



TS low profile AIR HANDLING UNITS IN SLIM EXECUTION

“Programmable” air volumes
from 1300 to 3500 m³/h



The air-handling units of the **TS “low profile”** series are designed to perform all the operations normally required to an AHU, but with a height of only 450mm in order to facilitate the installation in narrow spaces, under the roofs or in niches such as the case is for vertical executions.

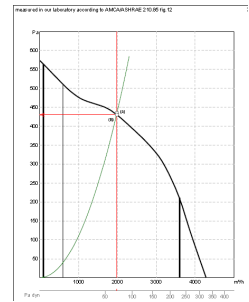
The units are made up of:

- Aluminium frame with twin panel sheet metal structure (galvanised internally/plasticised externally) insulated with 25mm of expanded polyurethane foam.
- Air intake damper, specifically designed with thicker blades height of 35mm for a better and more precise control of the air flow; possible configuration with 2-ays mixing box or total recirculation;

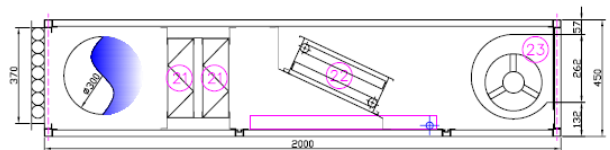


- Filter sections on the external air inlet and on the room air suction inlet with 85% efficient maintainable pleated cells, Ashrae 52/76-EU 3-UNI 7832 FIRE CLASSIFIC DIN 53438 FI
- Possibility to install F7 compact bag filters, with 98mm thickness and 80% efficiency or F9 with efficiency 90%;
- Cold water heat exchanger, with 4 rows, with optimised geometry 30x12 and 2.5mm fin spacing, complete with stainless steel AISI 304 condensate drain pan with drain pipe $\varnothing \frac{1}{2}$ ”; it is not necessary to install a drop eliminator since the air velocity does not exceed 2,5 m/s;
- Optional hot water heat exchanger, to be used as pre-heating in case of rigid temperature, or as re-heating with which, if combined with the cold water coil, realise a fine control of the room temperature and humidity in summer mode operations;
- High efficiency fans type P. Lemmens model DP 9-7 TH TAC 1/1, centrifugal type with directly-coupled motors, with air volumes from 1500 m³/h up to a maximum of 3500 m³/h. An

electronic system automatically adjusts the number of rpms depending on the set air flow rate. This means that the fan automatically changes its rotation speed to adjust to the system pressure losses, thus guaranteeing the pre-set flow rate. This also means that the required air flow rate is ensure at all times regardless of circuit load loss, as long as the latter is not higher than the maximum pressure value which the fan can provide (see Table 2). Therefore not even the filter clogging causes a reduction in the air flow rate and the consequent reduction in the system performance. The various air flow rates available for each fan are easily programmed using a terminal board located on the fan itself (optional).



- Ideal for ceiling installations thanks to its side-by-side low profile design
- Possibility to complete the unit with a control panel for a ‘plug & play’ execution, embedded in niche-type installation, complete with all the necessary electrical components and protection devices, with option for remote control with a specific ‘room unit’.





TECHNICAL DATA

TS low profile						
description of characteristic						
Air volume	m3/h	1.500	2.000	2.500	3.000	3.500
Max. fan total static pressure	Pa	440	429	383	329	236
G4 filters initial pressure drop	Pa	43	43	43	43	43
F7 filters initial pressure drop	Pa	95	95	95	95	95
Number of fans	n°	1 twin	1 twin	1 twin	1 twin	1 twin
Total absorbed power	W	504	658	742	839	947
Motor efficiency	%	84,8	84,6	83,7	83,0	82,3
Voltage		230V - 1 f - 50Hz				
Sound pressure level ⁽¹⁾	dB(A)					
Cold water heat exchanger	m3/h	1.500	2.000	2.500	3.000	3.500
Performance with water 7/12°C ⁽²⁾	kW	10,40	12,97	15,27	17,42	19,38
Cold coil pressure drop (4 rows)	Pa	64	64	64	64	64
Hot water heat exchanger	m3/h	1.500	2.000	2.500	3.000	3.500
Performance with water 80/70°C ⁽³⁾	kW	on request	on request	on request	on request	on request
Performance with water 70/60°C ⁽⁴⁾	kW	on request	on request	on request	on request	on request
Performance with water 50/40°C ⁽⁵⁾	kW	on request	on request <td>on request</td> <td>on request</td> <td>on request</td>	on request	on request	on request

