

Air FTP

Air handling units design software

News Release 2011

Introduction

This small guide is intended to inform the user of the improvements and changes to the selection Software. Pictures and comments will help the develop of your selections, should you require any additional information do not hesitate to contact the IAC team.

Windows Size selection

Air speed in the coil

Air speed in the unit section

Select unit size

Select size | Psychrometry

Supply air volume 16000 m³/h

Air speed 2.5 m/s

Return air volume 0 m³/h

X	Model	Speed	Height	Width	Int. Speed
<input type="checkbox"/>	FTP 160	3.29	1290	1540	2.55
<input type="checkbox"/>	FTP 170	2.74	1290	1790	2.18
<input checked="" type="checkbox"/>	FTP 200	2.35	1290	2040	1.90

Profile thickness 40 mm

Panels thickness 23 mm

Internal side material Galvanized steel

Thermoacoustic insulation Injected polyurethane

Internal panels metal sheet Standard

Inspection side Right

External side material Galvanized prepainted sheet

Connection side Right

Thickness of the structural work Standard

Roof Without roof

Base frame Continuous basement H. 150 mm galvanized s

Technical space No technical space

Dampers material Aluminium / Aluminium

material of structural work Galvanized steel

Drain pan material Galvanized drain pan

External side material

- Galvanized prepainted sheet
- Galvanized steel
- Galvanized prepainted sheet
- Aluminium
- Stainless steel AISI 304
- Stainless steel AISI 316

New options for base frame

Base frame

- Continuous basement H. 150 mm galvanized s
- Omega base H. 95 mm made of galvanized steel
- Continuous basement H. 150 mm galvanized sheet
- Omega base H. 95 mm made of INOX steel
- Continuous base H. 150 mm made of INOX steel
- Galvanized sheet adjustable feet H. 150
- Stainless steel adjustable feet H. 150

OK Cancel

Psychrometry

In this window you can set the temperature and humidity conditions that will be to used in all sections (heat exchanger, coils, mixing box ...)

Select unit size

Select size | Psychrometry

Summer performances

Fresh air	32 °C	50 %	0 m³/h
Recirculation air	26 °C	50 %	0 m³/h

Winter performances

Fresh air	-5 °C	80 %	0 m³/h
Recirculation air	20 °C	50 %	0 m³/h

☒ Calculate treatments

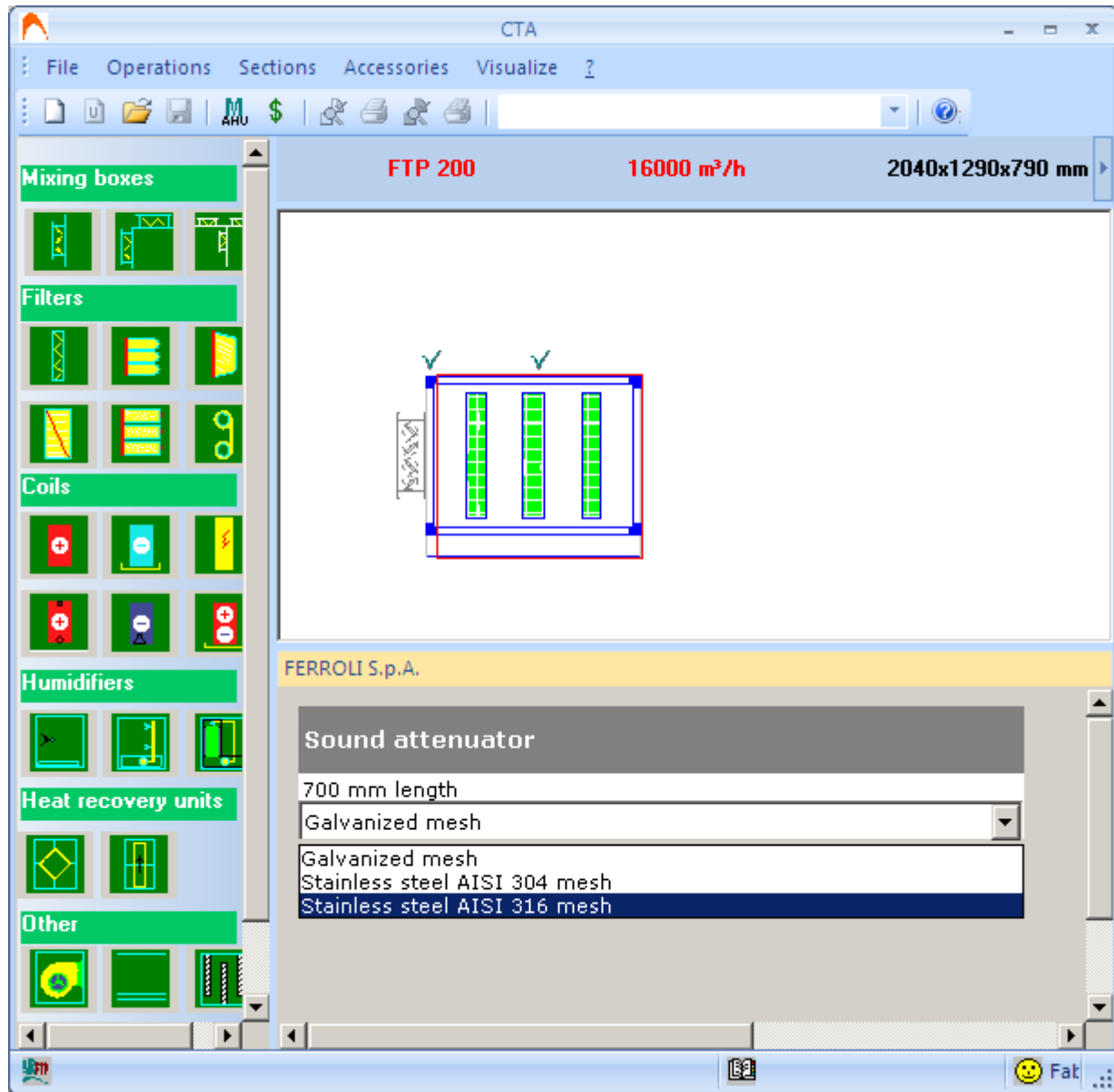
☒ calculate coil for post heating in winter conditions

