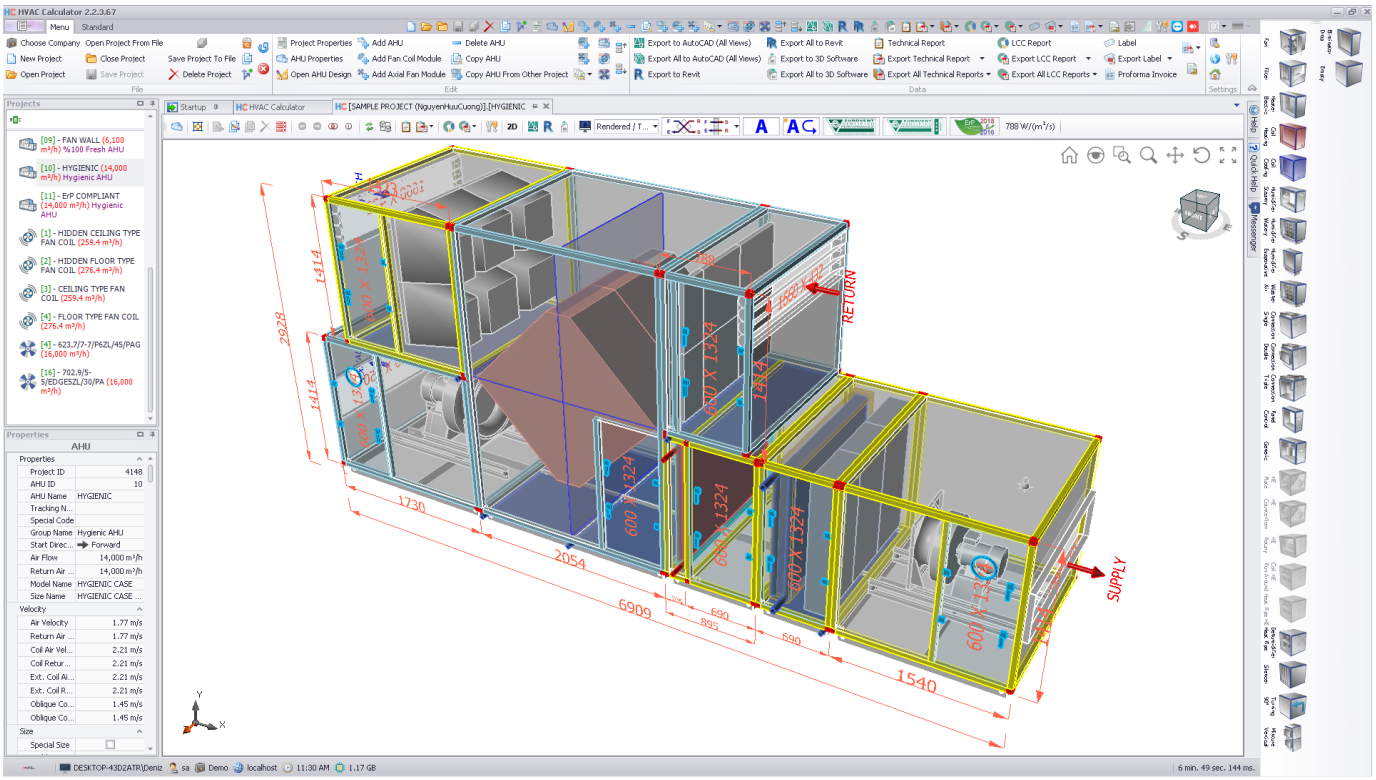
# 3D / 2D VECTORIAL DRAWING

You can design the AHU via 3D/2D design tool of the selection software. You can see all the surfaces of the AHU by the 3D/2D design tool. The drawing of the AHU on the screen is vectorial and all of the AHU selection can be exported to 3D/2D CAD softwares with many popular 3D/2D file formats. The drawing you see on your screen while designing the AHU and the drawing you will see in the 3D/2D CAD software will be the same. Users can export the 3D drawings as BIM (Building Information Modeling) file format. You can use exported files directly in Autodesk Revit via our own Autodesk Revit addin.

## 3D AHU DESIGN VIEW



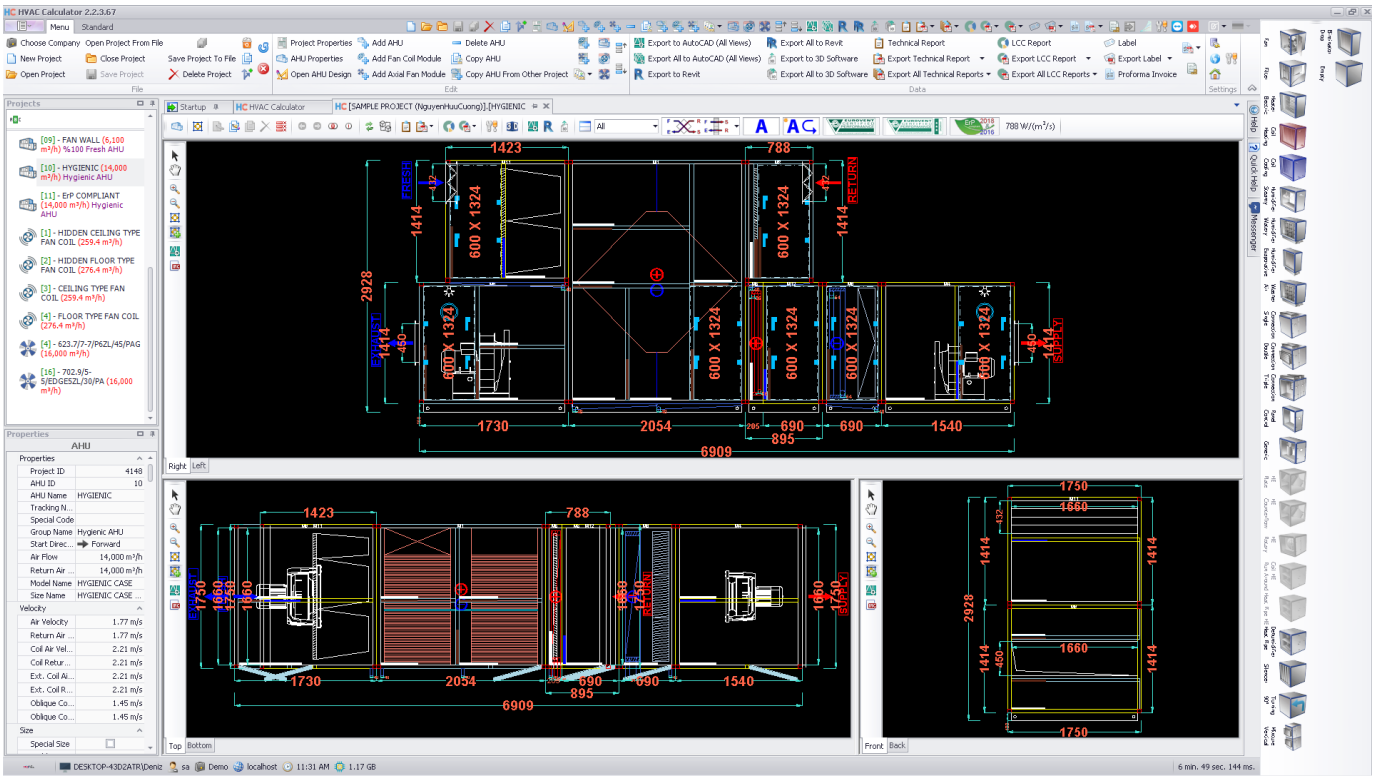

## BIM (BUILDING INFORMATION MODEL) / AUTODESK REVIT

You can effortlessly export the 3D drawings into the BIM (Building Information Modeling) file format, seamlessly integrating them with Autodesk Revit through our dedicated Autodesk Revit add-in.

AUTODESK®
REVIT®

IFC®
BIM²
xbim toolkit

## 2D AHU DESIGN VIEW



## EUROVENT AHU CERTIFICATE

Software is compliant for Eurovent AHU certificate. Many referenced companies have obtained Eurovent AHU certificate.

## EUROVENT HYGIENIC AHU CERTIFICATE

Software is compliant for Eurovent HYGIENIC AHU certificate. Some referenced companies have obtained Eurovent HYGIENIC AHU certificate.

# ENERGY-RELATED PRODUCTS (ERP) 2016 AND 2018 COMPLIANCE

“Energy-Related Products (ERP) compliance" refers to regulations set by the European Union (EU) regarding the energy efficiency of products. The regulations aim to reduce energy consumption, lower greenhouse gas emissions, and promote sustainable practices. The ERP Directive sets minimum energy efficiency standards for various products sold within the EU.

The ERP Directive has been updated over time, with significant revisions in 2016 and 2018. These updates typically include expanding the scope of products covered by the directive, tightening energy efficiency requirements, and aligning with advancements in technology and market trends.

When referring to "ERP 2016 and 2018 compliance," it likely means ensuring that products meet the energy efficiency standards set forth in the ERP Directive revisions of 2016 and 2018. Manufacturers and sellers must ensure that their products comply with these regulations to legally market and sell them within the EU.

Compliance may involve conducting energy efficiency tests, providing labeling indicating energy efficiency ratings, and adhering to specific requirements outlined in the ERP Directive. Failure to comply with these regulations can result in fines and other penalties for non-compliant businesses.

# EXPORTING TO AUTOCAD 2D

Software exports AHU drawing with all surfaces and all necessary technical informations of the AHU at the right side of the drawing. And there are 5 different export methods to export drawings to Autocad. These methods are;

1. With Internal Parts
2. Without Internal Parts
3. Only Profiles
4. Only Panels
5. Only Profiles and Panels

Supported 2D file export formats: DXF, DWG

## WITH INTERNAL PARTS

## WITHOUT INTERNAL PARTS

## ONLY PROFILES

## ONLY PANELS

Bottom
Back
Right
Front
Left
Top
Right / With Internal Parts
Top / With Internal Parts
Pedestal Settlement
hvaccalculator.net

## ONLY PROFILES AND PANELS

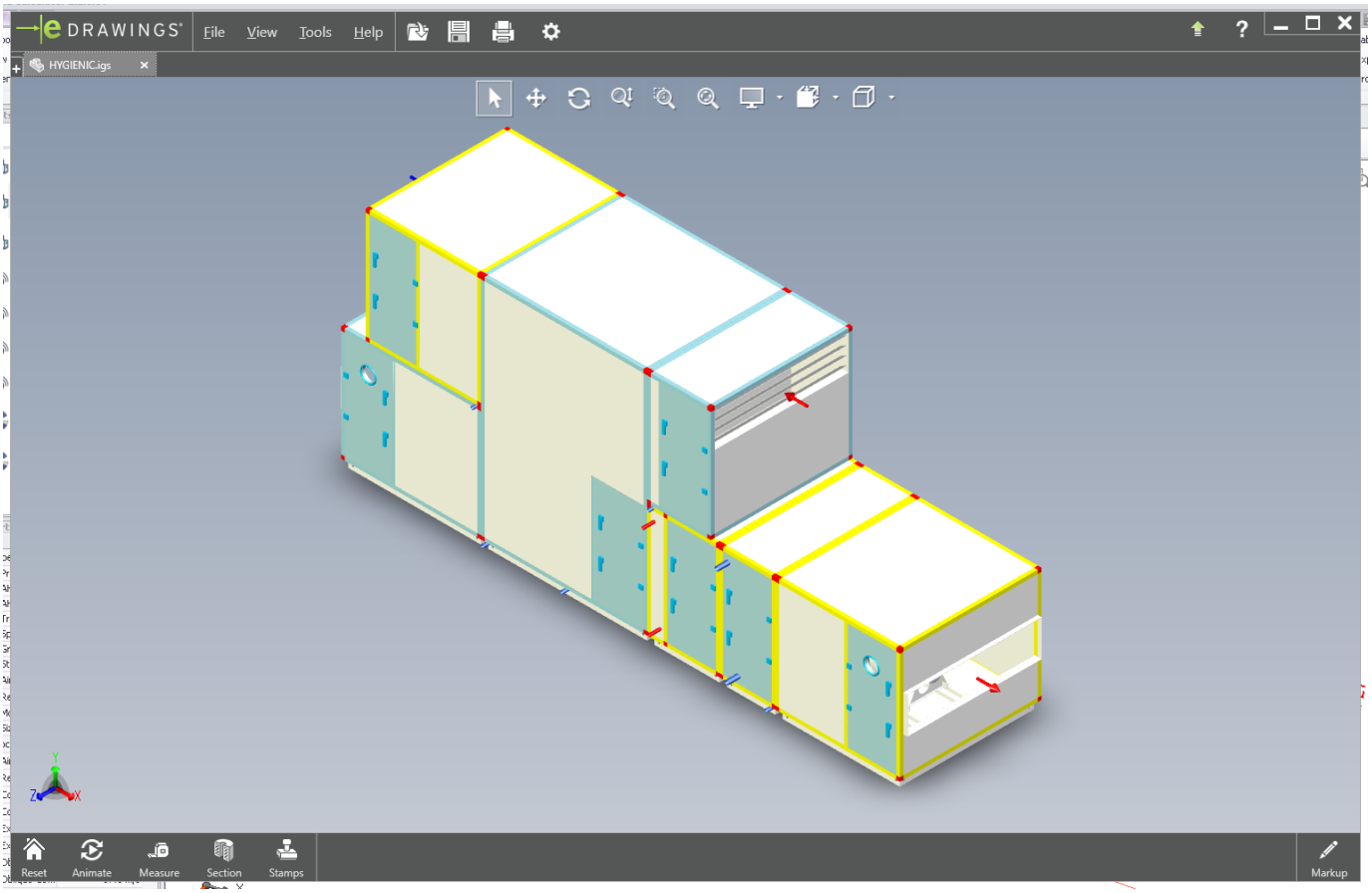
# EXPORTING TO 3D CAD SOFTWARE

There are 5 different export methods to export drawings to the 3D CAD software. These methods are;

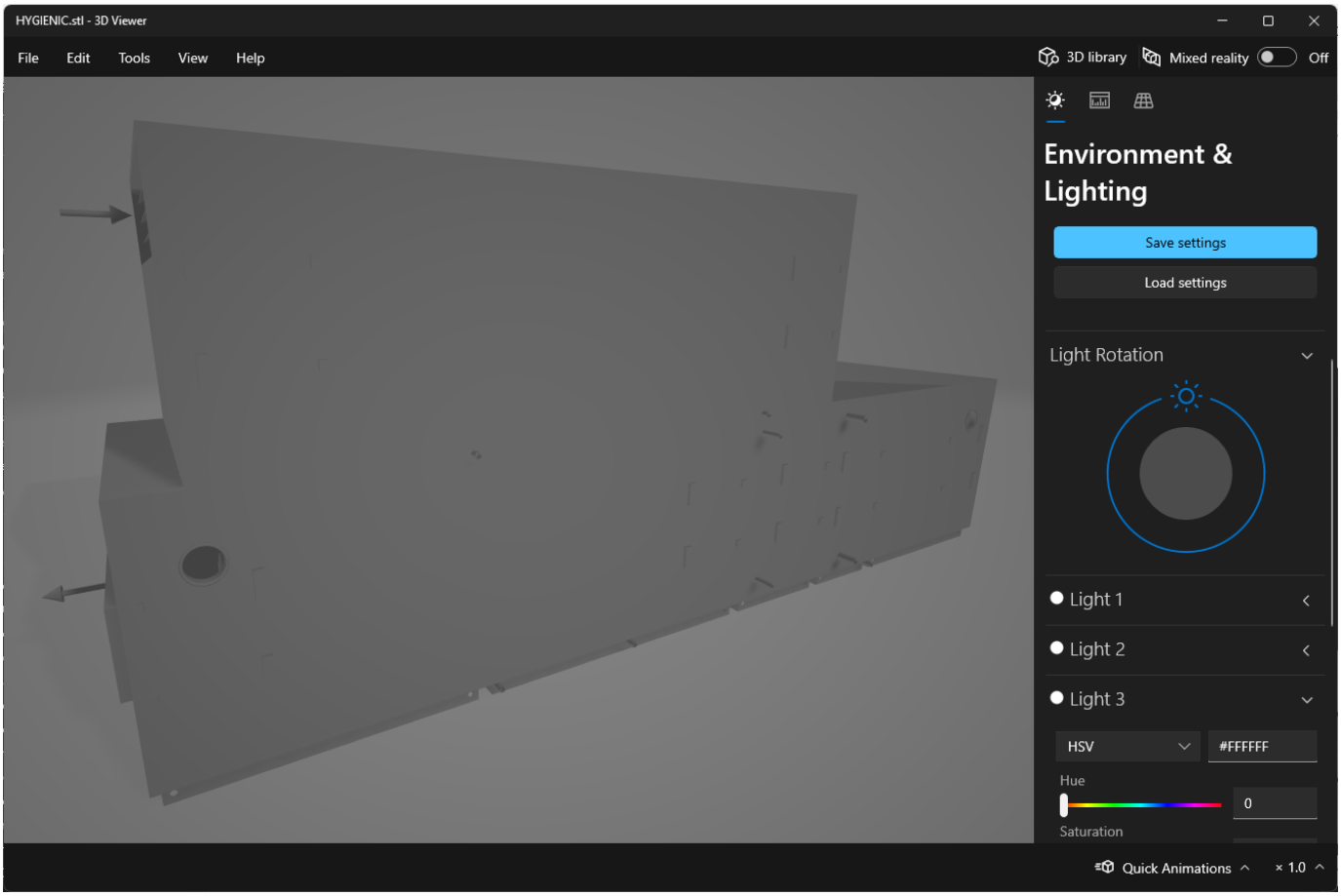
1. With Internal Parts
2. Without Internal Parts
3. Only Profiles
4. Only Panels
5. Only Profiles and Panels

Supported 3D file export formats: IGS/IGES, STP/STEP, Stereolithography STL, WaveFront OBJ, WebGL HTML, DWG, DXF

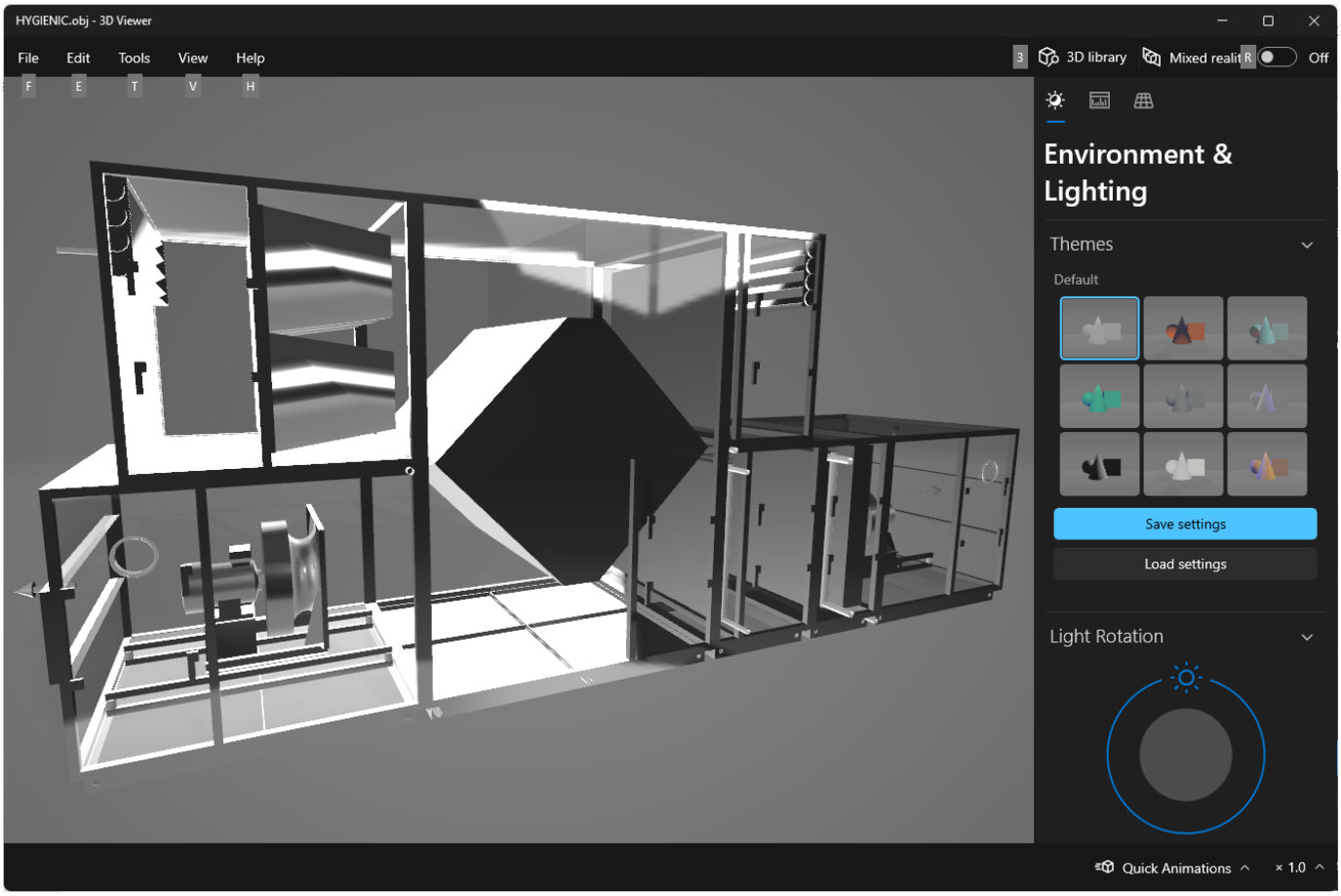
## EXPORTED IGS FILE VIEW



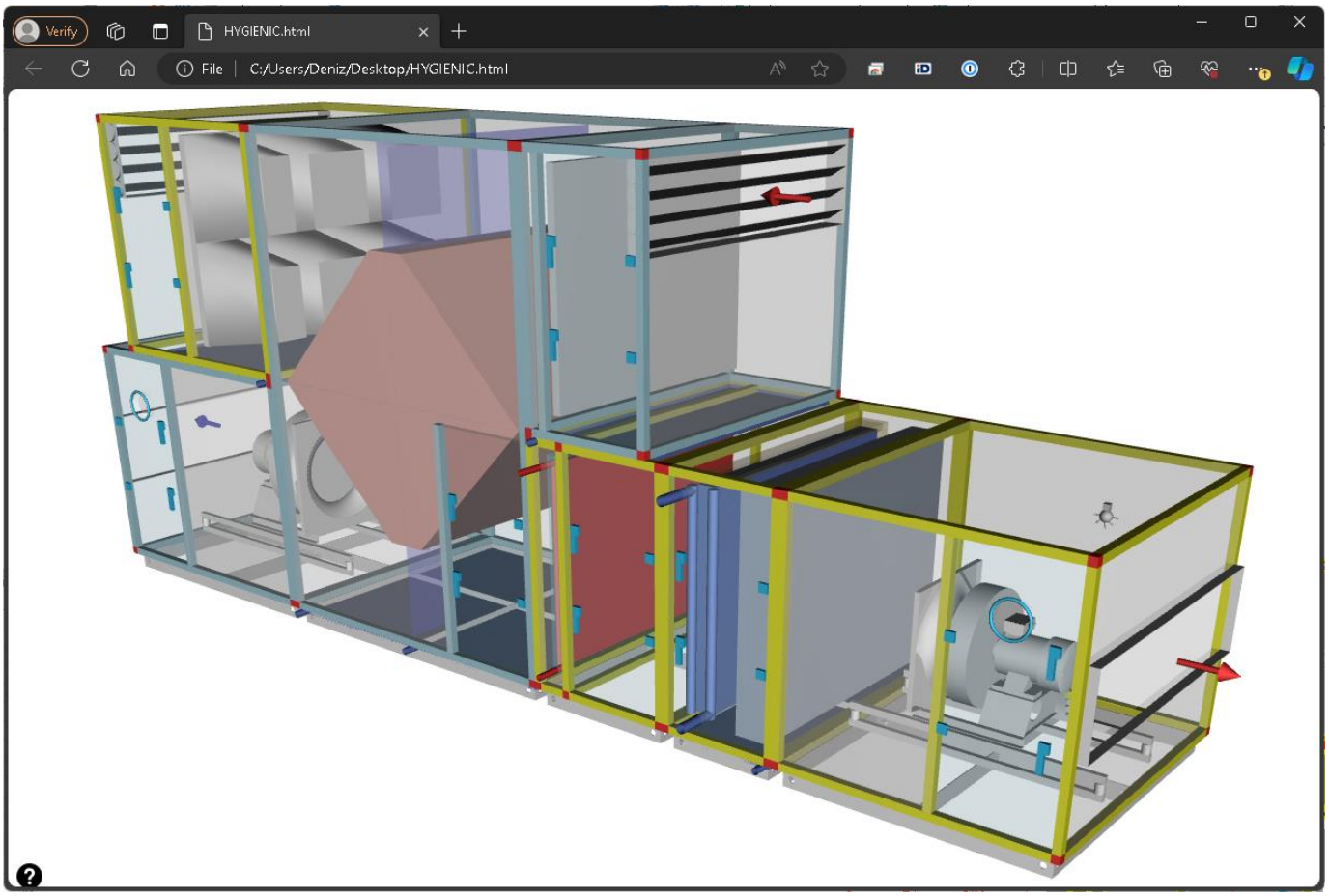
## EXPORTED STL FILE VIEW



## EXPORTED OBJ FILE VIEW



## EXPORTED WEBGL/HTML FILE VIEW



# EXPORTING AS BIM (BUILDING INFORMATION MODELING) FILE

You can export AHU design as IFC (Industry Foundation Classes) BIM (Building Information Modeling) file. You can use the exported IFC file in Autodesk Revit software and you can convert the IFC file native Autodesk Revit file via HVAC Calculator Autodesk Revit Addin. BIM file contains all the information about the AHU.

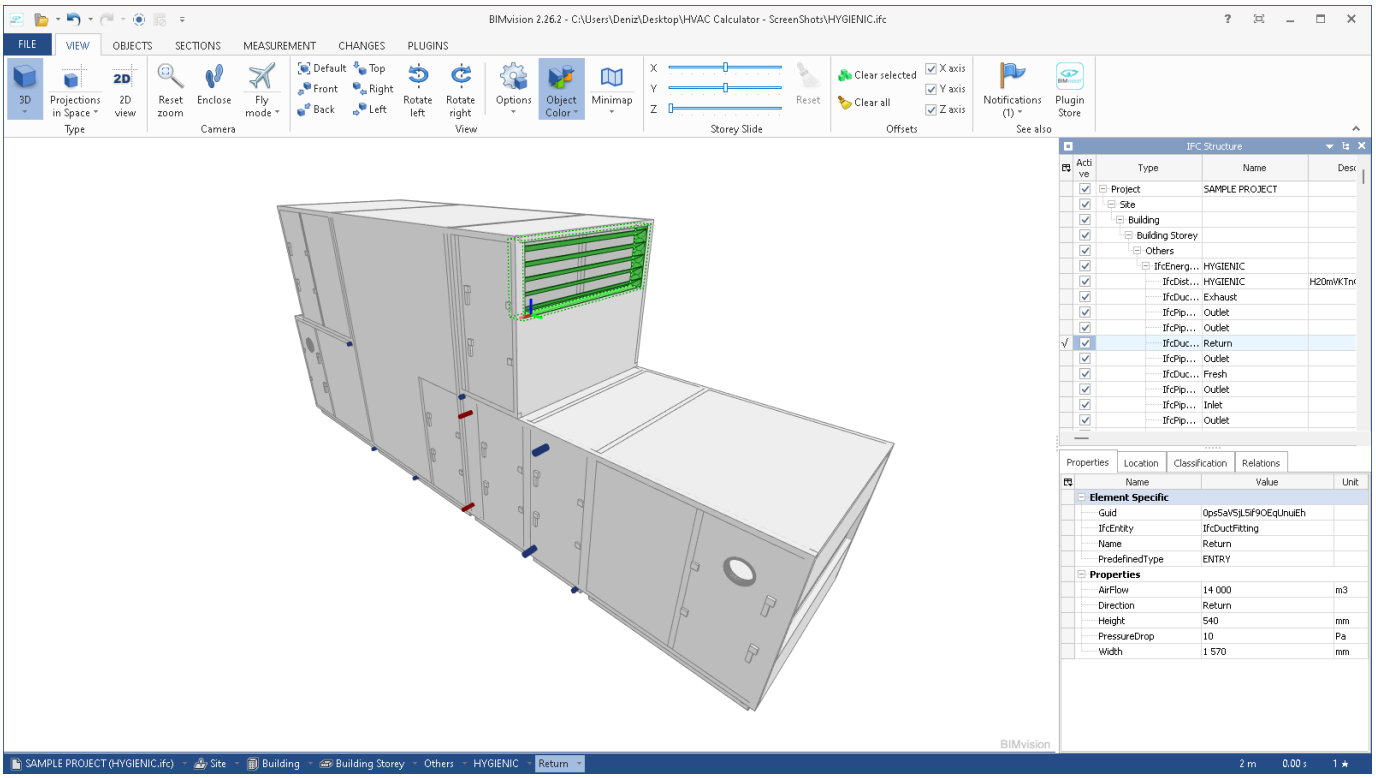
These informations are;

- Inlet / Outlet Air Connectors
- Inlet / Outlet Fluid Connectors
- Outdoor Air Condition
- Return Air Condition
- Air Flow
- Fluid Flow
- Heating Capacity
- Cooling Capacity
- Heat Exchanger Capacity
- Etc.

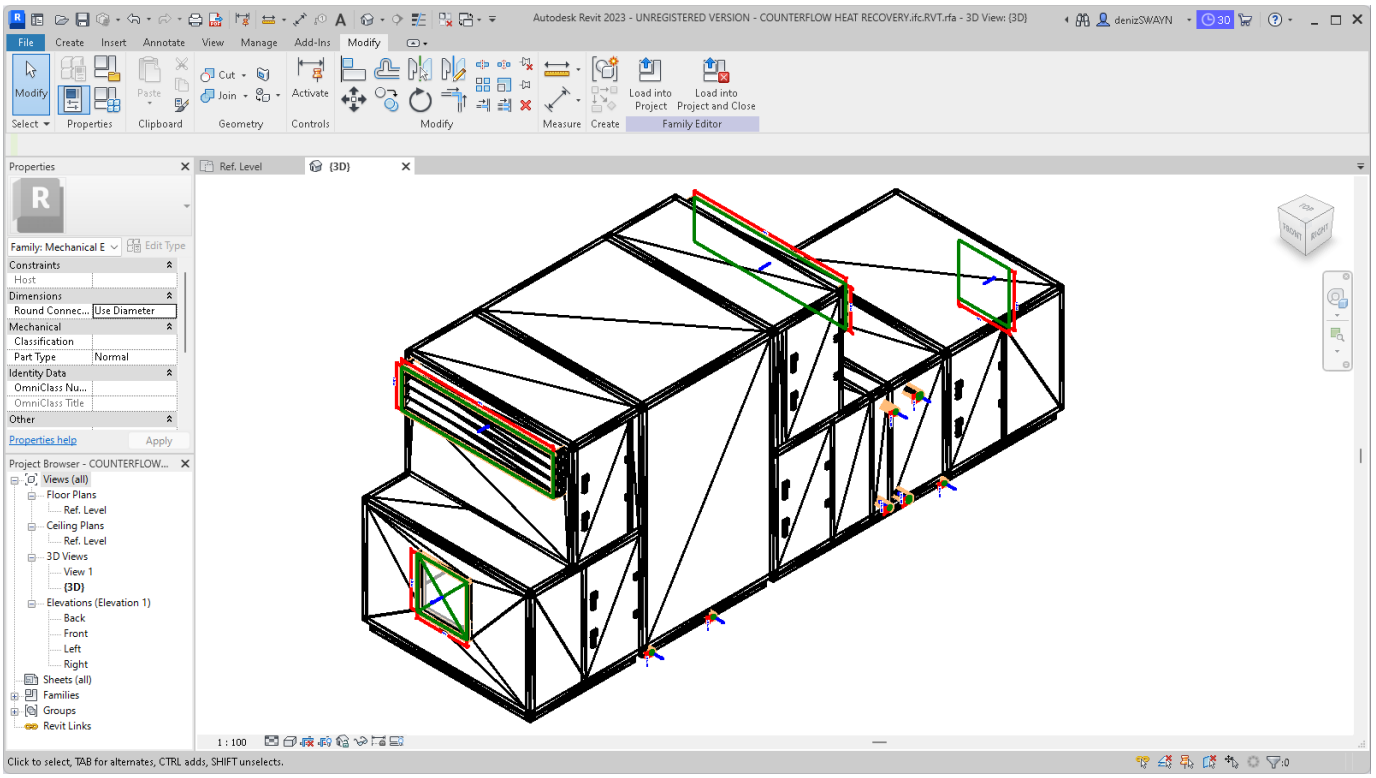
Autodesk Revit addins available for the editions below;

- Autodesk Revit 2017
- Autodesk Revit 2018
- Autodesk Revit 2019
- Autodesk Revit 2020
- Autodesk Revit 2021
- Autodesk Revit 2022
- Autodesk Revit 2023
- Autodesk Revit 2024

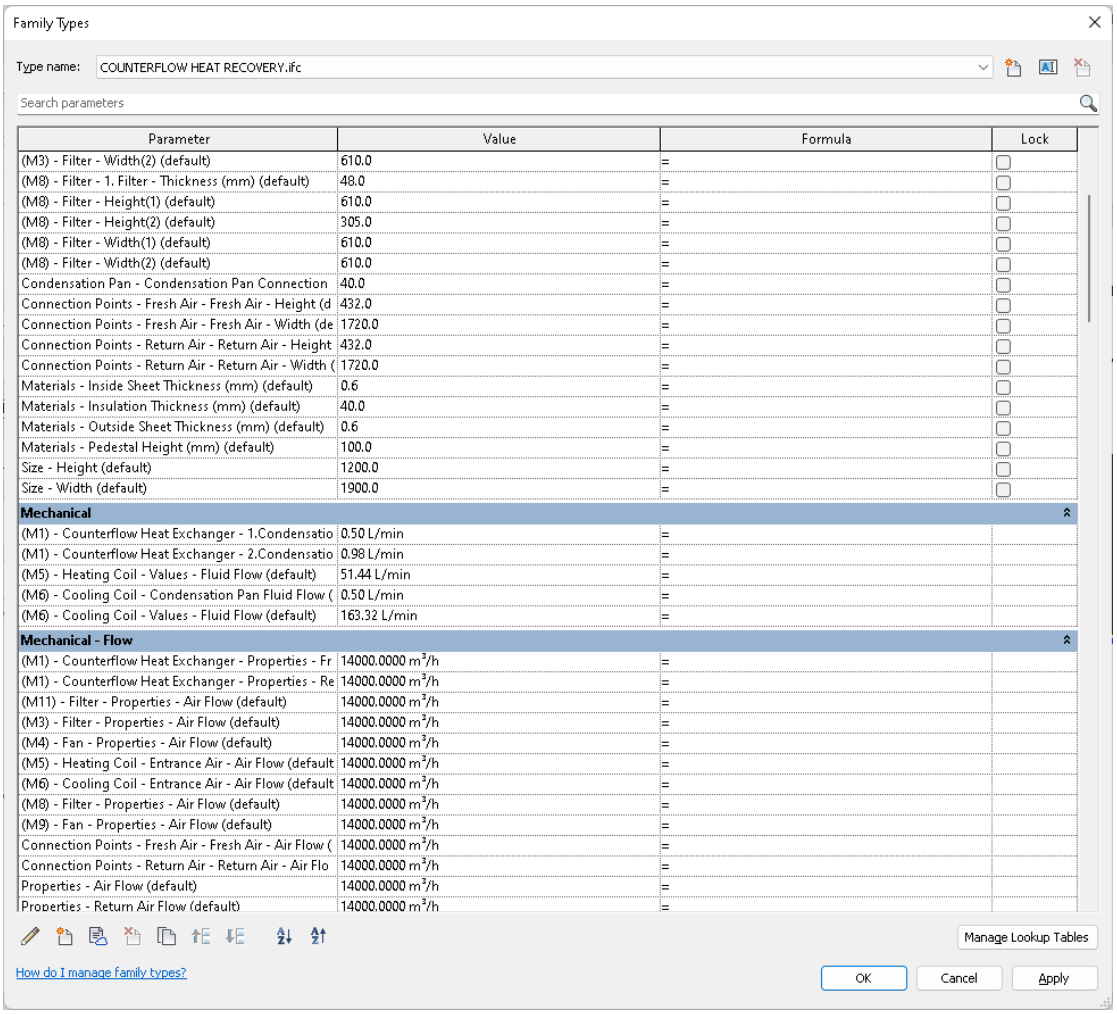
## EXPORTED IFC FILE VIEW




## AUTODESK REVIT



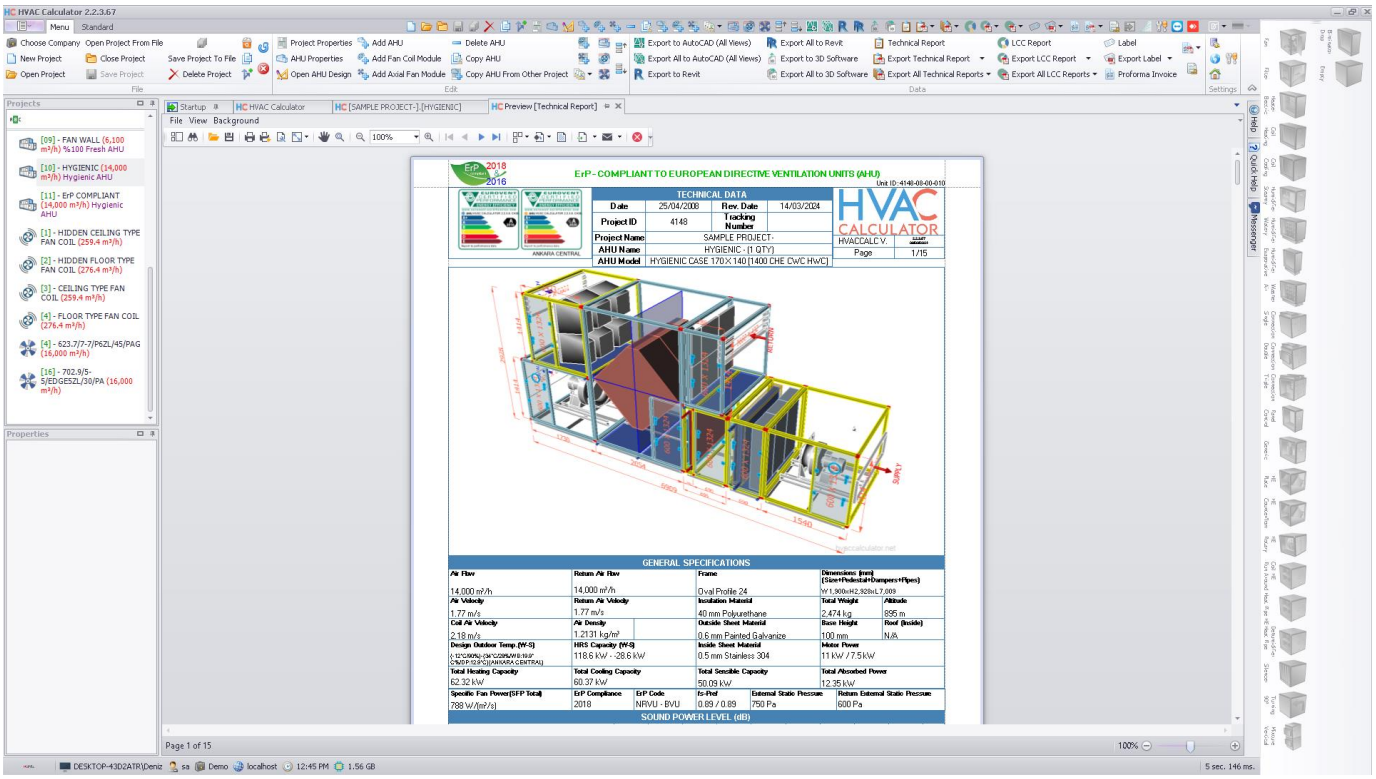
# AUTODESK REVIT FAMILY TYPE PARAMETERS




| Parameter | Value | Formula | Lock |
|---|---|---|---|
| (M3) - Filter - Width(2) (default) | 610.0 | = | |
| (M8) - Filter - 1. Filter - Thickness (mm) (default) | 48.0 | = | |
| (M8) - Filter - Height(1) (default) | 610.0 | = | |
| (M8) - Filter - Height(2) (default) | 305.0 | = | |
| (M8) - Filter - Width(1) (default) | 610.0 | = | |
| (M8) - Filter - Width(2) (default) | 610.0 | = | |
| Condensation Pan - Condensation Pan Connection | 40.0 | = | |
| Connection Points - Fresh Air - Fresh Air - Height (d | 432.0 | = | |
| Connection Points - Fresh Air - Fresh Air - Width (de | 1720.0 | = | |
| Connection Points - Return Air - Return Air - Height | 432.0 | = | |
| Connection Points - Return Air - Return Air - Width ( | 1720.0 | = | |
| Materials - Inside Sheet Thickness (mm) (default) | 0.6 | = | |
| Materials - Insulation Thickness (mm) (default) | 40.0 | = | |
| Materials - Outside Sheet Thickness (mm) (default) | 0.6 | = | |
| Materials - Pedestal Height (mm) (default) | 100.0 | = | |
| Size - Height (default) | 1200.0 | = | |
| Size - Width (default) | 1900.0 | = | |
| **Mechanical** | | | |
| (M1) - Counterflow Heat Exchanger - 1.Condensatio | 0.50 L/min | = | |
| (M1) - Counterflow Heat Exchanger - 2.Condensatio | 0.98 L/min | = | |
| (M5) - Heating Coil - Values - Fluid Flow (default) | 51.44 L/min | = | |
| (M6) - Cooling Coil - Condensation Pan Fluid Flow ( | 0.50 L/min | = | |
| (M6) - Cooling Coil - Values - Fluid Flow (default) | 163.32 L/min | = | |
| **Mechanical - Flow** | | | |
| (M1) - Counterflow Heat Exchanger - Properties - Fr | 14000.0000 $m^3/h$ | = | |
| (M1) - Counterflow Heat Exchanger - Properties - Re | 14000.0000 $m^3/h$ | = | |
| (M11) - Filter - Properties - Air Flow (default) | 14000.0000 $m^3/h$ | = | |
| (M3) - Filter - Properties - Air Flow (default) | 14000.0000 $m^3/h$ | = | |
| (M4) - Fan - Properties - Air Flow (default) | 14000.0000 $m^3/h$ | = | |
| (M5) - Heating Coil - Entrance Air - Air Flow (default | 14000.0000 $m^3/h$ | = | |
| (M6) - Cooling Coil - Entrance Air - Air Flow (default | 14000.0000 $m^3/h$ | = | |
| (M8) - Filter - Properties - Air Flow (default) | 14000.0000 $m^3/h$ | = | |
| (M9) - Fan - Properties - Air Flow (default) | 14000.0000 $m^3/h$ | = | |
| Connection Points - Fresh Air - Fresh Air - Air Flow ( | 14000.0000 $m^3/h$ | = | |
| Connection Points - Return Air - Return Air - Air Flo | 14000.0000 $m^3/h$ | = | |
| Properties - Air Flow (default) | 14000.0000 $m^3/h$ | = | |
| Properties - Return Air Flow (default) | 14000.0000 $m^3/h$ | = | |

# TECHNICAL REPORT

You can obtain the technical report with your own logo and your own company information. You can export the technical report as PDF, Excel, Word or Html file formats. You can also send the file in that format via e-mail from the program.



# TECHNICAL REPORT PAGES

ErP - COMPLIANT TO EUROPEAN DIRECTIVE VENTILATION UNITS (AHU)

Unit ID: 4148-08-00-010

**TECHNICAL DATA**

| | | | |
|---|---|---|---|
| Date | 25/04/2008 | Rev. Date | 14/03/2024 |
| Project ID | 4148 | Tracking Number | |
| Project Name | SAMPLE PROJECT- | | |
| AHU Name | HYGIENIC - (1 QTY) | | |
| AHU Model | HYGIENIC CASE 170 X 140 [1400 CHE CWC HWC] | | |

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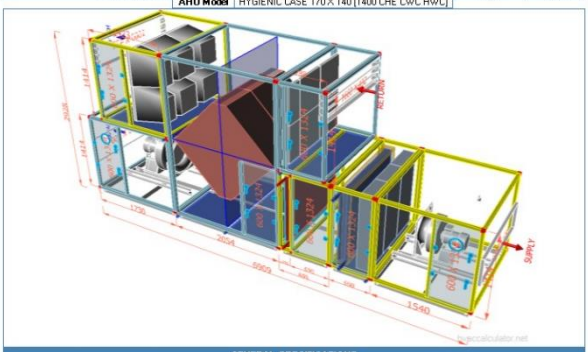

**GENERAL SPECIFICATIONS**

| Air Flow | Return Air Flow | Frame | Dimensions (mm) (Size+Pedestal+Dampers+Pipes) |
|---|---|---|---|
| 14,000 m³/h | 14,000 m³/h | Oval Profile 24 | W 1,900xH2,928xL7,009 |
| **Air Velocity** | **Return Air Velocity** | **Insulation Material** | **Total Weight** / **Altitude** |
| 1.77 m/s | 1.77 m/s | 40 mm Polyurethane | 2,474 kg / 895 m |
| **Coil Air Velocity** | **Air Density** | **Outside Sheet Material** | **Base Height** / **Roof (Inside)** |
| 2.18 m/s | 1.2131 kg/m³ | 0.6 mm Painted Galvanize | 100 mm / N/A |
| **Design Outdoor Temp.(W-S)** (-12°C/90%)-(34°C/29%/W:8.19.9° C%/DP:12.9°C)(ANKARA CENTRAL) | **HRS Capacity (W-S)** 118.6 kW - -28.6 kW | **Inside Sheet Material** 0.5 mm Stainless 304 | **Motor Power** 11 kW / 7.5 kW |
| **Total Heating Capacity** 62.32 kW | **Total Cooling Capacity** 60.37 kW | **Total Sensible Capacity** 50.09 kW | **Total Absorbed Power** 12.35 kW |
| **Specific Fan Power(SFP Total)** 788 W/(m³/s) | **ErP Compliance** 2018 | **ErP Code** NRVU - BVU | **fs-Pref** 0.89 / 0.89 |
| **External Static Pressure** 750 Pa | **Return External Static Pressure** 600 Pa | | |

**SOUND POWER LEVEL (dB)**

| Frequency Hz | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | LwA-wt |
|---|---|---|---|---|---|---|---|---|
| Airborne Sound Power Level | 70.1 | 74.1 | 63.3 | 57.2 | 50.5 | 47.8 | 34.7 | 67.6 dBA |
| Air Outlet Induct Sound Power Level | 85.0 | 92.6 | 96.4 | 94.7 | 89.6 | 88.6 | 82.8 | 98.7 dBA |
| Air Inlet Induct Sound Power Level | 66.0 | 73.6 | 77.4 | 75.7 | 75.6 | 74.6 | 68.8 | 82.1 dBA |
| Return Air Outlet Induct Sound Power Level | 89.1 | 101.1 | 94.3 | 91.2 | 84.5 | 84.8 | 76.7 | 97.1 dBA |
| Return Air Inlet Induct Sound Power Level | 80.1 | 92.1 | 85.3 | 82.2 | 77.5 | 77.8 | 69.7 | 88.6 dBA |

**MB MECHANICAL PROPERTY CLASSIFICATIONS**

| Model | CS Class | CAL Class -400 Pa (M) +400 Pa (B) | CAL Class +700 Pa (M) +400 Pa (B) | FBL Class | TT Class | TBF Class | CASING ACOUSTICAL INSULATION [dB] 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CASE | D1 (M) | L1 (M)/L1 (M) | L1 (M)/L1 (M) | F9 (M) | T2 | TB2 | 19 | 27 | 31 | 34 | 34 | 37 | 42 |

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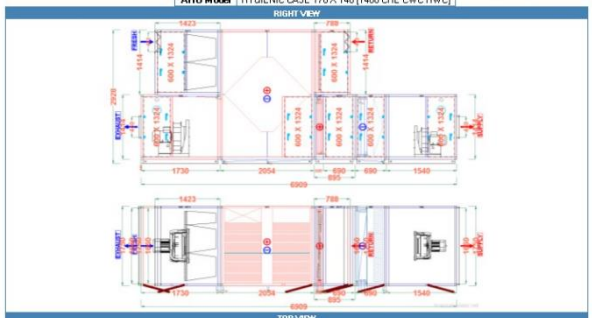
Designer: Cuong Nguyen Huu | 14.03.2024

ErP - COMPLIANT TO EUROPEAN DIRECTIVE VENTILATION UNITS (AHU)



**TOP VIEW**

**GENERAL SPECIFICATIONS**

| Air Flow | Return Air Flow | Frame | Dimensions (mm) (Size+Pedestal+Dampers+Pipes) |
|---|---|---|---|
| 14,000 m³/h | 14,000 m³/h | Oval Profile 24 | W 1,900xH2,928xL7,009 |
| **Air Velocity** | **Return Air Velocity** | **Insulation Material** | **Total Weight** / **Altitude** |
| 1.77 m/s | 1.77 m/s | 40 mm Polyurethane | 2,474 kg / 895 m |
| **Coil Air Velocity** | **Air Density** | **Outside Sheet Material** | **Base Height** / **Roof (Inside)** |
| 2.18 m/s | 1.2131 kg/m³ | 0.6 mm Painted Galvanize | 100 mm / N/A |
| **Design Outdoor Temp.(W-S)** (-12°C/90%)-(34°C/29%/W:8.19.9° C%/DP:12.9°C)(ANKARA CENTRAL) | **HRS Capacity (W-S)** 118.6 kW - -28.6 kW | **Inside Sheet Material** 0.5 mm Stainless 304 | **Motor Power** 11 kW / 7.5 kW |
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| **Specific Fan Power(SFP Total)** 788 W/(m³/s) | **ErP Compliance** 2018 | **ErP Code** NRVU - BVU | **fs-Pref** 0.89 / 0.89 |
| **External Static Pressure** 750 Pa | **Return External Static Pressure** 600 Pa | | |

**SOUND POWER LEVEL (dB)**

| Frequency Hz | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | LwA-wt |
|---|---|---|---|---|---|---|---|---|
| Airborne Sound Power Level | 70.1 | 74.1 | 63.3 | 57.2 | 50.5 | 47.8 | 34.7 | 67.6 dBA |
| Air Outlet Induct Sound Power Level | 85.0 | 92.6 | 96.4 | 94.7 | 89.6 | 88.6 | 82.8 | 98.7 dBA |
| Air Inlet Induct Sound Power Level | 66.0 | 73.6 | 77.4 | 75.7 | 75.6 | 74.6 | 68.8 | 82.1 dBA |
| Return Air Outlet Induct Sound Power Level | 89.1 | 101.1 | 94.3 | 91.2 | 84.5 | 84.8 | 76.7 | 97.1 dBA |
| Return Air Inlet Induct Sound Power Level | 80.1 | 92.1 | 85.3 | 82.2 | 77.5 | 77.8 | 69.7 | 88.6 dBA |

**MB MECHANICAL PROPERTY CLASSIFICATIONS**

| Model | CS Class | CAL Class -400 Pa (M) -400 Pa (B) | CAL Class +700 Pa (M) +400 Pa (B) | FBL Class | TT Class | TBF Class | CASING ACOUSTICAL INSULATION [dB] 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CASE | D1 (M) | L1 (M)/L1 (M) | L1 (M)/L1 (M) | F9 (M) | T2 | TB2 | 19 | 27 | 31 | 34 | 34 | 37 | 42 |

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ErP - COMPLIANT TO EUROPEAN DIRECTIVE VENTILATION UNITS (AHU)

Unit ID: 4148-08-00-010

**TECHNICAL DATA**

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| AHU Name | HYGIENIC - (1 QTY) | | |
| AHU Model | HYGIENIC CASE 170 X 140 [1400 CHE CWC HWC] | | |

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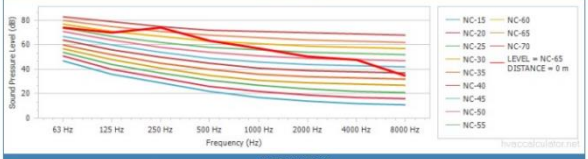
**NOISE CRITERIA**




**ACCESSORIES**

Negative Pressure Siphon (x5),Observation Glass (x2),Lightening (x2),Digital Manometer Pressure Gauge With Alarm (x3)

**FRESH AIR CONNECTION**

| Connection Type | Control Type | Pressure Drop |
|---|---|---|
| Gear Damper | Automatic (LM230ASR) | 10 Pa |
| **Air Flow** | **Dimensions** | **Air Velocity** |
| 14,000 m³/h | W 1,660 mm x H 432 mm | 5.42 m/s |

**SUPPLY CONNECTION**

| Connection Type | Control Type | Pressure Drop |
|---|---|---|
| Flange | | 0 Pa |
| **Air Flow** | **Dimensions** | **Air Velocity** |
| 14,000 m³/h | W 1,660 mm x H 450 mm | 5.21 m/s |

**RETURN CONNECTION**

| Connection Type | Control Type | Pressure Drop |
|---|---|---|
| Gear Damper | Automatic (LM230ASR) | 10 Pa |
| **Air Flow** | **Dimensions** | **Air Velocity** |
| 14,000 m³/h | W 1,660 mm x H 432 mm | 5.42 m/s |

**EXHAUST CONNECTION**

| Connection Type | Control Type | Pressure Drop |
|---|---|---|
| Flange | | 0 Pa |
| **Air Flow** | **Dimensions** | **Air Velocity** |
| 14,000 m³/h | W 1,660 mm x H 450 mm | 5.21 m/s |

**FILTER (M8)**

| Air Flow | Condensation Pan | Slide Type | Hygienic | Spare Filter | Section Weight |
|---|---|---|---|---|---|
| 14,000 m³/h | Stainless Steel (40 mm (ød)) (Connection:Right) (Pressure:Negative) | None | ☑ | ☐ | 163 kg |

| Filter Type | | | | | |
|---|---|---|---|---|---|
| M-5 Panel | | | | | |
| **Initial / Final / Design P.Drop** | **Air Velocity** | **Size/Quantity/EC*** | **Size/Quantity/EC*** | **Size/Quantity/EC*** | **Size/Quantity/EC*** |
| 71 Pa / 171 Pa / 121 Pa | 2.09 m/s | 610x610x48/4/D | 610x305x48/2/D | | |

* Filter Energy Performance; preferably energy classification
** M-5 : Certified according to EN 16890:2016 / ISO 17065:2012
*** Frame sealing applied.

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Designer: Cuong Nguyen Huu | 14.03.2024

ErP - COMPLIANT TO EUROPEAN DIRECTIVE VENTILATION UNITS (AHU)

Unit ID: 4148-08-00-010

**TECHNICAL DATA**

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|---|---|---|---|
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| AHU Name | HYGIENIC - (1 QTY) | | |
| AHU Model | HYGIENIC CASE 170 X 140 [1400 CHE CWC HWC] | | |

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**DOORS (M8)**

| ID | Type | Size | Position | Hinge Position | Alignment | Opposing Door |
|---|---|---|---|---|---|---|
| 1 | Standard (Handle + Hinge) | 600 mm x 1,324 mm | Right | Right | Left | ☐ |

**ACCESSORIES (M8)**

Digital Manometer Pressure Gauge With Alarm,Negative Pressure Siphon

**COUNTERFLOW HEAT EXCHANGER (M1)**

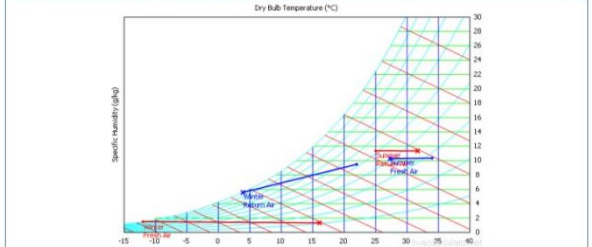
| Model | Maximum Internal Leakage Rate | Quantity | Section Weight |
|---|---|---|---|
| Hoval-GVC150/P1/1660/BSK329,G2 | 1 % | 1 | 851 kg |

| | Fresh Air | Exhaust | Capacity | Winter | | Summer | |
|---|---|---|---|---|---|---|---|
| Air Flow | 14,000 m³/h | 14,000 m³/h | | 118.6 kW | | -28.6 kW | |
| Air Vel. | 2.4 m/s | 2.4 m/s | | Fresh Air | Exhaust | Fresh Air | Exhaust |
| | Winter | Summer | P.D | 242 Pa | 253 Pa | 271 Pa | 270 Pa |
| | Effic. / Balan.(*) | Effic. / Balan.(*) | 1.2 kg/m³ | 220 Pa | 220 Pa | 220 Pa | 220 Pa |
| Wet | 83 % / 83 % | 74 % / 74 % | | | | | |
| Dry | 74 % / 74 % | 74 % / 74 % | | | | | |
| ErP Effic. | 72 % | 72 % | | | | | |

| Air Inlet / Outlet | Winter Fresh Air Inlet | Winter Fresh Air Outlet | Winter Exhaust Inlet | Winter Exhaust Outlet | Summer Fresh Air Inlet | Summer Fresh Air Outlet | Summer Exhaust Inlet | Summer Exhaust Outlet |
|---|---|---|---|---|---|---|---|---|
| DT | -12 °C | 16.1 °C | 22 °C | 3.9 °C | 34 °C | 27.3 °C | 25 °C | 31.7 °C |
| WT | -12.3 °C | 4.7 °C | 15.4 °C | 3.9 °C | 19.8 °C | 17.8 °C | 17.9 °C | 19.9 °C |
| RH | 90 % | 11 % | 52 % | 100 % | 28 % | 41 % | 52 % | 35 % |

| Condensation Pan | Size mm (**) | Bypass Damper |
|---|---|---|
| Stainless Steel (40 mm (ød)) (Connection:Right) (Pressure:Negative) | 1,864-1,142-246-11-666-1,632 | W 329 mm x H 1,142 mm |

* Efficiency at balanced flow
** Length - Edge Length - Horiz.Edge Len. - Vert.Edge Len. - Width - Height




**DOORS (M1)**

| ID | Type | Size | Position | Hinge Position | Alignment | Opposing Door |
|---|---|---|---|---|---|---|
| 1 | Standard (Handle + Hinge) | 600 mm x 1,324 mm | Right | Right | Right | ☐ |

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Designer: Cuong Nguyen Huu | 14.03.2024

# TECHNICAL REPORT PAGES

ErP 2018 & 2016

ErP - COMPLIANT TO EUROPEAN DIRECTIVE VENTILATION UNITS (AHU)

Unit ID: 4148-08-00-010

| TECHNICAL DATA | | | |
|---|---|---|---|
| Date | 25/04/2008 | Rev. Date | 14/03/2024 |
| Project ID | 4148 | Tracking Number | |
| Project Name | SAMPLE PROJECT- | | |
| AHU Name | HYGIENIC - (1 QTY) | | |
| AHU Model | HYGIENIC CASE 170X140 [1400 CHE CWC HWC] | | |

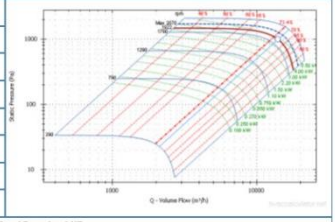
HVACCALC V. | Page 4/15

## ACCESSORIES (M1)

Negative Pressure Siphon (x2)

## EXHAUST FAN (M9)

| | | | | | |
|---|---|---|---|---|---|
| Air Flow: 14,000 m³/h | Motor Type: AC | Fan Model: EBM Papst-BPHM 560-4T-09 | | Quantity: 1 | Section Weight: 432 kg |
| Internal Static Pressue: 394 Pa | Motor P./Pha./Volt./Freq.: 7.5 kW/3P/400V/50-VHz | Isolator: Rubber | | Isolator Count: 4 | |
| External Static Pressure: 600 Pa | | Backup Fan: 0 | Backup Motor: 0 | Backup Inverter: 0 | |
| Total Static Pressure: 994 Pa | | | | | |
| Total Pressure: 994 Pa / System Effect: 10 Pa | | | | | |
| Total / Static Efficiency: 72.99 / 72.99 % | | | | | |
| Shaft Power / Absorbed Pwer: 5.3 / 5.3 kW | Absorbed Power With VFD: 5.3 kW | | | | |
| Fan Speed: 1921 rpm (Max. 2070 rpm) | | | | | |
| | Air Density: 1.1256 kg/m³ | | | | |
| Specific Fan Power (SFPe int): 399 W/(m³/s) | Electrical Current: 7.64 A (Max. 10.83 A) | | | | |



Sound Power Level (dB)

| Hz | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | Lw A-wt | |
|---|---|---|---|---|---|---|---|---|---|---|
| Outlet Side | 93.1 | 89.1 | 101.1 | 94.3 | 91.2 | 84.5 | 84.8 | 76.7 | 97.2 | dBA |
| Inlet Side | 93.1 | 89.1 | 101.1 | 94.3 | 91.2 | 84.5 | 84.8 | 76.7 | 97.2 | dBA |

* The fan system effect is taken into account in the fan performance
* The fan calculated for wet conditions

## DOORS (M9)

| ID | Type | Size | Position | Hinge Position | Alignment | Opposing Door |
|---|---|---|---|---|---|---|
| 1 | Standard (Handle + Hinge) | 600 mm x 1,324 mm | Right | Left | Right | |

## ACCESSORIES (M9)

Observation Glass,Lightening



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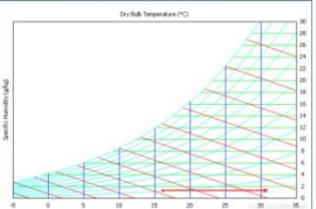
| Project ID | 4148 | Tracking Number | |
| Project Name | SAMPLE PROJECT- | | |
| AHU Name | HYGIENIC - (1 QTY) | | |
| AHU Model | HYGIENIC CASE 170X140 [1400 CHE CWC HWC] | | |

HVACCALC V. | Page 6/15

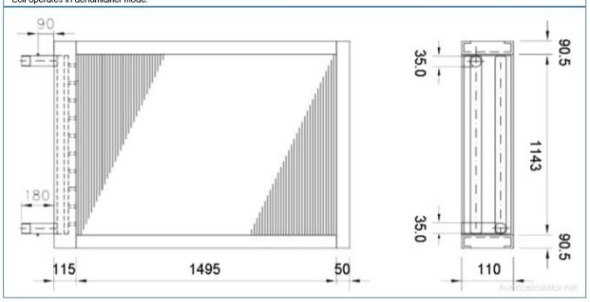
## COIL (Heating) (M5)

| | | | | | |
|---|---|---|---|---|---|
| Air Flow: 14,000 m³/h | Capacity: 62.32 kW | Required Capacity | Face Velocity: 2.28 m/s | Pitch: 3.2 | Quantity: 1 | Section Weight: 71.29 kg |
| Coil Code: Friterm-32 x 28 1/2 36T 1R 1495A 3.2P 6NC | | | Tube Material: Copper | Fin Material: Epoxy Coated Aluminum | Function: Heating |
| Droplet Elimin. / Press. Dep | Condensation Pan / Hmin U-Trap | | Tube Thickness: 0.35 mm | Fin Thickness: 0.12 mm | Mining Rate: 0 % |
| Fluid Kind: WATER | Fluid In / Out: 90/70 °C | | Size (W x H x L) mm: 1,495 x 1,143 x 27.5 | Conn. Material: Copper | Frame Material: Stainless Steel (304) |
| Air Inlet Drybulb Temperature: 16.1 °C | Air Outlet Drybulb Temperature: 30.6 °C | | | | |
| Air Inlet Wetbulb Temperature: 4.7 °C | Air Outlet Wetbulb Temperature: 11.2 °C | | | | |
| Air Inlet Relative Humidity: 11 % | Air Outlet Relative Humidity: 4 % | | | | |
| Air Inlet - Outlet Enthalpy: 19.59 - 34.24 kJ/kg | Fluid Flow / Vol. Flow: 2,672 kg/h / 2,769 dm³/h | | | | |
| Air Press.Drop: 13 Pa | Fluid Press.Drop / Fluid Velocity: 15.30 kPa / 1.04 m/s | | | | |
| Coil Surface Area: 27.26 m² | Tube Inner Volume: 8.86 L | | | | |
| Manifold / Conn.QTY: 1 / 1 | Conn.Direction: Right | | | | |
| Connection Sizes: 35 / 35 mm (1-3/8" DN32 / 1-3/8" DN32) | | | | | |
| Bypass Damper | | | | | |



| Air Condensation | Hygienic | Blygold |
|---|---|---|
| 0.0003 l/h | ☑ | ☐ |

* Coil operates in dehumidifier mode.

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Unit ID: 4148-08-00-010

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| Project ID | 4148 | Tracking Number | |
| Project Name | SAMPLE PROJECT- | | |
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| AHU Model | HYGIENIC CASE 170X140 [1400 CHE CWC HWC] | | |

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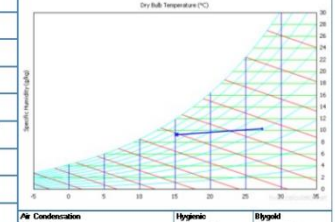
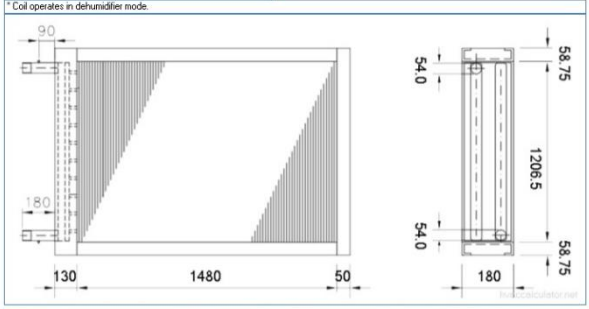
## COIL (Cooling) (Wet Surface) (M6)

| | | | | | |
|---|---|---|---|---|---|
| Air Flow: 14,000 m³/h | Capacity / Sensible: 60.37/50.09 kW | Required Capacity | Face Velocity: 2.18 m/s | Pitch: 3.2 | Quantity: 1 | Section Weight: 264.6 kg |
| Coil Code: Friterm-32 x 28 1/2 38T 4R 1480A 3.2P 19NC | | | Tube Material: Copper | Fin Material: Epoxy Coated Aluminum | Function: Cooling |
| Droplet Elimin. / Press. Dep: Polypropylene / 30 Pa / 19.29 kg / QTY:3 | Condensation Pan / Hmin U-Trap: Stainless Steel (40 mm (ød)) (Connection:Right) (Pressure:Negative) / 138.4 mm | | Tube Thickness: 0.35 mm | Fin Thickness: 0.12 mm | Mining Rate: 0 % |
| Fluid Kind: WATER | Fluid In / Out: 6/12 °C | | Size (W x H x L) mm: 1,480 x 1,207 x 110 | Conn. Material: Copper | Frame Material: Stainless Steel (304) |
| Air Inlet Drybulb Temperature: 27.3 °C | Air Outlet Drybulb Temperature: 15.2 °C | | | | |
| Air Inlet Wetbulb Temperature: 17.8 °C | Air Outlet Wetbulb Temperature: 12.8 °C | | | | |
| Air Inlet Relative Humidity: 41 % | Air Outlet Relative Humidity: 78 % | | | | |
| Air Inlet - Outlet Enthalpy: 53.7 - 38.76 kJ/kg | Fluid Flow / Vol. Flow: 8,629 kg/h / 8,630 dm³/h | | | | |
| Air Press.Drop(Wet/Dry): 46 Pa / 38 Pa | Fluid Press.Drop / Fluid Velocity: 25.59 kPa / 1.03 m/s | | | | |
| Coil Surface Area: 113.9 m² | Tube Inner Volume: 34.28 L | | | | |
| Manifold / Conn.QTY: 1 / 1 | Conn.Direction: Right | | | | |
| Connection Sizes: 54 / 54 mm (2-1/8" DN50 / 2-1/8" DN50) | | | | | |
| Bypass Damper | | | | | |



| Air Condensation | Hygienic | Blygold |
|---|---|---|
| 14.7526 l/h | ☑ | ☐ |

* Coil operates in dehumidifier mode.

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| Project ID | 4148 | Tracking Number | |
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| AHU Name | HYGIENIC - (1 QTY) | | |
| AHU Model | HYGIENIC CASE 170X140 [1400 CHE CWC HWC] | | |

HVACCALC V. | Page 9/15

## DOORS (M6)

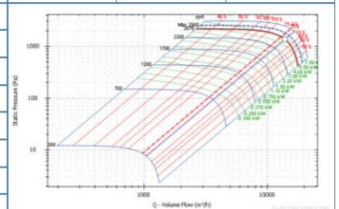
| ID | Type | Size | Position | Hinge Position | Alignment | Opposing Door |
|---|---|---|---|---|---|---|
| 1 | Standard (Handle + Hinge) | 600 mm x 1,324 mm | Right | Right | Right | |

## ACCESSORIES (M6)

Negative Pressure Siphon

## SUPPLY FAN (M4)

| | | | | | |
|---|---|---|---|---|---|
| Air Flow: 14,000 m³/h | Motor Type: AC | Fan Model: EBM Papst-BPHM 500-PM-10 | | Quantity: 1 | Section Weight: 356 kg |
| Internal Static Pressue: 606 Pa | Motor P./Pha./Volt./Freq.: 11 kW/3P/400V/50-VHz | Isolator: Rubber | | Isolator Count: 4 | |
| External Static Pressure: 750 Pa | | Backup Fan: 0 | Backup Motor: 0 | Backup Inverter: 0 | |
| Total Static Pressure: 1,356 Pa | | | | | |
| Total Pressure: 1,356 Pa / System Effect: 10 Pa | | | | | |
| Total / Static Efficiency: 74.81 / 74.81 % | | | | | |
| Shaft Power / Absorbed Pwer: 7.05 / 7.05 kW | Absorbed Power With VFD: 7.05 kW | | | | |
| Fan Speed: 2675 rpm (Max. 2900 rpm) | | | | | |
| | Air Density: 1.0581 kg/m³ | | | | |
| Specific Fan Power (SFPe int): 389 W/(m³/s) | Electrical Current: 10.17 A (Max. 15.88 A) | | | | |



Sound Power Level (dB)

| Hz | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | Lw A-wt | |
|---|---|---|---|---|---|---|---|---|---|---|
| Outlet Side | 99.0 | 85.0 | 92.6 | 96.4 | 94.7 | 89.6 | 88.6 | 82.8 | 98.8 | dBA |
| Inlet Side | 99.0 | 85.0 | 92.6 | 96.4 | 94.7 | 89.6 | 88.6 | 82.8 | 98.8 | dBA |

* The fan system effect is taken into account in the fan performance
* The fan calculated for wet conditions

## DOORS (M4)

| ID | Type | Size | Position | Hinge Position | Alignment | Opposing Door |
|---|---|---|---|---|---|---|
| 1 | Standard (Handle + Hinge) | 600 mm x 1,324 mm | Right | Left | Right | |

## ACCESSORIES (M4)

Observation Glass,Lightening

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# TECHNICAL REPORT PAGES

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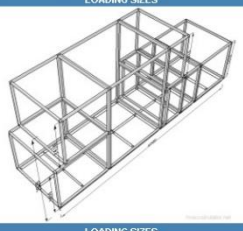
ErP - COMPLIANT TO EUROPEAN DIRECTIVE VENTILATION UNITS (AHU)

Unit ID: 4148-08-00-010

| TECHNICAL DATA | | | |
|---|---|---|---|
| Date | 25/04/2008 | Rev. Date | 14/03/2024 |
| Project ID | 4148 | Tracking Number | |
| Project Name | SAMPLE PROJECT- | | |
| AHU Name | HYGIENIC - (1 QTY) | | |
| AHU Model | HYGIENIC CASE 170 X 140 [1400 CHE CWC HWC] | | |

HVAC CALCULATOR — HVACCALC V. — Page 10/15

## LOADING SIZES



## LOADING SIZES

| Section | Module | Type | Count | Width | Height | Length | Weight | Total Weight |
|---|---|---|---|---|---|---|---|---|
| S1 | | Fan | 1 | 1,810 mm | 1,514 mm | 1,780 mm | 432 kg | 432 kg |
| | 1 pcs. | | | | | 1,780 mm | 432 kg | 432 kg |
| S2 | | Counterflow Heat Exchanger | 1 | 1,750 mm | 2,928 mm | 2,054 mm | 851 kg | 851 kg |
| | 1 pcs. | | | | | 2,054 mm | 851 kg | 851 kg |
| S3 | | Filter | 1 | 1,810 mm | 1,414 mm | 918 mm | 163 kg | 163 kg |
| | 1 pcs. | | | | | 918 mm | 163 kg | 163 kg |
| S4 | | Filter | 1 | 1,810 mm | 1,414 mm | 1,553 mm | 242.4 kg | 242.4 kg |
| | 1 pcs. | | | | | 1,553 mm | 242.4 kg | 242.4 kg |
| S5 | | Heating Coil | 1 | 1,900 mm | 1,514 mm | 205 mm | 71.29 kg | 71.29 kg |
| S5 | | Empty | 1 | 1,810 mm | 1,514 mm | 690 mm | 93.22 kg | 93.22 kg |
| | 2 pcs. | | | | | 895 mm | 164.5 kg | 164.5 kg |
| S6 | | Cooling Coil | 1 | 1,900 mm | 1,514 mm | 690 mm | 264.6 kg | 264.6 kg |
| | 1 pcs. | | | | | 690 mm | 264.6 kg | 264.6 kg |
| S7 | | Fan | 1 | 1,810 mm | 1,514 mm | 1,590 mm | 356 kg | 356 kg |
| | 1 pcs. | | | | | 1,590 mm | 356 kg | 356 kg |
| 7 pcs. | 8 pcs. | | | | | | 2,474 kg | 2,474 kg |

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ErP 2018 & 2016

ErP - COMPLIANT TO EUROPEAN DIRECTIVE VENTILATION UNITS (AHU)

Unit ID: 4148-08-00-010

TECHNICAL DATA — Date 25/04/2008 | Rev. Date 14/03/2024 | Project ID 4148 | Tracking Number | Project Name SAMPLE PROJECT- | AHU Name HYGIENIC - (1 QTY) | AHU Model HYGIENIC CASE 170 X 140 [1400 CHE CWC HWC]

HVAC CALCULATOR — HVACCALC V. — Page 11/15

## Ecodesign Requirements Table

| | | Value | | 2016 | 2018 |
|---|---|---|---|---|---|
| | Product | HYGIENIC CASE | | | |
| | Erp | 2018 | | | |
| A | Manufacturer | Demo | | | |
| B | Model Identifier | HYGIENIC CASE 170 X 140 [1400 CHE CWC HWC] | | | |
| C | ErP Code | NRVU - BVU | | | |
| D | Type Of Drive | Variable Speed Drive (VSD) | Variable Speed Drive (VSD) | Required | Required |
| E | Type Of HRS | Counterflow | | | |
| | HRS Damper | Exists | | Required | Required |
| F | Thermal Efficiency of HRS | 73.80 % | | >= 67 % | >= 73 % |
| G | Nominal Flow Rate | 3.89 m³/s | 3.89 m³/s | | |
| H | Effective Electrical Power Input | 7.05 kW | 5.3 kW | | |
| I | SFPint | 389 W/(m³/s) | 399 W/(m³/s) | <= 1104 | <= 824 |
| J | Face Velocity | 1.77 m/s | 1.77 m/s | | |
| K | Nominal External Drop Δps, Ext | 750 Pa | 600 Pa | | |
| L | Internal Pressure Drop Δps, Int | 606 Pa | 394 Pa | | |
| M | Additional Pressure Drop Δps, Add | 0 Pa | 0 Pa | | |
| N | Static Fan Efficiency EC327/2011 | 74.81 % | 72.99 % | | |
| O | Declared Maximum Internal Leakage Rate | 1.00 % | | | |
| P | Energy Performance Of Filters | A+ | D | | |
| Q | Description Of Visual Filter Warning | Manometer Pressure Gauge | Manometer Pressure Gauge | | Required |
| R | Casing Sound Power Level (Lwa) | 67.6 dBA | | | |
| S | Internet Address Of Instructions | smartprojectdesigner.com | | | |

## EUROVENT HYGIENE COMPLIANCE (Level 3)

| Code | Explanation | Level 1 | Level 2 | Level 3 |
|---|---|---|---|---|
| R4 | Flat packing delivery of units is not allowed. In order to comply with restricted buildings accesses or transportation limits, units might be delivered in sections, blocks or sub-assemblies to be assembled together on site. In that case, the assembly method shall be explained in the IOM or the site assembly to be performed by personally trained by the manufacturers.<br>Level 1, 2 & 3: Procedure shall be included in the quality system of the manufacturer. In case of blocks or sub-assemblies delivery, requirements must be included in the IOM of the manufacturer or evidence showing that a qualified person is in charge of the assembly shall be provided. | Compliant | Compliant | Compliant |
| R14 | Every component selected in the software (air filters, heat exchangers (energy recovery systems and coils, droplet separators, fans, humidifiers, dehumidifiers, silencers, dampers) shall be installed within/inside the AHU.<br>Level 1, 2 & 3: Requirement applied | Compliant | Compliant | Compliant |

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Unit ID: 4148-08-00-010

TECHNICAL DATA — Date 25/04/2008 | Rev. Date 14/03/2024 | Project ID 4148 | Tracking Number | Project Name SAMPLE PROJECT- | AHU Name HYGIENIC - (1 QTY) | AHU Model HYGIENIC CASE 170 X 140 [1400 CHE CWC HWC]

HVAC CALCULATOR — HVACCALC V. — Page 12/15

| | | | | |
|---|---|---|---|---|
| R21 | Any component as defined under R20 shall be quickly removable.<br>A component designed for the purpose of IMC as ""quickly removable" shall have a weight of a maximum of 25 kg. Quickly removable means that after opening the access door or hatch, the component is directly removable within a short time.<br>Note: For that reason, water or a refrigerant coil cannot be claimed as ""quickly removable"". It is not allowed, that other installation (cables, instruments...) hinder the quick removal of the component.<br>Level 1, 2 & 3: Requirement applied | Compliant | Compliant | Compliant |
| R25 | Droplet separators downstream cooling coils shall be easily accessible and quickly removable or alternatively have an access door and plenum between cooling coils and droplet separator as defined in APPENDIX A. In case that there is no compliant space<br>between cooling coil and droplet separator and the droplet separator itself is easily removable, the length (in air direction) of the removed droplet separator can be used as available length for IMC of the cooling coil.<br>Level 1, 2 & 3: Requirement applied | Compliant | Compliant | Compliant |
| R26 | For easy removal of droplet separators, these shall be side removable in parts with a maximum weight of 25 kg and maximum width of 1000 mm.<br>Level 1, 2 & 3: Requirement applied | Compliant | Compliant | Compliant |
| R27 | Filter change shall be possible from the dirty air side or by side removal. The installed filter frame shall correspond to the filter class installed and the manufacturer shall be certified minimum for the installed filter bypass leakage. In any case, the requirements for sufficient space and easy access for IMC shall be maintained.<br>Level 1: Requirement applied<br>Level 2 & 3: Requirement applied and the complete filter(s) frame shall be sealed to the casing<br>frame | Compliant | Compliant | Compliant |
| R30 | To avoid condensation, the certified model box shall have a minimum thermal bridging class of X Published July 2018 Page 11 of 19<br>Level 1 &2: X = TB3<br>Level 3: X = TB2 | Compliant | Compliant | Compliant |
| R31 | The certified model box shall have at least a tightness class of X and the Real Unit shall have at least a tightness class of Y.<br>Level 1 & 2: X = L2 (M) & Y = L2 (R)<br>Level 3: X = L1 (M) & Y = L1 (R) L1 ® | Compliant | Compliant | Compliant |
| R33 | Drain pipes of the unit shall have a diameter of at least 40 mm and sufficient slope and run via a siphon with free discharge into the sewer system. Backflow protection is mandatory for negative pressures. In case it is not provided by the manufacturer, it shall be stated in the<br>IOM.<br>Level 1, 2 & 3: Requirement applied | Compliant | Compliant | Compliant |
| R34 | Drains with positive and negative pressure levels shall be constructed separately with each having an individual siphon.<br>Level 1, 2 & 3: Requirement applied | Compliant | Compliant | Compliant |
| R36 | A minimum M5 filtration stage shall be installed upstream of any component (except dampers or filter pre-heater)<br>Level 1, 2 & 3: Requirement applied | Compliant | Compliant | Compliant |

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HVAC CALCULATOR — HVACCALC V. — Page 13/15

| | | | | |
|---|---|---|---|---|
| R37 | Air filters shall be selected and arranged in order to ensure a good incoming air quality (as a minimum). The filter efficiency according to EN 16890:2016 of the filters shall be certified by a certification body accredited ISO 17065:2012. Level 1 & 2: The filtration efficiency at 0.4 µm of all filters installed shall be equivalent to an ePM10 50% filter on the exhaust side and to an ePM1 50% filter on the supply side. Level 3: The filtration efficiency at 0.4 µm of all filters installed shall be equivalent to an ePM10 50% filter on the exhaust side and to an ePM1 85% filter on the supply side. | Compliant | Compliant | Compliant |
| R39 | Bag filter must be in the vertical position (this requirement does not apply to rigid filters). It shall be clearly indicated in the IOM that the filter shall always be in a vertical position, it is also recommended to put a label on the unit.<br>Level 1, 2 & 3: Requirement applied | ..... | ..... | ..... |
| R41 | Each filter stage shall be equipped with a differential pressure gauge. The measuring display device shall be easily accessible and easily readable by future users.<br>Level 1 & 2: For each filter visual signaling or an alarm in the control system is mandatory. For units to be installed outdoor liquid manometer is not allowed.<br>Level 3: For each filter an alarm in the control system is mandatory. For units to be installed the outdoor liquid manometer is not allowed.<br>Note: Should the control system be delivered by the manufacturer, the requirements apply. Should they not, the requirement shall be written in the IOM. | Compliant | Compliant | Compliant |
| R42 | The supply-side shall be filtered by two filter stages.<br>Level 1: No requirements<br>Level 2 & 3: Requirement applied and the first stage of filter class shall be at least M5.<br>Note: if a third stage filter is required, it can be present within the unit or outside the unit. Therefore this is not in the scope of this program. | Compliant | Compliant | Compliant |
| R43 | Recirculated air shall be filtered with the same requirement as defined under R36 for the supply air filter.<br>Level 1 & 2: Requirement applied<br>Level 3: No recirculated air shall be allowed. | Compliant | Compliant | Compliant |
| R44 | For energy and hygiene reasons the distance between the fins of the coolers that can dehumidify shall be at a minimum Y mm, otherwise, the distance between fins shall be at a minimum X mm. Published July 2018 Page 13 of 19<br>Note: This applies also to cooling coil within run around coil<br>Level 1 & 2: Xmin = 2.0 mm and Ymin = 2.5 mm<br>Level 3: Xmin = 2.5 m and Ymin = 3.0 mm | Compliant | Compliant | Compliant |
| R45 | Air heaters, which are used for drying before the first filter stage, shall guarantee a minimum distance between the fins of at least 4 mm.<br>Level 1, 2 & 3: Requirement applied | ..... | ..... | ..... |
| R46 | The fins shall have a thickness of X.<br>Level 1, 2 & 3: Xmin = 0.1 mm | Compliant | Compliant | Compliant |
| R47 | For hygiene reasons, coolers with dehumidification shall not be arranged immediately before air filters or silencers. Fans, heaters or droplet separators shall be installed in between to limit the relative humidity. Selection software to alert the user that cooler with dehumidification shall not be arranged immediately before air filters or silencers<br>Level 1, 2 & 3: Requirement applied | Compliant | Compliant | Compliant |
| R48 | For clean application, humidifier shall be installed with at least an element (Coil, fan, heat exchanger, droplet separator) between the humidifier and final filter or silencers. A maximum of 90% RH is allowed before each filter section or silencer.<br>Level 1, 2 & 3: Requirement must be included in the IOM of the product | Compliant | Compliant | Compliant |

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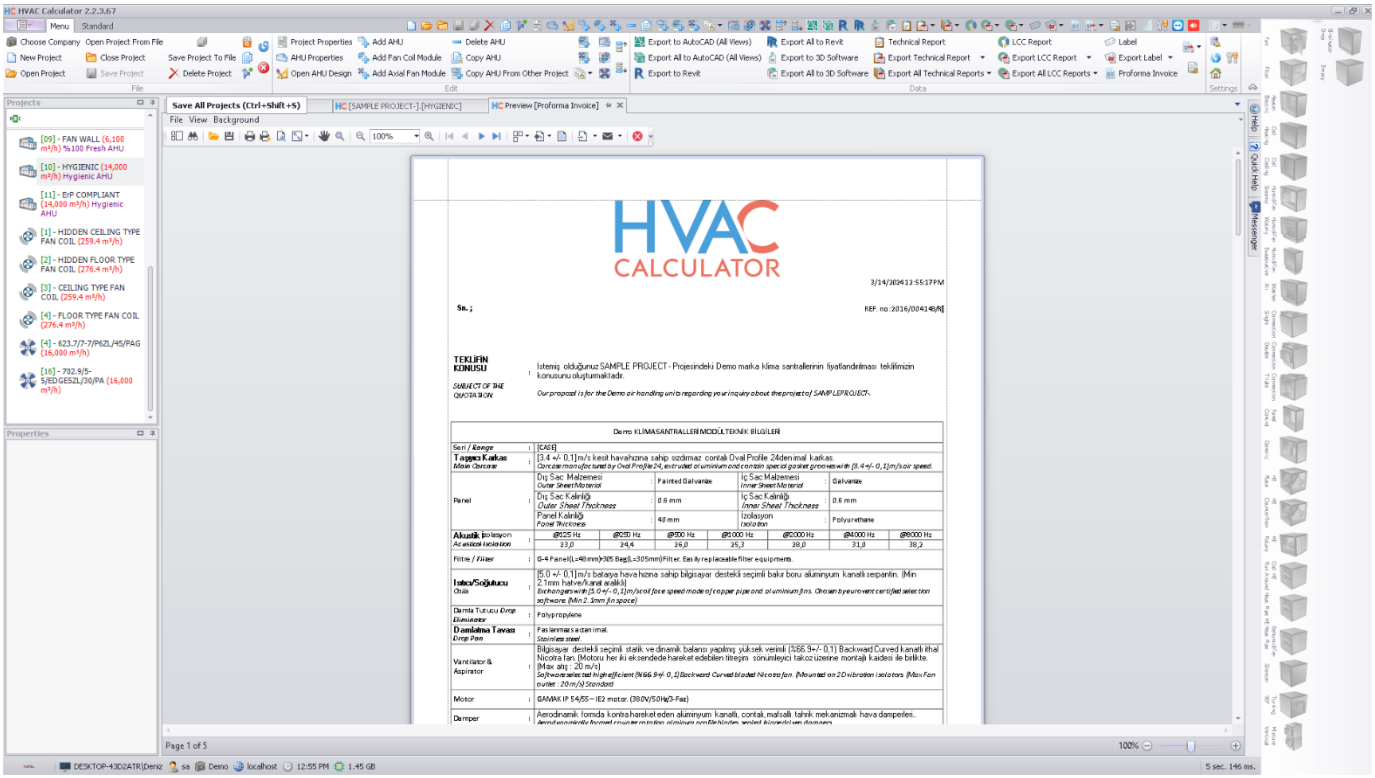
Designer: Cuong Nguyen Huu — 14.03.2024

# PROFORMA INVOICE

You can prepare a special design of proforma invoice and generate your proforma invoices via the selection software. You can export the proforma invoice as PDF, Excel, Word or Html file formats. You can also send the file in that format via e-mail from the program.



# PROFORMA INVOICE PAGES

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Sn. ;

REF. no :2016/000149/RJ

**TEKLİFİN KONUSU** / *SUBJECT OF THE QUOTATION* : İstemiş olduğunuz SAMPLE PROJECT - Projesindeki Demo marka klima santrallerinin fiyatlandırılması teklifimizin konusunu oluşturmaktadır.

*Our proposal is for the Demo air handling units regarding your inquiry about the project of SAMPLEPROJECT-.*

| Demo KLİMA SANTRALLERİ MODÜL TEKNİK BİLGİLERİ | | | | | | | |
|---|---|---|---|---|---|---|---|
| Seri / *Range* | [CASE] | | | | | | |
| **Taşıyıcı Karkas** / *Main Carcase* | [3.4 +/- 0,1] m/s kesit havahızına sahip sızdırmaz contalı Oval Profile 24den imal karkas. *Carcase manufactured by Oval Profile 24, extruded aluminium and contain special gasket grooves with [3.4+/- 0,1]m/s air speed.* | | | | | | |
| Panel | Dış Sac Malzemesi / *Outer Sheet Material* : Painted Galvanize | | | İç Sac Malzemesi / *Inner Sheet Material* : Galvaniz | | | |
| | Dış Sac Kalınlığı / *Outer Sheet Thickness* : 0.6 mm | | | İç Sac Kalınlığı / *Inner Sheet Thickness* : 0.6 mm | | | |
| | Panel Kalınlığı / *Panel Thickness* : 40 mm | | | İzolasyon / *Isolation* : Polyurethane | | | |
| **Akustik** İzolasyon / *Acustical Isolation* | @125 Hz | @250 Hz | @500 Hz | @1000 Hz | @2000 Hz | @4000 Hz | @8000 Hz |
| | 23,0 | 24,4 | 26,0 | 25,3 | 28,0 | 31,0 | 39,2 |
| Filtre / *Filter* | G-4 Panel (L=48mm)+305 Bag (L=305mm) Filter. Easily replaceable filter equipments. | | | | | | |
| **Isıtıcı/Soğutucu** / *Coils* | [5.0 +/- 0,1] m/s batarya hava hızına sahip bilgisayar destekli seçimli bakır boru alüminyum kanatlı serpantin. (Min 2.1mm hatve/kanat aralıklı) *Exchangers with (5.0 +/- 0,1)m/s coil face speed made of copper pipe and aluminium fins. Chosen by eurovent certified selection software (Min 2.1mm fin space)* | | | | | | |
| Damla Tutucu *Drop Eliminator* | Polypropylene | | | | | | |
| **Damlalma Tavası** / *Drop Pan* | Paslanmaz sactan imal. *Stainless steel.* | | | | | | |
| Vantilator & Aspirator | Bilgisayar destekli seçimli statik ve dinamik balansı yapılmış yüksek verimli [%66.9+/- 0,1] Backward Curved kanatlı ithal Nicotra fan. (Motoru her iki ek.sendede hareket edebilen titreşim sönümleyici takoz üzerine montajlı kaidesi ile birlikte. (Max ahş : 20 m/s) *Software selected high efficient (%66.9+/- 0,1) Backward Curved bladed Nicotra fan. (Mounted on 2 D vibration isolators. (Max Fan outlet : 20 m/s) Standard* | | | | | | |
| Motor | GAMAK IP 54/55 – IE2 motor. (380V/50Hz/3-Faz) | | | | | | |
| Damper | Aerodinamik formda kontra hareket eden alüminyum kanatlı, contalı, mafsallı tahrik mekanizmalı hava damperleri. *Aerodynamically formed counter rotating aluminum profile blades, sealed, hinge driven dampers* | | | | | | |
| **Isı Geri Kazanım** / *Heat Recovery* | İstenen santrallerde yüksek verimli: Rotorlu/Döner Tamburlu - Plakalı/Çapraz Akışlı ısı geri kazanım ünitesi kullanılmıştır. (Verim boş gözükenciholar projede kullanılmamıştır.) | | | | | | |
| | Rotor verimi : Recuperator Rotor verimi / *Efficiency* : (%73...All) | | | | | | |
| | Plaka verimi : Recuperator Plaka verimi / *Efficiency* : (%47...) | | | | | | |
| Aksesuarlar & Notlar / Accessories & Notes | ... -mm - dB yutumlu ses tutucu *dB absorbing silencers* -İstenirse Standard marka Frekans invertörü *Frequency drives* *if included -100 mm kaide. mm high pedestal.* | | | | | | |
| FİYAT | | | | | | | Fiyatlarımıza K.D.V. - Ö.T.V. dahil değildir |



| | |
|---|---|
| PRICE | Taxes are excluded. |
| ÖDEME ŞEKLİ / *PAYMENT TERMS* | |

Ödemeler, ödeme tarihindeki Merkez Bankası Döviz Satış Kuru üzerinden Türk Lirası'na çevrilerek yapılacaktır. Faturaya esas kur, fatura kesim tarihindeki Merkez Bankası Döviz Satış Kuru (Bakiyenin ödenmesine esas kur) ile diğer ödeme tarihlerindeki kurların ağırlıklı ortalaması alınarak belirlenecek ve fatura düzenlenecektir. Bahsedilen miktarın vadesinde ödenmemesi üzerine, şirketimiz herhangi bir sorumluluk doğurmaksızın siparişi iptal etme ve cihaza yeniden sahibi olma veya cihazın ücretinin derhal ödenmesini talep etme hakkını saklı tutar.