* With G4 filters and cold water coil

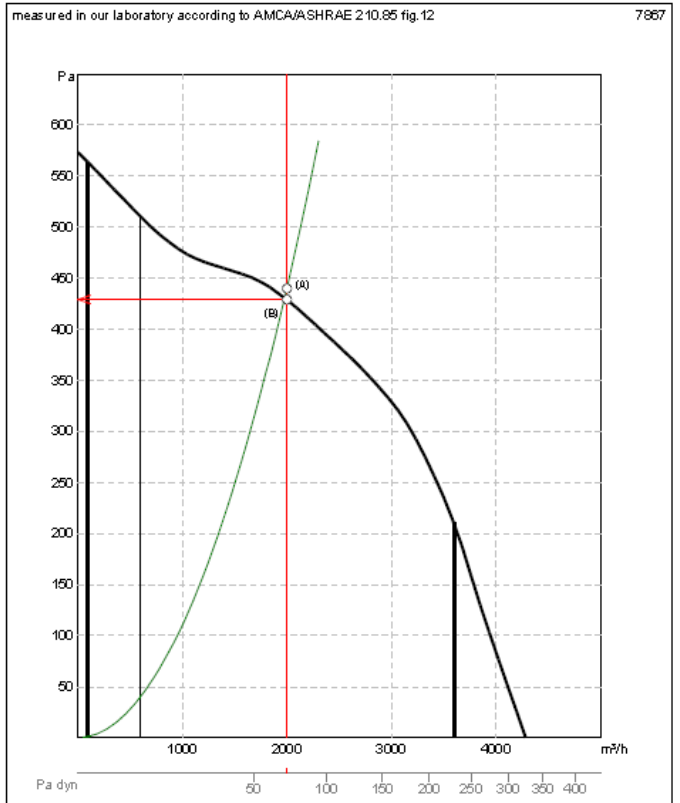
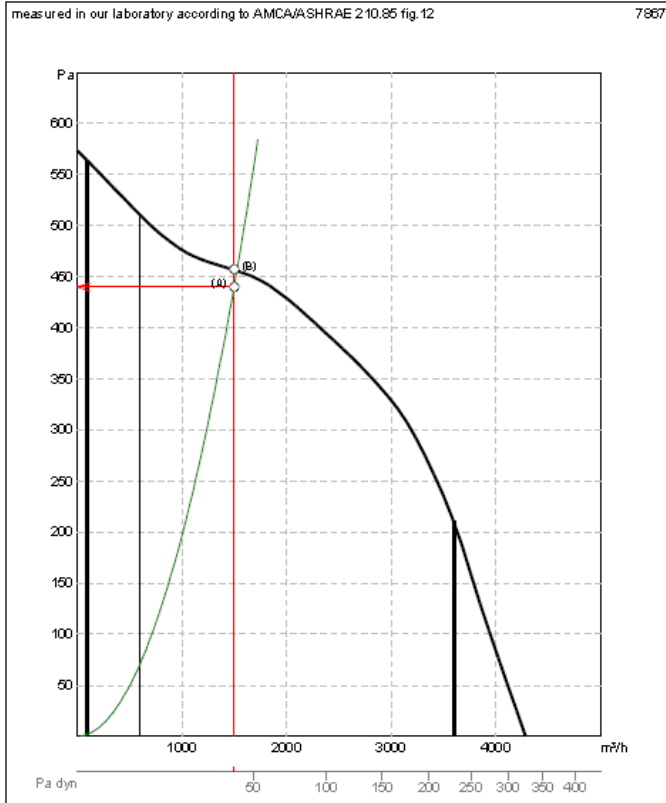
⁽²⁾ Performances calculated with air inlet temperature +28°C/50%