☒ Consider heat recovery

OK Cancel

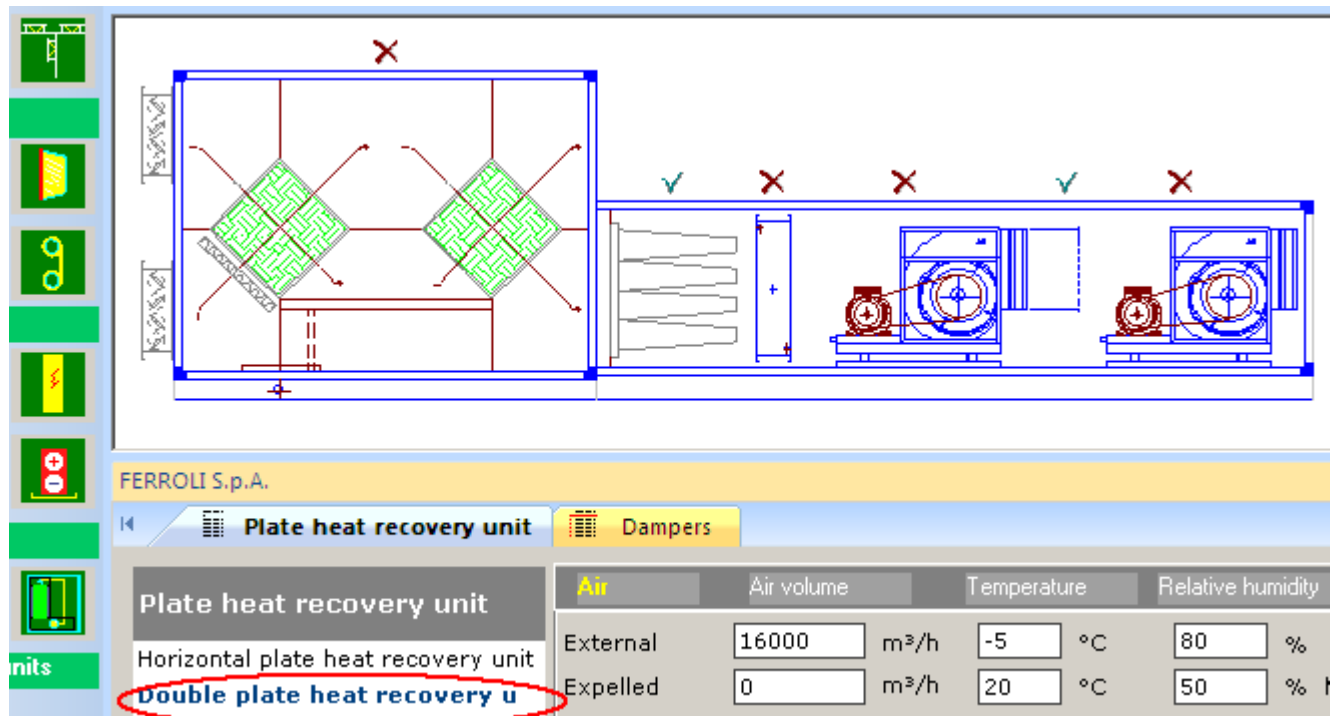
Sound Attenuator

Is possible to select stainless steel mesh AISI 304 or AISI 316.
Option requested in some hospital application



Double plate heat recovery unit

Used where is requested an high efficiency.



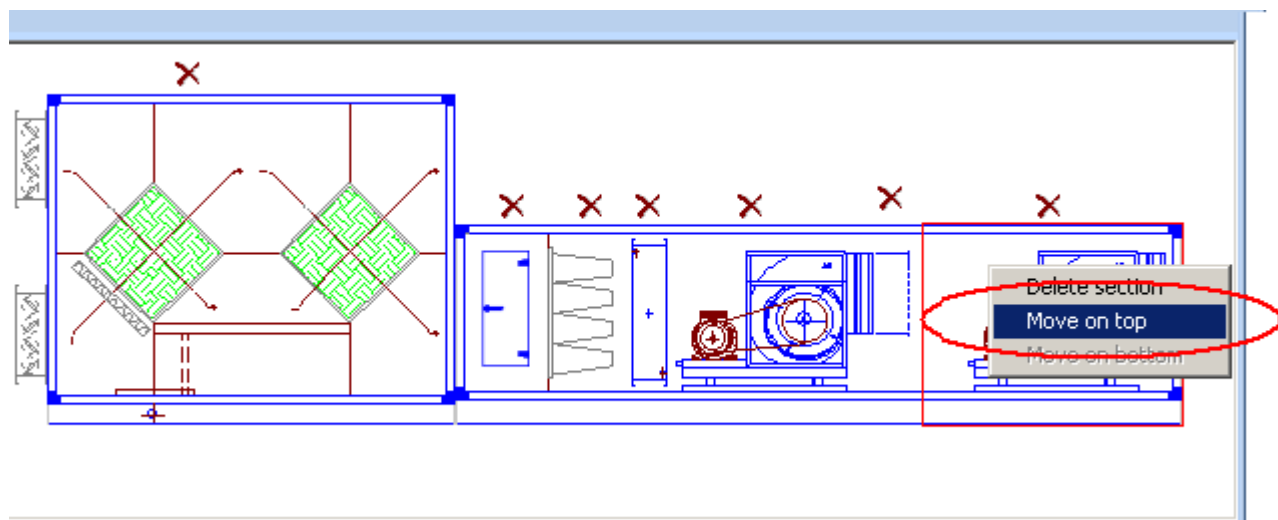
The screenshot shows the Ferrolti S.p.A. software interface. On the left is a vertical