*Payments will be done according to the Foreign Exchange Rates of Central Bank at the invoice dates. Upon the payments are overdue without any responsibilities, our company holds the right to cancel the order and device again or reserves the right to claim the payment of the device immediatly.*

| | |
|---|---|
| TESLİMAT / *Delivery Terms* | |

Teslimat tarihleri fikir verici nitelikte olacak; teklif konusu cihazlar karşılıklı görüşmelerimiz sonucu belirlenen tarihte teslim edilecektir. (İmalat çizimlerinin onayından sonra haftada teslim edilecektir.).

*Delivery dates will be on the suggestive nature; The quoted materials will be ready for picking up by your for order in weeks after the receipt of purchase order. Costs born from late pick up by the client will be charged.*

Şirketimizin kontrolü dışındaki herhangi bir sebepten dolayı cihazın vadesinde teslim edilememesi durumunda, şirketimiz, Alıcı'nın da onayı üzerine, söz konusu cihazı, riskleri ve masrafları Alıcı'ya ait olmak üzere depolayacaktır ve gerekirse kullanacaktır. Alıcı teslimat tarihinden itibaren satılan cihaza ilgili tüm riskleri ve bununla ilgili tüm masrafları üstlenecektir. Ancak, mülkiyet, ödemenin tamamı gerçekleştiğinde alıcıya geçecektir.

*Delivery dates will be on the suggestive nature; The quoted materials will be ready for picking up by your for order in weeks after the receipt of purchase order. Costs born from late pick up by the client will be charged.*

| | |
|---|---|
| HARİÇ OLAN İŞLER / *EXCLUDED WORKS* | |

| | |
|---|---|
| GARANTİ KAPSAMI / *WARRANTY TERMS* | Teklif konusu cihazlar;<br>• Alıcının veya üçüncü kişinin ürünü uygun koşullarda muhafaza etmemesi,<br>• Şirketimizin teknik özelliklerine, kabul edilmiş mühendislik standartlarına montaj devreye alma ,<br>• ve bakım kitapçığına uygun montaj yapılmaması,<br>• Şirketimizin yazılı izni olmaksızın Alıcı veya üçüncü kişi tarafından ,<br>• cihazda tadilat,<br>• Cihazın hatalı kullanılması veya cihaza yanlış bakım yapılması,<br>• Kötü su arıtımı,<br>• Uygun olmayan elektrik enerjisi bağlantısı<br><br>haricinde kapasite, malzeme, üretim hatalarına karşı (işletme ve bakım hataları hariç) teslim tarihinden itibaren iki yıl (24 ay), devreye alma tarihinden itibaren 18 ay garantimiz altındadır. Normal aşınmaya maruz parçaların aşınması ve bozulması garantimiz kapsamı dışındadır. Paslanmaya karşı veya yasal düzenlemelere istinaden kullanılan ikame malzemenin uygunluğuna yönelik garanti verilmemiştir. Alıcı, ürünlerin imalatçı tüm eksiklik, hata ve kusurları, bu eksiklik, hata veya kusurların ortaya çıkmasından itibaren iki hafta içinde şirketimize'e yazılı olarak bildirecektir. Söz konusu bildirim yapılmadığı takdirde Alıcı ürün garantisinden yararlanma hakkını kaybeder. Ürünlerin bedeli ödenmedikçe şirketimizi n herhangi bir sorumluluğu olmayacaktır. |



*Our guarantee term are valid as long as the installation and assembly are made according to accepted engineering standards and user's manual of our products are guaranteed for poor labor ship for 28 months from the delivery and two years (24 months) from the start up date whichever is earlier. Our guarantee excludes;*

- *Mishandling or improper maintenance of the device,*
- *Poor water treatment,*
- *Improper electric energy supply connection,*
- *Corrosion of materials used with reference,*

| | |
|---|---|
| KABUL ve GEÇERLİLİK / *VALIDITY* | Teklifimiz 15 gün süre ile geçerlidir. Söz konusu bir sipariş şirketimizin yazılı olarak kabulüne tabidir. Aksi açıkça belirtilmedikçe, belirtilmiş olan fiyatlar sadece teklif niteliğindedir ve her zaman önceden bildirilmeksizin güncelleştirilebilir. Sipariş üzerine sevkedilen malların Alıcı tarafından kabulü, her halükarda, iş bu satış koşullarının ikrazsız kabul edildiği anlamına gelecektir.<br>*Our proposal is valid for 15 days. Orders are subject to acceptance of our company in writing. Unless explicitly stated otherwise, the prices stated are purely for offer purposes and can be updated any time without notice after validity duration is exceeded. In case of acception of the offer, the term and conditions in the proposal will be deemed valid without any objection.* |

Teklifimizin uygun karşılanacağını ümit eder, esenlikler dileriz.

Saygılarımızla,
*Regards,*
Cuong Nguyen Huu

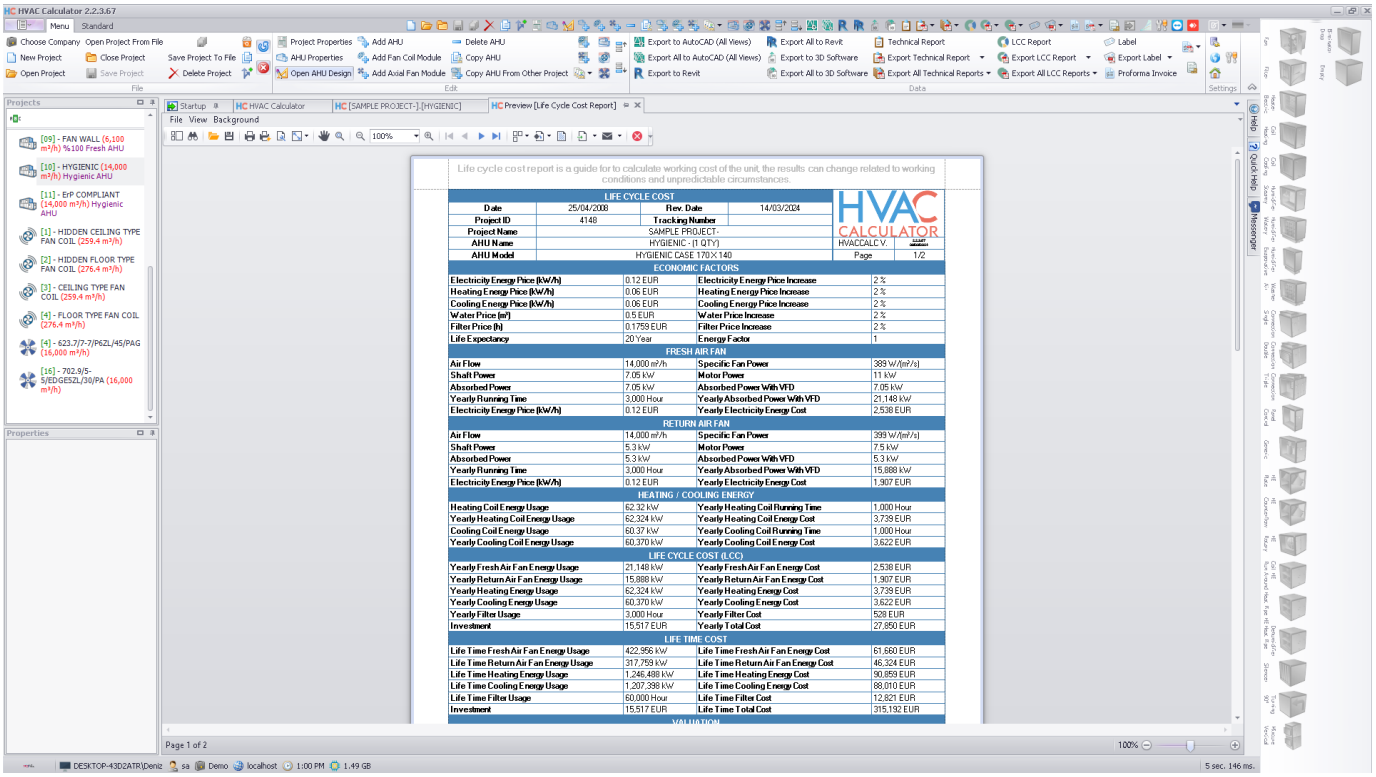
| AHU | Air Flow | Model | Quantity | Price (EUR) | Total (EUR) |
|---|---|---|---|---|---|
| HORSE SHOE HEAT PIPE | 6,100 m³/h | CASE 140 X 110 - (W 1,474xH 1,180xL 2,307) | 1 | 2,028 | 2,028 |
| | | | | (EUR) | 2,028 |
| **%100 Fresh AHU** | | | | | |
| **AHU** | **Air Flow** | **Model** | **Quantity** | **Price (EUR)** | **Total (EUR)** |
| %100 FRESH | 6,100 m³/h | CASE 080 X 080 - (W 950xH 900xL 3,362) | 1 | 1,253 | 1,253 |
| FAN WALL | 6,100 m³/h | CASE 140 X 110 - (W 1,564xH 1,180xL 2,193) | 1 | 2,955 | 2,955 |
| | | | | (EUR) | 4,208 |
| **AHU with Counterflow Heat Exchanger** | | | | | |
| **AHU** | **Air Flow** | **Model** | **Quantity** | **Price (EUR)** | **Total (EUR)** |
| COUNTERFLOW HEAT RECOVERY | 14,000 m³/h | CASE 230 X 200 - (W 2,050xH 2,500xL 6,059) | 1 | 7,125 | 7,125 |
| | | | | (EUR) | 7,125 |



| AHU with Plate Heat Exchanger | | | | | |
|---|---|---|---|---|---|
| **AHU** | **Air Flow** | **Model** | **Quantity** | **Price (EUR)** | **Total (EUR)** |
| PLATE HEAT RECOVERY | 14,000 m³/h | CASE 230 X 200 - (W 2,050xH 2,500xL 5,610) | 1 | 4,679 | 4,679 |
| | | | | (EUR) | 4,679 |
| **AHU with Rotary Heat Exchanger** | | | | | |
| **AHU** | **Air Flow** | **Model** | **Quantity** | **Price (EUR)** | **Total (EUR)** |
| ROTARY HEAT RECOVERY | 8,000 m³/h | CASE 170 X 140 - (W 1,910xH 2,260xL 3,811) | 1 | 4,434 | 4,434 |
| | | | | (EUR) | 4,434 |
| **AHU with Run-Around Coil (RC/EF)** | | | | | |
| **AHU** | **Air Flow** | **Model** | **Quantity** | **Price (EUR)** | **Total (EUR)** |
| RUN AROUND COIL HEAT RECOVERY | 22,000 m³/h | CASE 200 X 170 - (W 2,136xH 1,850xL 4,329) | 1 | 10,027 | 10,027 |
| | | | | (EUR) | 10,027 |
| **Hygienic AHU** | | | | | |
| **AHU** | **Air Flow** | **Model** | **Quantity** | **Price (EUR)** | **Total (EUR)** |
| HYGIENIC | 14,000 m³/h | HYGIENIC CASE 170 X 140 - (W 1,900xH 2,928xL 7,009) | 1 | 15,517 | 15,517 |
| ErP COMPLIANT | 14,000 m³/h | CASE 170 X 140 - (W 1,900xH 2,928xL 7,393) | 1 | 13,238 | 13,238 |
| | | | | (EUR) | 28,755 |
| **Mixture AHU** | | | | | |
| **AHU** | **Air Flow** | **Model** | **Quantity** | **Price (EUR)** | **Total (EUR)** |
| MIXTURE | 29,000 m³/h | CASE 200 X 200 - (W 2,136xH 2,286xL 6,084) | 1 | 5,763 | 5,763 |
| VERTICAL MIXTURE | 10,000 m³/h | CASE 140 X 110 - (W 1,850xH 2,260xL 4,196) | 1 | 3,310 | 3,310 |
| | | | | (EUR) | 9,073 |
| | | | | Total Offer Price (EUR) | 70,329 |
| **Fan Coil** | **Air Flow** | **Model** | **Quantity** | **Price (EUR)** | **Total (EUR)** |
| HIDDEN CEILING TYPE FAN COIL | 259.4 m³/h | HIDDEN CEILING TYPE - TWO PIPE HIDDEN CEILING TYPE - FNCL-HCT-0-(2)-(2)-32-L-R | 1 | 114 | 114 |
| HIDDEN FLOOR TYPE FAN COIL | 276.4 m³/h | HIDDEN FLOOR TYPE - TWO PIPE HIDDEN FLOOR TYPE - FNCL-HFT-(2)-(2)-50-L-R | 1 | 130 | 130 |
| CEILING TYPE FAN COIL | 259.4 m³/h | CEILING TYPE - TWO PIPE CEILING TYPE - FNCL-CT-0-(2)-(2)-32-L-R | 1 | 136 | 136 |

# LIFE CYCLE COST REPORT

You can get the LCC report for the AHU, it includes all the cost details of the AHU with the time plan. You can export the proforma invoice as PDF, Excel, Word or Html file formats. You can also send the file in that format via e-mail from the program.



Life cycle cost report is a guide for to calculate working cost of the unit, the results can change related to working conditions and unpredictable circumstances.

| LIFE CYCLE COST | | | |
|---|---|---|---|
| Date | 25/04/2008 | Rev. Date | 14/03/2024 |
| Project ID | 4148 | Tracking Number | |
| Project Name | SAMPLE PROJECT- | | |
| AHU Name | HYGIENIC - (1 QTY) | HVACCALC V. | |
| AHU Model | HYGIENIC CASE 170X140 | Page | 1/2 |

| ECONOMIC FACTORS | | | |
|---|---|---|---|
| Electricity Energy Price (kW/h) | 0.12 EUR | Electricity Energy Price Increase | 2 % |
| Heating Energy Price (kW/h) | 0.06 EUR | Heating Energy Price Increase | 2 % |
| Cooling Energy Price (kW/h) | 0.06 EUR | Cooling Energy Price Increase | 2 % |
| Water Price (m³) | 0.5 EUR | Water Price Increase | 2 % |
| Filter Price (h) | 0.1759 EUR | Filter Price Increase | 2 % |
| Life Expectancy | 20 Year | Energy Factor | 1 |
| **FRESH AIR FAN** | | | |
| Air Flow | 14,000 m³/h | Specific Fan Power | 399 W/(m³/s) |
| Shaft Power | 7.05 kW | Motor Power | 11 kW |
| Absorbed Power | 7.05 kW | Absorbed Power With VFD | 7.05 kW |
| Yearly Running Time | 3,000 Hour | Yearly Absorbed Power With VFD | 21,148 kW |
| Electricity Energy Price (kW/h) | 0.12 EUR | Yearly Electricity Energy Cost | 2,538 EUR |
| **RETURN AIR FAN** | | | |
| Air Flow | 14,000 m³/h | Specific Fan Power | 399 W/(m³/s) |
| Shaft Power | 5.3 kW | Motor Power | 7.5 kW |
| Absorbed Power | 5.3 kW | Absorbed Power With VFD | 5.3 kW |
| Yearly Running Time | 3,000 Hour | Yearly Absorbed Power With VFD | 15,888 kW |
| Electricity Energy Price (kW/h) | 0.12 EUR | Yearly Electricity Energy Cost | 1,907 EUR |
| **HEATING / COOLING ENERGY** | | | |
| Heating Coil Energy Usage | 62.32 kW | Yearly Heating Coil Running Time | 1,000 Hour |
| Yearly Heating Coil Energy Usage | 62,324 kW | Yearly Heating Coil Energy Cost | 3,739 EUR |
| Cooling Coil Energy Usage | 60.37 kW | Yearly Cooling Coil Running Time | 1,000 Hour |
| Yearly Cooling Coil Energy Usage | 60,370 kW | Yearly Cooling Coil Energy Cost | 3,622 EUR |
| **LIFE CYCLE COST (LCC)** | | | |
| Yearly Fresh Air Fan Energy Usage | 21,148 kW | Yearly Fresh Air Fan Energy Cost | 2,538 EUR |
| Yearly Return Air Fan Energy Usage | 15,888 kW | Yearly Return Air Fan Energy Cost | 1,907 EUR |
| Yearly Heating Energy Usage | 62,324 kW | Yearly Heating Energy Cost | 3,739 EUR |
| Yearly Cooling Energy Usage | 60,370 kW | Yearly Cooling Energy Cost | 3,622 EUR |
| Yearly Filter Usage | 3,000 Hour | Yearly Filter Cost | 528 EUR |
| Investment | 15,517 EUR | Yearly Total Cost | 27,850 EUR |
| **LIFE TIME COST** | | | |
| Life Time Fresh Air Fan Energy Usage | 422,956 kW | Life Time Fresh Air Fan Energy Cost | 51,660 EUR |
| Life Time Return Air Fan Energy Usage | 317,759 kW | Life Time Return Air Fan Energy Cost | 46,324 EUR |
| Life Time Heating Energy Usage | 1,246,488 kW | Life Time Heating Energy Cost | 90,859 EUR |
| Life Time Cooling Energy Usage | 1,207,398 kW | Life Time Cooling Energy Cost | 88,010 EUR |
| Life Time Filter Usage | 60,000 Hour | Life Time Filter Cost | 12,821 EUR |
| Investment | 15,517 EUR | Life Time Total Cost | 315,192 EUR |
| **VALUATION** | | | |

# LIFE CYCLE COST REPORT PAGES

Life cycle cost report is a guide for to calculate working cost of the unit, the results can change related to working conditions and unpredictable circumstances.

| LIFE CYCLE COST | | | | HVAC CALCULATOR |
|---|---|---|---|---|
| Date | 25/04/2008 | Rev. Date | 14/03/2024 | |
| Project ID | 4148 | Tracking Number | | |
| Project Name | SAMPLE PROJECT- | | | |
| AHU Name | HYGIENIC - (1 QTY) | | | HVACCALC V. |
| AHU Model | HYGIENIC CASE 170X140 | | | Page 1/2 |

| ECONOMIC FACTORS | | | |
|---|---|---|---|
| Electricity Energy Price (kW/h) | 0.12 EUR | Electricity Energy Price Increase | 2 % |
| Heating Energy Price (kW/h) | 0.06 EUR | Heating Energy Price Increase | 2 % |
| Cooling Energy Price (kW/h) | 0.06 EUR | Cooling Energy Price Increase | 2 % |
| Water Price (m³) | 0.5 EUR | Water Price Increase | 2 % |
| Filter Price (h) | 0.1759 EUR | Filter Price Increase | 2 % |
| Life Expectancy | 20 Year | Energy Factor | 1 |
| **FRESH AIR FAN** | | | |
| Air Flow | 14,000 m³/h | Specific Fan Power | 389 W/(m³/s) |
| Shaft Power | 7.05 kW | Motor Power | 11 kW |
| Absorbed Power | 7.05 kW | Absorbed Power With VFD | 7.05 kW |
| Yearly Running Time | 3,000 Hour | Yearly Absorbed Power With VFD | 21,148 kW |
| Electricity Energy Price (kW/h) | 0.12 EUR | Yearly Electricity Energy Cost | 2,538 EUR |
| **RETURN AIR FAN** | | | |
| Air Flow | 14,000 m³/h | Specific Fan Power | 399 W/(m³/s) |
| Shaft Power | 5.3 kW | Motor Power | 7.5 kW |
| Absorbed Power | 5.3 kW | Absorbed Power With VFD | 5.3 kW |
| Yearly Running Time | 3,000 Hour | Yearly Absorbed Power With VFD | 15,888 kW |
| Electricity Energy Price (kW/h) | 0.12 EUR | Yearly Electricity Energy Cost | 1,907 EUR |
| **HEATING / COOLING ENERGY** | | | |
| Heating Coil Energy Usage | 62.32 kW | Yearly Heating Coil Running Time | 1,000 Hour |
| Yearly Heating Coil Energy Usage | 62,324 kW | Yearly Heating Coil Energy Cost | 3,739 EUR |
| Cooling Coil Energy Usage | 60.37 kW | Yearly Cooling Coil Running Time | 1,000 Hour |
| Yearly Cooling Coil Energy Usage | 60,370 kW | Yearly Cooling Coil Energy Cost | 3,622 EUR |
| **LIFE CYCLE COST (LCC)** | | | |
| Yearly Fresh Air Fan Energy Usage | 21,148 kW | Yearly Fresh Air Fan Energy Cost | 2,538 EUR |
| Yearly Return Air Fan Energy Usage | 15,888 kW | Yearly Return Air Fan Energy Cost | 1,907 EUR |
| Yearly Heating Energy Usage | 62,324 kW | Yearly Heating Energy Cost | 3,739 EUR |
| Yearly Cooling Energy Usage | 60,370 kW | Yearly Cooling Energy Cost | 3,622 EUR |
| Yearly Filter Usage | 3,000 Hour | Yearly Filter Cost | 528 EUR |
| Investment | 15,517 EUR | Yearly Total Cost | 27,850 EUR |
| **LIFE TIME COST** | | | |
| Life Time Fresh Air Fan Energy Usage | 422,956 kW | Life Time Fresh Air Fan Energy Cost | 61,660 EUR |
| Life Time Return Air Fan Energy Usage | 317,759 kW | Life Time Return Air Fan Energy Cost | 46,324 EUR |
| Life Time Heating Energy Usage | 1,246,488 kW | Life Time Heating Energy Cost | 90,859 EUR |
| Life Time Cooling Energy Usage | 1,207,398 kW | Life Time Cooling Energy Cost | 88,010 EUR |
| Life Time Filter Usage | 60,000 Hour | Life Time Filter Cost | 12,821 EUR |
| Investment | 15,517 EUR | Life Time Total Cost | 315,192 EUR |
| **VALUATION** | | | |
| Investment (I) | 15,517 EUR | Energy Cost (E) | 11,806 EUR |
| Water Cost (W) | 0 EUR | Filter Cost (F) | 528 EUR |
| Energy Factor (A) | 1 | Total Cost (I + E xA + W + F) | 27,850 EUR |
| **RUNNING DATA** | | | |
| Fresh Air Flow | 14,000 m³/h | Return Air Flow | 14,000 m³/h |
| Total Specific Fan Power | 788 W/(m³/s) | Exchanger Temperature Efficiency (%) | 73.80 % |

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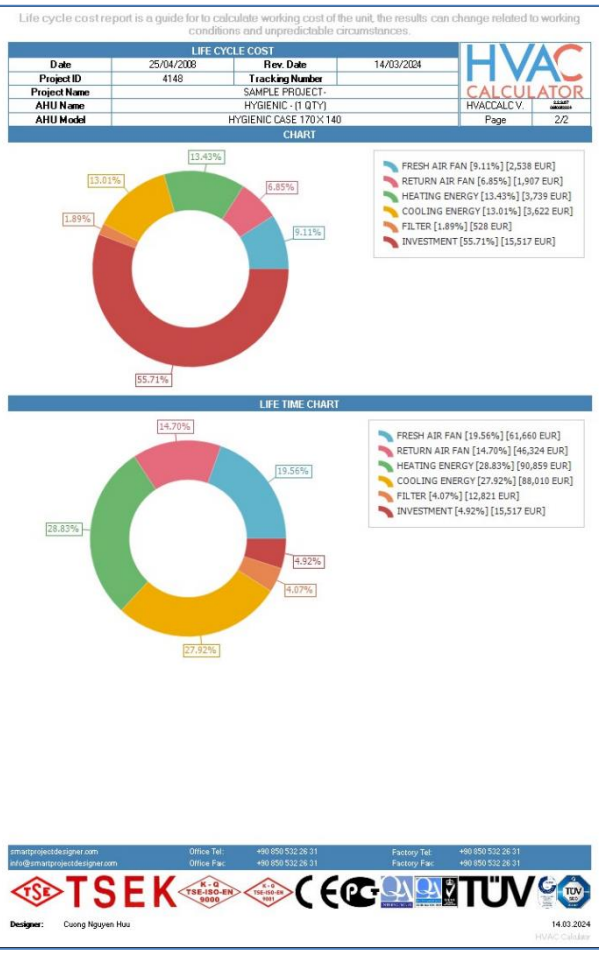
Designer: Cuong Nguyen Huu 14.03.2024



Life cycle cost report is a guide for to calculate working cost of the unit, the results can change related to working conditions and unpredictable circumstances.

| LIFE CYCLE COST | | | | HVAC CALCULATOR |
|---|---|---|---|---|
| Date | 25/04/2008 | Rev. Date | 14/03/2024 | |
| Project ID | 4148 | Tracking Number | | |
| Project Name | SAMPLE PROJECT- | | | |
| AHU Name | HYGIENIC - (1 QTY) | | | HVACCALC V. |
| AHU Model | HYGIENIC CASE 170X140 | | | Page 2/2 |

**CHART**



**LIFE TIME CHART**



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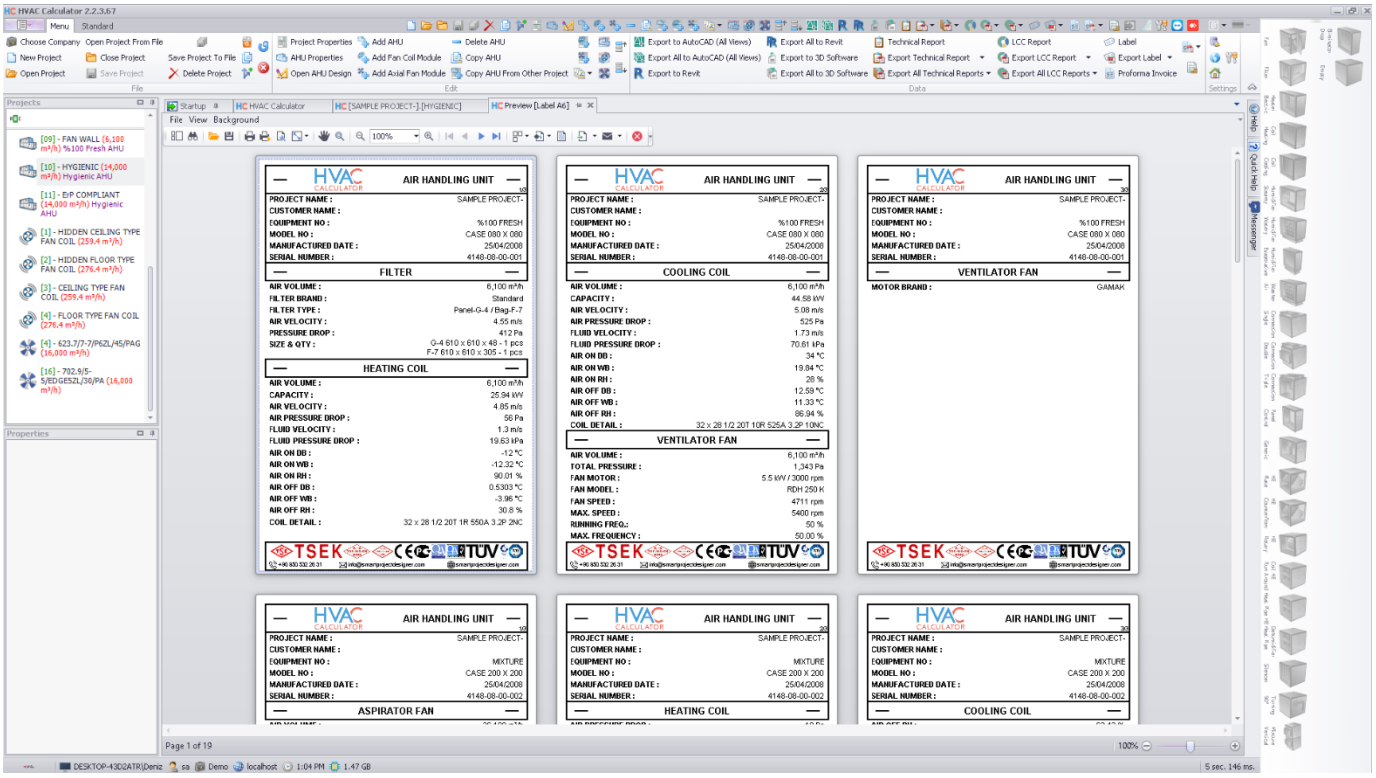
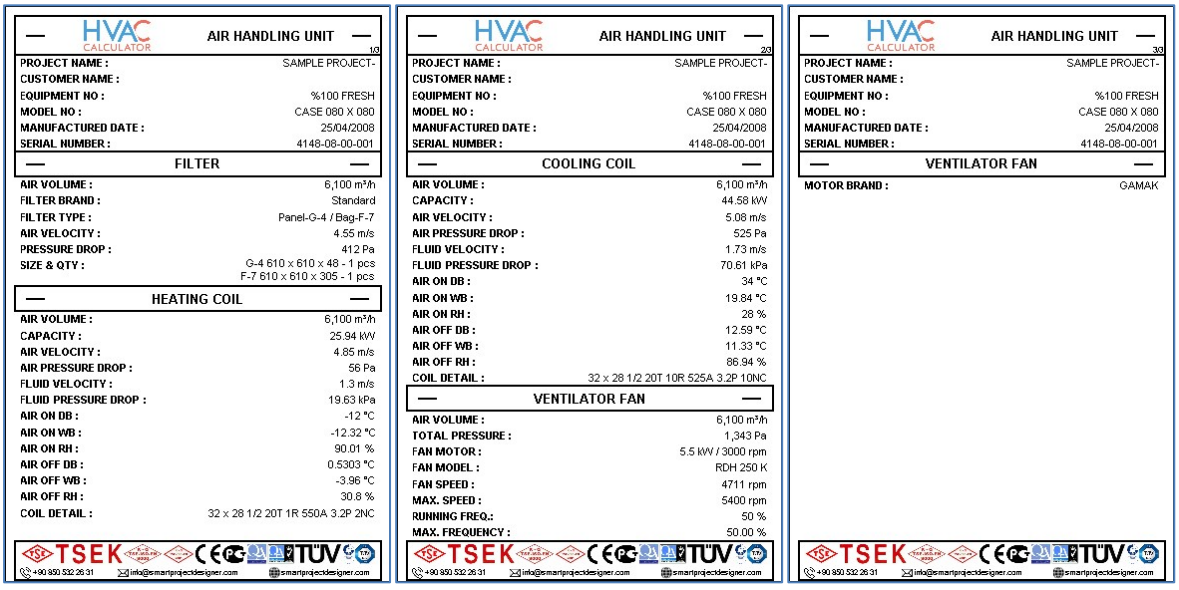
## LABEL

You can print the AHU module labels by using the label section of the software. You can use your own logo and your own company information. You can export the label as PDF, Excel, Word or Html file formats. You can also send the file in that format via e-mail from the program.



## LABEL PAGES



AIR HANDLING UNIT 10

| | |
|---|---|
| PROJECT NAME : | SAMPLE PROJECT- |
| CUSTOMER NAME : | |
| EQUIPMENT NO : | %100 FRESH |
| MODEL NO : | CASE 080 X 080 |
| MANUFACTURED DATE : | 25/04/2008 |
| SERIAL NUMBER : | 4148-08-00-001 |

FILTER

| | |
|---|---|
| AIR VOLUME : | 6,100 m³/h |
| FILTER BRAND : | Standard |
| FILTER TYPE : | Panel-G-4 / Bag-F-7 |
| AIR VELOCITY : | 4.55 m/s |
| PRESSURE DROP : | 412 Pa |
| SIZE & QTY : | G-4 610 x 610 x 48 - 1 pcs<br>F-7 610 x 610 x 305 - 1 pcs |

HEATING COIL

| | |
|---|---|
| AIR VOLUME : | 6,100 m³/h |
| CAPACITY : | 25.94 kW |
| AIR VELOCITY : | 4.85 m/s |
| AIR PRESSURE DROP : | 56 Pa |
| FLUID VELOCITY : | 1.3 m/s |
| FLUID PRESSURE DROP : | 19.63 kPa |
| AIR ON DB : | -12 °C |
| AIR ON WB : | -12.32 °C |
| AIR ON RH : | 90.01 % |
| AIR OFF DB : | 0.5303 °C |
| AIR OFF WB : | -3.96 °C |
| AIR OFF RH : | 30.8 % |
| COIL DETAIL : | 32 x 28 1/2 20T 1R 550A 3.2P 2NC |

AIR HANDLING UNIT 20

| | |
|---|---|
| PROJECT NAME : | SAMPLE PROJECT- |
| CUSTOMER NAME : | |
| EQUIPMENT NO : | %100 FRESH |
| MODEL NO : | CASE 080 X 080 |
| MANUFACTURED DATE : | 25/04/2008 |
| SERIAL NUMBER : | 4148-08-00-001 |

COOLING COIL

| | |
|---|---|
| AIR VOLUME : | 6,100 m³/h |
| CAPACITY : | 44.58 kW |
| AIR VELOCITY : | 5.08 m/s |
| AIR PRESSURE DROP : | 525 Pa |
| FLUID VELOCITY : | 1.73 m/s |
| FLUID PRESSURE DROP : | 70.61 kPa |
| AIR ON DB : | 34 °C |
| AIR ON WB : | 19.84 °C |
| AIR ON RH : | 28 % |
| AIR OFF DB : | 12.59 °C |
| AIR OFF WB : | 11.33 °C |
| AIR OFF RH : | 86.94 % |
| COIL DETAIL : | 32 x 28 1/2 20T 10R 525A 3.2P 10NC |

VENTILATOR FAN

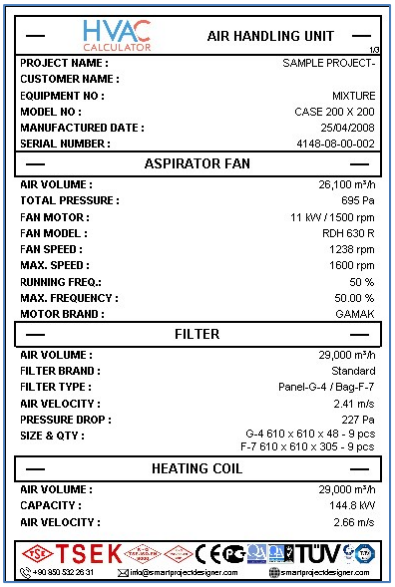
| | |
|---|---|
| AIR VOLUME : | 6,100 m³/h |
| TOTAL PRESSURE : | 1,343 Pa |
| FAN MOTOR : | 5.5 kW / 3000 rpm |
| FAN MODEL : | RDH 250 K |
| FAN SPEED : | 4711 rpm |
| MAX. SPEED : | 5400 rpm |
| RUNNING FREQ.: | 50 % |
| MAX. FREQUENCY : | 50.00 % |

AIR HANDLING UNIT 30

| | |
|---|---|
| PROJECT NAME : | SAMPLE PROJECT- |
| CUSTOMER NAME : | |
| EQUIPMENT NO : | %100 FRESH |
| MODEL NO : | CASE 080 X 080 |
| MANUFACTURED DATE : | 25/04/2008 |
| SERIAL NUMBER : | 4148-08-00-001 |

VENTILATOR FAN

| | |
|---|---|
| MOTOR BRAND : | GAMAK |



AIR HANDLING UNIT — 10

| | |
|---|---|
| PROJECT NAME : | SAMPLE PROJECT- |
| CUSTOMER NAME : | |
| EQUIPMENT NO : | MIXTURE |
| MODEL NO : | CASE 200 X 200 |
| MANUFACTURED DATE : | 25/04/2008 |
| SERIAL NUMBER : | 4148-08-00-002 |

**ASPIRATOR FAN**

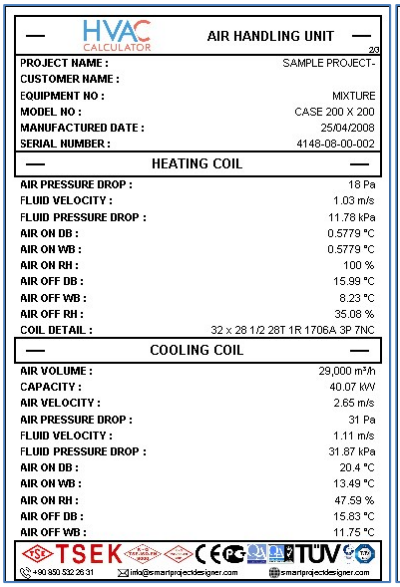
| | |
|---|---|
| AIR VOLUME : | 26,100 m³/h |
| TOTAL PRESSURE : | 695 Pa |
| FAN MOTOR : | 11 kW / 1500 rpm |
| FAN MODEL : | RDH 630 R |
| FAN SPEED : | 1238 rpm |
| MAX. SPEED : | 1600 rpm |
| RUNNING FREQ.: | 50 % |
| MAX. FREQUENCY : | 50.00 % |
| MOTOR BRAND : | GAMAK |

**FILTER**

| | |
|---|---|
| AIR VOLUME : | 29,000 m³/h |
| FILTER BRAND : | Standard |
| FILTER TYPE : | Panel-G-4 / Bag-F-7 |
| AIR VELOCITY : | 2.41 m/s |
| PRESSURE DROP : | 227 Pa |
| SIZE & QTY : | G-4 610 x 610 x 48 - 9 pcs<br>F-7 610 x 610 x 305 - 9 pcs |

**HEATING COIL**

| | |
|---|---|
| AIR VOLUME : | 29,000 m³/h |
| CAPACITY : | 144.8 kW |
| AIR VELOCITY : | 2.66 m/s |



AIR HANDLING UNIT — 20

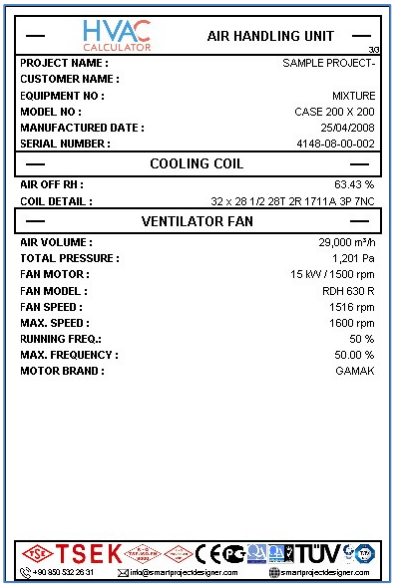
| | |
|---|---|
| PROJECT NAME : | SAMPLE PROJECT- |
| CUSTOMER NAME : | |
| EQUIPMENT NO : | MIXTURE |
| MODEL NO : | CASE 200 X 200 |
| MANUFACTURED DATE : | 25/04/2008 |
| SERIAL NUMBER : | 4148-08-00-002 |

**HEATING COIL**

| | |
|---|---|
| AIR PRESSURE DROP : | 18 Pa |
| FLUID VELOCITY : | 1.03 m/s |
| FLUID PRESSURE DROP : | 11.78 kPa |
| AIR ON DB : | 0.5779 °C |
| AIR ON WB : | 0.5779 °C |
| AIR ON RH : | 100 % |
| AIR OFF DB : | 15.99 °C |
| AIR OFF WB : | 8.23 °C |
| AIR OFF RH : | 35.08 % |
| COIL DETAIL : | 32 x 28 1/2 28T 1R 1706A 3P 7NC |

**COOLING COIL**

| | |
|---|---|
| AIR VOLUME : | 29,000 m³/h |
| CAPACITY : | 40.07 kW |
| AIR VELOCITY : | 2.65 m/s |
| AIR PRESSURE DROP : | 31 Pa |
| FLUID VELOCITY : | 1.11 m/s |
| FLUID PRESSURE DROP : | 31.87 kPa |
| AIR ON DB : | 20.4 °C |
| AIR ON WB : | 13.49 °C |
| AIR ON RH : | 47.59 % |
| AIR OFF DB : | 15.83 °C |
| AIR OFF WB : | 11.75 °C |



AIR HANDLING UNIT — 30

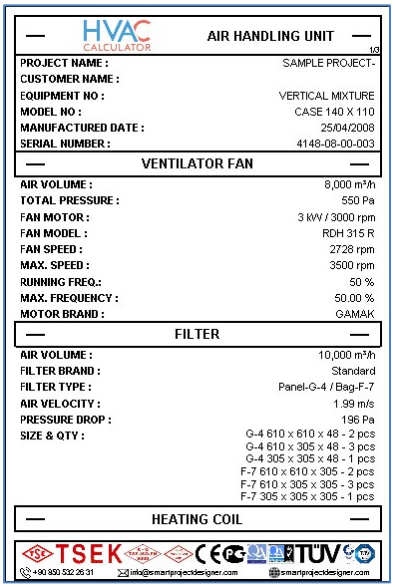
| | |
|---|---|
| PROJECT NAME : | SAMPLE PROJECT- |
| CUSTOMER NAME : | |
| EQUIPMENT NO : | MIXTURE |
| MODEL NO : | CASE 200 X 200 |
| MANUFACTURED DATE : | 25/04/2008 |
| SERIAL NUMBER : | 4148-08-00-002 |

**COOLING COIL**

| | |
|---|---|
| AIR OFF RH : | 63.43 % |
| COIL DETAIL : | 32 x 28 1/2 28T 2R 1711A 3P 7NC |

**VENTILATOR FAN**

| | |
|---|---|
| AIR VOLUME : | 29,000 m³/h |
| TOTAL PRESSURE : | 1,201 Pa |
| FAN MOTOR : | 15 kW / 1500 rpm |
| FAN MODEL : | RDH 630 R |
| FAN SPEED : | 1516 rpm |
| MAX. SPEED : | 1600 rpm |
| RUNNING FREQ.: | 50 % |
| MAX. FREQUENCY : | 50.00 % |
| MOTOR BRAND : | GAMAK |



AIR HANDLING UNIT — 10

| | |
|---|---|
| PROJECT NAME : | SAMPLE PROJECT- |
| CUSTOMER NAME : | |
| EQUIPMENT NO : | VERTICAL MIXTURE |
| MODEL NO : | CASE 140 X 110 |
| MANUFACTURED DATE : | 25/04/2008 |
| SERIAL NUMBER : | 4148-08-00-003 |

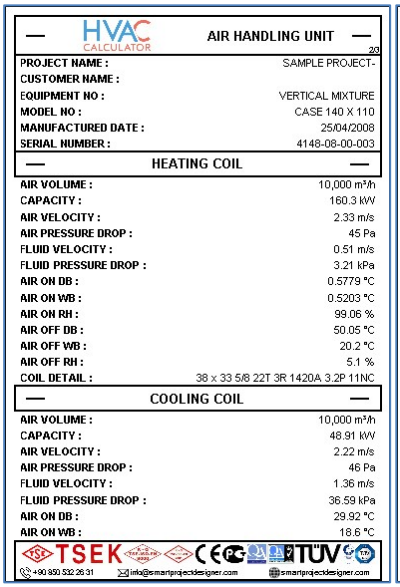
**VENTILATOR FAN**

| | |
|---|---|
| AIR VOLUME : | 8,000 m³/h |
| TOTAL PRESSURE : | 550 Pa |
| FAN MOTOR : | 3 kW / 3000 rpm |
| FAN MODEL : | RDH 315 R |
| FAN SPEED : | 2728 rpm |
| MAX. SPEED : | 3500 rpm |
| RUNNING FREQ.: | 50 % |
| MAX. FREQUENCY : | 50.00 % |
| MOTOR BRAND : | GAMAK |

**FILTER**

| | |
|---|---|
| AIR VOLUME : | 10,000 m³/h |
| FILTER BRAND : | Standard |
| FILTER TYPE : | Panel-G-4 / Bag-F-7 |
| AIR VELOCITY : | 1.99 m/s |
| PRESSURE DROP : | 196 Pa |
| SIZE & QTY : | G-4 610 x 610 x 48 - 2 pcs<br>G-4 610 x 305 x 48 - 3 pcs<br>G-4 305 x 305 x 48 - 1 pcs<br>F-7 610 x 610 x 305 - 2 pcs<br>F-7 610 x 305 x 305 - 3 pcs<br>F-7 305 x 305 x 305 - 1 pcs |

**HEATING COIL**



AIR HANDLING UNIT — 20

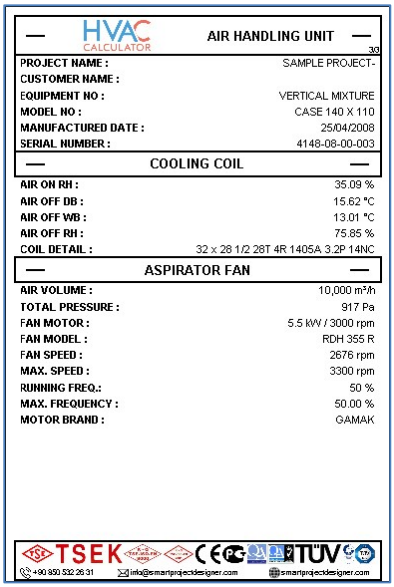
| | |
|---|---|
| PROJECT NAME : | SAMPLE PROJECT- |
| CUSTOMER NAME : | |
| EQUIPMENT NO : | VERTICAL MIXTURE |
| MODEL NO : | CASE 140 X 110 |
| MANUFACTURED DATE : | 25/04/2008 |
| SERIAL NUMBER : | 4148-08-00-003 |

**HEATING COIL**

| | |
|---|---|
| AIR VOLUME : | 10,000 m³/h |
| CAPACITY : | 160.3 kW |
| AIR VELOCITY : | 2.33 m/s |
| AIR PRESSURE DROP : | 45 Pa |
| FLUID VELOCITY : | 0.51 m/s |
| FLUID PRESSURE DROP : | 3.21 kPa |
| AIR ON DB : | 0.5779 °C |
| AIR ON WB : | 0.5203 °C |
| AIR ON RH : | 99.06 % |
| AIR OFF DB : | 50.05 °C |
| AIR OFF WB : | 20.2 °C |
| AIR OFF RH : | 5.1 % |
| COIL DETAIL : | 38 x 33 5/8 22T 3R 1420A 3.2P 11NC |

**COOLING COIL**

| | |
|---|---|
| AIR VOLUME : | 10,000 m³/h |
| CAPACITY : | 48.91 kW |
| AIR VELOCITY : | 2.22 m/s |
| AIR PRESSURE DROP : | 46 Pa |
| FLUID VELOCITY : | 1.36 m/s |
| FLUID PRESSURE DROP : | 36.59 kPa |
| AIR ON DB : | 29.92 °C |
| AIR ON WB : | 18.6 °C |



AIR HANDLING UNIT — 30

| | |
|---|---|
| PROJECT NAME : | SAMPLE PROJECT- |
| CUSTOMER NAME : | |
| EQUIPMENT NO : | VERTICAL MIXTURE |
| MODEL NO : | CASE 140 X 110 |
| MANUFACTURED DATE : | 25/04/2008 |
| SERIAL NUMBER : | 4148-08-00-003 |

**COOLING COIL**

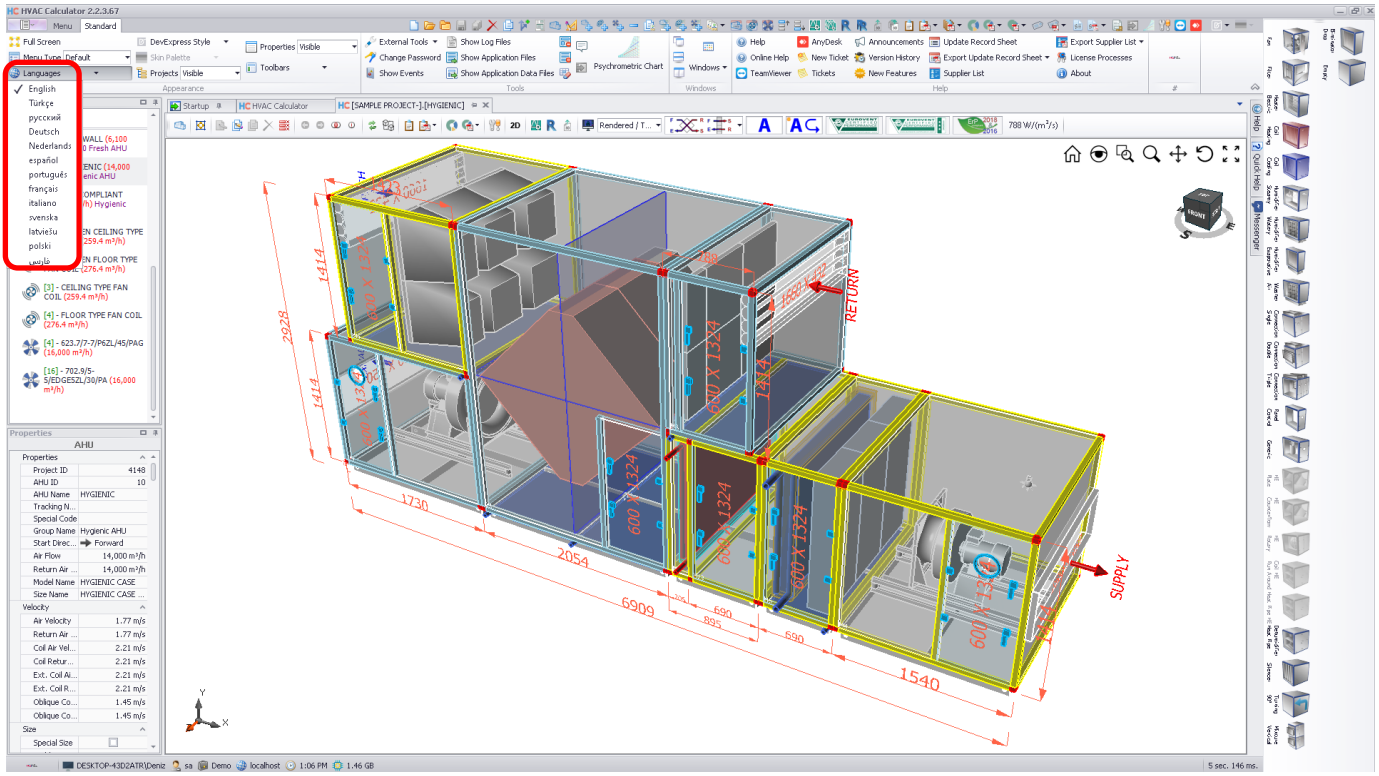
| | |
|---|---|
| AIR ON RH : | 35.09 % |
| AIR OFF DB : | 15.62 °C |
| AIR OFF WB : | 13.01 °C |
| AIR OFF RH : | 75.85 % |
| COIL DETAIL : | 32 x 28 1/2 28T 4R 1405A 3.2P 14NC |

**ASPIRATOR FAN**

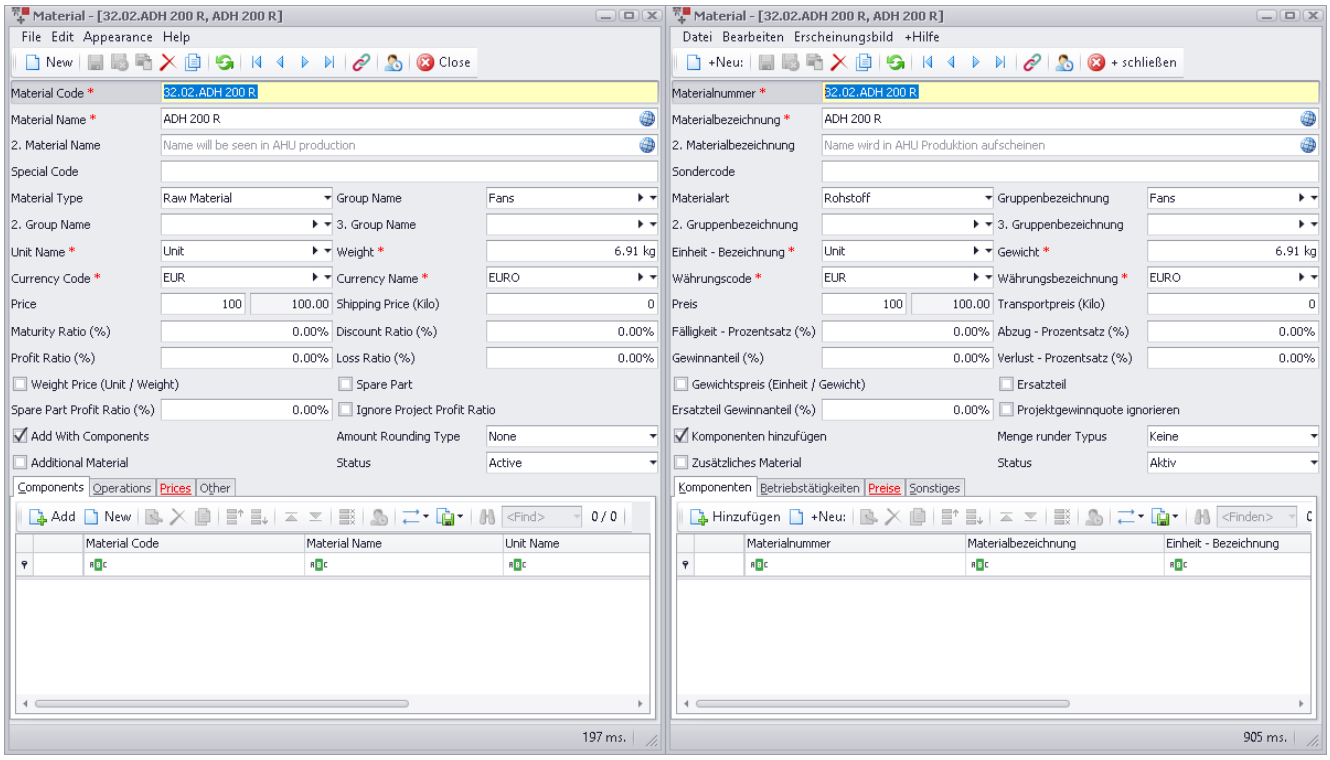
| | |
|---|---|
| AIR VOLUME : | 10,000 m³/h |
| TOTAL PRESSURE : | 917 Pa |
| FAN MOTOR : | 5.5 kW / 3000 rpm |
| FAN MODEL : | RDH 355 R |
| FAN SPEED : | 2676 rpm |
| MAX. SPEED : | 3300 rpm |
| RUNNING FREQ.: | 50 % |
| MAX. FREQUENCY : | 50.00 % |
| MOTOR BRAND : | GAMAK |

# MULTIPLE LANGUAGE SUPPORT (TURKISH, ENGLISH, RUSSIAN, GERMAN, DUTCH, SPANISH, FRENCH, LATVIAN, POLISH)

All the screens of program can operate in Turkish, English, Russian, German, Dutch, Spanish, Portuguese, French, Italian, Swedish, Latvian, Polish, Persian.  Software language can be changed by using the “Languages” menu.



## ENGLISH AND GERMAN MATERIAL FORMS




## ENGLISH AND SPANISH TECHNICAL REPORT

# RUSSIAN AND GERMAN TECHNICAL REPORT

ErP 2018 2016

ErP - СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ ЕВРОПЕЙСКОЙ ДИРЕКТИВЫ, ВЕНТИЛЯЦИОННЫЕ УСТАНОВКИ (AHU)

ANKARA CENTRAL

**ТЕХНИЧЕСКИЕ ДАННЫЕ**

| | | | |
|---|---|---|---|
| Дата | 25/04/2008 | Дата ревизии | 14/03/2024 |
| ID проекта | 4148 | Номер проекта | |
| Название проекта | SAMPLE PROJECT- | | |
| Название установки | HYGIENIC - (1 КОЛ-ВО) | | |
| Модель установки | HYGIENIC CASE 170X140 [1400 CHE CWC HWC] | | |

HVAC CALCULATOR
HVACCALC V.
Страница 1/17

**СВОДНАЯ СПЕЦИФИКАЦИЯ**

| | | | |
|---|---|---|---|
| Расход воздуха<br>14,000 m³/h | Расход вытяжного воздуха<br>14,000 m³/h | Рама<br>Oval Profile 24 | Габариты (mm) (Размер-ты цоколя+диффер+труб ы)<br>W1,900xH2,928xL7,009 |
| Скорость воздуха<br>1.77 m/s | Скорость вытяжного воздуха<br>1.77 m/s | Материал изоляции<br>40 mm Polyurethane | Общий вес<br>2,474 kg / Высота<br>895 m |
| Скорость воздуха на теплообменнике<br>2.18 m/s | Плотность воздуха<br>1.2131 kg/m³ | Материал наружного листа<br>0.6 mm Painted Galvanize | Высота основания<br>100 mm / Крыша (Внутри)<br>N/A |
| Расчетная наружная температура (З-й)<br>(-12°C/90%)-(34°C/28%/WB:19.9°C%/DP:12.9°C)(ANKARA CENTRAL) | Мощность рекуперации (З-й)<br>118.6 kW - -28.6 kW | Материал внутреннего листа<br>0.5 mm Stainless 304 | Мощность двигателя<br>11 kW / 7.5 kW |
| Суммарная мощность нагрева<br>62.32 kW | Суммарная мощность охлаждения<br>60.37 kW | Суммарная мощность охлаждения жидк<br>50.09 kW | Общая потребляемая мощность<br>12.35 kW |
| Удельная мощность вентилятора (SFP общий)<br>788 W/(m³/s) | Соответствие требованиям ErP<br>2018 / Код ErP<br>NRVU - BVU | fs-Pref<br>0.89 / 0.89 | Внешнее статическое давление<br>750 Pa / Внешнее статическое давление вытяжного в-на<br>600 Pa |

**УРОВЕНЬ ЗВУКОВОЙ МОЩНОСТИ (дБ)**

| Частота, Гц | | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | LwA-ez | |
|---|---|---|---|---|---|---|---|---|---|---|
| Уровень звуковой мощности снаружи установки | | 70.1 | 74.1 | 63.3 | 57.2 | 50.5 | 47.8 | 34.7 | 67.6 | dBA |
| Уровень звуковой мощ-ти на подаче в "помещение" | | 85.0 | 92.6 | 96.4 | 94.7 | 89.6 | 88.6 | 82.8 | 98.7 | dBA |
| Уровень звуковой мощ-ти на заборе свежего в-на | | 66.0 | 73.6 | 77.4 | 75.7 | 75.6 | 74.6 | 68.8 | 82.1 | dBA |
| Уровень звук-ой мощности на выбросе вытяжного в-на | | 89.1 | 101.1 | 94.3 | 91.2 | 84.5 | 84.8 | 76.7 | 97.1 | dBA |
| Уровень звук-ой мощности на заборе вытяжного в-на | | 80.1 | 92.1 | 85.3 | 82.2 | 77.5 | 77.8 | 69.7 | 88.6 | dBA |

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info@smartprojectdesigner.com Факс в офисе: +90 850 532 26 31 Факс на заводе: +90 850 532 26 31

TSEK TÜV

Разработчик: Cuong Nguyen Huu 14.03.2024

ErP 2018 2016

ErP - ENTSPRICHT LÜFTUNGSGERÄTEN GEMÄSS EUROPÄISCHER RICHTLINIE (AHU)

Unit ID:4148-00-00-010

ANKARA CENTRAL

**TECHNISCHE DATEN**

| | | | |
|---|---|---|---|
| Datum | 25/04/2008 | Rev. Datum | 14/03/2024 |
| Projekt Nr. | 4148 | Prog. Nachverfolgungsnr. | |
| Projektbezeichnung | SAMPLE PROJECT- | | |
| AHU Bezeichnung | HYGIENIC - (1 MENGE) | | |
| AHU-Modell | HYGIENIC CASE 170X140 [1400 CHE CWC HWC] | | |

HVAC CALCULATOR
HVACCALC V.
Seiten 1/17

**ALLGEMEINE SPEZIFIKATIONEN**

| | | | |
|---|---|---|---|
| Luftvolumenstrom<br>14,000 m³/h | Abluft-Volumenstrom<br>14,000 m³/h | Rahmen<br>Oval Profile 24 | Abmessungen (mm)(Größe Pedestal Dämpfer Rohre)<br>W1,900xH2,928xL7,009 |
| Luftgeschwindigkeit<br>1.77 m/s | Abluft-Geschwindigkeit<br>1.77 m/s | Dämmmaterial<br>40 mm Polyurethane | Gesamtgewicht / Seehöhe<br>2,474 kg / 895 m |
| Luftgeschwindigkeit über Register<br>2.18 m/s | Luftdichte<br>1.2131 kg/m³ | Paneel außen<br>0.6 mm Painted Galvanize | Grundrahmenhöhe / Dach (Innenaufstellung)<br>100 mm / N/A |
| Außentemperatur (W-S)<br>(-12°C/90%)-(34°C/28%/WB:19.9°C%/DP:12.9°C)(ANKARA CENTRAL) | HRS-Kapazität (W-S)<br>118.6 kW - -28.6 kW | Paneel innen<br>0.5 mm Stainless 304 | Motorleistung<br>11 kW / 7.5 kW |
| Heizleistung (ges.)<br>62.32 kW | Kühlleistung (ges.)<br>60.37 kW | Gesamte sinnvolle Kapazität<br>50.09 kW | Gesamte absorbierte Leistung<br>12.35 kW |
| spezifische Ventilatorleistung (SFP gesamt)<br>788 W/(m³/s) | Einhaltung ErP / ErP Code<br>2018 / NRVU - BVU | fs-Pref<br>0.89 / 0.89 | Statischer Druck (extern)<br>750 Pa / Abluft Statischer Druck (extern)<br>600 Pa |

**SCHALLPEGEL (dB)**

| Frequenz Hz | | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | LwA-ez | |
|---|---|---|---|---|---|---|---|---|---|---|
| Gehäuseschallleistung | | 70.1 | 74.1 | 63.3 | 57.2 | 50.5 | 47.8 | 34.7 | 67.6 | dBA |
| Zuluftstutzen (lin) | | 85.0 | 92.6 | 96.4 | 94.7 | 89.6 | 88.6 | 82.8 | 98.7 | dBA |
| Außenluftstutzen (lin) | | 66.0 | 73.6 | 77.4 | 75.7 | 75.6 | 74.6 | 68.8 | 82.1 | dBA |
| Fortluftstutzen (lin) | | 89.1 | 101.1 | 94.3 | 91.2 | 84.5 | 84.8 | 76.7 | 97.1 | dBA |
| Abluftstutzen (lin) | | 80.1 | 92.1 | 85.3 | 82.2 | 77.5 | 77.8 | 69.7 | 88.6 | dBA |

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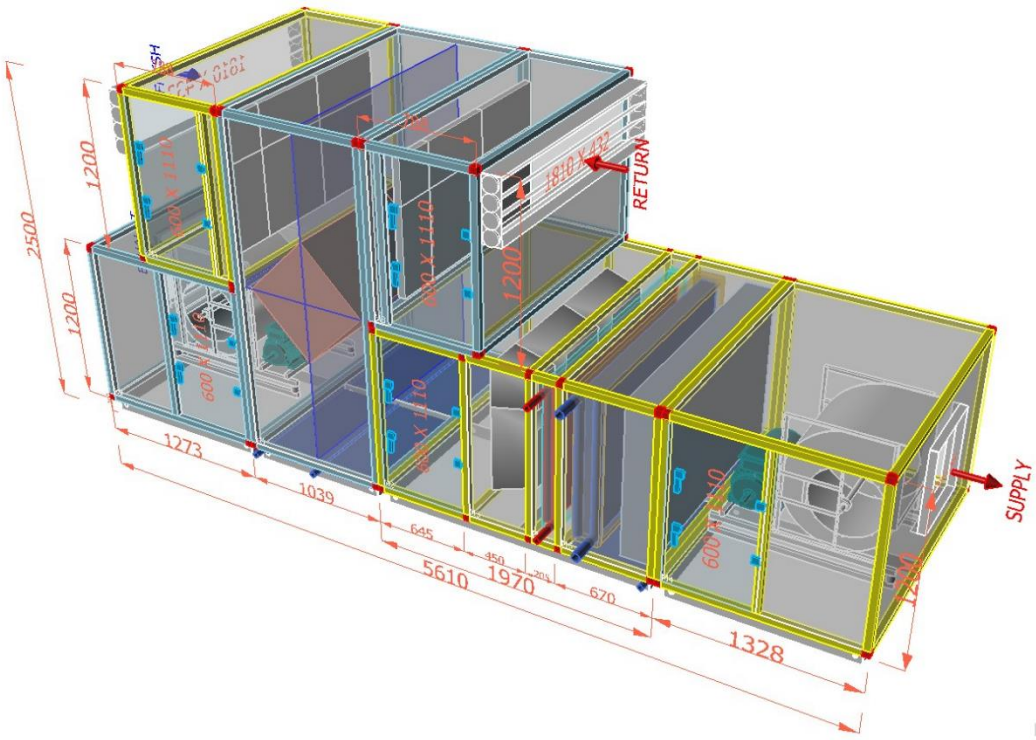
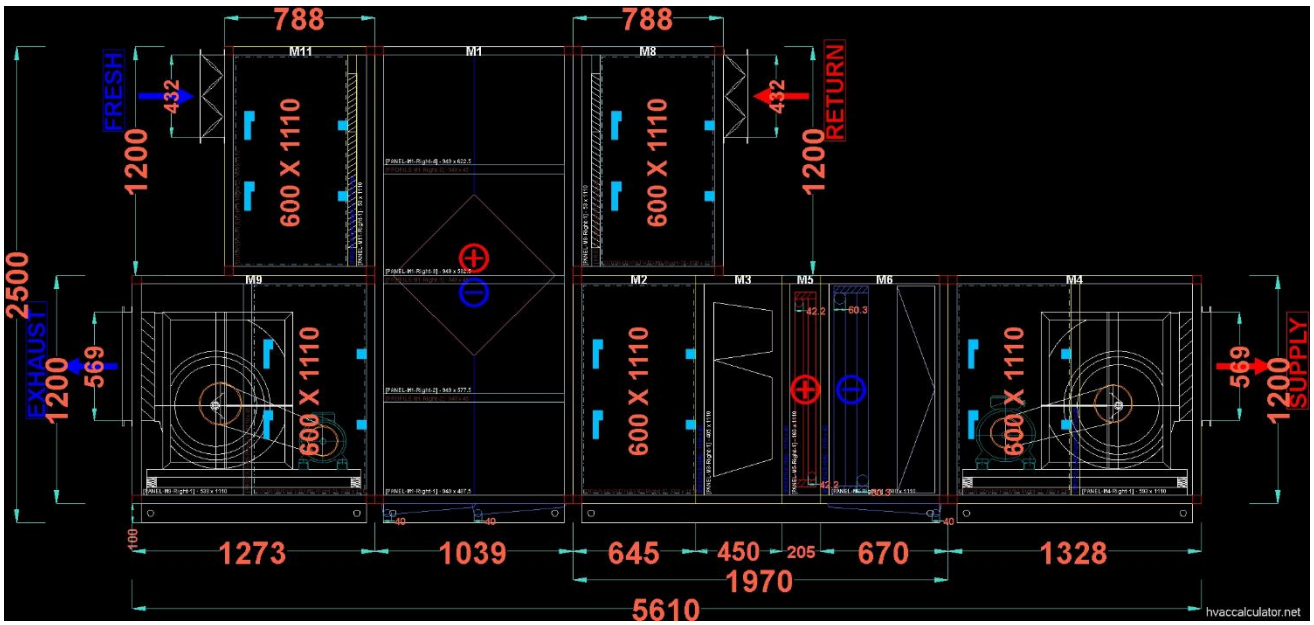
TSEK TÜV

