



ATENA S.P.A. HAS A QUALITY  
MANAGEMENT SYSTEM  
CERTIFICATED BY RINA  
IN COMPLIANCE WITH ISO 9001



# Atena H+

## 24 Syncro Evo | ISO 2

Patent number: 102016000006819



### PANELS FEATURES AND DIMENSIONS

600x600 | 600x1200 | 300x600 | 300x1200 mm  
other dimensions on request  
Right edge | Shaped edges to apply air tight gasket and corners  
spring model

### PANELS MATERIAL

Steel 5/10 | 6/10  
Aluminum 8/10

### HIDDEN STRUCTURE

Steel Strong Easy T24 | Easy Antiseismic T24

### ANTI-SEISMIC EQUIPMENTS

Atena Antiseismic Kit for ≤ 1,2 m plenum  
Atena Antiseismic Kit for > 1,2 m high plenum  
Compulsory for buildings in 3 and 4 Class (NTC 2018 - § 7.2.3)

### HANGERS

Twister, Nonius, Standard with spring, 90° hanger

### COLORS

Atena white, Atena silver pre-painted aluminum  
Atena white, Atena silver pre-painted steel  
RAL / NCS coatings

### FINISHING

Plain or perforated surface  
Sublimation of images and effects  
Antimicrobial treatment (**Defence H\***)

### WALL ANGLES

"L" Syncro Evo with air tight gasket to apply on site

### ACCESSORIES

Atena Lux | TAURUS EVO IP65 integrated lighting body

### PANELS MATERIAL | M<sup>2</sup> METAL CEILING WEIGHT

PANEL MATERIAL	PANELS* Kg/m <sup>2</sup>	STRUCTURE* Kg/m <sup>2</sup>	LAMP WEIGHT * Kg/m <sup>2</sup>
<b>Steel 5/10</b>	5,00	1,05	10
<b>Steel 6/10</b>	6,00	1,05	10
<b>Aluminum 8/10</b>	2,80	1,05	10

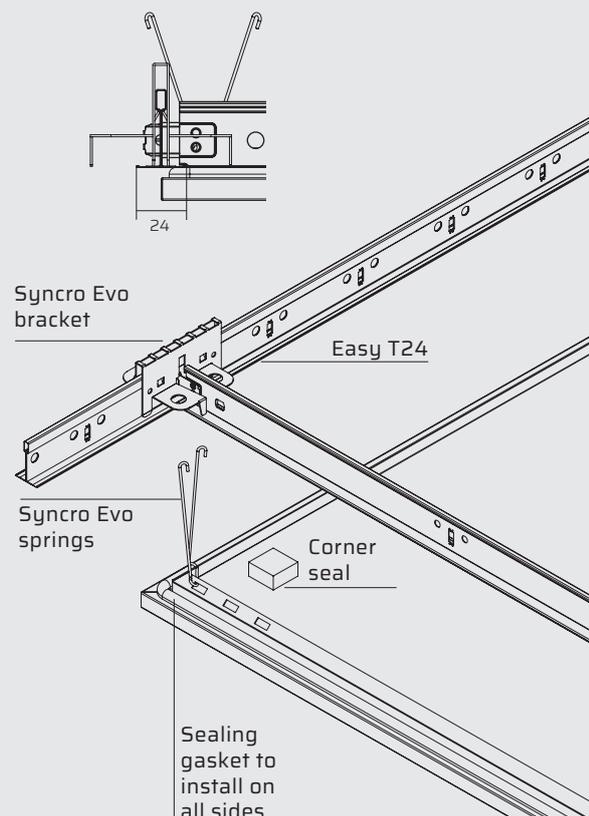
\* Panel weight including hooking springs, corner seal and sealing gasket.  
Structure weight including Syncro bracket, hangers and wall angles not included.



### SECTIONS

Metal ceiling made up of SYNCRO EVO panels with T24 structure.

#### Right edge



## TECHNICAL PERFORMANCES

	<b>FLEXION RESISTANCE</b>	Maximum span mm 1200 - <b>1 Class</b> EN13964
	<b>CORROSION RESISTANCE</b>	Galvanized steel products: <b>C2 Class</b> Pre-painted galvanized steel products: <b>C3 Class</b> Post-painted galvanized steel products: <b>C4 Class</b> Pre/post-painted aluminum products: <b>C5 Class</b>
	<b>(RH%) RELATIVE HUMIDITY RESISTANCE</b>	Galvanized steel products: ≤ <b>90%</b> Pre/post-painted galvanized steel products: > <b>90%</b> Stainless steel and aluminium products: > <b>90%</b>
	<b>FIRE REACTION</b>	<b>Classe A1</b> UNI EN 13501-1
	<b>ACOUSTICS</b>	Information in "Acoustic Performance"
	<b>COLOR STABILITY</b>	In compliance with technical tolerances standard. Test according to the ΔE - CIELab method. ISO 7724-2 (3)
	<b>METAL CEILING MAXIMUM LOAD</b> <sup>(2)</sup>	12 kg/sqm Classe C EN13964
	<b>LIGHT REFLECTION</b>	Smooth glossy white: up to 85% ISO 7724-2 (3)
	<b>DURABILITÀ VERNICIATI</b>	12 kg/sqm Classe C EN13964
	<b>GALVANIZED ITEM DURABILITY</b>	B Class EN13964
	<b>AIR CLEANLINESS CLASS</b>	ISO 2 ISO 14644-1 - Fraunhofer institute - Stuttgart
	<b>CLEANING</b> <sup>(1)</sup>	Wet cloth with warm water and neutral non-abrasive detergents. <b>High pressure water</b>
	<b>DISINFECTION IDONEITY</b> <sup>(3)</sup>	"Defence 4H*" galvanised post-painted steel products only. VDI2083 P.17; ISO 4628-1; ISO2812-1 - Fraunhofer institute - Stuttgart
	<b>ANTIMICROBIAL PROPERTIES</b> <sup>(4)</sup>	Products "Defence 1H*" in galv. pre-painted steel: action > 99% Products "Defence 2H*" in pre-painted aluminum: action > 99% ISO 22196   JIS Z 2801-2010 Products "Defence 3H*   4H*" in alu. / galv. st. post-paint.: action > 99%
	<b>RESISTANCE TO MOLD</b> <sup>(5)</sup>	Products "Defence H*" <sup>(5)</sup>

(1): Clean the metal ceiling by dry-cleaning before proceeding with water; the false ceiling can be washed with high pressure water if sealed with silicone.  
(2): Value calculated with Easy T24 and Easy Antiseismic T24 structures. (3): Frequent cleaning with diluted disinfectants containing active agents such as formalin, hydrogen peroxide, sulfuric acid, phosphoric acid, hydrochloric acid, isopropanol, sodium hydroxide and sodium hypochlorite. (4): Information on the tested bacterial spectrum available on request. (5): pre-painted and post-painted steel and aluminum products are resistant to mold thanks to their chemical-physical properties. Products maintain the declared performance properties if properly cleaned and maintained.