⁽³⁾ Performances calculated with air inlet temperature +15°C/85%

FAN PERFORMANCES CURVE

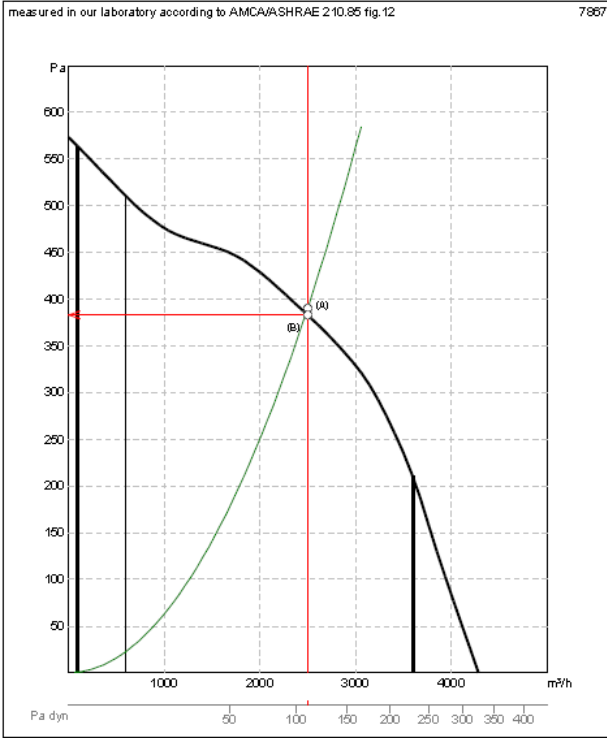
@ 1500 m3/h

@ 2000 m3/h

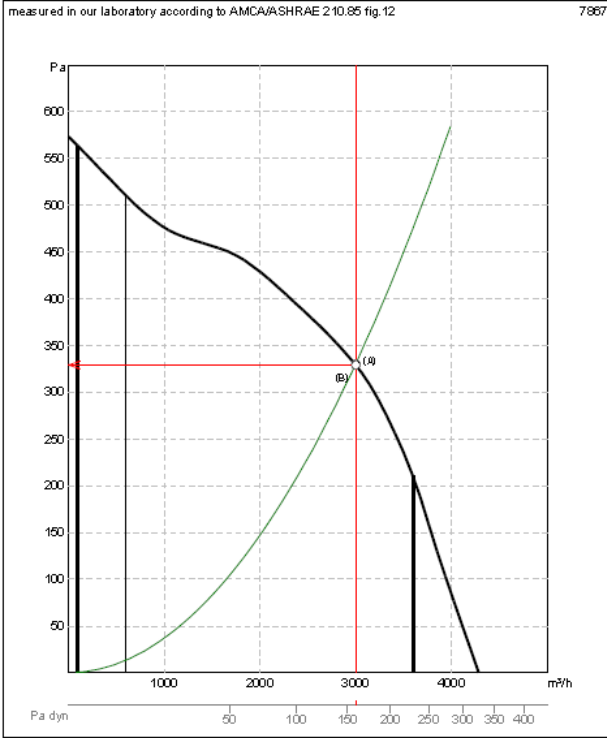




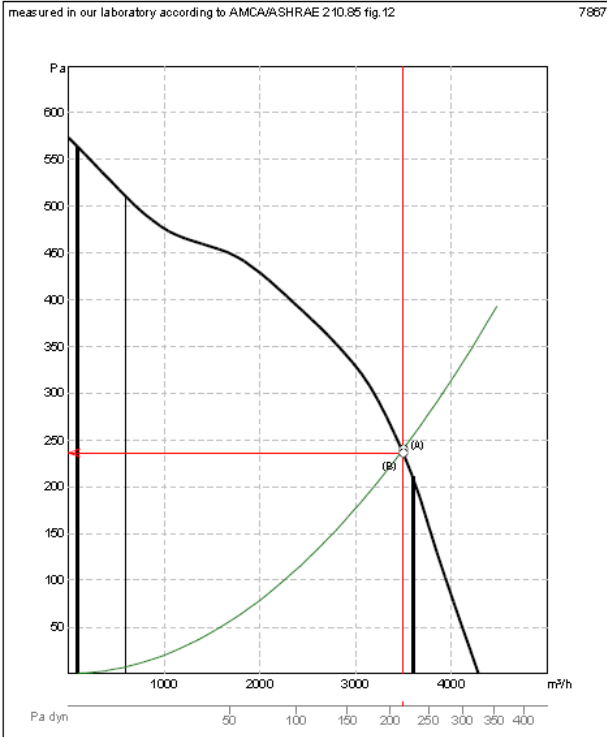
@ 2500 m³/h



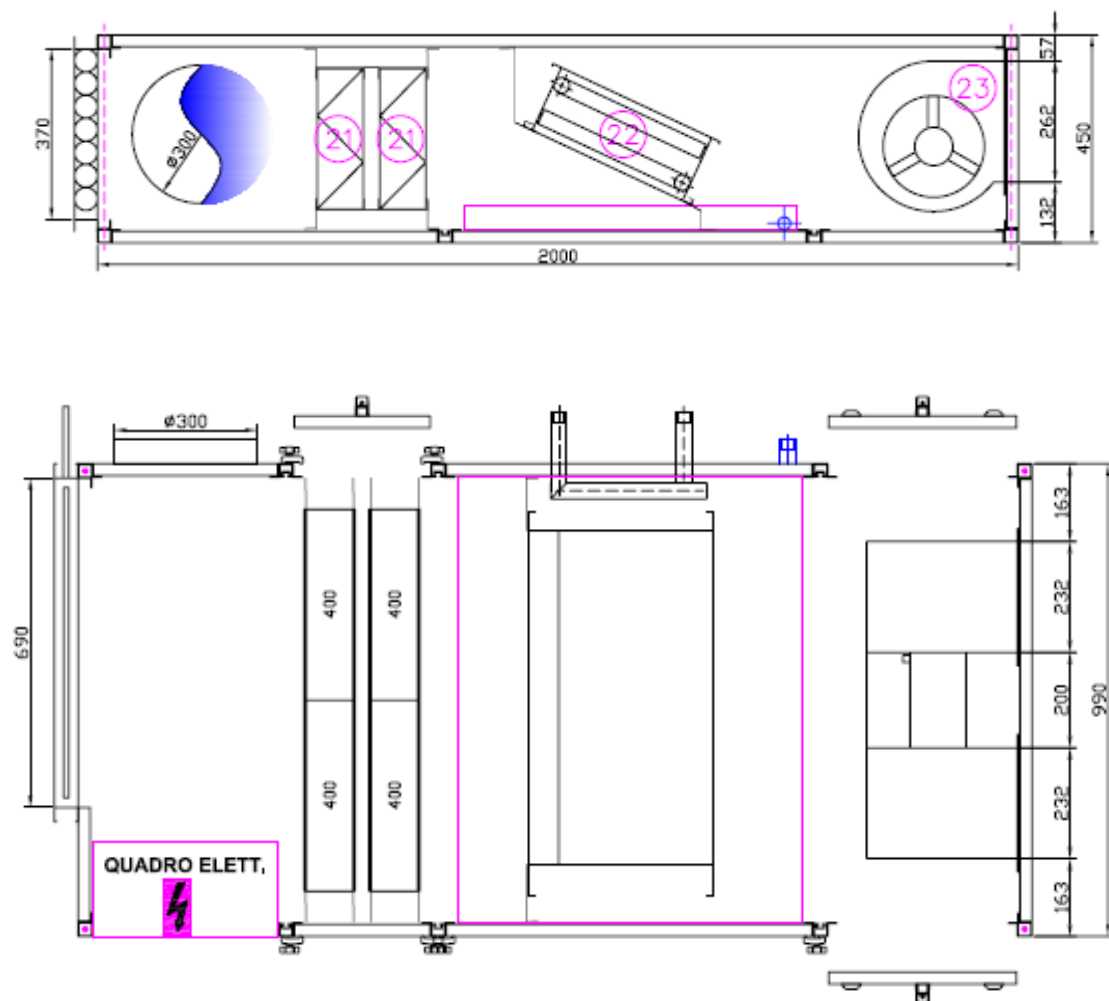
@ 3000 m³/h



@ 3500 m³/h



DIMENSIONS



TS low profile		Dimension
Description of the characteristic		
Lenght (base version without mixing box)	mm	2000
Width (base version without mixing box)	mm	990
Height	mm	450

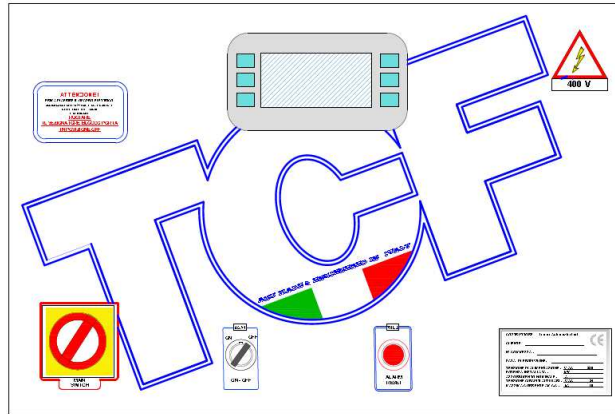
AVAILABLE ACCESSORIES

- Compact bag filters class F7 to integrate the pre-filters class G4
- Hot water heat exchanger, optimised geometry and fin spacing 2.1mm or 2.5mm
- Electric heating battery
- Air inlet dampers, 2-ways mixing box
- Complete control board with microprocessor

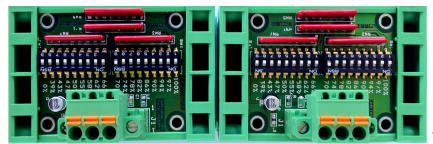


AVAILABLE CONTROL SYSTEMS

The available control systems for the URP units include a control board, one 3-way mixing valve for each water heat exchanger, 2 temperature sensors, anti-freeze function in presence of the hot water coil and 1 differential pressure switch for detection of filters clogging. All will be installed and wired on board the unit and totally factory-tested.



The air volume is set by means of a switch on the standard card (1 or 2 fans) wired within the control box :



On request, a controller is also available for the setting, visualisation and control of the air flow. This controller may be supplied wired on board the unit or as a remote panel.





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