Planer: Cuong Nguyen Huu 14.03.2024

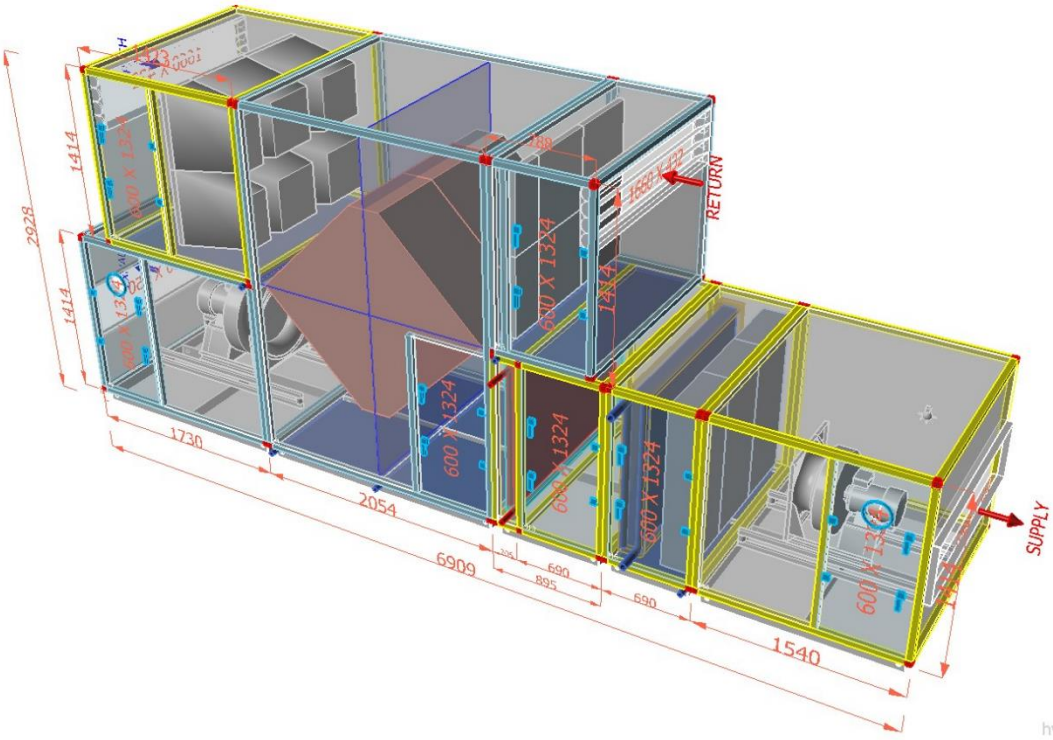
# HEAT EXCHANGERS

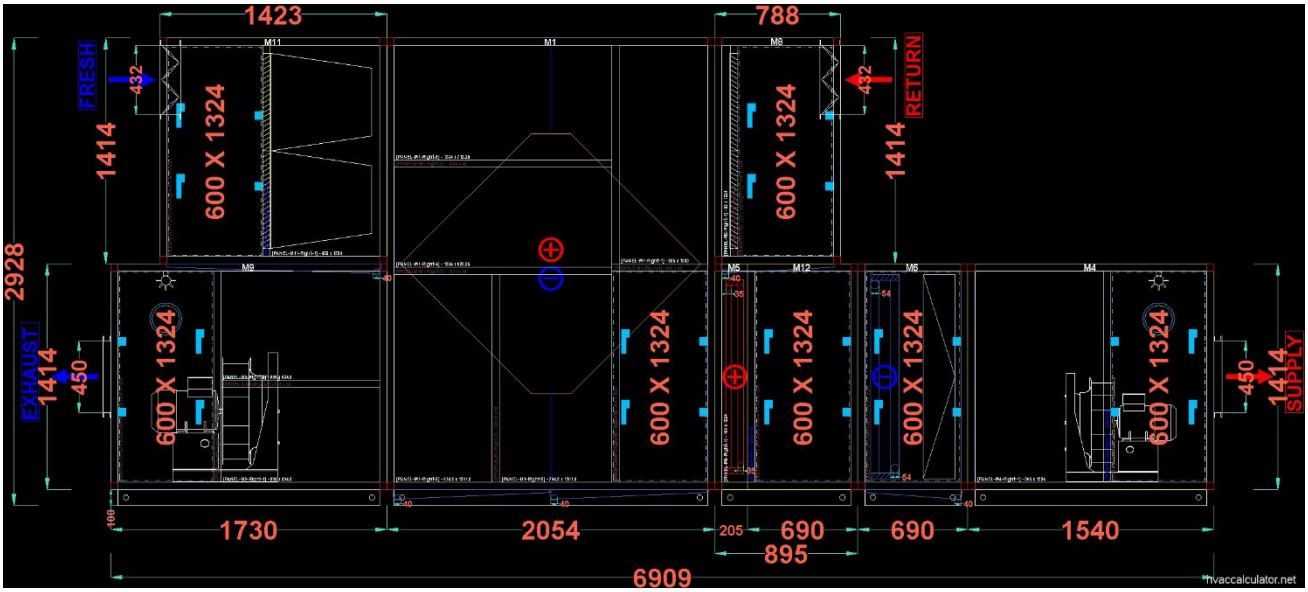
## CROSSFLOW HEAT EXCHANGER



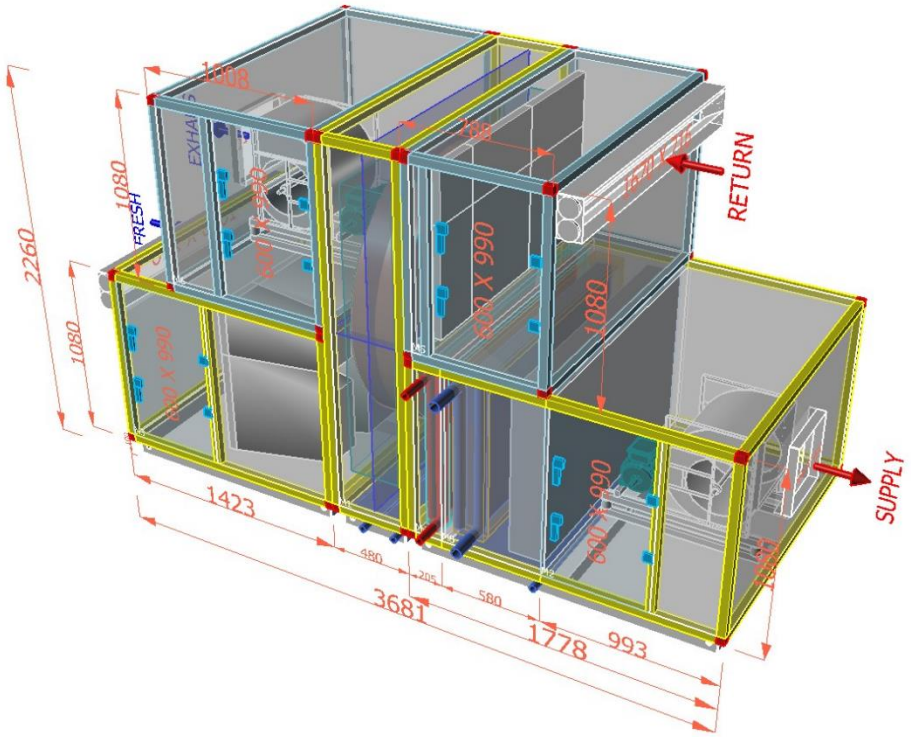



## COUNTERFLOW HEAT EXCHANGER

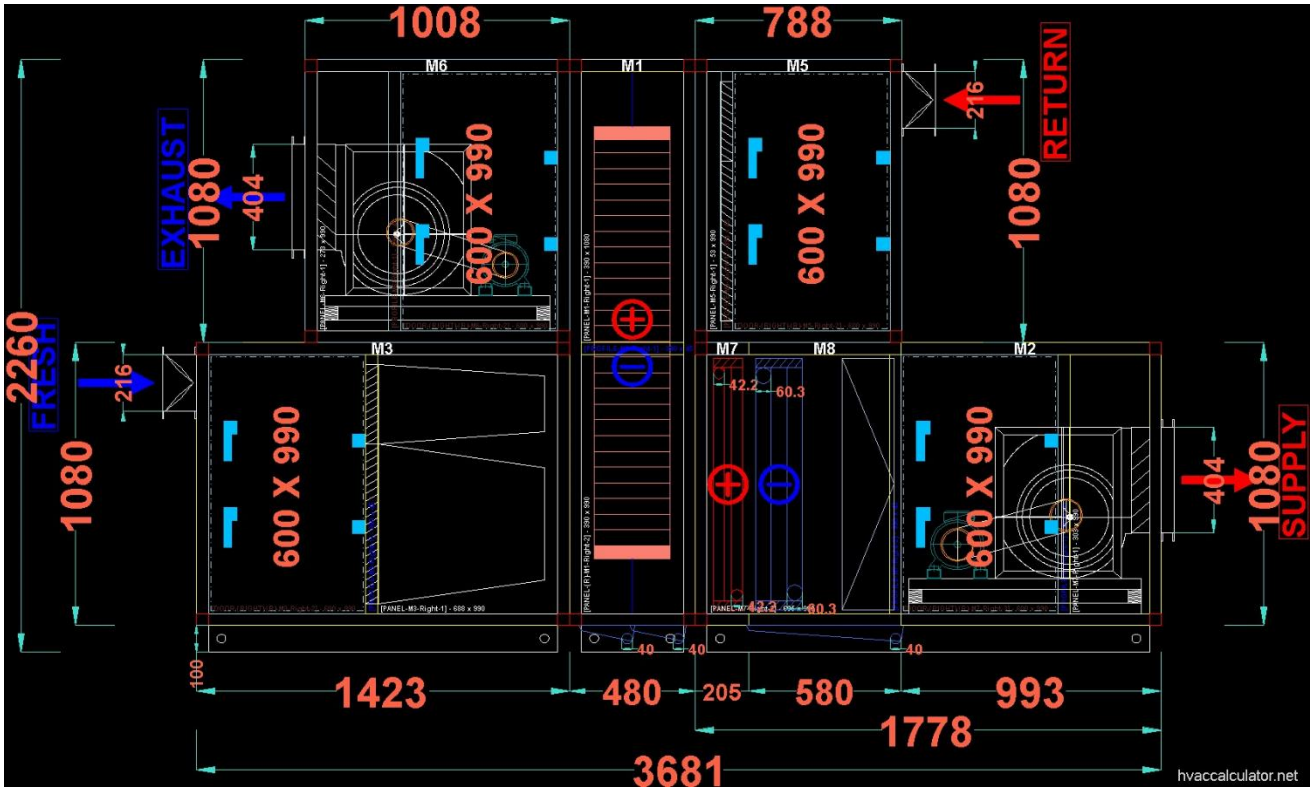


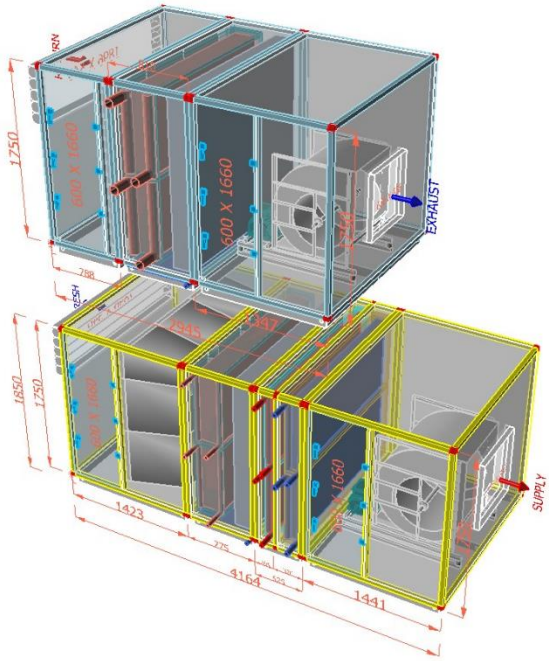
## ROTARY HEAT EXCHANGER



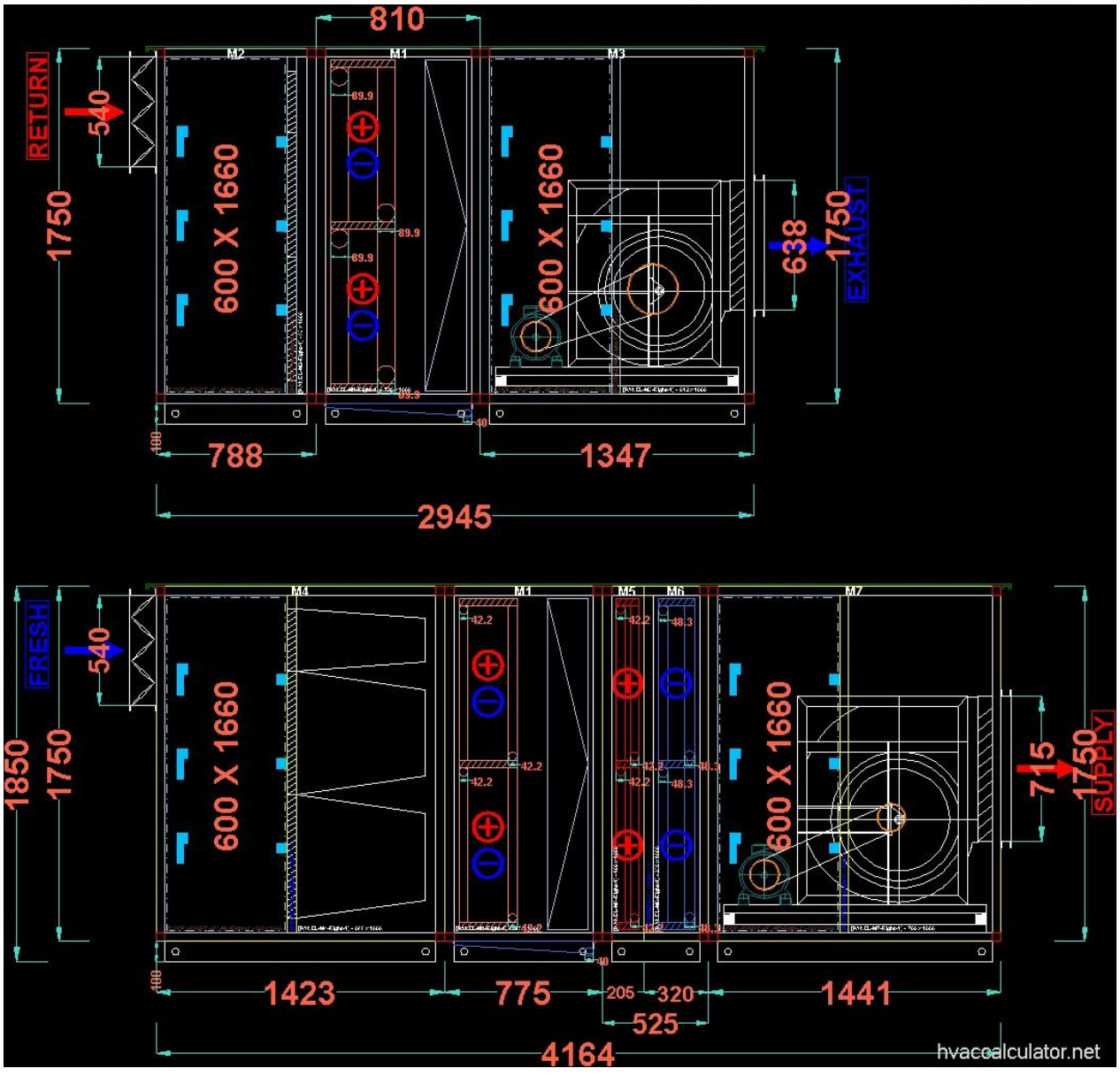

hvaccalculator.net



# RUN AROUND COIL HEAT EXCHANGER

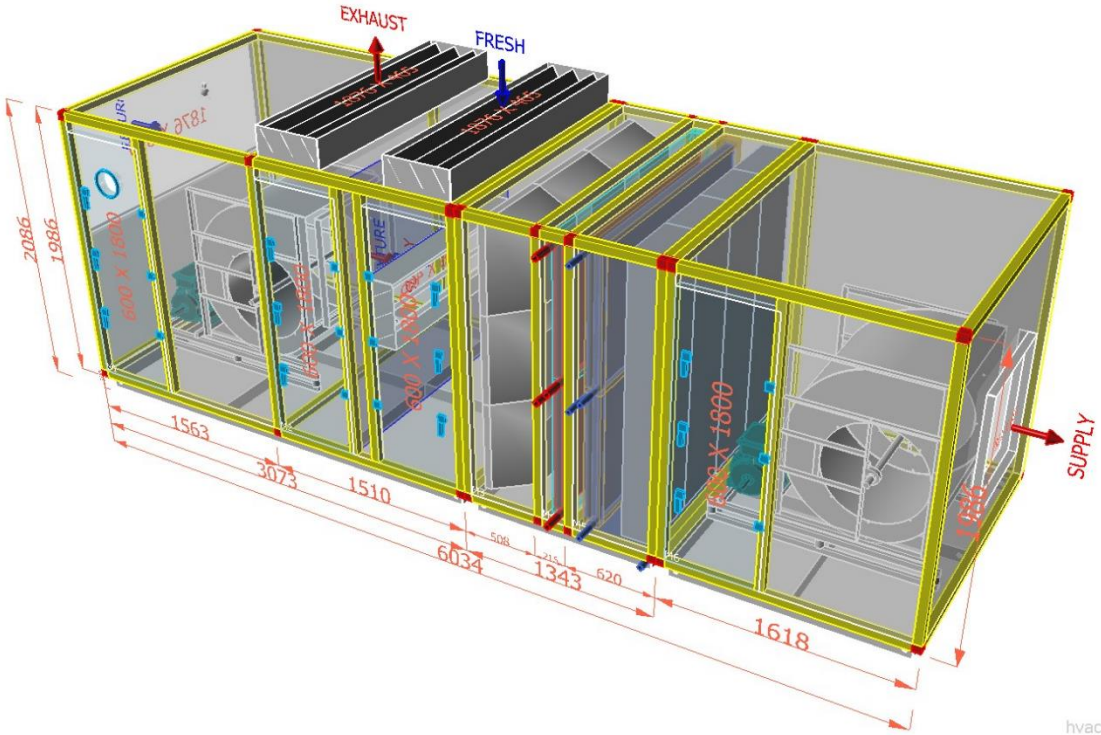


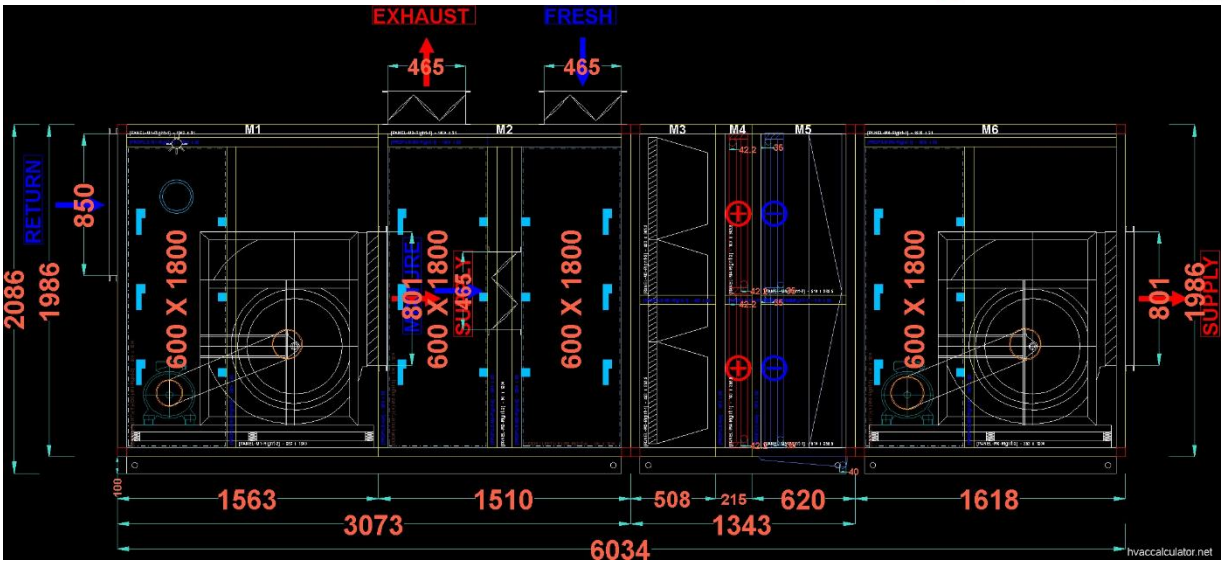

hvaccalculator.net



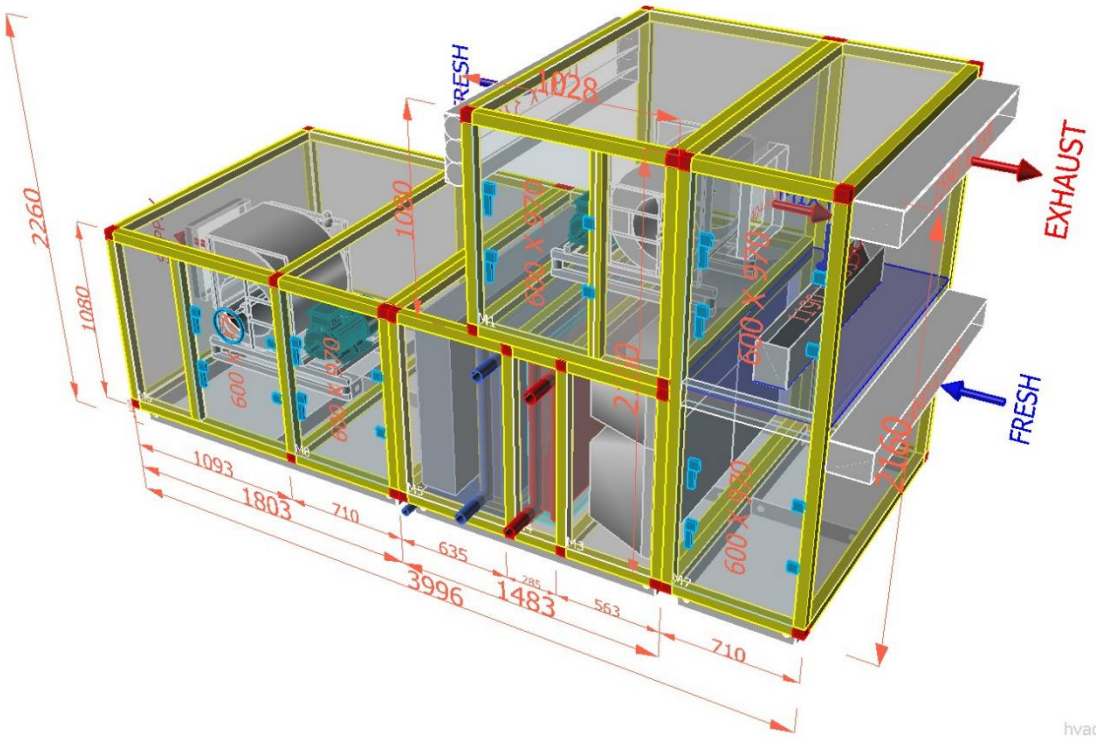
# MIXTURE MODULES

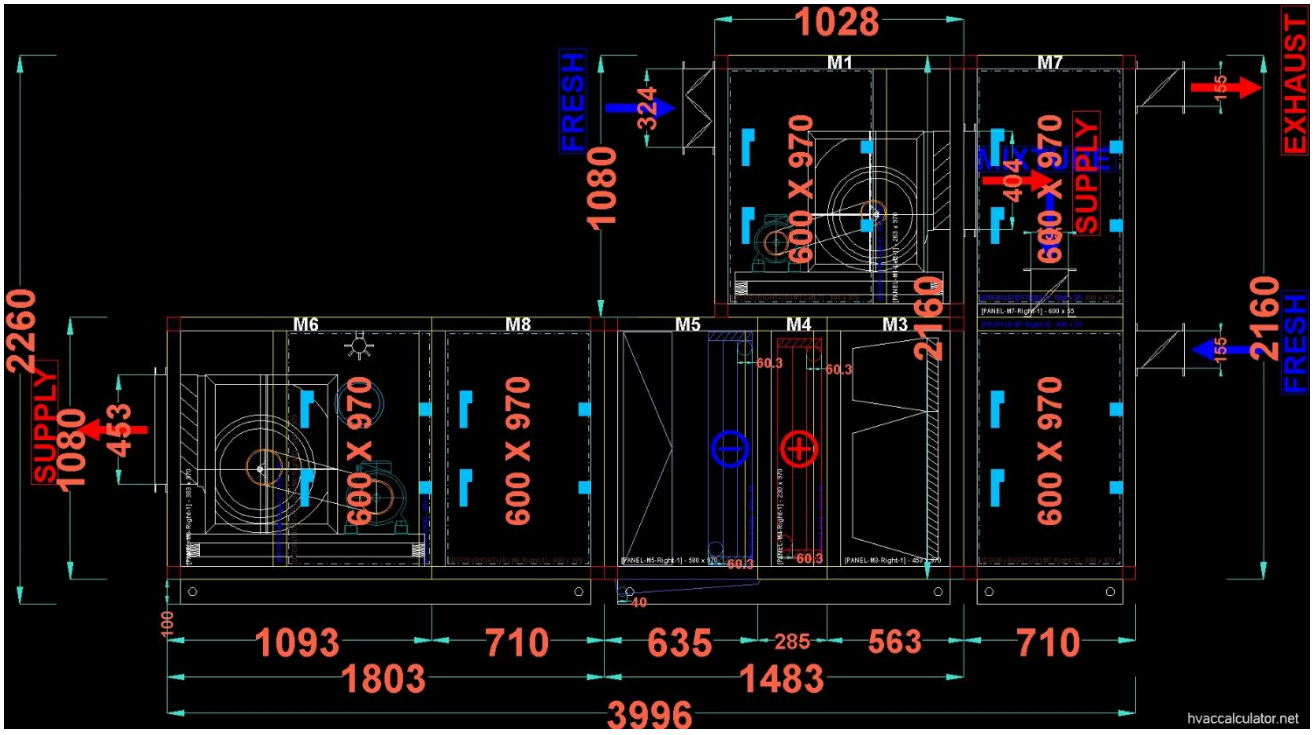
## HORIZONTAL MIXTURE



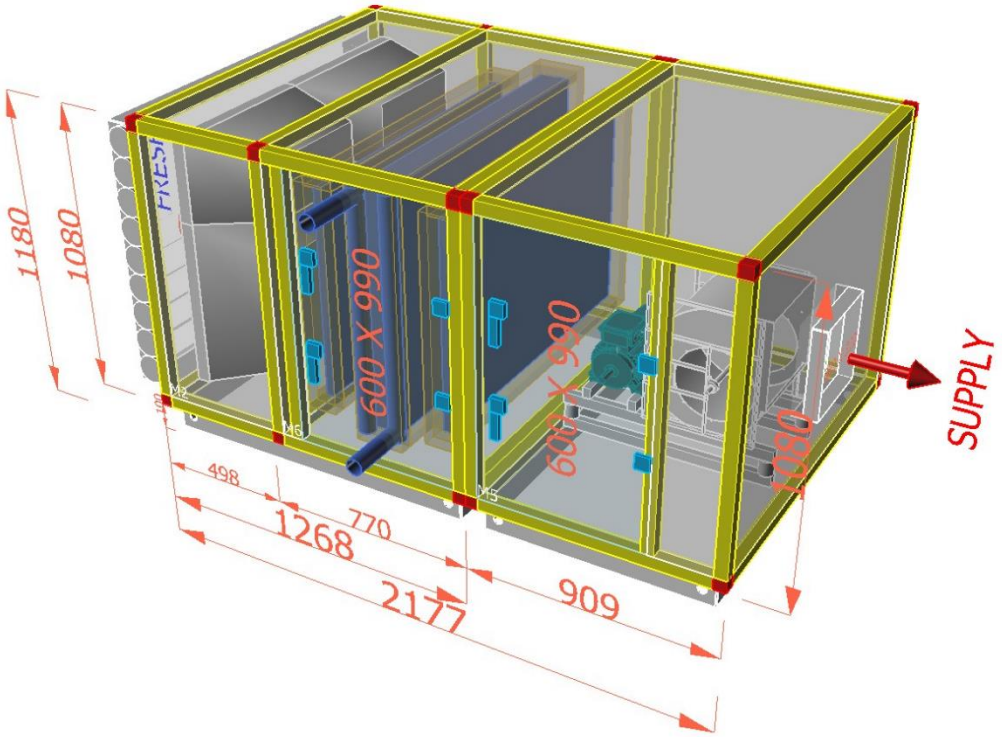



## VERTICAL MIXTURE

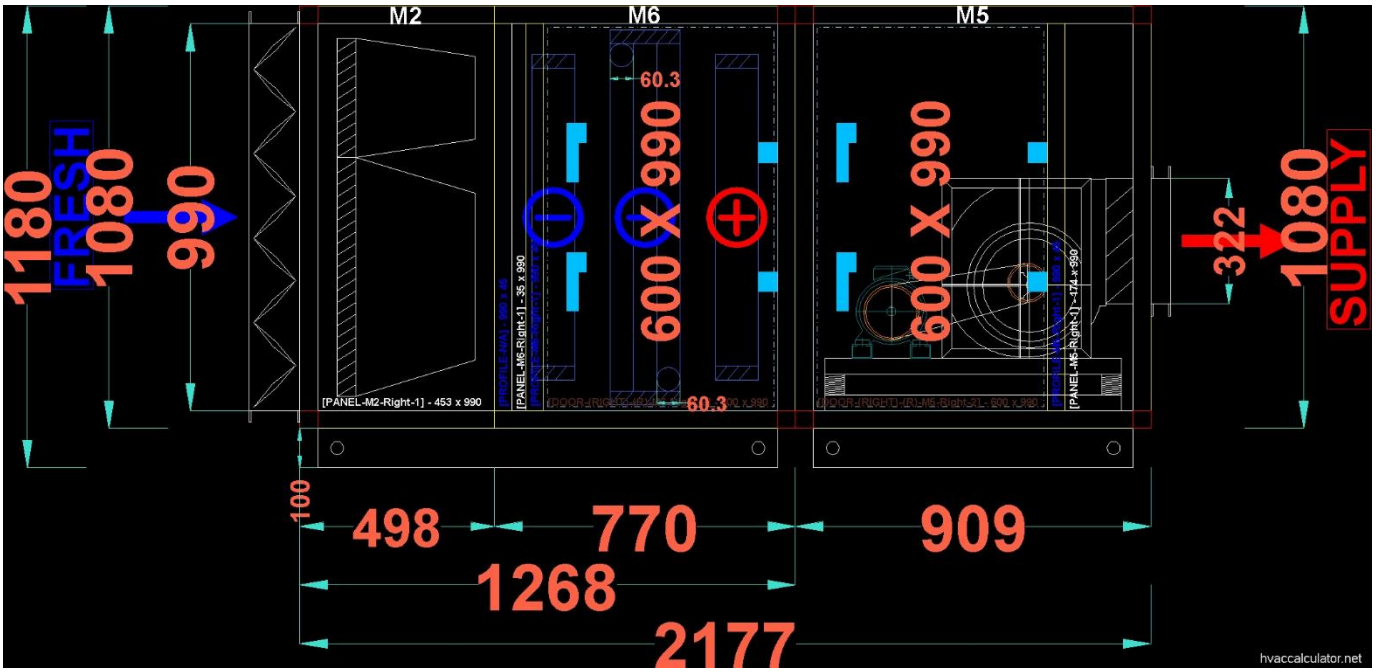


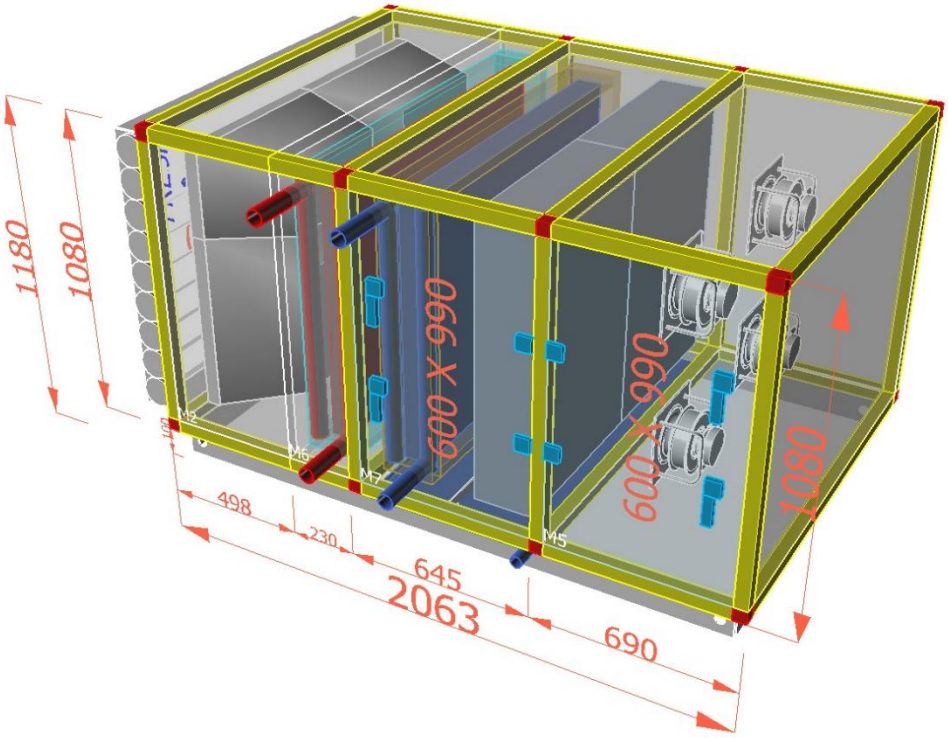
# HORSE SHOE HEAT PIPE




hvaccalculator.net



# FAN WALL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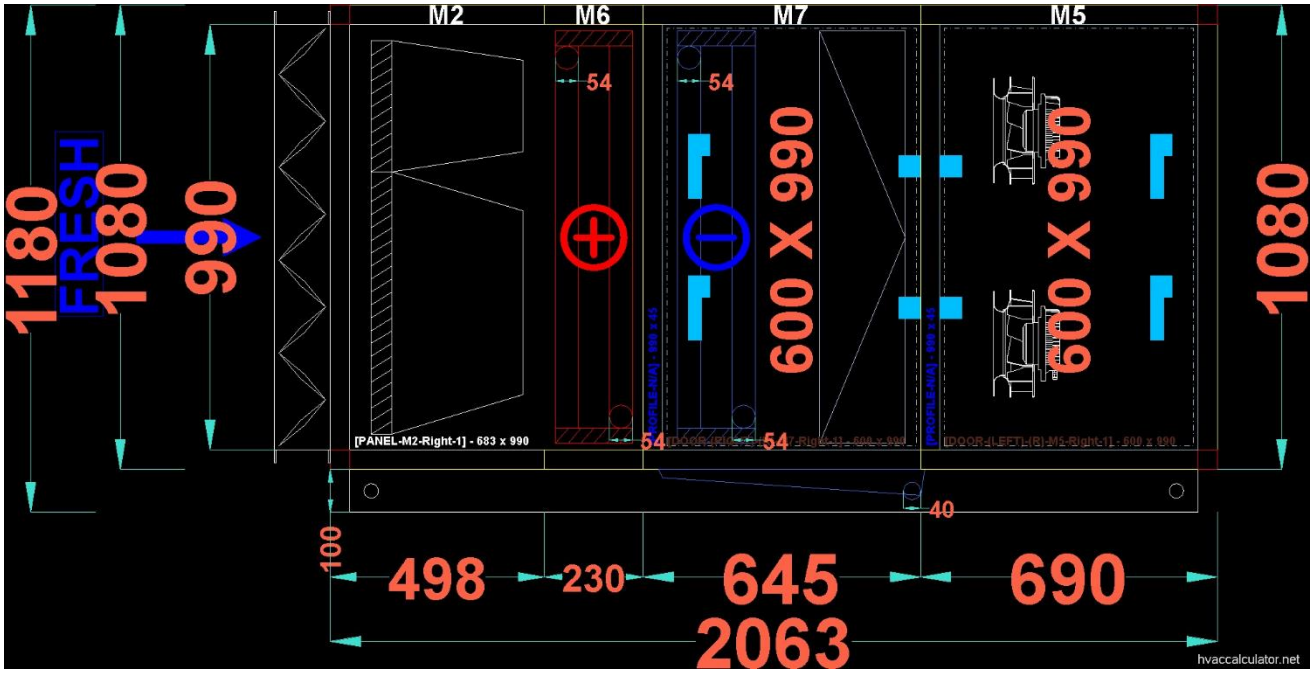
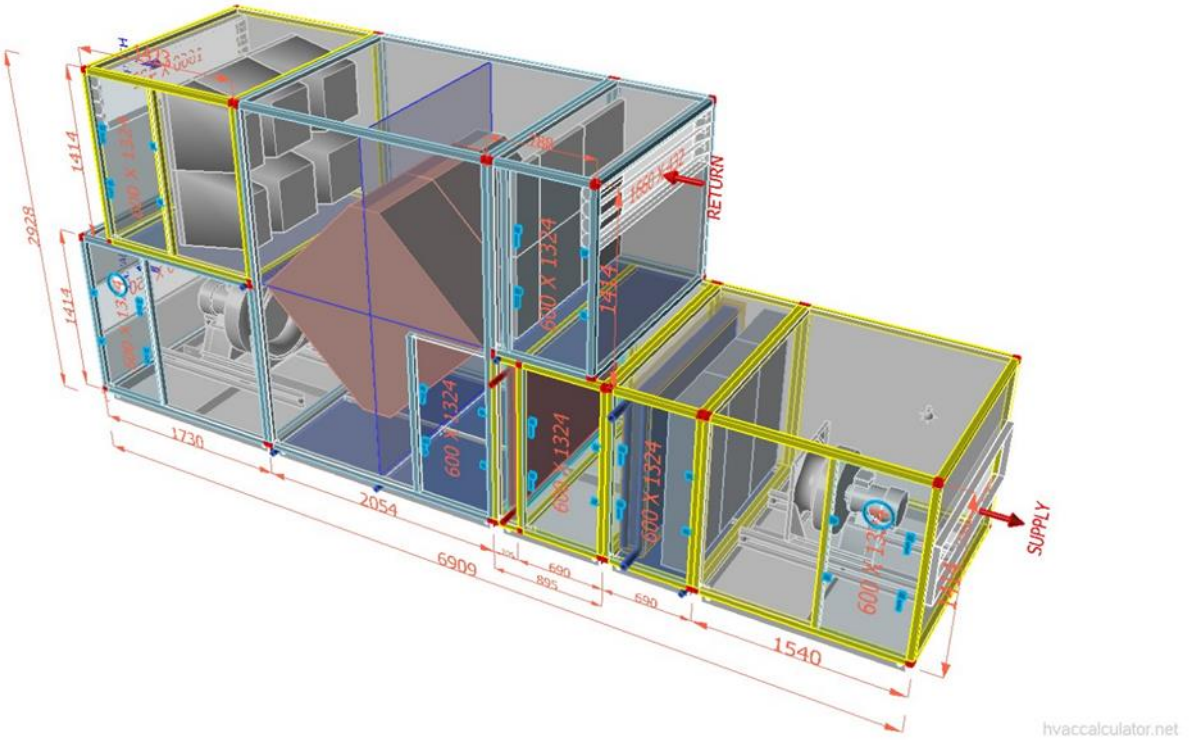
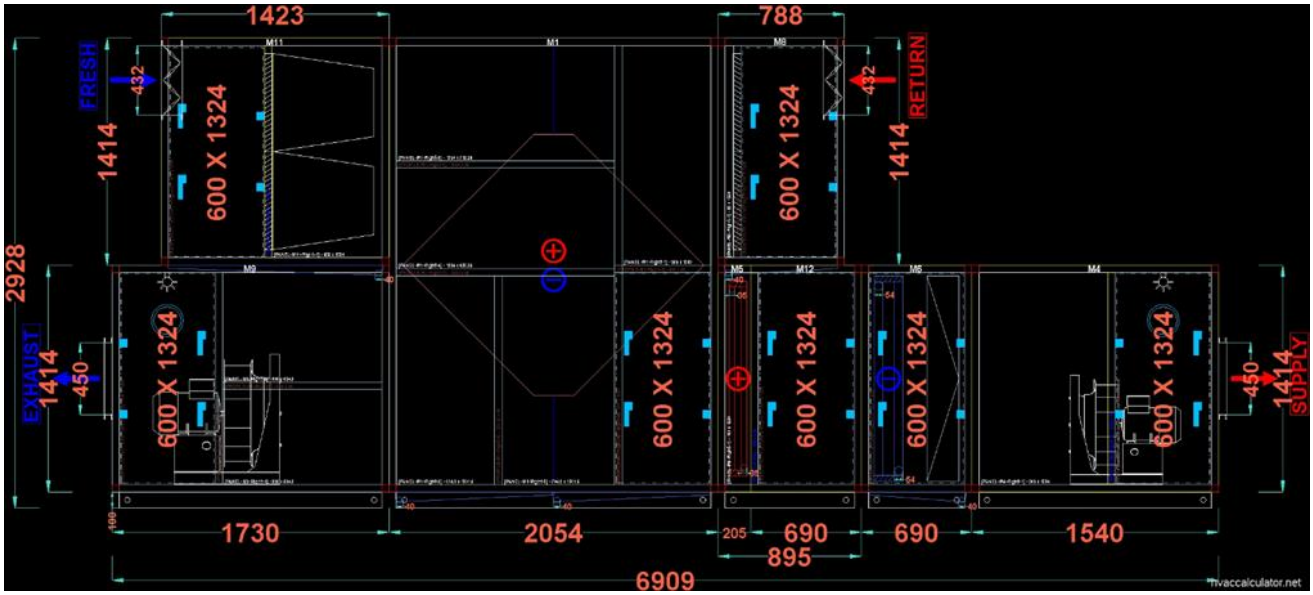
1080
600 X 990
600 X 990
1080
498
230
645
2063
690
M2
M6
M7
M5
hvaccalculator.net


M2
M6
M7
M5
1180
FRESH
1080
990
54
54
600 X 990
600 X 990
1080
[PANEL-M2-Right-1] - 683 x 990
54
54
40
100
498
230
645
690
2063
hvaccalculator.net

# HYGIENIC AHU

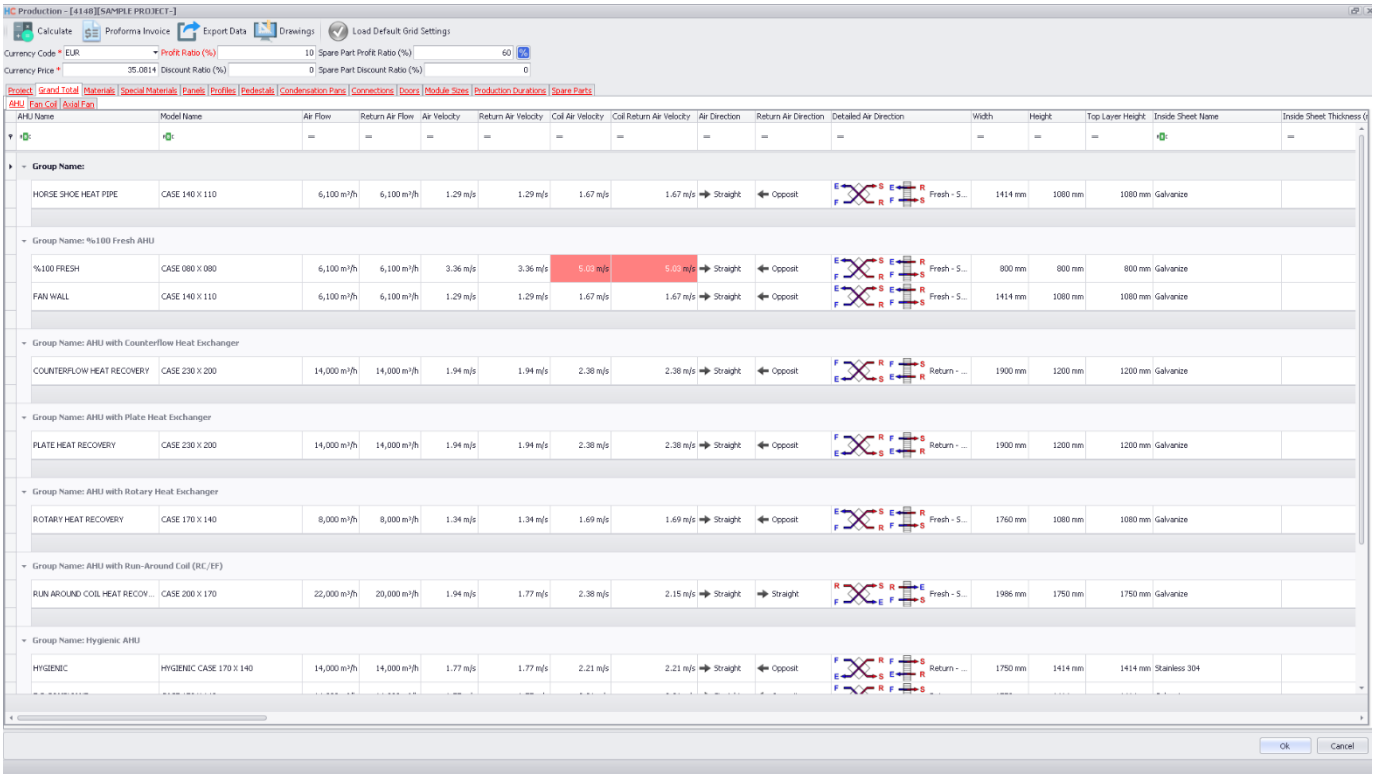


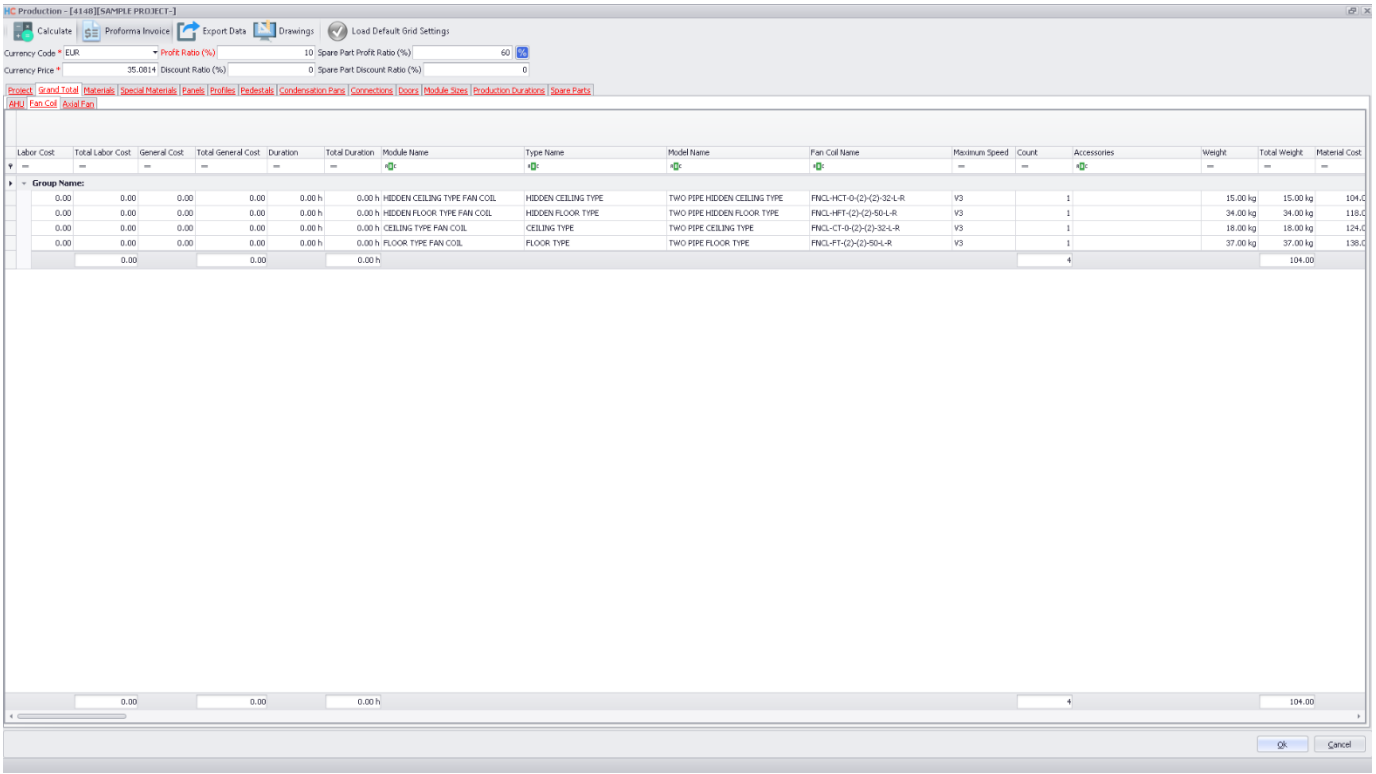
# PRODUCTION / PRICING

You can obtain detailed production information of all material and workmanship used during the production of AHU, based on module, AHU and project. You can calculate the price of the project and production duration of the AHU. You can get the detailed BOM (Bill Of Materials) inside this section.

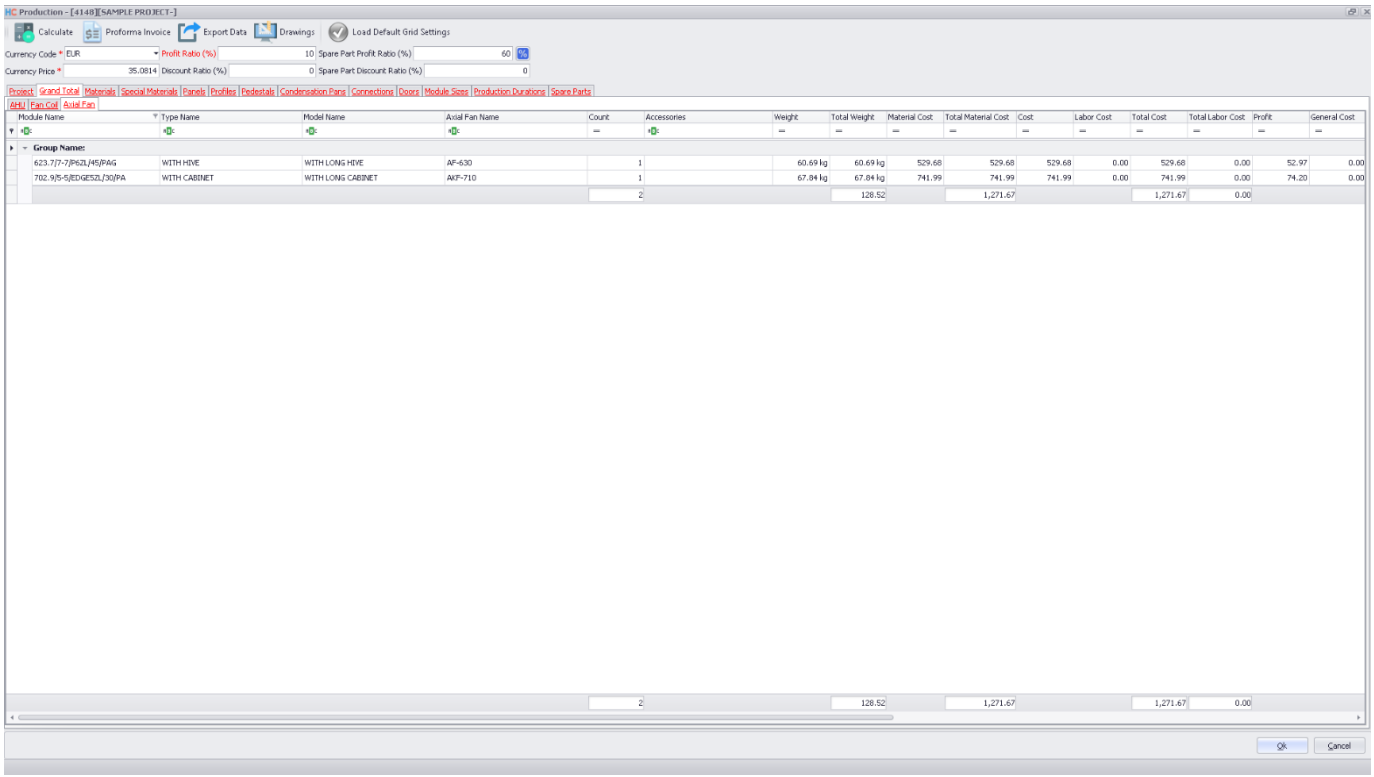
## AHU GRAND TOTALS



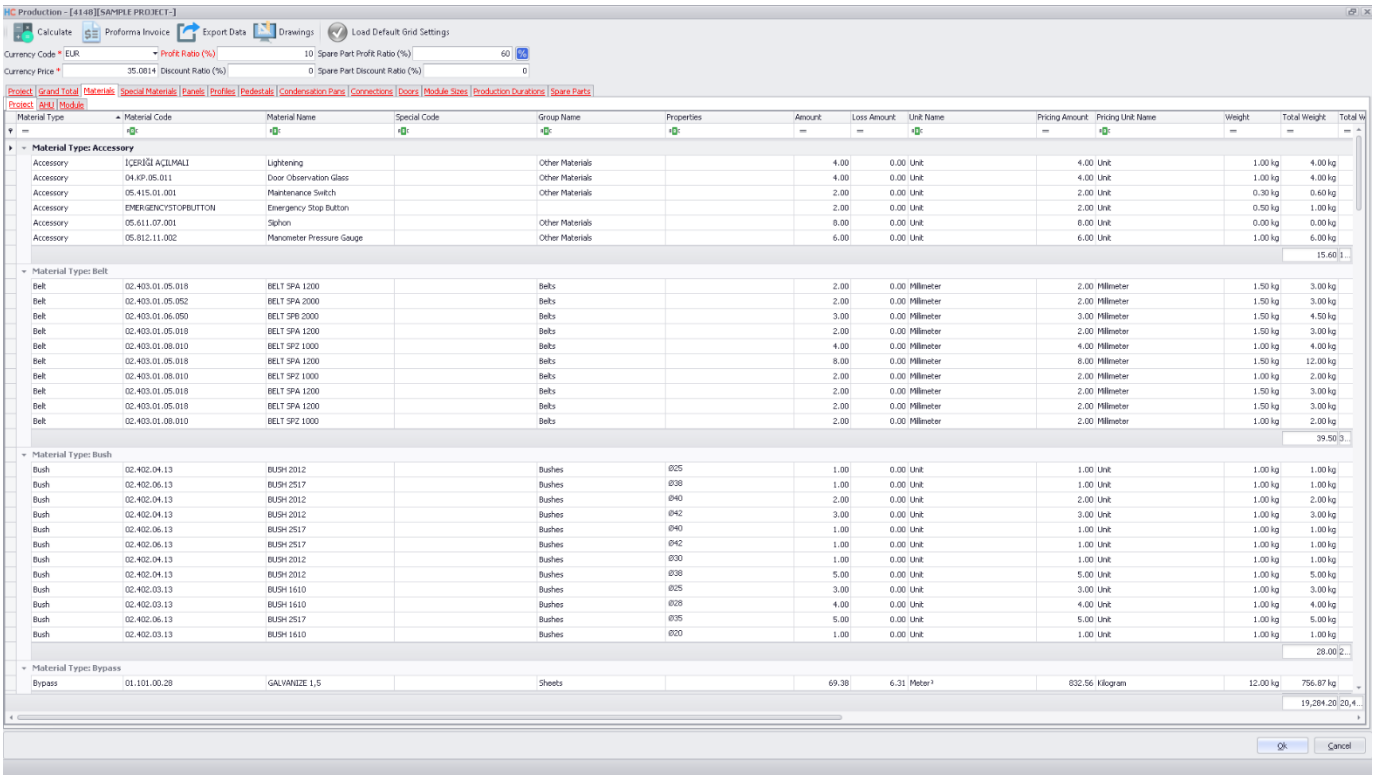

## FAN COIL GRAND TOTALS



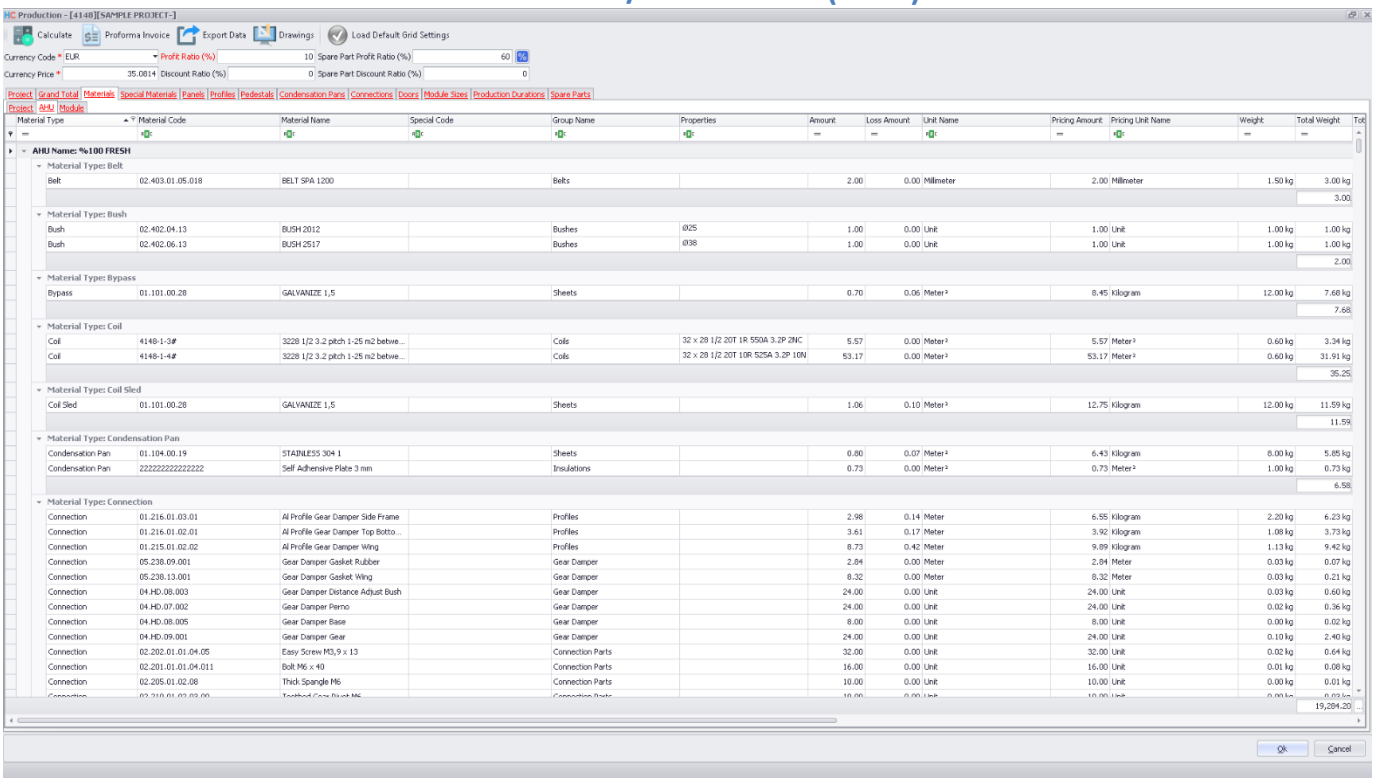
## AXIAL FAN GRAND TOTALS



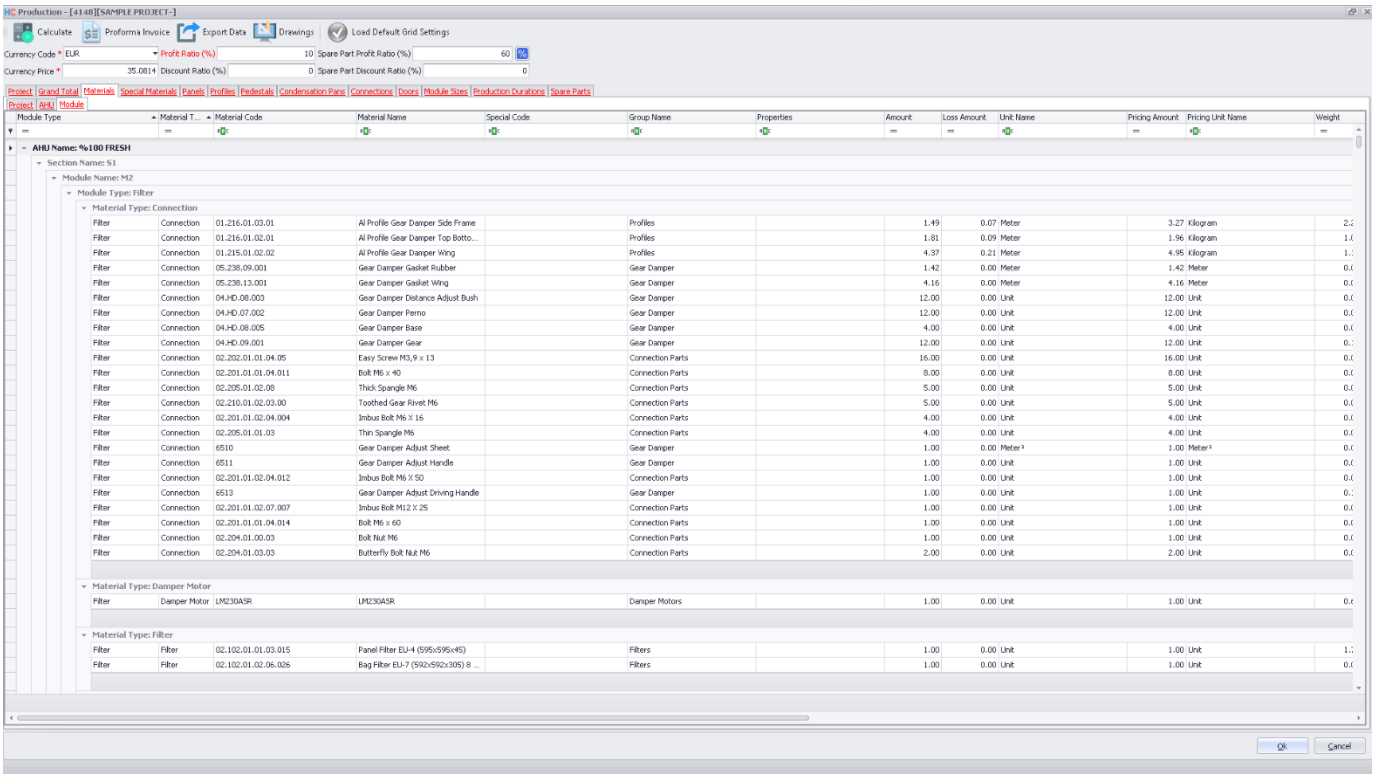
## MATERIALS / PROJECT BASED (BOM)



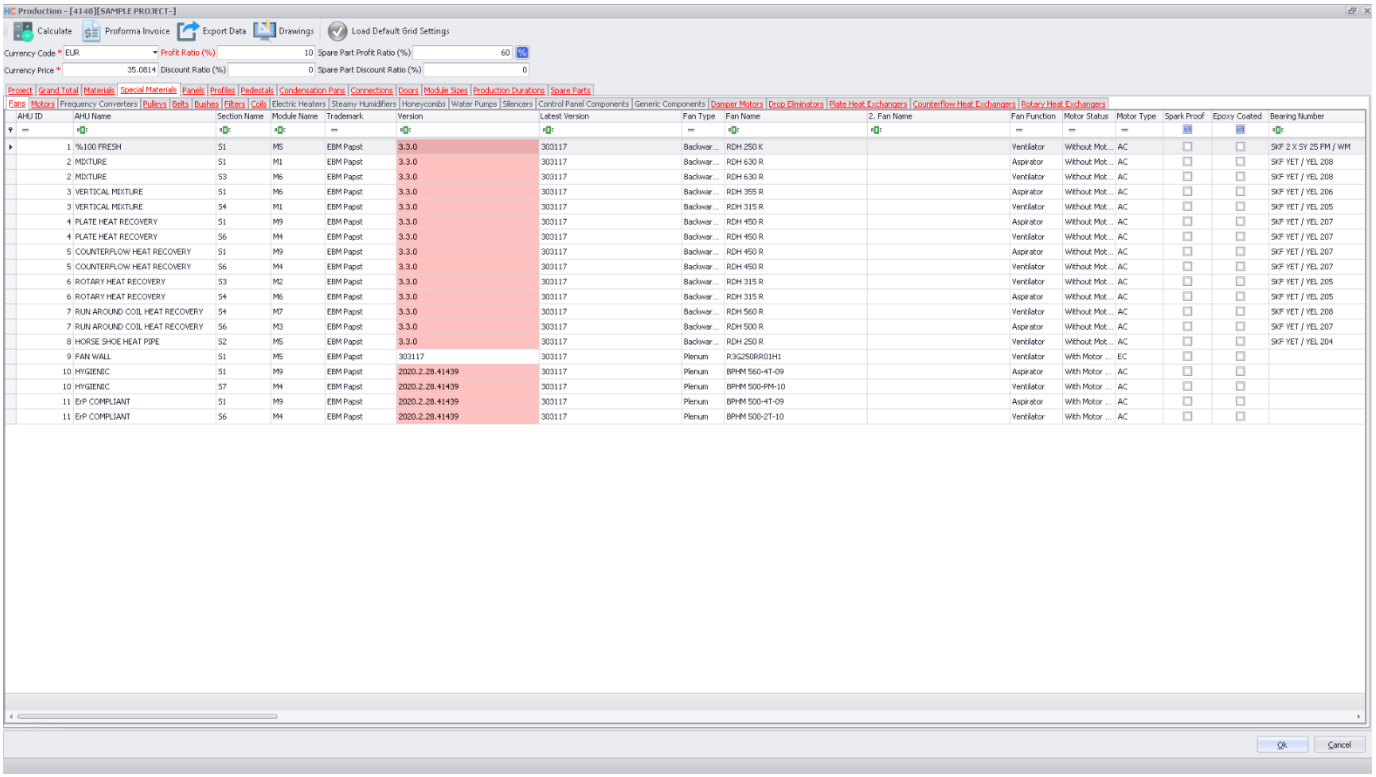

## MATERIALS / AHU BASED (BOM)



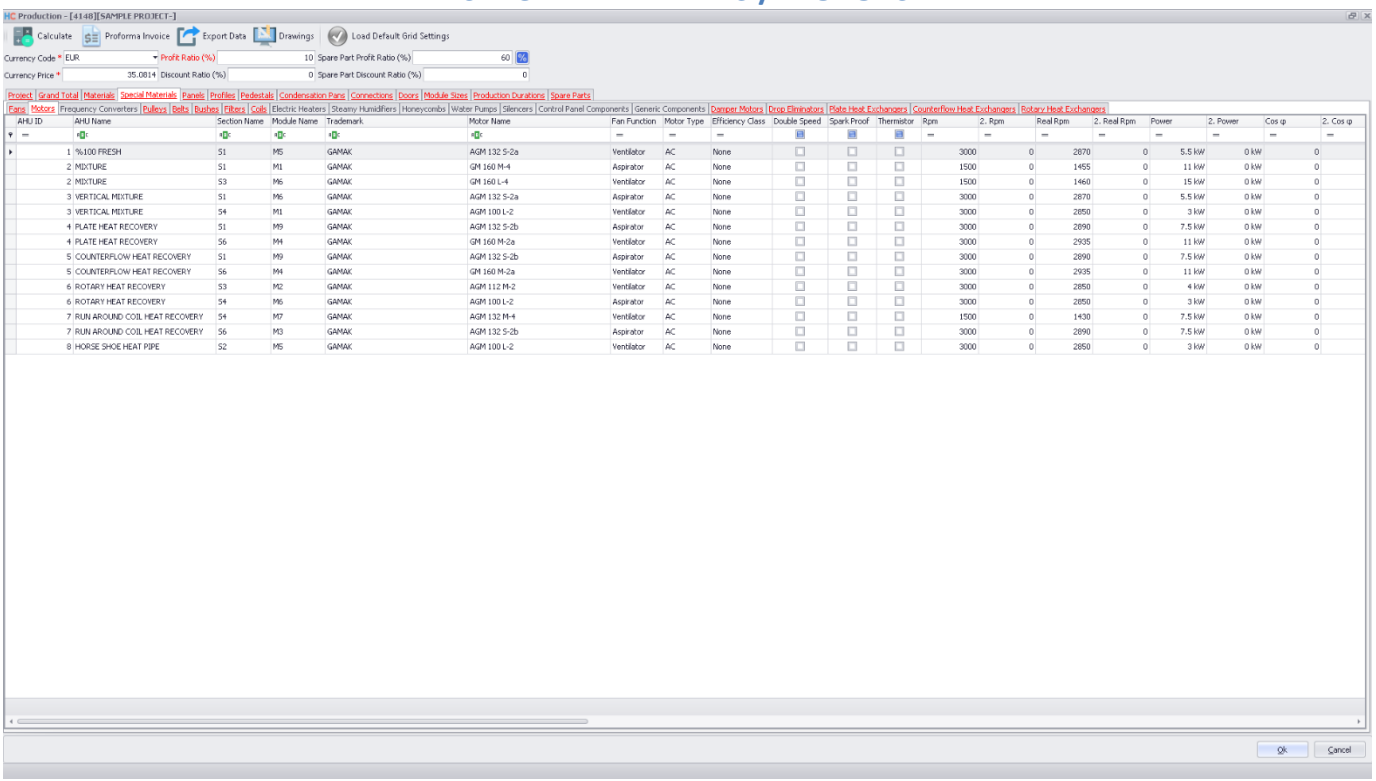
## MATERIALS / MODULE BASED (BOM)



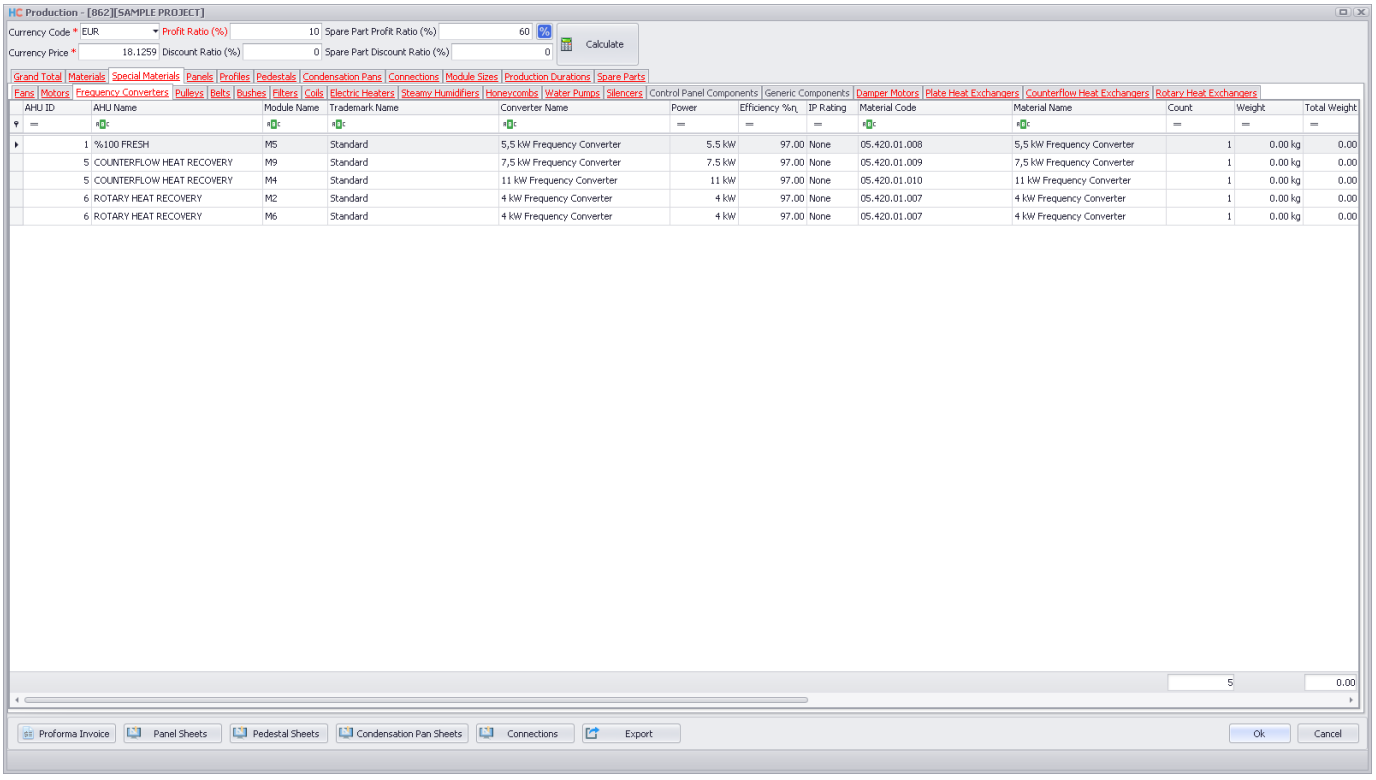

## SPECIAL MATERIALS / FANS



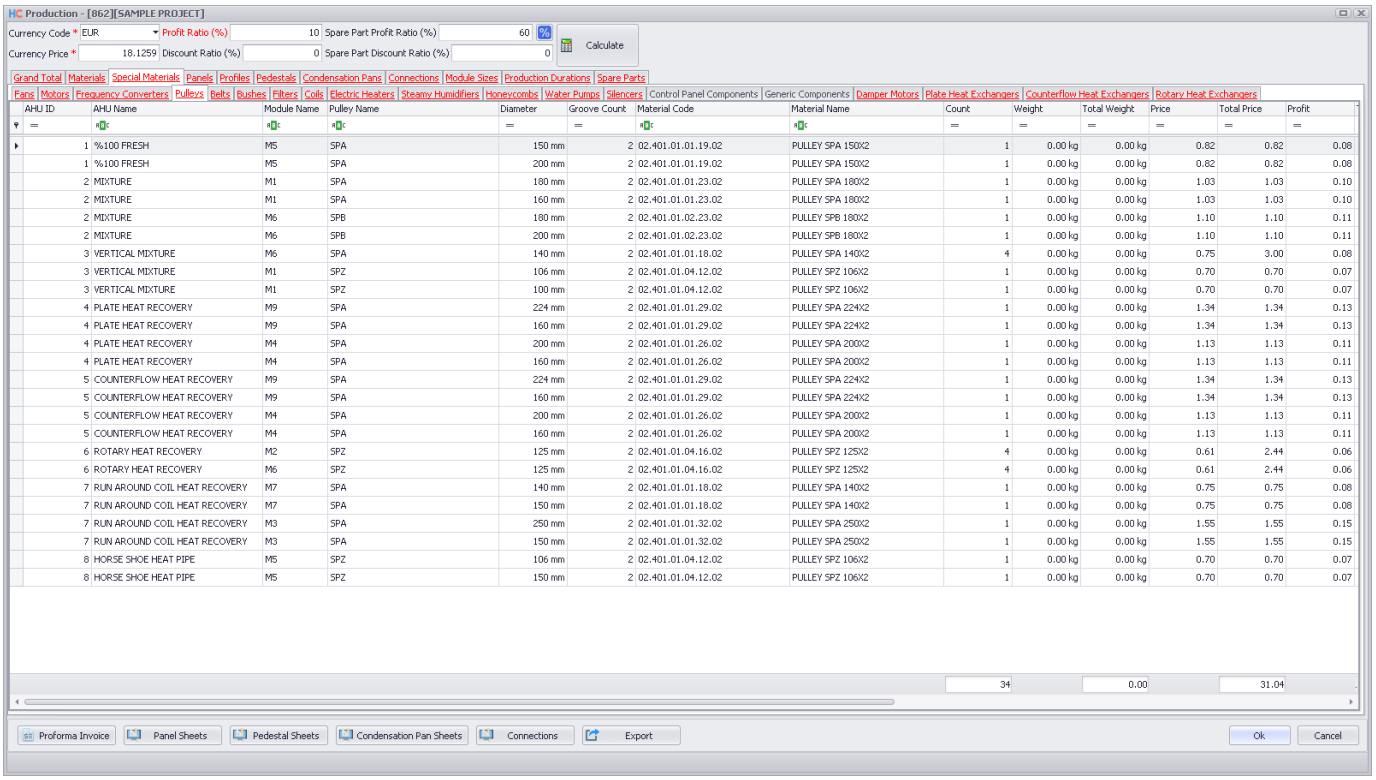
## SPECIAL MATERIALS / MOTORS



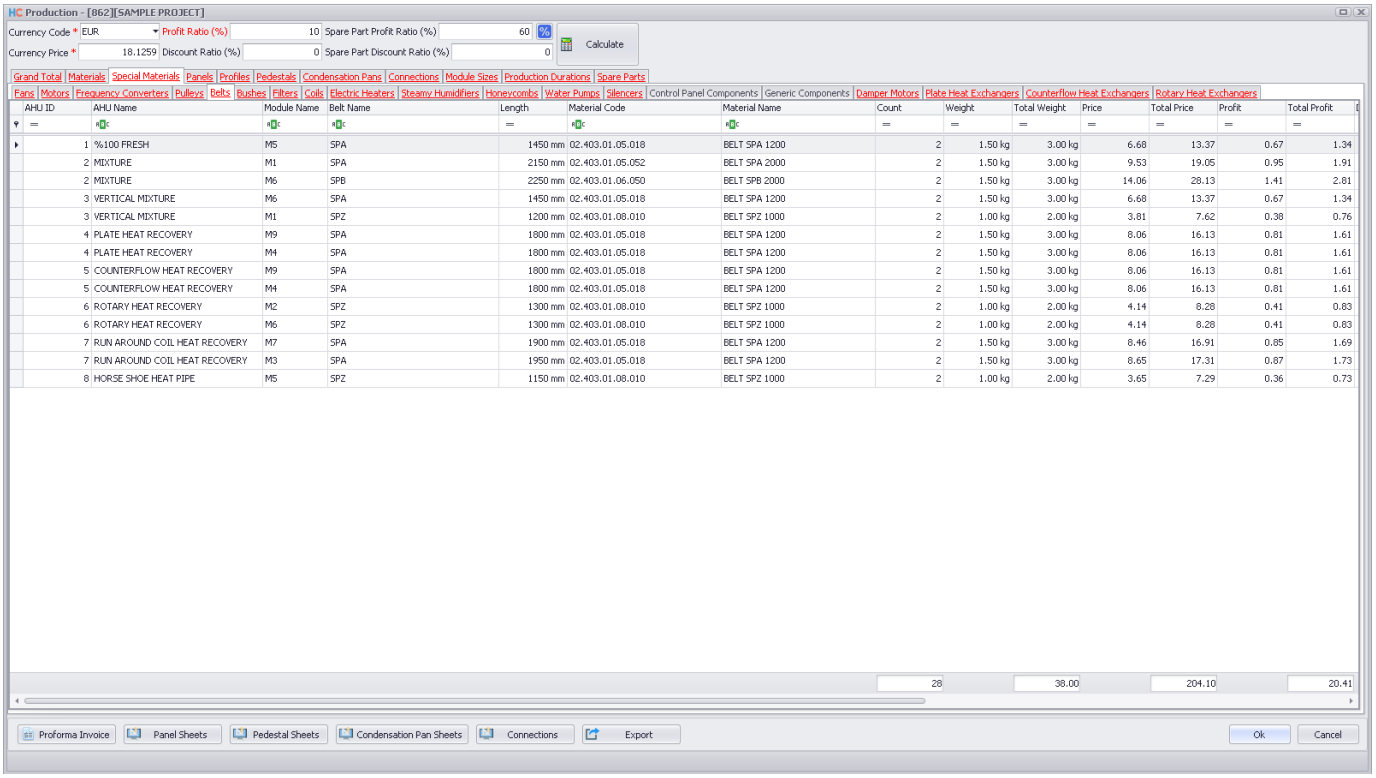

## SPECIAL MATERIALS / FREQUENCY CONVERTERS



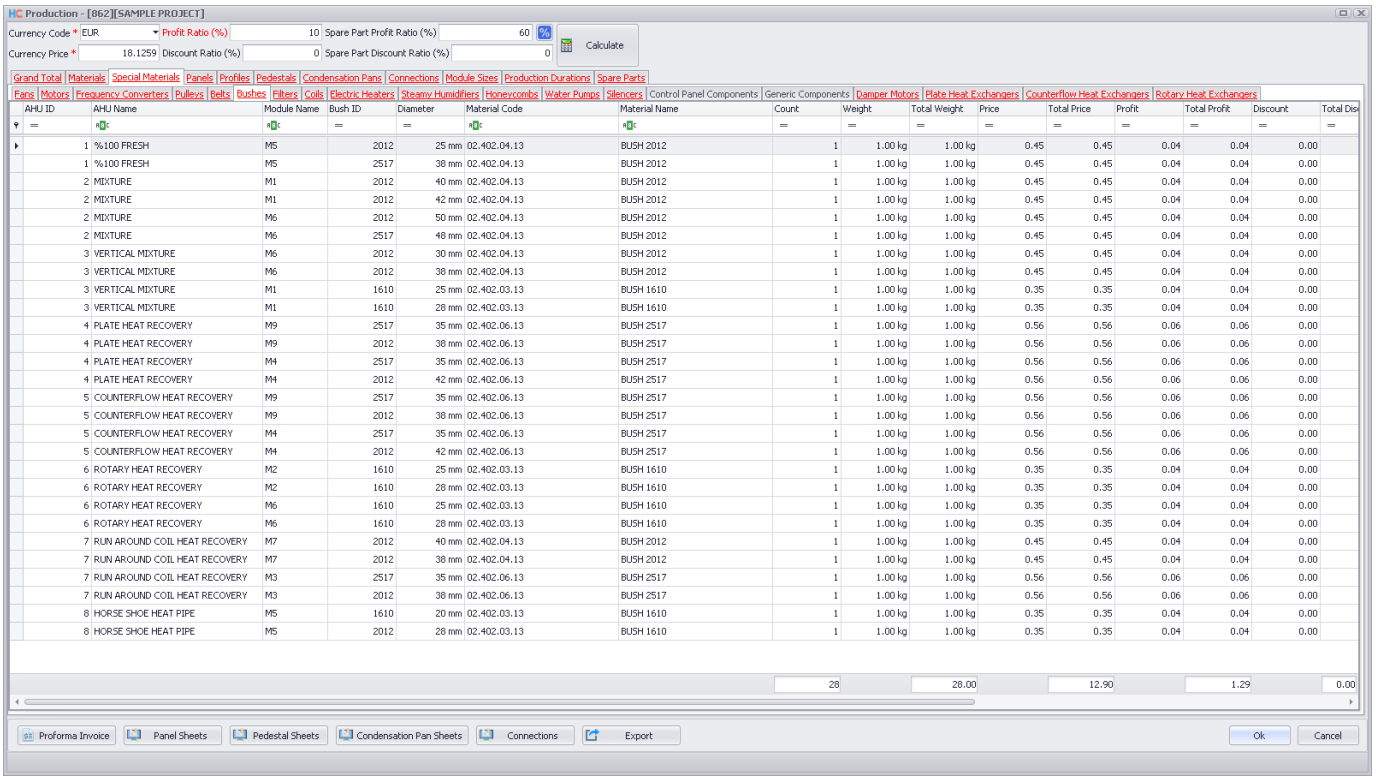
## SPECIAL MATERIALS / PULLEYS



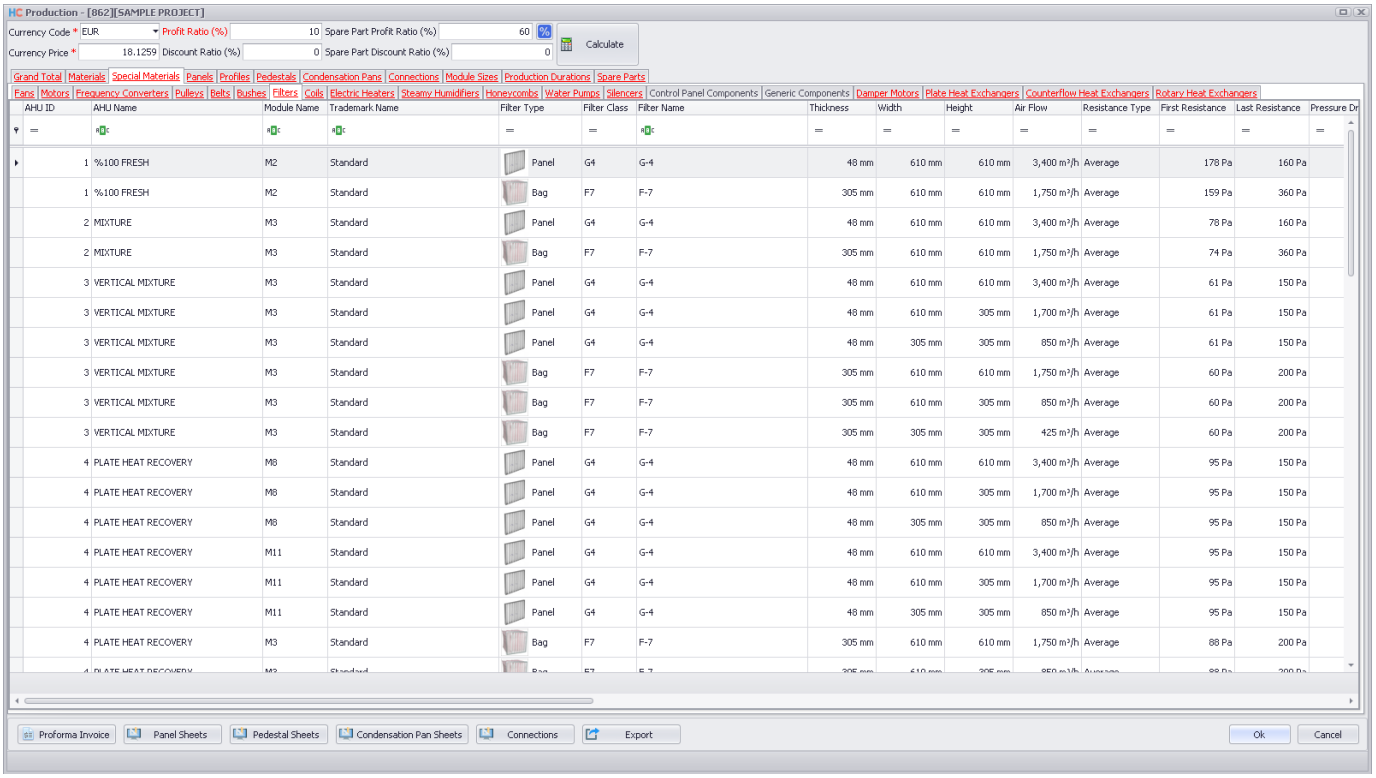

## SPECIAL MATERIALS / BELTS



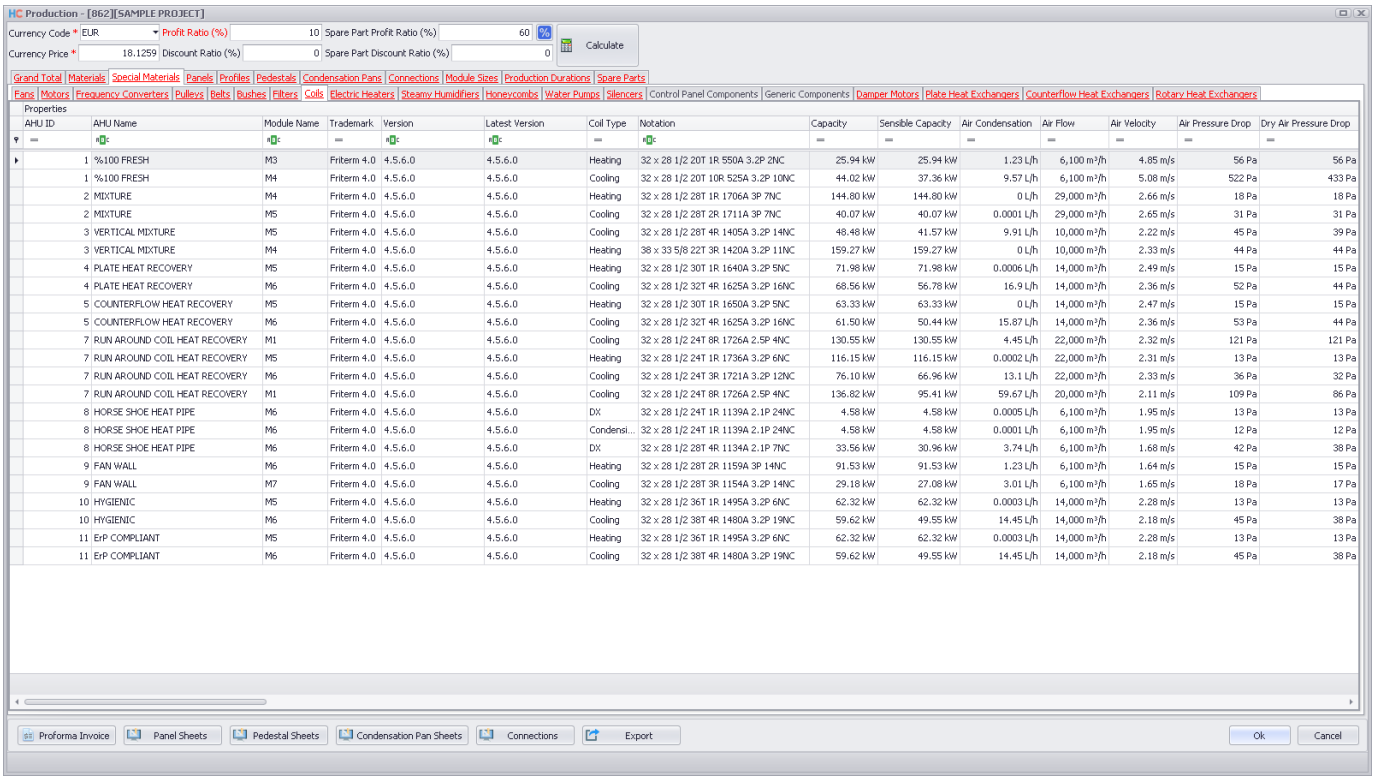
## SPECIAL MATERIALS / BUSHES



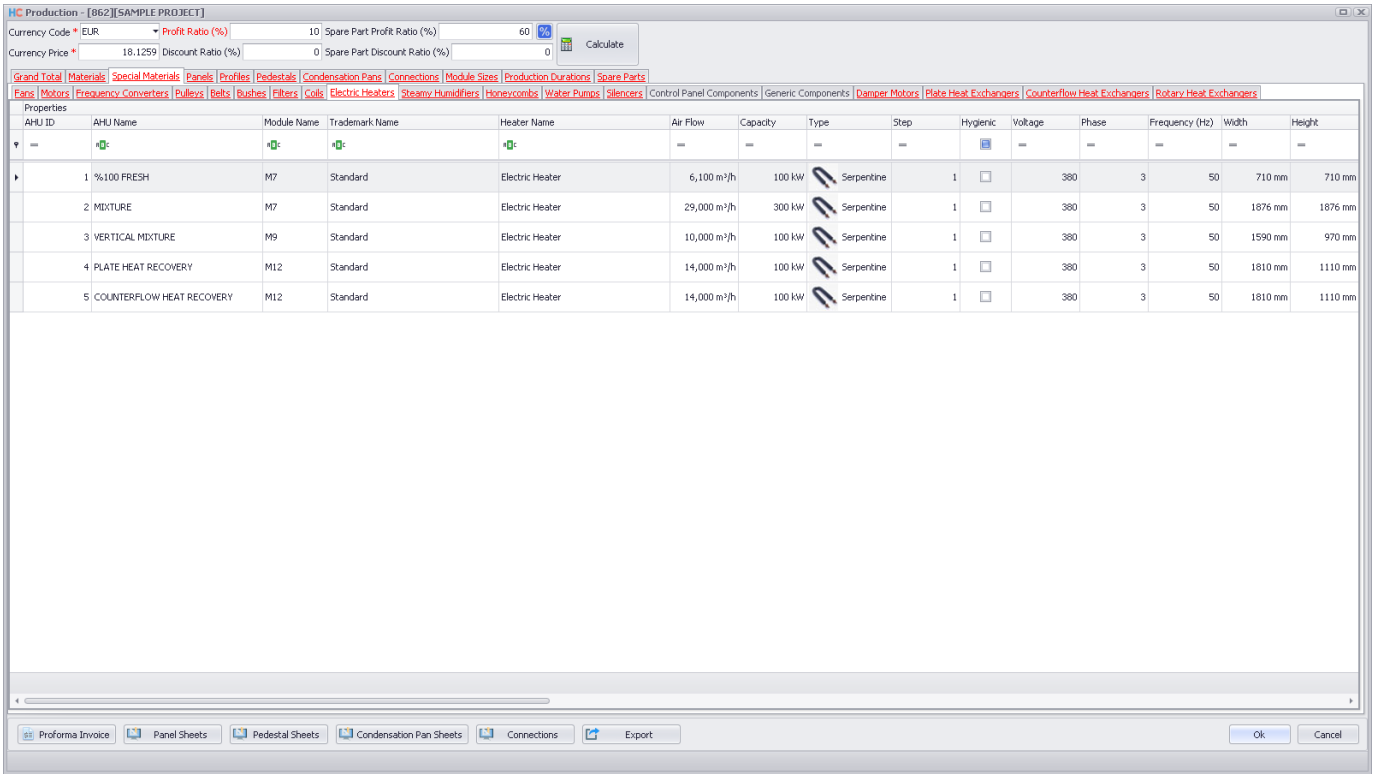

## SPECIAL MATERIALS / FILTERS



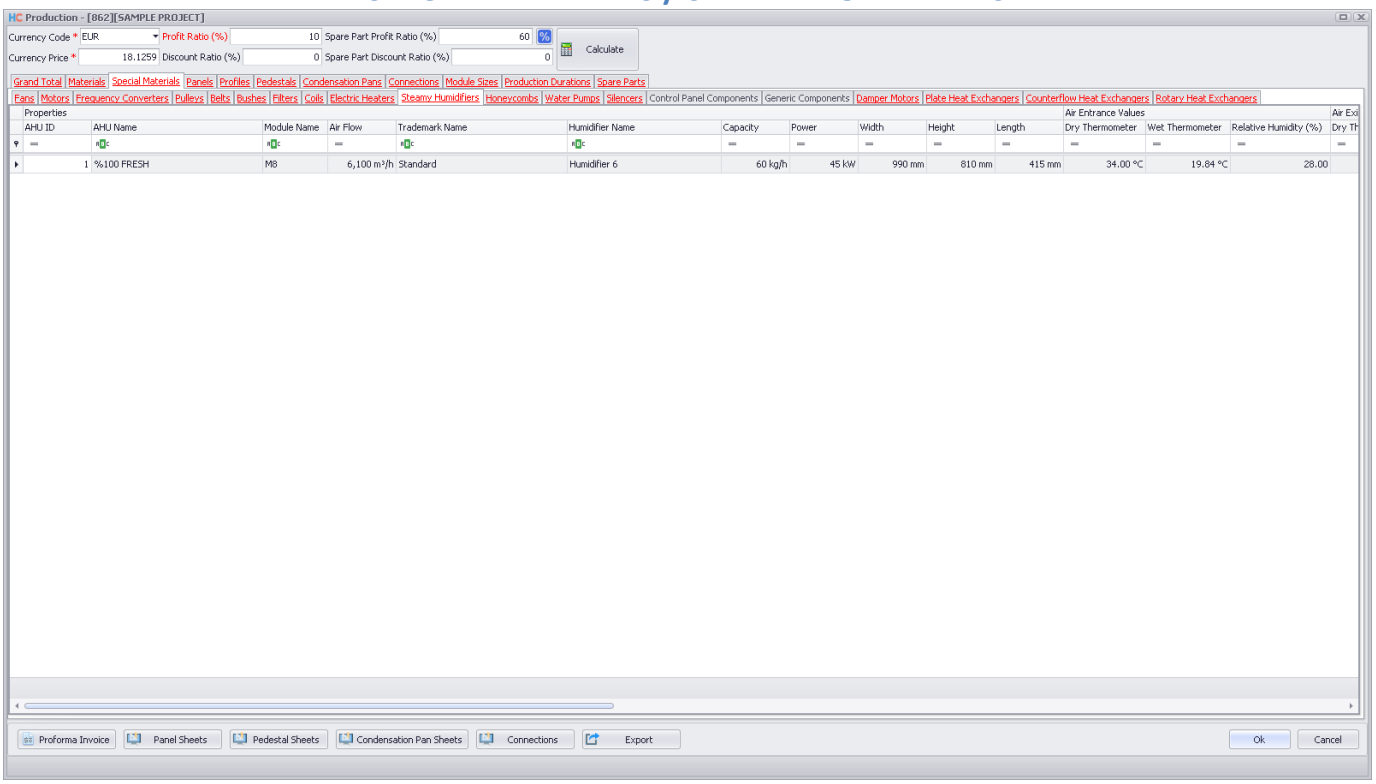
## SPECIAL MATERIALS / COILS



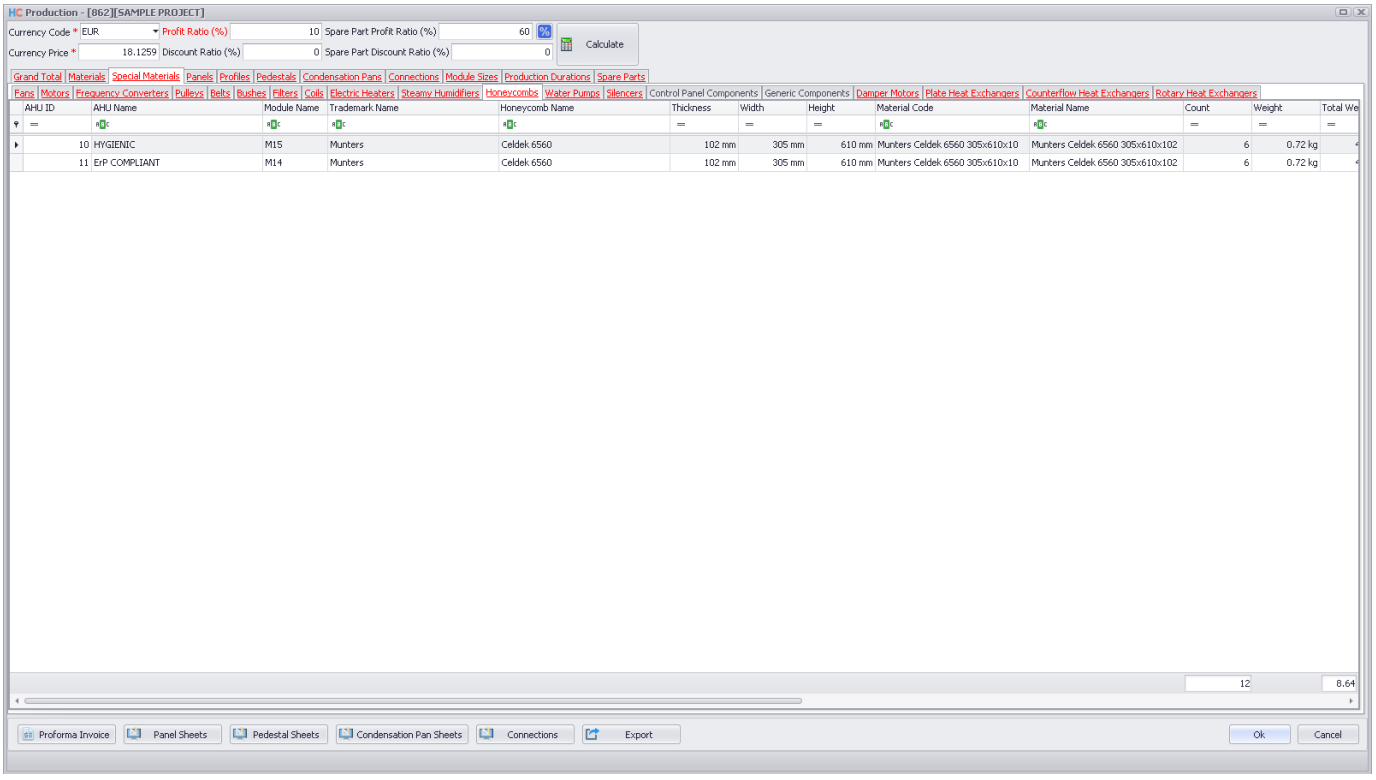

## SPECIAL MATERIALS / ELECTRIC HEATERS



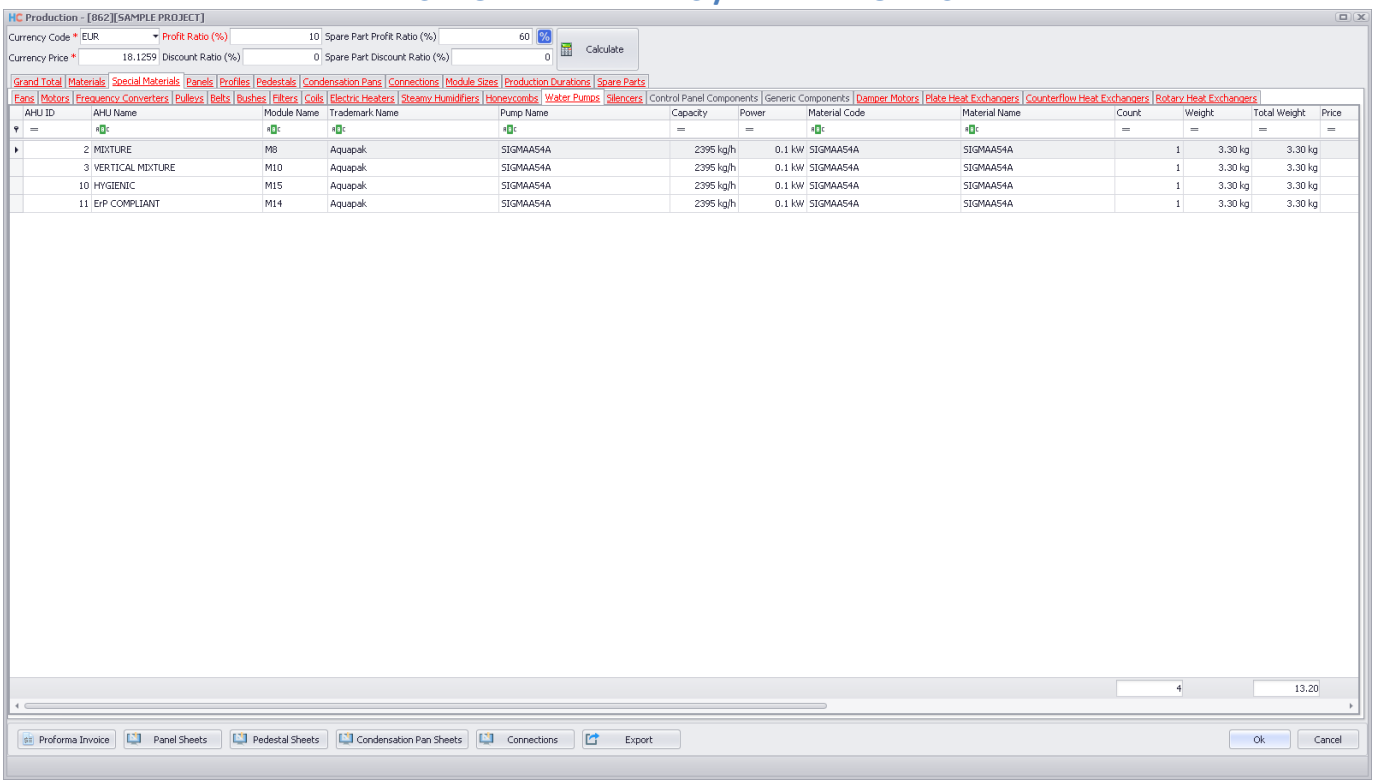
## SPECIAL MATERIALS / STEAMY HUMIDIFIERS