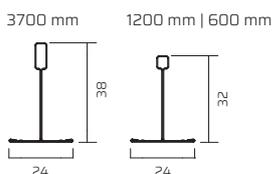
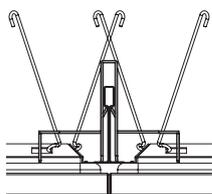
## SUSTAINABILITY

	<b>RELEASE OF DANGEROUS SUBSTANCES*</b>	None CAM 2.4.13 EN13964		<b>FORMALDEHYDE*</b>	E1 Class CAM 2.3.5.5
	<b>DISASSEMBLY*</b>	Steel   Aluminium 100% recyclable CAM 2.4.11		<b>MATERIAL DEMOLITION AND REMOVAL*</b>	Non hazardous waste in compliance with CAM 2.5.1.
	<b>RECYCLED PRODUCT CONTENT*</b>	CAM 2.4.1.8 compliance		<b>GREEN BUILDING</b>	Requirements: <b>LEED</b> (BREEAM and ITACA for cross-section aspects)

\* Data declaration as required by the ISO 14021 standard

All dimensions are nominal and expressed in millimeters.  
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tel. + 39 0421 75526 export@atena-it.com

## BASE 24 STRUCTURE SYSTEM



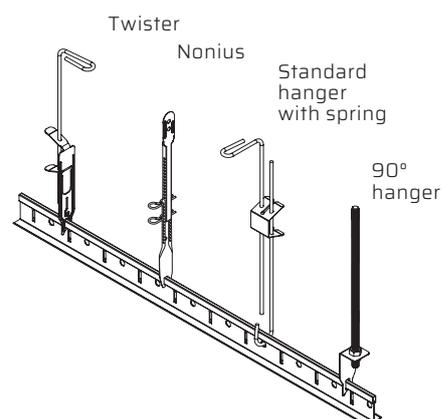
\*Verify the interaxe according to the load at m<sup>2</sup> and particular conditions.

## COMPONENT INCIDENCES

ID	DESCRIPTION	INCIDENCE*
1	SYNCR0 EVO PANEL	2,78 pz/mq
2	"L SYNCR0 EVO" WALL ANGLE	1 pz/mq
3	HANGERS	1 pz/mq
4	EASY T24 3700 (h38)	0,85 ml/mq
5	EASY T24 1200 (h32   h38)	1,70 ml/mq
6	EASY T24 600 (h32   h38)	0,85 ml/mq
7	T24 SYNCR0 BRACKET	-
8	TAURUS EVO IP65 LIGHTING BODY	-

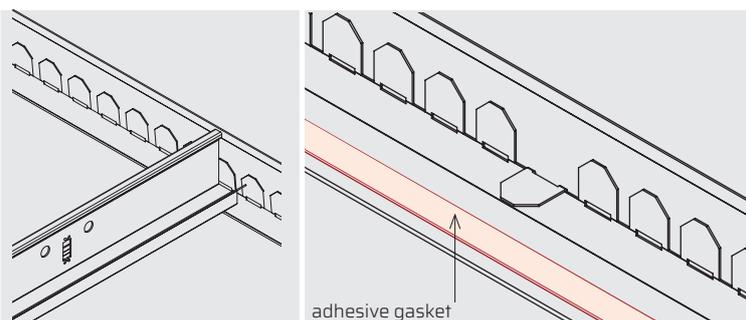
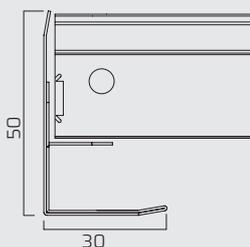
\* Component incidences 600x600mm model

## HANGERS

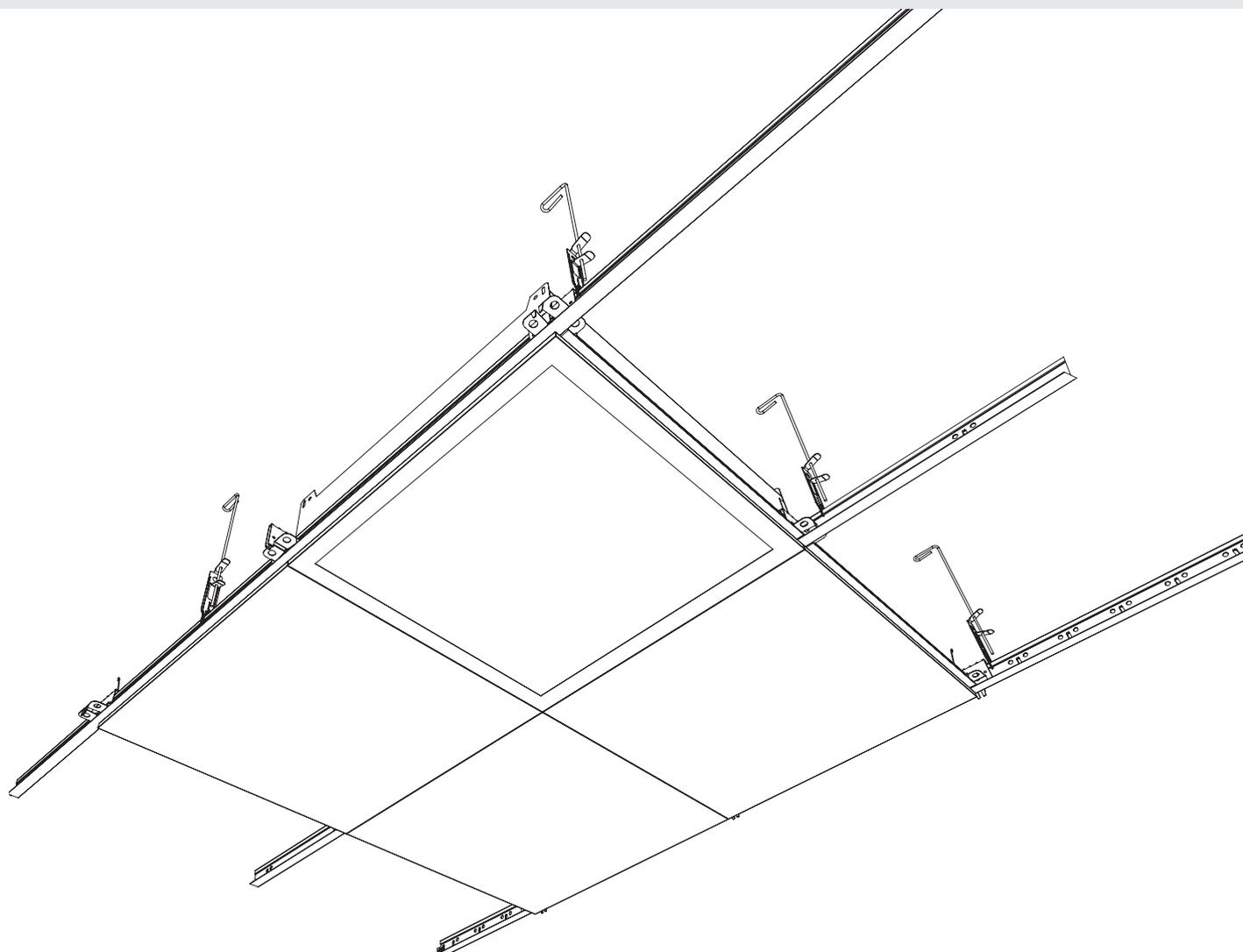


## WALL ANGLE

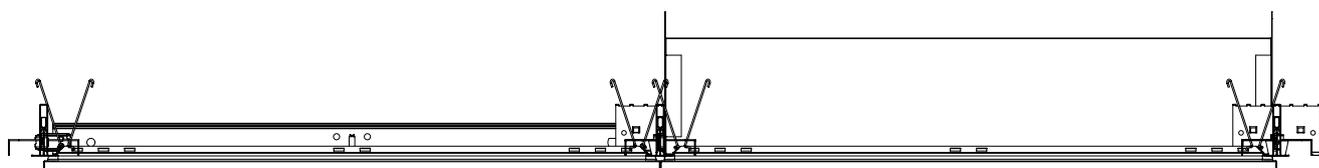
**SYNCR0 EVO**  
Nearby T profile, wall angles must be bended at 90 degrees to allow profiles laying.