toolbar with icons for various components. The main workspace displays a schematic of a double plate heat recovery unit, consisting of two diamond-shaped heat exchangers connected in series. Below the schematic is a configuration table for the 'Plate heat recovery unit'.

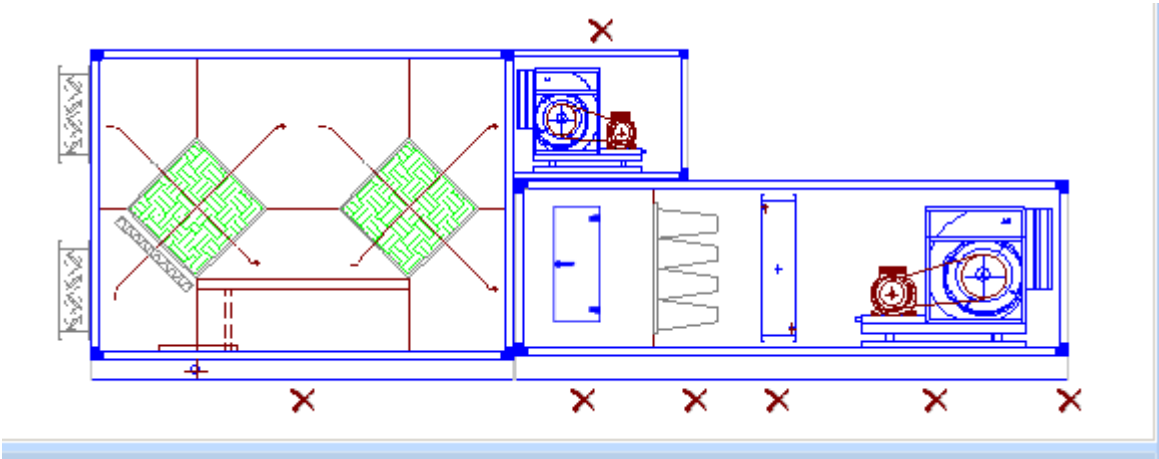
Air		Air volume	Temperature	Relative humidity
External	16000	m³/h	-5 °C	80 %
Expelled	0	m³/h	20 °C	50 %