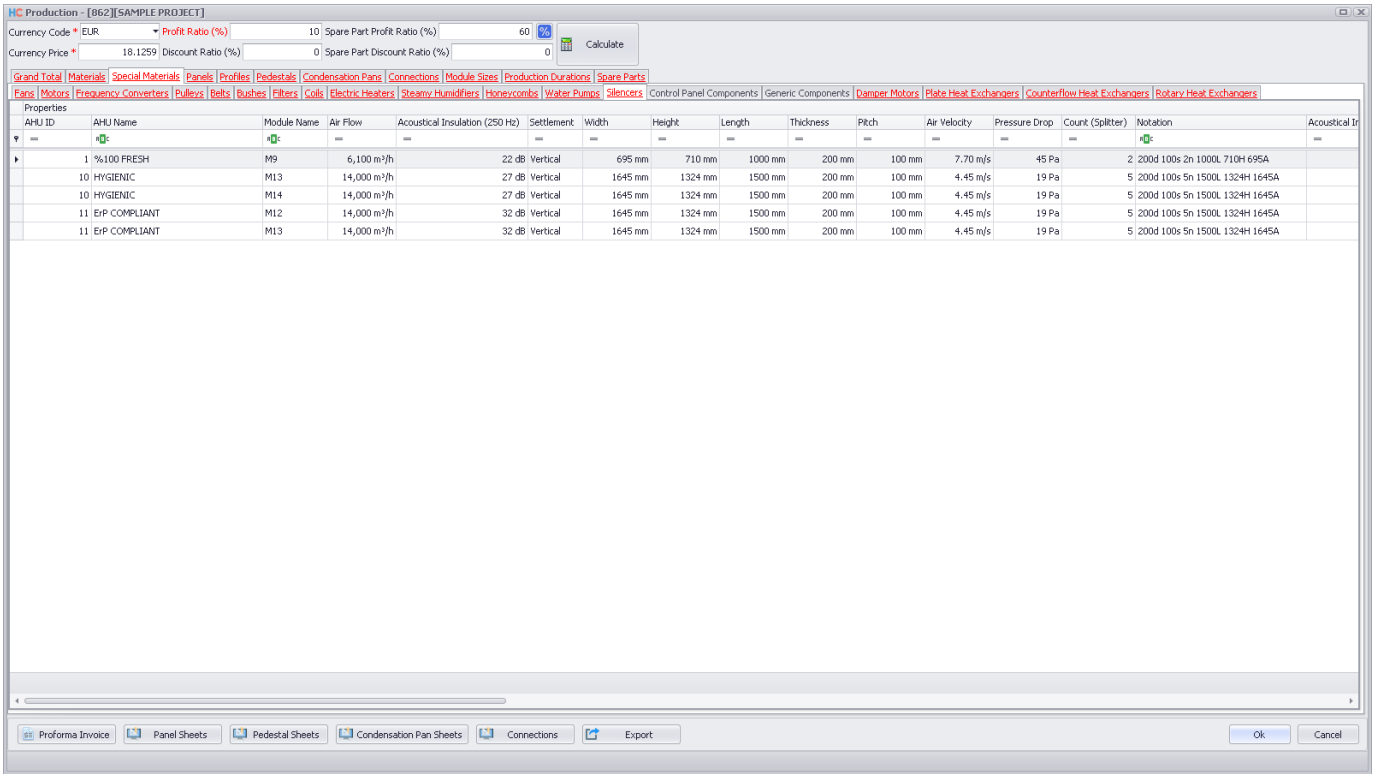

## SPECIAL MATERIALS / HONEYCOMBS



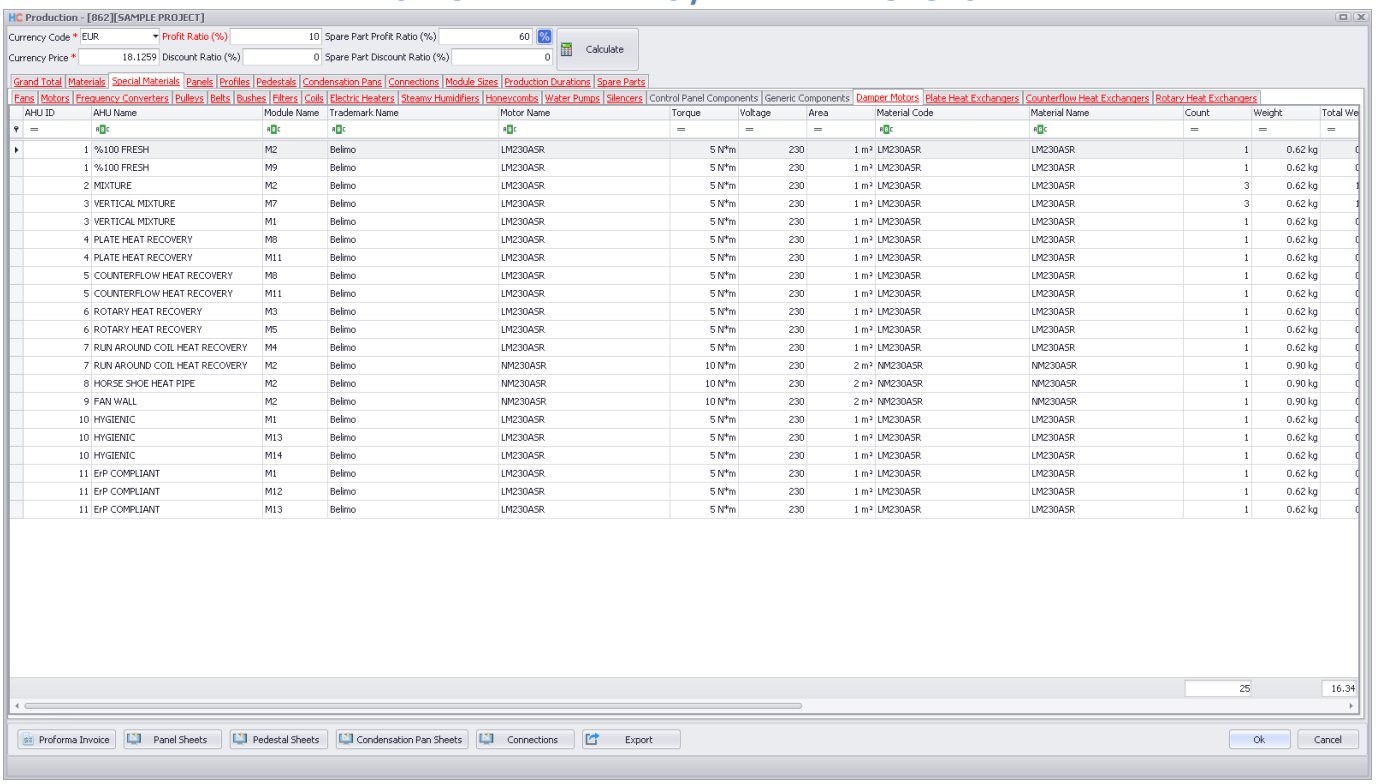
## SPECIAL MATERIALS / WATER PUMPS



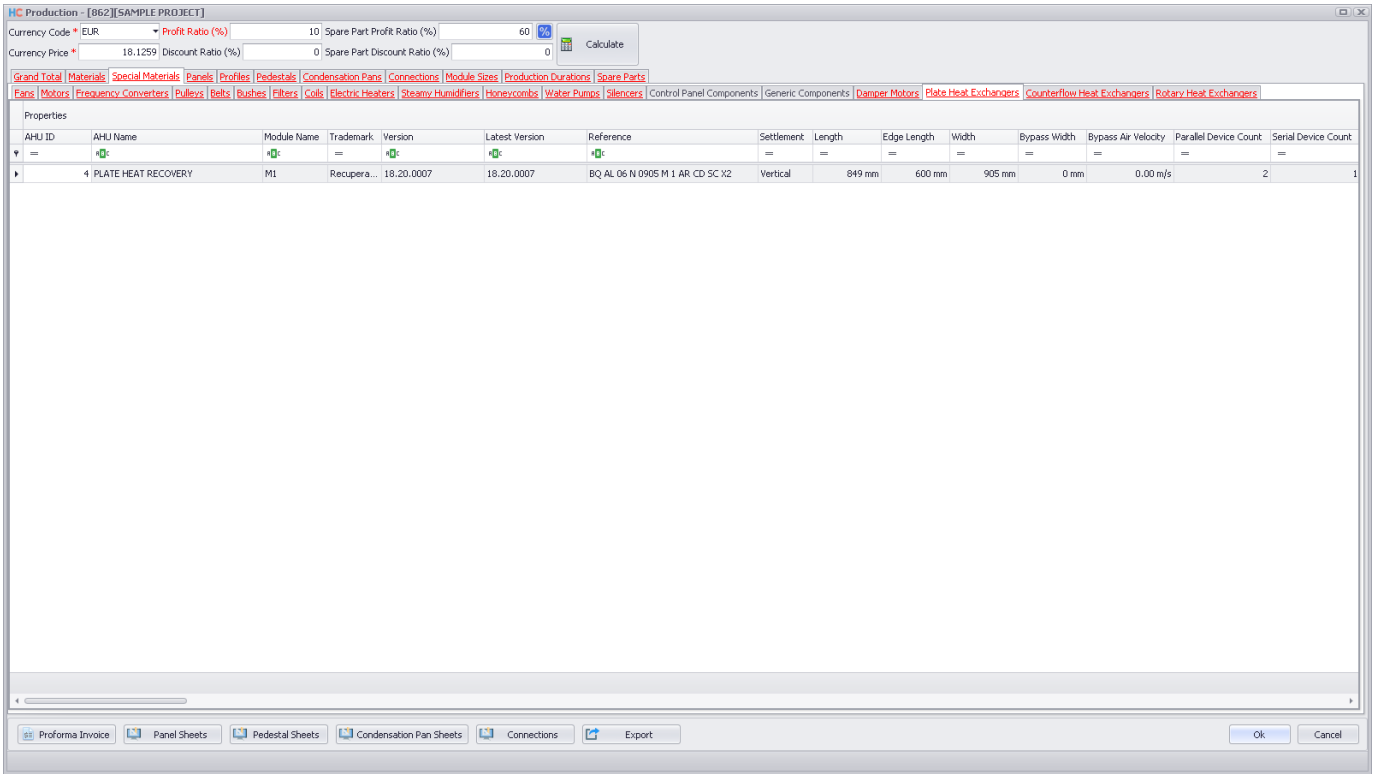

## SPECIAL MATERIALS / SILENCERS



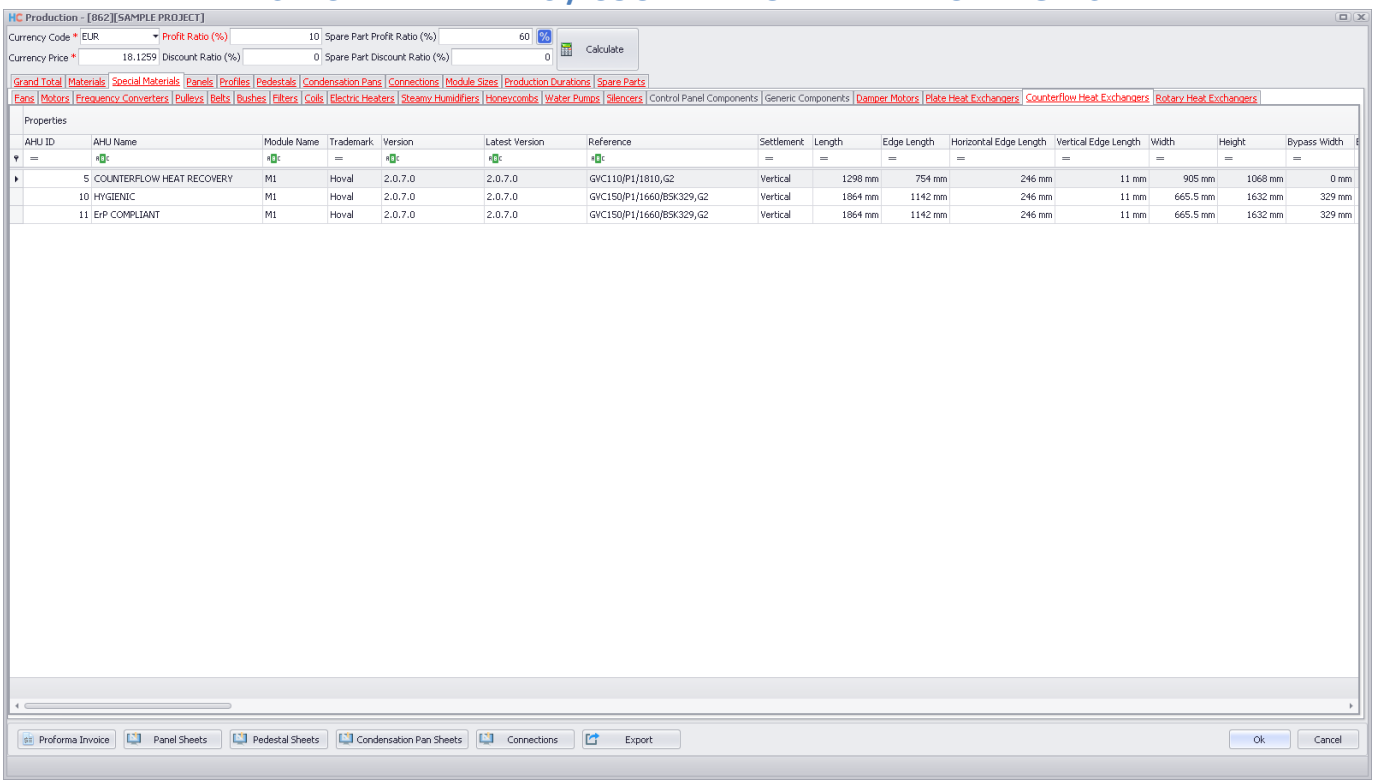
## SPECIAL MATERIALS / DAMPER MOTORS



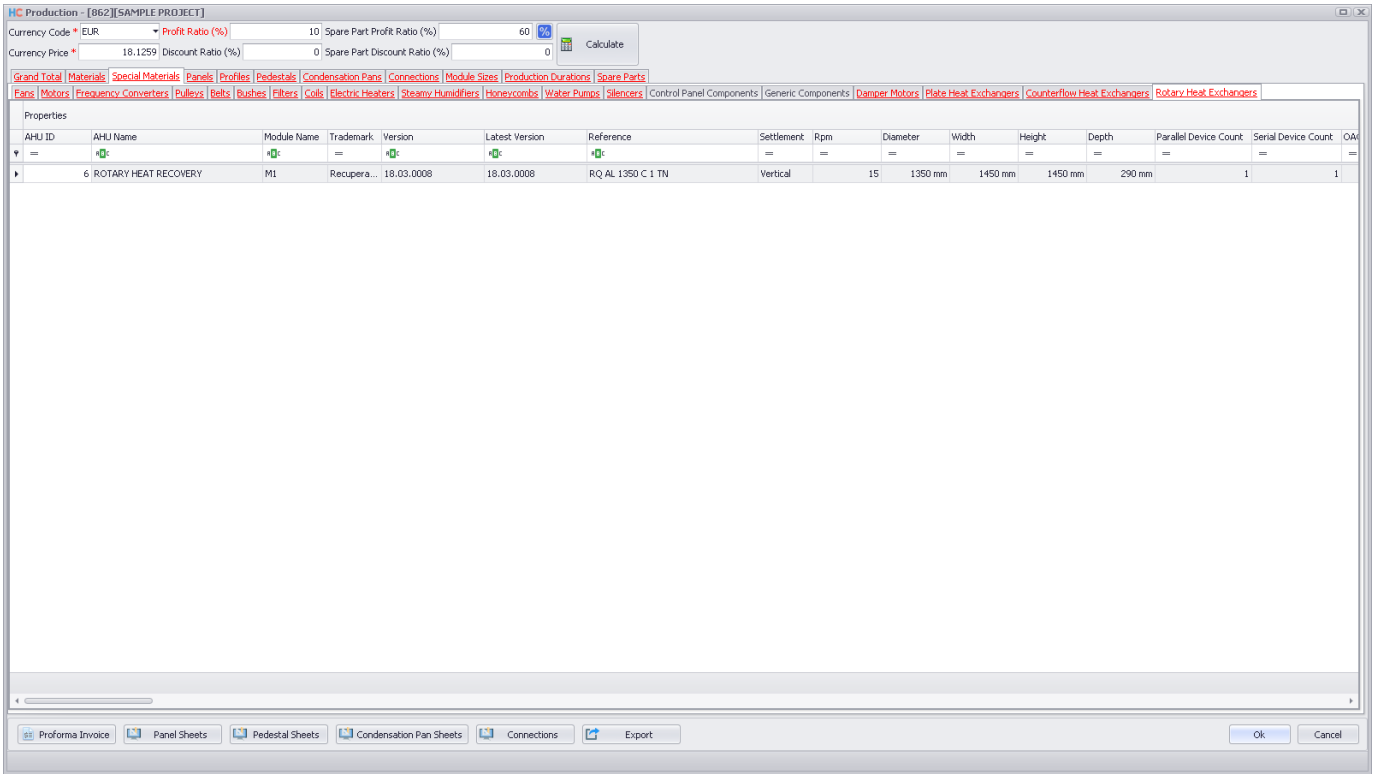

## SPECIAL MATERIALS / PLATE HEAT EXCHANGERS



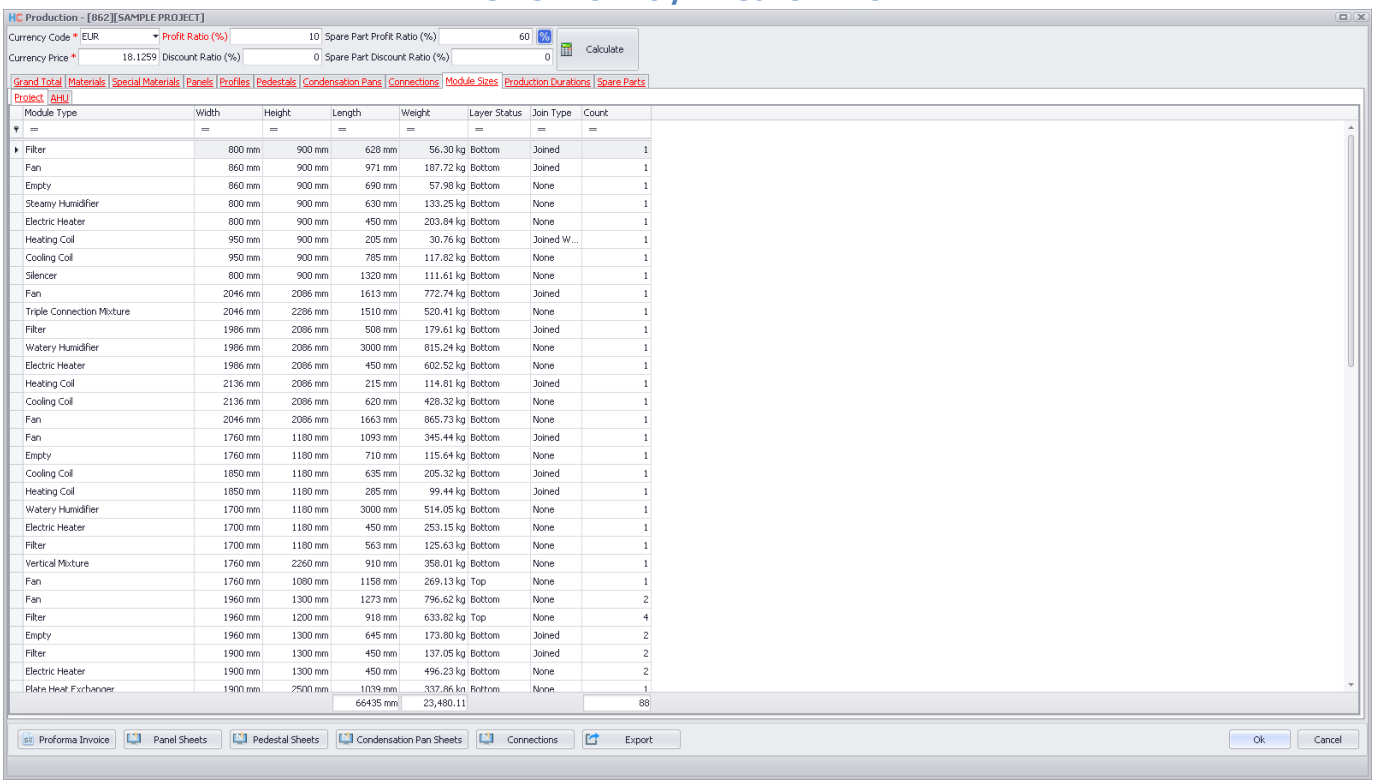
## SPECIAL MATERIALS / COUNTERFLOW HEAT EXCHANGERS




## SPECIAL MATERIALS / ROTARY HEAT EXCHANGERS

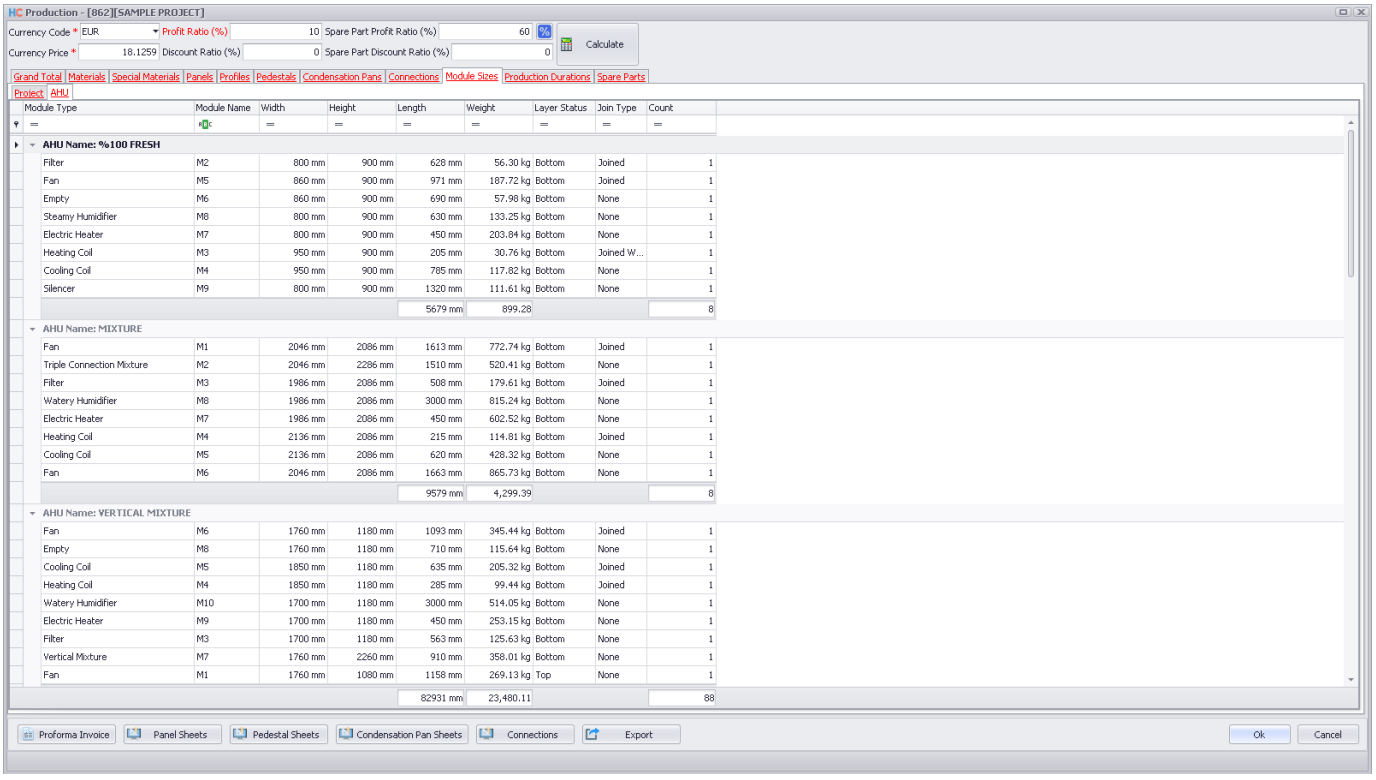


## MODULE SIZES / PROJECT BASED



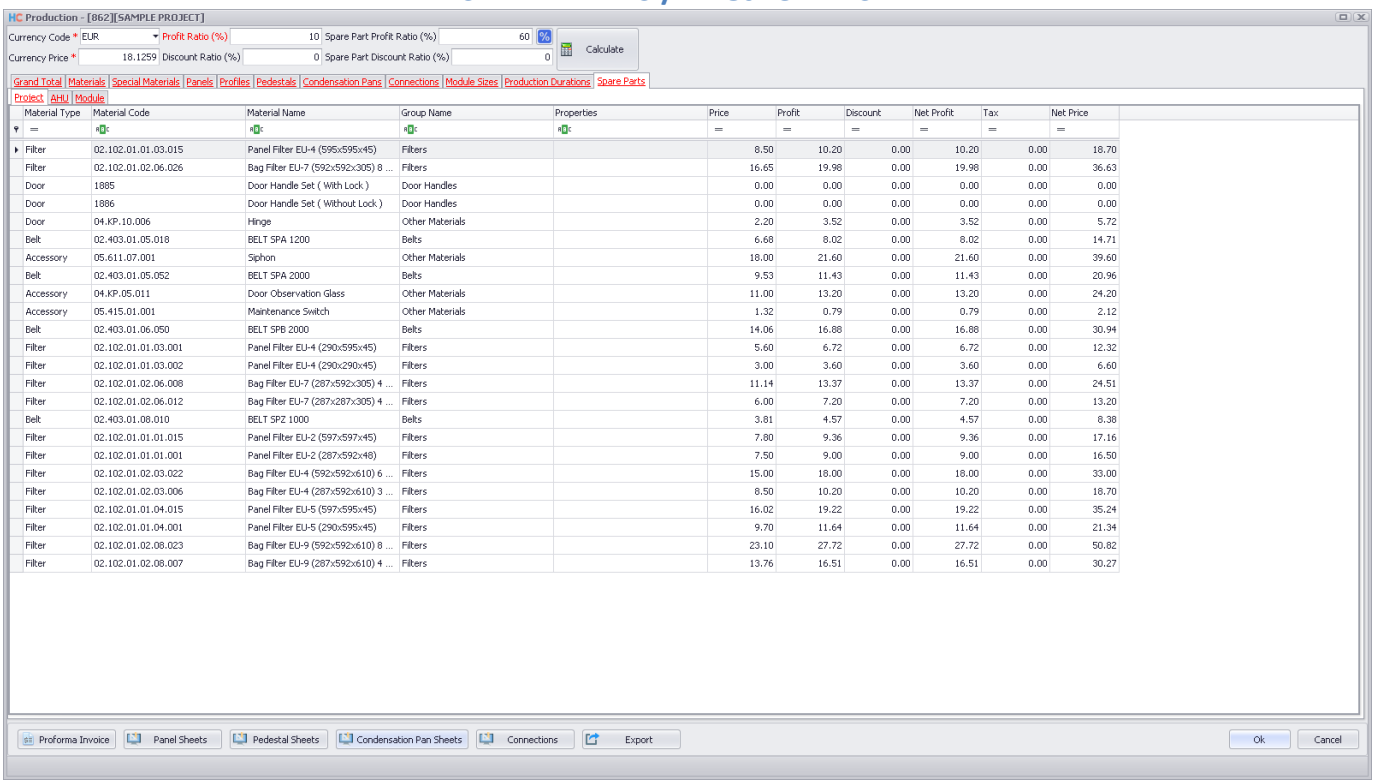

| Module Type | Width | Height | Length | Weight | Layer Status | Join Type | Count |
|---|---|---|---|---|---|---|---|
| Filter | 800 mm | 900 mm | 628 mm | 56.30 kg | Bottom | Joined | 1 |
| Fan | 860 mm | 900 mm | 971 mm | 187.72 kg | Bottom | Joined | 1 |
| Empty | 860 mm | 900 mm | 690 mm | 57.98 kg | Bottom | None | 1 |
| Steamy Humidifier | 800 mm | 900 mm | 630 mm | 133.25 kg | Bottom | None | 1 |
| Electric Heater | 800 mm | 900 mm | 450 mm | 203.84 kg | Bottom | None | 1 |
| Heating Coil | 950 mm | 900 mm | 205 mm | 30.76 kg | Bottom | Joined W... | 1 |
| Cooling Coil | 950 mm | 900 mm | 785 mm | 117.82 kg | Bottom | None | 1 |
| Silencer | 800 mm | 900 mm | 1320 mm | 111.61 kg | Bottom | None | 1 |
| Fan | 2046 mm | 2086 mm | 1613 mm | 772.74 kg | Bottom | Joined | 1 |
| Triple Connection Mixture | 2046 mm | 2286 mm | 1510 mm | 520.41 kg | Bottom | None | 1 |
| Filter | 1986 mm | 2086 mm | 508 mm | 179.61 kg | Bottom | Joined | 1 |
| Watery Humidifier | 1986 mm | 2086 mm | 3000 mm | 815.24 kg | Bottom | None | 1 |
| Electric Heater | 1986 mm | 2086 mm | 450 mm | 602.52 kg | Bottom | None | 1 |
| Heating Coil | 2136 mm | 2086 mm | 215 mm | 114.81 kg | Bottom | Joined | 1 |
| Cooling Coil | 2136 mm | 2086 mm | 620 mm | 428.32 kg | Bottom | None | 1 |
| Fan | 2046 mm | 2086 mm | 1663 mm | 865.73 kg | Bottom | None | 1 |
| Fan | 1760 mm | 1180 mm | 1093 mm | 345.44 kg | Bottom | Joined | 1 |
| Empty | 1760 mm | 1180 mm | 710 mm | 115.64 kg | Bottom | None | 1 |
| Cooling Coil | 1850 mm | 1180 mm | 635 mm | 205.32 kg | Bottom | Joined | 1 |
| Heating Coil | 1850 mm | 1180 mm | 285 mm | 99.44 kg | Bottom | Joined | 1 |
| Watery Humidifier | 1700 mm | 1180 mm | 3000 mm | 514.05 kg | Bottom | None | 1 |
| Electric Heater | 1700 mm | 1180 mm | 450 mm | 253.15 kg | Bottom | None | 1 |
| Filter | 1700 mm | 1180 mm | 563 mm | 125.63 kg | Bottom | None | 1 |
| Vertical Mixture | 1760 mm | 2260 mm | 910 mm | 358.01 kg | Bottom | None | 1 |
| Fan | 1760 mm | 1080 mm | 1158 mm | 269.13 kg | Top | None | 1 |
| Fan | 1960 mm | 1300 mm | 1273 mm | 796.62 kg | Bottom | None | 2 |
| Filter | 1960 mm | 1200 mm | 918 mm | 633.82 kg | Top | None | 4 |
| Empty | 1960 mm | 1300 mm | 645 mm | 173.80 kg | Bottom | Joined | 2 |
| Filter | 1900 mm | 1300 mm | 450 mm | 137.05 kg | Bottom | Joined | 2 |
| Electric Heater | 1900 mm | 1300 mm | 450 mm | 496.23 kg | Bottom | None | 2 |
| Plate Heat Exchanger | 1900 mm | 2500 mm | 1039 mm | 337.86 kg | Bottom | None | 1 |
| | | | 66435 mm | 23,480.11 | | | 88 |

## MODULE SIZES / AHU BASED



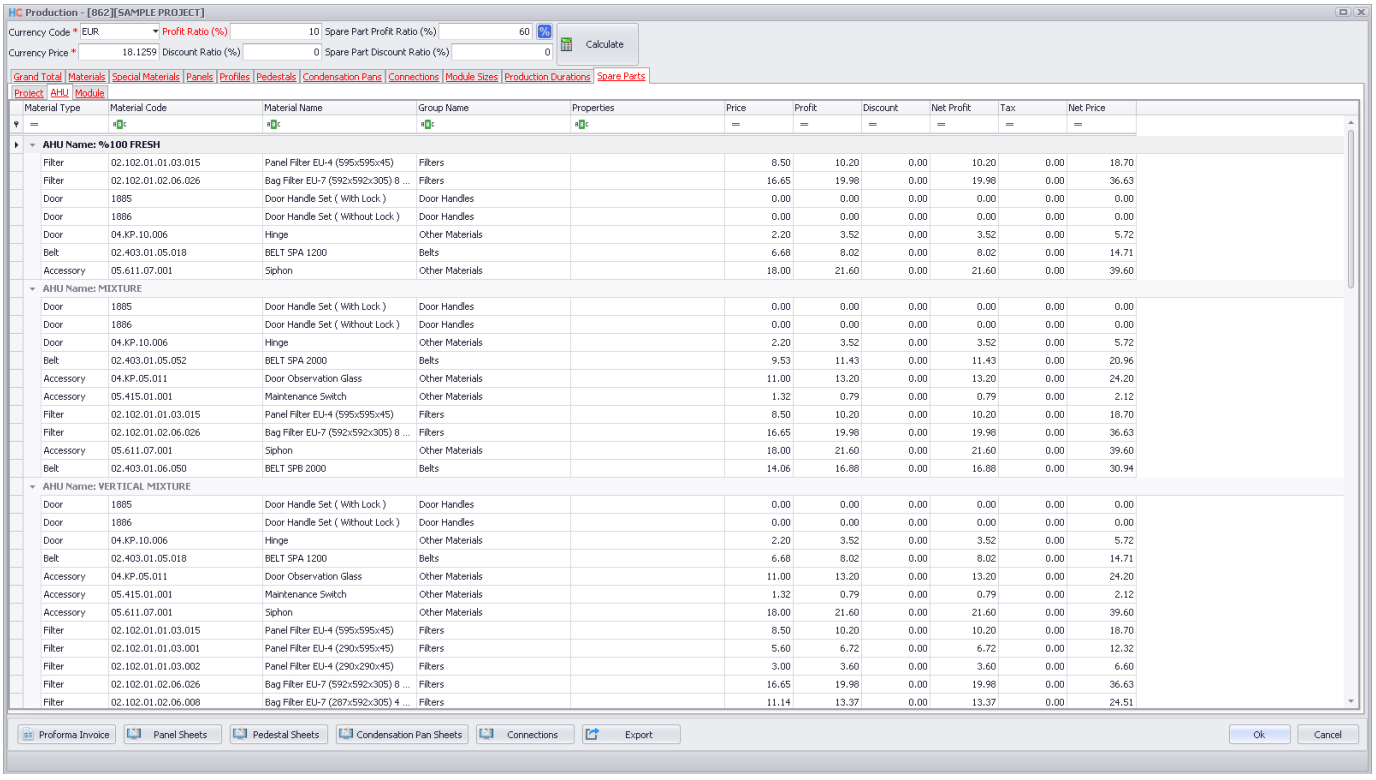

| Module Type | Module Name | Width | Height | Length | Weight | Layer Status | Join Type | Count |
|---|---|---|---|---|---|---|---|---|
| **AHU Name: %100 FRESH** | | | | | | | | |
| Filter | M2 | 800 mm | 900 mm | 628 mm | 56.30 kg | Bottom | Joined | 1 |
| Fan | M5 | 860 mm | 900 mm | 971 mm | 187.72 kg | Bottom | Joined | 1 |
| Empty | M6 | 860 mm | 900 mm | 690 mm | 57.98 kg | Bottom | None | 1 |
| Steamy Humidifier | M8 | 800 mm | 900 mm | 630 mm | 133.25 kg | Bottom | None | 1 |
| Electric Heater | M7 | 800 mm | 900 mm | 450 mm | 203.84 kg | Bottom | None | 1 |
| Heating Coil | M3 | 950 mm | 900 mm | 205 mm | 30.76 kg | Bottom | Joined W... | 1 |
| Cooling Coil | M4 | 950 mm | 900 mm | 785 mm | 117.82 kg | Bottom | None | 1 |
| Silencer | M9 | 800 mm | 900 mm | 1320 mm | 111.61 kg | Bottom | None | 1 |
| | | | | 5679 mm | 899.28 | | | 8 |
| **AHU Name: MIXTURE** | | | | | | | | |
| Fan | M1 | 2046 mm | 2086 mm | 1613 mm | 772.74 kg | Bottom | Joined | 1 |
| Triple Connection Mixture | M2 | 2046 mm | 2286 mm | 1510 mm | 520.41 kg | Bottom | None | 1 |
| Filter | M3 | 1986 mm | 2086 mm | 508 mm | 179.61 kg | Bottom | Joined | 1 |
| Watery Humidifier | M8 | 1986 mm | 2086 mm | 3000 mm | 815.24 kg | Bottom | None | 1 |
| Electric Heater | M7 | 1986 mm | 2086 mm | 450 mm | 602.52 kg | Bottom | None | 1 |
| Heating Coil | M4 | 2136 mm | 2086 mm | 215 mm | 114.81 kg | Bottom | Joined | 1 |
| Cooling Coil | M5 | 2136 mm | 2086 mm | 620 mm | 428.32 kg | Bottom | None | 1 |
| Fan | M6 | 2046 mm | 2086 mm | 1663 mm | 865.73 kg | Bottom | None | 1 |
| | | | | 9579 mm | 4,299.39 | | | 8 |
| **AHU Name: VERTICAL MIXTURE** | | | | | | | | |
| Fan | M6 | 1760 mm | 1180 mm | 1093 mm | 345.44 kg | Bottom | Joined | 1 |
| Empty | M8 | 1760 mm | 1180 mm | 710 mm | 115.64 kg | Bottom | None | 1 |
| Cooling Coil | M5 | 1850 mm | 1180 mm | 635 mm | 205.32 kg | Bottom | Joined | 1 |
| Heating Coil | M4 | 1850 mm | 1180 mm | 285 mm | 99.44 kg | Bottom | Joined | 1 |
| Watery Humidifier | M10 | 1700 mm | 1180 mm | 3000 mm | 514.05 kg | Bottom | None | 1 |
| Electric Heater | M9 | 1700 mm | 1180 mm | 450 mm | 253.15 kg | Bottom | None | 1 |
| Filter | M3 | 1700 mm | 1180 mm | 563 mm | 125.63 kg | Bottom | None | 1 |
| Vertical Mixture | M7 | 1760 mm | 2260 mm | 910 mm | 358.01 kg | Bottom | None | 1 |
| Fan | M1 | 1760 mm | 1080 mm | 1158 mm | 269.13 kg | Top | None | 1 |
| | | | | 82931 mm | 23,480.11 | | | 88 |

## SPARE PARTS / PROJECT BASED



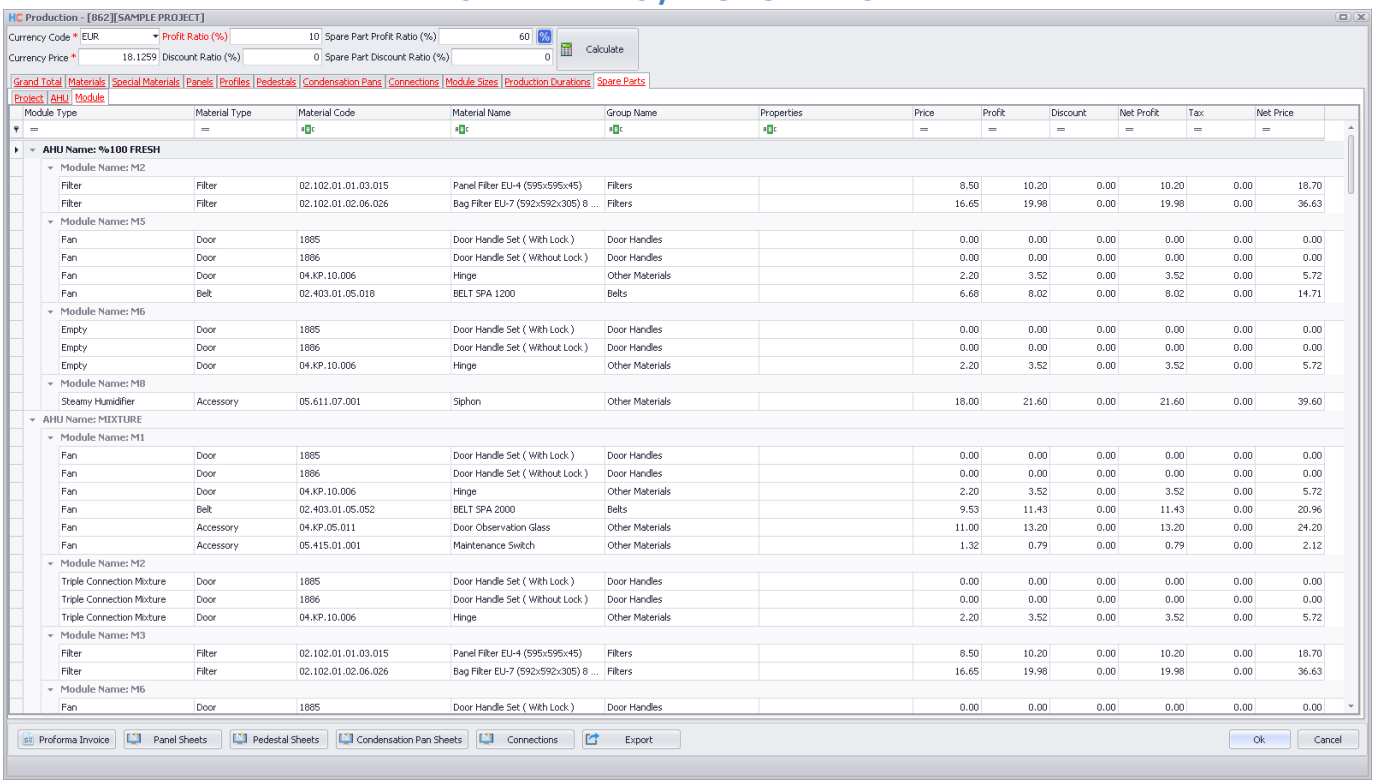

| Material Type | Material Code | Material Name | Group Name | Properties | Price | Profit | Discount | Net Profit | Tax | Net Price |
|---|---|---|---|---|---|---|---|---|---|---|
| Filter | 02.102.01.01.03.015 | Panel Filter EU-4 (595x595x45) | Filters | | 8.50 | 10.20 | 0.00 | 10.20 | 0.00 | 18.70 |
| Filter | 02.102.01.02.06.026 | Bag Filter EU-7 (592x592x305) 8 ... | Filters | | 16.65 | 19.98 | 0.00 | 19.98 | 0.00 | 36.63 |
| Door | 1885 | Door Handle Set ( With Lock ) | Door Handles | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Door | 1886 | Door Handle Set ( Without Lock ) | Door Handles | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Door | 04.KP.10.006 | Hinge | Other Materials | | 2.20 | 3.52 | 0.00 | 3.52 | 0.00 | 5.72 |
| Belt | 02.403.01.05.018 | BELT SPA 1200 | Belts | | 6.68 | 8.02 | 0.00 | 8.02 | 0.00 | 14.71 |
| Accessory | 05.611.07.001 | Siphon | Other Materials | | 18.00 | 21.60 | 0.00 | 21.60 | 0.00 | 39.60 |
| Belt | 02.403.01.05.052 | BELT SPA 2000 | Belts | | 9.53 | 11.43 | 0.00 | 11.43 | 0.00 | 20.96 |
| Accessory | 04.KP.05.011 | Door Observation Glass | Other Materials | | 11.00 | 13.20 | 0.00 | 13.20 | 0.00 | 24.20 |
| Accessory | 05.415.01.001 | Maintenance Switch | Other Materials | | 1.32 | 0.79 | 0.00 | 0.79 | 0.00 | 2.12 |
| Belt | 02.403.01.06.050 | BELT SPB 2000 | Belts | | 14.06 | 16.88 | 0.00 | 16.88 | 0.00 | 30.94 |
| Filter | 02.102.01.01.03.001 | Panel Filter EU-4 (290x595x45) | Filters | | 5.60 | 6.72 | 0.00 | 6.72 | 0.00 | 12.32 |
| Filter | 02.102.01.01.03.002 | Panel Filter EU-4 (290x290x45) | Filters | | 3.00 | 3.60 | 0.00 | 3.60 | 0.00 | 6.60 |
| Filter | 02.102.01.02.06.008 | Bag Filter EU-7 (287x592x305) 4 ... | Filters | | 11.14 | 13.37 | 0.00 | 13.37 | 0.00 | 24.51 |
| Filter | 02.102.01.02.06.012 | Bag Filter EU-7 (287x287x305) 4 ... | Filters | | 6.00 | 7.20 | 0.00 | 7.20 | 0.00 | 13.20 |
| Belt | 02.403.01.08.010 | BELT SPZ 1000 | Belts | | 3.81 | 4.57 | 0.00 | 4.57 | 0.00 | 8.38 |
| Filter | 02.102.01.01.01.015 | Panel Filter EU-2 (597x597x45) | Filters | | 7.80 | 9.36 | 0.00 | 9.36 | 0.00 | 17.16 |
| Filter | 02.102.01.01.01.001 | Panel Filter EU-2 (287x592x48) | Filters | | 7.50 | 9.00 | 0.00 | 9.00 | 0.00 | 16.50 |
| Filter | 02.102.01.02.03.022 | Bag Filter EU-4 (592x592x610) 6 ... | Filters | | 15.00 | 18.00 | 0.00 | 18.00 | 0.00 | 33.00 |
| Filter | 02.102.01.02.03.006 | Bag Filter EU-4 (287x592x610) 3 ... | Filters | | 8.50 | 10.20 | 0.00 | 10.20 | 0.00 | 18.70 |
| Filter | 02.102.01.01.04.015 | Panel Filter EU-5 (597x595x45) | Filters | | 16.02 | 19.22 | 0.00 | 19.22 | 0.00 | 35.24 |
| Filter | 02.102.01.01.04.001 | Panel Filter EU-5 (290x595x45) | Filters | | 9.70 | 11.64 | 0.00 | 11.64 | 0.00 | 21.34 |
| Filter | 02.102.01.02.08.023 | Bag Filter EU-9 (592x592x610) 8 ... | Filters | | 23.10 | 27.72 | 0.00 | 27.72 | 0.00 | 50.82 |
| Filter | 02.102.01.02.08.007 | Bag Filter EU-9 (287x592x610) 4 ... | Filters | | 13.76 | 16.51 | 0.00 | 16.51 | 0.00 | 30.27 |

## SPARE PARTS / AHU BASED




| Material Type | Material Code | Material Name | Group Name | Properties | Price | Profit | Discount | Net Profit | Tax | Net Price |
|---|---|---|---|---|---|---|---|---|---|---|
| **AHU Name: %100 FRESH** | | | | | | | | | | |
| Filter | 02.102.01.01.03.015 | Panel Filter EU-4 (595x595x45) | Filters | | 8.50 | 10.20 | 0.00 | 10.20 | 0.00 | 18.70 |
| Filter | 02.102.01.02.06.026 | Bag Filter EU-7 (592x592x305) 8 ... | Filters | | 16.65 | 19.98 | 0.00 | 19.98 | 0.00 | 36.63 |
| Door | 1885 | Door Handle Set ( With Lock ) | Door Handles | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Door | 1886 | Door Handle Set ( Without Lock ) | Door Handles | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Door | 04.KP.10.006 | Hinge | Other Materials | | 2.20 | 3.52 | 0.00 | 3.52 | 0.00 | 5.72 |
| Belt | 02.403.01.05.018 | BELT SPA 1200 | Belts | | 6.68 | 8.02 | 0.00 | 8.02 | 0.00 | 14.71 |
| Accessory | 05.611.07.001 | Siphon | Other Materials | | 18.00 | 21.60 | 0.00 | 21.60 | 0.00 | 39.60 |
| **AHU Name: MIXTURE** | | | | | | | | | | |
| Door | 1885 | Door Handle Set ( With Lock ) | Door Handles | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Door | 1886 | Door Handle Set ( Without Lock ) | Door Handles | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Door | 04.KP.10.006 | Hinge | Other Materials | | 2.20 | 3.52 | 0.00 | 3.52 | 0.00 | 5.72 |
| Belt | 02.403.01.05.052 | BELT SPA 2000 | Belts | | 9.53 | 11.43 | 0.00 | 11.43 | 0.00 | 20.96 |
| Accessory | 04.KP.05.011 | Door Observation Glass | Other Materials | | 11.00 | 13.20 | 0.00 | 13.20 | 0.00 | 24.20 |
| Accessory | 05.415.01.001 | Maintenance Switch | Other Materials | | 1.32 | 0.79 | 0.00 | 0.79 | 0.00 | 2.12 |
| Filter | 02.102.01.01.03.015 | Panel Filter EU-4 (595x595x45) | Filters | | 8.50 | 10.20 | 0.00 | 10.20 | 0.00 | 18.70 |
| Filter | 02.102.01.02.06.026 | Bag Filter EU-7 (592x592x305) 8 ... | Filters | | 16.65 | 19.98 | 0.00 | 19.98 | 0.00 | 36.63 |
| Accessory | 05.611.07.001 | Siphon | Other Materials | | 18.00 | 21.60 | 0.00 | 21.60 | 0.00 | 39.60 |
| Belt | 02.403.01.06.050 | BELT SPB 2000 | Belts | | 14.06 | 16.88 | 0.00 | 16.88 | 0.00 | 30.94 |
| **AHU Name: VERTICAL MIXTURE** | | | | | | | | | | |
| Door | 1885 | Door Handle Set ( With Lock ) | Door Handles | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Door | 1886 | Door Handle Set ( Without Lock ) | Door Handles | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Door | 04.KP.10.006 | Hinge | Other Materials | | 2.20 | 3.52 | 0.00 | 3.52 | 0.00 | 5.72 |
| Belt | 02.403.01.05.018 | BELT SPA 1200 | Belts | | 6.68 | 8.02 | 0.00 | 8.02 | 0.00 | 14.71 |
| Accessory | 04.KP.05.011 | Door Observation Glass | Other Materials | | 11.00 | 13.20 | 0.00 | 13.20 | 0.00 | 24.20 |
| Accessory | 05.415.01.001 | Maintenance Switch | Other Materials | | 1.32 | 0.79 | 0.00 | 0.79 | 0.00 | 2.12 |
| Accessory | 05.611.07.001 | Siphon | Other Materials | | 18.00 | 21.60 | 0.00 | 21.60 | 0.00 | 39.60 |
| Filter | 02.102.01.01.03.015 | Panel Filter EU-4 (595x595x45) | Filters | | 8.50 | 10.20 | 0.00 | 10.20 | 0.00 | 18.70 |
| Filter | 02.102.01.01.03.001 | Panel Filter EU-4 (290x595x45) | Filters | | 5.60 | 6.72 | 0.00 | 6.72 | 0.00 | 12.32 |
| Filter | 02.102.01.01.03.002 | Panel Filter EU-4 (290x290x45) | Filters | | 3.00 | 3.60 | 0.00 | 3.60 | 0.00 | 6.60 |
| Filter | 02.102.01.02.06.026 | Bag Filter EU-7 (592x592x305) 8 ... | Filters | | 16.65 | 19.98 | 0.00 | 19.98 | 0.00 | 36.63 |
| Filter | 02.102.01.02.06.008 | Bag Filter EU-7 (287x592x305) 4 ... | Filters | | 11.14 | 13.37 | 0.00 | 13.37 | 0.00 | 24.51 |

# SPARE PARTS / MODULE BASED



# MANUFACTURING MODULE

Software can generate the below information to help the manufacturing of the AHU.

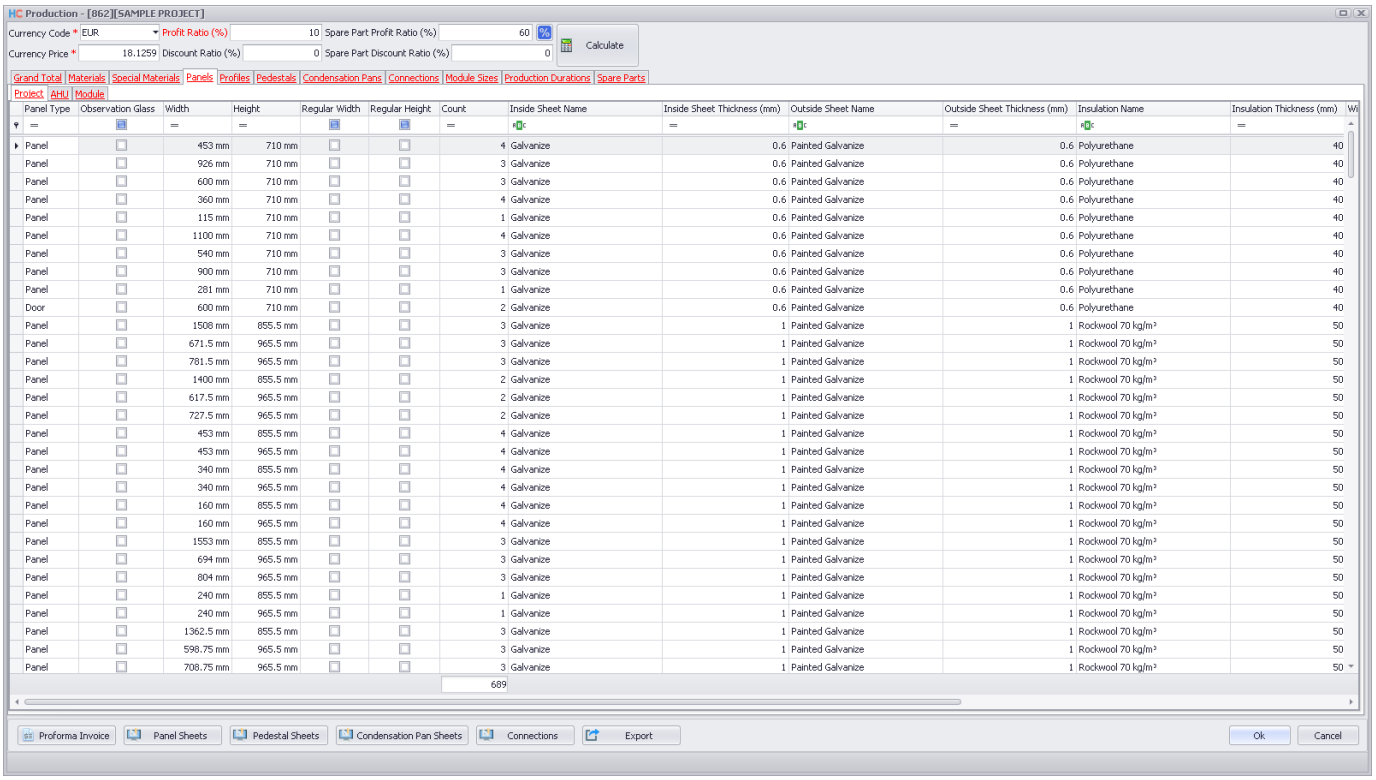
- Generation of Panel / Door List
- Generation of Profile List
- Generation of Pedestal List
- Generation of Damper / Flange List
- Generation of Condensation Pan List
- Generation of Panel Inside / Outside Sheet Drawings For Cutting List
- Generation of Pedestal Drawings For Cutting List
- Generation of Condensation Pan Drawings For Cutting List
- Generation of Module Production Duration

Also we can generate the cutting list of internal parts.

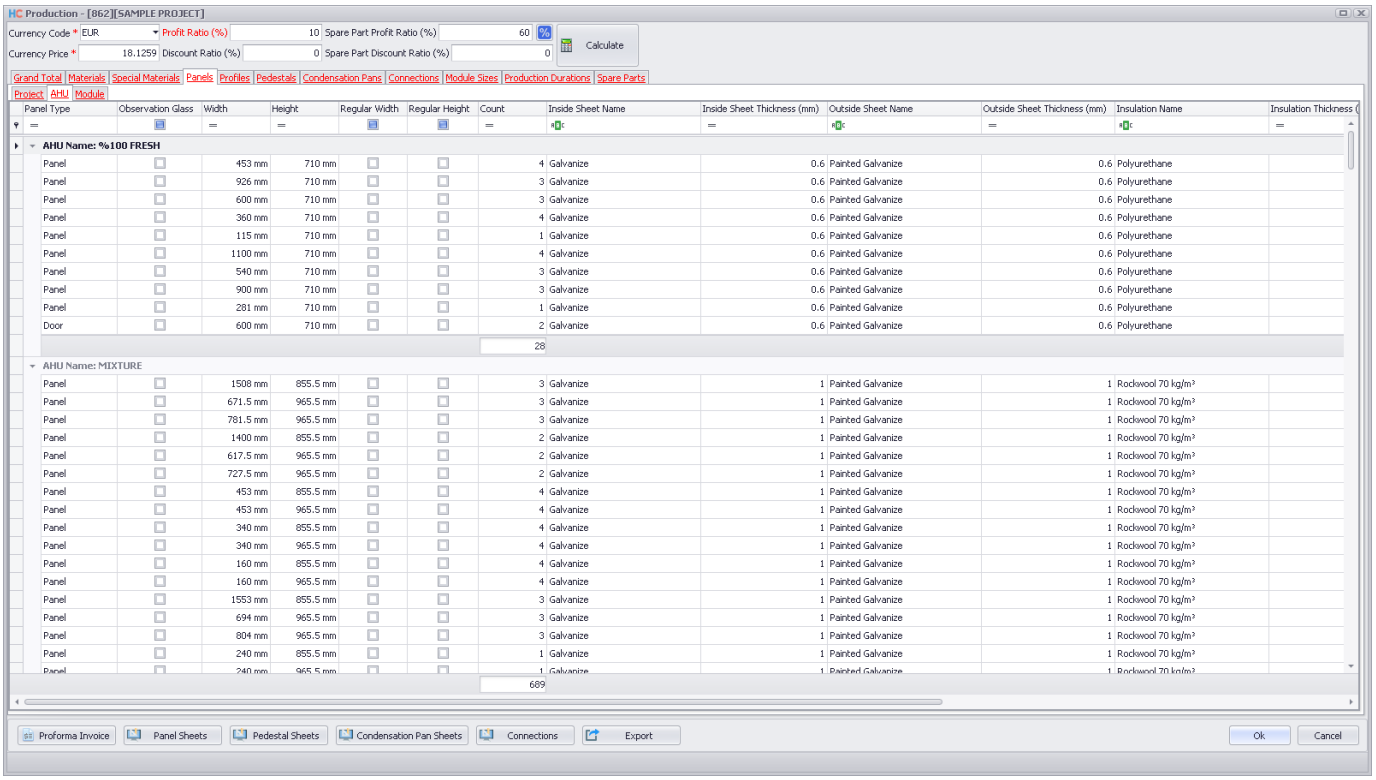
- Bypass Sheets Cutting List For Heat Exchangers, Coils, Filters, Fans, Humidifiers
- Coil, Drop Eliminator Sled Sheet Cutting List
- Fan / Motor Bases Cutting List
- Drop Eliminators Cutting List

Whole manufacturing information will be customized for the customer.