## TAURUS EVO IP65 INTEGRATED LIGHTING BODY



### SYSTEM SECTION

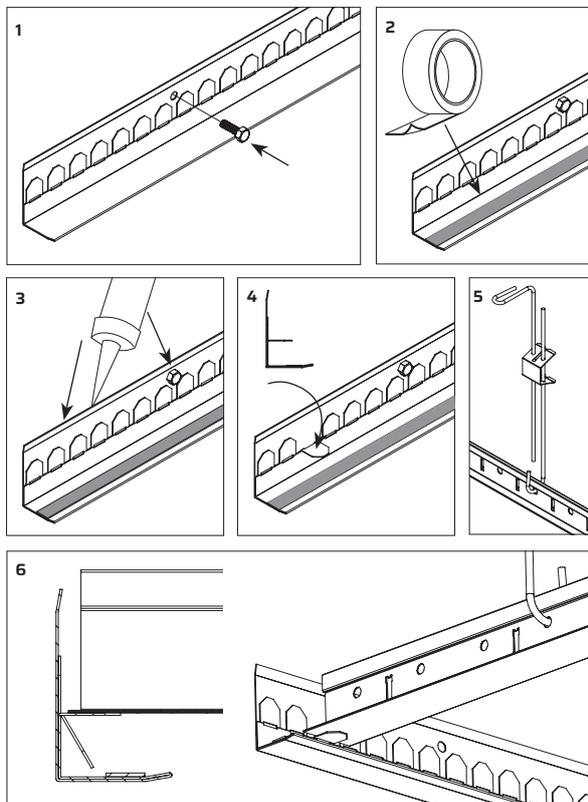
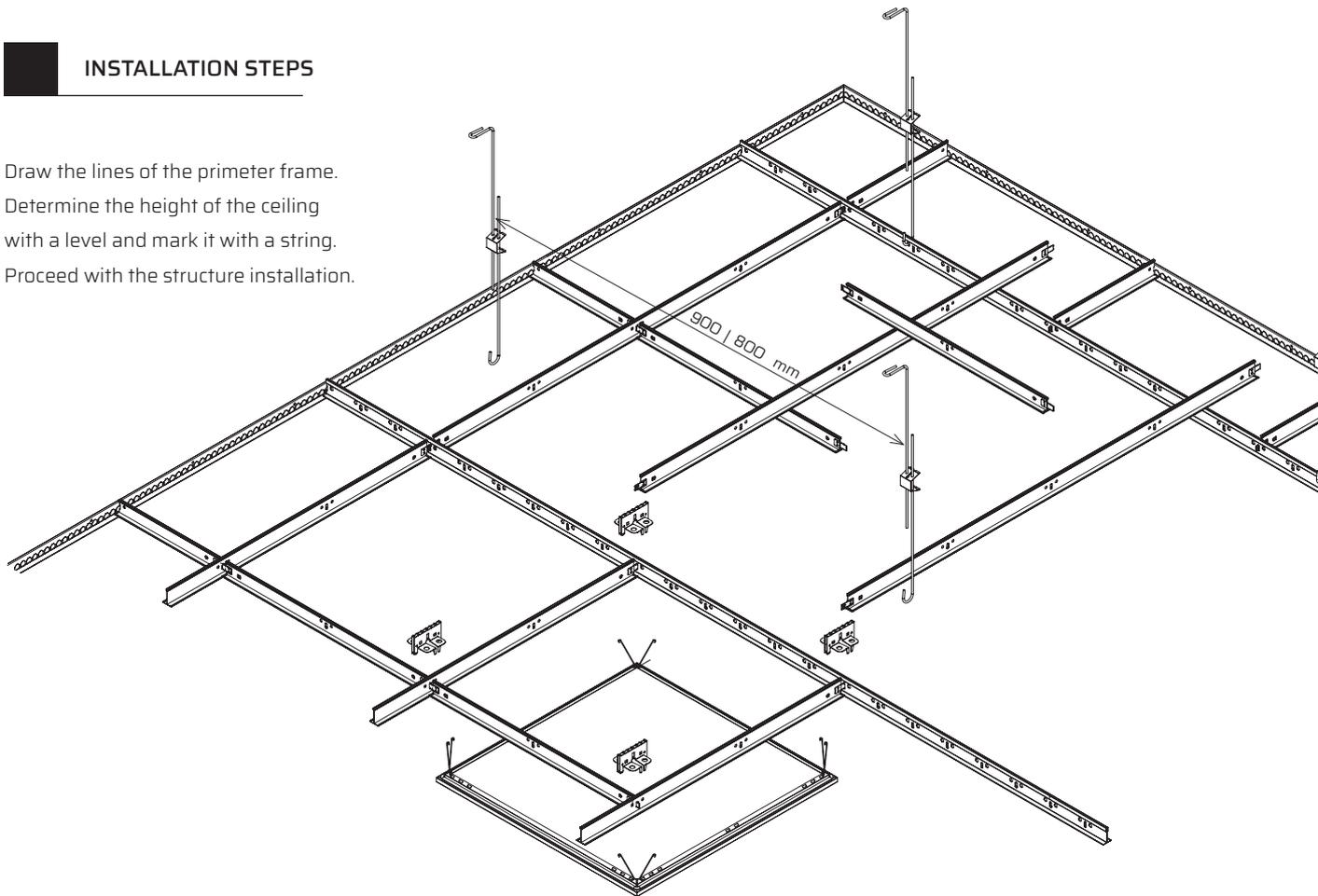


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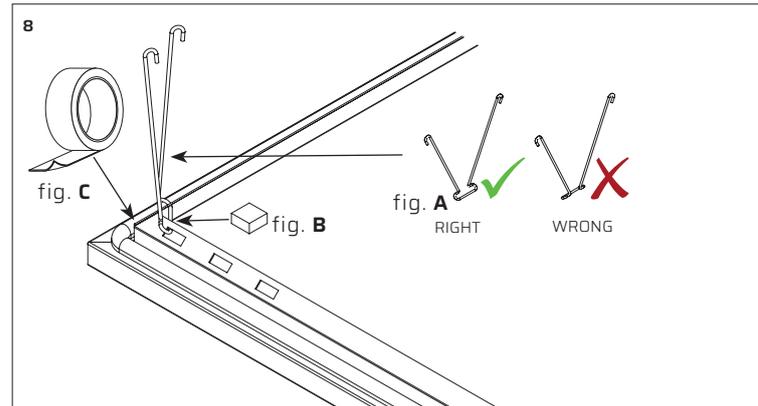
## INSTALLATION STEPS

Draw the lines of the primeter frame.  
Determine the height of the ceiling  
with a level and mark it with a string.  
Proceed with the structure installation.