In the configuration table, the 'Double plate heat recovery unit' is highlighted with a red oval. The 'Dampers' tab is also visible.

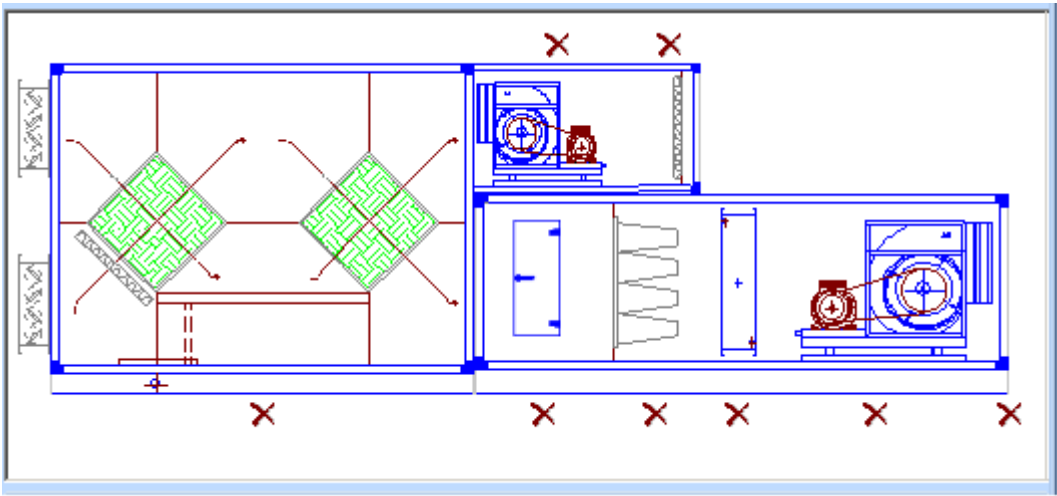
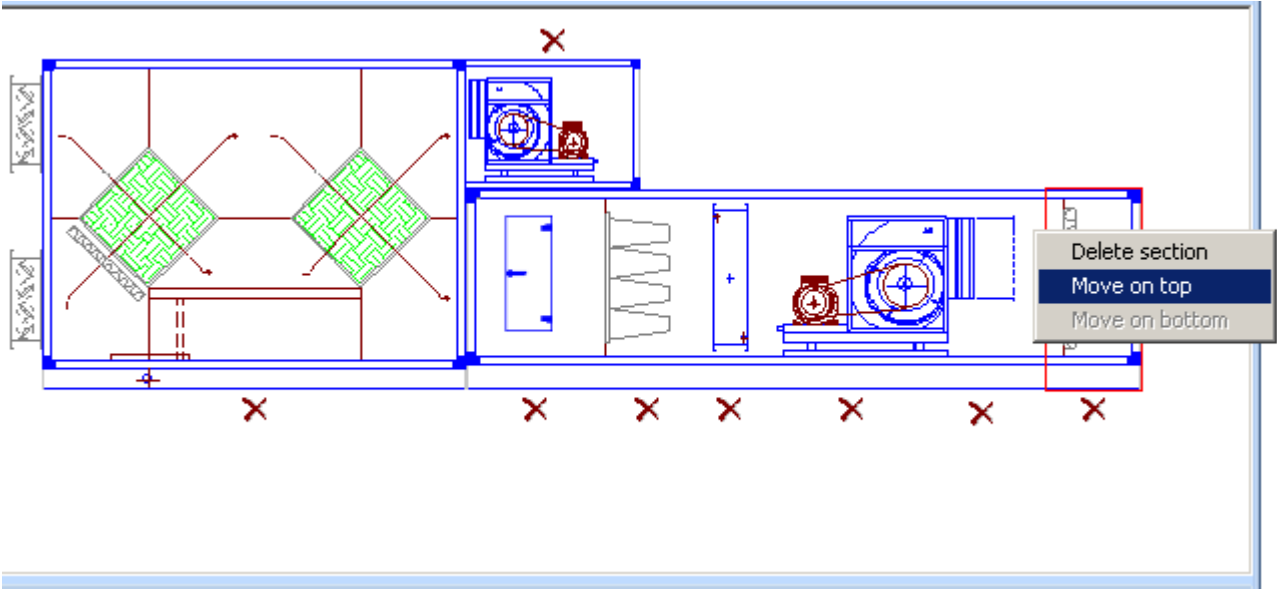
How to select:

- 1) Select all components on bottom line as shown in the above picture.
- 2) To move a component in the top right click and select move on top





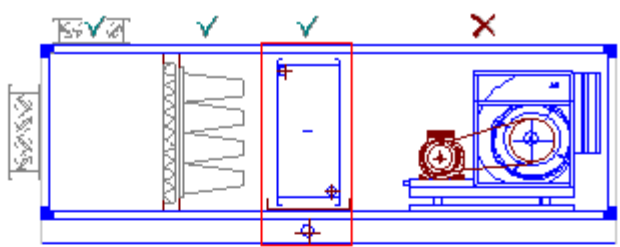
Same steps to move on top all components.



Cooling coil, winter verify

Used on 2 pipe system (one coil for cooling/heating)

- 1) Select the cooling coil according with design conditions



FERROLI S.p.A.

Cooling coil Winter verification

Geometry P60 Tube type 16.45 x 0.4 Copper Fin type 0.12 mm Aluminium
 Fins step 2.5 mm Frame type Frame fe zn 1,5 mm
 Only predisposition ☐ Without droplet eliminator

Air Entering temperature 32 °C 50 Relative humidity (%) Tratt.
 Leaving temperature (°C) 12 12.0 °C 100.0 % Speed 2.20 m/s Volume 10000 m³/h Pressure drop 196.9 Pa

Fluid Water Ethylenic in weight 0 %
 Entering temperature 7 °C Leaving temperature °C 12 12.00 °C

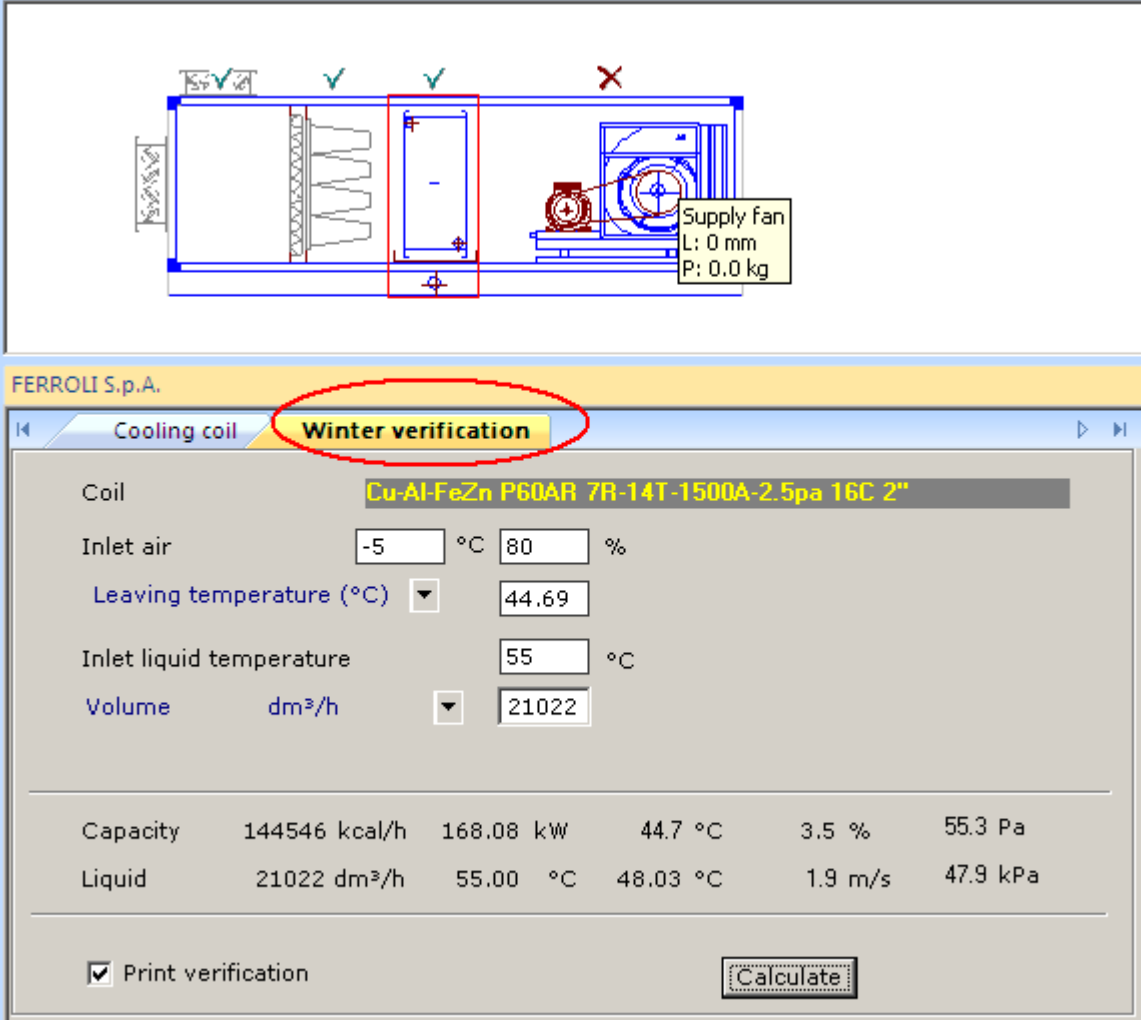
Calculate Max pressure drop (kPa) 35 1.17 m/s 21022 dm³/h 18.6 kPa