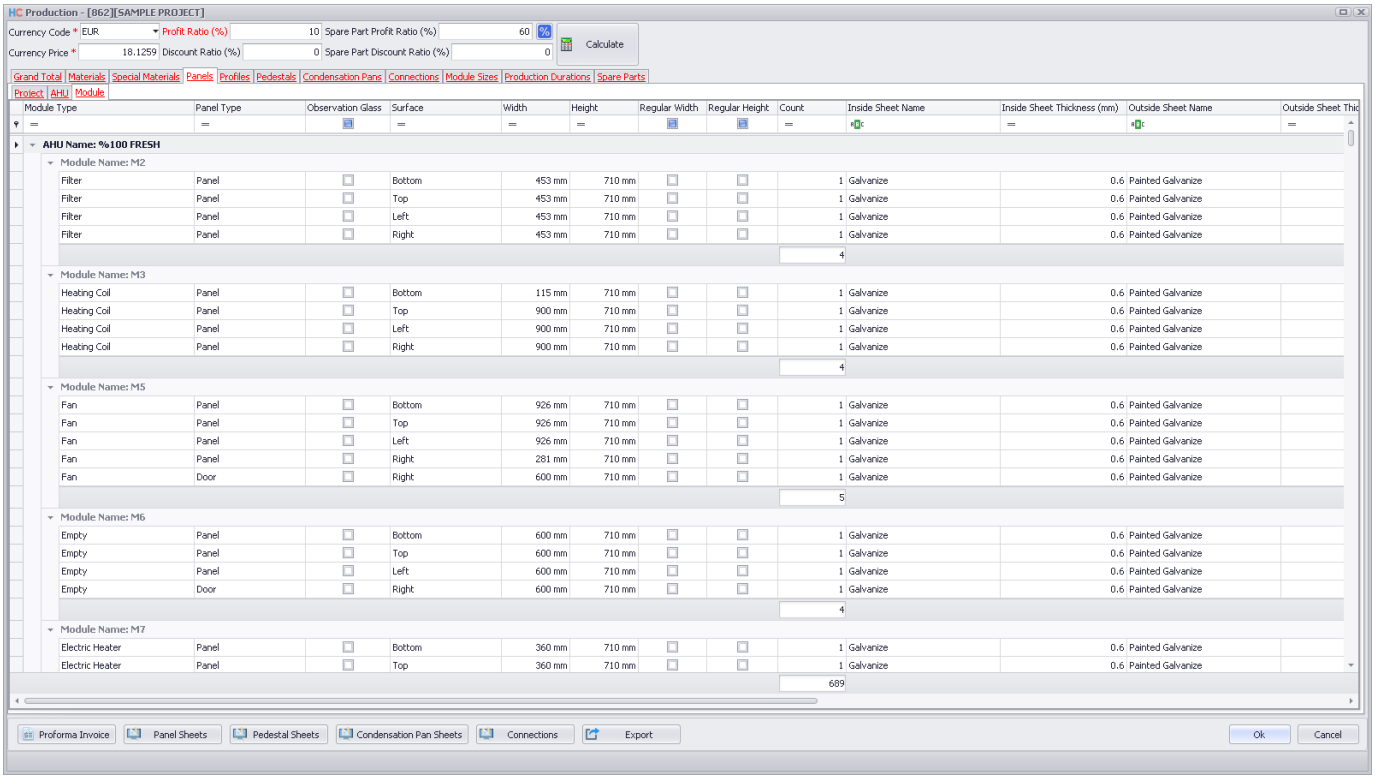
## PANELS / PROJECT BASED



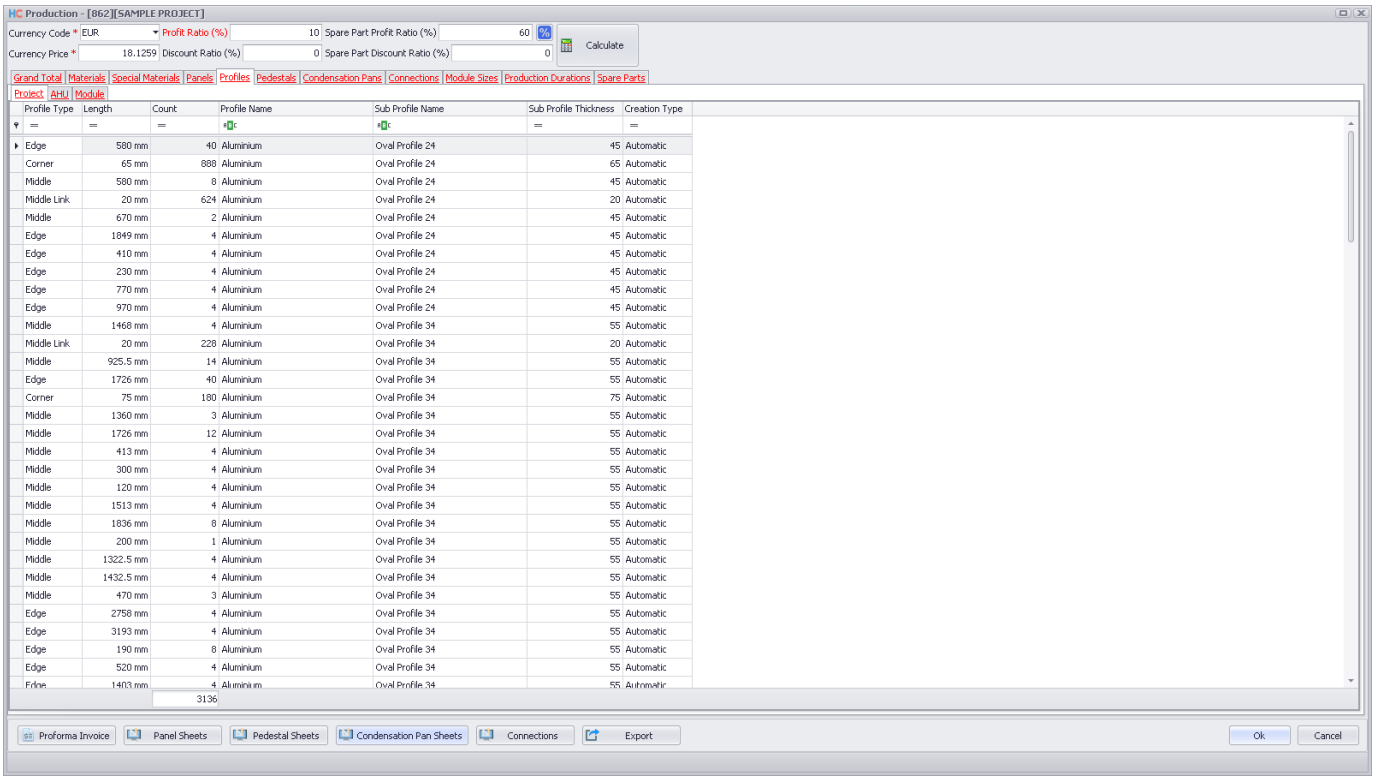
## PANELS / AHU BASED



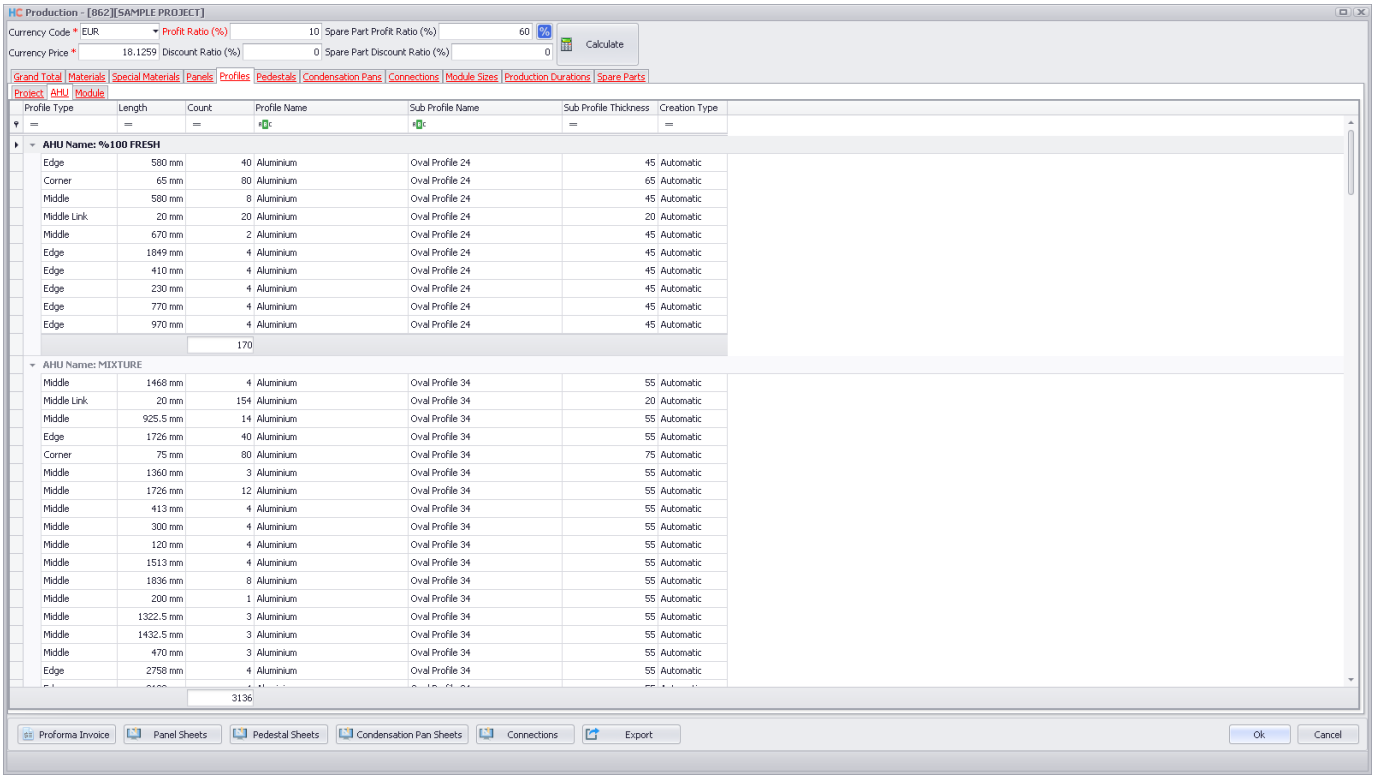

## PANELS / MODULE BASED



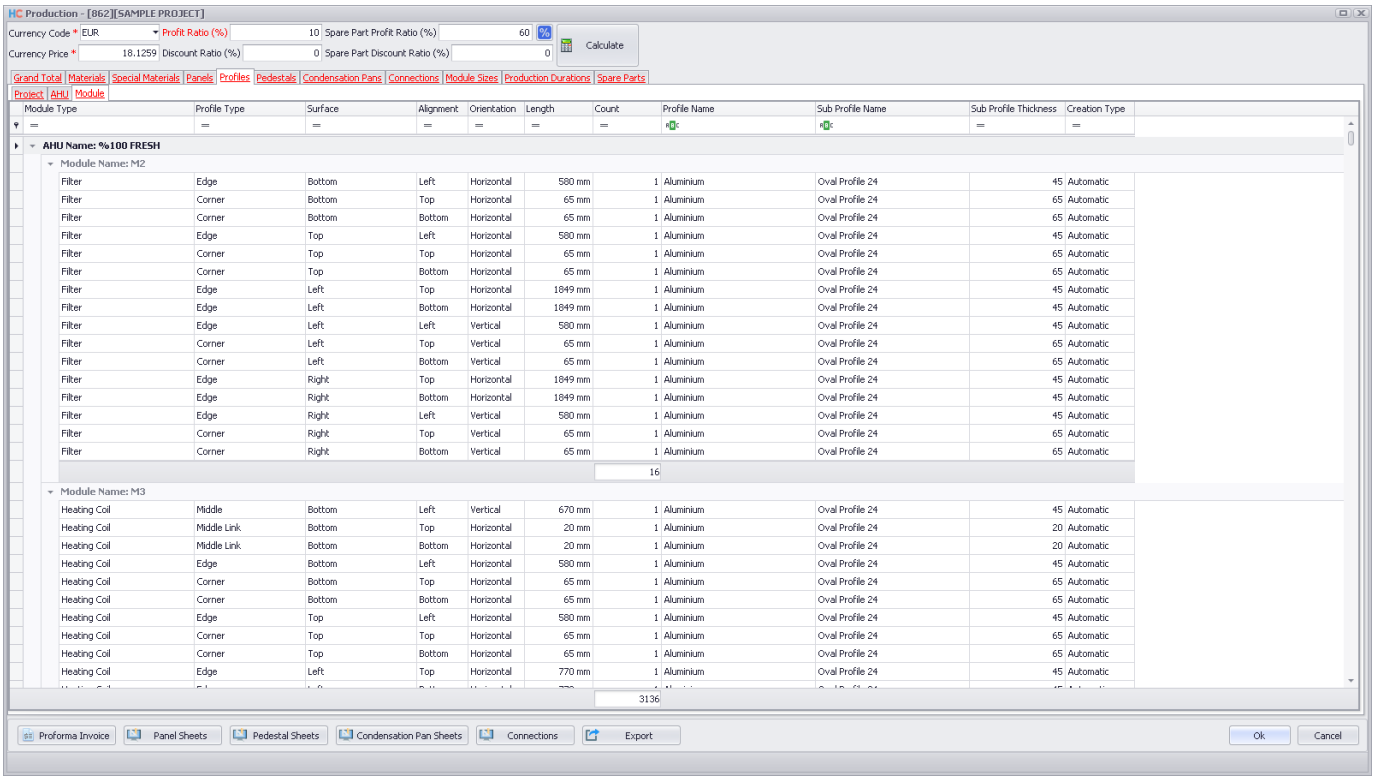
## PROFILES / PROJECT BASED



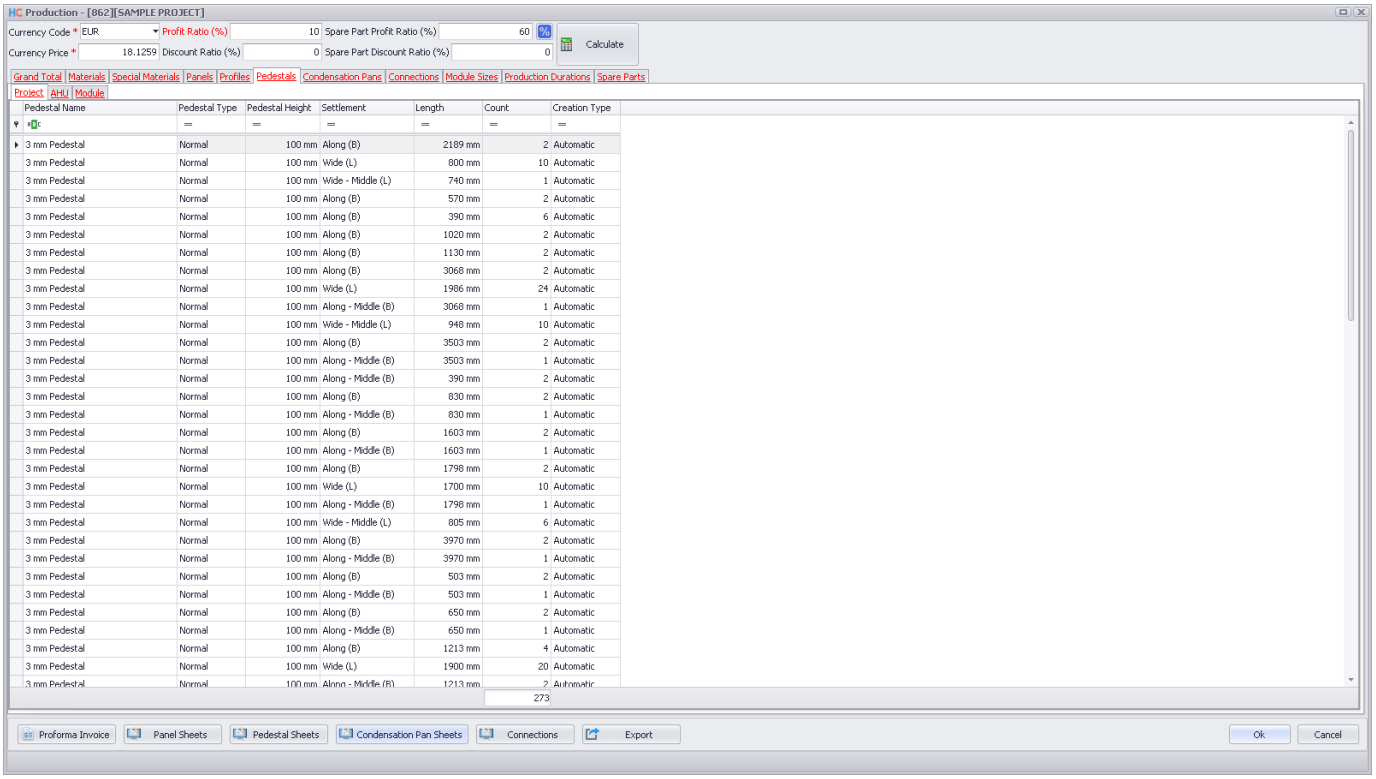

## PROFILES / AHU BASED



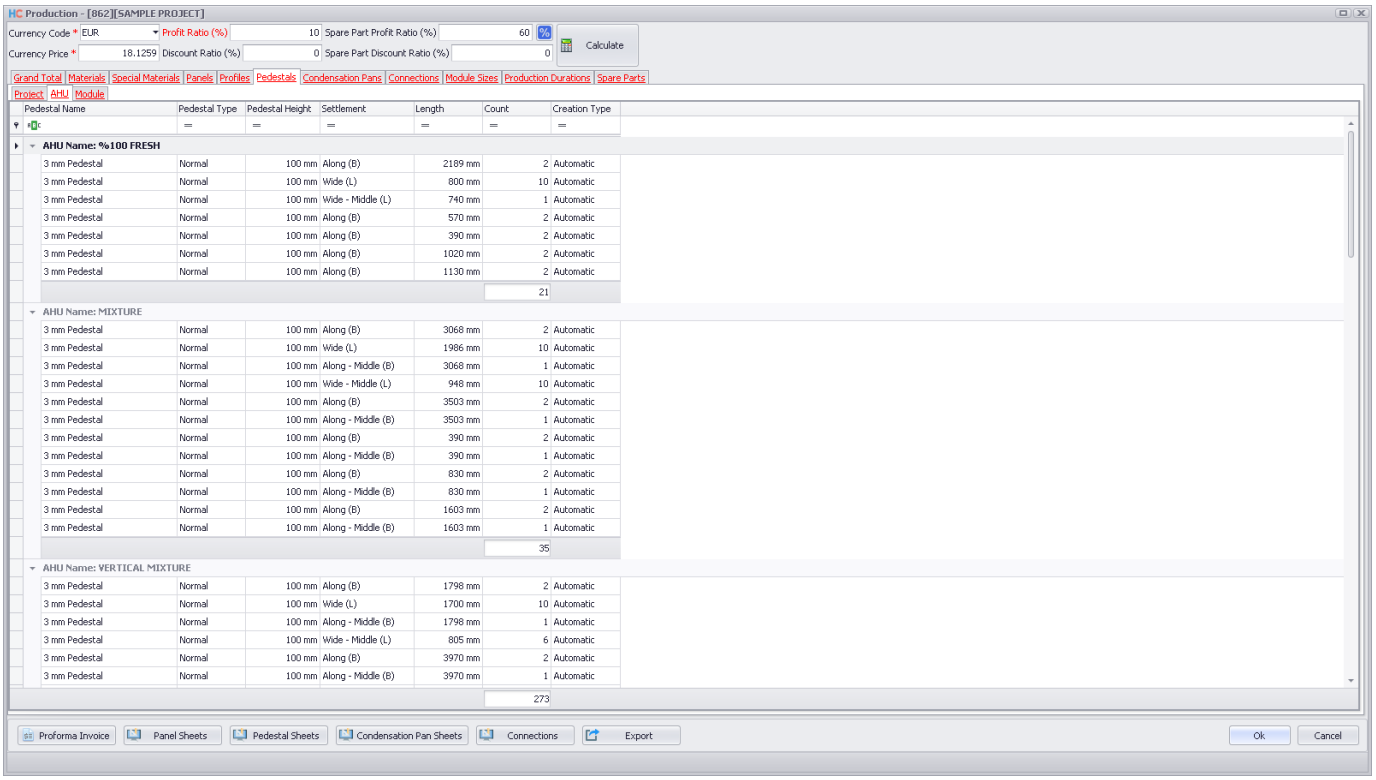
## PROFILES / MODULE BASED



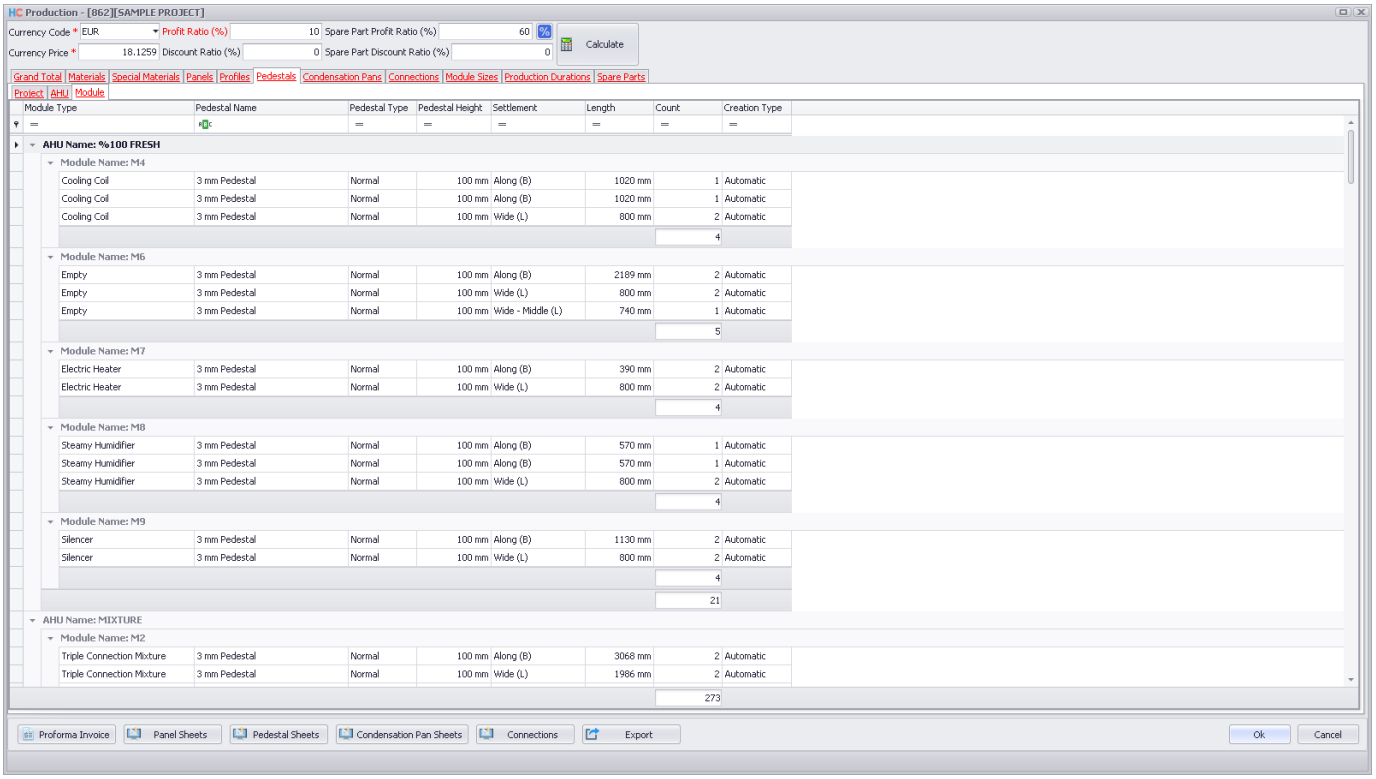

## PEDESTALS / PROJECT BASED



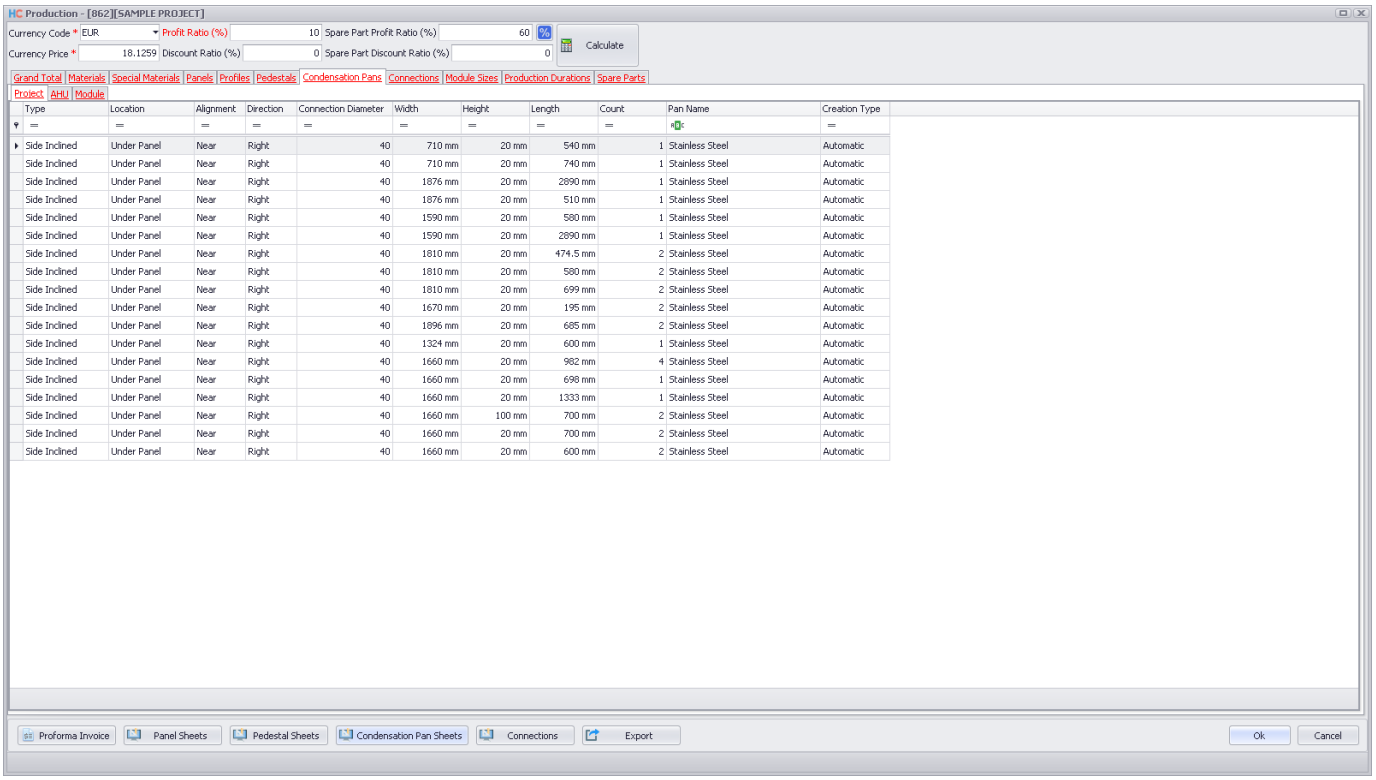
## PEDESTALS / AHU BASED



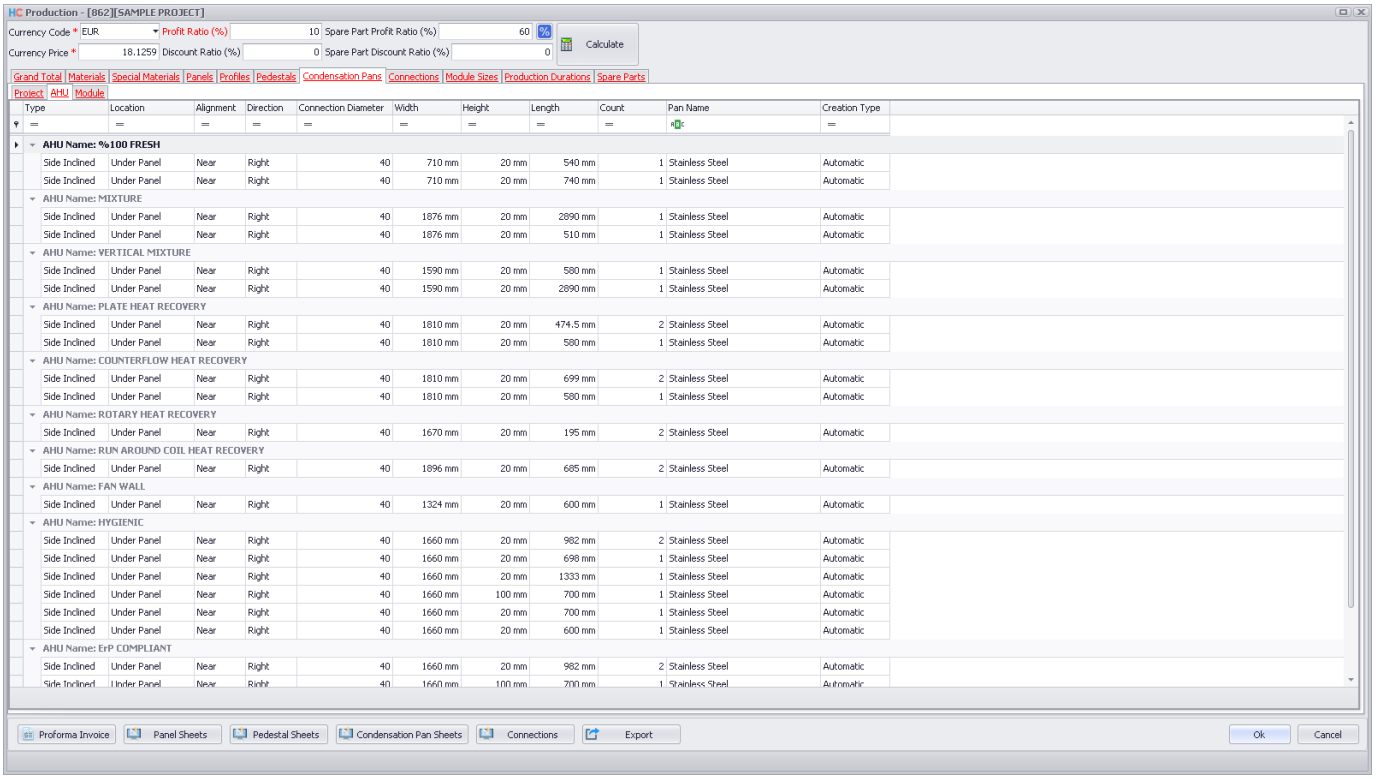

## PEDESTALS / MODULE BASED



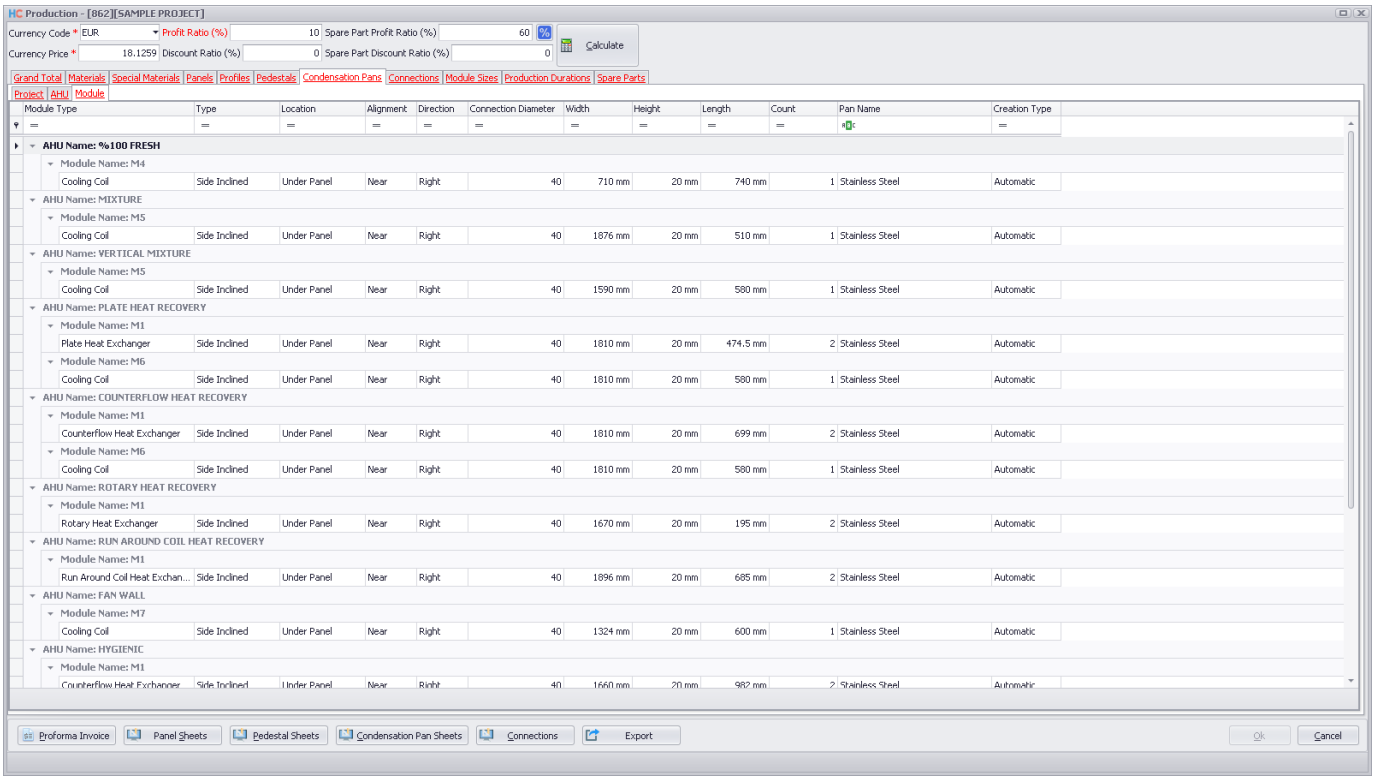
## CONDENSATION PANS / PROJECT BASED



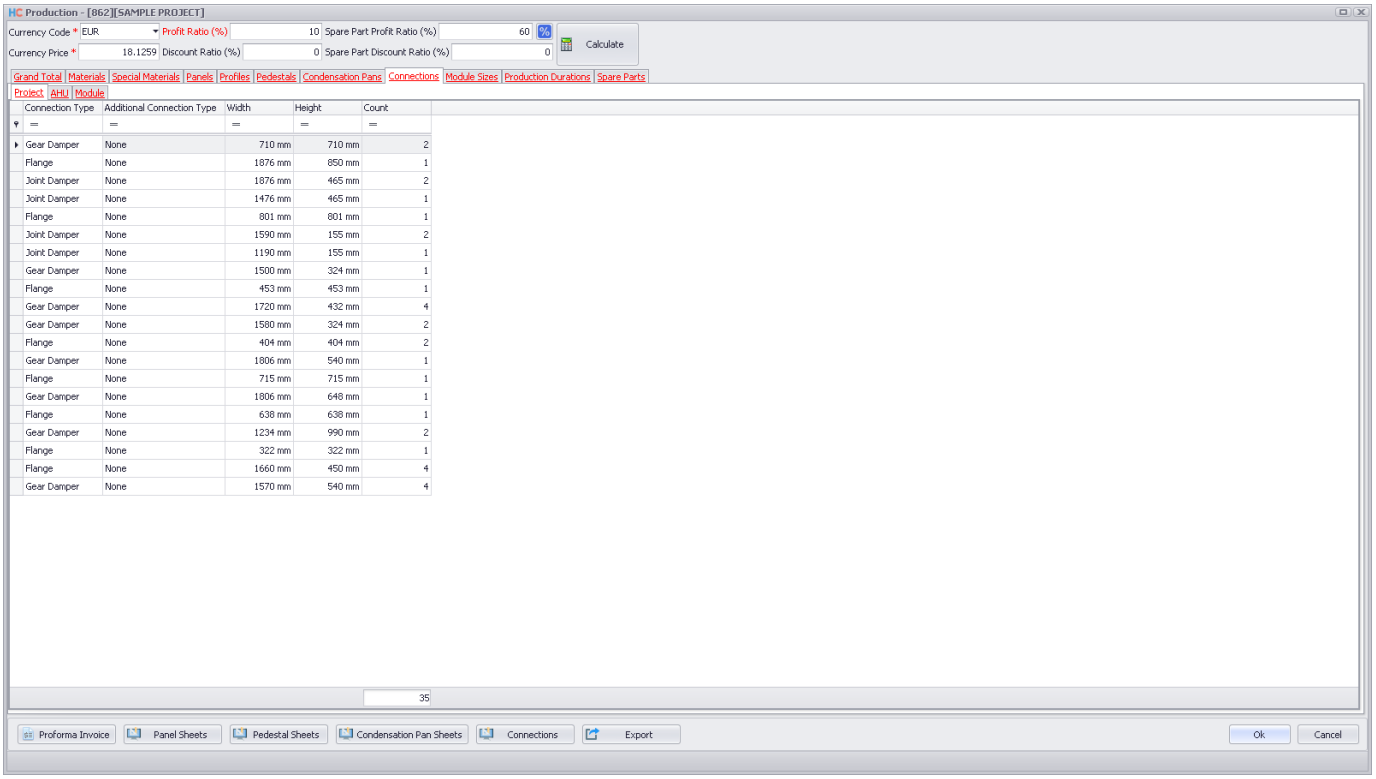

## CONDENSATION PANS / AHU BASED



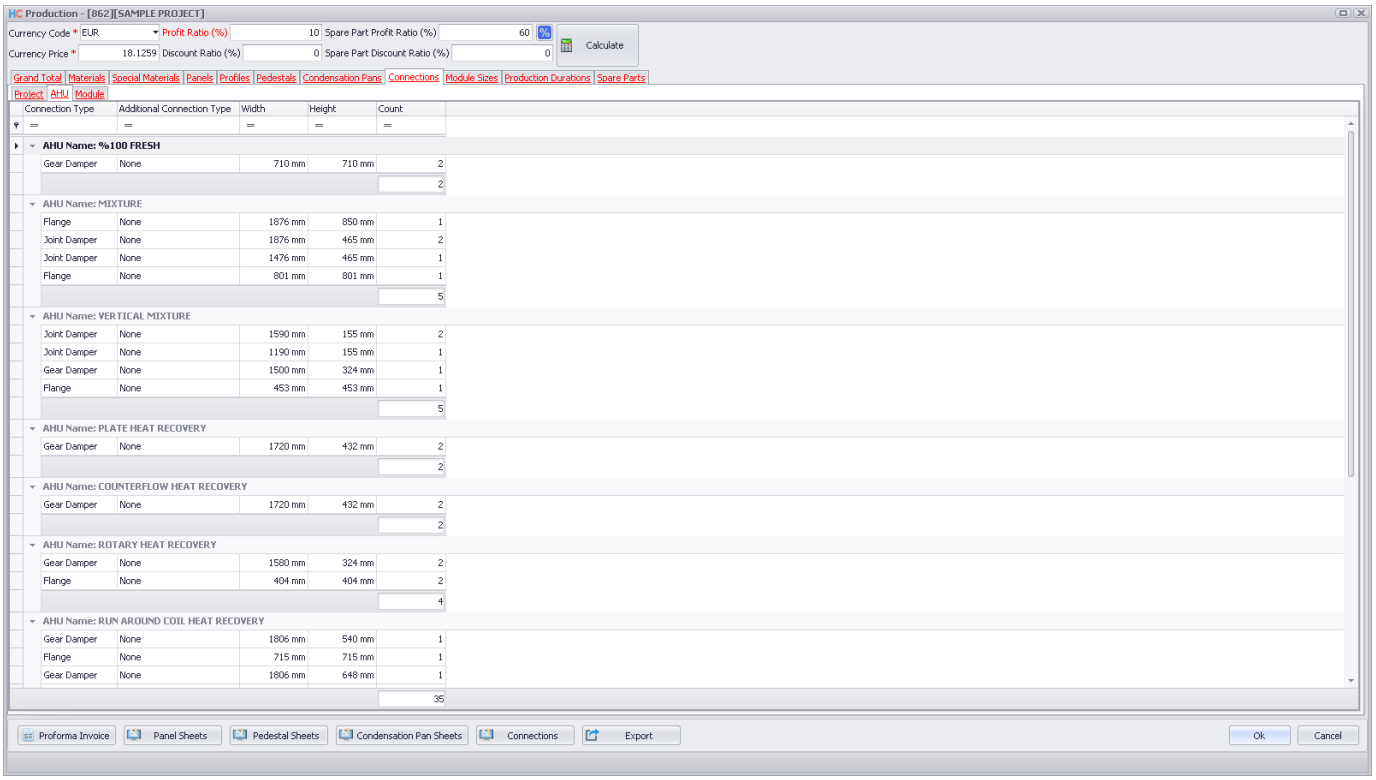
## CONDENSATION PANS / MODULE BASED



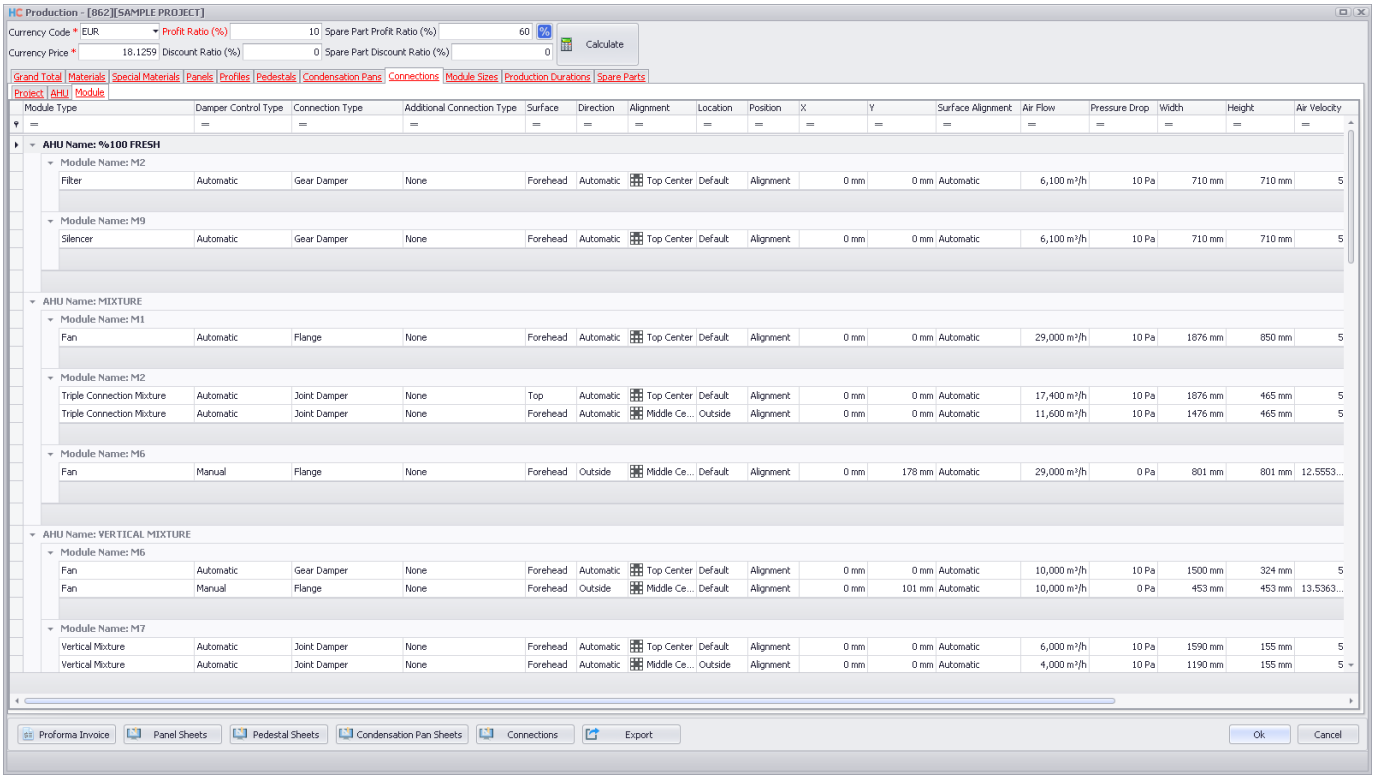

## CONNECTIONS / PROJECT BASED



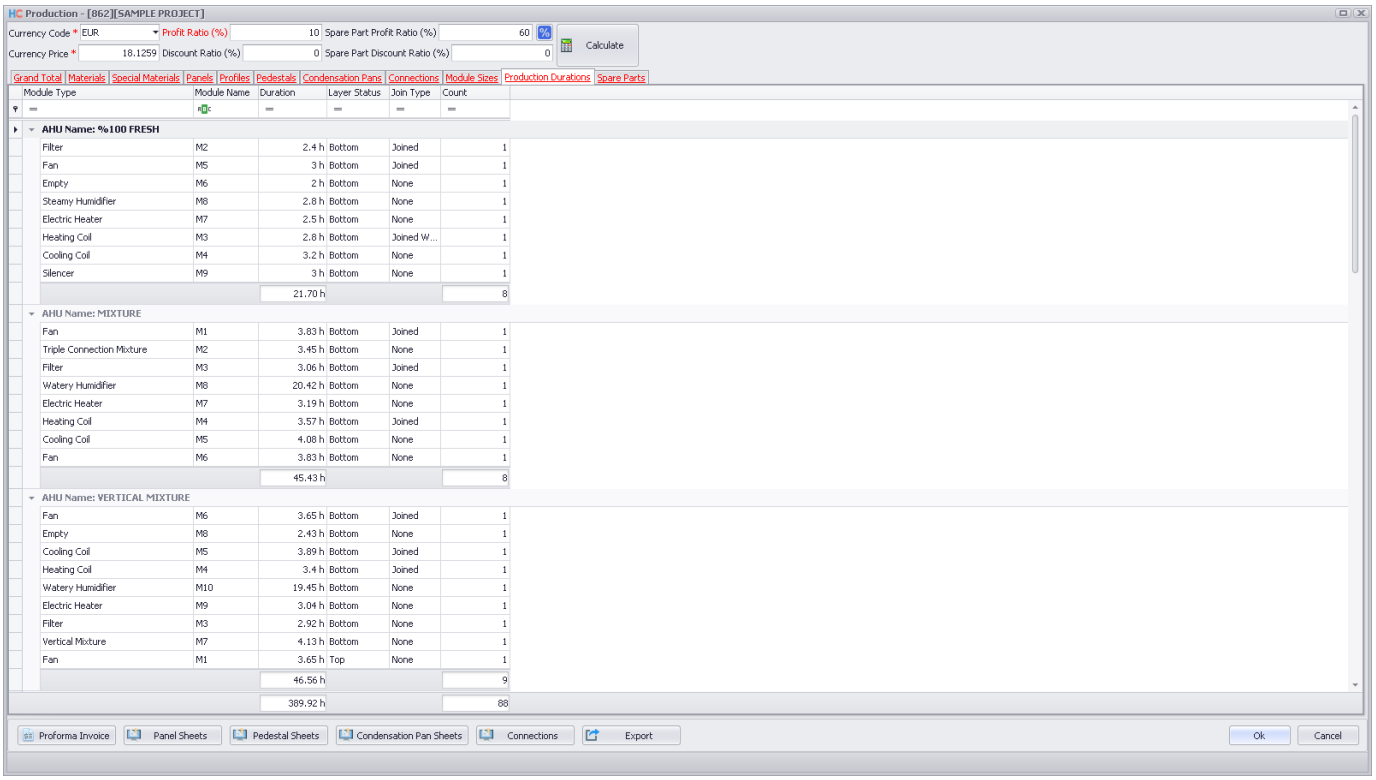
## CONNECTIONS / AHU BASED



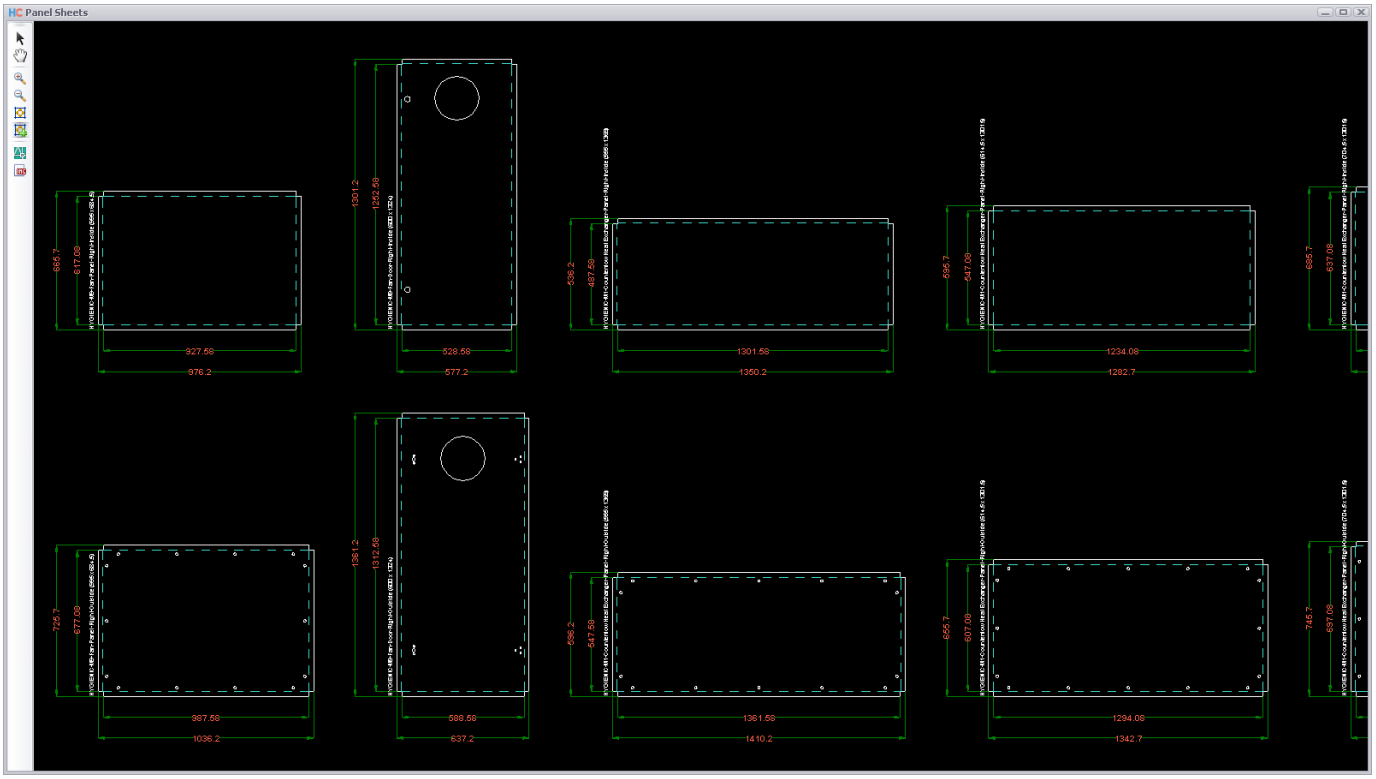

## CONNECTIONS / MODULE BASED



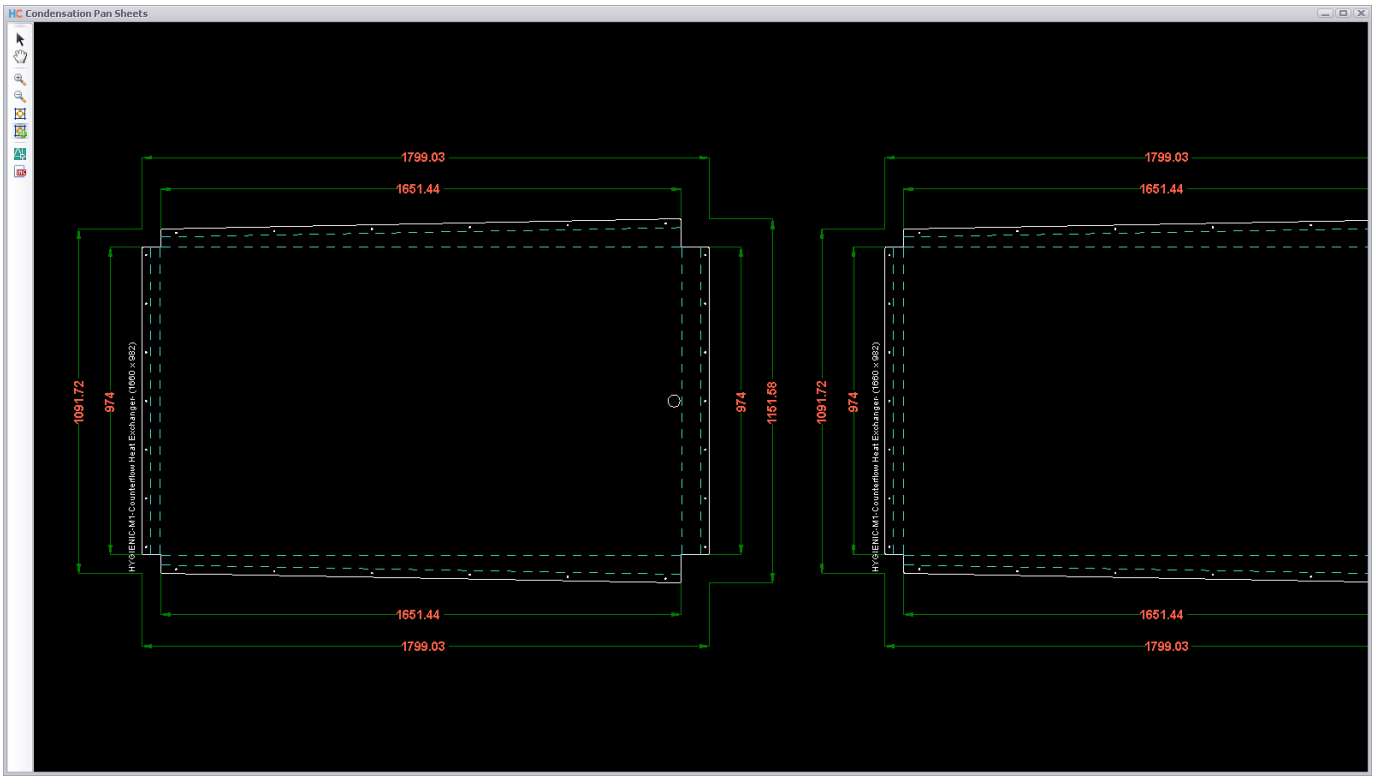
## PRODUCTION DURATION



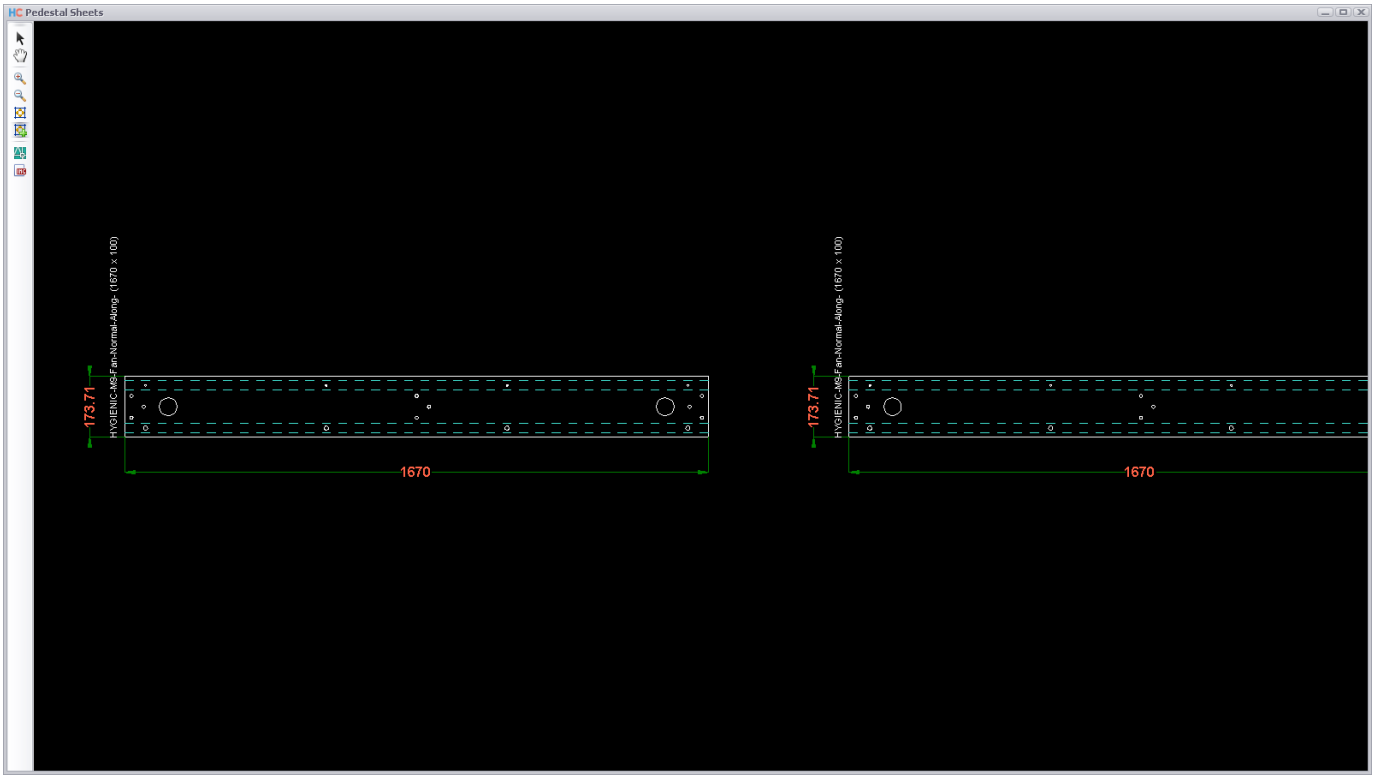

## PANEL SHEET DRAWINGS



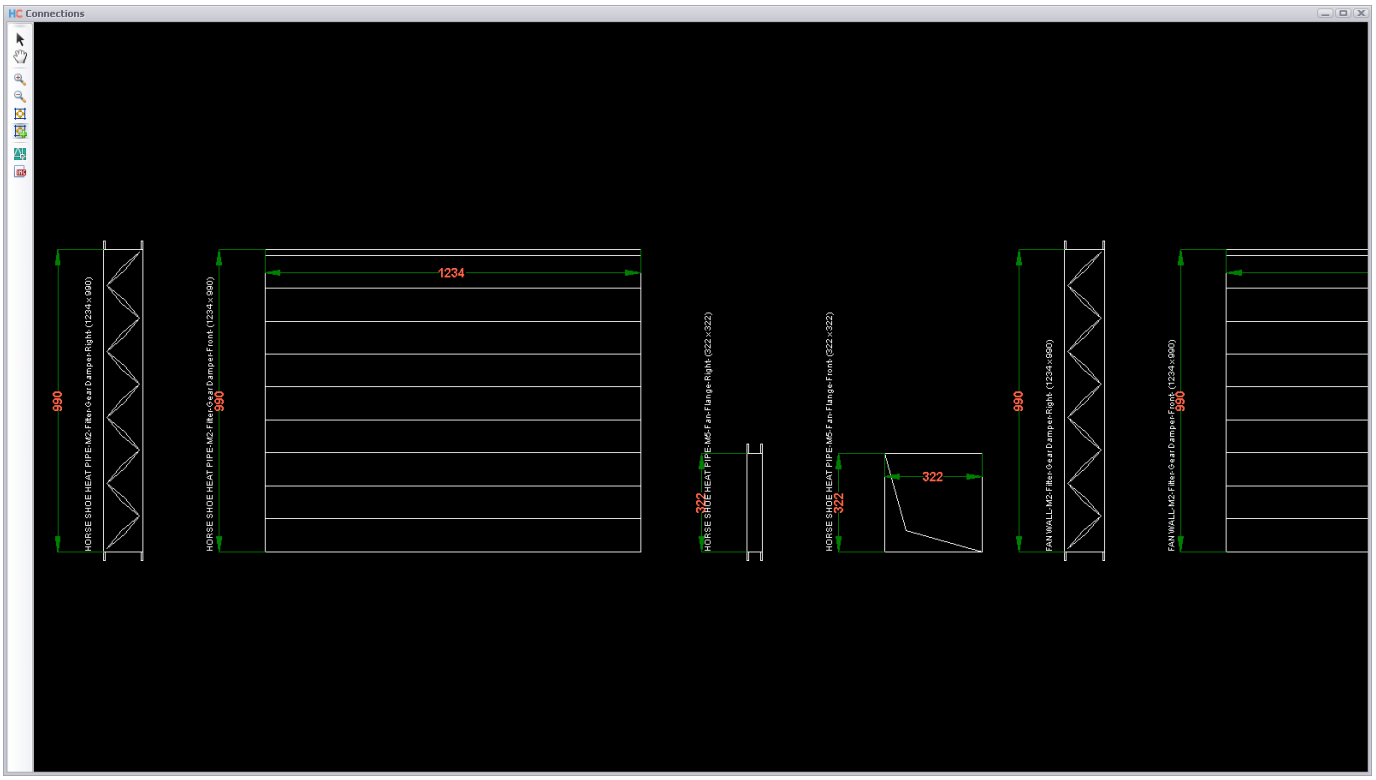
## CONDENSATION PAN SHEET DRAWINGS



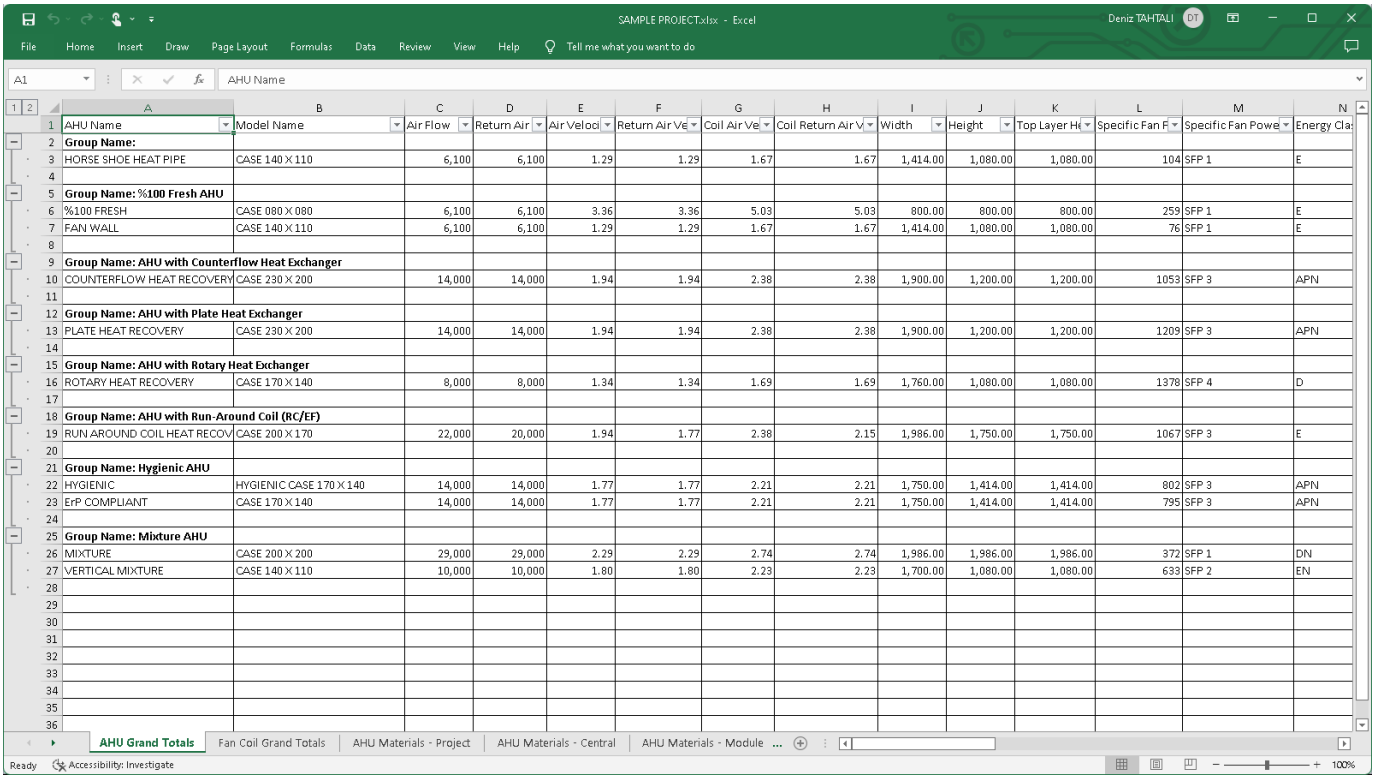

## PEDESTAL SHEET DRAWINGS



## CONNECTION DRAWINGS




## EXPORTED PRODUCTION DATA

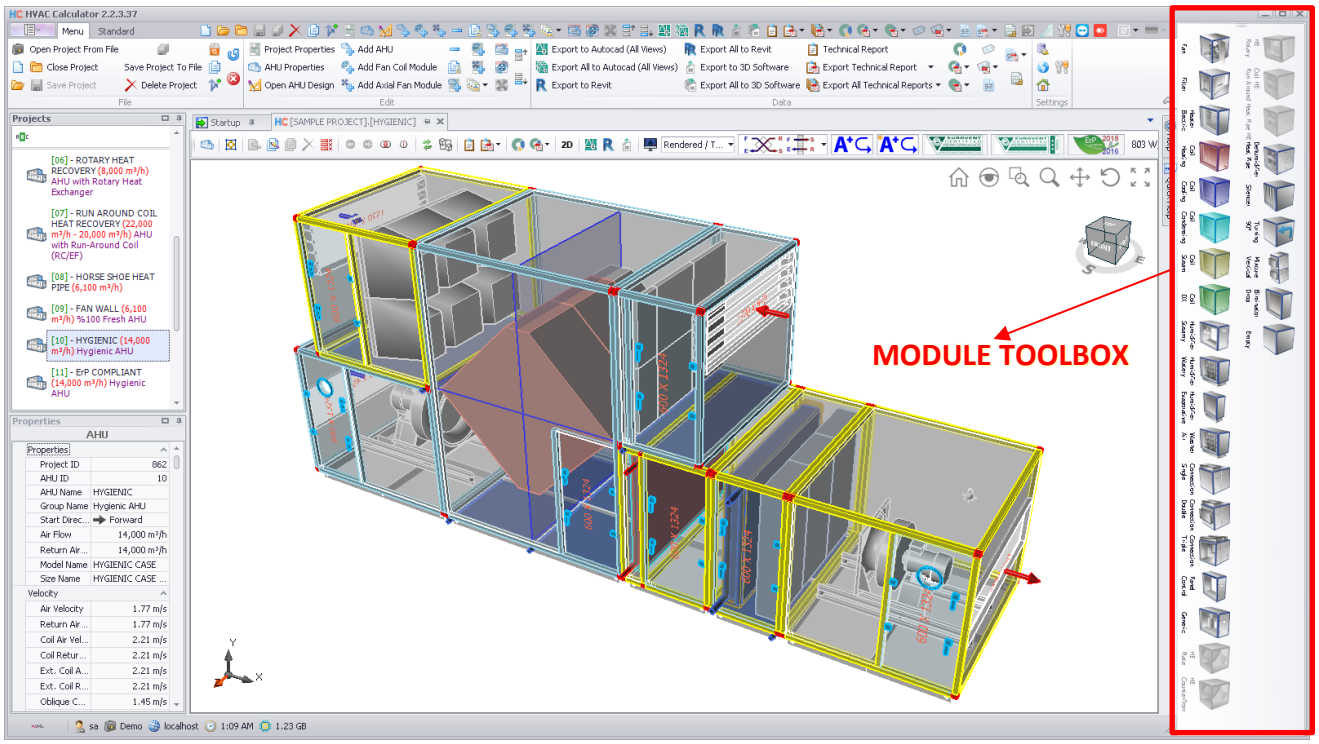


SAMPLE PROJECT.xlsx - Excel

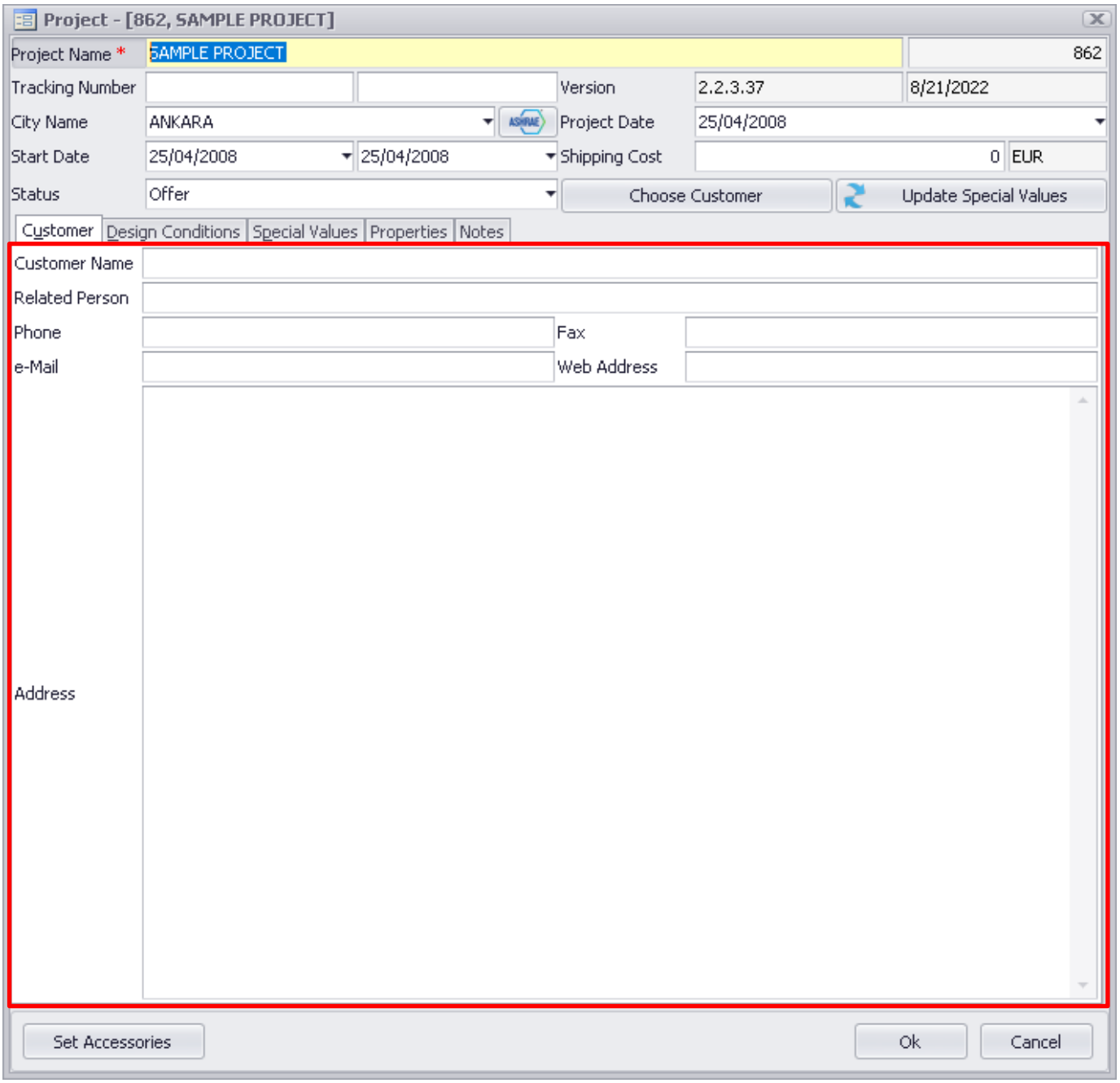
| AHU Name | Model Name | Air Flow | Return Air | Air Velocity | Return Air Ve | Coil Air Ve | Coil Return Air V | Width | Height | Top Layer He | Specific Fan F | Specific Fan Powe | Energy Cla |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Group Name:** | | | | | | | | | | | | | |
| HORSE SHOE HEAT PIPE | CASE 140 X 110 | 6,100 | 6,100 | 1.29 | 1.29 | 1.67 | 1.67 | 1,414.00 | 1,080.00 | 1,080.00 | 104 | SFP 1 | E |
| **Group Name: %100 Fresh AHU** | | | | | | | | | | | | | |
| %100 FRESH | CASE 080 X 080 | 6,100 | 6,100 | 3.36 | 3.36 | 5.03 | 5.03 | 800.00 | 800.00 | 800.00 | 259 | SFP 1 | E |
| FAN WALL | CASE 140 X 110 | 6,100 | 6,100 | 1.29 | 1.29 | 1.67 | 1.67 | 1,414.00 | 1,080.00 | 1,080.00 | 76 | SFP 1 | E |
| **Group Name: AHU with Counterflow Heat Exchanger** | | | | | | | | | | | | | |
| COUNTERFLOW HEAT RECOVERY | CASE 230 X 200 | 14,000 | 14,000 | 1.94 | 1.94 | 2.38 | 2.38 | 1,900.00 | 1,200.00 | 1,200.00 | 1053 | SFP 3 | APN |
| **Group Name: AHU with Plate Heat Exchanger** | | | | | | | | | | | | | |
| PLATE HEAT RECOVERY | CASE 230 X 200 | 14,000 | 14,000 | 1.94 | 1.94 | 2.38 | 2.38 | 1,900.00 | 1,200.00 | 1,200.00 | 1209 | SFP 3 | APN |
| **Group Name: AHU with Rotary Heat Exchanger** | | | | | | | | | | | | | |
| ROTARY HEAT RECOVERY | CASE 170 X 140 | 8,000 | 8,000 | 1.34 | 1.34 | 1.69 | 1.69 | 1,760.00 | 1,080.00 | 1,080.00 | 1378 | SFP 4 | D |
| **Group Name: AHU with Run-Around Coil (RC/EF)** | | | | | | | | | | | | | |
| RUN AROUND COIL HEAT RECOV | CASE 200 X 170 | 22,000 | 20,000 | 1.94 | 1.77 | 2.38 | 2.15 | 1,986.00 | 1,750.00 | 1,750.00 | 1067 | SFP 3 | E |
| **Group Name: Hygienic AHU** | | | | | | | | | | | | | |
| HYGIENIC | HYGIENIC CASE 170 X 140 | 14,000 | 14,000 | 1.77 | 1.77 | 2.21 | 2.21 | 1,750.00 | 1,414.00 | 1,414.00 | 802 | SFP 3 | APN |
| ErP COMPLIANT | CASE 170 X 140 | 14,000 | 14,000 | 1.77 | 1.77 | 2.21 | 2.21 | 1,750.00 | 1,414.00 | 1,414.00 | 795 | SFP 3 | APN |
| **Group Name: Mixture AHU** | | | | | | | | | | | | | |
| MIXTURE | CASE 200 X 200 | 29,000 | 29,000 | 2.29 | 2.29 | 2.74 | 2.74 | 1,986.00 | 1,986.00 | 1,986.00 | 372 | SFP 1 | DN |
| VERTICAL MIXTURE | CASE 140 X 110 | 10,000 | 10,000 | 1.80 | 1.80 | 2.23 | 2.23 | 1,700.00 | 1,080.00 | 1,080.00 | 633 | SFP 2 | EN |

# AHU DESIGN / SELECTION WINDOWS

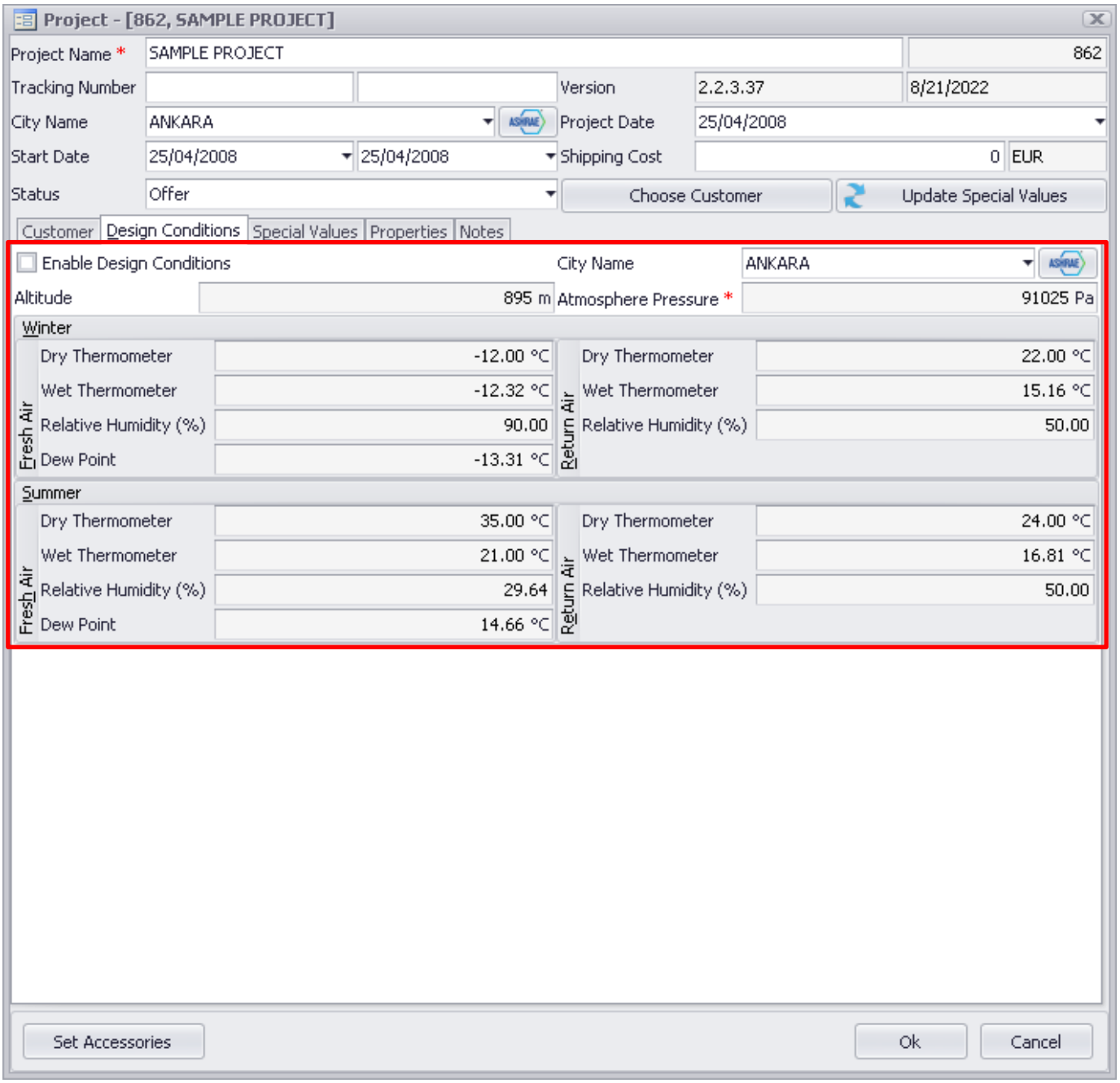
## MODULE TOOLBOX



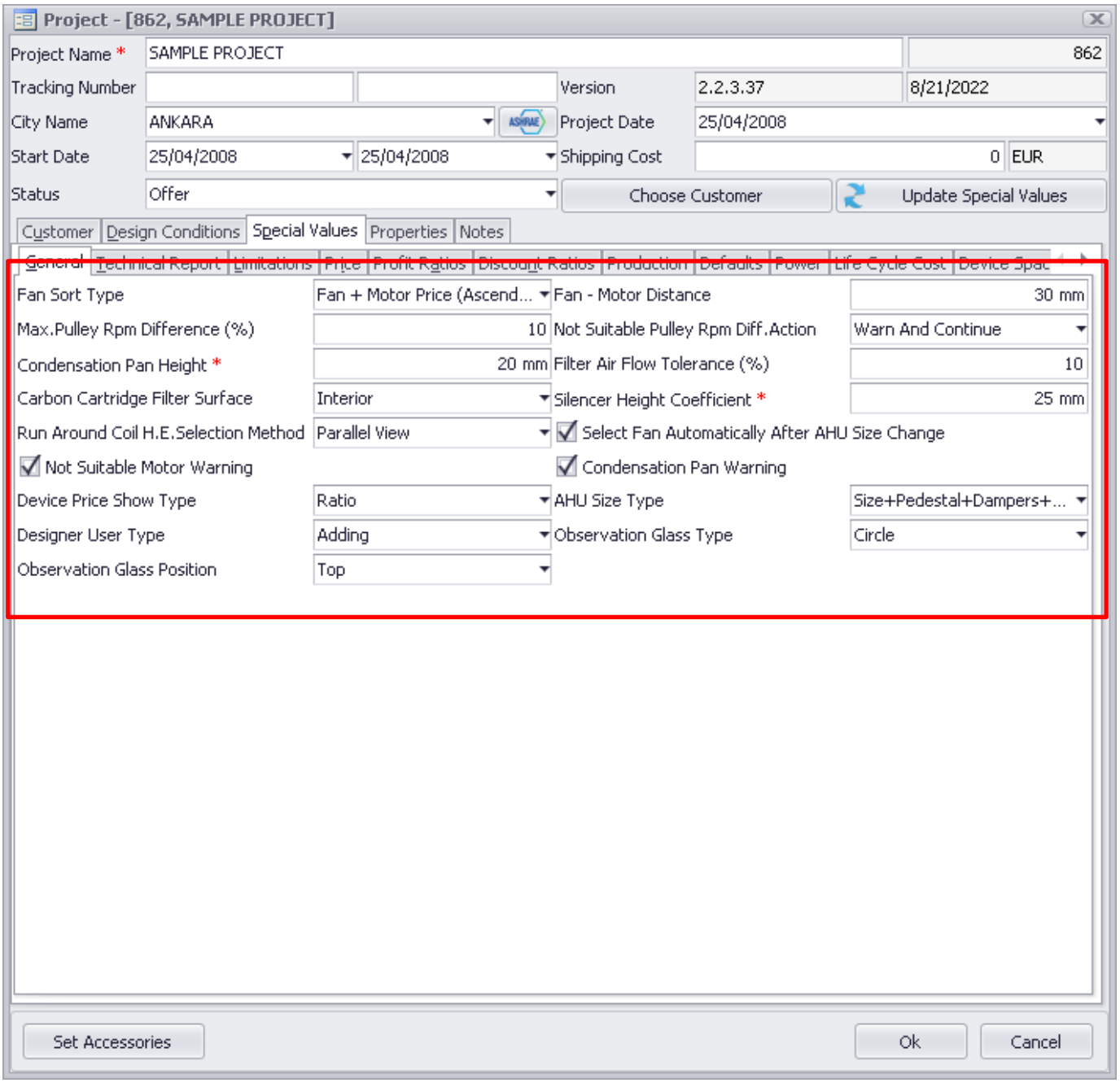
## PROJECT - CUSTOMER



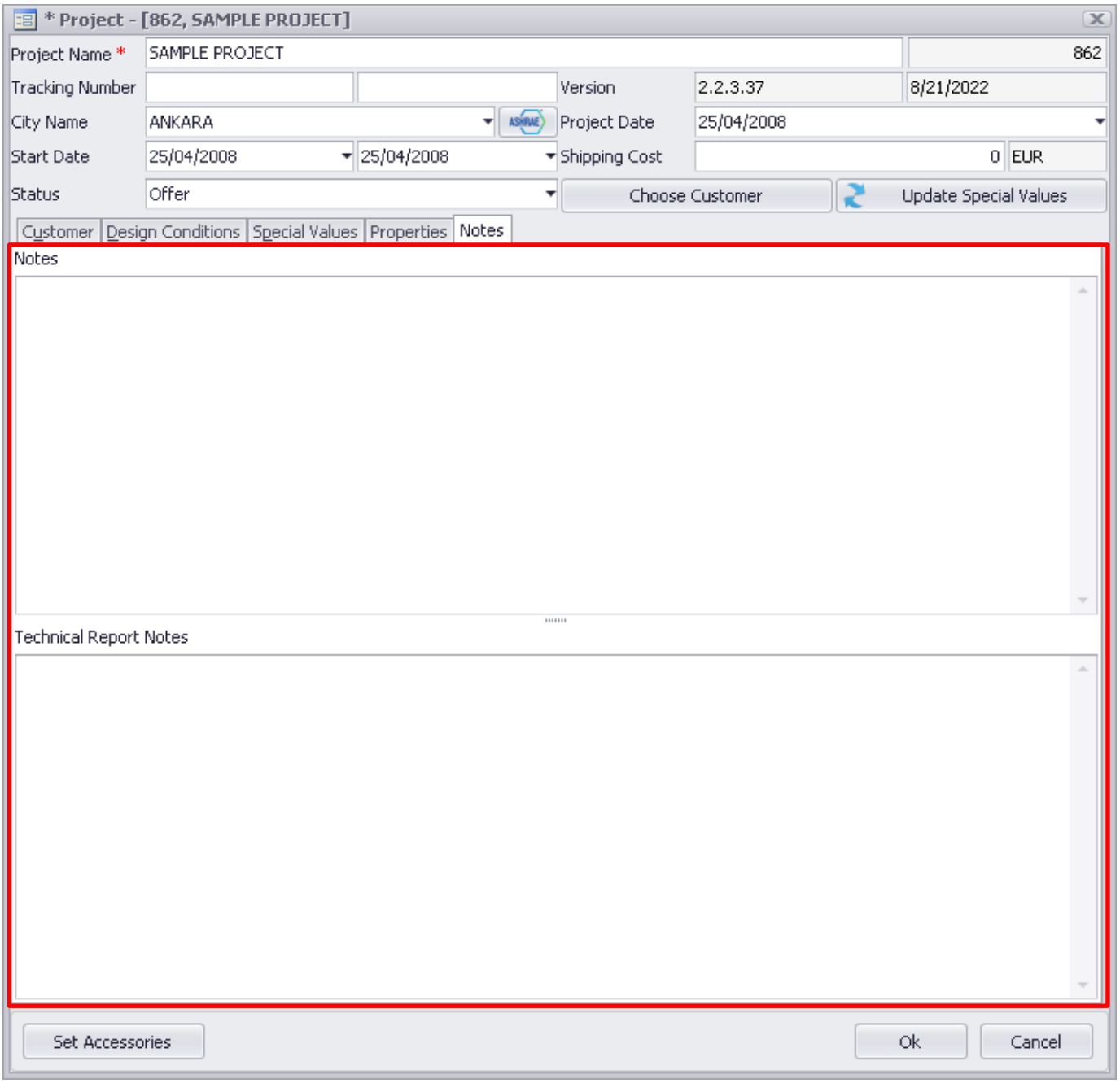
## PROJECT - DESIGN CONDITIONS



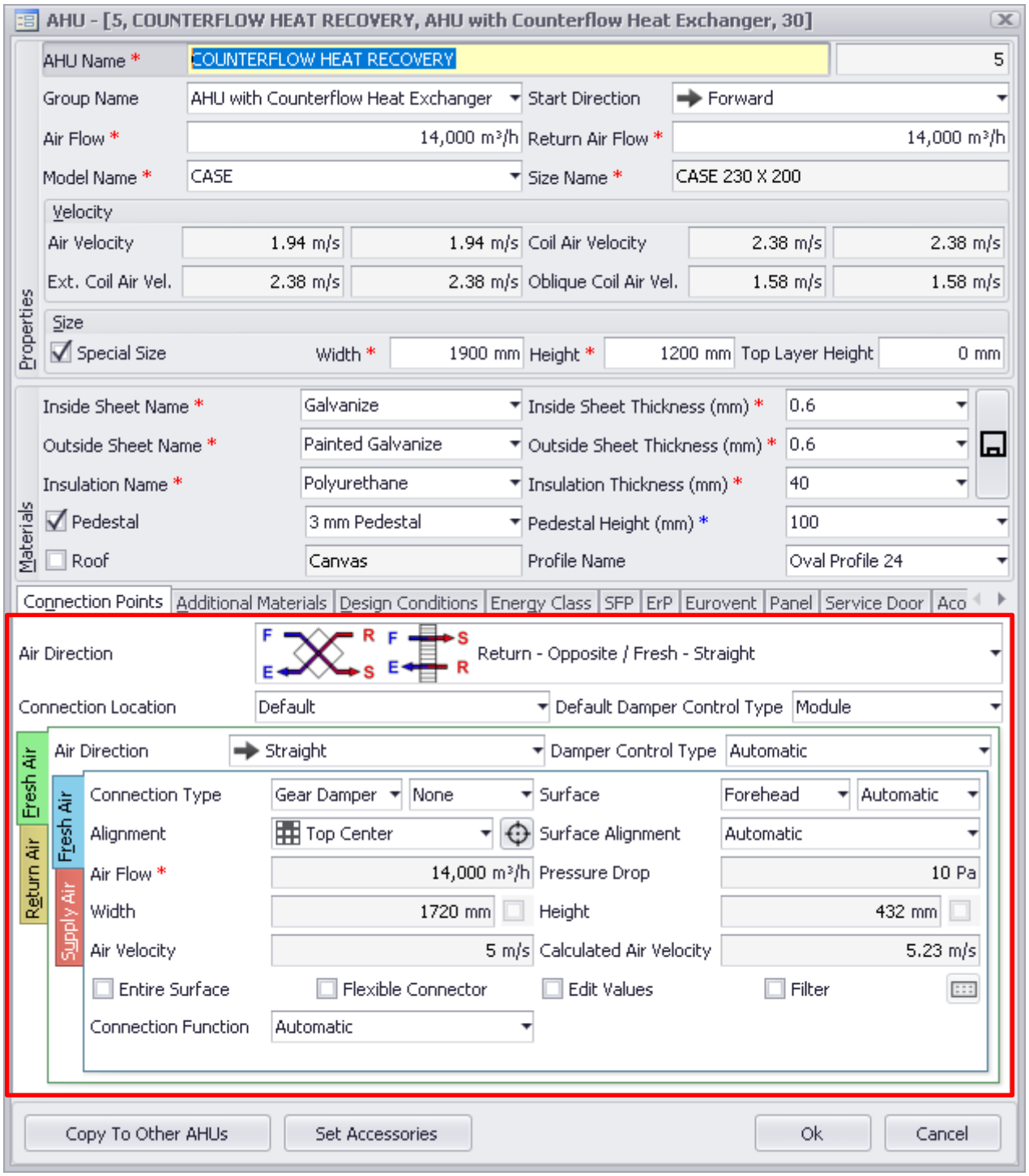
# PROJECT – SPECIAL VALUES



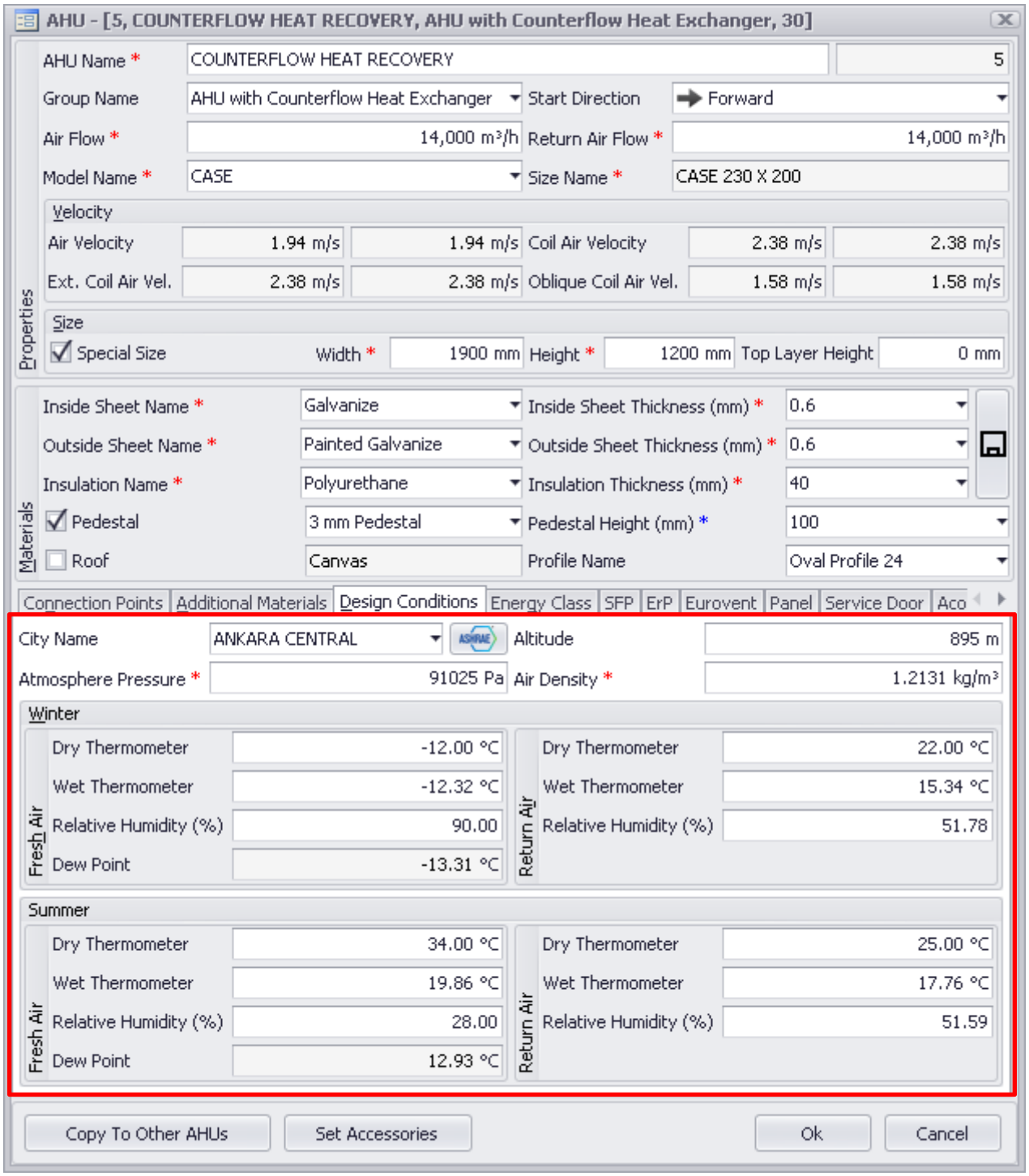
## PROJECT – NOTES



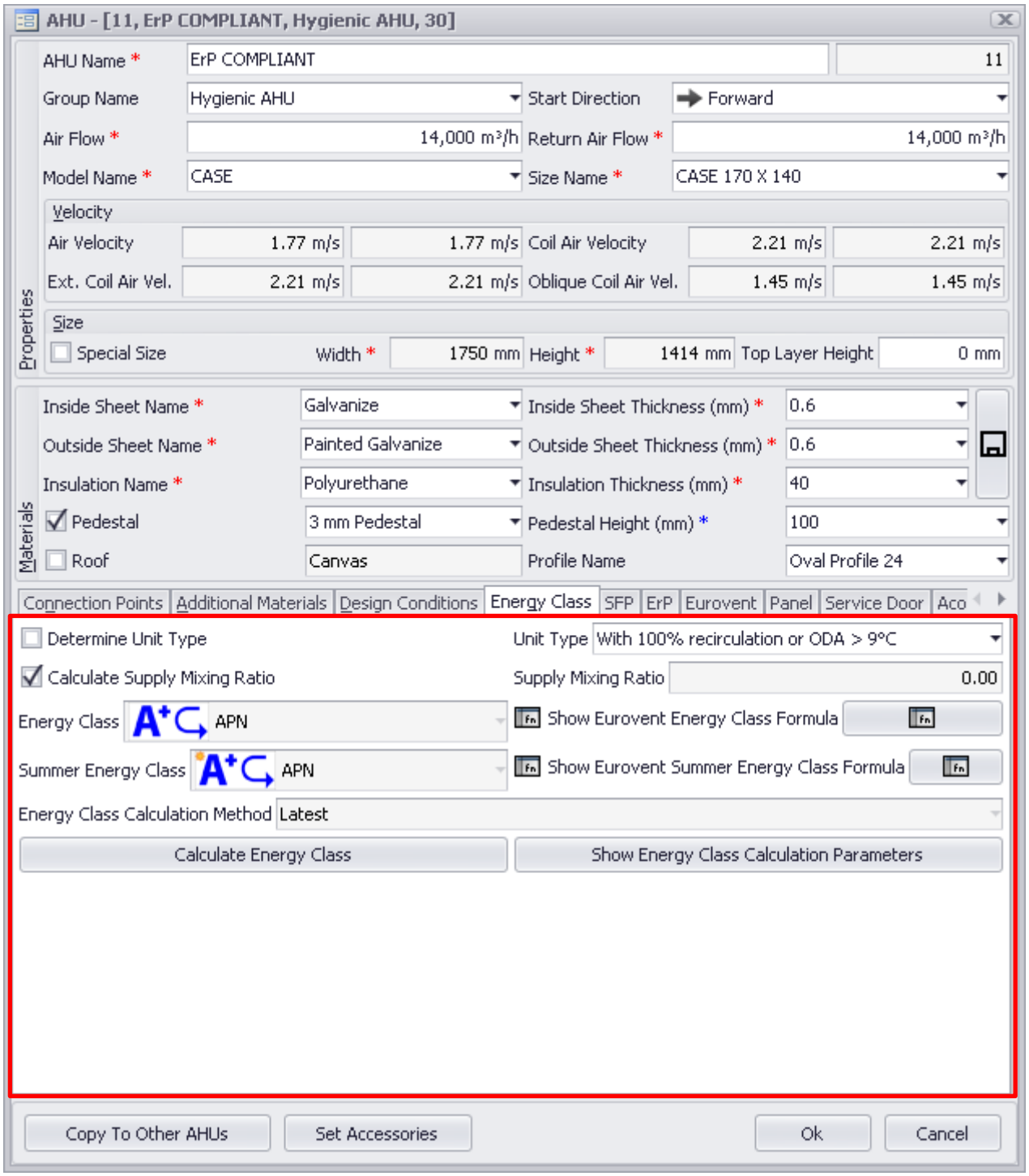
## AHU – CONNECTION POINTS



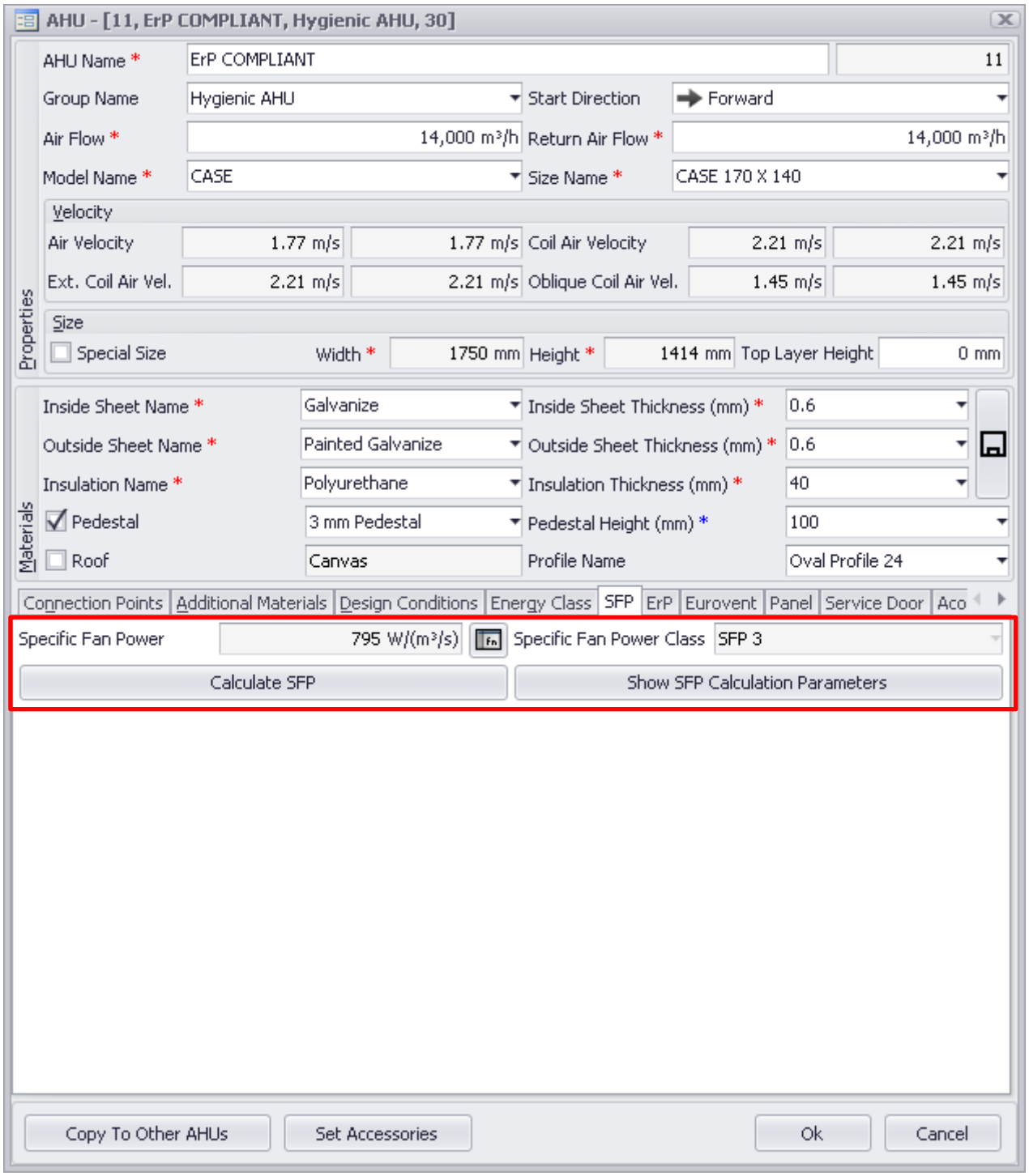
## AHU – DESIGN CONDITIONS



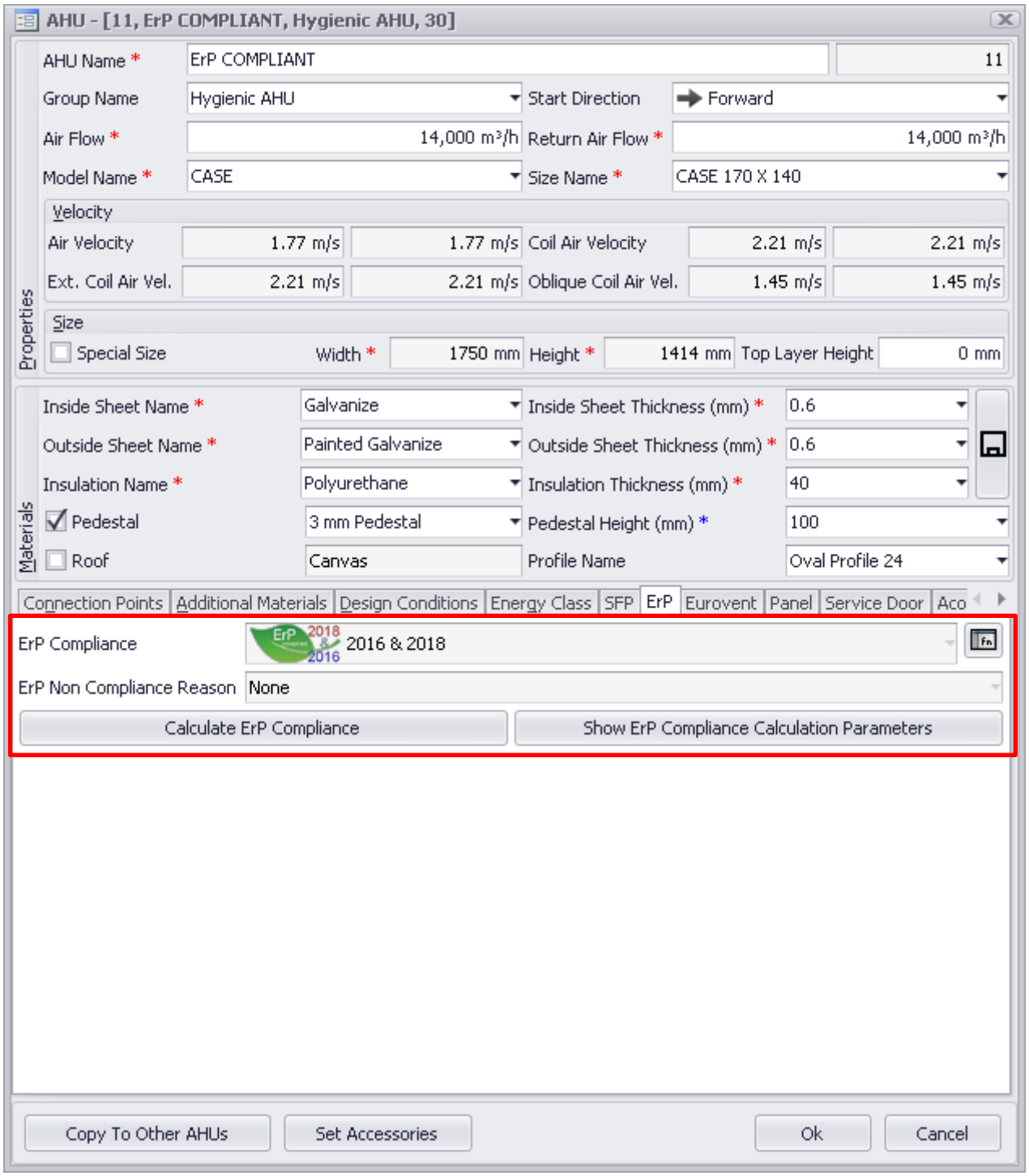
## AHU – ENERGY CLASS



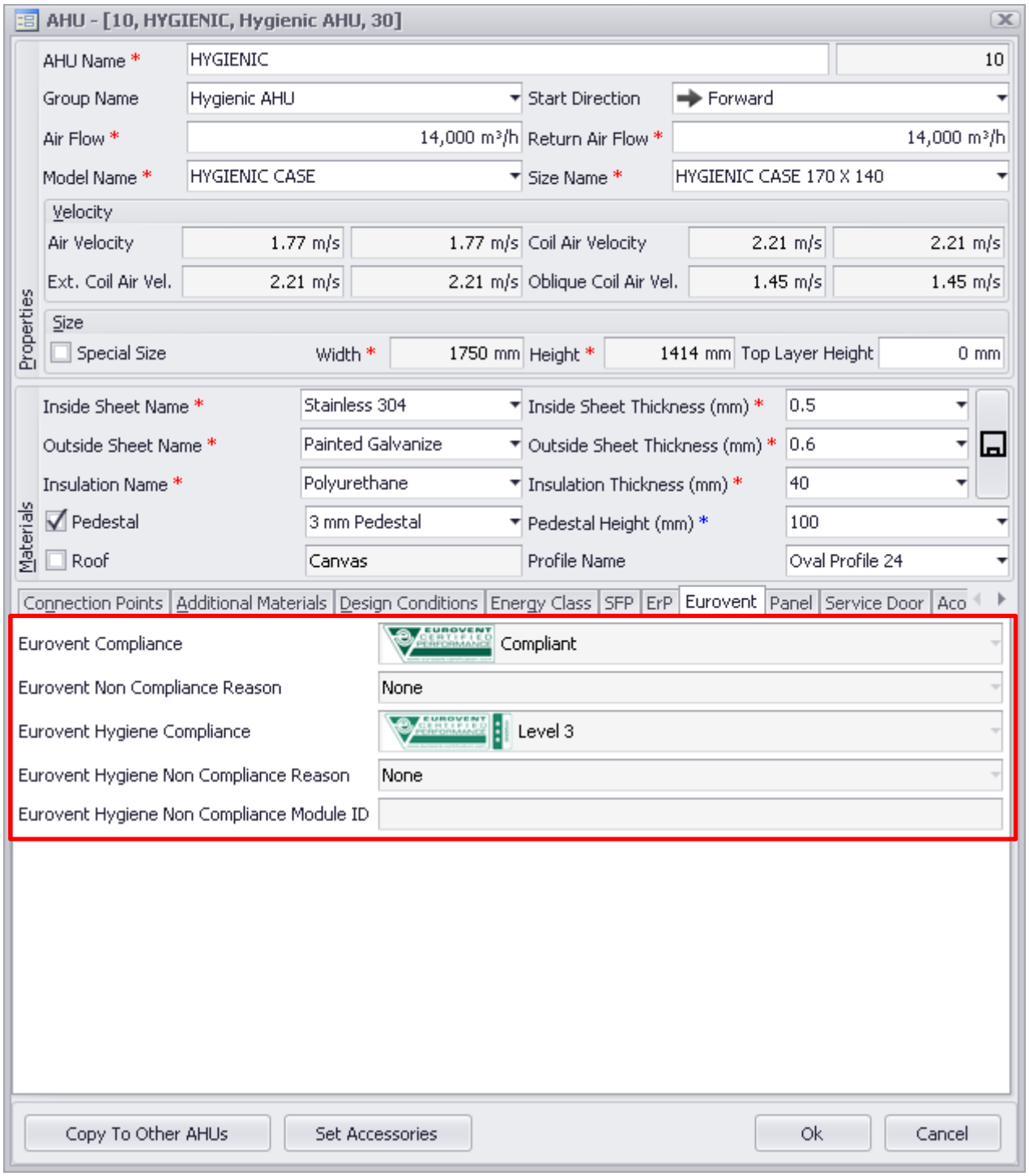
## AHU – SFP (SPECIFIC FAN POWER)



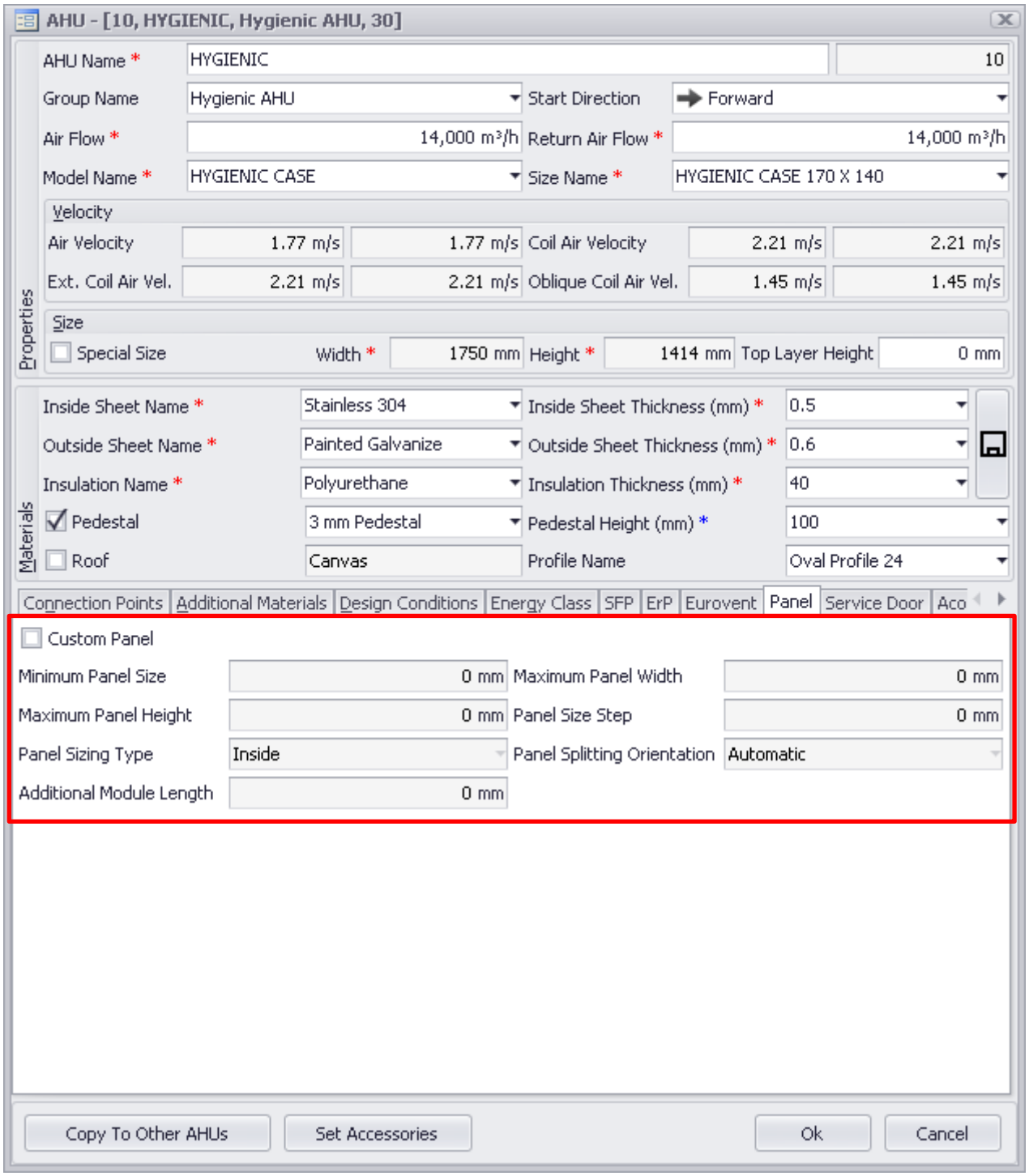
## AHU – ERP (ECODESIGN REQUIREMENTS)



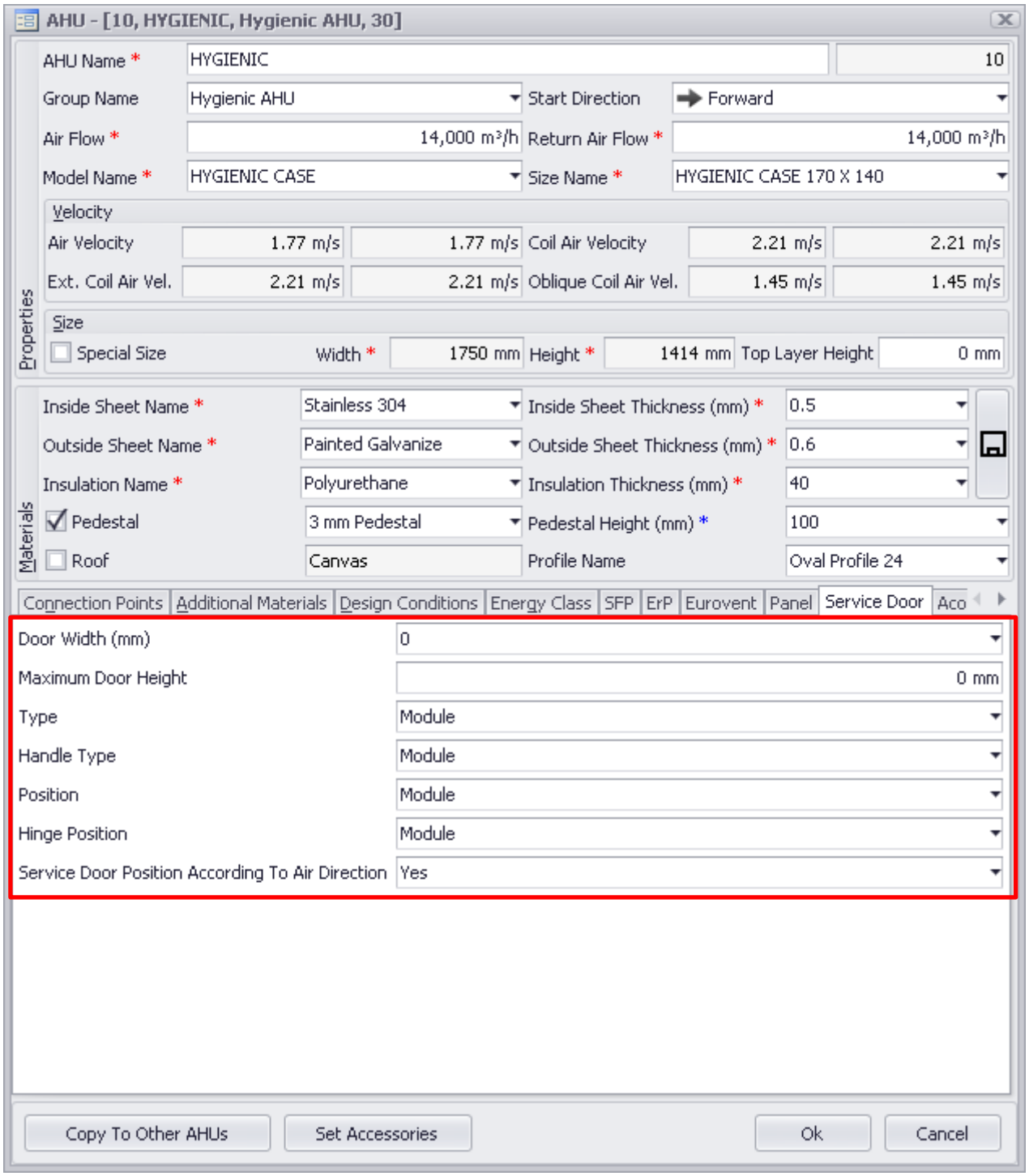
## AHU – EUROVENT



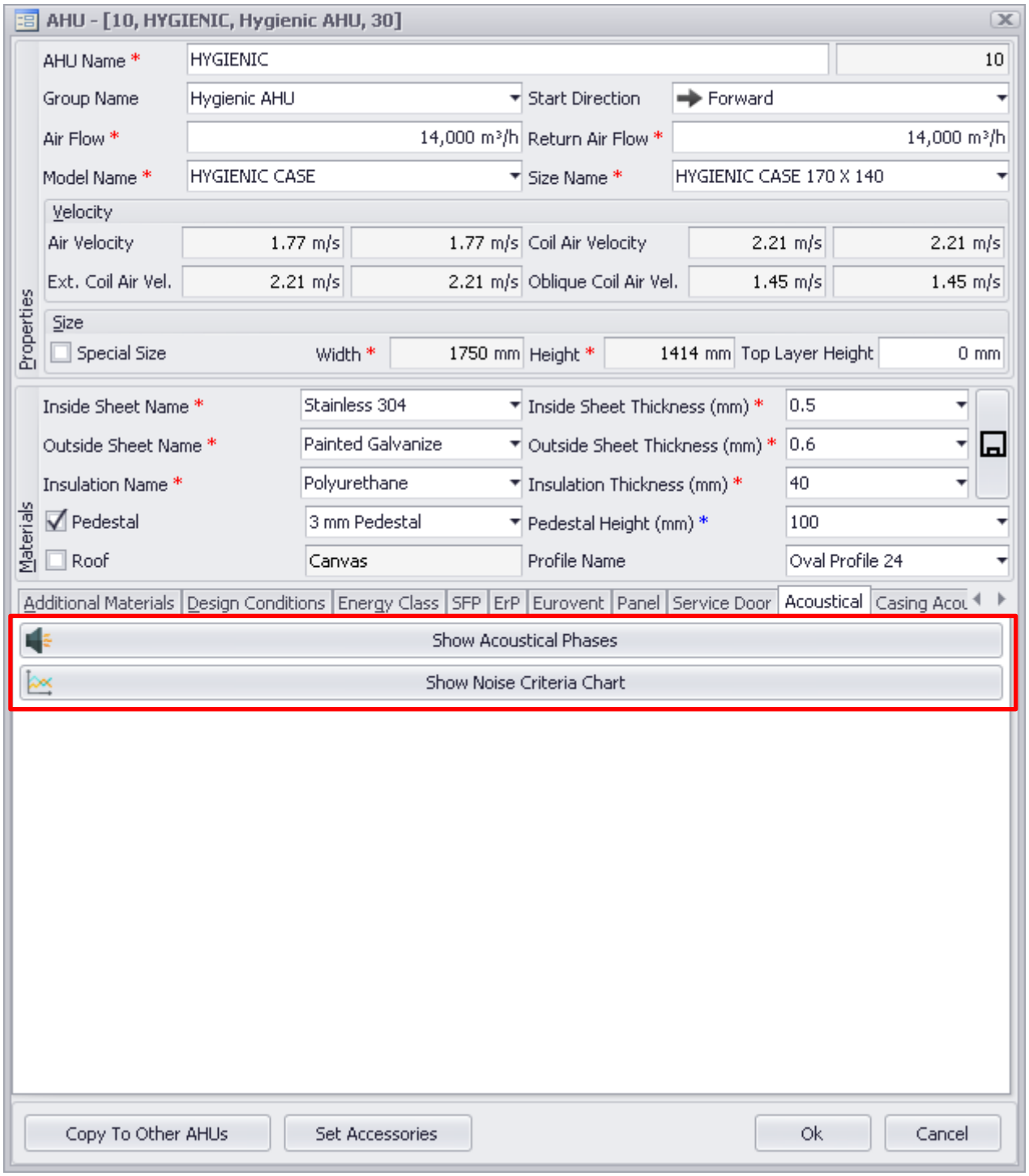
## AHU – PANEL


AHU - [10, HYGIENIC, Hygienic AHU, 30]
AHU Name *
HYGIENIC
10
Group Name
Hygienic AHU
Start Direction
Forward
Air Flow *
14,000 m³/h
Return Air Flow *
14,000 m³/h
Model Name *
HYGIENIC CASE
Size Name *
HYGIENIC CASE 170 X 140
Properties
Velocity
Air Velocity
1.77 m/s
1.77 m/s
Coil Air Velocity
2.21 m/s
2.21 m/s
Ext. Coil Air Vel.
2.21 m/s
2.21 m/s
Oblique Coil Air Vel.
1.45 m/s
1.45 m/s
Size
Special Size
Width *
1750 mm
Height *
1414 mm
Top Layer Height
0 mm
Materials
Inside Sheet Name *
Stainless 304
Inside Sheet Thickness (mm) *
0.5
Outside Sheet Name *
Painted Galvanize
Outside Sheet Thickness (mm) *
0.6
Insulation Name *
Polyurethane
Insulation Thickness (mm) *
40
Pedestal
3 mm Pedestal
Pedestal Height (mm) *
100
Roof
Canvas
Profile Name
Oval Profile 24
Connection Points
Additional Materials
Design Conditions
Energy Class
SFP
ErP
Eurovent
Panel
Service Door
Aco
Custom Panel
Minimum Panel Size
0 mm
Maximum Panel Width
0 mm
Maximum Panel Height
0 mm
Panel Size Step
0 mm
Panel Sizing Type
Inside
Panel Splitting Orientation
Automatic
Additional Module Length
0 mm
Copy To Other AHUs
Set Accessories
Ok
Cancel

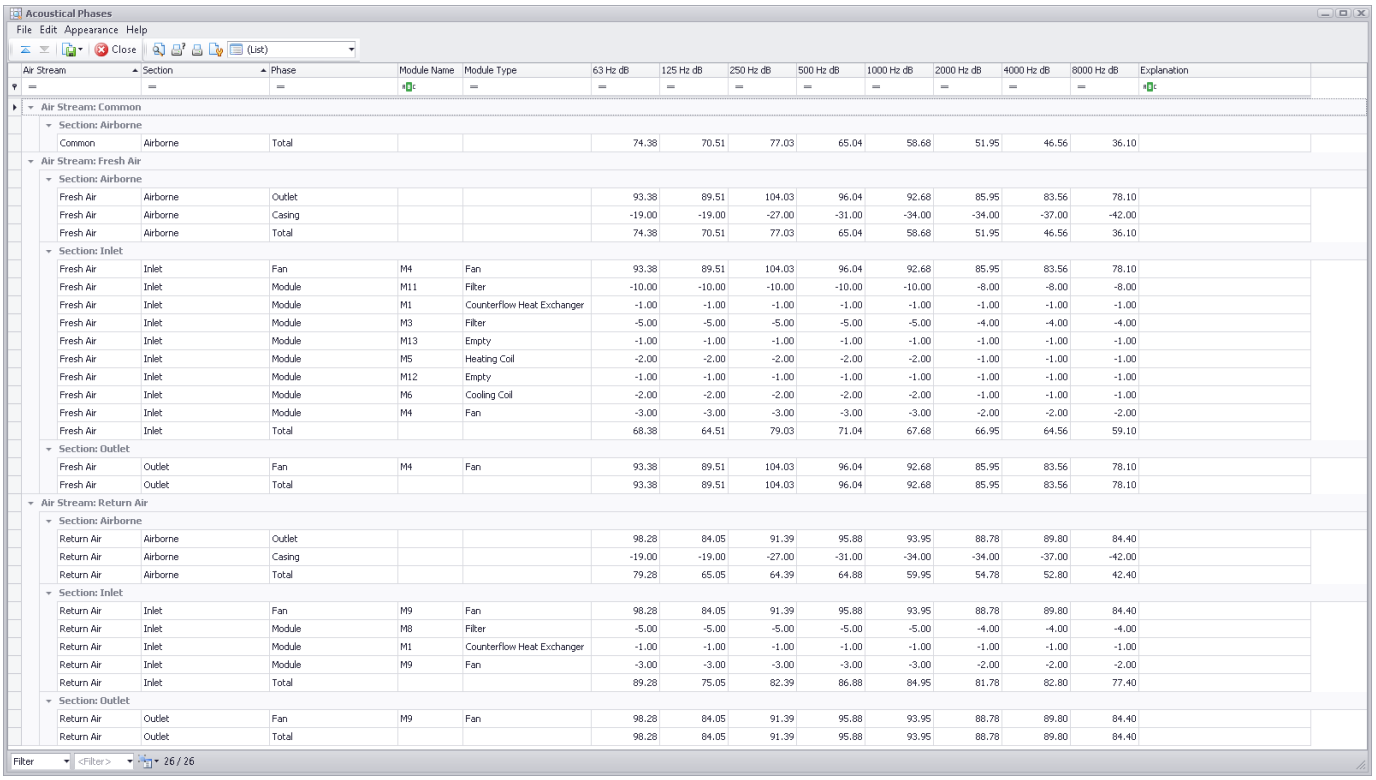
## AHU – SERVICE DOOR



## AHU – ACOUSTICAL



## AHU – ACOUSTICAL PHASES



Acoustical Phases

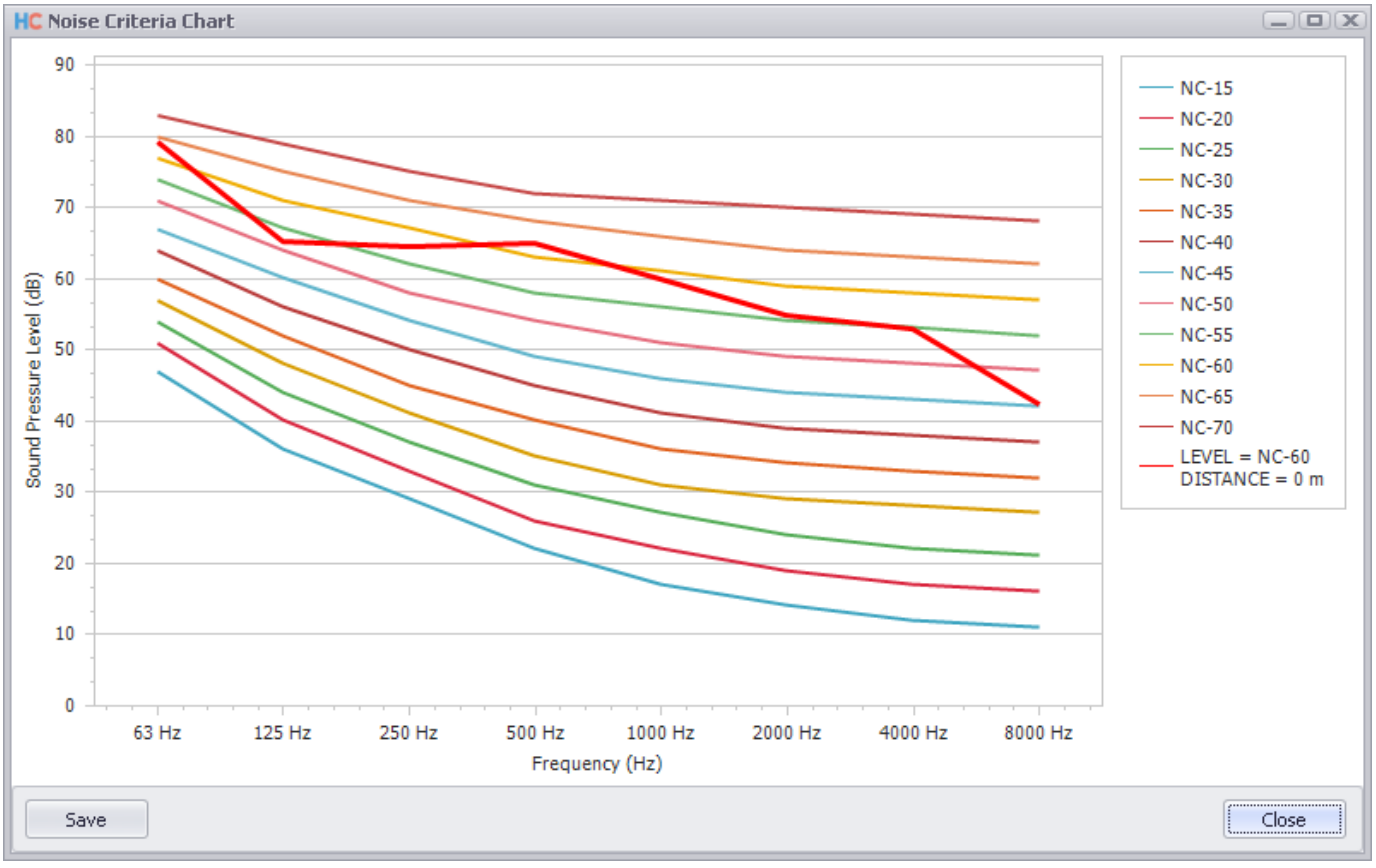
File Edit Appearance Help

Close (List)

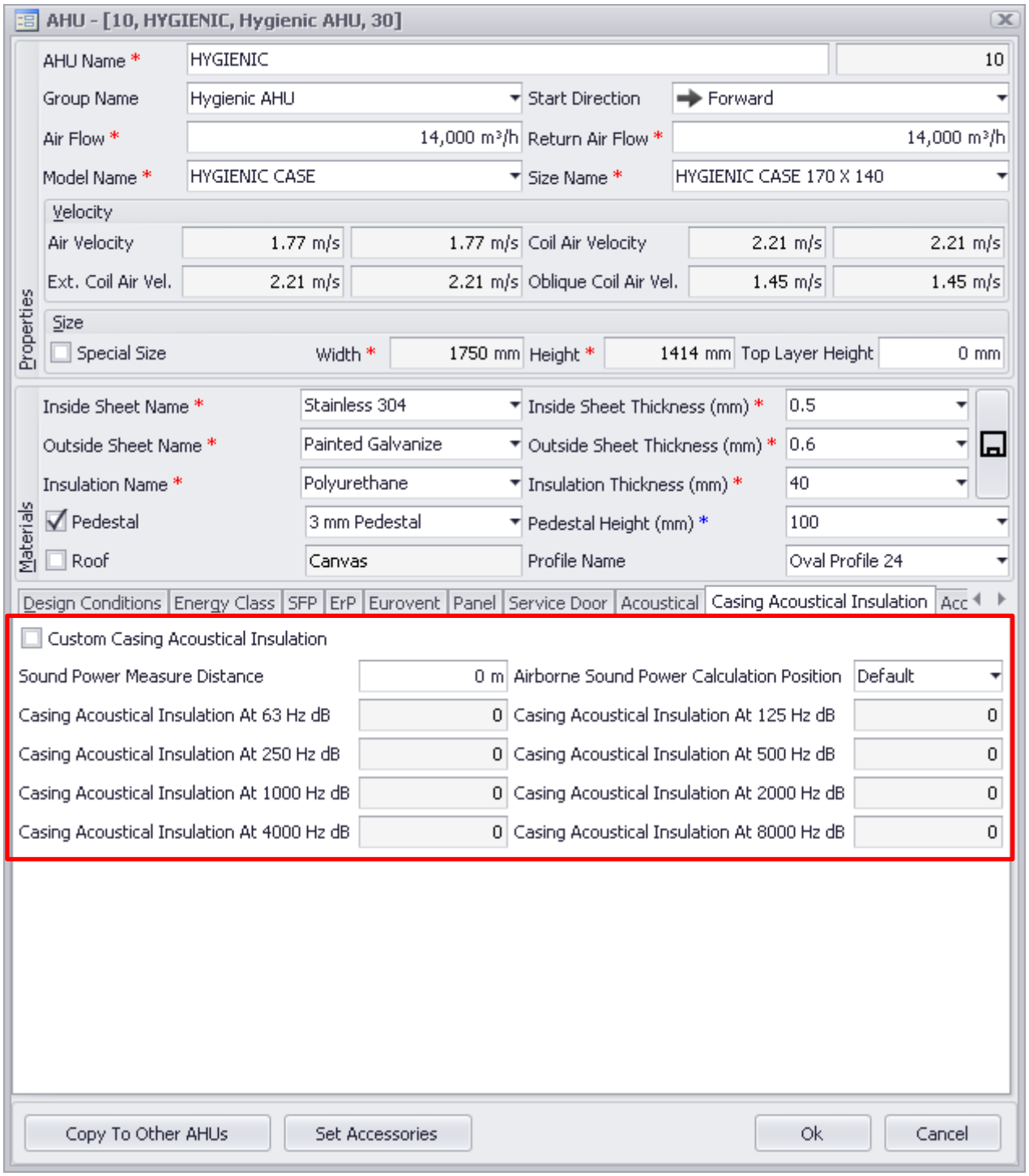
| Air Stream | Section | Phase | Module Name | Module Type | 63 Hz dB | 125 Hz dB | 250 Hz dB | 500 Hz dB | 1000 Hz dB | 2000 Hz dB | 4000 Hz dB | 8000 Hz dB | Explanation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Air Stream: Common | | | | | | | | | | | | | |
| Section: Airborne | | | | | | | | | | | | | |
| Common | Airborne | Total | | | 74.38 | 70.51 | 77.03 | 65.04 | 58.68 | 51.95 | 46.56 | 36.10 | |
| Air Stream: Fresh Air | | | | | | | | | | | | | |
| Section: Airborne | | | | | | | | | | | | | |
| Fresh Air | Airborne | Outlet | | | 93.38 | 89.51 | 104.03 | 96.04 | 92.68 | 85.95 | 83.56 | 78.10 | |
| Fresh Air | Airborne | Casing | | | -19.00 | -19.00 | -27.00 | -31.00 | -34.00 | -34.00 | -37.00 | -42.00 | |
| Fresh Air | Airborne | Total | | | 74.38 | 70.51 | 77.03 | 65.04 | 58.68 | 51.95 | 46.56 | 36.10 | |
| Section: Inlet | | | | | | | | | | | | | |
| Fresh Air | Inlet | Fan | M4 | Fan | 93.38 | 89.51 | 104.03 | 96.04 | 92.68 | 85.95 | 83.56 | 78.10 | |
| Fresh Air | Inlet | Module | M11 | Filter | -10.00 | -10.00 | -10.00 | -10.00 | -10.00 | -8.00 | -8.00 | -8.00 | |
| Fresh Air | Inlet | Module | M1 | Counterflow Heat Exchanger | -1.00 | -1.00 | -1.00 | -1.00 | -1.00 | -1.00 | -1.00 | -1.00 | |
| Fresh Air | Inlet | Module | M3 | Filter | -5.00 | -5.00 | -5.00 | -5.00 | -5.00 | -4.00 | -4.00 | -4.00 | |
| Fresh Air | Inlet | Module | M13 | Empty | -1.00 | -1.00 | -1.00 | -1.00 | -1.00 | -1.00 | -1.00 | -1.00 | |
| Fresh Air | Inlet | Module | M5 | Heating Coil | -2.00 | -2.00 | -2.00 | -2.00 | -2.00 | -1.00 | -1.00 | -1.00 | |
| Fresh Air | Inlet | Module | M12 | Empty | -1.00 | -1.00 | -1.00 | -1.00 | -1.00 | -1.00 | -1.00 | -1.00 | |
| Fresh Air | Inlet | Module | M6 | Cooling Coil | -2.00 | -2.00 | -2.00 | -2.00 | -2.00 | -1.00 | -1.00 | -1.00 | |
| Fresh Air | Inlet | Module | M4 | Fan | -3.00 | -3.00 | -3.00 | -3.00 | -3.00 | -2.00 | -2.00 | -2.00 | |
| Fresh Air | Inlet | Total | | | 68.38 | 64.51 | 79.03 | 71.04 | 67.68 | 66.95 | 64.56 | 59.10 | |
| Section: Outlet | | | | | | | | | | | | | |
| Fresh Air | Outlet | Fan | M4 | Fan | 93.38 | 89.51 | 104.03 | 96.04 | 92.68 | 85.95 | 83.56 | 78.10 | |
| Fresh Air | Outlet | Total | | | 93.38 | 89.51 | 104.03 | 96.04 | 92.68 | 85.95 | 83.56 | 78.10 | |
| Air Stream: Return Air | | | | | | | | | | | | | |
| Section: Airborne | | | | | | | | | | | | | |
| Return Air | Airborne | Outlet | | | 98.28 | 84.05 | 91.39 | 95.88 | 93.95 | 88.78 | 89.80 | 84.40 | |
| Return Air | Airborne | Casing | | | -19.00 | -19.00 | -27.00 | -31.00 | -34.00 | -34.00 | -37.00 | -42.00 | |
| Return Air | Airborne | Total | | | 79.28 | 65.05 | 64.39 | 64.88 | 59.95 | 54.78 | 52.80 | 42.40 | |
| Section: Inlet | | | | | | | | | | | | | |
| Return Air | Inlet | Fan | M9 | Fan | 98.28 | 84.05 | 91.39 | 95.88 | 93.95 | 88.78 | 89.80 | 84.40 | |
| Return Air | Inlet | Module | M8 | Filter | -5.00 | -5.00 | -5.00 | -5.00 | -5.00 | -4.00 | -4.00 | -4.00 | |
| Return Air | Inlet | Module | M1 | Counterflow Heat Exchanger | -1.00 | -1.00 | -1.00 | -1.00 | -1.00 | -1.00 | -1.00 | -1.00 | |
| Return Air | Inlet | Module | M9 | Fan | -3.00 | -3.00 | -3.00 | -3.00 | -3.00 | -2.00 | -2.00 | -2.00 | |
| Return Air | Inlet | Total | | | 89.28 | 75.05 | 82.39 | 86.88 | 84.95 | 81.78 | 82.80 | 77.40 | |
| Section: Outlet | | | | | | | | | | | | | |
| Return Air | Outlet | Fan | M9 | Fan | 98.28 | 84.05 | 91.39 | 95.88 | 93.95 | 88.78 | 89.80 | 84.40 | |
| Return Air | Outlet | Total | | | 98.28 | 84.05 | 91.39 | 95.88 | 93.95 | 88.78 | 89.80 | 84.40 | |