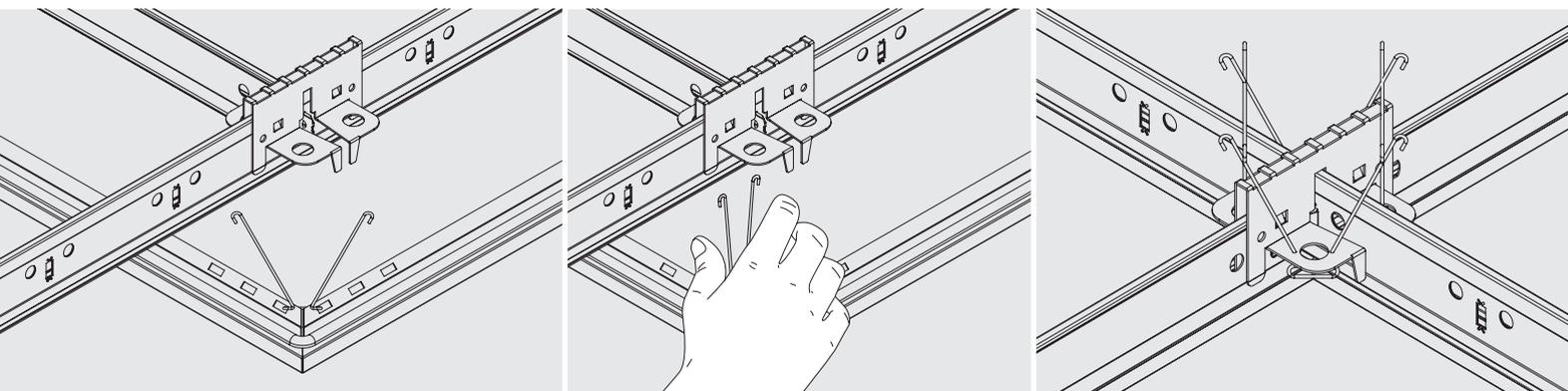
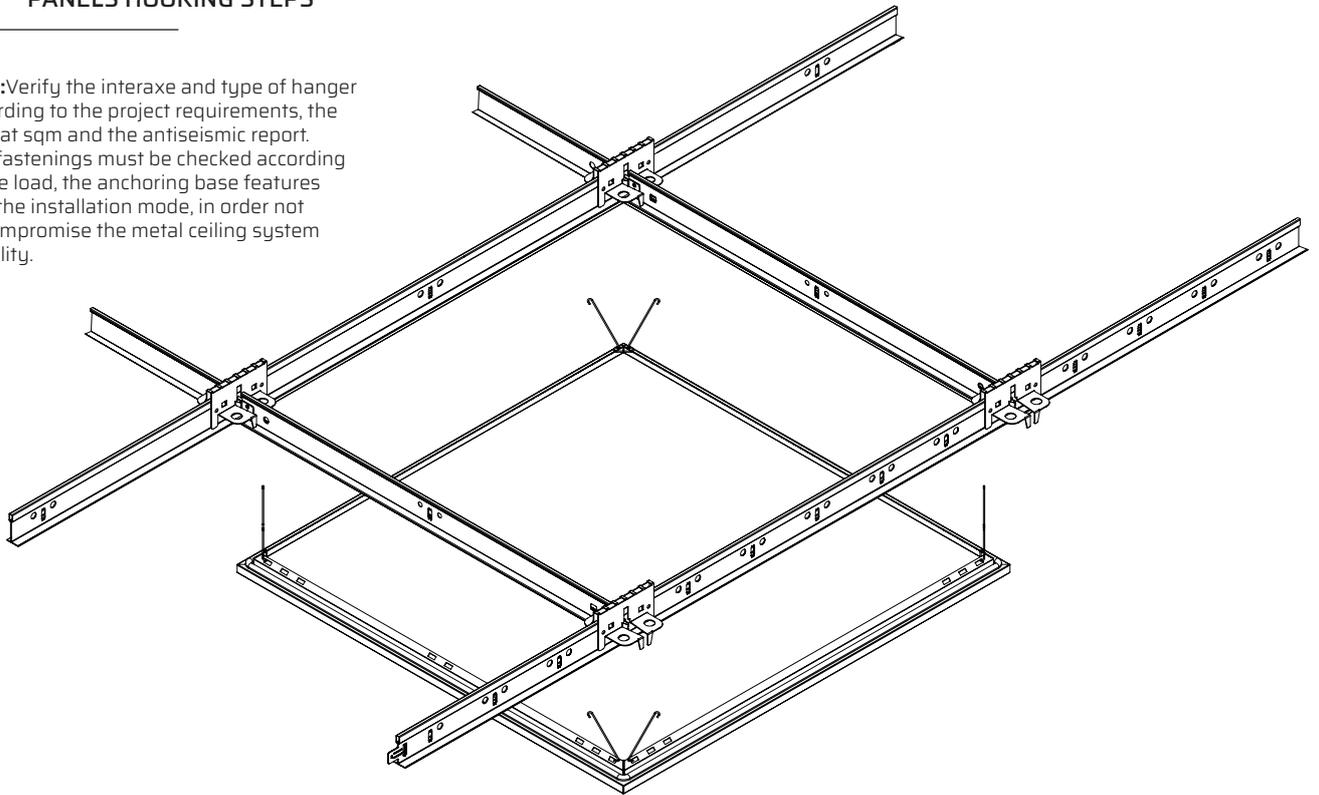
1. Install the wall angles with nails, screws and / or plugs suitable to the wall material.
2. Apply the **sealing gasket** on wall angle.
3. Use **non acetic silicone** to seal the top of wall angle and all fixing screw holes.
4. Bend the **wall angle wings at 90 degrees** nearby **T profiles**: to install 600x600 mm panels, bend the wings with an interaxe of 600 mm.
5. Fix the **hangers** according to the type of ceiling to be installed, verify the interaxe according to the load at m<sup>2</sup> and particular conditions.
6. Install the **T24 3700 mm main runners with an interaxe of 1200 mm with hangers every 900 | 800 mm or according to project requirements.**  
Pay attention, T-grid must lay in the perimeter wings previously bent.
7. Insert **1200 mm cross T** in main runners and insert **600 mm cross T** in 1200 mm cross profiles.

8. **Prepare the panels** by applying the springs (fig. A), the sealing corners (fig. B) and the neoprene gasket on all sides (fig. C)
9. Insert **T24 Syncro brackets** at the crossings.
10. Proceed with the **panels installation** keeping free the last series before the wall angles.
11. Hook the panels on **T24 Syncro brackets** through the special springs.

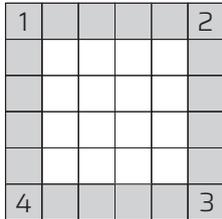


## PANELS HOOKING STEPS

**Note:** Verify the interaxe and type of hanger according to the project requirements, the load at sqm and the antiseismic report. The fastenings must be checked according to the load, the anchoring base features and the installation mode, in order not to compromise the metal ceiling system stability.



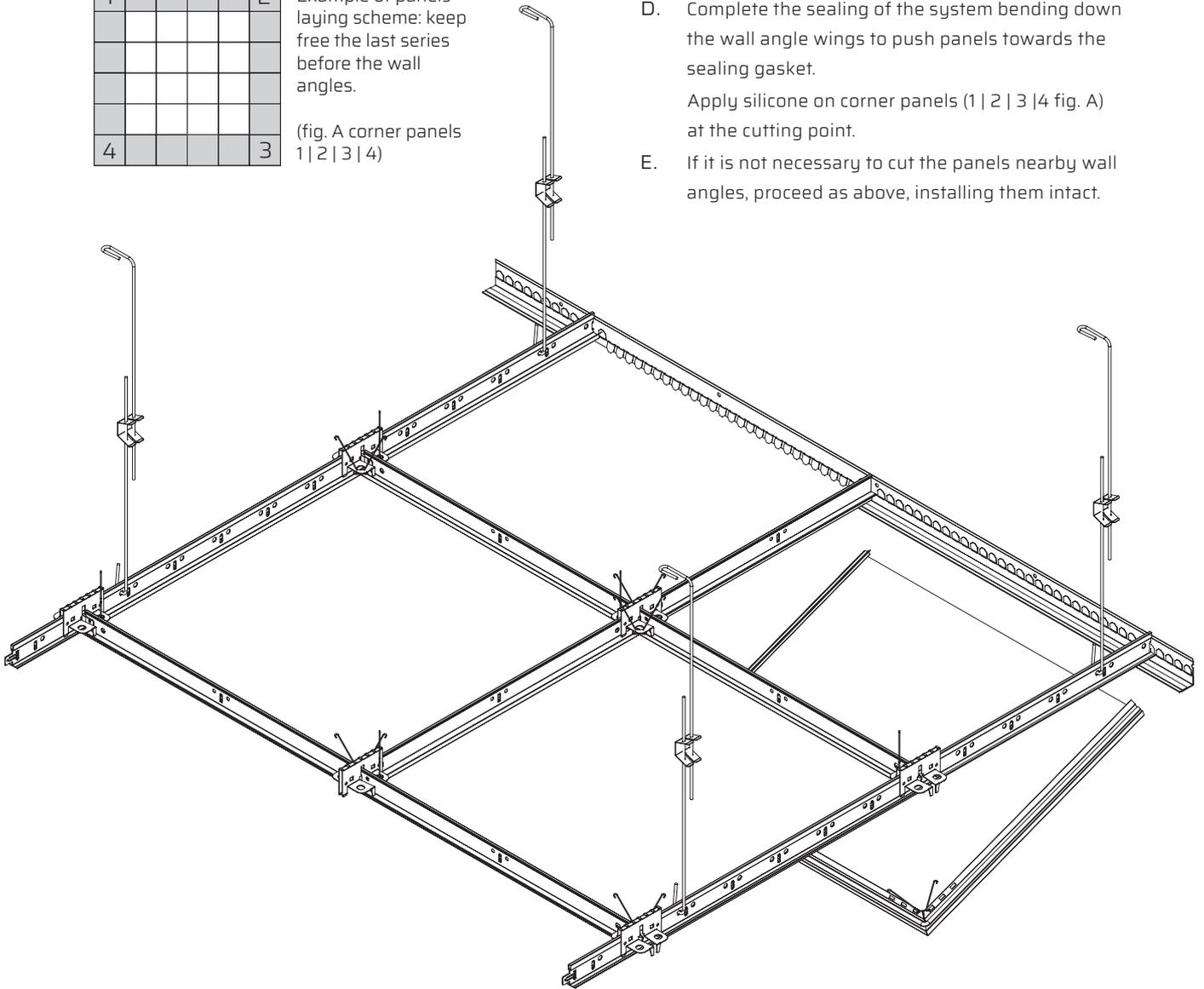
## PANELS INSTALLATION NEARBY WALL ANGLES