	Power	Exchange	S/T
N°1 Cu-Al-FeZn P60AR 11R-14T-1500A-2.5pa 26C 2 1/2	105187 kcal/h	122.31 kW	304.2 m²

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2) Select the winter verification page frame

You can calculate the coil to verify the outlet air condition and capacity in heating mode and print the results.



FERROLI S.p.A.

14 Cooling coil **Winter verification**

Coil **Cu-Al-FeZn P60AR 7R-14T-1500A-2.5pa 16C 2"**

Inlet air °C %

Leaving temperature (°C)

Inlet liquid temperature °C

Volume dm³/h

Capacity	144546 kcal/h	168.08 kW	44.7 °C	3.5 %	55.3 Pa
Liquid	21022 dm³/h	55.00 °C	48.03 °C	1.9 m/s	47.9 kPa

☒ Print verification

Damper Section

New accessory and additional features

FERROLI S.p.A.

Ricirculation damper Fresh air damper

Length -1

Mixing box

Damper on the top

With damper

Prepared for servomotor installation

☐ With anti-vibrating flexible connections

☐ With grid

☒ **With rain hood**

For outdoor installation

Designed damper air volume 10000

Mixed air performances

Winter performances -5 °C 80

Summer performances 32 °C 50

Mixed air damper air volume 2000

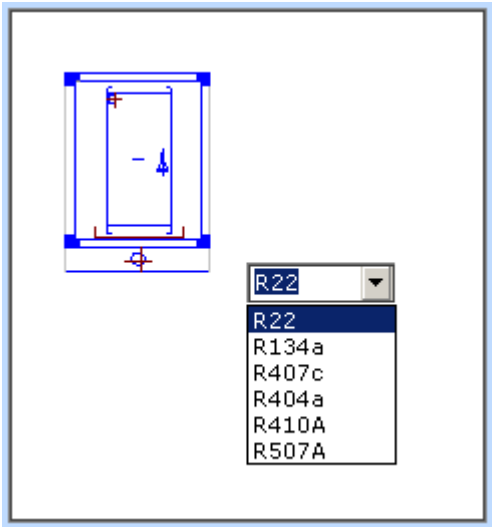
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Air volume for the size of the damper