Filter <Filter> 26 / 26

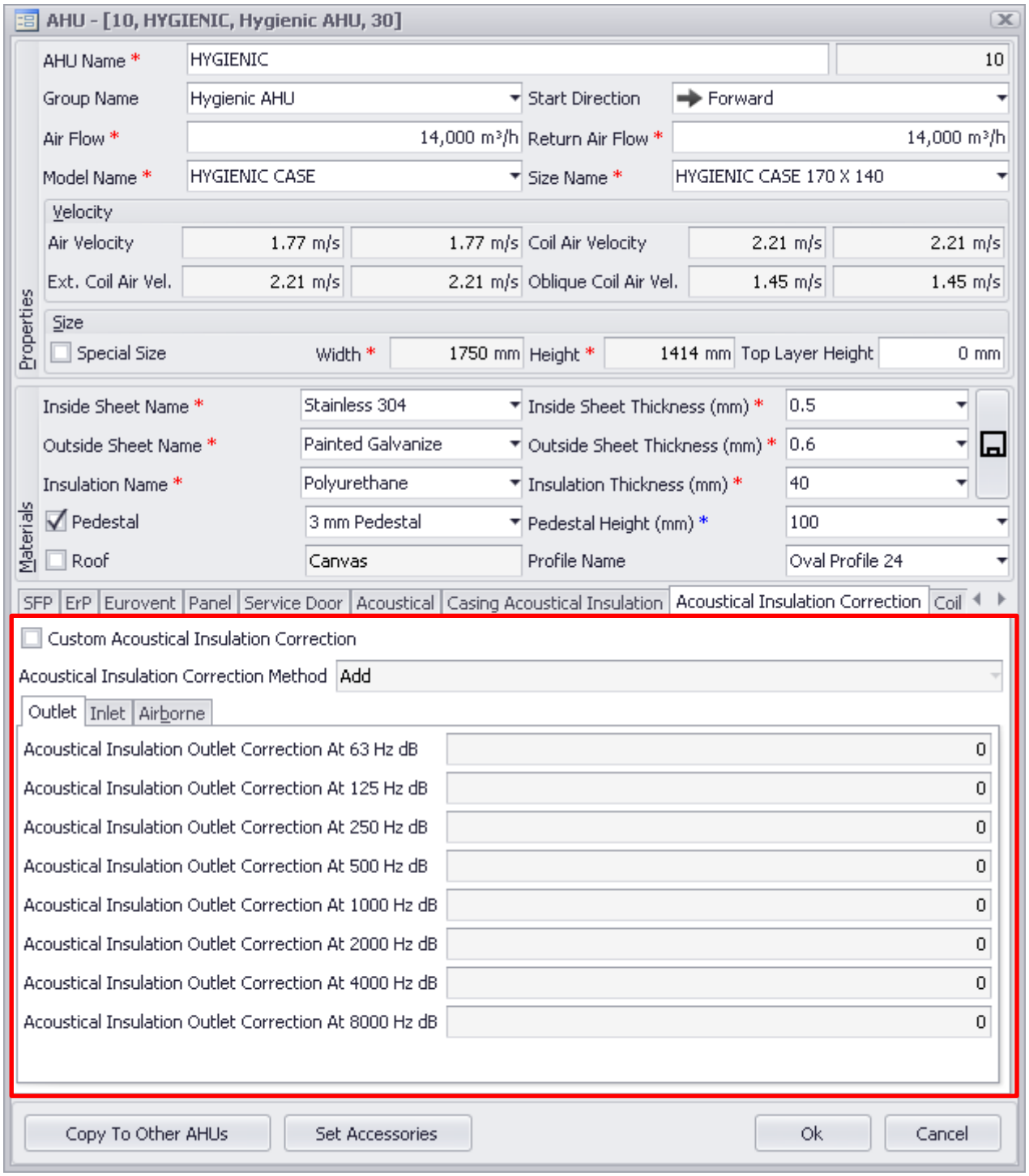
## AHU – NOISE CRITERIA CHART



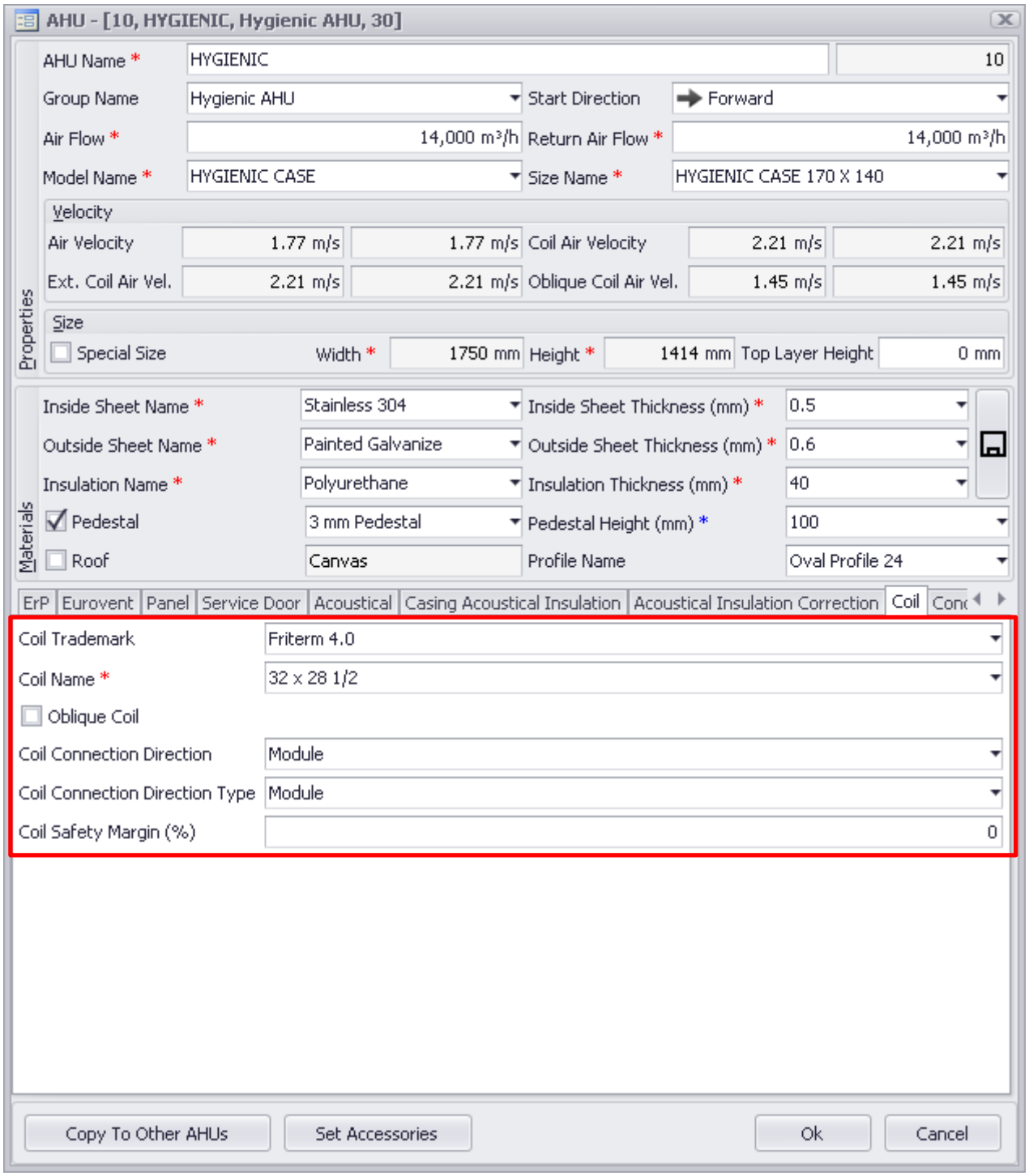
## AHU – CASING ACOUSTICAL INSULATION



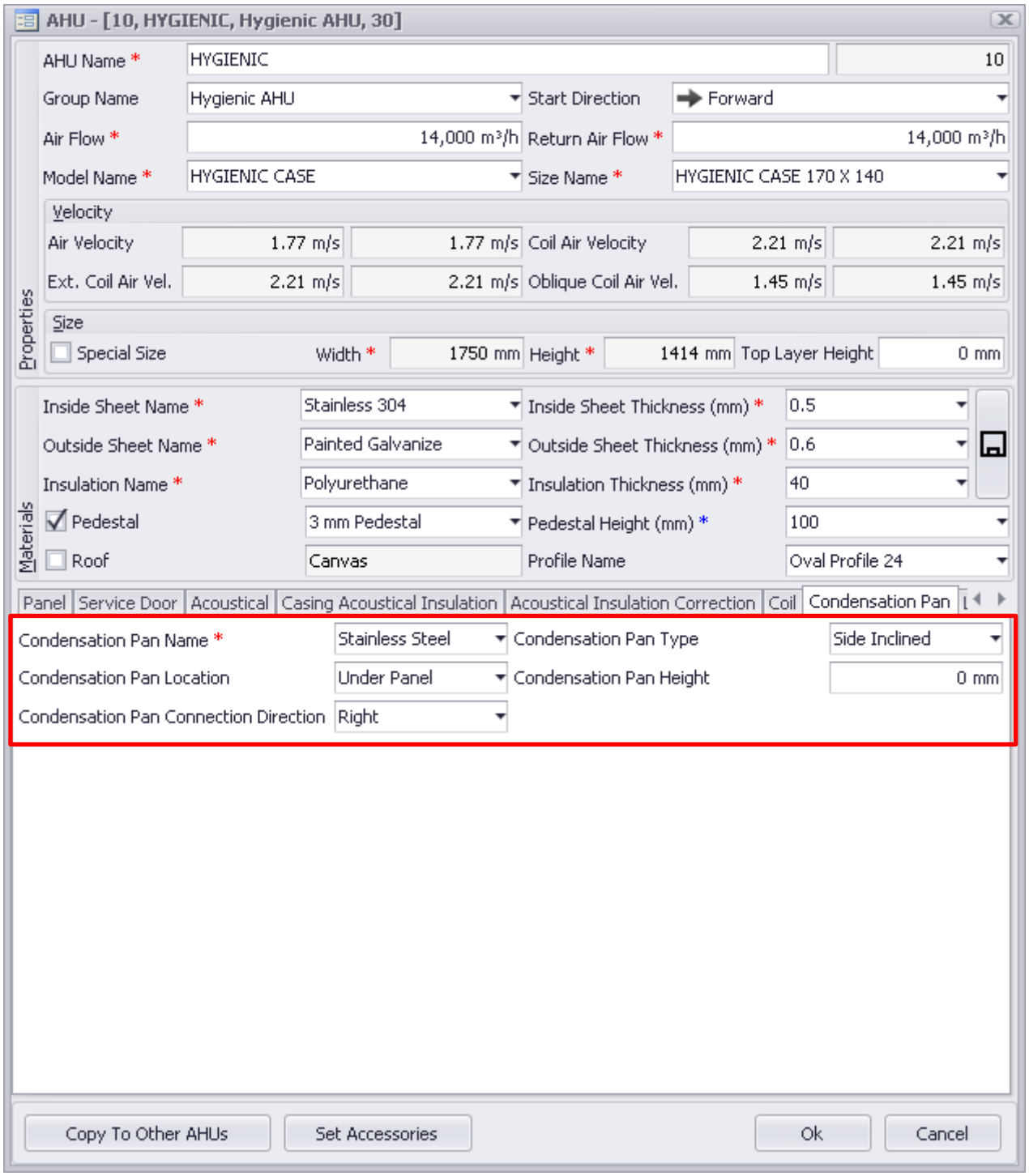
# AHU – ACOUSTICAL INSULATION CORRECTION



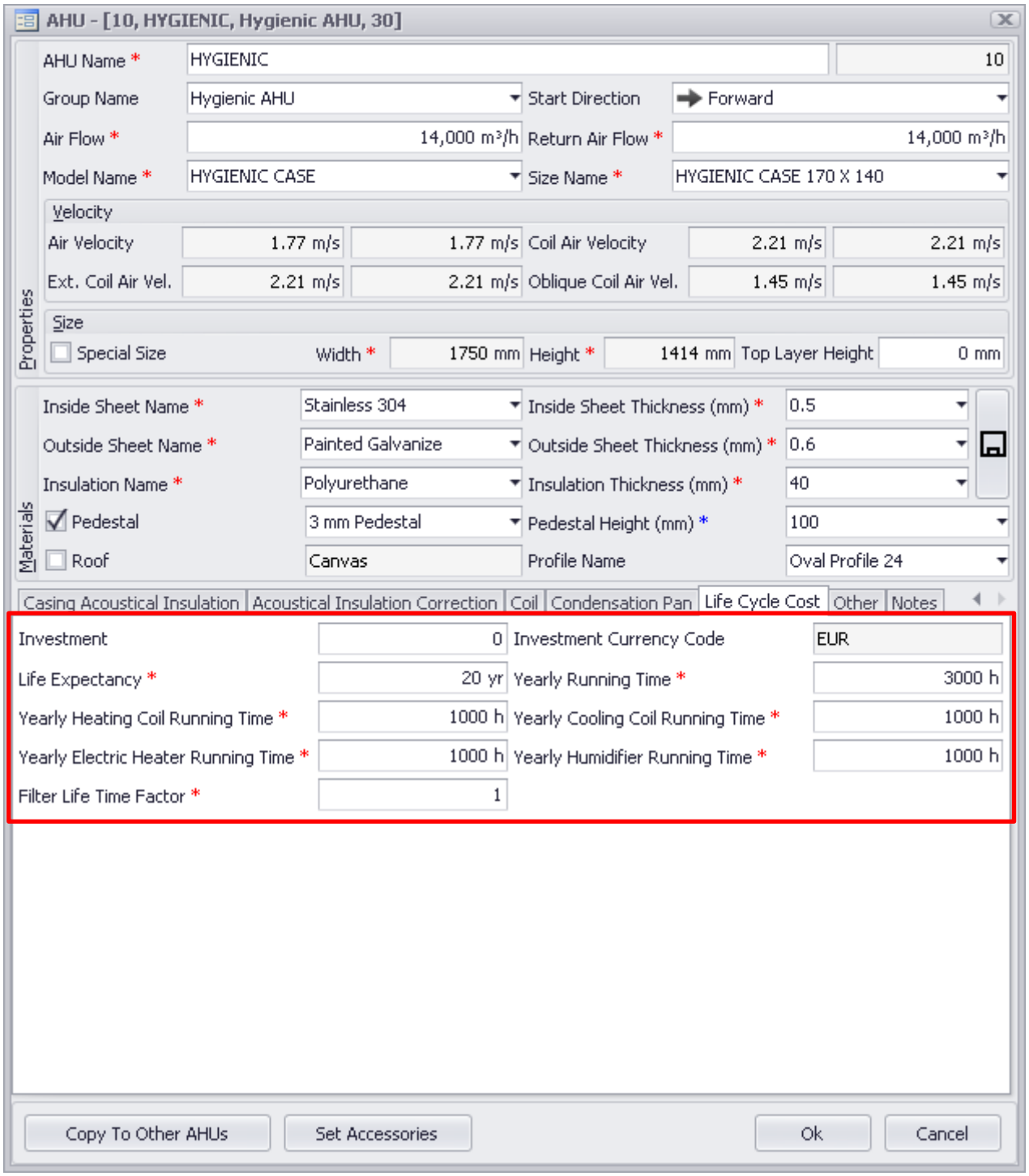
## AHU - COIL


AHU - [10, HYGIENIC, Hygienic AHU, 30]
AHU Name *
HYGIENIC
10
Group Name
Hygienic AHU
Start Direction
Forward
Air Flow *
14,000 m³/h
Return Air Flow *
14,000 m³/h
Model Name *
HYGIENIC CASE
Size Name *
HYGIENIC CASE 170 X 140
Properties
Velocity
Air Velocity
1.77 m/s
1.77 m/s
Coil Air Velocity
2.21 m/s
2.21 m/s
Ext. Coil Air Vel.
2.21 m/s
2.21 m/s
Oblique Coil Air Vel.
1.45 m/s
1.45 m/s
Size
Special Size
Width *
1750 mm
Height *
1414 mm
Top Layer Height
0 mm
Materials
Inside Sheet Name *
Stainless 304
Inside Sheet Thickness (mm) *
0.5
Outside Sheet Name *
Painted Galvanize
Outside Sheet Thickness (mm) *
0.6
Insulation Name *
Polyurethane
Insulation Thickness (mm) *
40
Pedestal
3 mm Pedestal
Pedestal Height (mm) *
100
Roof
Canvas
Profile Name
Oval Profile 24
ErP
Eurovent
Panel
Service Door
Acoustical
Casing Acoustical Insulation
Acoustical Insulation Correction
Coil
Coil Trademark
Friterm 4.0
Coil Name *
32 x 28 1/2
Oblique Coil
Coil Connection Direction
Module
Coil Connection Direction Type
Module
Coil Safety Margin (%)
0
Copy To Other AHUs
Set Accessories
Ok
Cancel

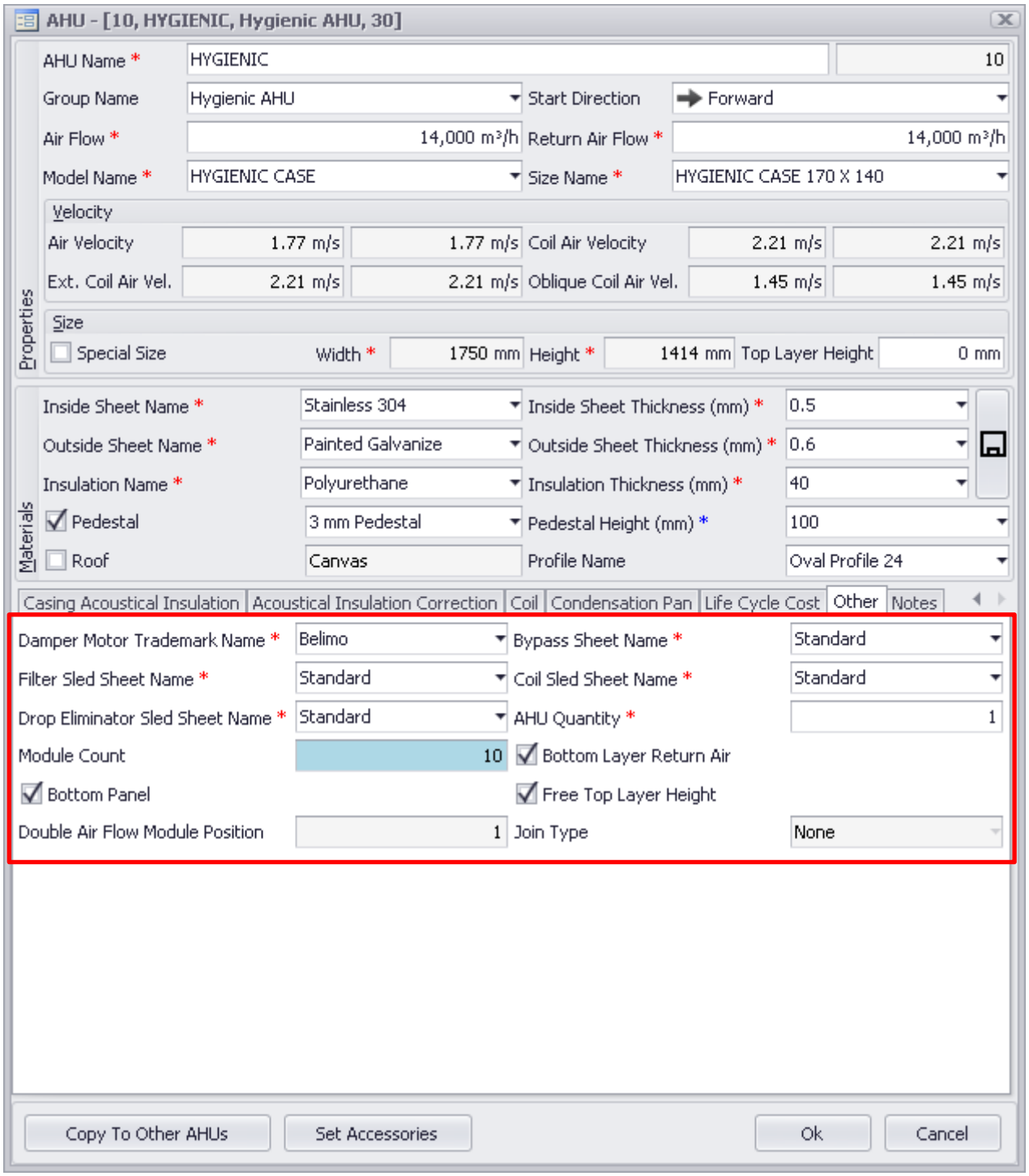
## AHU – CONDENSATION PAN



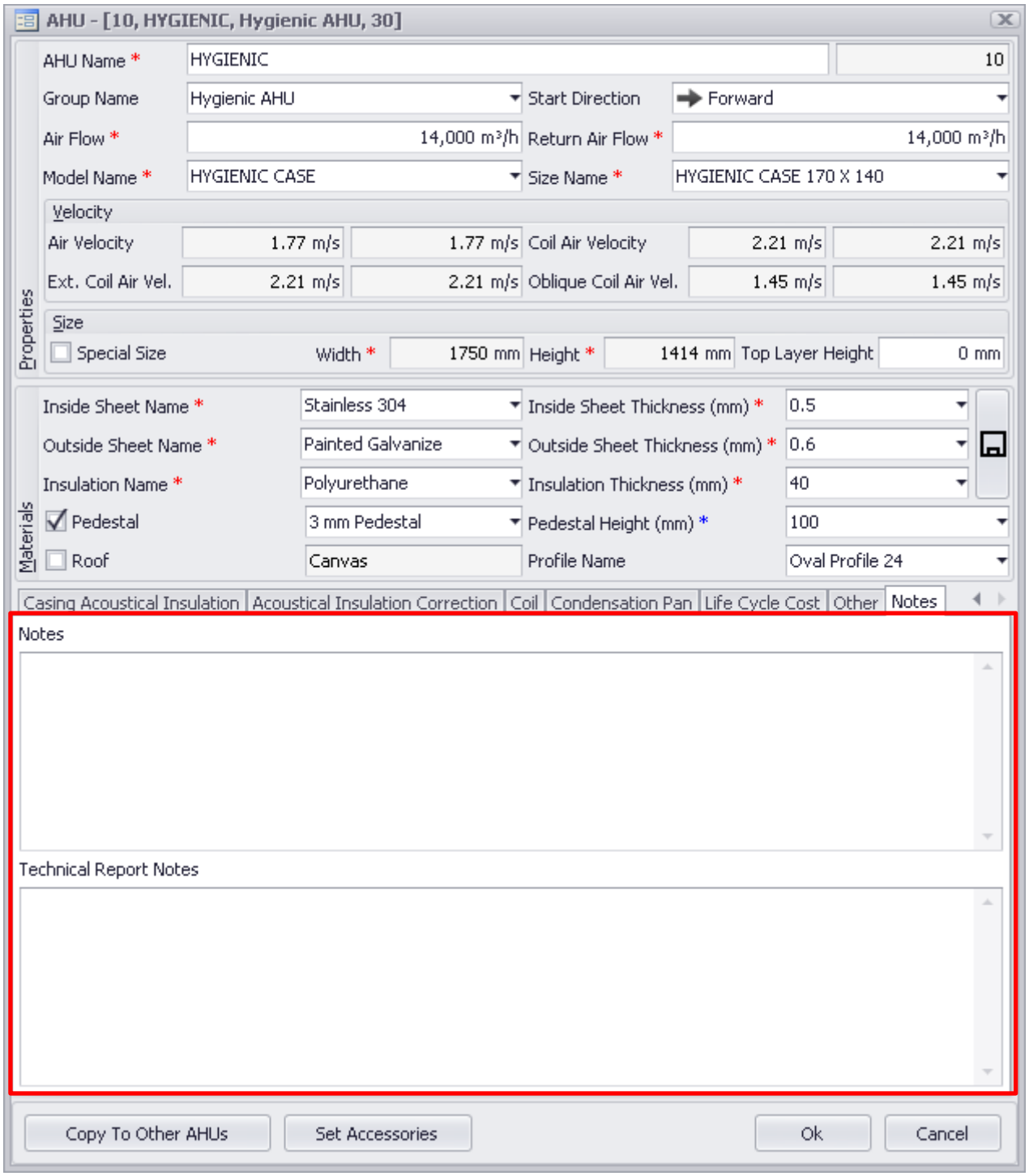
## AHU – LIFE CYCLE COST



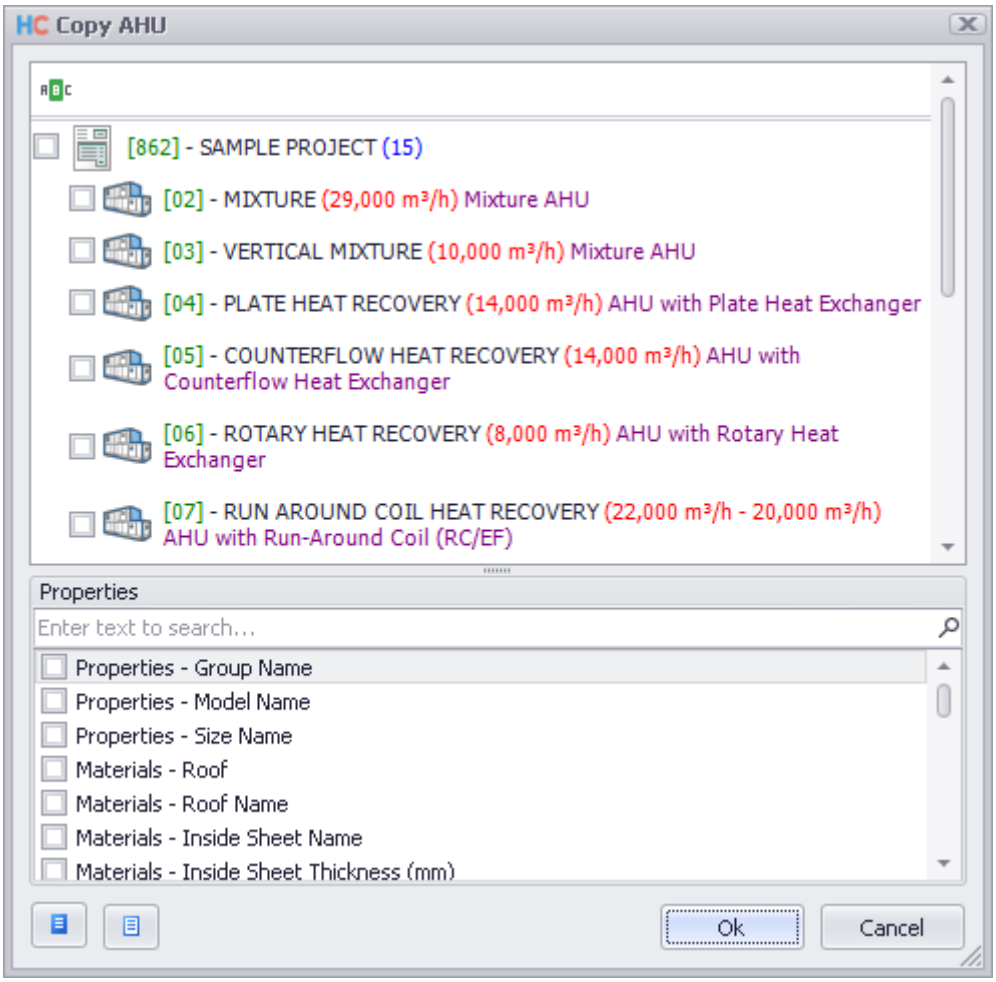
## AHU - OTHER


AHU - [10, HYGIENIC, Hygienic AHU, 30]
AHU Name *
HYGIENIC
10
Group Name
Hygienic AHU
Start Direction
Forward
Air Flow *
14,000 m³/h
Return Air Flow *
14,000 m³/h
Model Name *
HYGIENIC CASE
Size Name *
HYGIENIC CASE 170 X 140
Properties
Velocity
Air Velocity
1.77 m/s
1.77 m/s
Coil Air Velocity
2.21 m/s
2.21 m/s
Ext. Coil Air Vel.
2.21 m/s
2.21 m/s
Oblique Coil Air Vel.
1.45 m/s
1.45 m/s
Size
Special Size
Width *
1750 mm
Height *
1414 mm
Top Layer Height
0 mm
Materials
Inside Sheet Name *
Stainless 304
Inside Sheet Thickness (mm) *
0.5
Outside Sheet Name *
Painted Galvanize
Outside Sheet Thickness (mm) *
0.6
Insulation Name *
Polyurethane
Insulation Thickness (mm) *
40
Pedestal
3 mm Pedestal
Pedestal Height (mm) *
100
Roof
Canvas
Profile Name
Oval Profile 24
Casing Acoustical Insulation
Acoustical Insulation Correction
Coil
Condensation Pan
Life Cycle Cost
Other
Notes
Damper Motor Trademark Name *
Belimo
Bypass Sheet Name *
Standard
Filter Sled Sheet Name *
Standard
Coil Sled Sheet Name *
Standard
Drop Eliminator Sled Sheet Name *
Standard
AHU Quantity *
1
Module Count
10
Bottom Layer Return Air
Bottom Panel
Free Top Layer Height
Double Air Flow Module Position
1
Join Type
None
Copy To Other AHUs
Set Accessories
Ok
Cancel

# AHU - NOTES


AHU - [10, HYGIENIC, Hygienic AHU, 30]
AHU Name *
HYGIENIC
10
Group Name
Hygienic AHU
Start Direction
Forward
Air Flow *
14,000 m³/h
Return Air Flow *
14,000 m³/h
Model Name *
HYGIENIC CASE
Size Name *
HYGIENIC CASE 170 X 140
Properties
Velocity
Air Velocity
1.77 m/s
1.77 m/s
Coil Air Velocity
2.21 m/s
2.21 m/s
Ext. Coil Air Vel.
2.21 m/s
2.21 m/s
Oblique Coil Air Vel.
1.45 m/s
1.45 m/s
Size
Special Size
Width *
1750 mm
Height *
1414 mm
Top Layer Height
0 mm
Materials
Inside Sheet Name *
Stainless 304
Inside Sheet Thickness (mm) *
0.5
Outside Sheet Name *
Painted Galvanize
Outside Sheet Thickness (mm) *
0.6
Insulation Name *
Polyurethane
Insulation Thickness (mm) *
40
Pedestal
3 mm Pedestal
Pedestal Height (mm) *
100
Roof
Canvas
Profile Name
Oval Profile 24
Casing Acoustical Insulation
Acoustical Insulation Correction
Coil
Condensation Pan
Life Cycle Cost
Other
Notes
Notes
Technical Report Notes
Copy To Other AHUs
Set Accessories
Ok
Cancel

## AHU – COPY TO OTHER AHUS



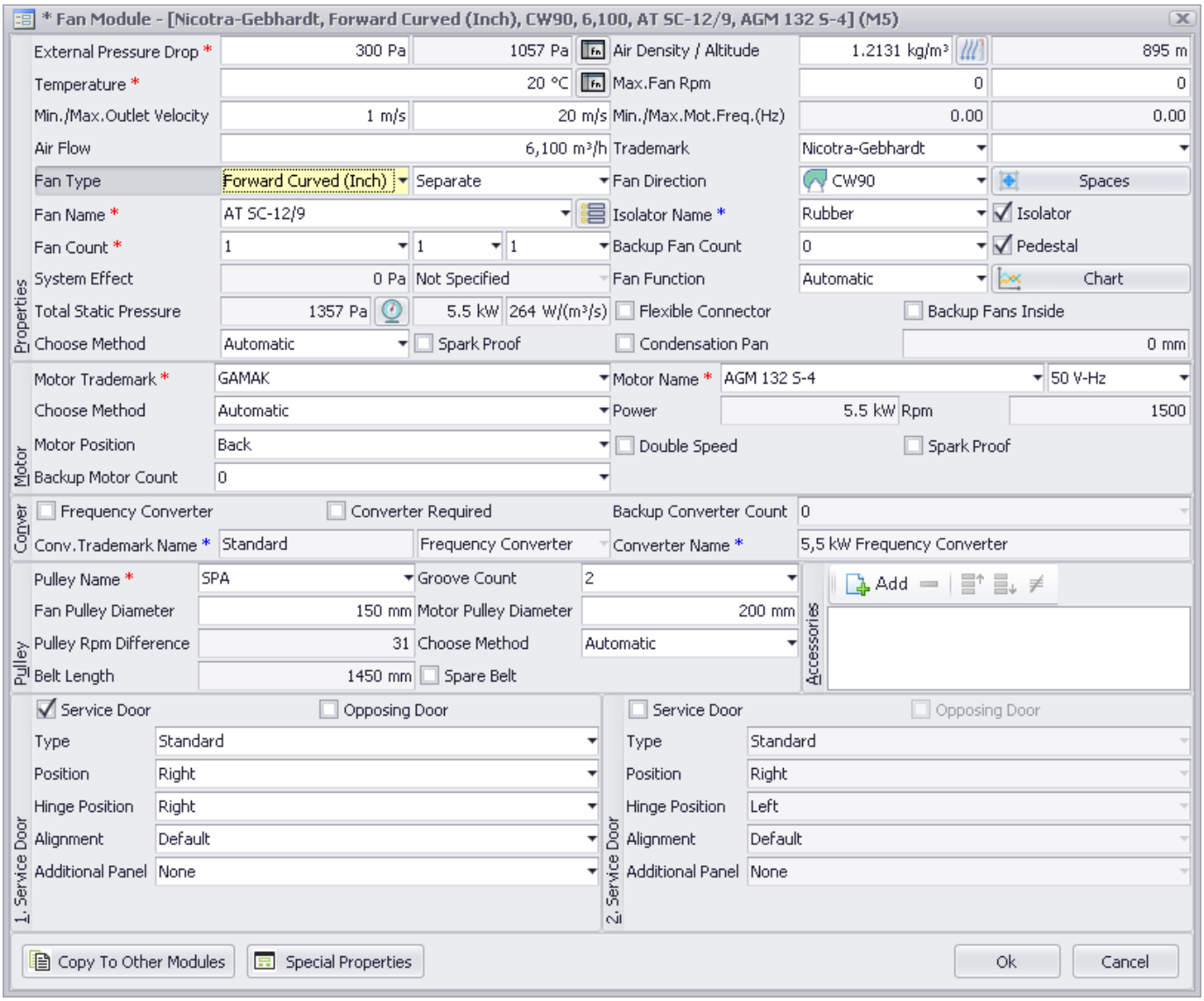
## FAN MODULE

Supportted fan types;

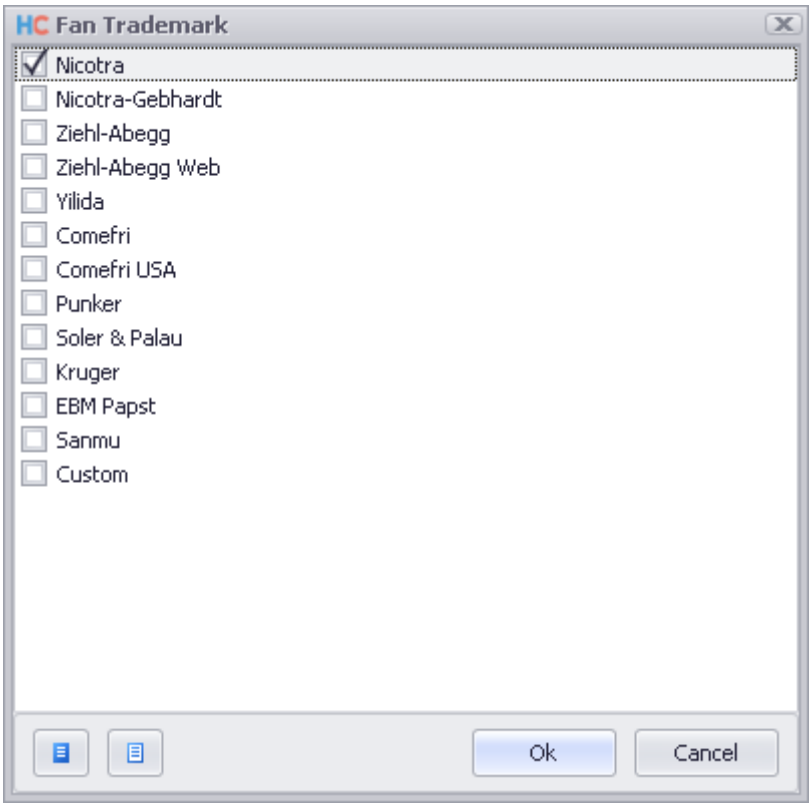
- Forward Curved (Inch)
- Forward Curved
- Backward Curved
- Centrifugal Airfoil
- Plenum
- EC
- Direct Drive

Fan and motor automatically selected according to needed airflow and pressure drop.

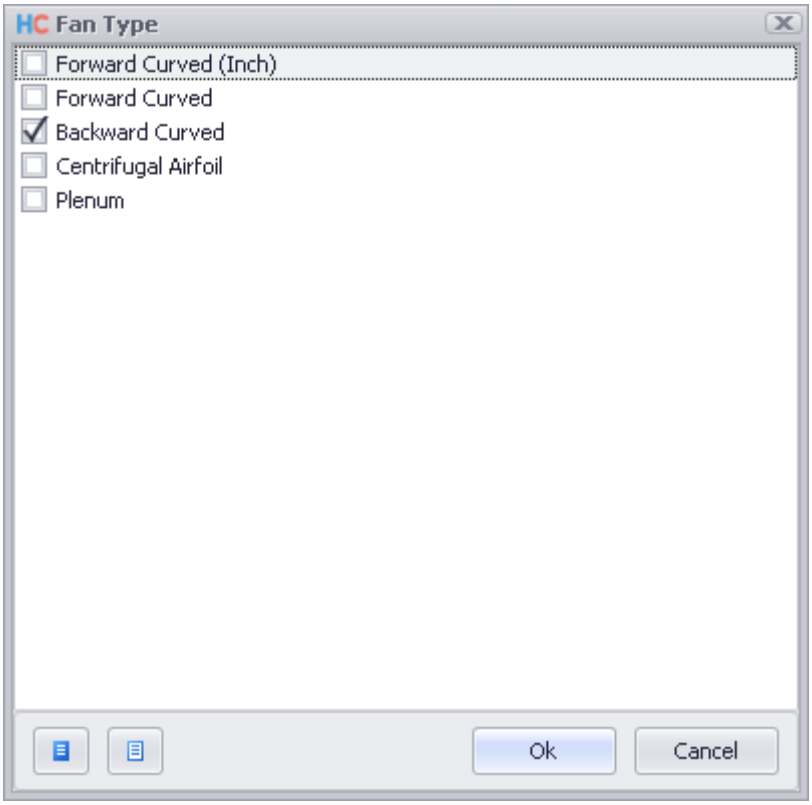
Pulleys and belts automatically calculated according to fan and motor for centrifugal fans.



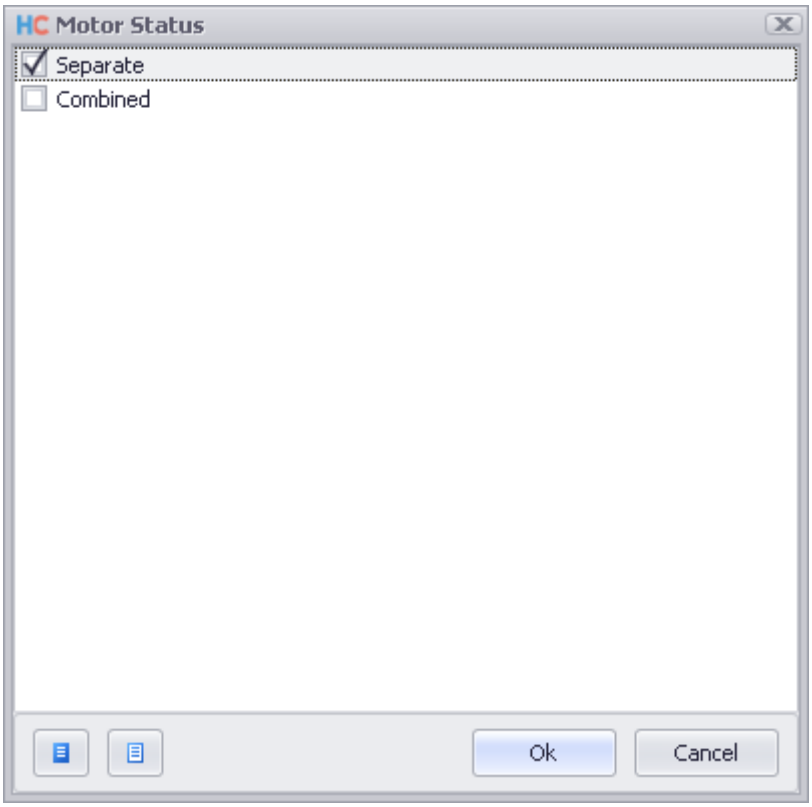
## FAN MODULE - FAN TRADEMARK



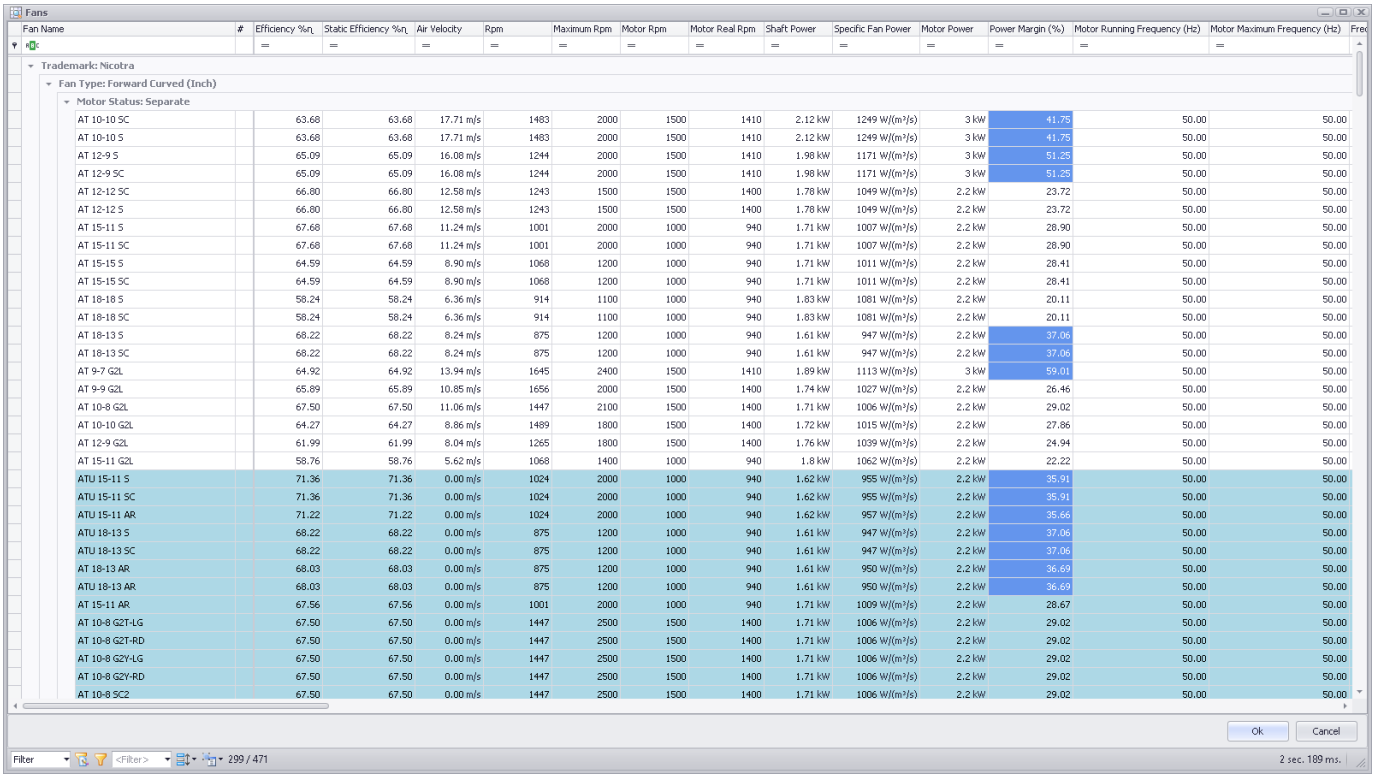

## FAN MODULE - FAN TYPE



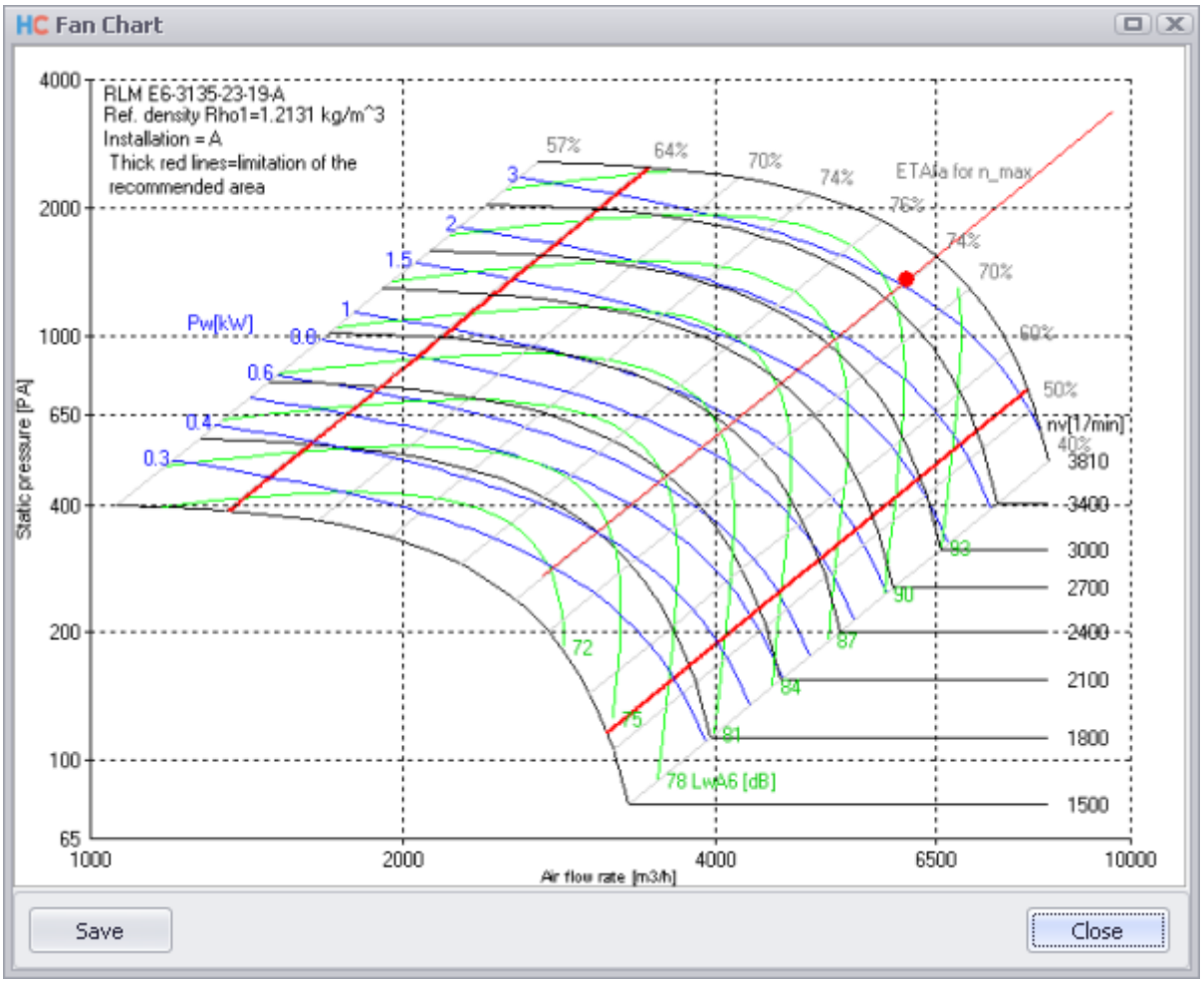
## FAN MODULE – MOTOR STATUS



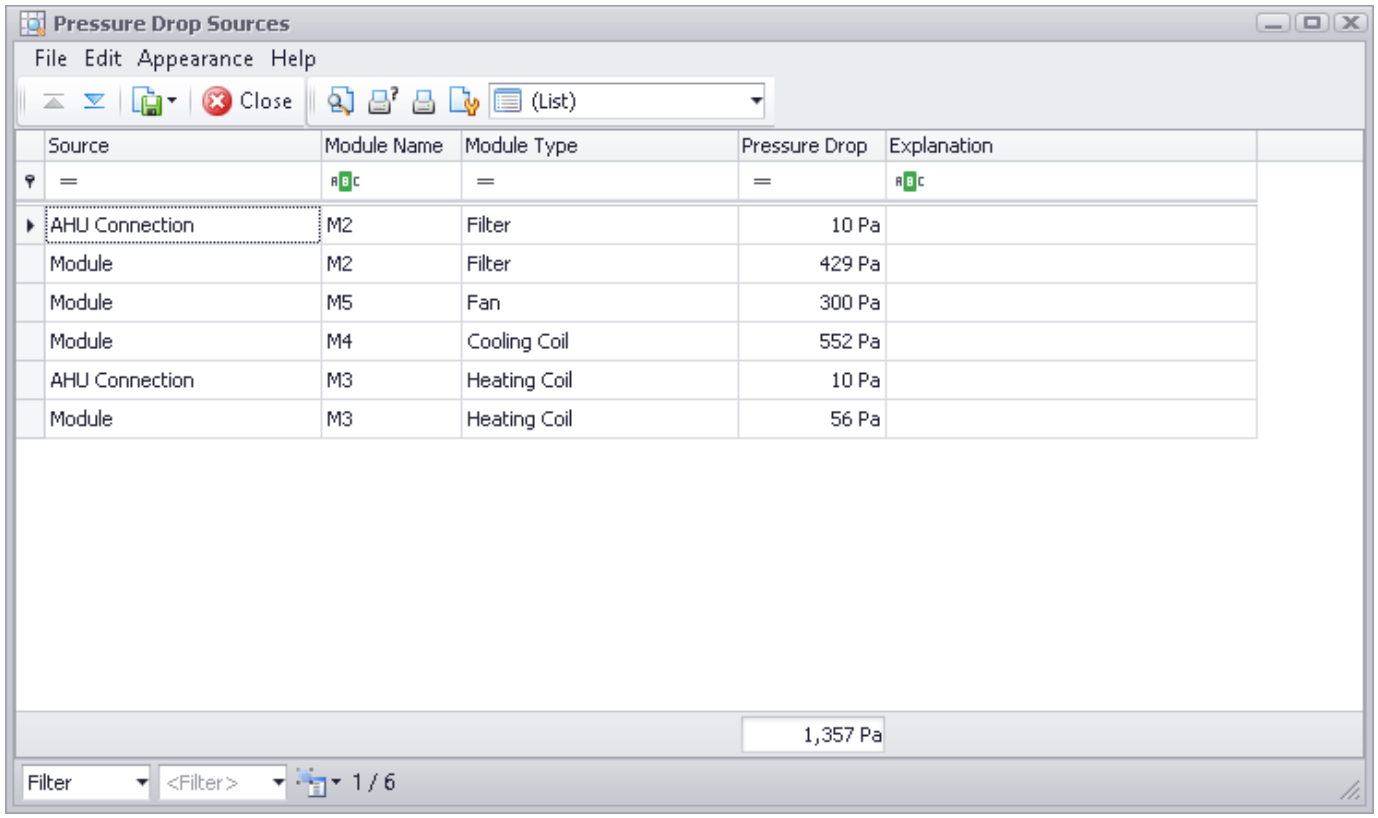

## FAN MODULE - FANS



## FAN MODULE – FAN CHART

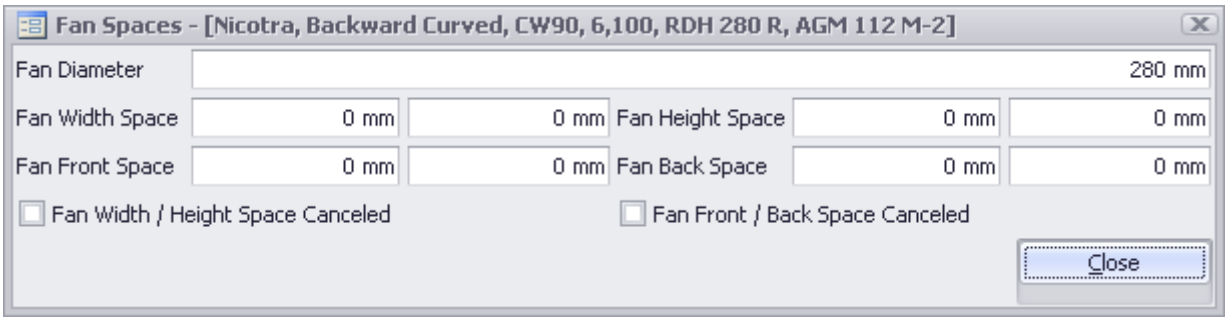



## FAN MODULE – PRESSURE DROP SOURCES

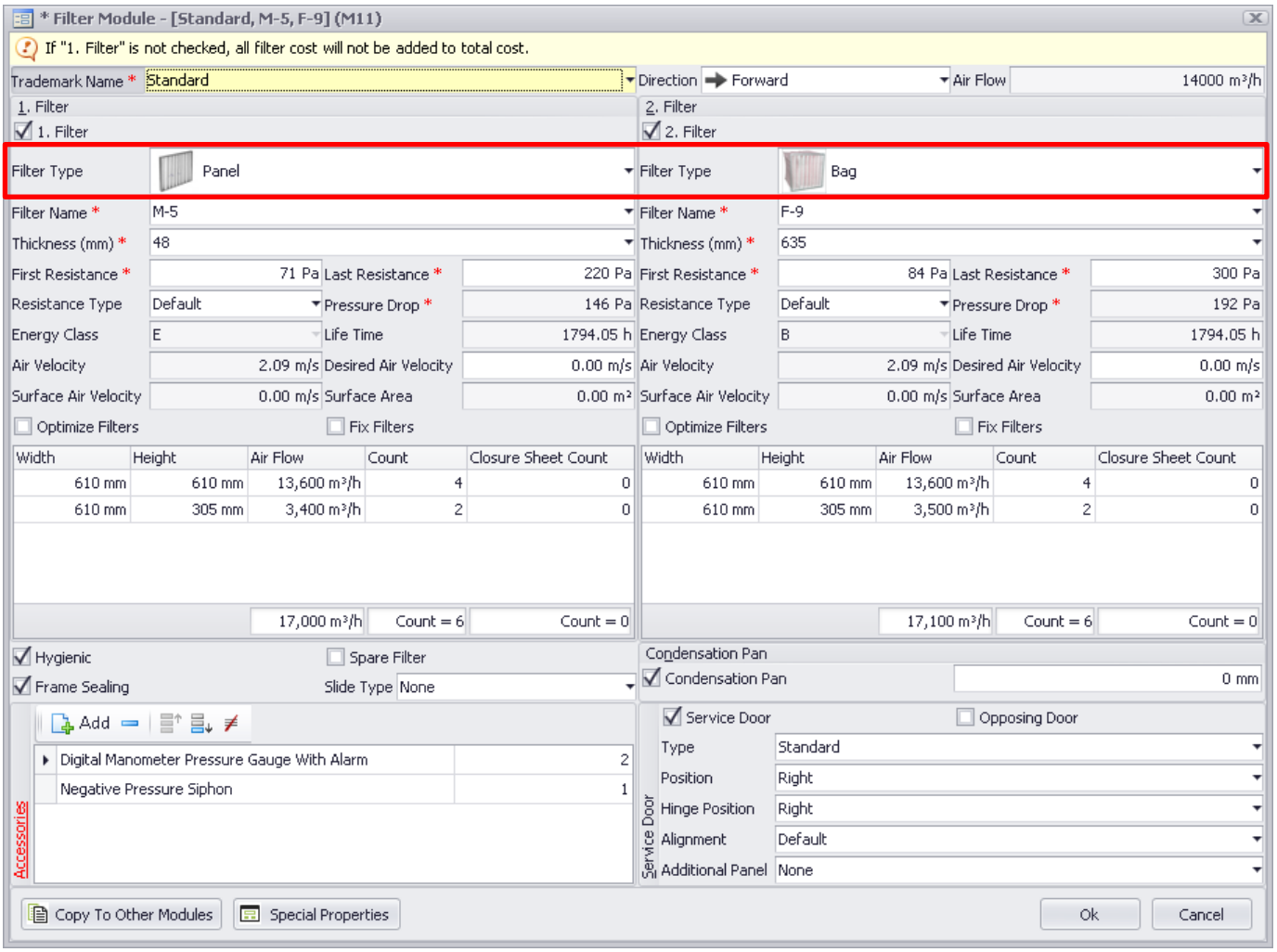



| Source | Module Name | Module Type | Pressure Drop | Explanation |
|---|---|---|---|---|
| AHU Connection | M2 | Filter | 10 Pa | |
| Module | M2 | Filter | 429 Pa | |
| Module | M5 | Fan | 300 Pa | |
| Module | M4 | Cooling Coil | 552 Pa | |
| AHU Connection | M3 | Heating Coil | 10 Pa | |
| Module | M3 | Heating Coil | 56 Pa | |

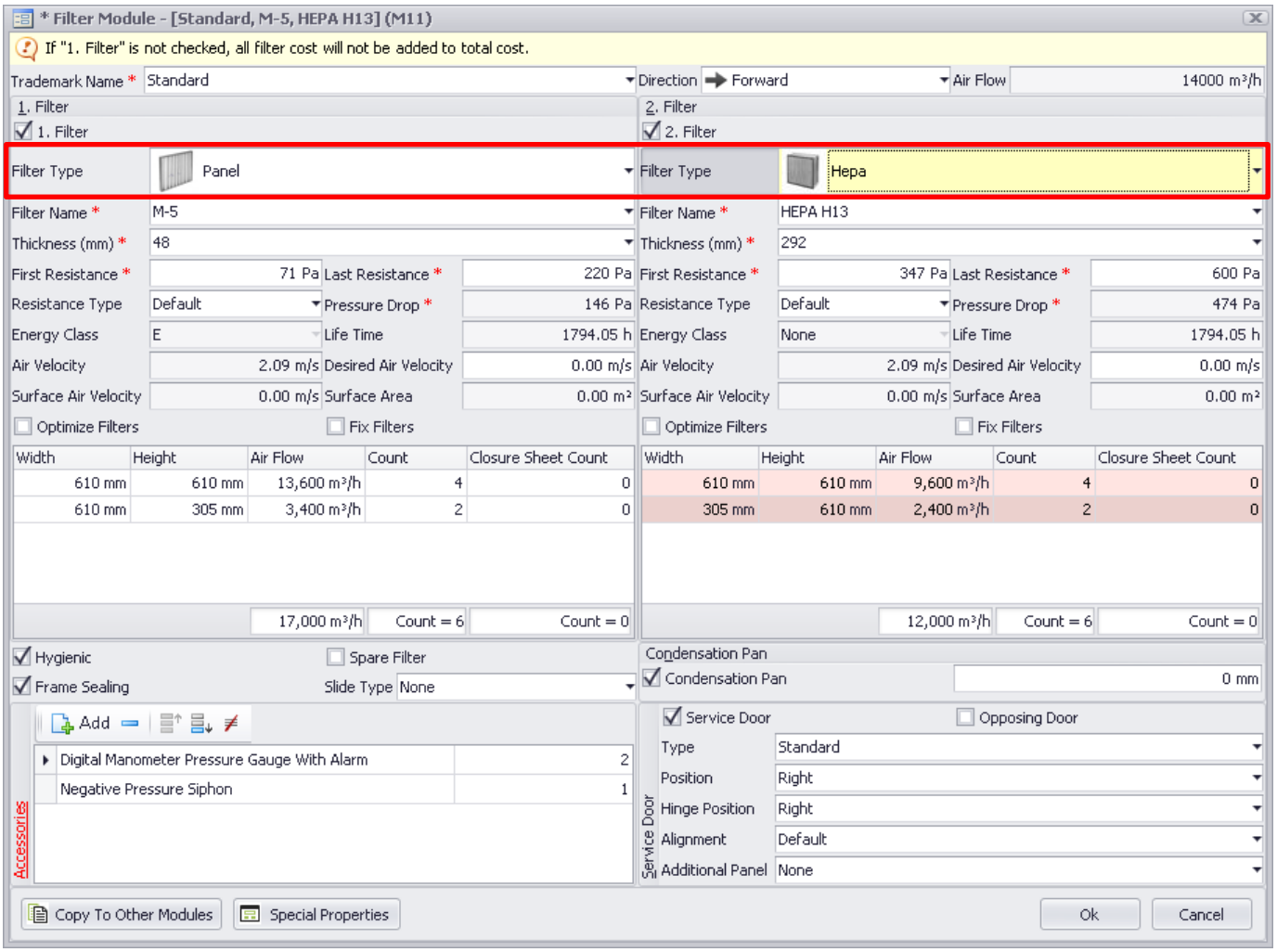
## FAN MODULE – FAN SPACES



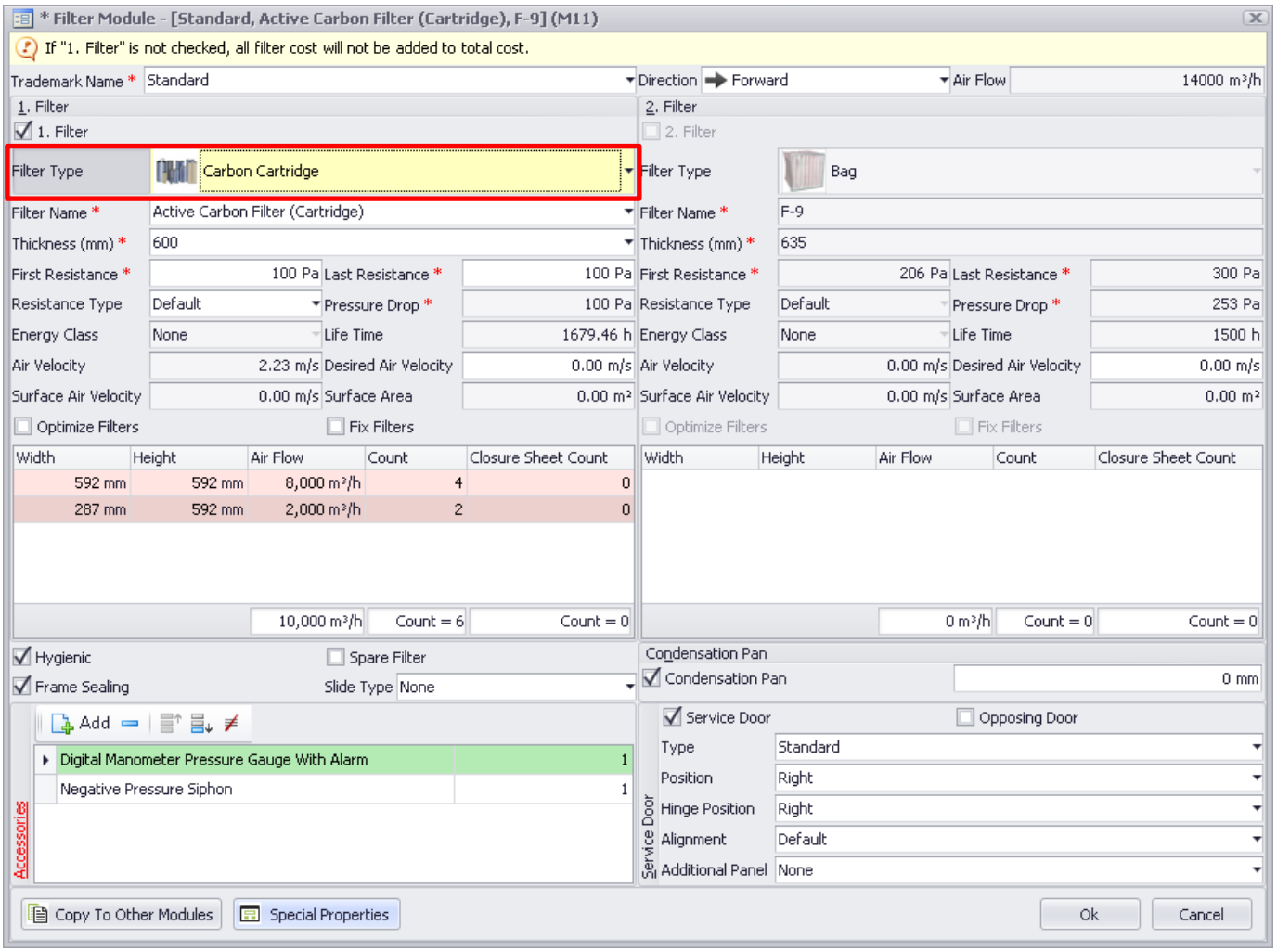

## FILTER MODULES (PANEL + BAG)



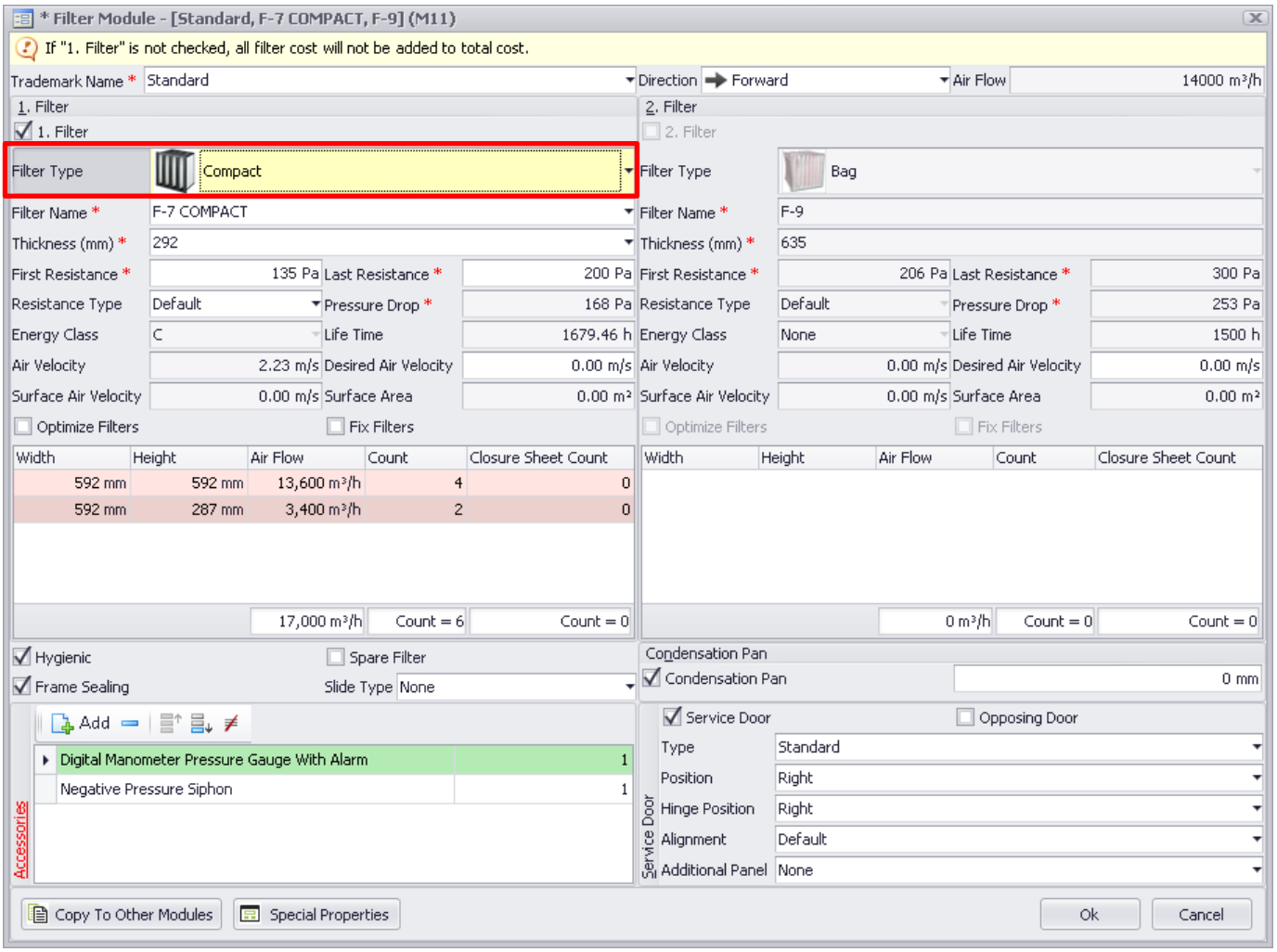
# FILTER MODULES (PANEL + HEPA)



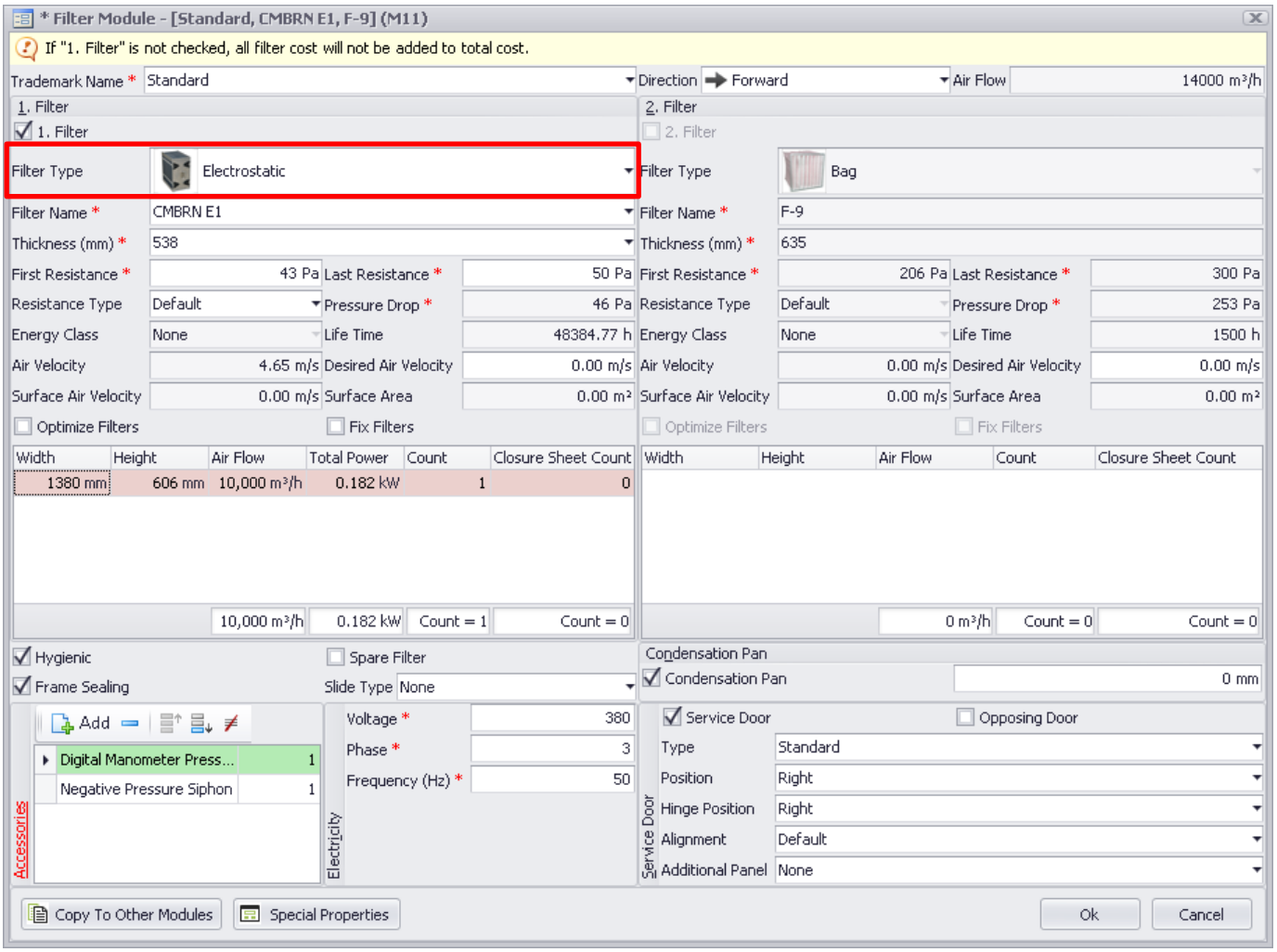
# FILTER MODULES (CARBON CARTRIDGE)



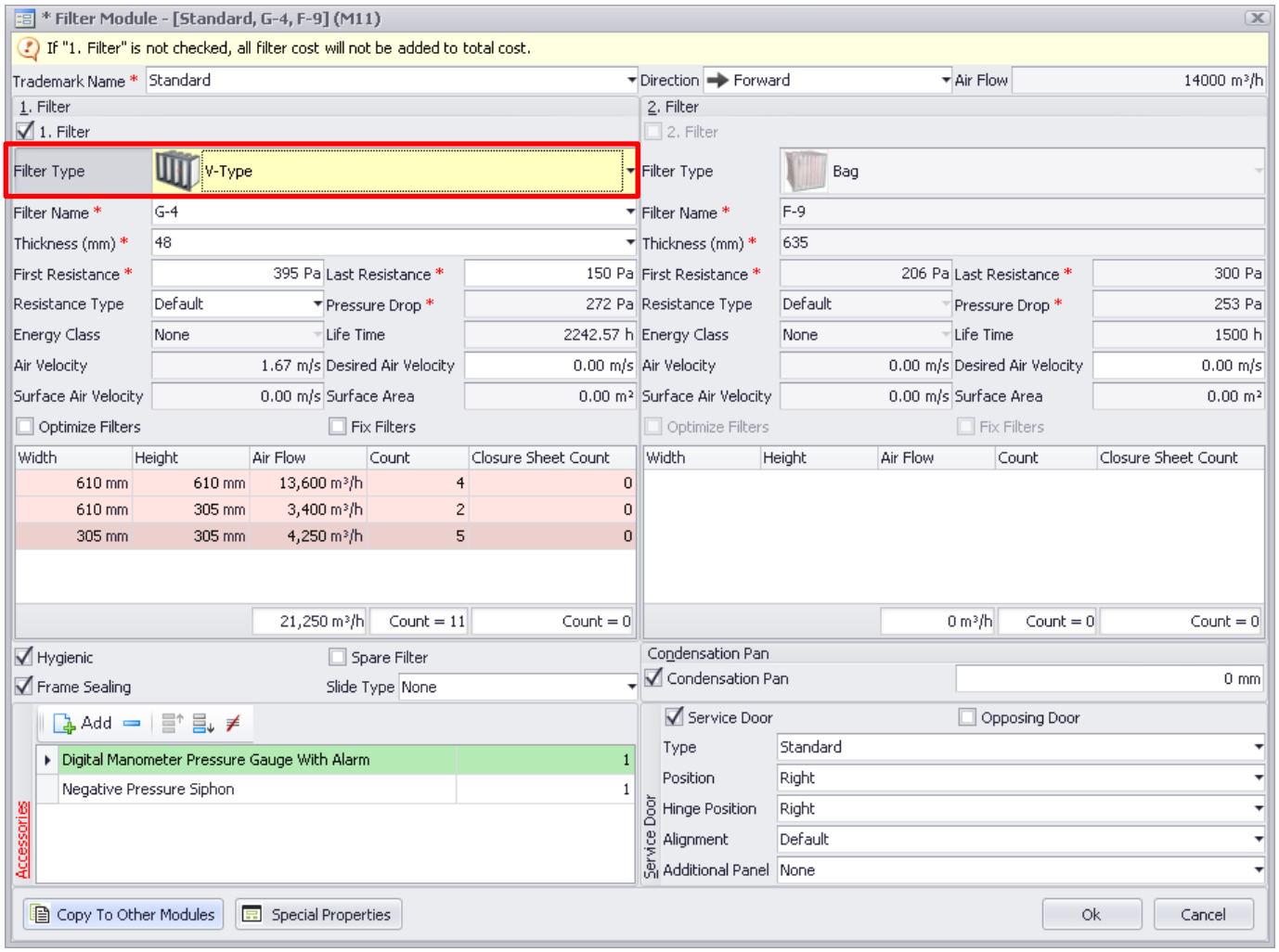
# FILTER MODULES (COMPACT)



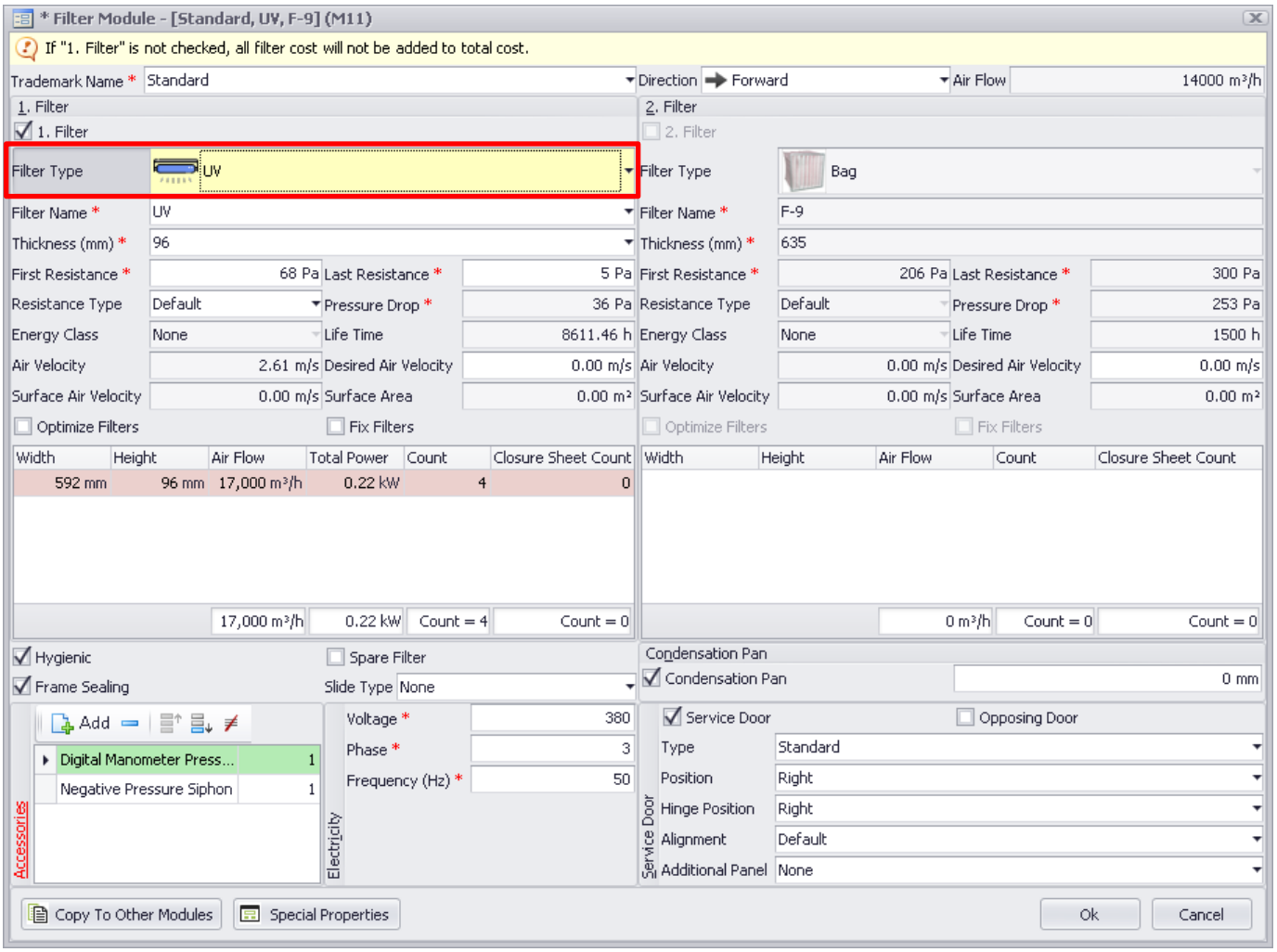
# FILTER MODULES (ELECTROSTATIC)



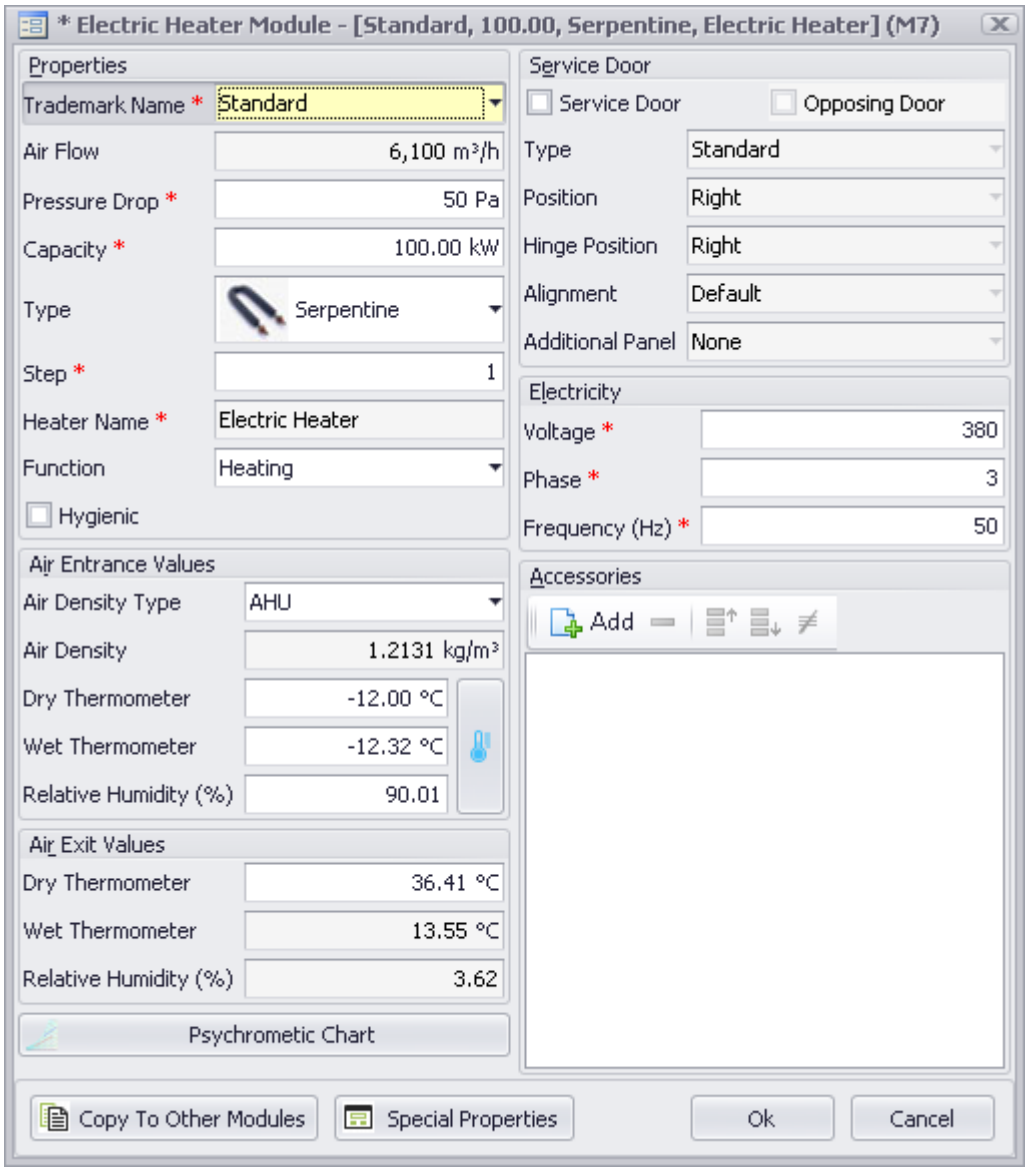
# FILTER MODULES (V-TYPE)



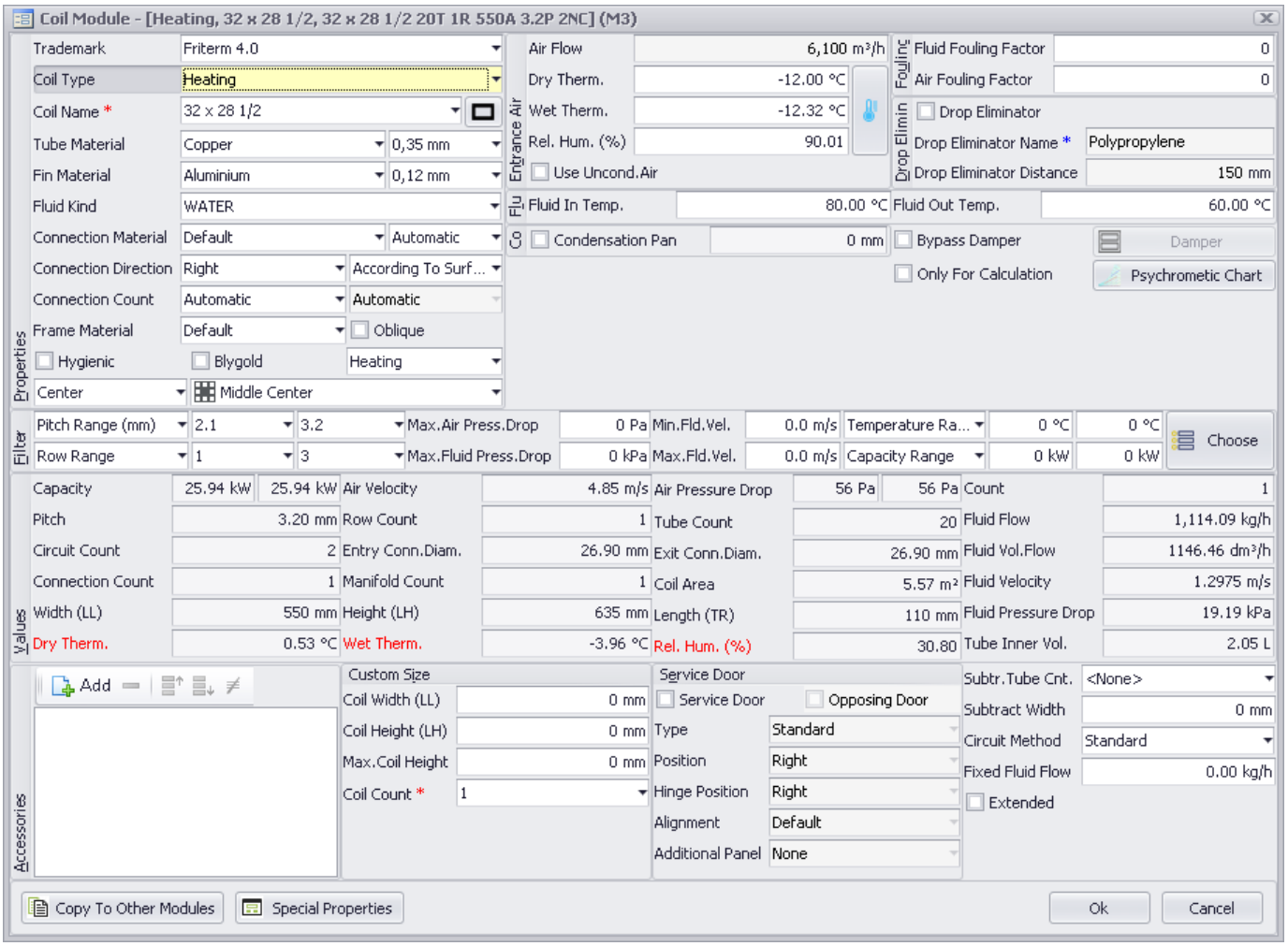
# FILTER MODULES (UV)