Example of panels laying scheme: keep free the last series before the wall angles.

(fig. A corner panels 1 | 2 | 3 | 4)

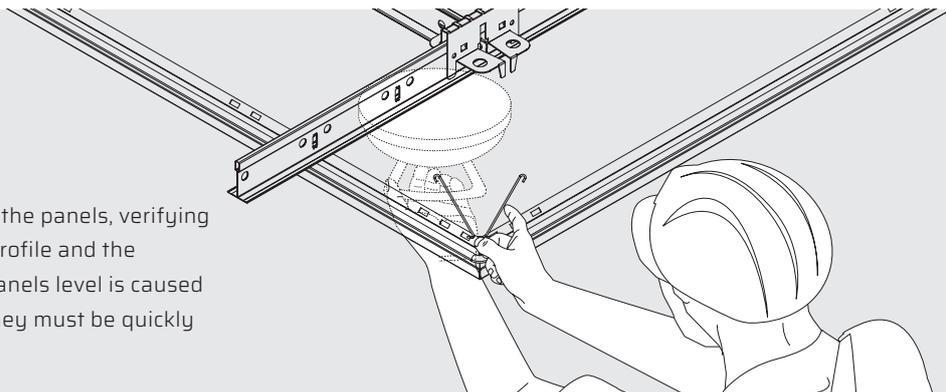
- A. Cut the panels according to the necessary measurement.
- B. Tilt panels to position them under the T structure.
- C. Hook the springs.
- D. Complete the sealing of the system bending down the wall angle wings to push panels towards the sealing gasket.  
Apply silicone on corner panels (1 | 2 | 3 | 4 fig. A) at the cutting point.
- E. If it is not necessary to cut the panels nearby wall angles, proceed as above, installing them intact.



## REMOVAL

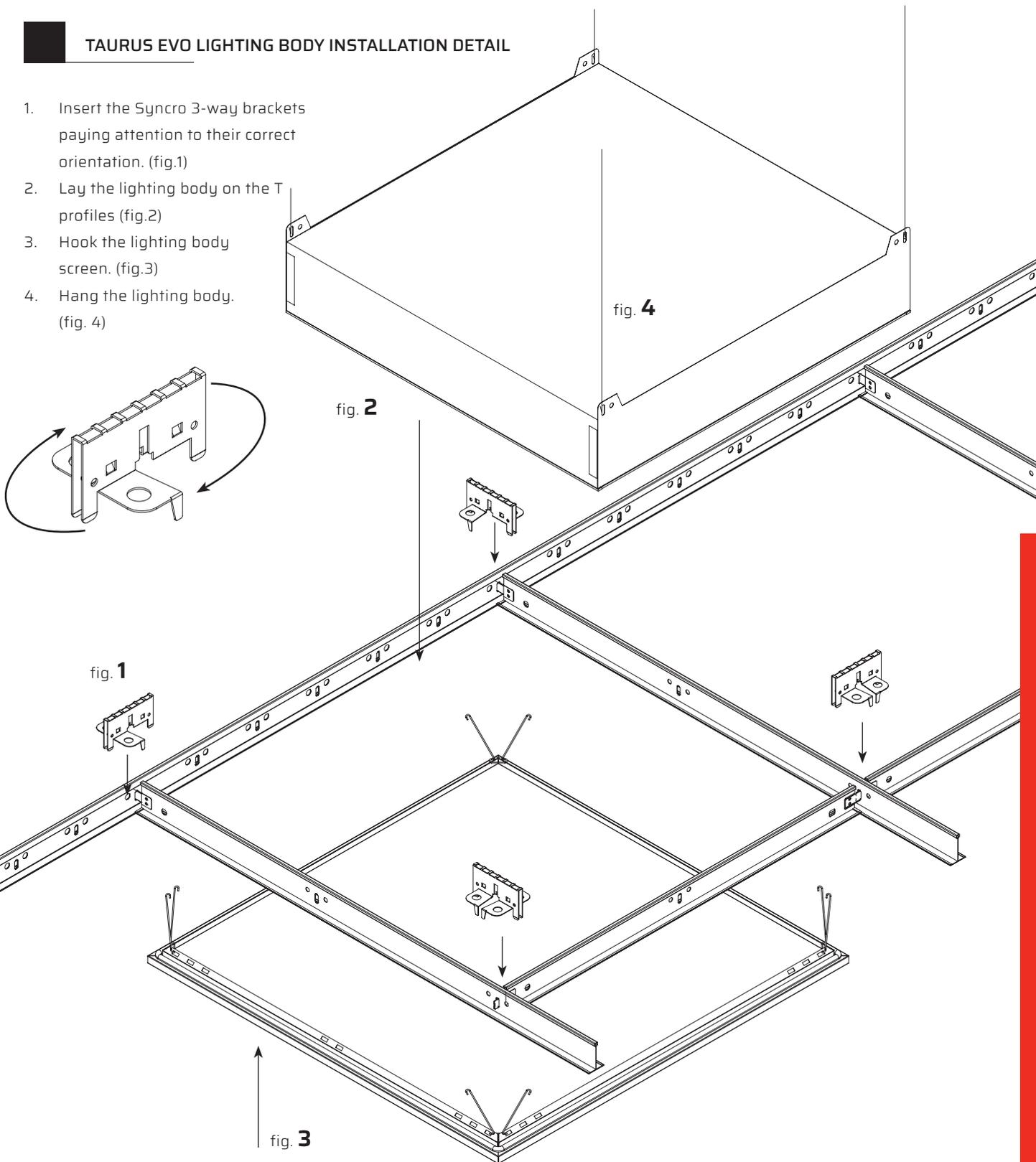
Use the suction cups to loosen the panel.  
Tighten the spring and release it.

When the maintenance is over, install again the panels, verifying that the tiles are properly hooked on the T profile and the planarity is guaranteed. Any difference in panels level is caused by wrong installation and, for this reason, they must be quickly controlled.