Air volume to calculate the mixing temperature to the cooling/heating coils

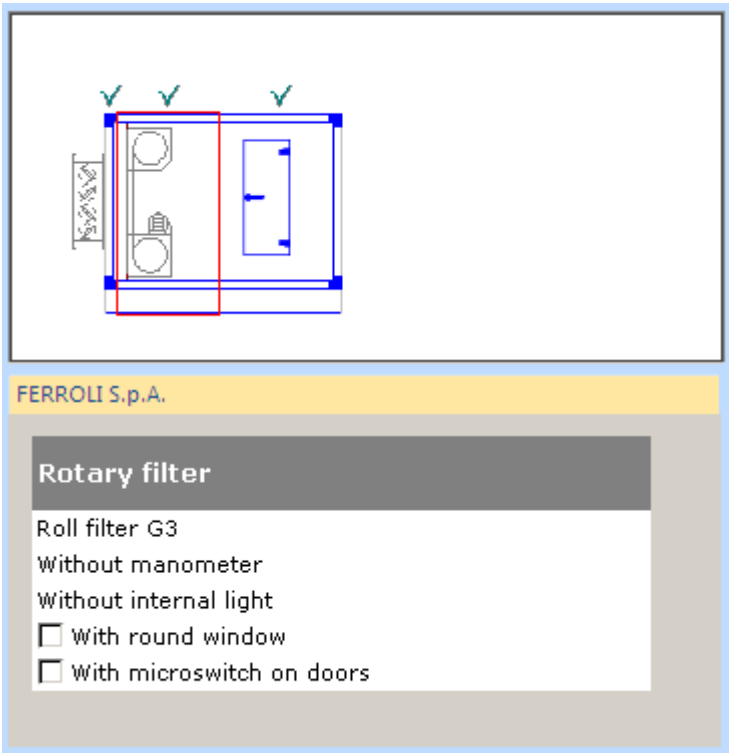
Direct Expansion coils

New Refrigerants



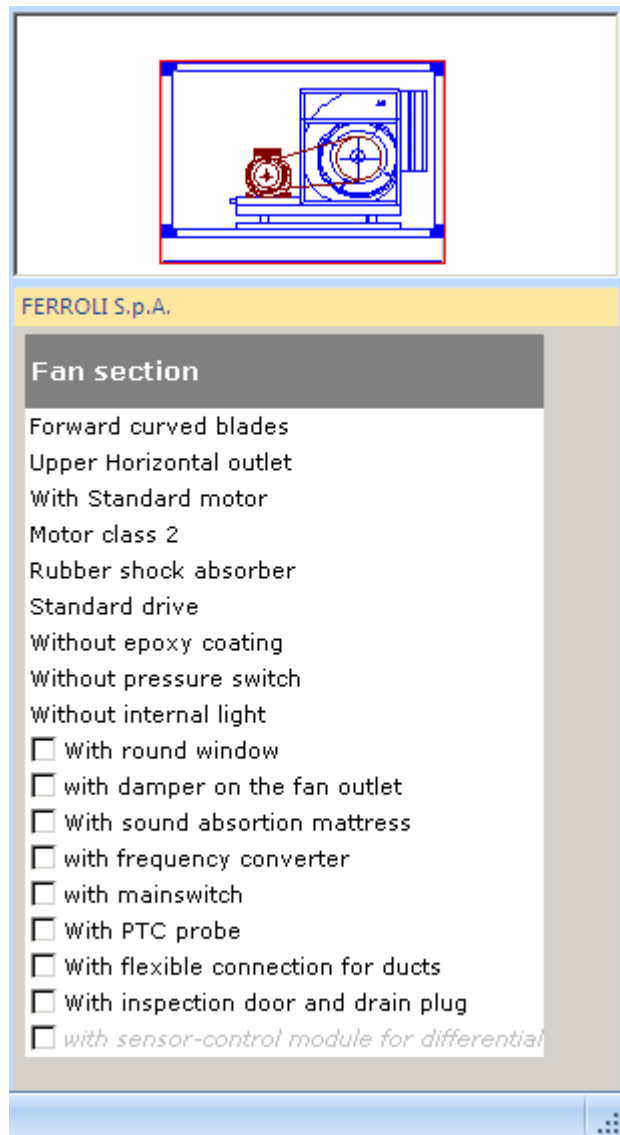
Filters

New type



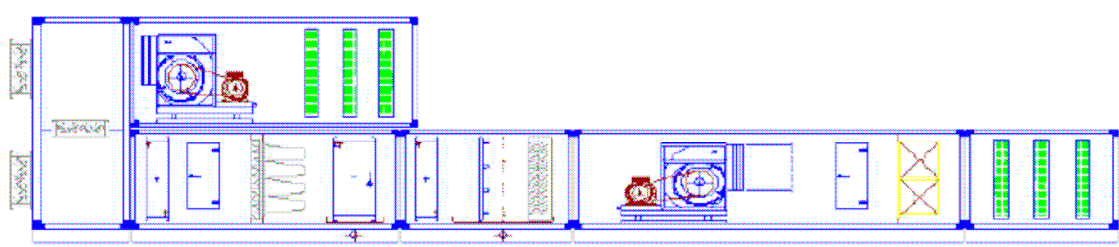
Fans

New series Nicotra K1 and K2 and new accessories



Data sheet

Dimensions of sections

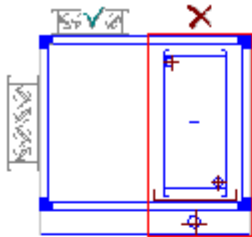
				
SECTIONS DIMENSIONS	Length	Width	Height	Weight
Section 1 T	1790 mm	1290 mm	790 mm	218 kg
Section 2 T	415 mm	1290 mm	1580+150 mm	73 kg
Section 3 B	1540 mm	1290 mm	790+150 mm	207 kg
Section 4 B	1290 mm	1290 mm	790+150 mm	181 kg
Section 5 B	2290 mm	1290 mm	790+150 mm	226 kg
Section 6 B	790 mm	1290 mm	790+150 mm	147 kg
Sections are numbered accordingly with air flow; B means " Bottom ", T means " Top "				

Characteristic of structure

Mechanical characteristics of structure according EN1886			
Mechanical strength	Leakage	Thermal transmittance	Thermal bridging
D1(M)	L2	T3	TB4

Cooling Heating coils

New options and features.



New thickness and type

16.45 x 0.4 Copper
16.45 x 0.4 Copper
16.45 x 0.75 Copper
16.45 x 1.0 Copper
16.45 x 1.5 Iron
16.45 x 1.0 Inox 304
16.45 x 1.0 Inox 316

New thickness and type

0.12 mm Aluminium
0.12 mm Aluminium
0.12 mm pre-painted Al.
0.12 mm Copper
0.12 mm Copper-tinned
0.20 mm Aluminium
0.20 mm pre-painted Al.
0.20 mm Copper
0.20 mm Copper-tinned

New Geometry

P60
P60
P30
P3012
P40

Cooling coil Winter verification

Geometry: P60 Tube type: 16.45 x 0.4 Copper Fin type: 0.12 mm Aluminium
