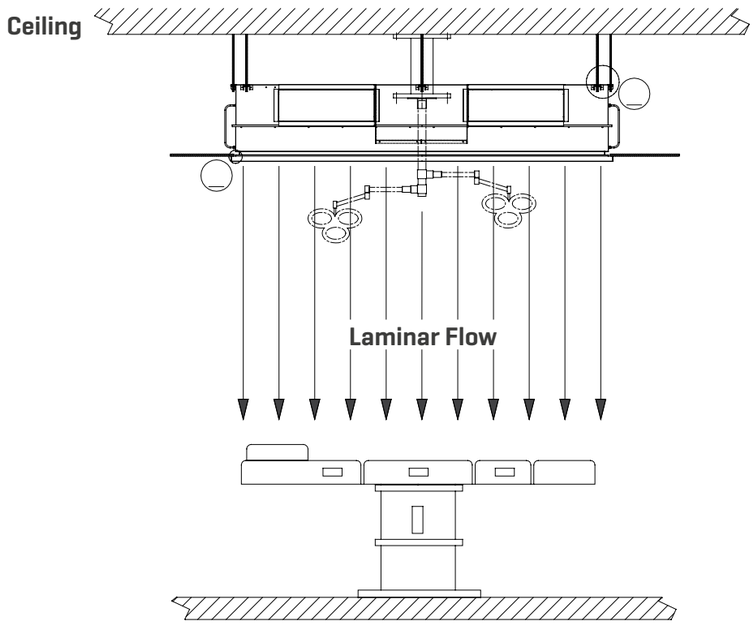
Stage 5: M10 rods that fixed on the ceiling, will be connected to the hanger module, which placed on the case, by M10 nuts with balancing operation.
Stage 6: Attach the laminarizer to the case with torque hinges and clips.
Stage 7: Connect the case with the profile frame which seated on the ceiling, by the fixing bolts.
Stage 8: Before testing, make sure that the ceiling zone is at negative pressure.



DETAIL - A



DETAIL - B



SUSTAINABILITY SOLUTIONS AT DOGU HVAC

3 GOOD HEALTH and WELL- BEING

We offer supplementary health insurance to our employees to promote healthy living. We also plan health-focused initiatives such as smoking cessation programs.

4 QUALITY EDUCATION

Through the DOGU HVAC CLUB project, we organize technical tours of our factory, participate in career events, and provide sponsorships to support the skill development of university and technical high school students.

5 GENDER EQUALITY

In 2024, we increased female employment in our administrative and production departments. This step aims to contribute to gender equality by offering a workplace with equal rights for all employees.

7 AFFORDABLE and CLEAN ENERGY

Our R&D center's 2,500 m² solar panels and 0.6 MW annual capacity solar energy systems reduce our carbon footprint. We generate our electricity, ensuring a reliable, sustainable, and accessible clean energy source.

8 DECENT WORK and ECONOMIC GROWTH

Decent Work and Economic Growth: As an employer brand, our primary goal is to protect our employees' rights and create a workplace founded on equality and justice for all employees.

11 SUSTAINABLE CITIES and COMMUNITIES

We enhance indoor air quality with environmentally friendly and energy-efficient products, ensuring adherence to European standards.

12 RESPONSIBLE CONSUMPTION and PRODUCTION

We minimize waste through lean production policies and emphasize recycling, simultaneously increasing efficiency in our production processes.

13 CLIMATE ACTION

We support environmental protection through our eco-friendly, sustainable, energy-efficient product lines and R&D efforts focused on reducing waste that could contribute to climate change.

16 PEACE, JUSTIGE and STRONG INSTITIONS

We value transparency and accountability, working with associations like ISKAV to prevent corruption and unfair competition, aligning with sectoral ethical values.

*"DOGU HVAC" reserves the right to introduce changes of parameters and sizes in the process of improvement of the devices.

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