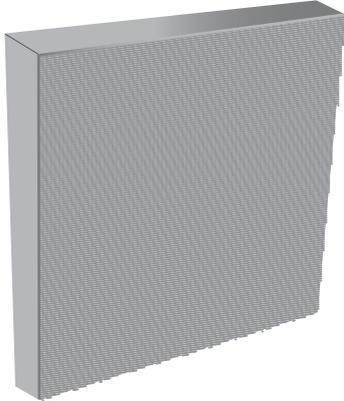
## TAURUS EVO LIGHTING BODY INSTALLATION DETAIL

1. Insert the Syncro 3-way brackets paying attention to their correct orientation. (fig.1)
2. Lay the lighting body on the T profiles (fig.2)
3. Hook the lighting body screen. (fig.3)
4. Hang the lighting body. (fig. 4)



**Note:** Lighting bodies, accessories and systems must not weigh on the metal ceiling system, but must be independently hung.

## ABSOLUTE FILTERS FOR LAMINARY FLOWS



Filters for absolute filtration of low turbulence laminar flows in controlled contamination environments.

Extruded aluminum frame and filter in water-repellent fire-retardant glass microfiber, separators in heat-sealed wire and protective screen in painted steel on both sides. Two-component polyurethane sealant with one-piece cast polyurethane gasket. Filters fixing to the filter holder frame with seal through elastometer and mechanical tightening

**Each filter is equipped with con individual test certificate.**

Filtration Class:

H14 | weighted mean efficiency: >99,999 (EN 1822)

U15 | weighted mean efficiency: >99,9999 (EN 1822)

### FIELDS OF USE

MAXIMUM TEMPERATURE	80°C	ΔP† FINAL RECOMMENDED	600 Pa
RELATIVE HUMIDITY	100%	ΔP† MAXIMUM	1000 Pa

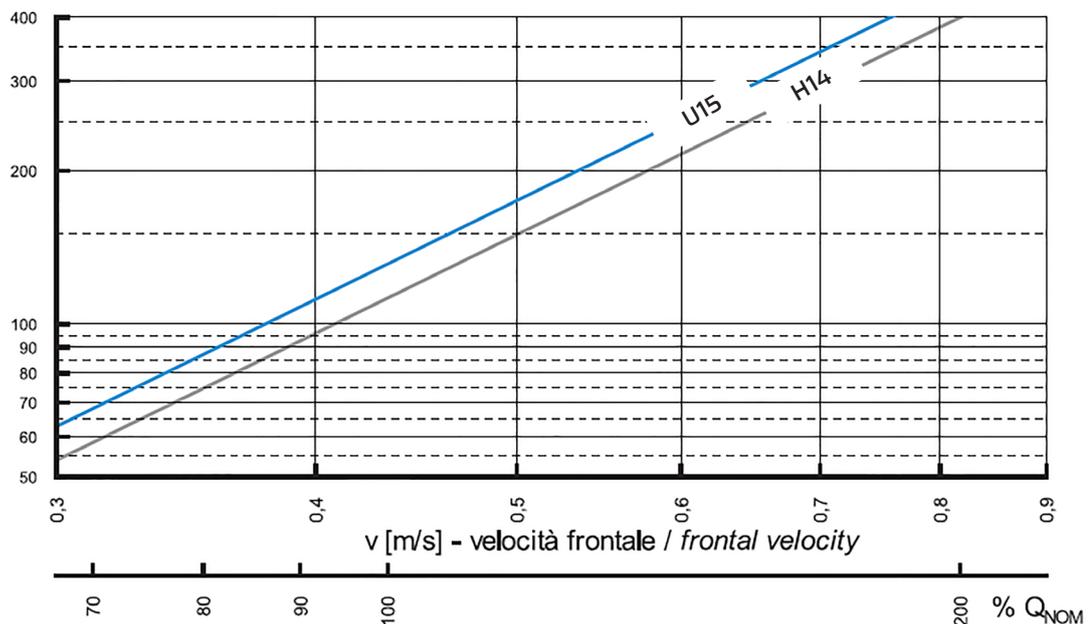
DIMENSIONS bxhxp	CAPACITY Q Nominal m³/h	ΔP† STARTING A Q Nominal Pa	Filtering surface m²	CLASS OF FILTRATION	EFFICIENCY %
305x305x68	150	120	2,7	H14	>99,999
457x457x68	335	120	6,2	H14	>99,999
305x305x68	150	140	2,7	U15	>99,9999
457x457x68	335	140	6,2	U15	>99,9999

The pressure drops are equal to the filter pressure drops added to the diffuser ones. To replace the filter, consider the recommended final pressure drop measurable through the pressure probes installed on the terminal board.

## PRESSURE DROP

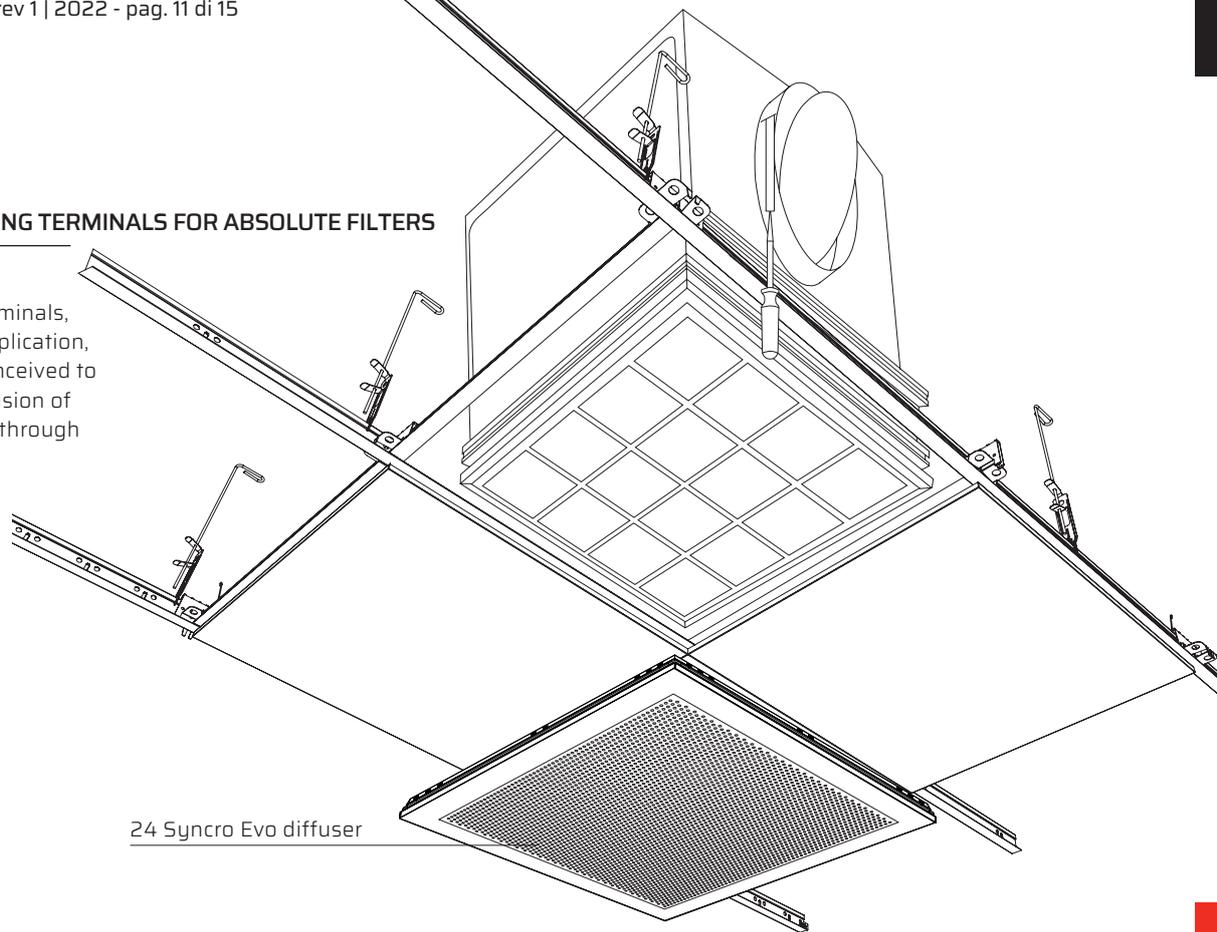
**V (m/s) front speed | QNOM (m³/h) front speed**  
**ΔP (Pa) Pressure drop**

Consider the characteristic curve of the filters, intended as a clean filter to evaluate the pressure drops (Δp) as a function of the front speed (V) or the percentage of flow rate compared to the nominal one (QNOM).