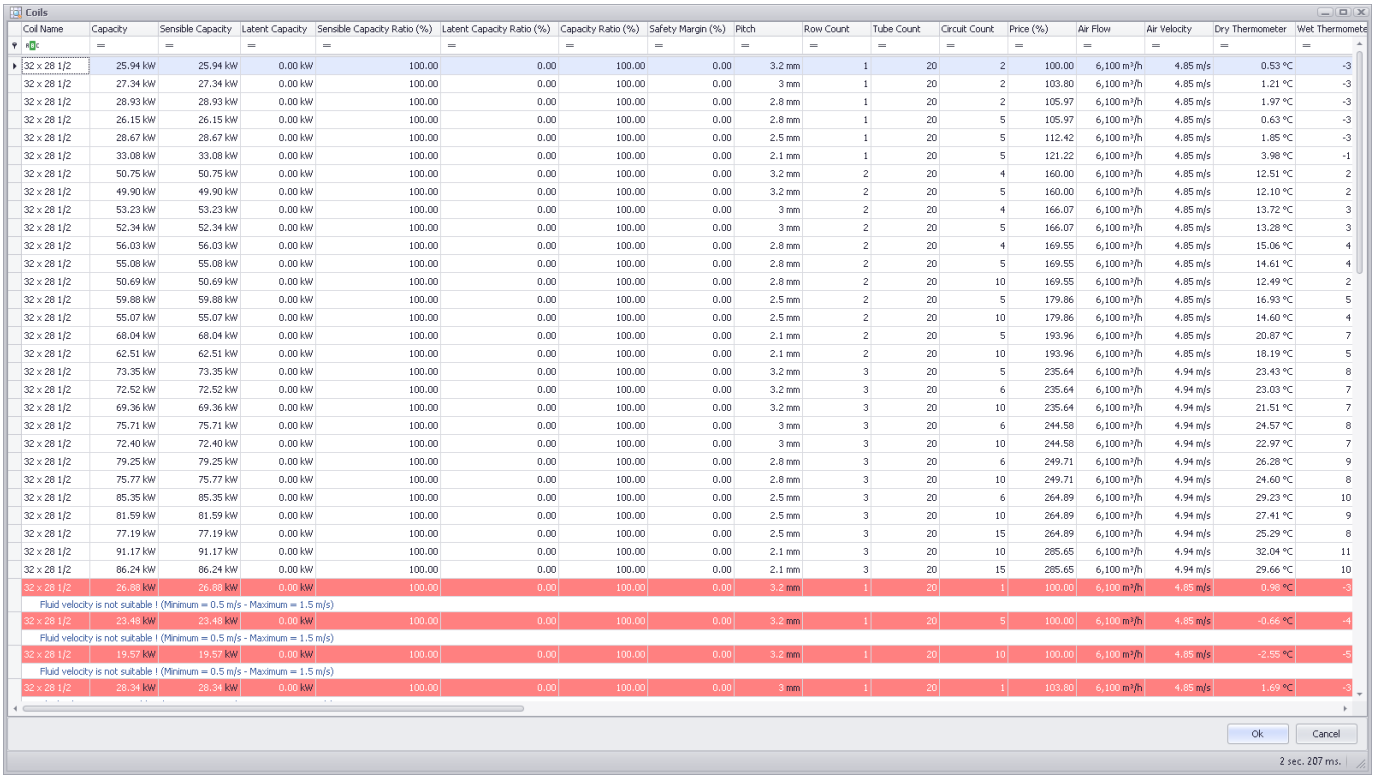
## ELECTRIC HEATER MODULE



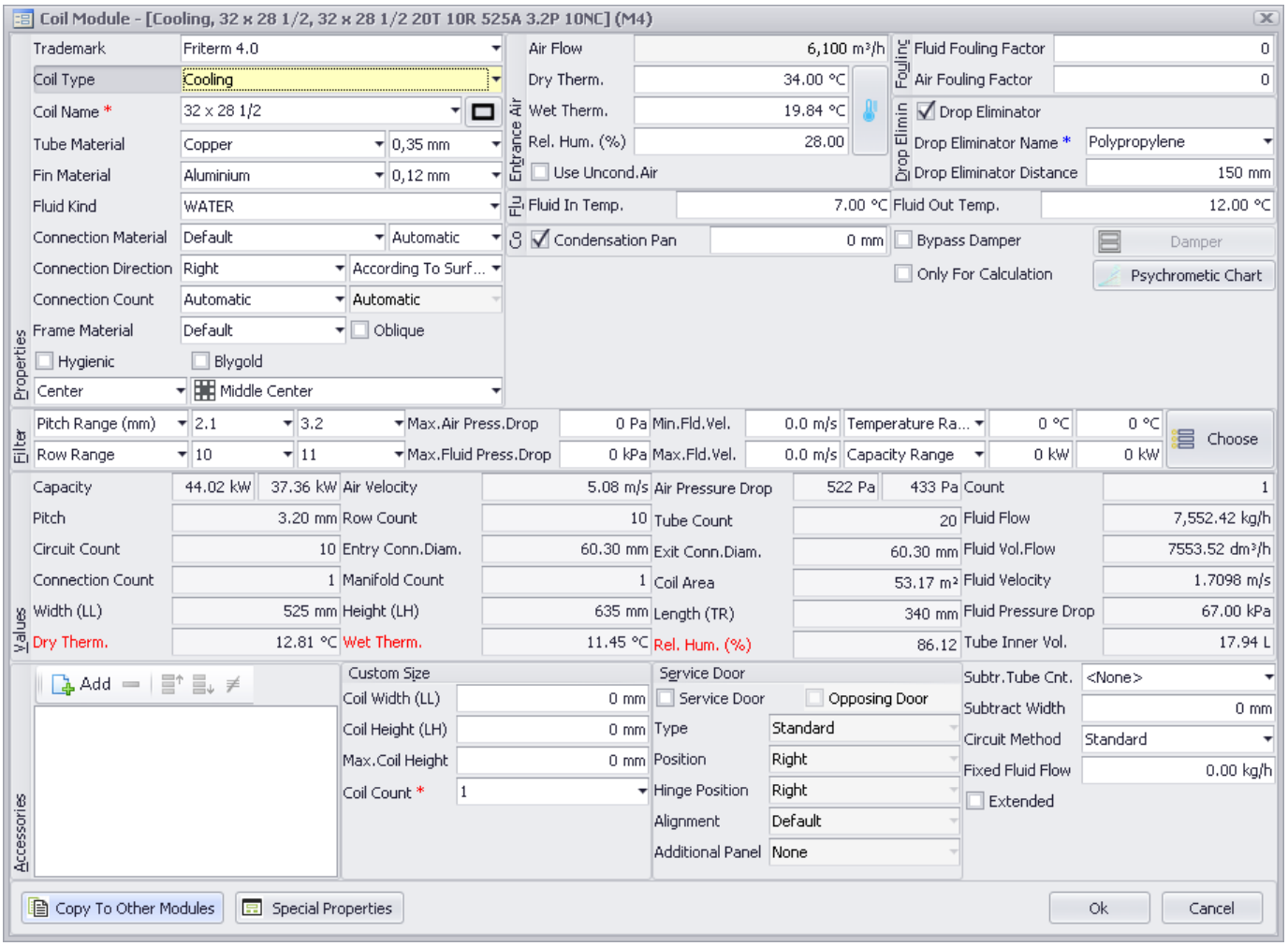
## HEATING COIL MODULE



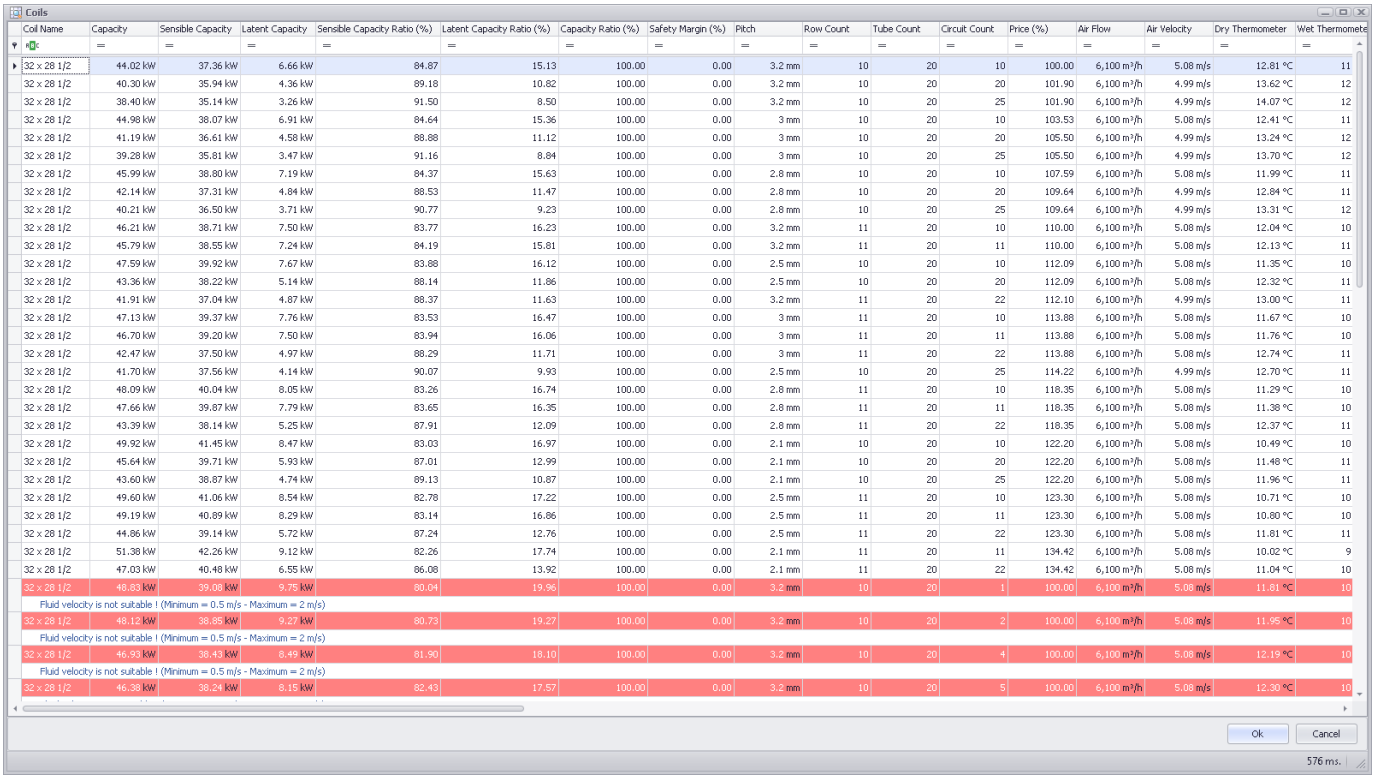

## HEATING COIL MODULE – COILS



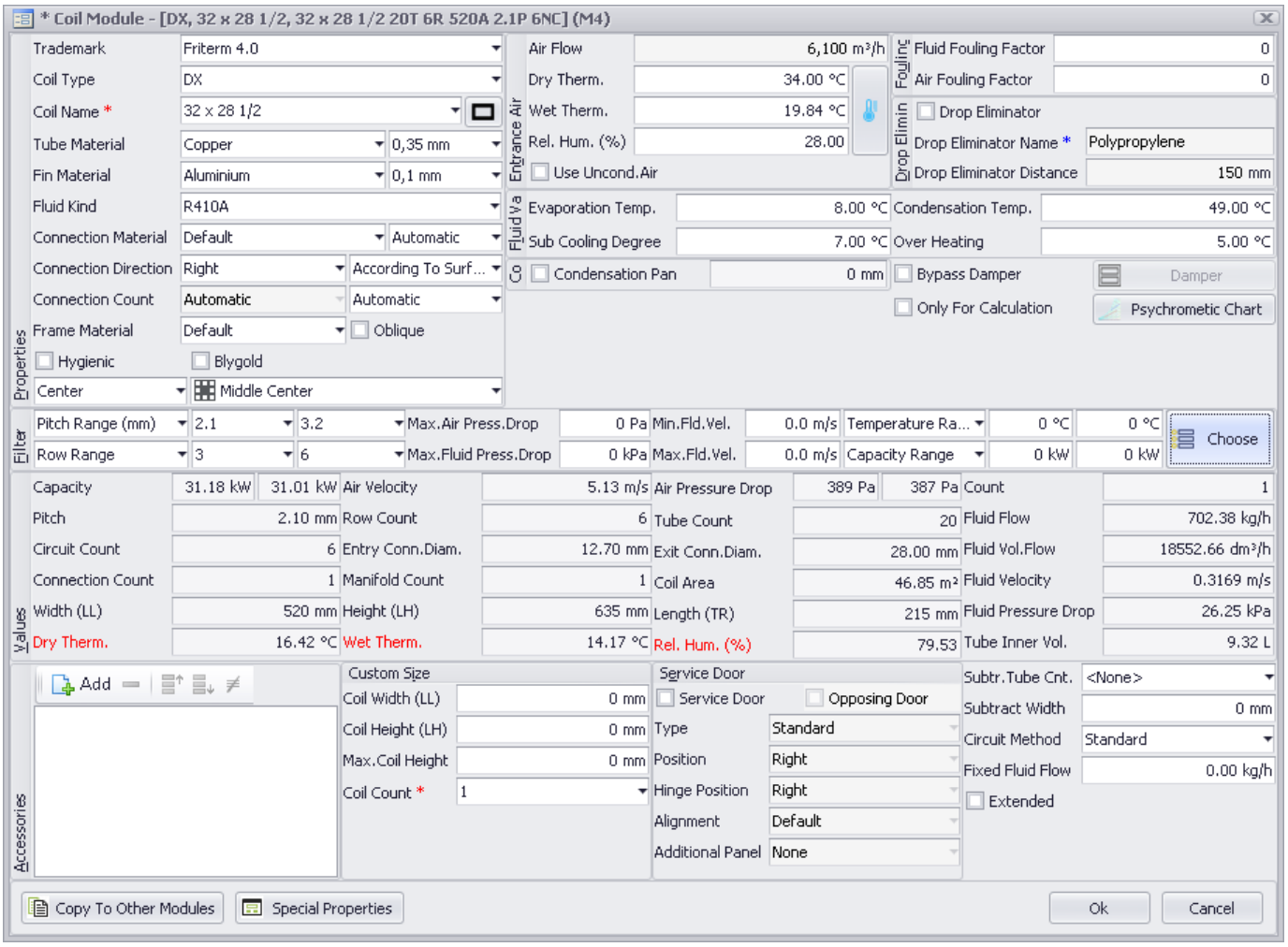
## COOLING COIL MODULE



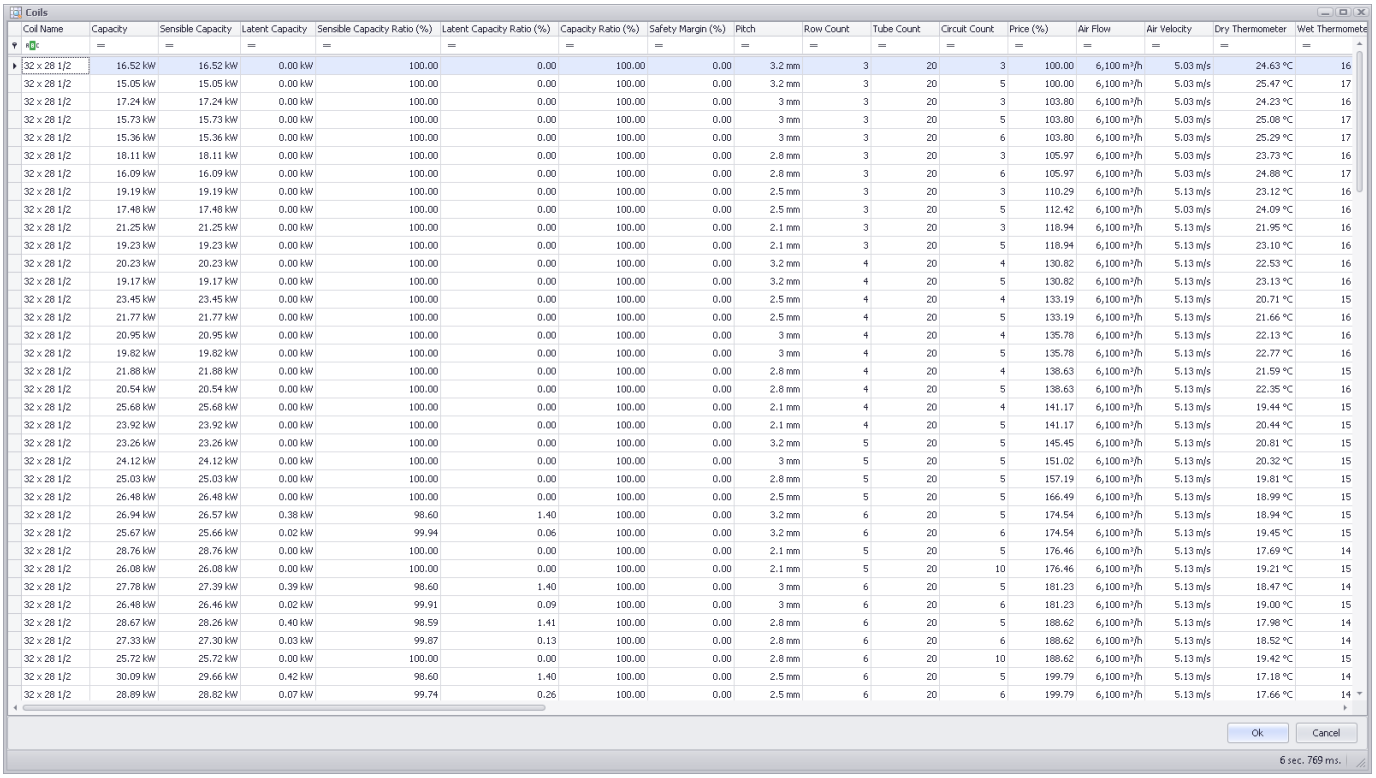

## COOLING COIL MODULE – COILS



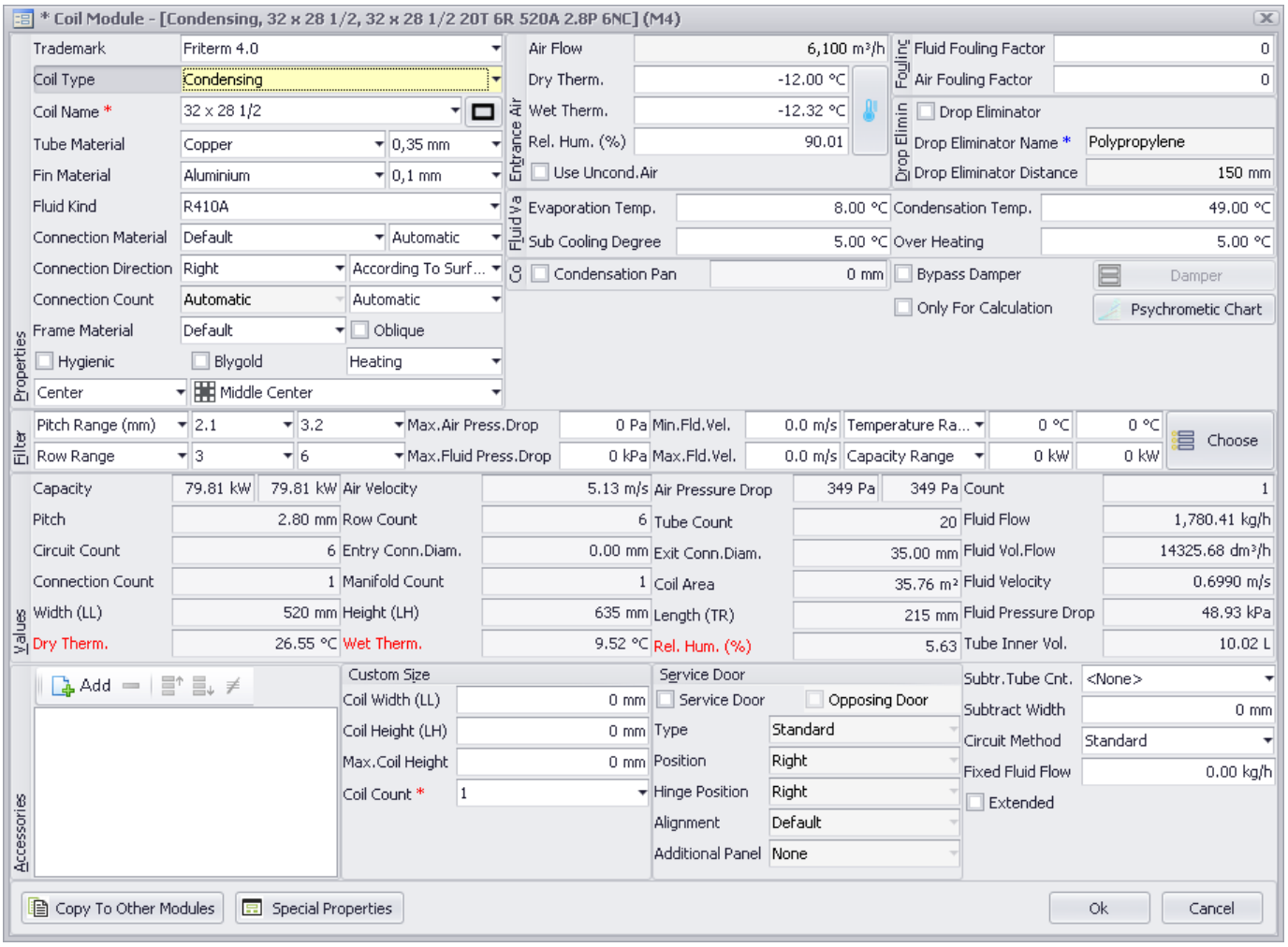
## DX COIL MODULE



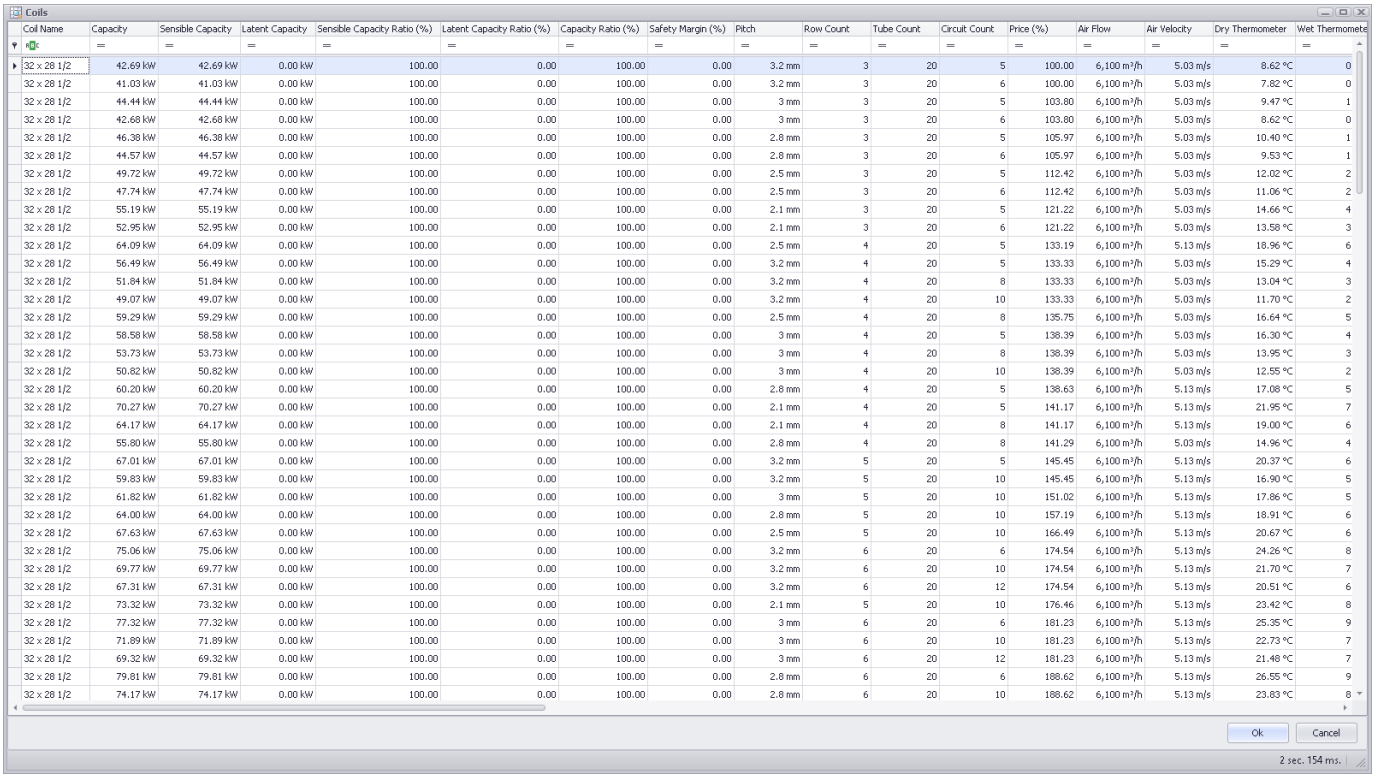

## DX COIL MODULE – COILS



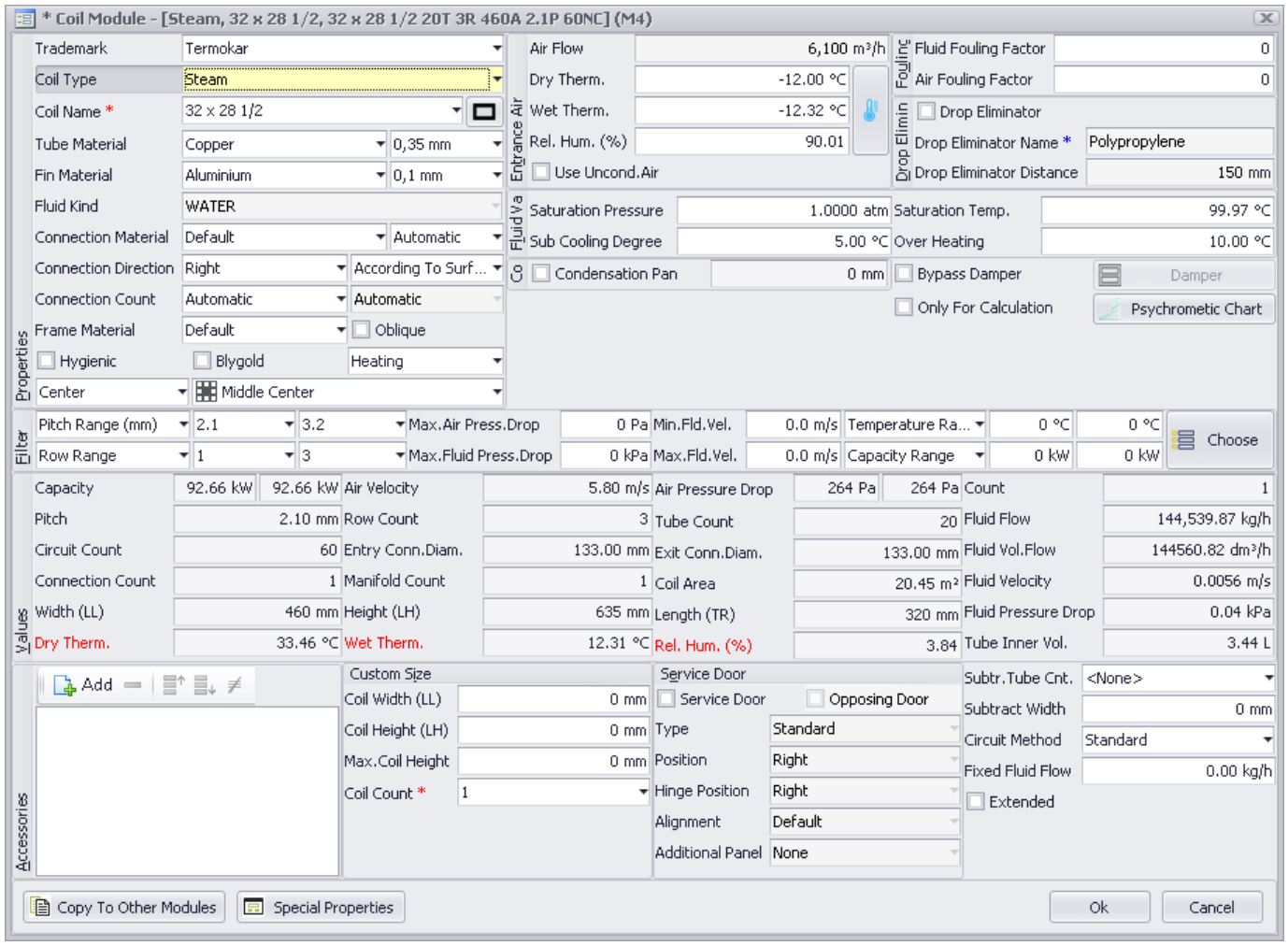
## CONDENSING COIL MODULE



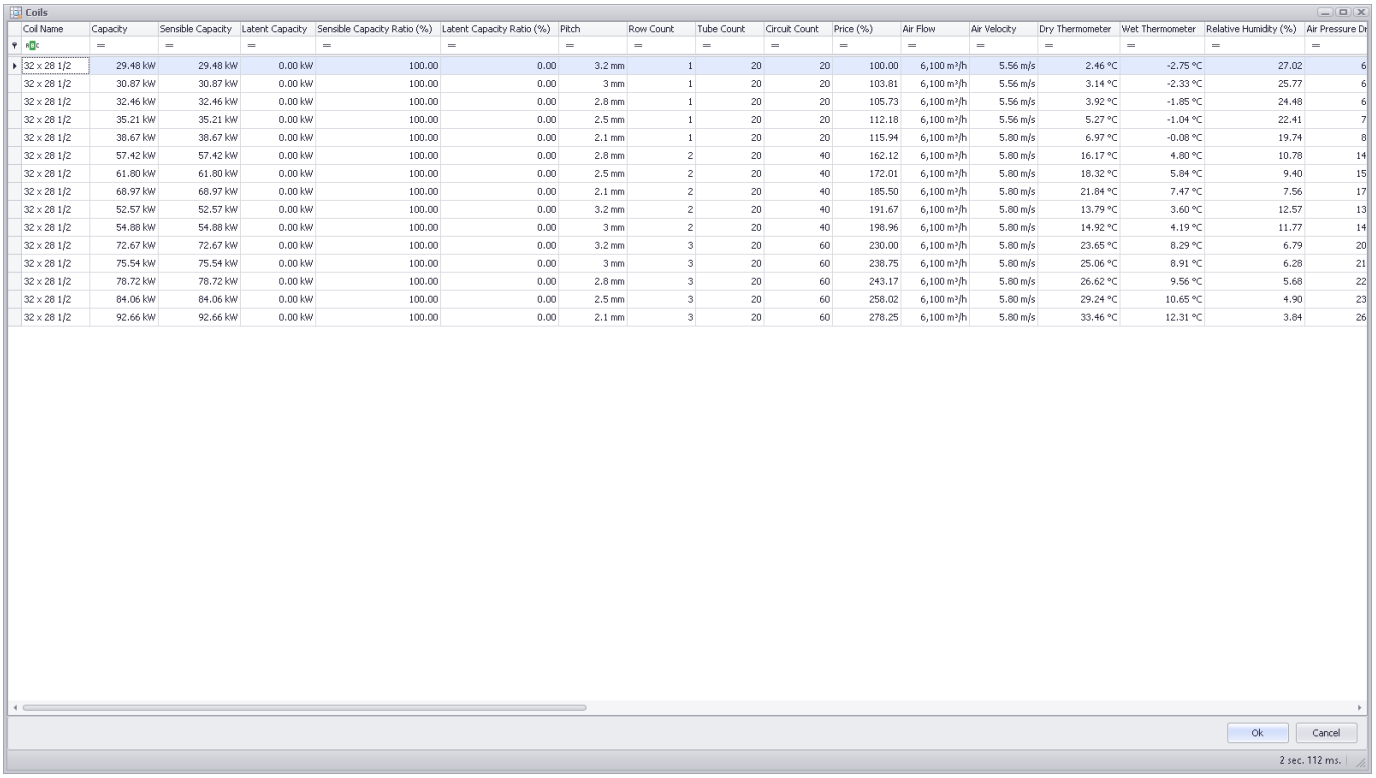

## CONDENSING COIL MODULE – COILS



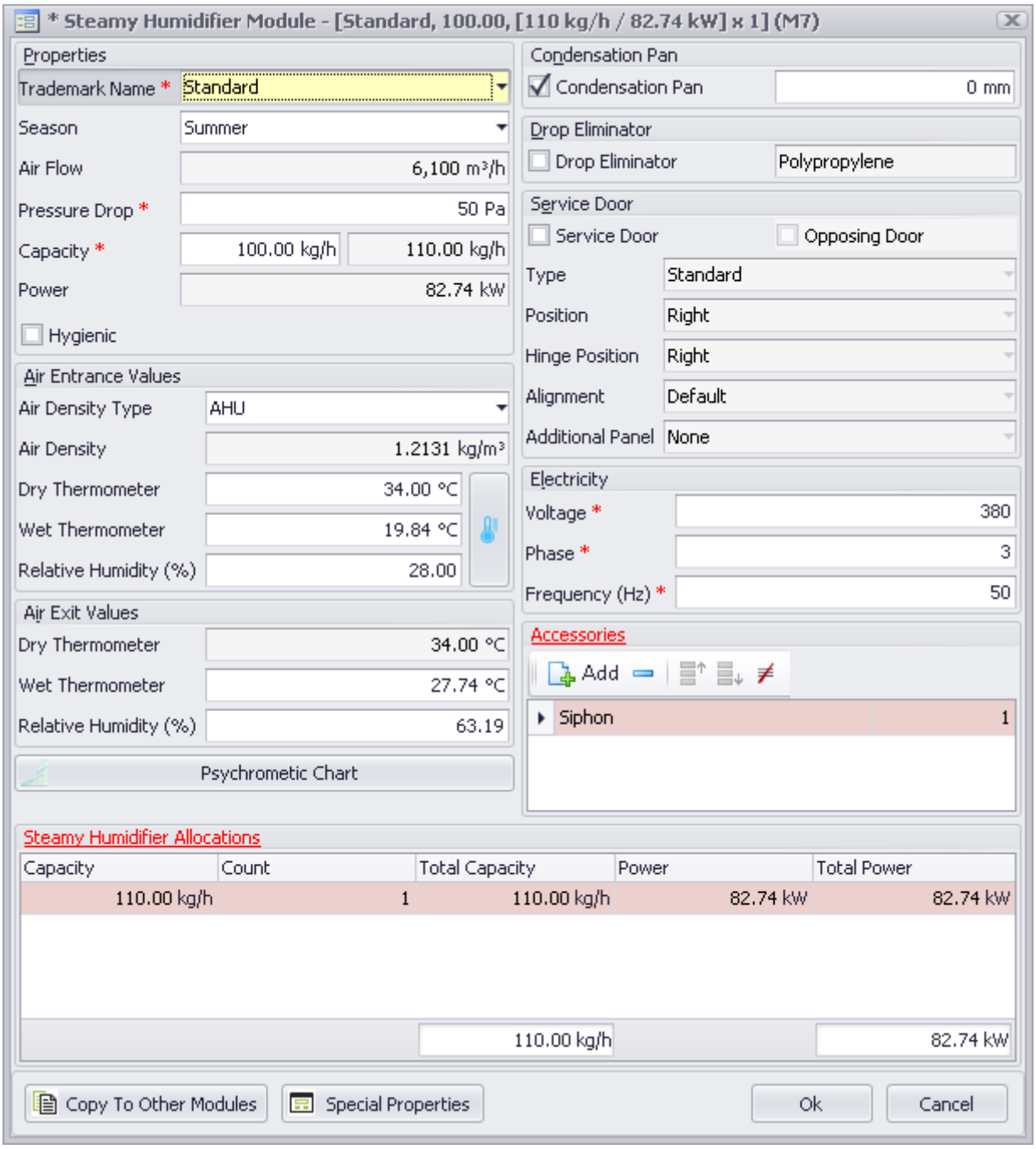
## STEAM COIL MODULE



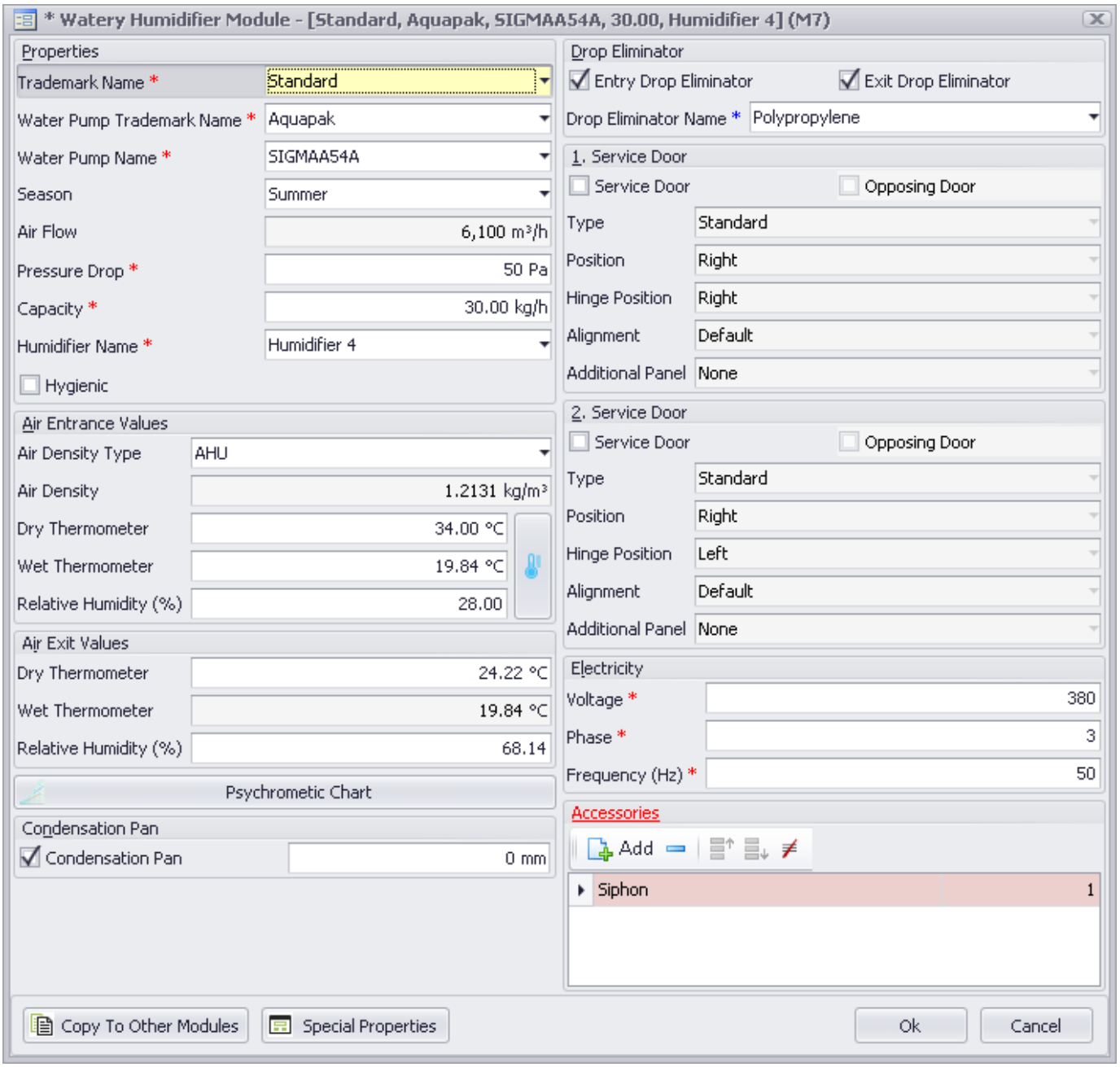

## STEAM COIL MODULE – COILS



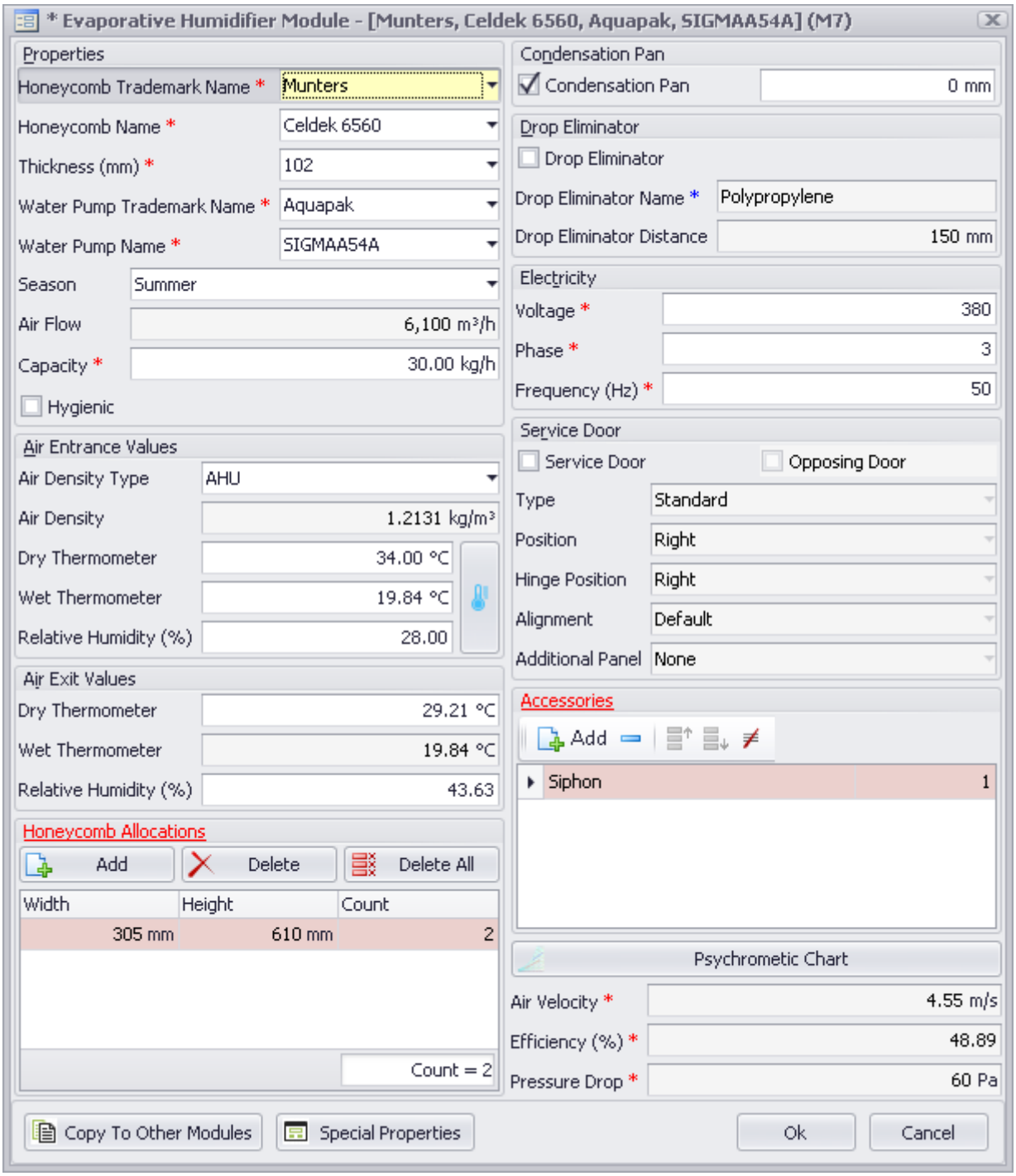
# STEAMY HUMIDIFIER MODULE



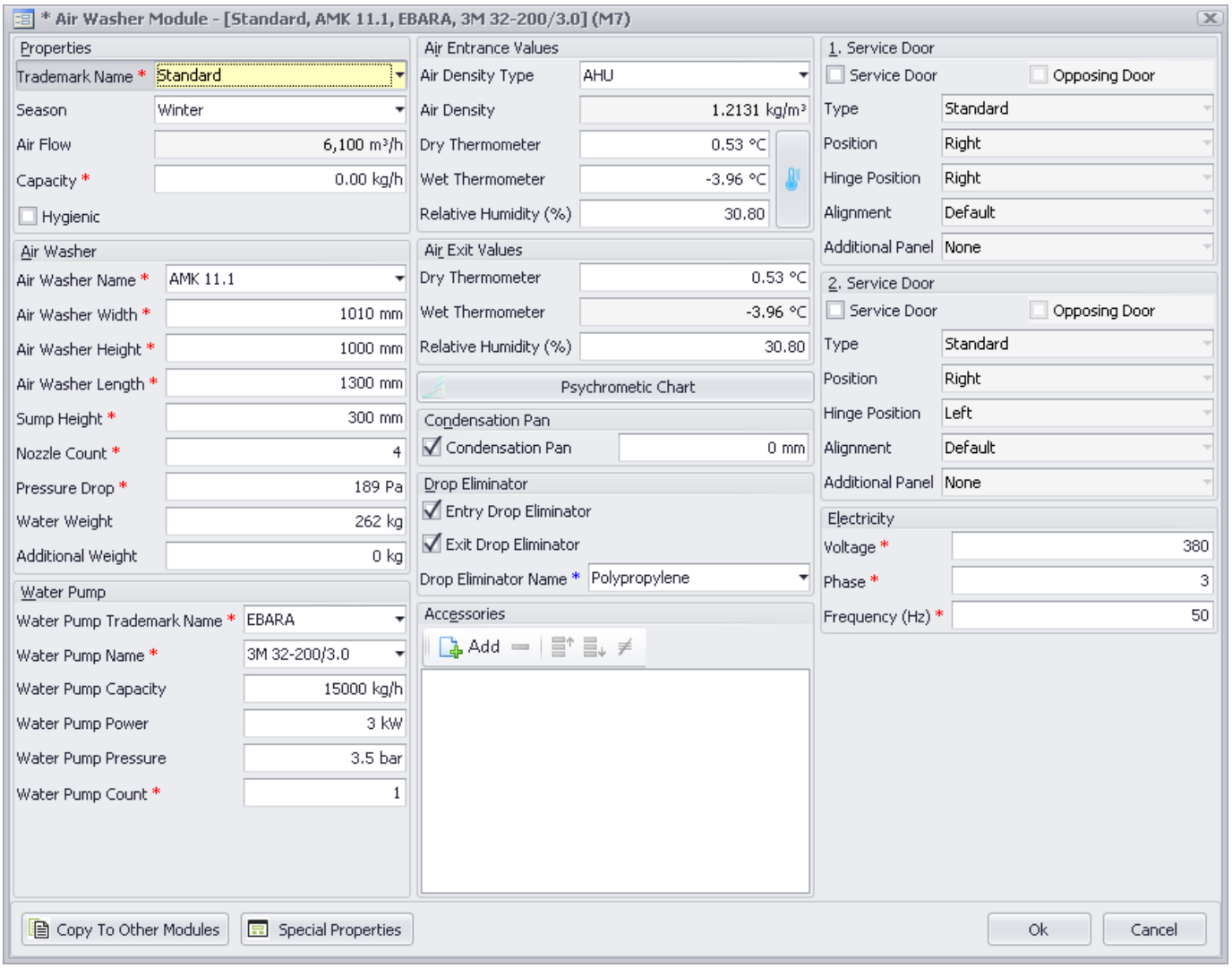
# WATERY HUMIDIFIER MODULE



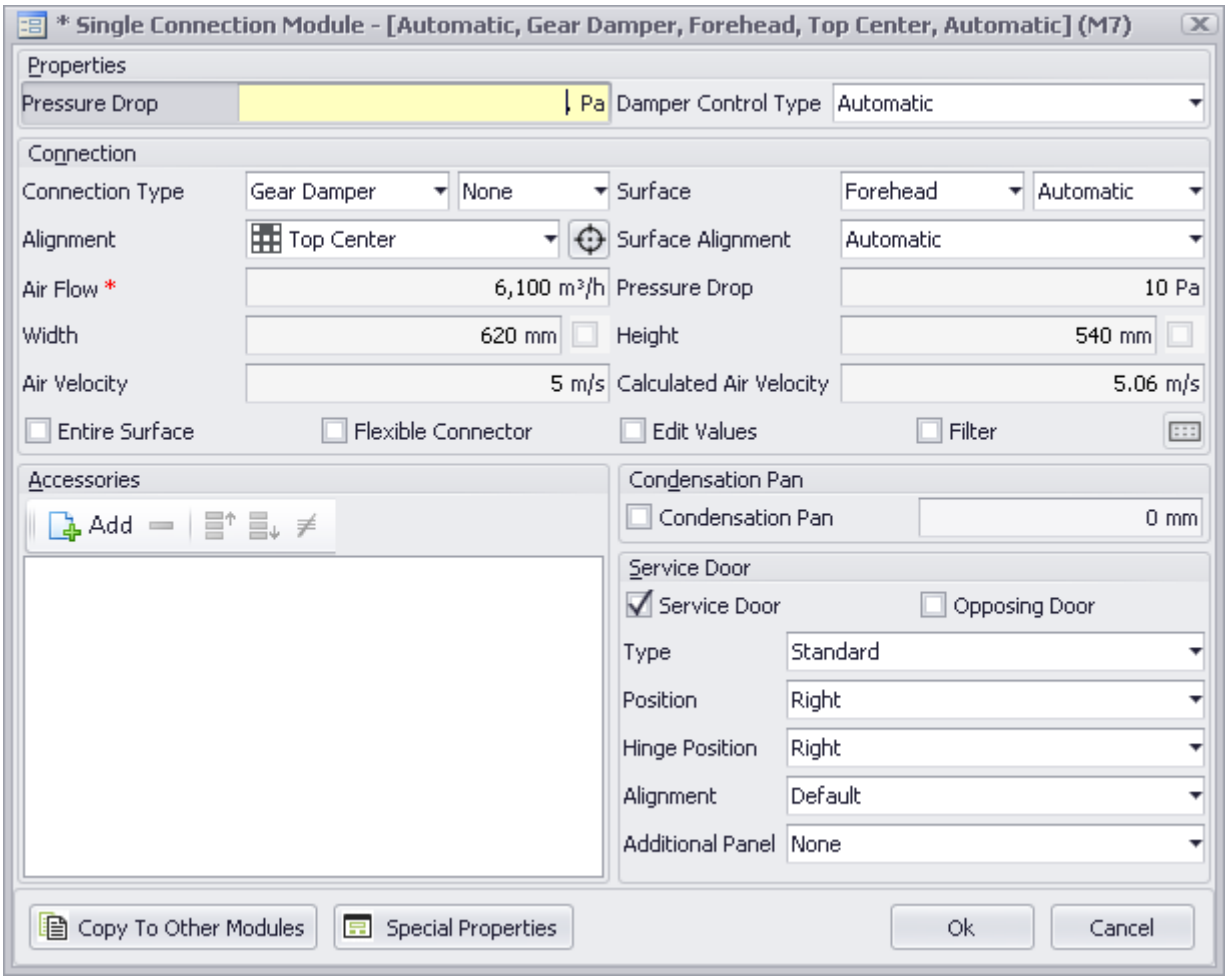
# EVAPORATIVE HUMIDIFIER MODULE



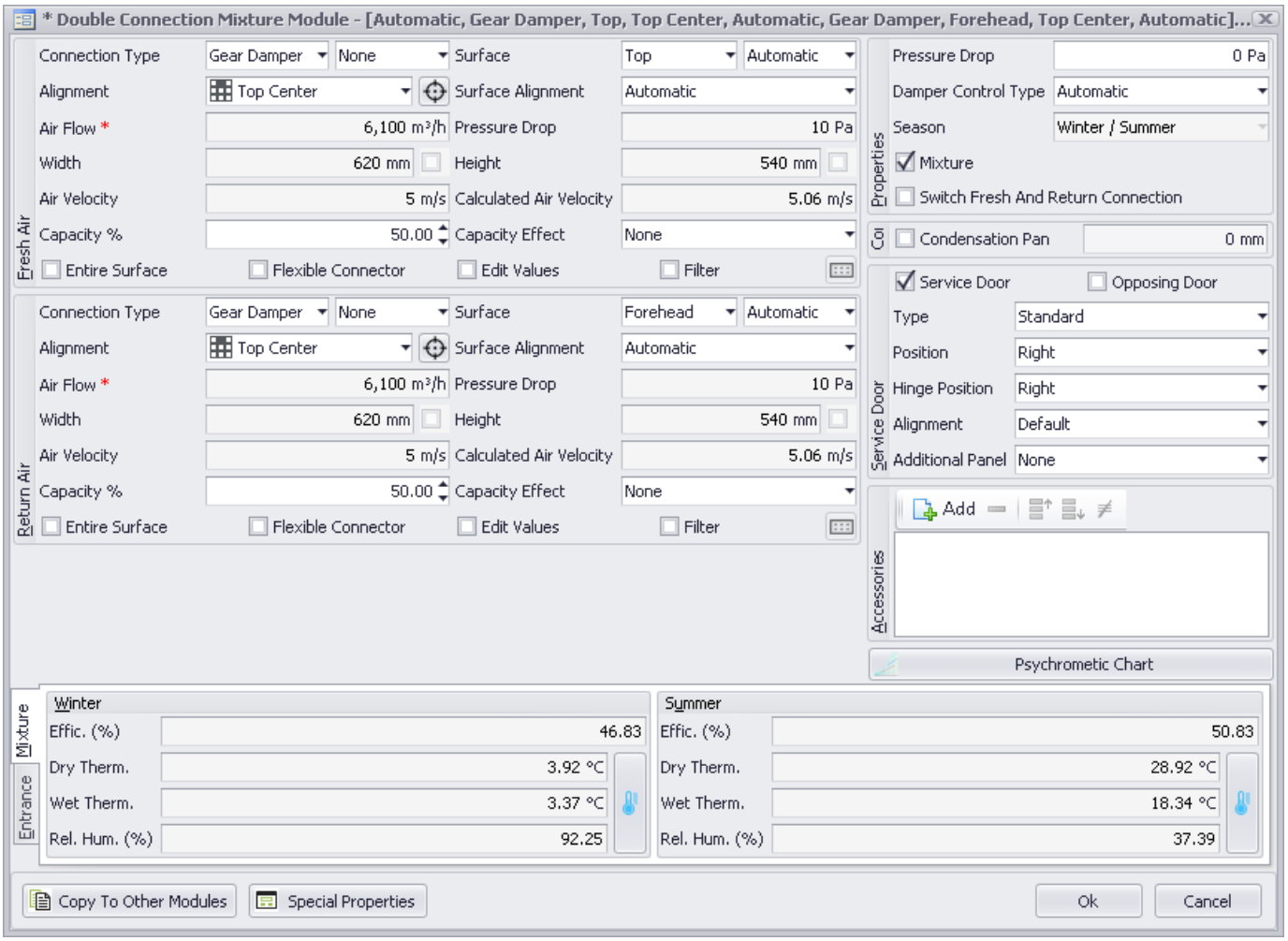
# AIR WASHER MODULE



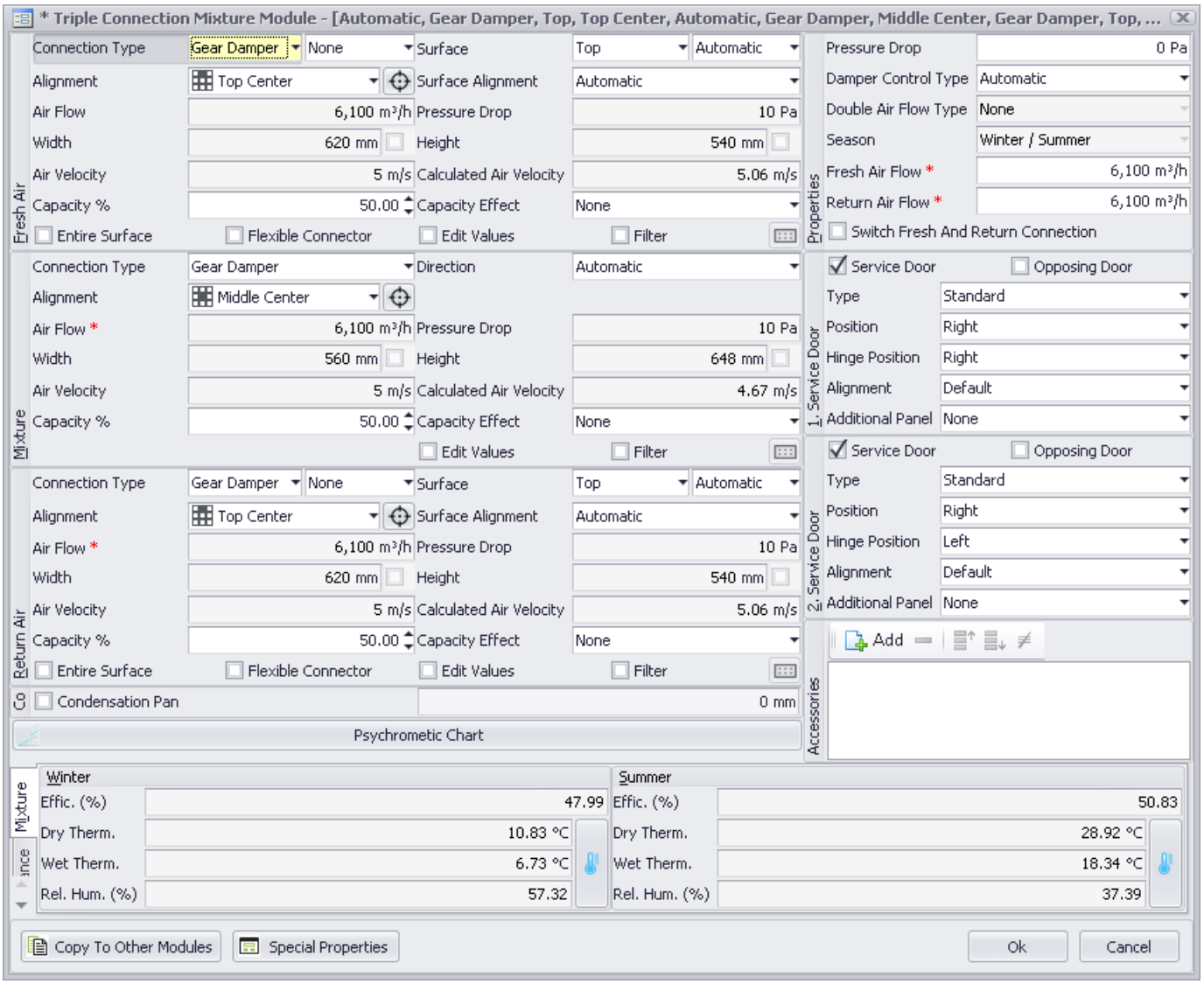
# SINGLE CONNECTION MODULE



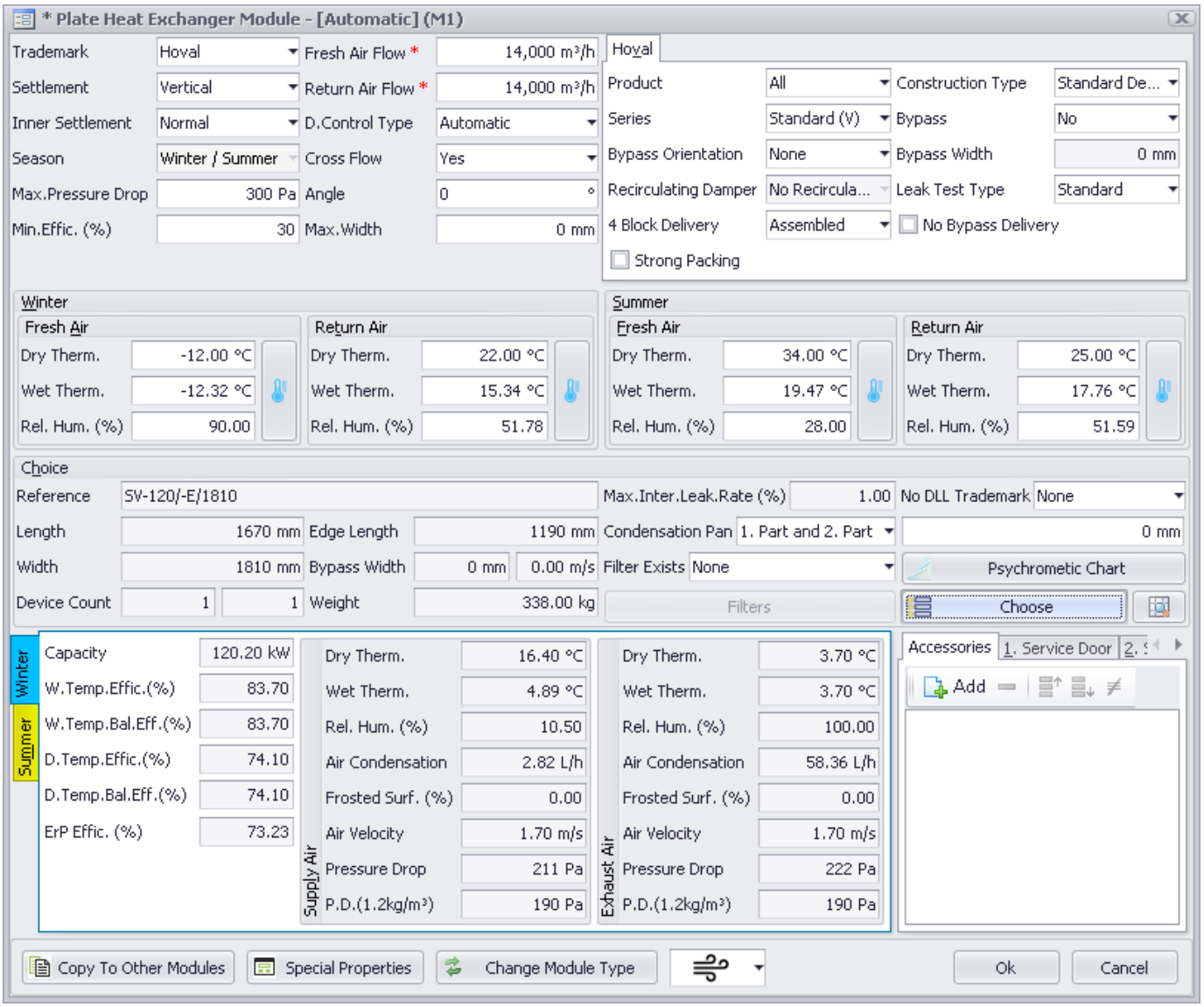
# DOUBLE CONNECTION MIXTURE MODULE



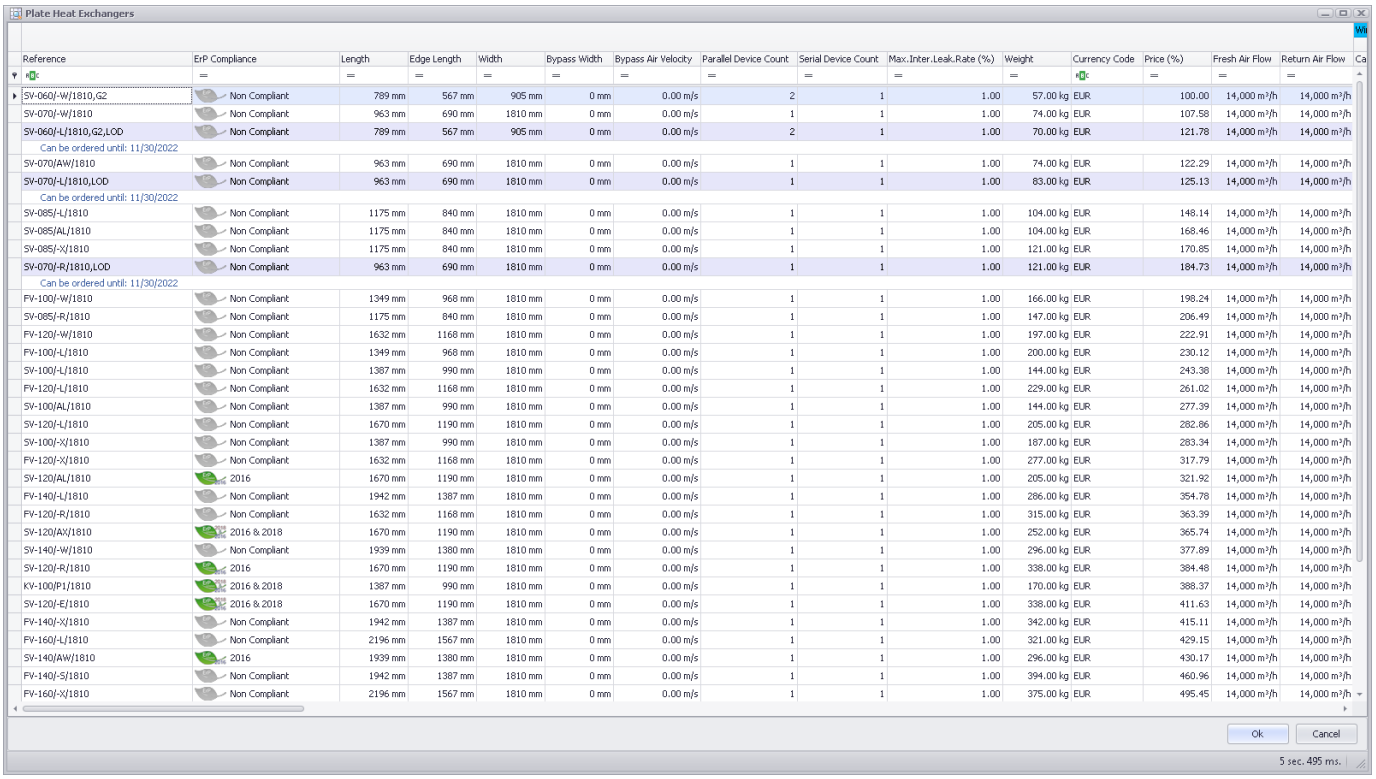
# TRIPLE CONNECTION MIXTURE MODULE



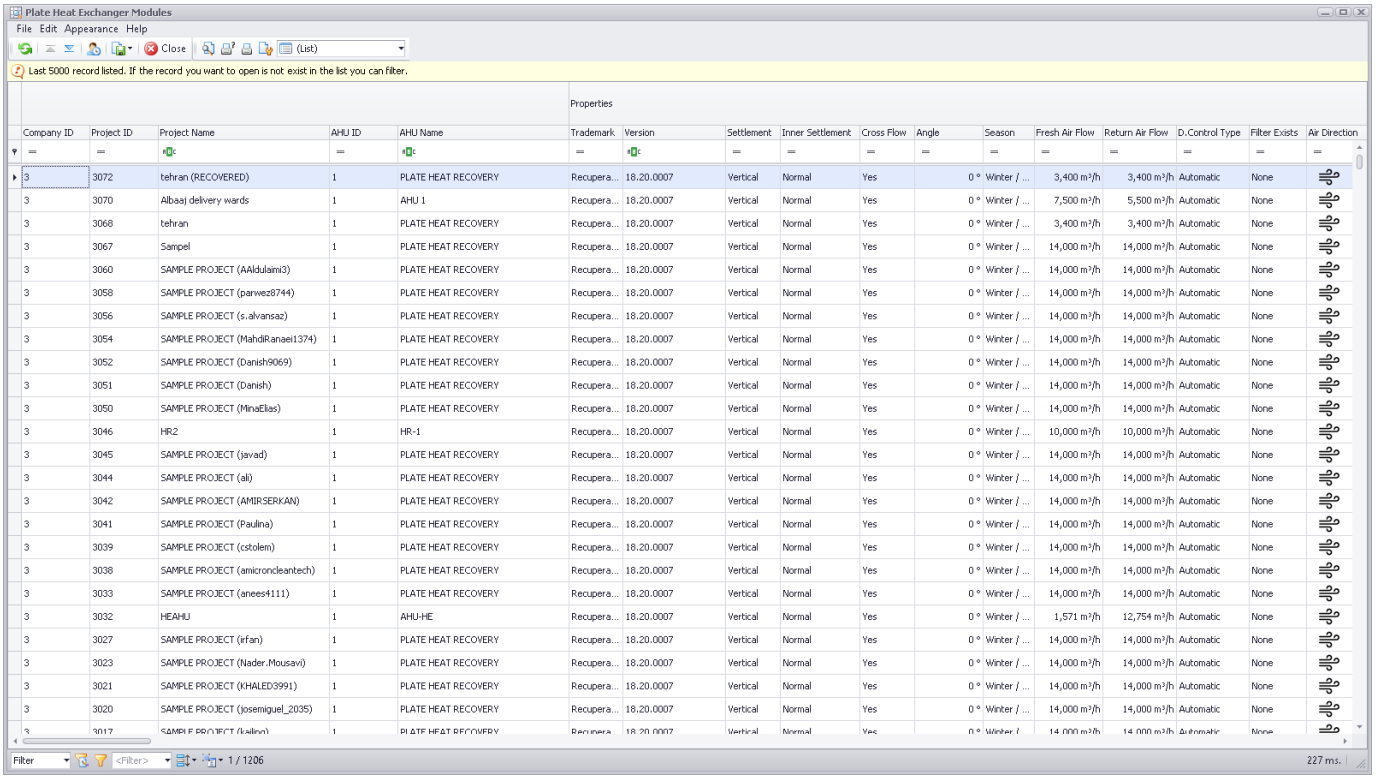
# PLATE HEAT EXCHANGER MODULE



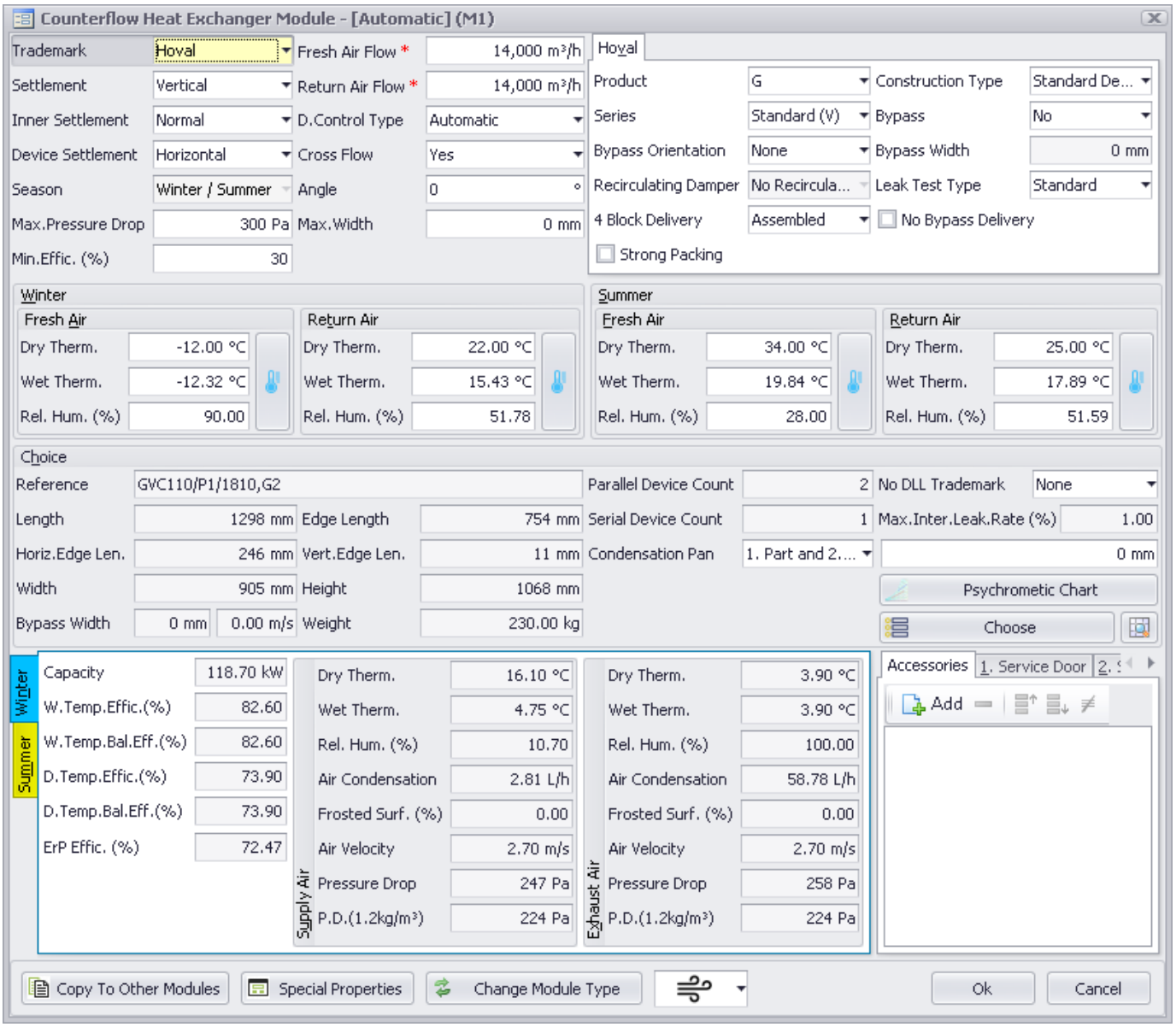
# PLATE HEAT EXCHANGER MODULE – DEVICES



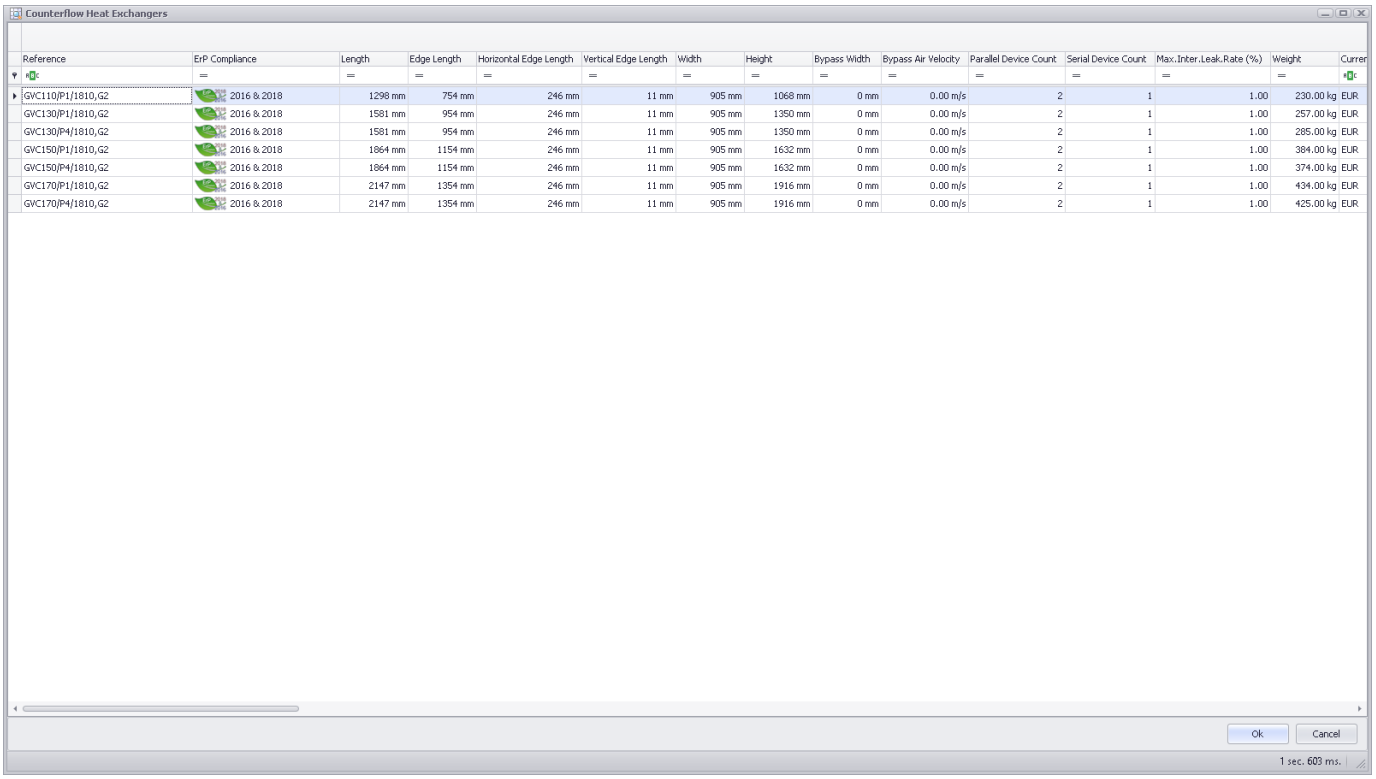

# PLATE HEAT EXCHANGER MODULE – PREVIOUS SELECTIONS



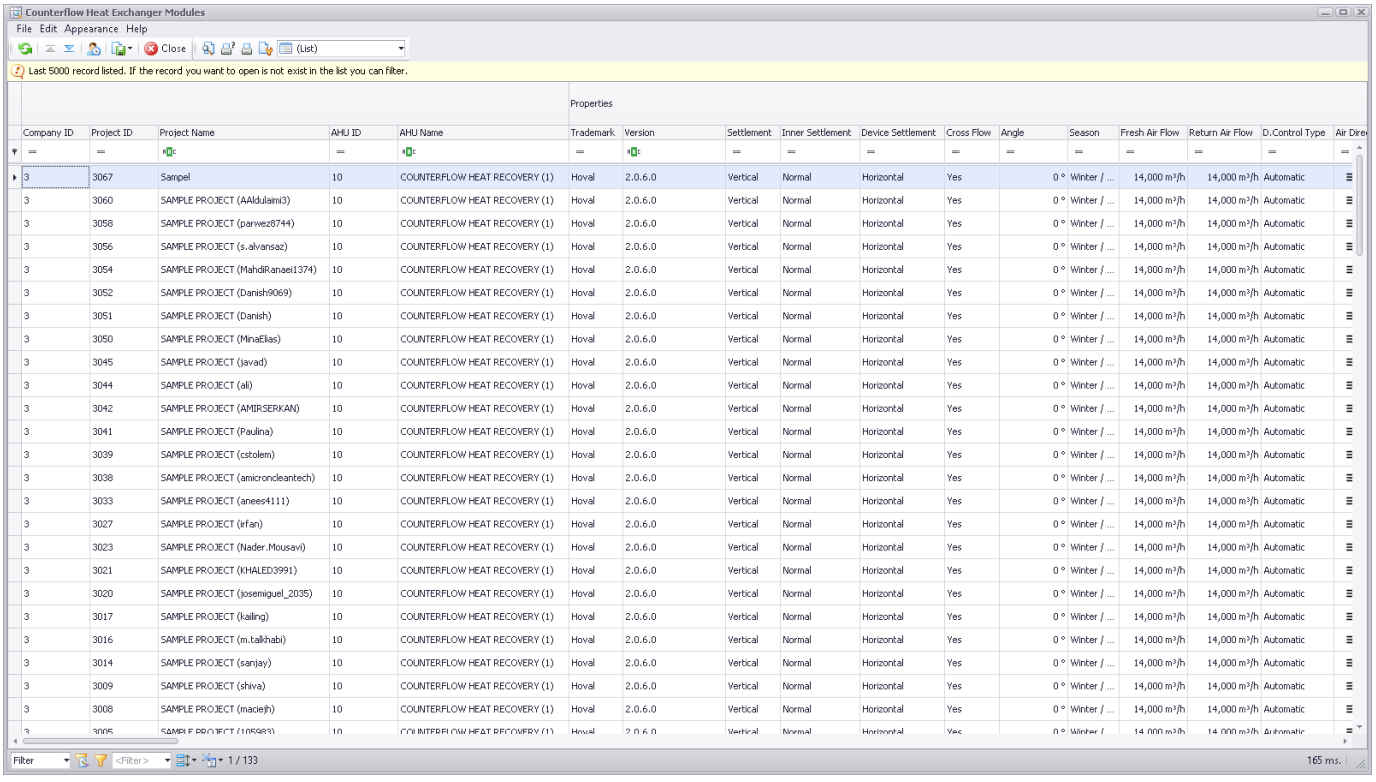
# COUNTERFLOW HEAT EXCHANGER MODULE



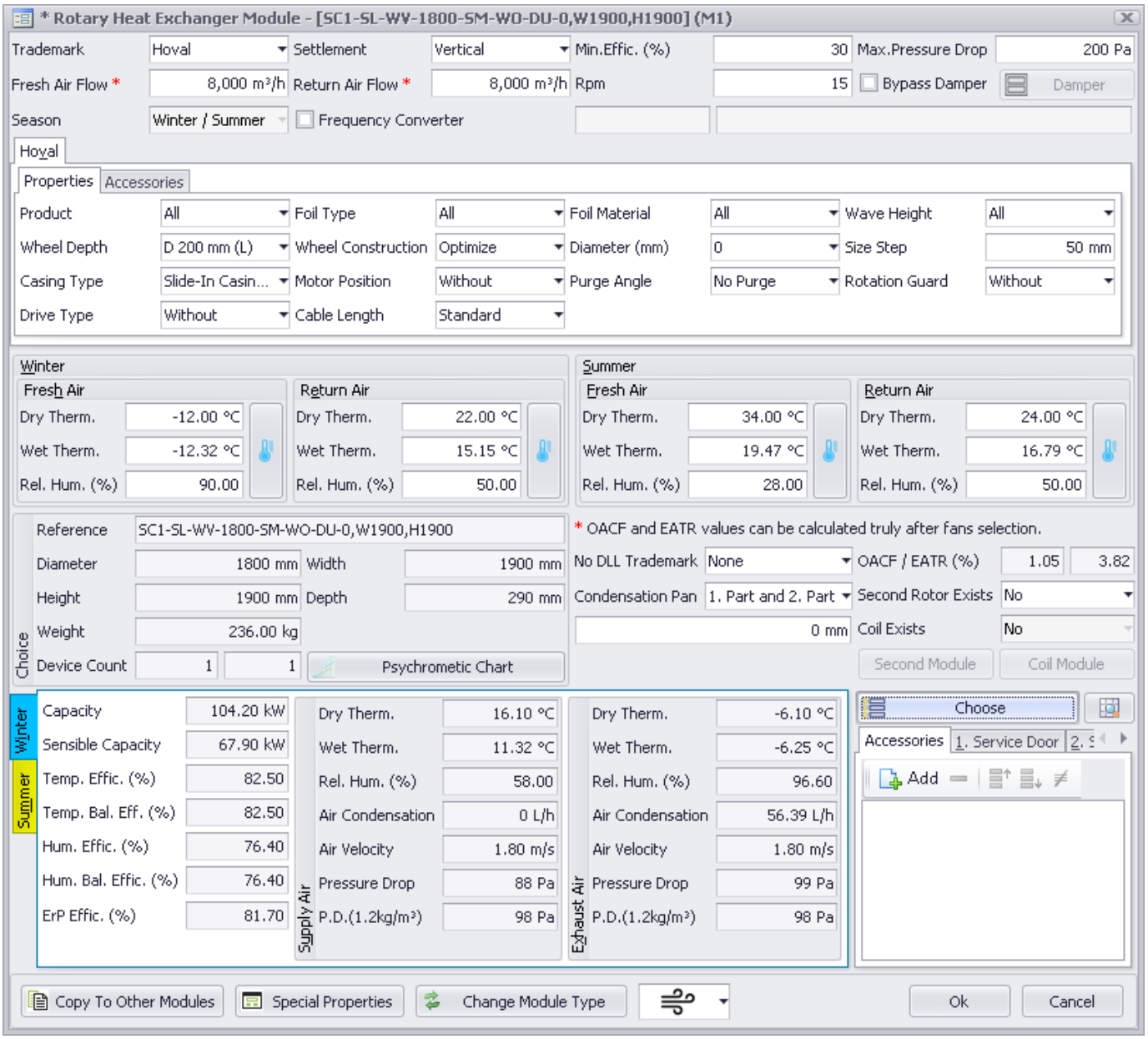
# COUNTERFLOW HEAT EXCHANGER MODULE – DEVICES



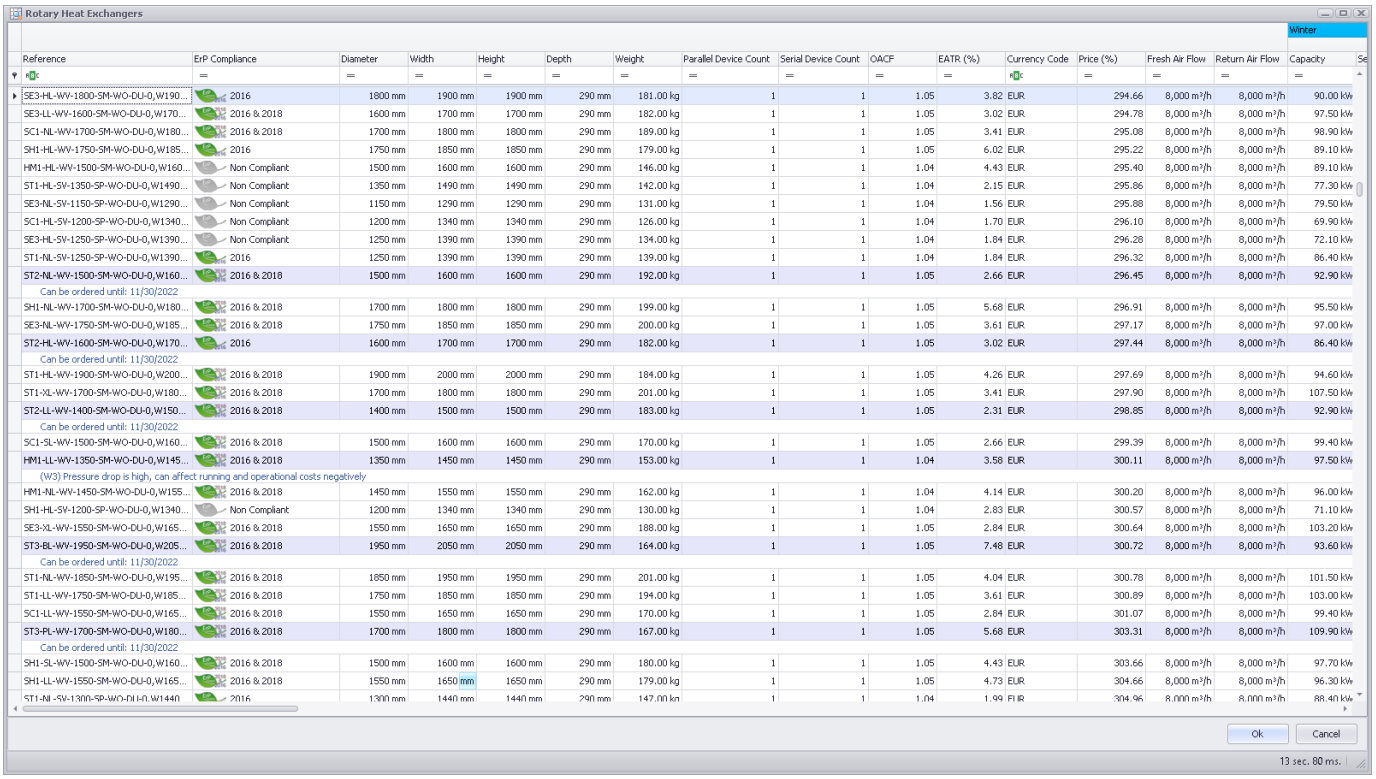

# COUNTERFLOW HEAT EXCHANGER MODULE – PREVIOUS SELECTIONS



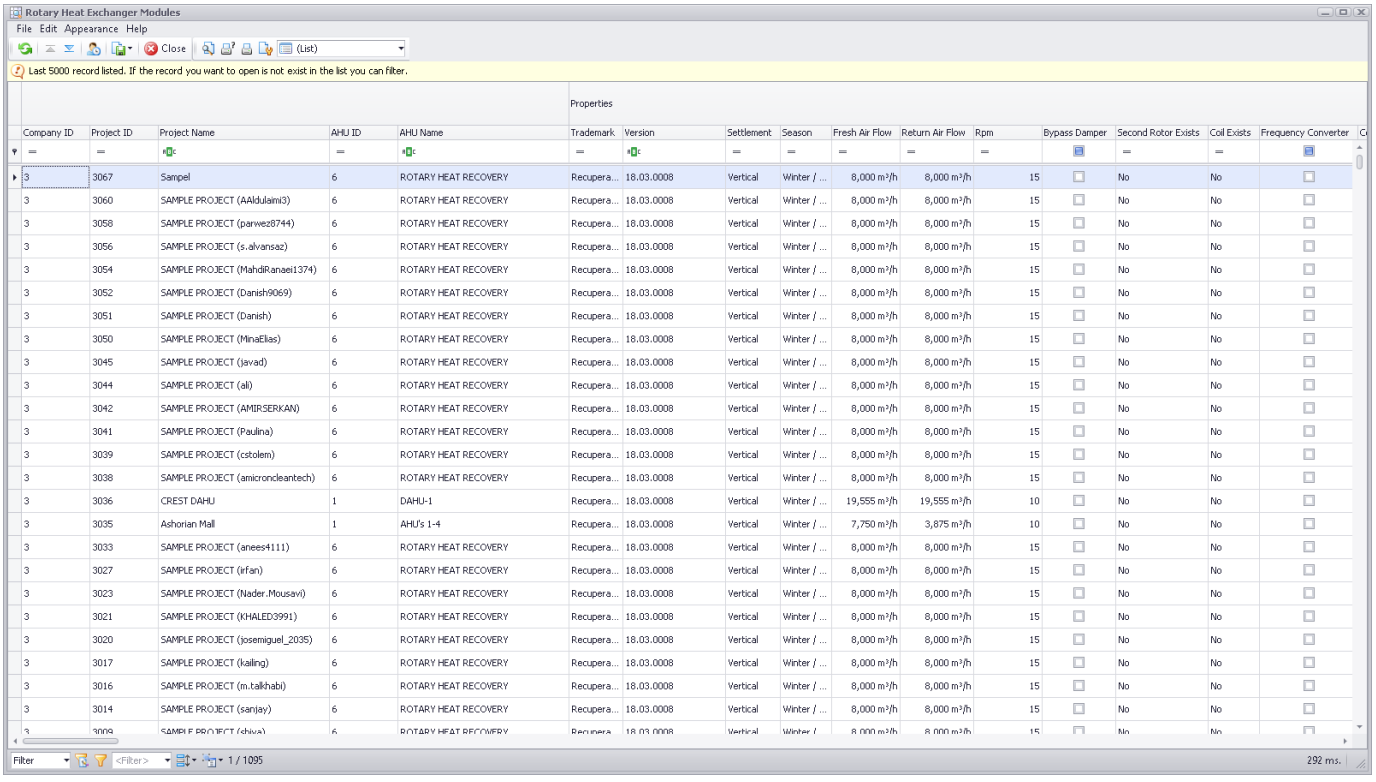
# ROTARY HEAT EXCHANGER MODULE



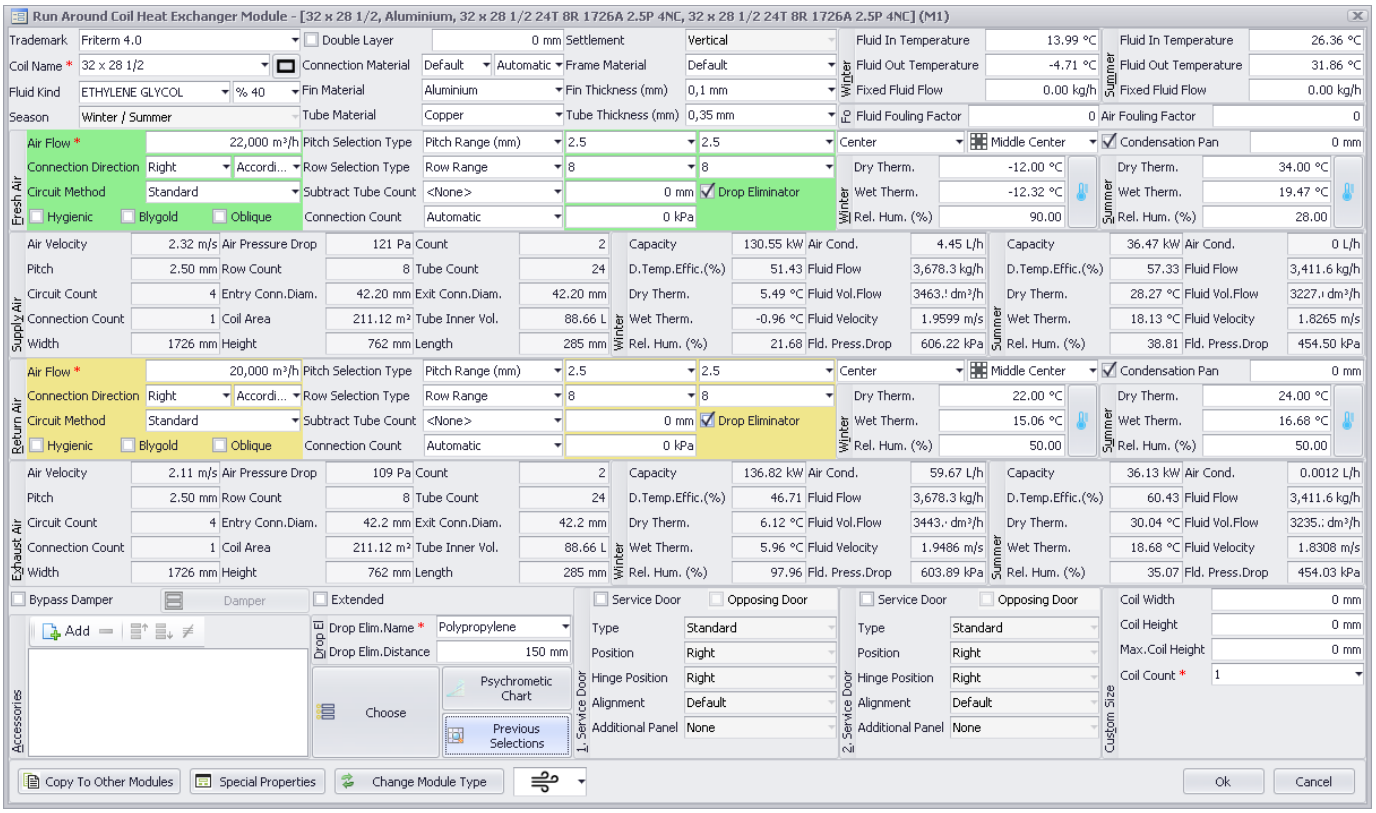
## ROTARY HEAT EXCHANGER MODULE – DEVICES