Fins step: 2.5 mm Frame type: Frame fe zn 1,5 mm
Only predisposition: ☐ Without droplet eliminator

Entering temperature: 32 °C 50 Relative humidity (%) Tratt.
27,1 Speed: 50,4 Volume Pressure drop
temperature (°C): 0 0.0 °C 0.0 % 0.00 m/s 10000 m³/h 0.0 Pa
Water Ethylenic in weight 0 %
Entering temperature: 7 °C Leaving temperature °C: 12 0.00 °C
Calculate Max pressure drop (kPa): 35 0.00 m/s 0 dm³/h 0.0 kPa
Power Exchange S/T
N°1 0 kcal/h 0.00 kW 0.0 m² 0.0

Temperature and humidity
Mixed with fresh air

Heat recovery coil

The eat recovery coil section is now complete and customizable.

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Coil type: Return recovery coil Calculate

	Geometry	Fins spacing	Pipe type	Fin type	Frame type
Expulsion	P60	2.5 mm	16.45 x 0.4 Copper	0.12 mm Aluminium	Frame fe zn 1,5 mm
Supply	P60	2.5 mm	16.45 x 0.4 Copper	0.12 mm Aluminium	Frame fe zn 1,5 mm

	Rows N°	NC	AHU size	Inlet temperature	Flow
Expulsion	8	0	1500 X 840 mm	20 °C 50 %	10000 m³/h
Supply	8	0	1500 X 840 mm	-8 °C 80 %	10000 m³/h

Fluid: Water Ethylenic in weight 20 % 0 dm³/h Max pressure drops (kPa) 50

	Temperature	Velocity	Pressure drop	NC
Air	7.8 °C 100.0 %	2.28 m/s	101.4 Pa	
	6.2 °C 27.9 %	2.20 m/s	61.0 Pa	6

Results

	Fluid	In	Out	Velocity	Pressure drop	Flow
Temperature		1.41 °C	11.81 °C	1.00 m/s	52.0 kPa	4150 l/h

Coil Description: Cu-Al-FeZn P60AR 8R-14T-1500A-2.5pa 60 1"-0

	Exchange surf	Power	S/R ratio
	221.2 m²	47 kW	0.9

☐ Only arrangement

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