**FILTERING TERMINALS FOR ABSOLUTE FILTERS**

The filtering terminals, for hospitals application, are properly conceived to control the diffusion of filtered air flow through absolute filters.

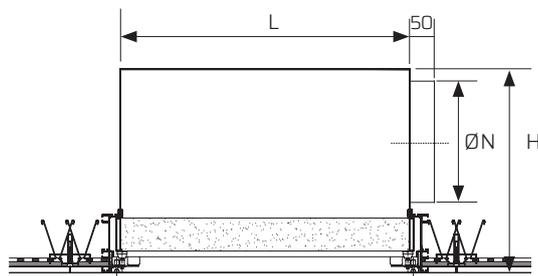


24 Syncro Evo diffuser

Made up of extruded aluminum frame which houses the absolute filter, the diffuser plate and the plenum, the filtering terminals for 24 SYNCRO EVO are perfectly integrated into the metal ceiling without altering the sealing features, creating an aesthetic unicuum with the system. Plenum with lateral connection, equipped with two sockets for DOP /  $\Delta p$  differential pressure probe.

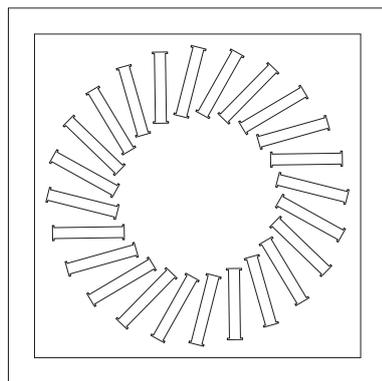
24 SYNCRO EVO diffuser in the same material of panel with sealing gasket to install on site.

Installation and dismounting as 24 SYNCRO EVO panels. Use tie rods to suspend the terminal without filter.

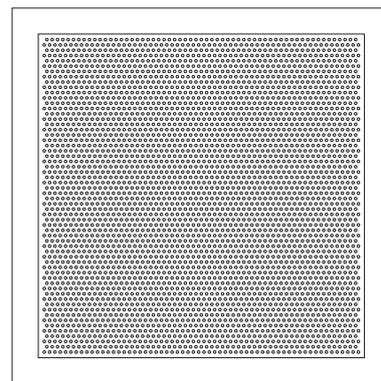


System with side connection

Sistema con attacco laterale



**S430** Swirl diffusers  
Air outlet



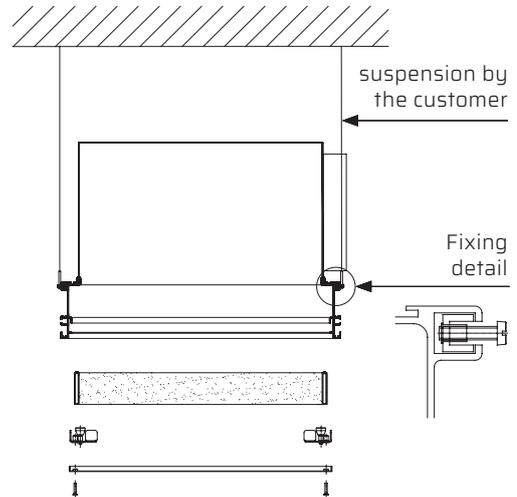
**S460** Diffuser with perforated screen  
For air intake

FILTER DIMENSIONS	EXTERNAL DIMENSIONS B1xB2xH (mm)	PANELS DIMENSIONS Nominal (mm)	HOLE DIAMETER ØN (mm)	NOMINAL CAPACITY (m <sup>2</sup> /h)	MAX. CAPACITY (m <sup>2</sup> /h)
305x305x68	365x365x320	600x600	160	150	270
457x457x68	517x517x420	600x600	250	340	600

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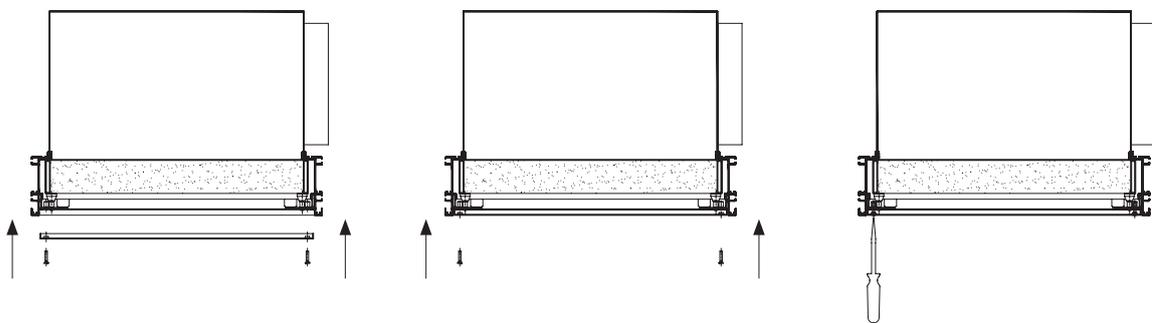
## TERMINAL SUSPENSION WITH RODS

- To suspend the terminal without the filter and its diffuser use the tie rods suitably anchored to the special inserts that are positioned in the grooves of the aluminum profile.
- Adjust the position of the tie rods so that the terminal is perfectly placed at the necessary distance from the ceiling.
- Complete the false ceiling installation all around the module with suitable panels, sealing the flange to the panels with silicone if necessary.



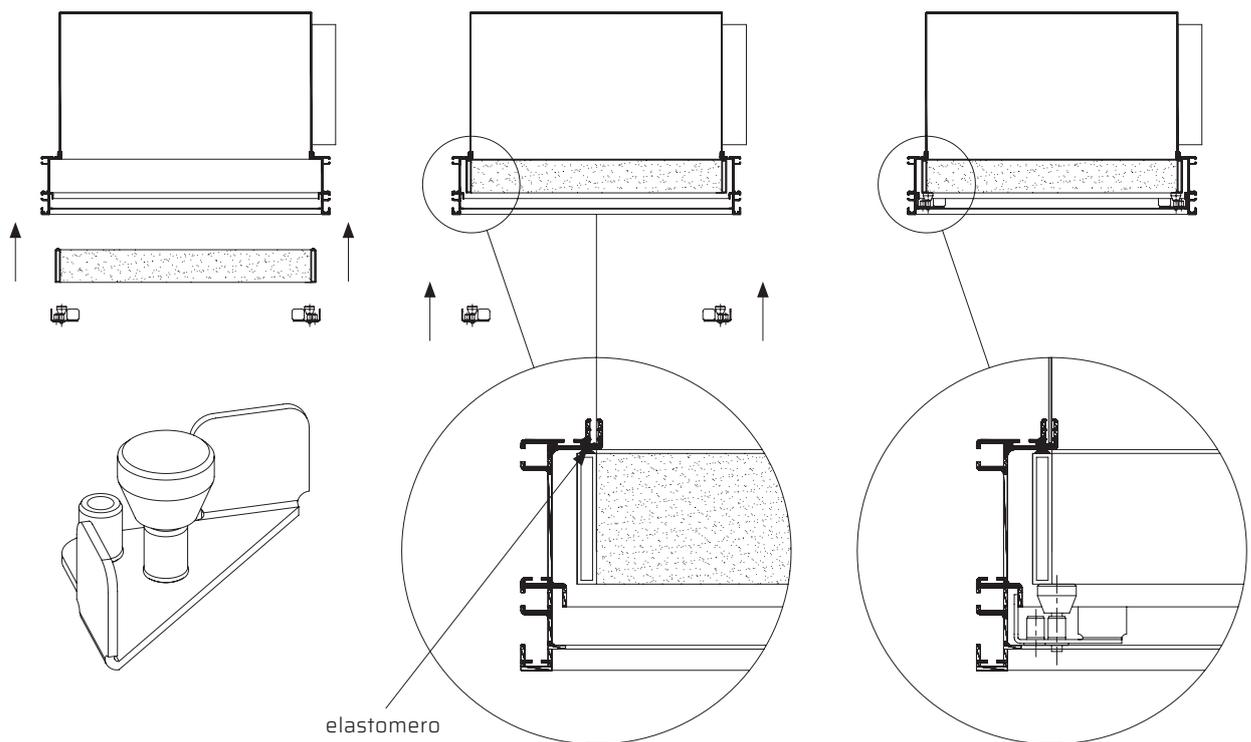
## DIFFUSER INSTALLATION AND REPLACEMENT

- Lay the diffuser plate against the bottom side of the terminal.
- Insert the four screws in corresponding holes of the plate and the threaded inserts of the fixing blocks then tighten.



## FILTERS INSTALLATION AND REPLACEMENT

- Clean carefully the terminal internal surface with a cloth.
- Remove the filter from its original packaging.
- Insert the filter into the module with the gasket in the upper position, support the filter using its frame in order not to damage the filter material (use original filters only).
- Insert the fasteners into the corresponding frame grooves.
- Secure the filter by turning the screws evenly until the polyurethane gasket is compressed to approximately 60% of its thickness.



## CLEANING, MAINTENANCE AND REMOVAL INSTRUCTIONS

Cleaning and maintenance require some attention and care even though are easy to make and don't take much time. It is necessary to use warm water and neutral and non-abrasive detergents. It is recommended to clean the metal ceiling by dry-cleaning before proceeding with water. 24 | 35 Syncro Evo and Enigma Syncro XL a tenuta of Atena H+ range can be washed with high pressure water if sealed with silicone. Metal ceilings made in antimicrobial post painted galvanised steel "Defence H4+" tested for chemical resistance by Fraunhofer Institut di Stuggart, can be cleaned frequently with diluted disinfectants containing active agents such as formalin, hydrogen peroxide, sulfuric acid, phosphoric acid, hydrochloric acid, isopropanol, sodium hydroxide and sodium hypochlorite.

Metal ceilings maintenance usually refers to: placement, alignment or replacement of damaged or broken modules (panels, staves, baffles, open cells) which can be also removed for restoration or maintenance of the system below.

In order to ensure an excellent results, the maintenance work must be carried out by specialised workers trained with technical data sheets about setting, removal and maintenance of the metal ceilings. Using inadequate tools can damage the bearing structure, causing adherence loss or even accidental modules fall. All the maintenance intervention must follow the technical data sheet instructions or specific information when provided and every diversity has to be promptly reported. Each worker charged with maintenance operation must carefully remove the modules, perform the intervention and do not alter the metal ceiling structure, the hanging system and the connection between these elements.

When the maintenance is over, modules must be installed again, checking that these are well hooked or positioned if they are lay-in/on on a visible structure and that the flatness of the assembly is guaranteed. Any difference in level is caused by wrong installation and, for this reason, the system must be quickly controlled.

## STORAGE MODE

Materials supplied by Atena S.p.A. shall be maintained in good condition from purchase to installation. Materials must be stored in a closed, clean and dry site, not under direct light. Atena S.p.A. protects its products with resistant packaging under normal handling. Please handle packages with care to avoid shocks and inappropriate handling that might damage what is provided. The manual handling must be carried out with caution and in compliance with safety regulations at work. For carriage of packaged products on pallets, provide a mechanical transport to avoid damages or risks resulting from inadequate transport.

## FASTENERS

Atena supplies the hangers and accessories such as screws, washers and nuts to connect the elements of its own supply only. Lightings, accessories and systems must not weigh on the metal ceiling system, but must be independently suspended. The fastening must be checked with regard to the loads, the anchoring base features and the installation accuracy, in order not to compromise the stability of the metal ceiling system.

## SUSTANABILITY AND SAFETY

All Atena metal ceilings are made with products that do not release dangerous substances into the environment including formaldehyde. Coating and / or sublimation are free from Volatile Organic Compounds (VOC). The products will be recyclable and as a whole manufactured using recycling processes materials, the recycled material percentage is calculated for each type of product, in compliance with CAM requirements and declared according to the ISO 14021 standard.

The metal ceiling systems contribute to getting credits for the certification of building design, construction and sustainable and efficient management according to the LEED protocol and to the BREEAM and ITACA cross-cutting aspects.

## **NORMATIVE REQUIREMENTS**

Atena S.p.A. has adopted a quality management system in compliance with the UNI EN ISO 9001 standard.

All Atena metal ceilings are produced for indoor applications, in compliance with Technical Standards for Construction NTC 2018 and relative circular requirements, the Minimum Environmental Criteria CAM (Ministerial Decree 11 October 2017), the specific technical standards applicable UNI EN 13964 and 14195. Each Atena S.p.A. product has its own DOP (CE Declaration of Performance) according to the European Law for construction products 305/2011.

The performance properties declared in D.o.P. Declarations of Performance provided by Atena S.p.A. are guarantees, if the metal ceiling is installed in the environment conditions for which it has been conceived and the recommended maintenance is executed.

Precisely, metal ceilings are non-structural construction elements therefore they must be properly sized in order to withstand with adequate safety against all actions that can stress the building, such as, but not limited to, earthquakes, winds, thermal expansion, humidity, etc., in relation to the installation site, the building use and the project technical features. Check with Atena technical department the specific environmental conditions to which the product will be subjected, in order to choose the most suitable materials for the installation site.

In the case of outdoor installation, the metal ceilings are not covered by an harmonized technical standard, therefore they are not subject to the regulation 305/2011. They are in any case subjected to the NTC 2018 and to the safety checks of civil constructions, and must be properly sized according to the installation site environmental conditions, to the structural features and to the project specifications.

Independently by information, suggestions, advices and technical opinions exchanged between the parts, during pre-agreement negotiations Atena S.p.A. will manufacture the products only according to the orders received and the technical drawings/projects attached, having no responsibility on what is not indicated in the order, in the technical drawings or in the project.

All rights are reserved and subject to industrial protection. Changes to the illustrated products, even if partial, can be carried out only if explicitly authorized by the company Atena S.p.A. All data provided and illustrated are indicative and Atena S.p.A. reserves the right to make changes at any time according the business needs and the production processes.

The information contained in this following sheet must to be considered updated at the date of writing. Changes in product performance occurred after that date may affect the accuracy of the data sheet: it is compulsory for users to make sure to have the latest version of this sheet.

## **WARRANTY**

Atena S.p.A. as a manufacturer, covers the manufacturing defects of its products; Except as provided in the specific warranty extensions, the warranty period is one year from delivery of goods. Any complaints must be communicated in accordance with the sales terms and conditions.

The Atena metal ceilings system components have been conceived for this purpose only, any other use is considered improper.