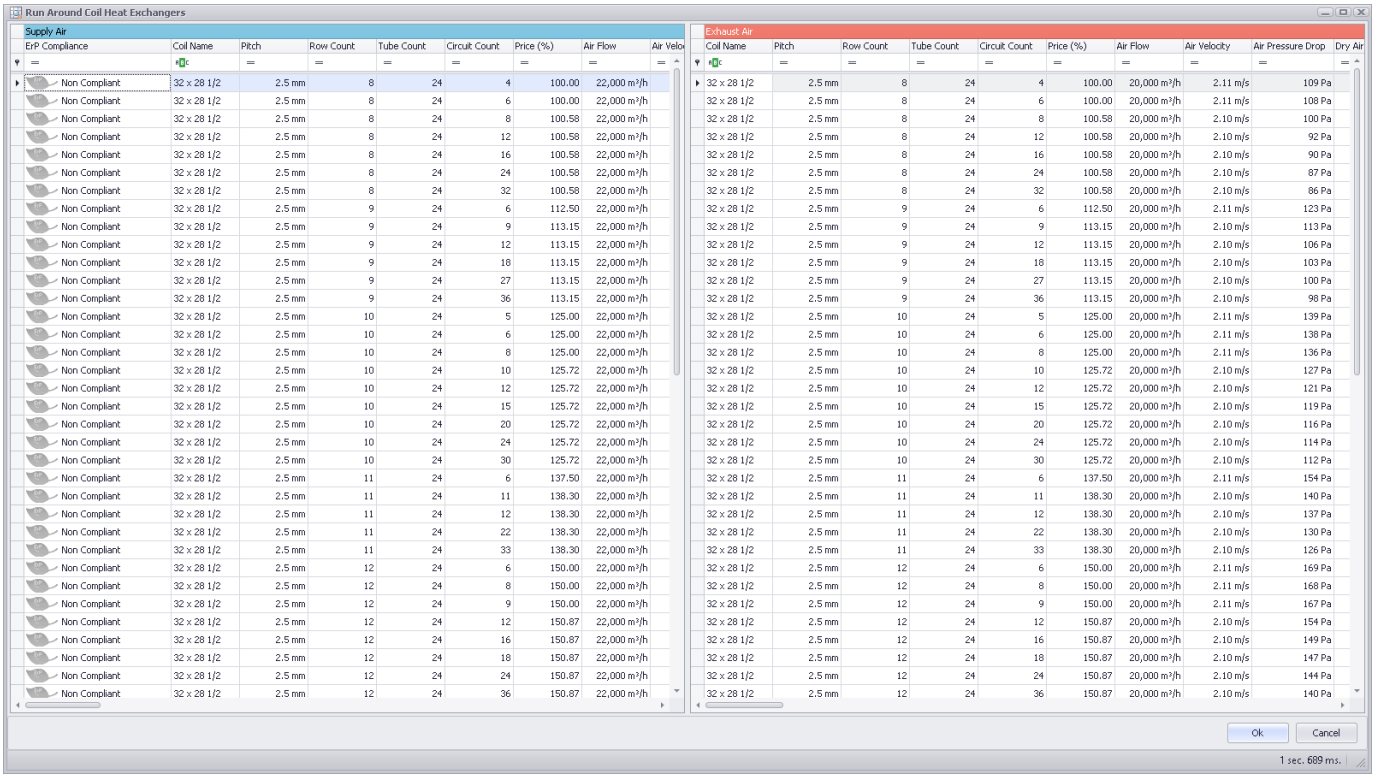

## ROTARY HEAT EXCHANGER MODULE – PREVIOUS SELECTIONS



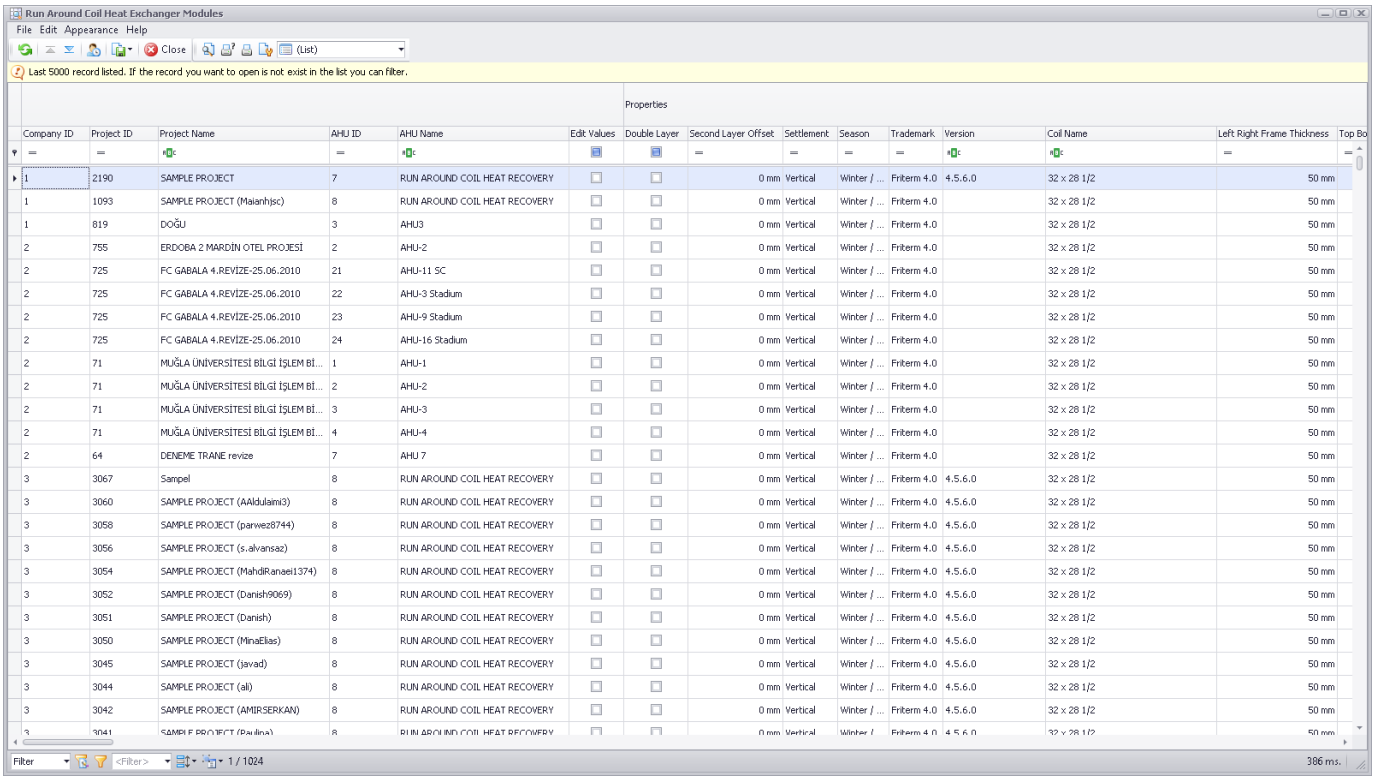
# RUN AROUND COIL HEAT EXCHANGER MODULE



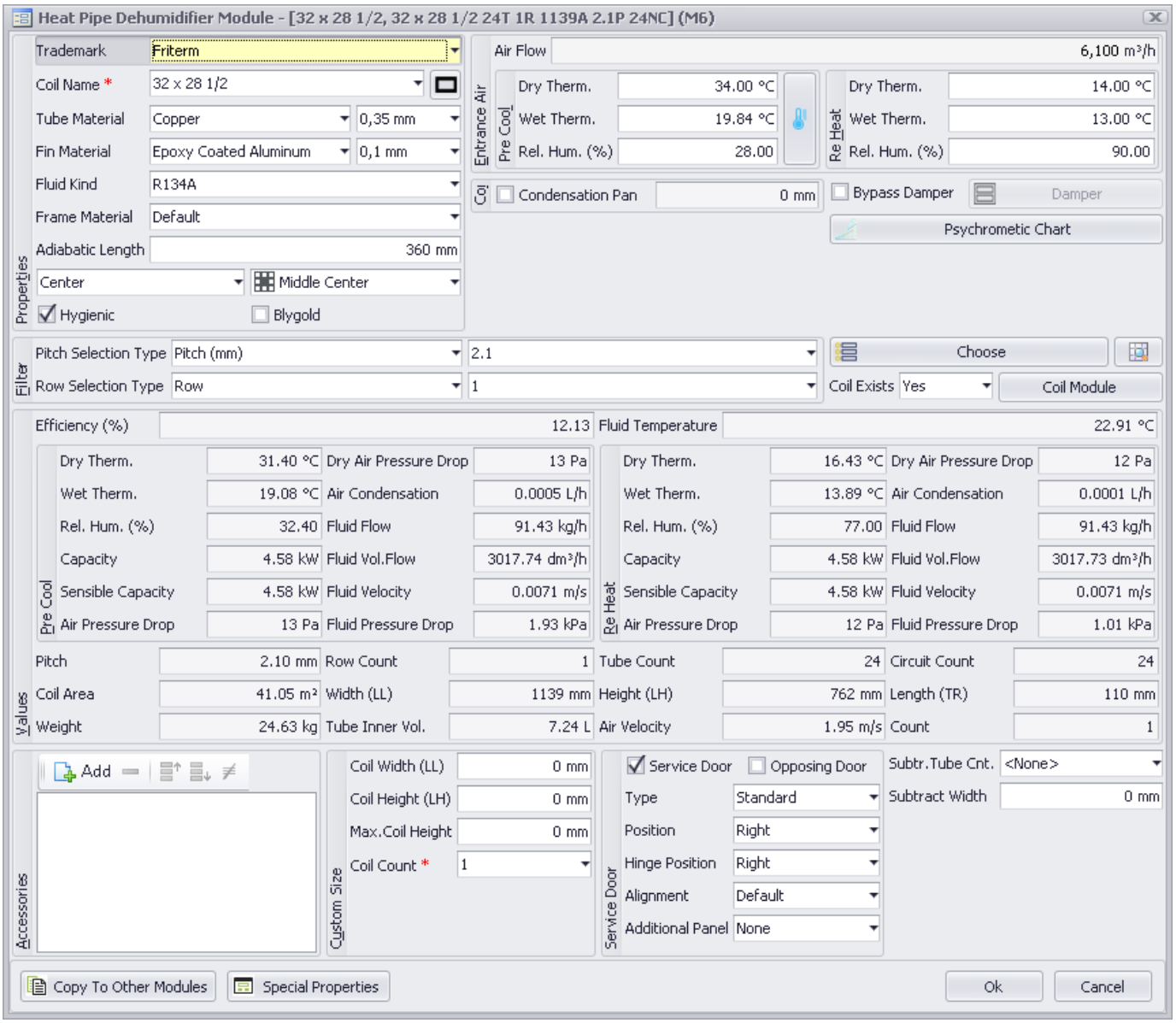

# RUN AROUND COIL HEAT EXCHANGER MODULE – DEVICES



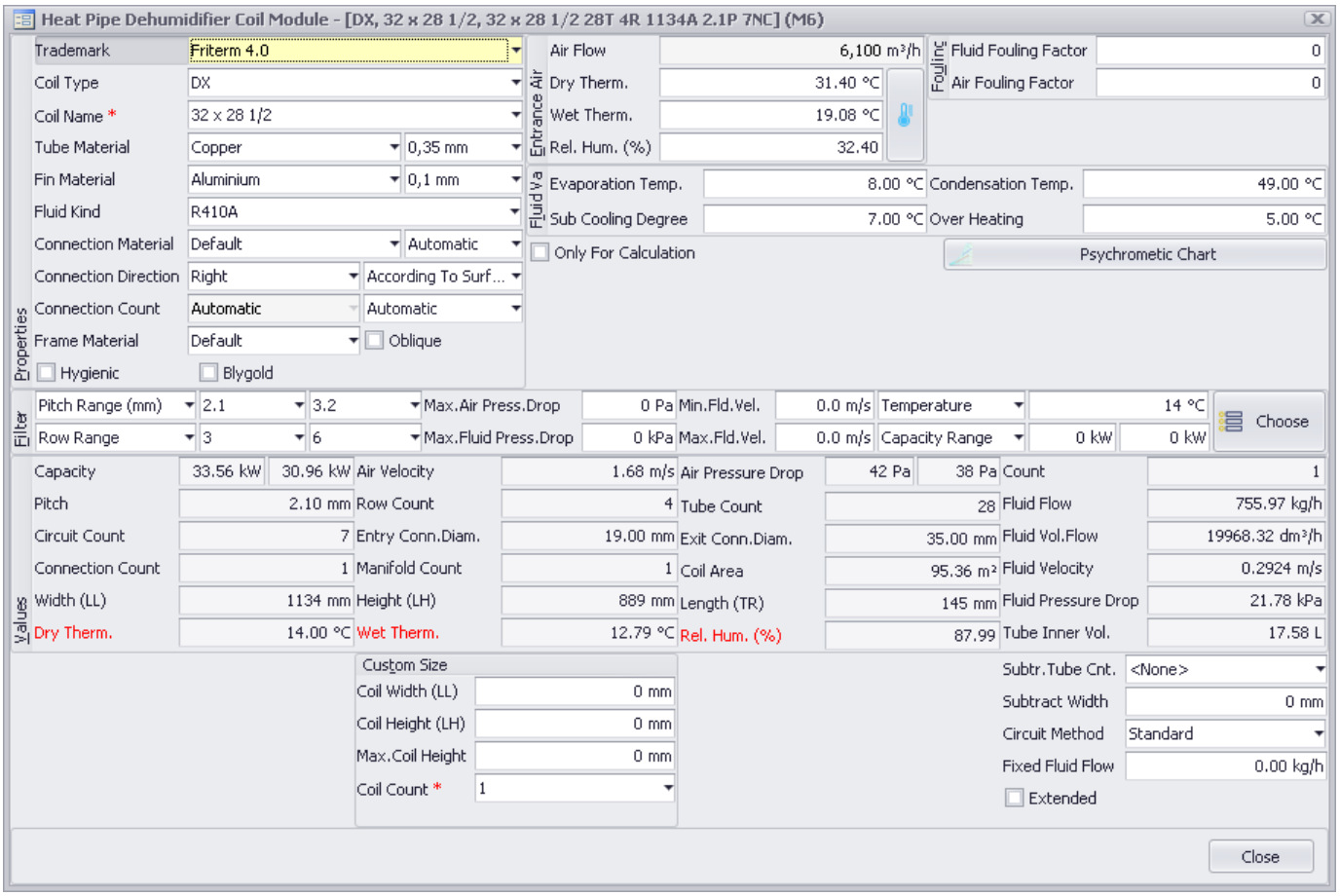
# RUN AROUND COIL HEAT EXCHANGER MODULE – PREVIOUS SELECTIONS



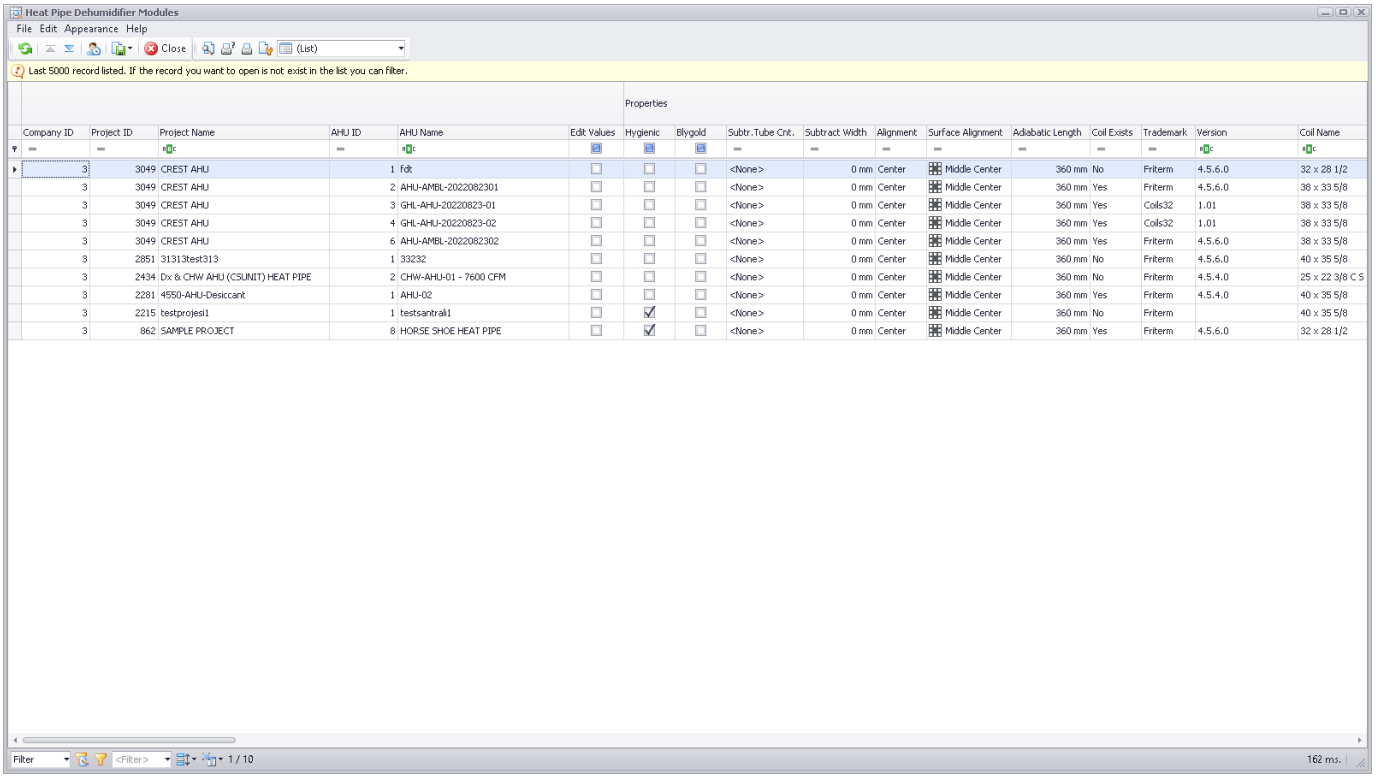
# HORSE SHOE HEAT PIPE MODULE



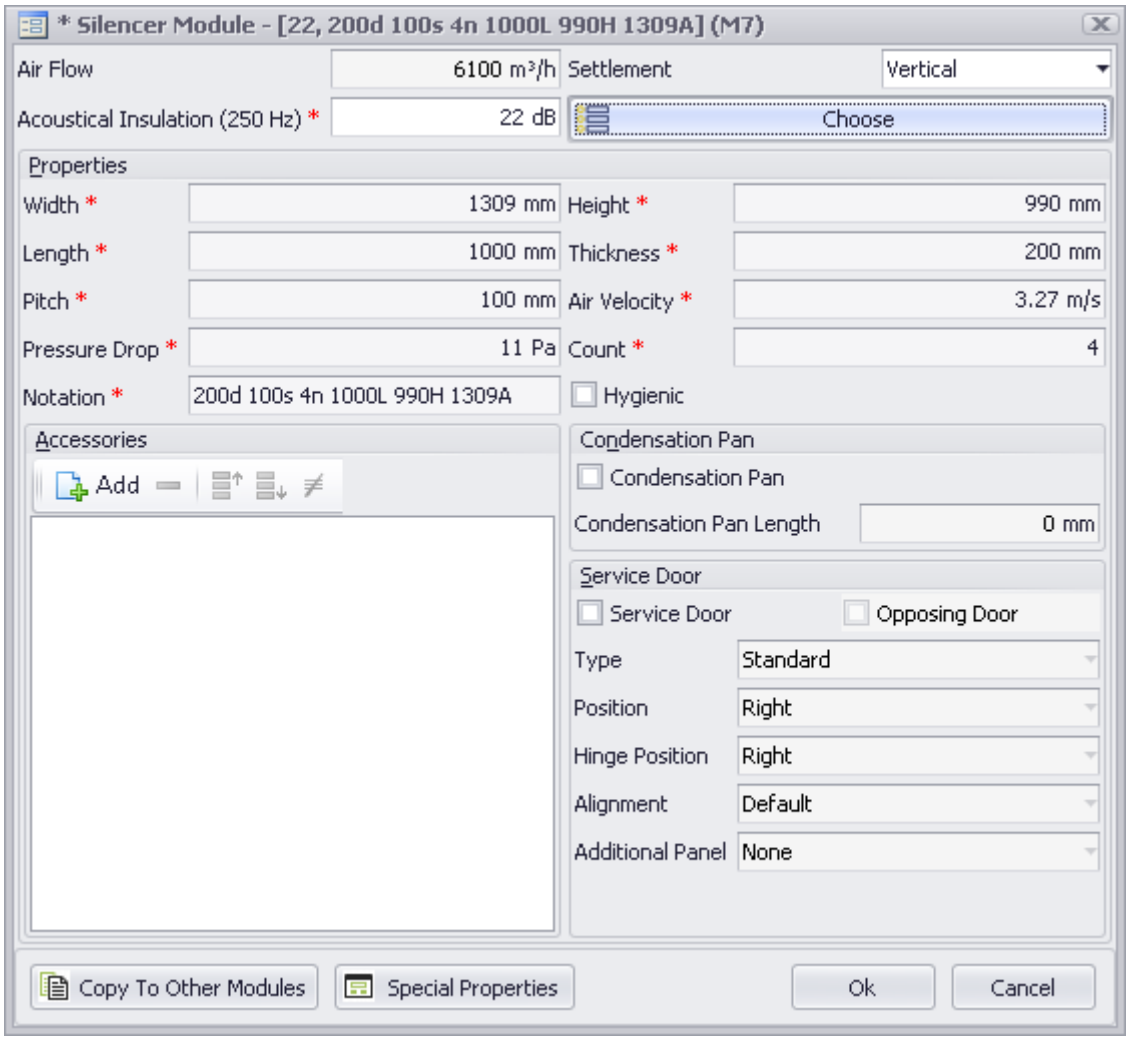
## HORSE SHOE HEAT PIPE MODULE – COIL



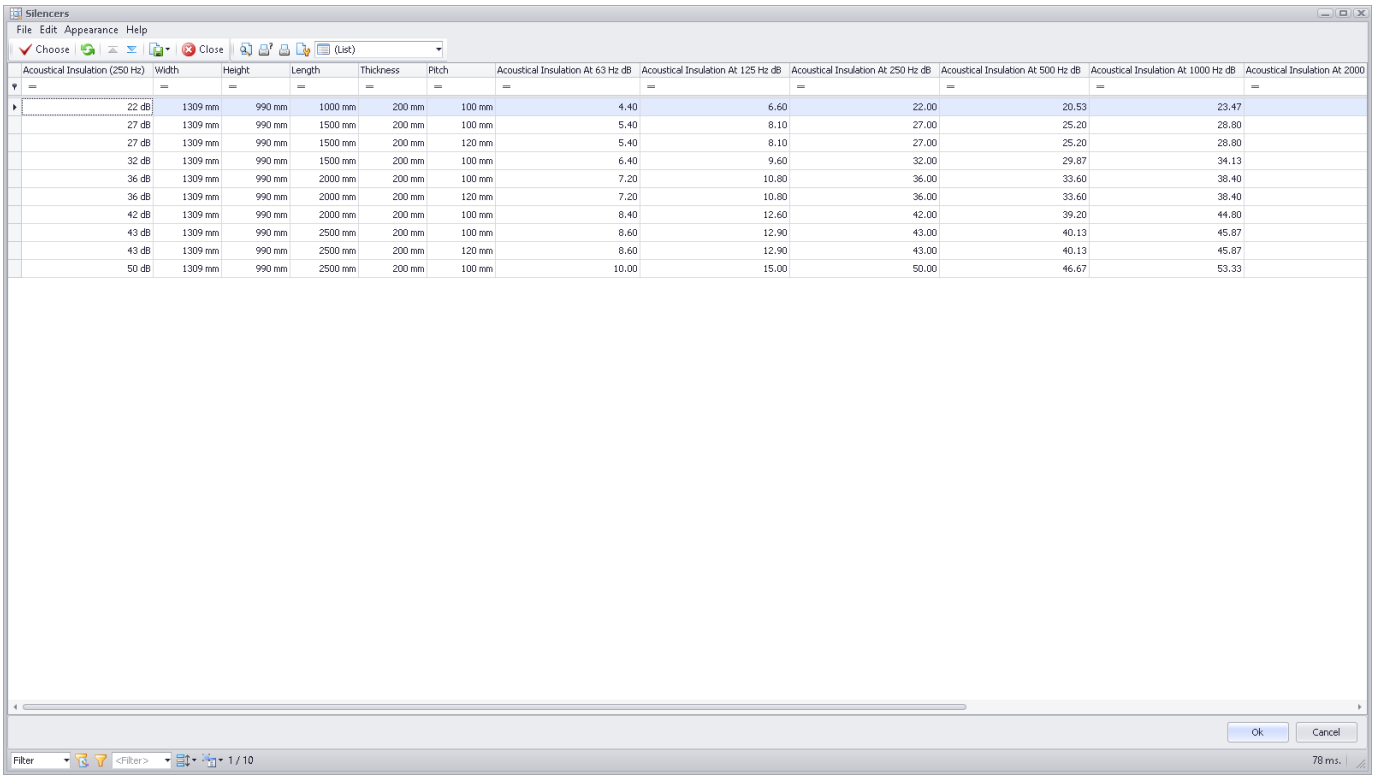

## HORSE SHOE HEAT PIPE MODULE – PREVIOUS SELECTIONS



# SILENCER MODULE

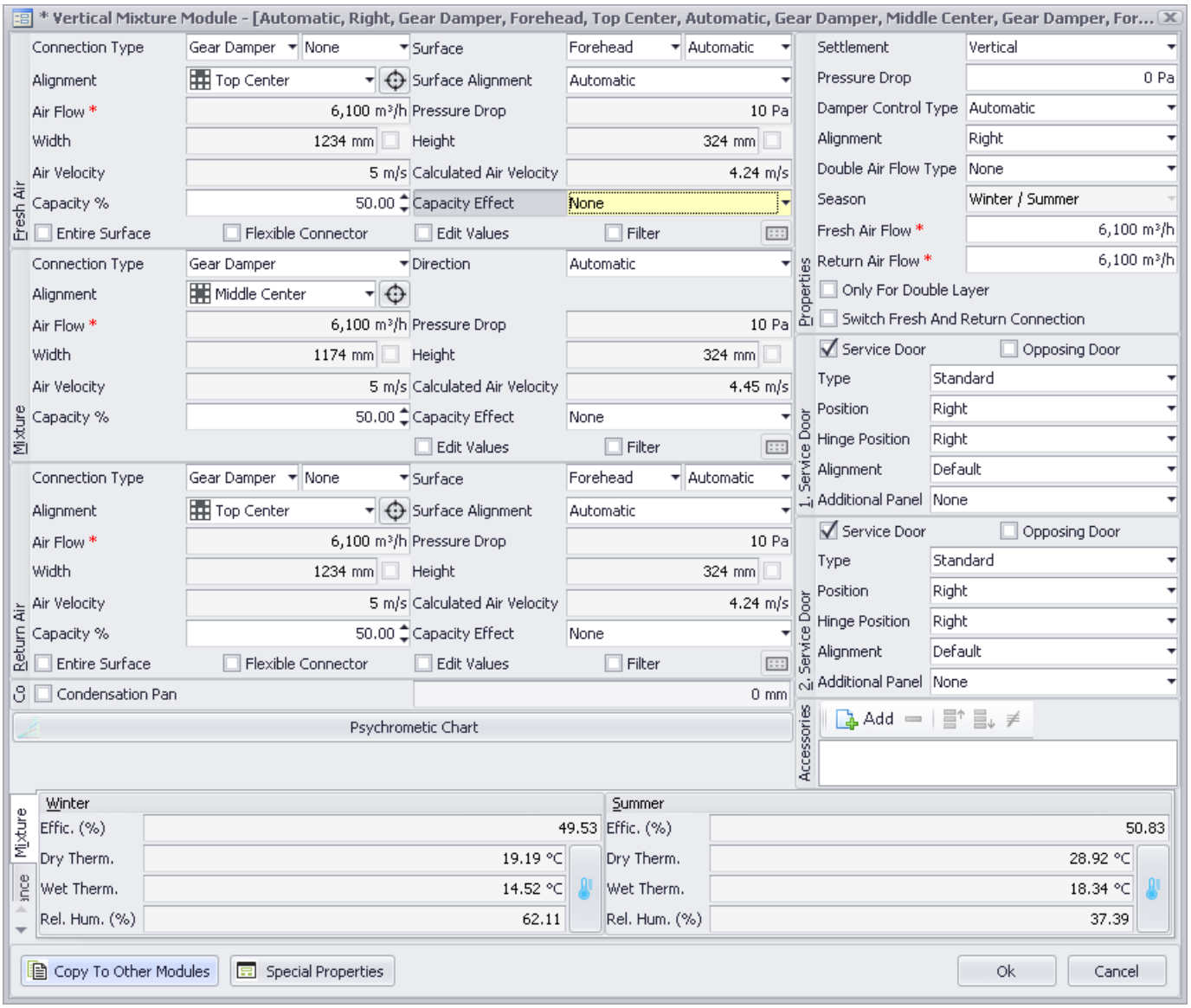


# SILENCER MODULE – SLENCERS

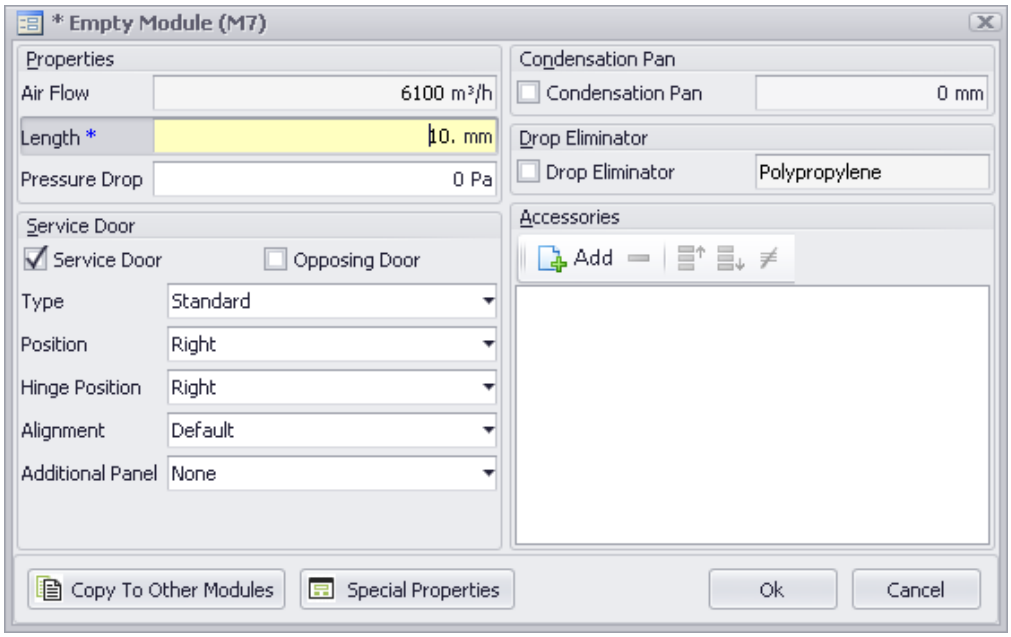



| Acoustical Insulation (250 Hz) | Width | Height | Length | Thickness | Pitch | Acoustical Insulation At 63 Hz dB | Acoustical Insulation At 125 Hz dB | Acoustical Insulation At 250 Hz dB | Acoustical Insulation At 500 Hz dB | Acoustical Insulation At 1000 Hz dB | Acoustical Insulation At 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 dB | 1309 mm | 990 mm | 1000 mm | 200 mm | 100 mm | 4.40 | 6.60 | 22.00 | 20.53 | 23.47 | |
| 27 dB | 1309 mm | 990 mm | 1500 mm | 200 mm | 100 mm | 5.40 | 8.10 | 27.00 | 25.20 | 28.80 | |
| 27 dB | 1309 mm | 990 mm | 1500 mm | 200 mm | 120 mm | 5.40 | 8.10 | 27.00 | 25.20 | 28.80 | |
| 32 dB | 1309 mm | 990 mm | 1500 mm | 200 mm | 100 mm | 6.40 | 9.60 | 32.00 | 29.87 | 34.13 | |
| 36 dB | 1309 mm | 990 mm | 2000 mm | 200 mm | 100 mm | 7.20 | 10.80 | 36.00 | 33.60 | 38.40 | |
| 36 dB | 1309 mm | 990 mm | 2000 mm | 200 mm | 120 mm | 7.20 | 10.80 | 36.00 | 33.60 | 38.40 | |
| 42 dB | 1309 mm | 990 mm | 2000 mm | 200 mm | 100 mm | 8.40 | 12.60 | 42.00 | 39.20 | 44.80 | |
| 43 dB | 1309 mm | 990 mm | 2500 mm | 200 mm | 100 mm | 8.60 | 12.90 | 43.00 | 40.13 | 45.87 | |
| 43 dB | 1309 mm | 990 mm | 2500 mm | 200 mm | 120 mm | 8.60 | 12.90 | 43.00 | 40.13 | 45.87 | |
| 50 dB | 1309 mm | 990 mm | 2500 mm | 200 mm | 100 mm | 10.00 | 15.00 | 50.00 | 46.67 | 53.33 | |

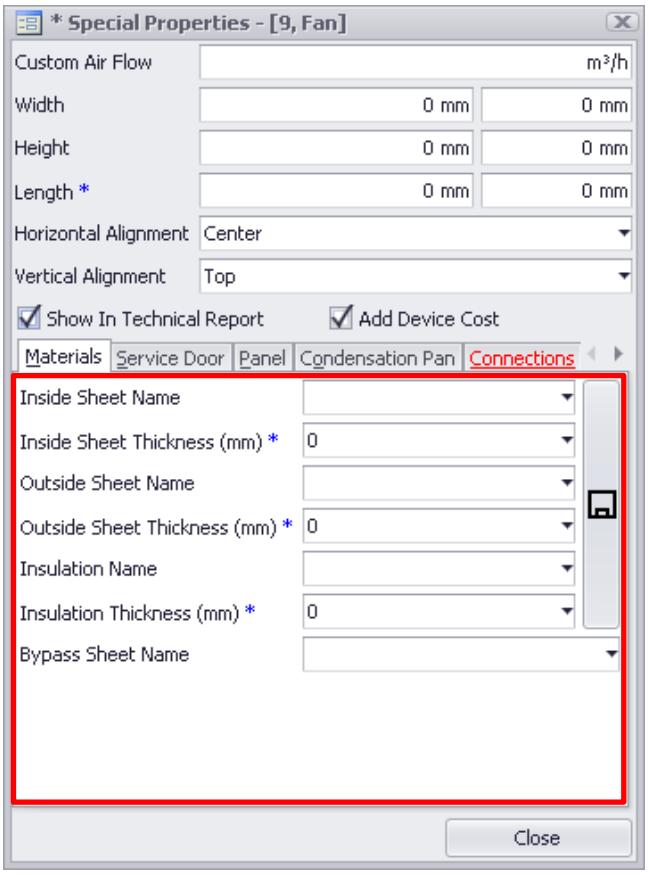
## VERTICAL MIXTURE MODULE



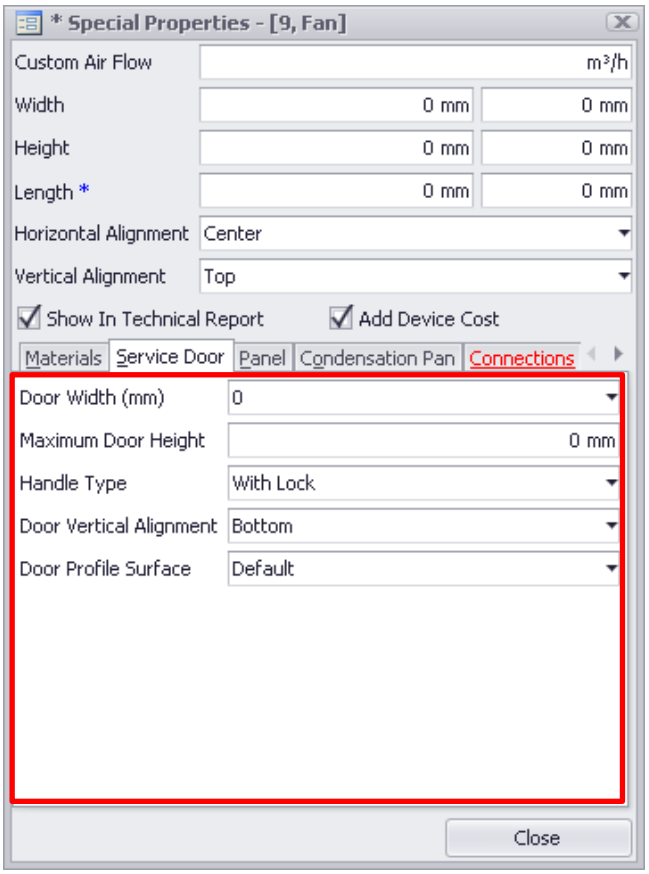

## EMPTY MODULE



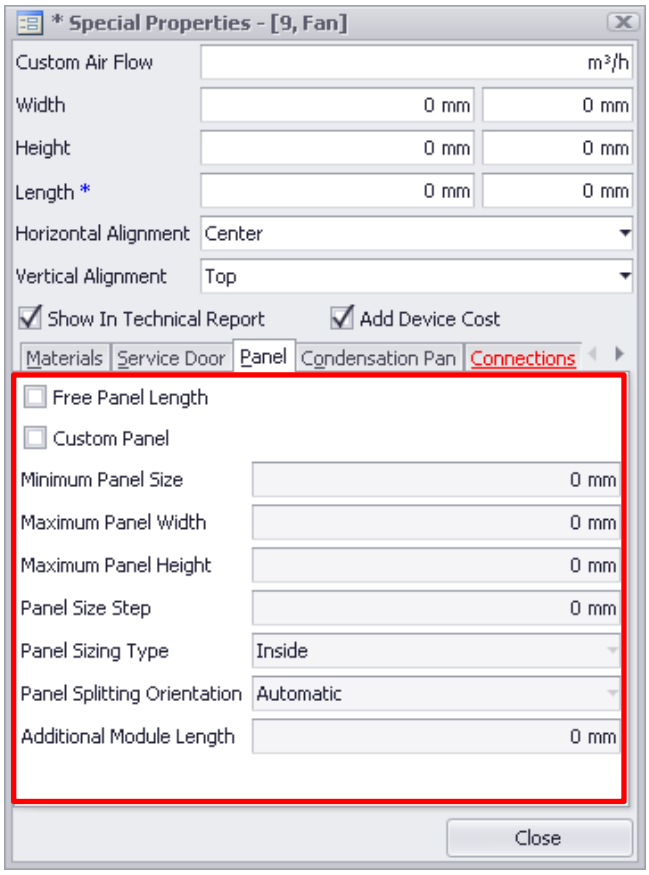
## MODULE SPECIAL PROPERTIES - MATERIALS



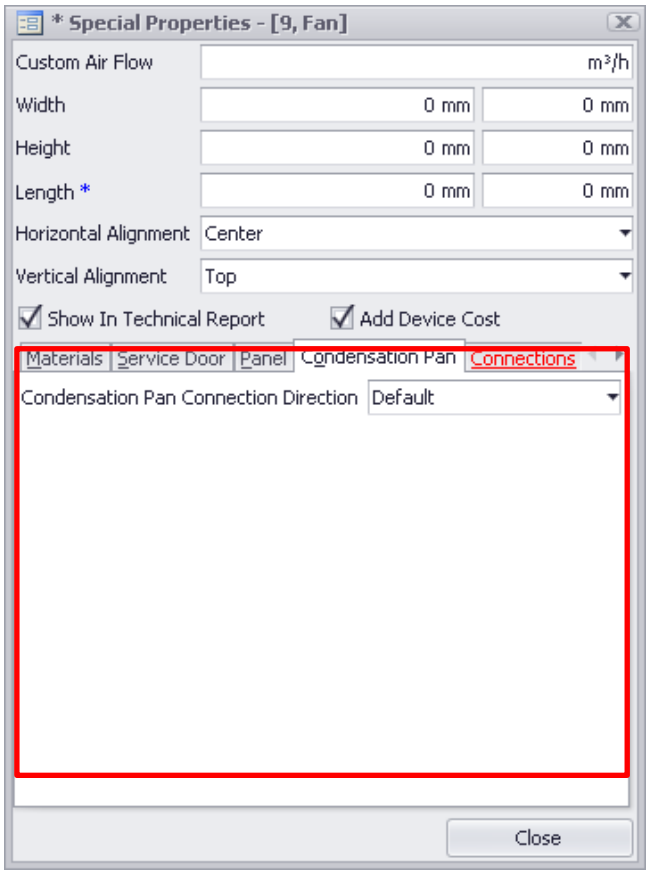

## MODULE SPECIAL PROPERTIES – SERVICE DOOR



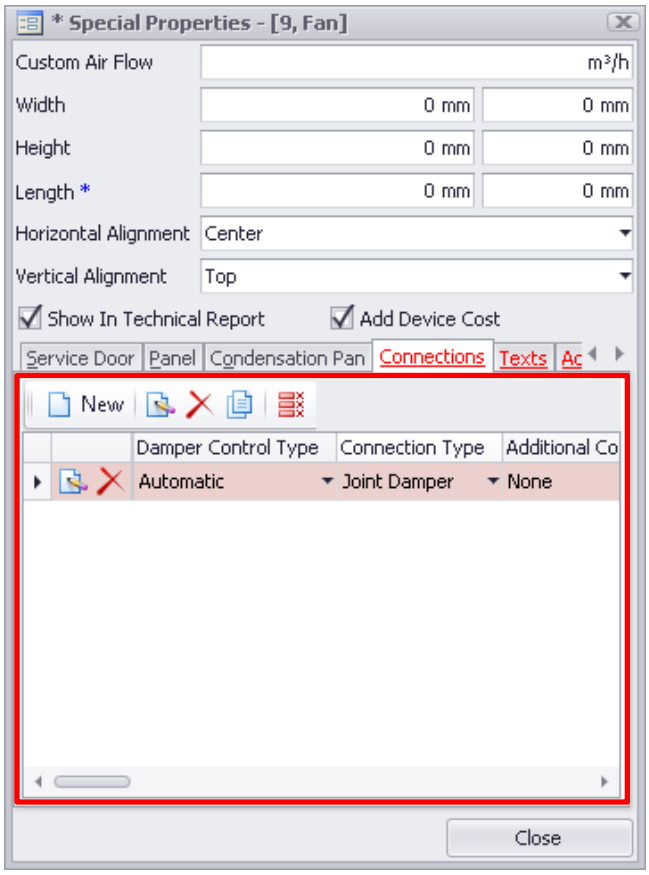
## MODULE SPECIAL PROPERTIES – PANEL



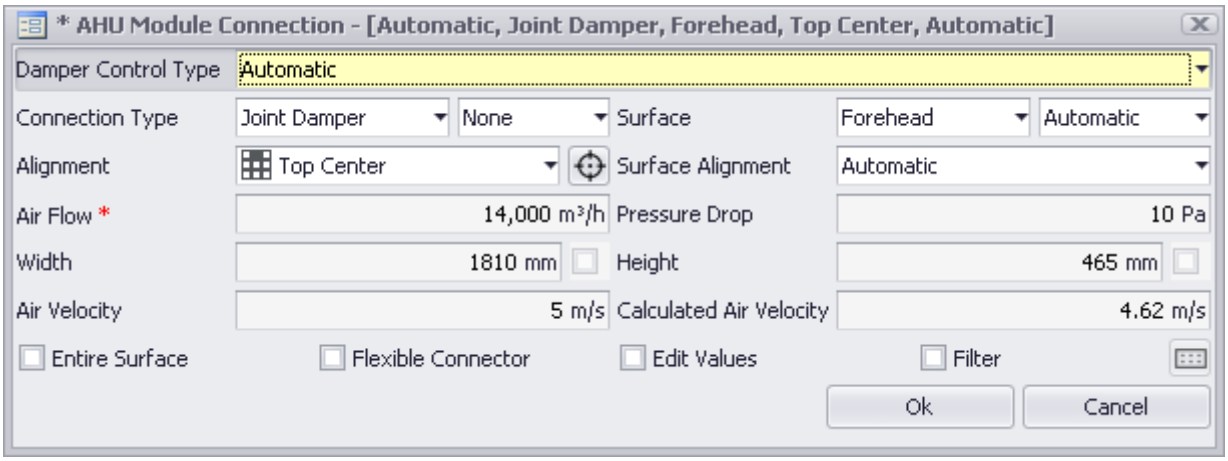

## MODULE SPECIAL PROPERTIES – CONDENSATION PAN



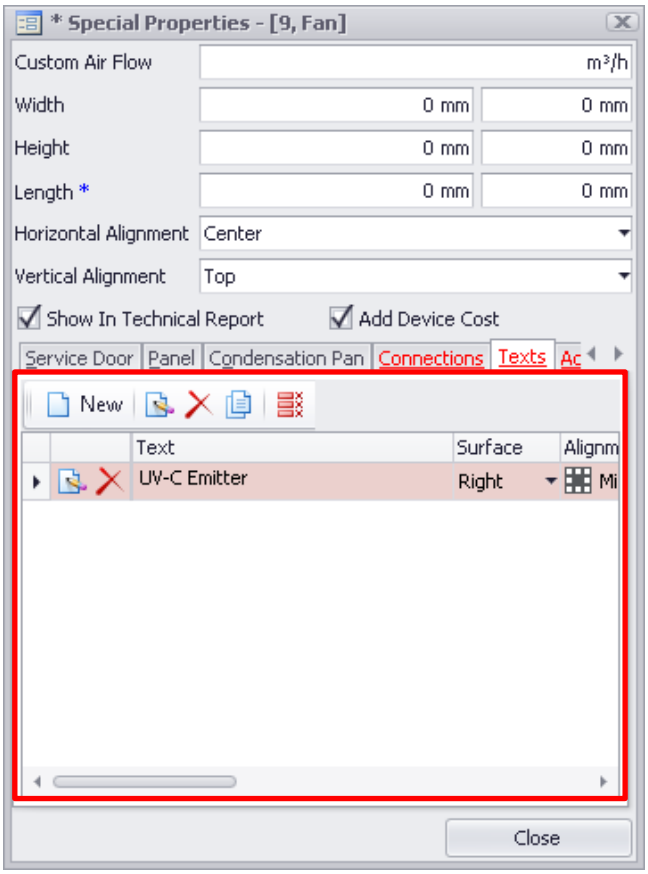
## MODULE SPECIAL PROPERTIES – CONNECTIONS



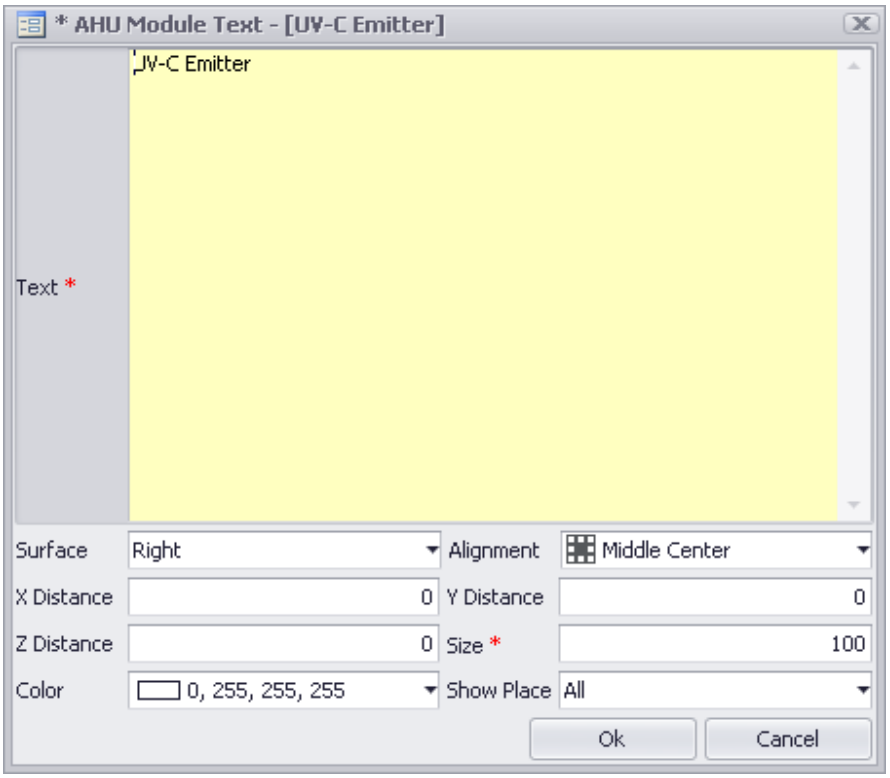

## MODULE SPECIAL PROPERTIES – CONNECTION



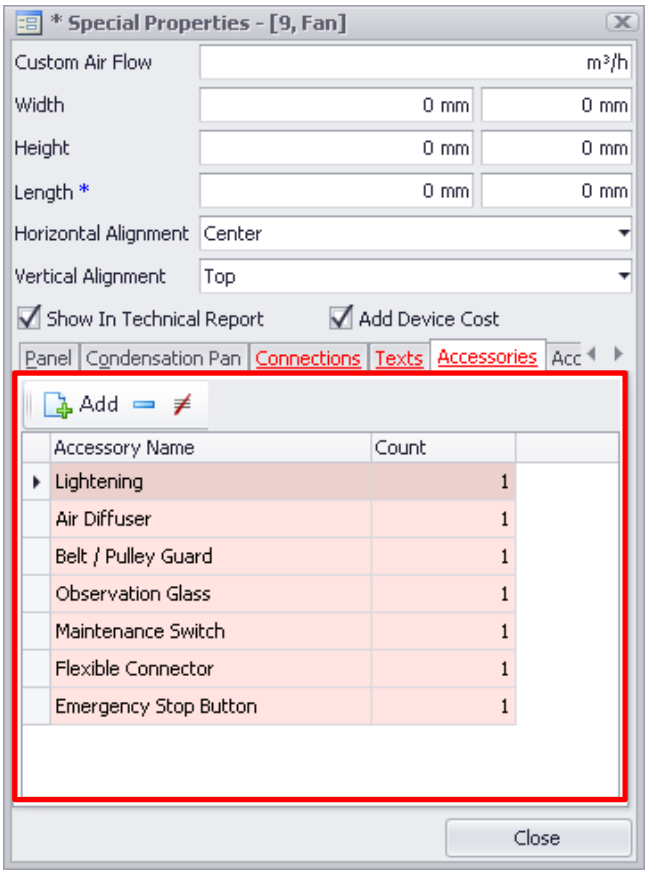
## MODULE SPECIAL PROPERTIES – TEXTS



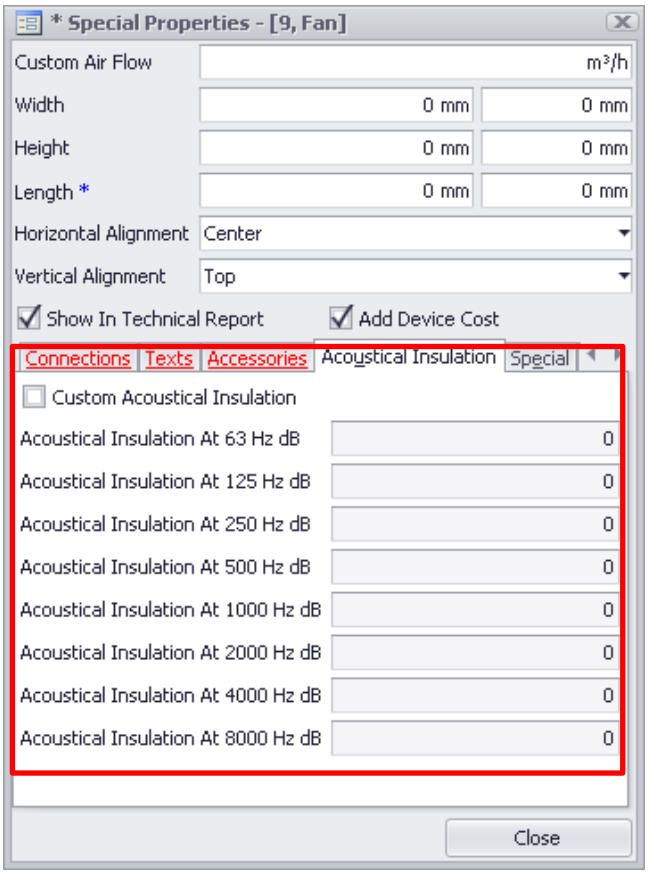

## MODULE SPECIAL PROPERTIES – TEXT



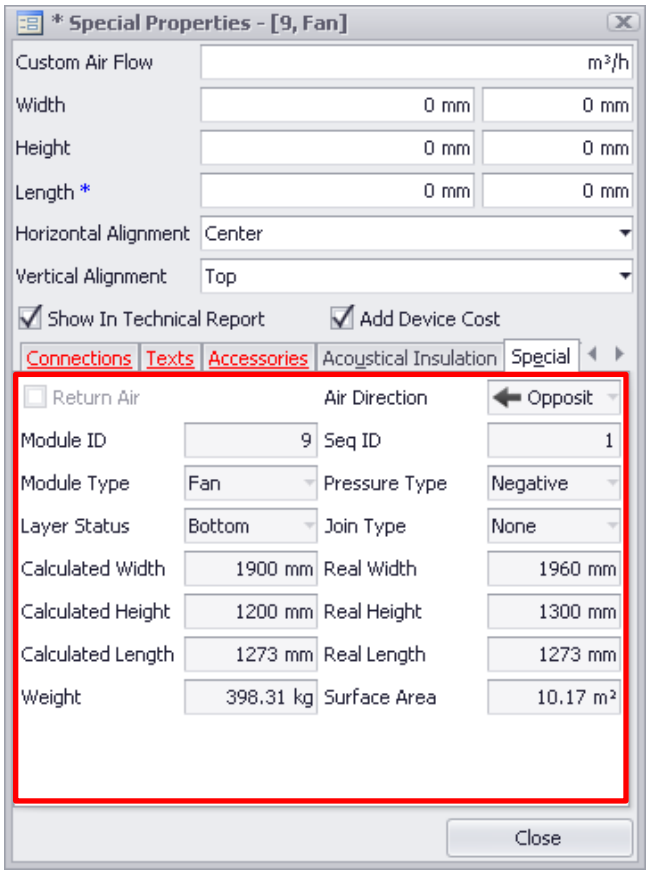
## MODULE SPECIAL PROPERTIES – ACCESSORIES



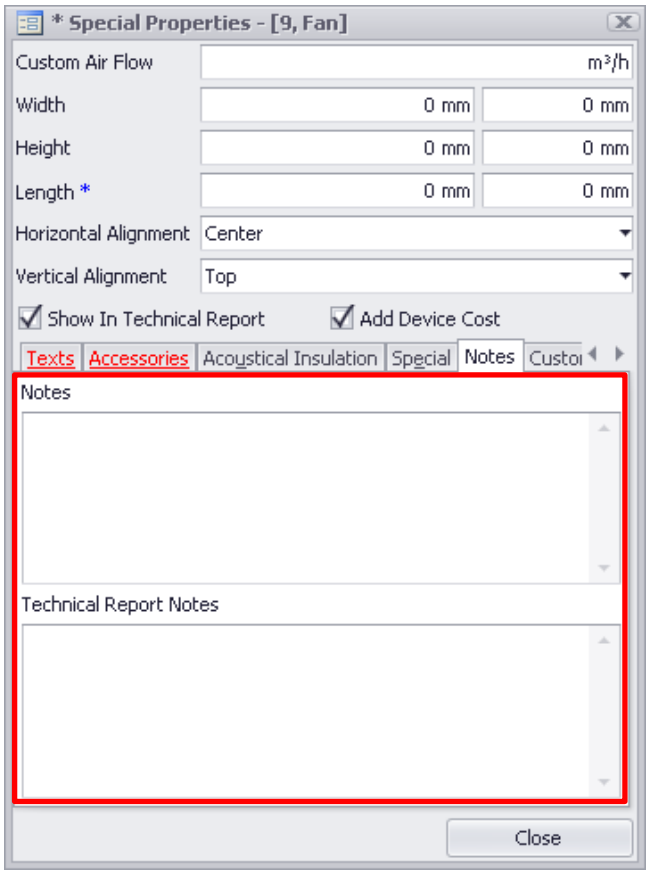

## MODULE SPECIAL PROPERTIES – ACOUSTICAL INSULATION



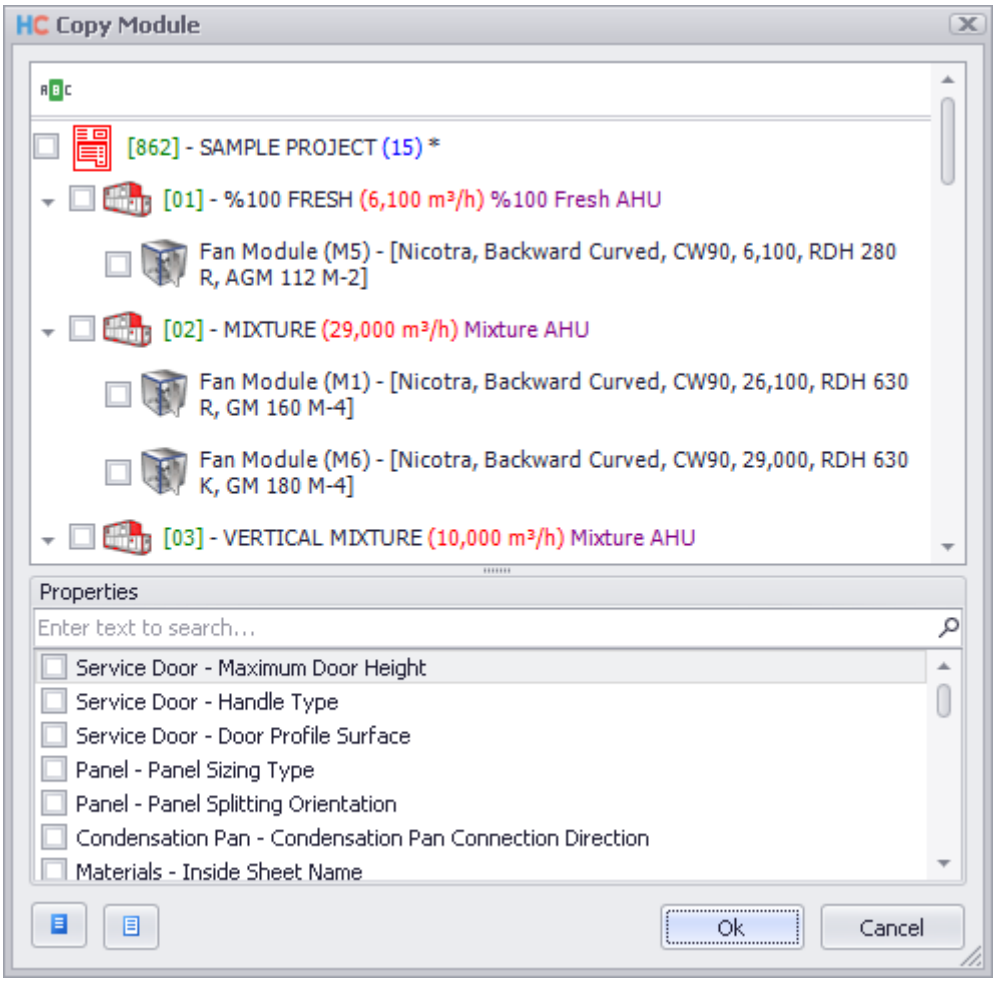
## MODULE SPECIAL PROPERTIES – SPECIAL




## MODULE SPECIAL PROPERTIES – NOTES

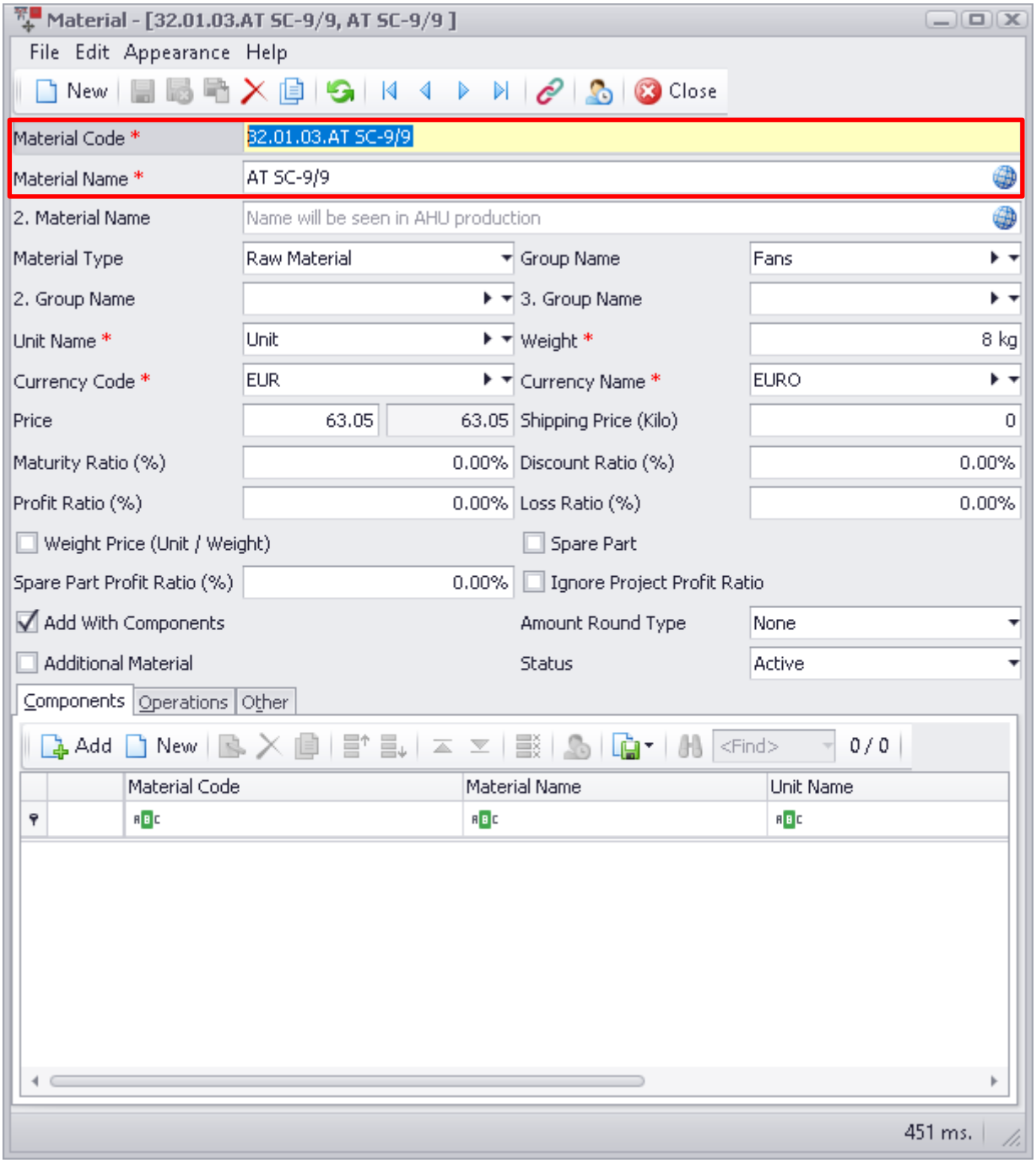


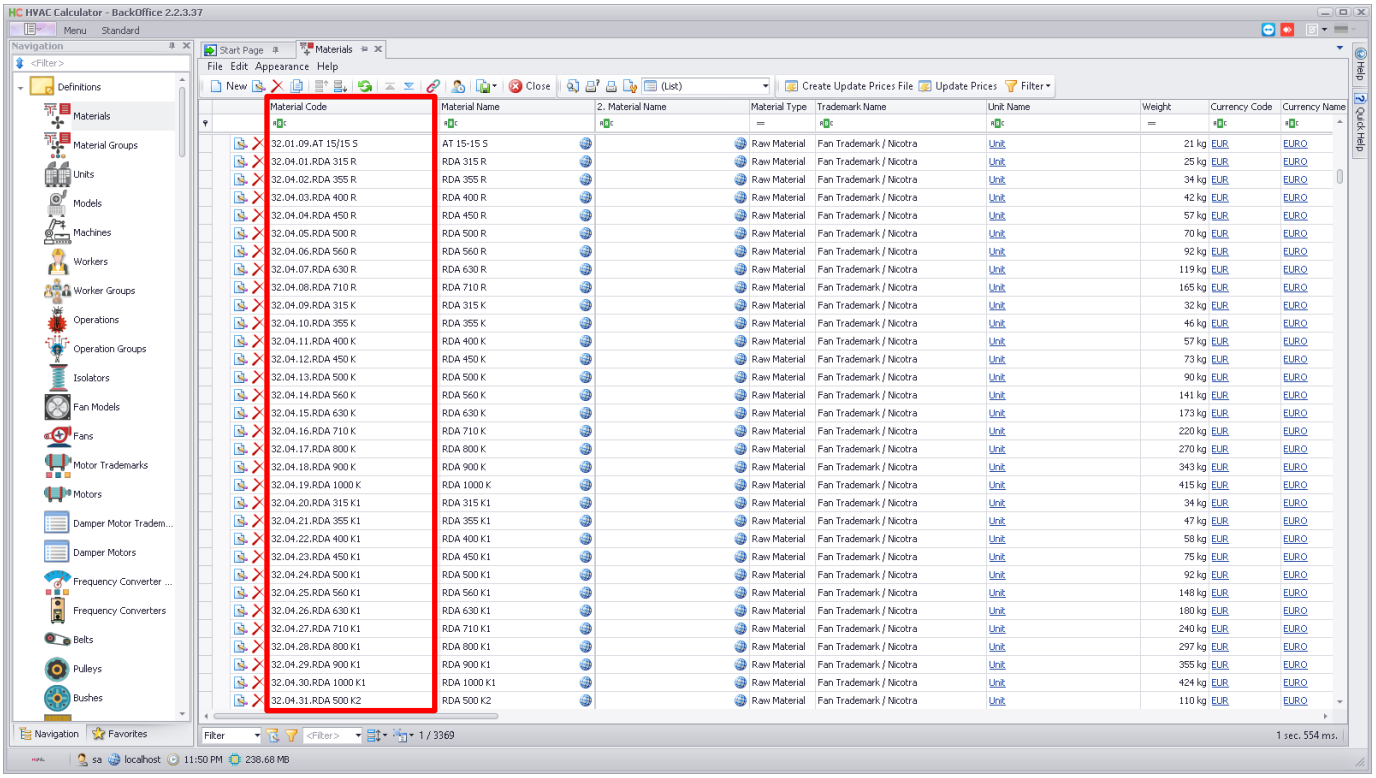
# COPY MODULE TO OTHER MODULES



# ACCOUNTING SOFTWARE INTEGRATION

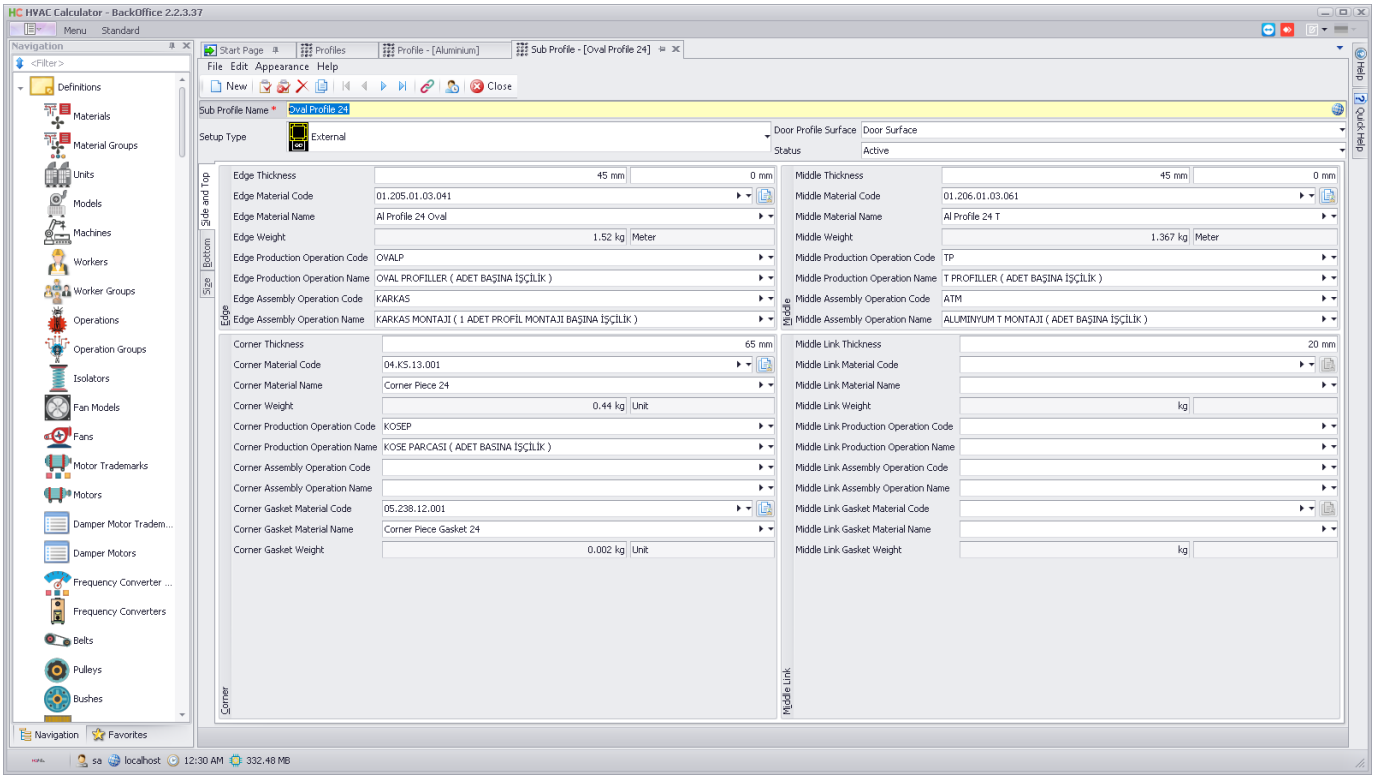
All AHU materials are defined in the “BackOffice / Materials” section of the software. All materials have unique material codes. Users can equalize the material codes and names with the accounting software material codes to transfer data beatween the HVAC Calculator software and the accounting software. Also the HVAC Calculator software prices can be updated batch by using the Excel file. By this way the material prices will be the same with the accounting software.




HC HVAC Calculator - BackOffice 2.2.3.37
Menu
Standard
Navigation
Start Page
Materials
File Edit Appearance Help
New
Close
(List)
Create Update Prices File
Update Prices
Filter
Definitions
Materials
Material Groups
Units
Models
Machines
Workers
Worker Groups
Operations
Operation Groups
Isolators
Fan Models
Fans
Motor Trademarks
Motors
Damper Motor Tradem...
Damper Motors
Frequency Converter ...
Frequency Converters
Belts
Pulleys
Bushes
Navigation
Favorites
Help
Quick Help
Material Code
Material Name
2. Material Name
Material Type
Trademark Name
Unit Name
Weight
Currency Code
Currency Name
32.01.09.AT 15/15 S
AT 15-15 S
32.04.01.RDA 315 R
RDA 315 R
32.04.02.RDA 355 R
RDA 355 R
32.04.03.RDA 400 R
RDA 400 R
32.04.04.RDA 450 R
RDA 450 R
32.04.05.RDA 500 R
RDA 500 R
32.04.06.RDA 560 R
RDA 560 R
32.04.07.RDA 630 R
RDA 630 R
32.04.08.RDA 710 R
RDA 710 R
32.04.09.RDA 315 K
RDA 315 K
32.04.10.RDA 355 K
RDA 355 K
32.04.11.RDA 400 K
RDA 400 K
32.04.12.RDA 450 K
RDA 450 K
32.04.13.RDA 500 K
RDA 500 K
32.04.14.RDA 560 K
RDA 560 K
32.04.15.RDA 630 K
RDA 630 K
32.04.16.RDA 710 K
RDA 710 K
32.04.17.RDA 800 K
RDA 800 K
32.04.18.RDA 900 K
RDA 900 K
32.04.19.RDA 1000 K
RDA 1000 K
32.04.20.RDA 315 K1
RDA 315 K1
32.04.21.RDA 355 K1
RDA 355 K1
32.04.22.RDA 400 K1
RDA 400 K1
32.04.23.RDA 450 K1
RDA 450 K1
32.04.24.RDA 500 K1
RDA 500 K1
32.04.25.RDA 560 K1
RDA 560 K1
32.04.26.RDA 630 K1
RDA 630 K1
32.04.27.RDA 710 K1
RDA 710 K1
32.04.28.RDA 800 K1
RDA 800 K1
32.04.29.RDA 900 K1
RDA 900 K1
32.04.30.RDA 1000 K1
RDA 1000 K1
32.04.31.RDA 500 K2
RDA 500 K2
Raw Material
Fan Trademark / Nicotra
Unit
EUR
EURO
Filter
1 / 3369
1 sec. 554 ms.
sa
localhost
11:50 PM
238.68 MB

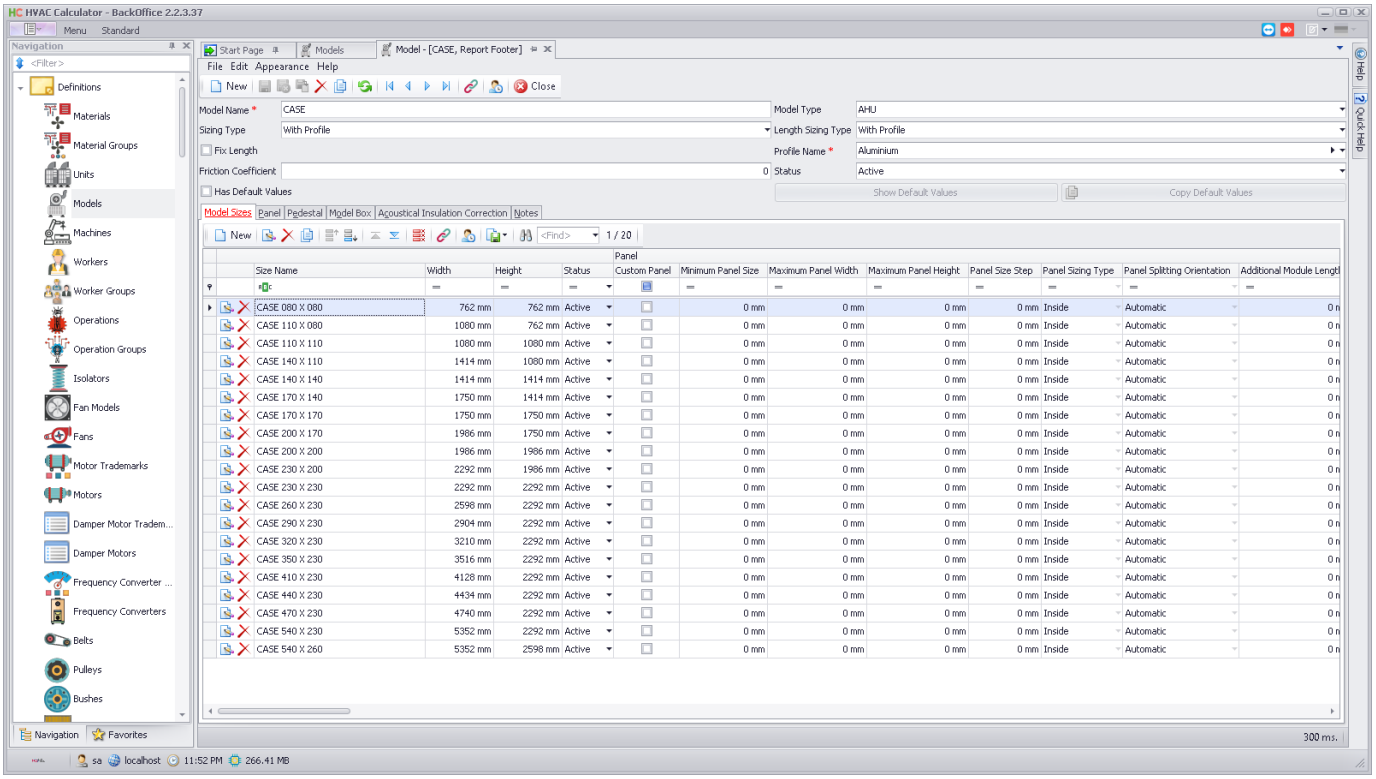
# PROFILE DEFINITION

Users can define their own certified profiles or third party profiles in the software easily. Countless profiles can be defined.



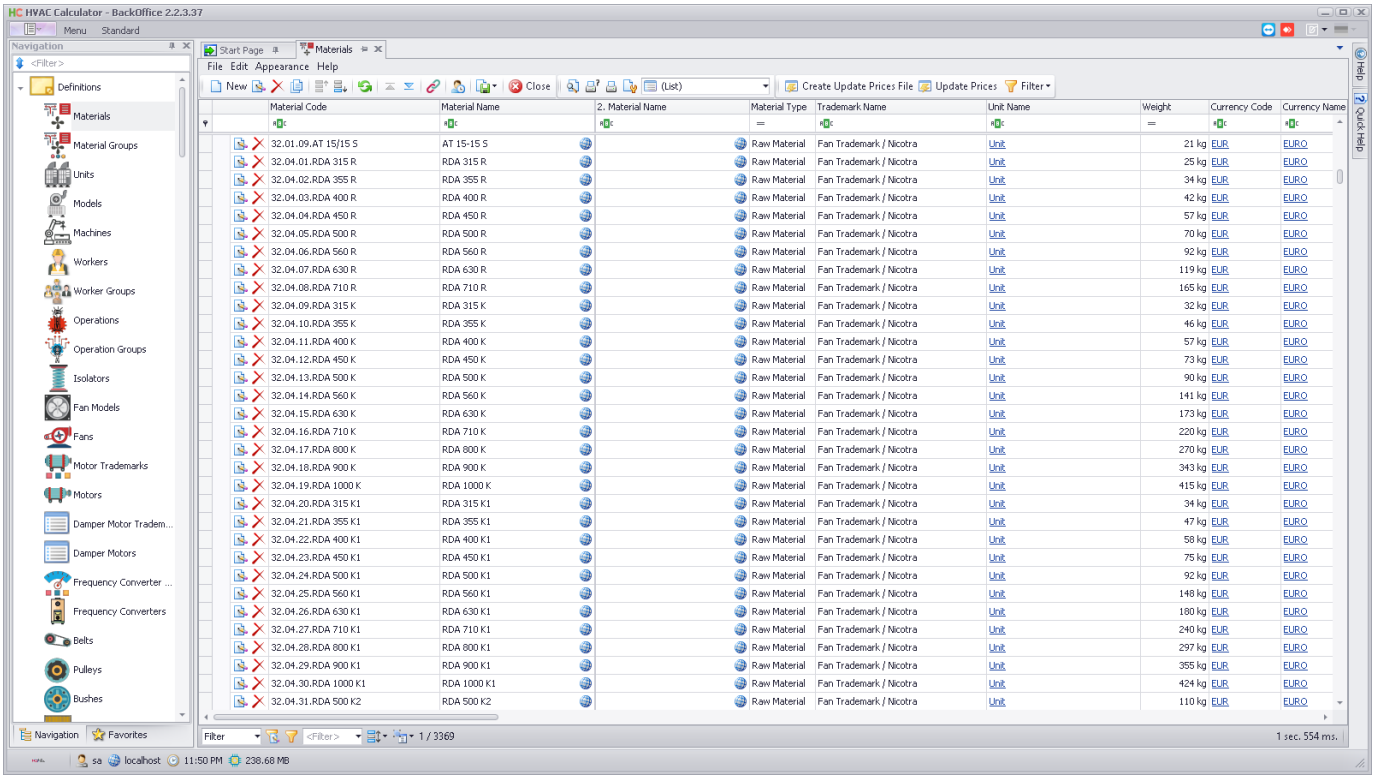
# MODEL DEFINITION

Users can define their own models and own model sizes in the software easily. Countless models can be defined.



# MATERIALS

It is also possible to define new filter, profile, model, accessory, sheet, insulation, belt, pulley, bush, drop eliminator, roof and steam humidifier.

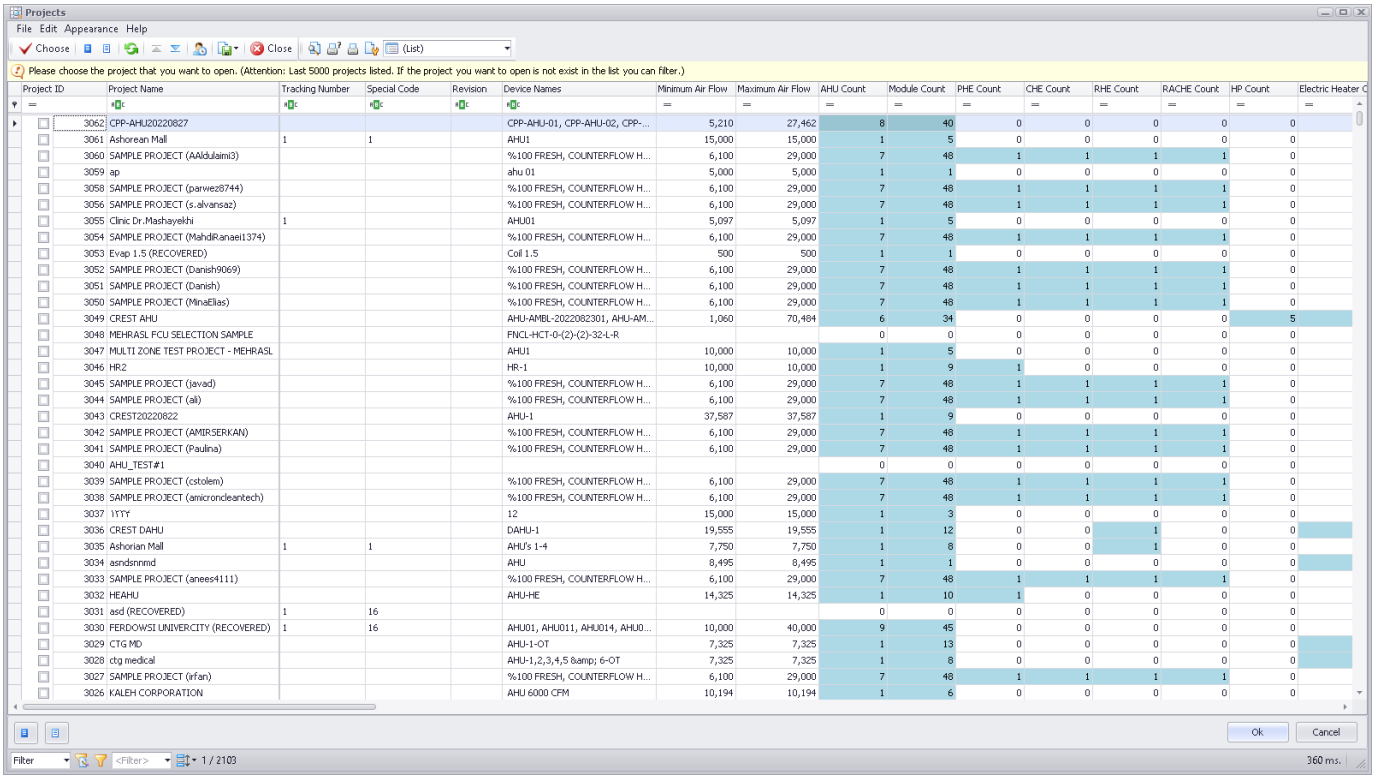



# INTERNET / ONLINE

You can select the AHU through Internet all over the world.

# COMMON DATABASE

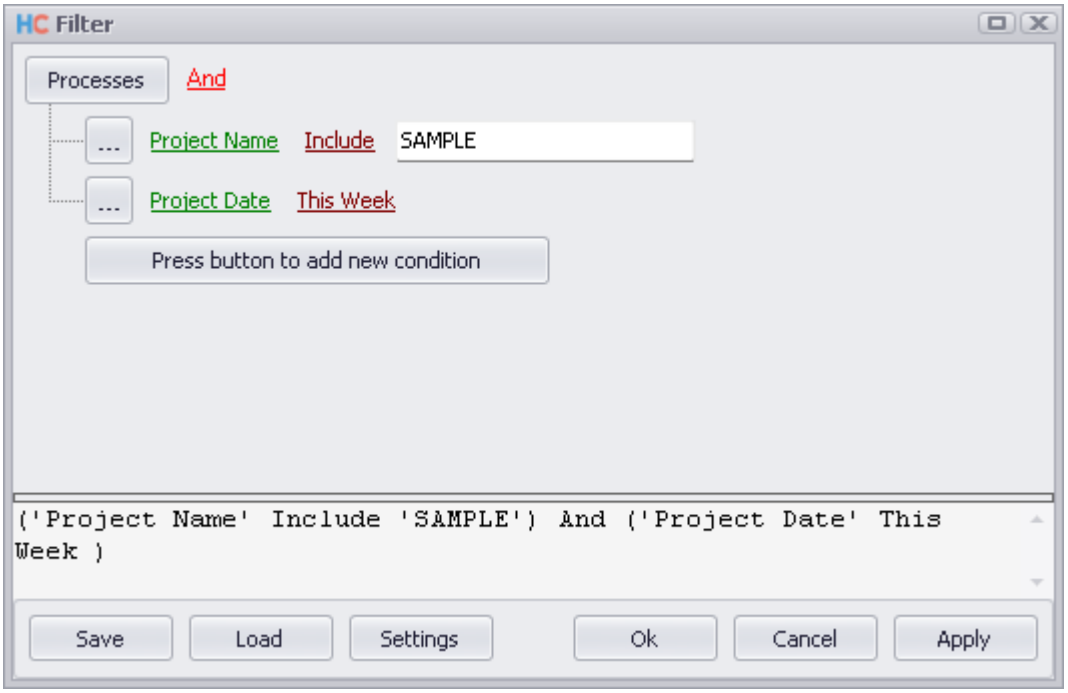
The projects prepared by all of the users are stored in a common database and the users can access the projects within the scope of their authorization.




| Project ID | Project Name | Tracking Number | Special Code | Revision | Device Names | Minimum Air Flow | Maximum Air Flow | AHU Count | Module Count | PHE Count | CHE Count | RHE Count | RACHE Count | HP Count | Electric Heater C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3062 | CPP-AHU20220827 | | | | CPP-AHU-01, CPP-AHU-02, CPP-... | 5,210 | 27,462 | 8 | 40 | 0 | 0 | 0 | 0 | 0 | |
| 3061 | Ashorean Mall | 1 | 1 | | AHU1 | 15,000 | 15,000 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | |
| 3060 | SAMPLE PROJECT (AAldulaimi3) | | | | %100 FRESH, COUNTERFLOW H... | 6,100 | 29,000 | 7 | 48 | 1 | 1 | 1 | 1 | 0 | |
| 3059 | ap | | | | ahu 01 | 5,000 | 5,000 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | |
| 3058 | SAMPLE PROJECT (parwez8744) | | | | %100 FRESH, COUNTERFLOW H... | 6,100 | 29,000 | 7 | 48 | 1 | 1 | 1 | 1 | 0 | |
| 3056 | SAMPLE PROJECT (s.alvansaz) | | | | %100 FRESH, COUNTERFLOW H... | 6,100 | 29,000 | 7 | 48 | 1 | 1 | 1 | 1 | 0 | |
| 3055 | Clinic Dr.Mashayekhi | 1 | | | AHU01 | 5,097 | 5,097 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | |
| 3054 | SAMPLE PROJECT (MahdiRanaei1374) | | | | %100 FRESH, COUNTERFLOW H... | 6,100 | 29,000 | 7 | 48 | 1 | 1 | 1 | 1 | 0 | |
| 3053 | Evap 1.5 (RECOVERED) | | | | Coil 1.5 | 500 | 500 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | |
| 3052 | SAMPLE PROJECT (Danish9069) | | | | %100 FRESH, COUNTERFLOW H... | 6,100 | 29,000 | 7 | 48 | 1 | 1 | 1 | 1 | 0 | |
| 3051 | SAMPLE PROJECT (Danish) | | | | %100 FRESH, COUNTERFLOW H... | 6,100 | 29,000 | 7 | 48 | 1 | 1 | 1 | 1 | 0 | |
| 3050 | SAMPLE PROJECT (MinaElias) | | | | %100 FRESH, COUNTERFLOW H... | 6,100 | 29,000 | 7 | 48 | 1 | 1 | 1 | 1 | 0 | |
| 3049 | CREST AHU | | | | AHU-AMBL-2022082301, AHU-AM... | 1,060 | 70,484 | 6 | 34 | 0 | 0 | 0 | 0 | 5 | |
| 3048 | MEHRASL FCU SELECTION SAMPLE | | | | FNCL-HCT-0-(2)-(2)-32-L-R | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 3047 | MULTI ZONE TEST PROJECT - MEHRASL | | | | AHU1 | 10,000 | 10,000 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | |
| 3046 | HR2 | | | | HR-1 | 10,000 | 10,000 | 1 | 9 | 1 | 0 | 0 | 0 | 0 | |
| 3045 | SAMPLE PROJECT (javad) | | | | %100 FRESH, COUNTERFLOW H... | 6,100 | 29,000 | 7 | 48 | 1 | 1 | 1 | 1 | 0 | |
| 3044 | SAMPLE PROJECT (ali) | | | | %100 FRESH, COUNTERFLOW H... | 6,100 | 29,000 | 7 | 48 | 1 | 1 | 1 | 1 | 0 | |
| 3043 | CREST20220822 | | | | AHU-1 | 37,587 | 37,587 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | |
| 3042 | SAMPLE PROJECT (AMIRSERKAN) | | | | %100 FRESH, COUNTERFLOW H... | 6,100 | 29,000 | 7 | 48 | 1 | 1 | 1 | 1 | 0 | |
| 3041 | SAMPLE PROJECT (Paulina) | | | | %100 FRESH, COUNTERFLOW H... | 6,100 | 29,000 | 7 | 48 | 1 | 1 | 1 | 1 | 0 | |
| 3040 | AHU_TEST#1 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 3039 | SAMPLE PROJECT (cstolem) | | | | %100 FRESH, COUNTERFLOW H... | 6,100 | 29,000 | 7 | 48 | 1 | 1 | 1 | 1 | 0 | |
| 3038 | SAMPLE PROJECT (amicroncleantech) | | | | %100 FRESH, COUNTERFLOW H... | 6,100 | 29,000 | 7 | 48 | 1 | 1 | 1 | 1 | 0 | |
| 3037 | YYYY | | | | 12 | 15,000 | 15,000 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | |
| 3036 | CREST DAHU | | | | DAHU-1 | 19,555 | 19,555 | 1 | 12 | 0 | 0 | 1 | 0 | 0 | |
| 3035 | Ashorian Mall | 1 | 1 | | AHU's 1-4 | 7,750 | 7,750 | 1 | 8 | 0 | 0 | 1 | 0 | 0 | |
| 3034 | asndsnnmd | | | | AHU | 8,495 | 8,495 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | |
| 3033 | SAMPLE PROJECT (anees4111) | | | | %100 FRESH, COUNTERFLOW H... | 6,100 | 29,000 | 7 | 48 | 1 | 1 | 1 | 1 | 0 | |
| 3032 | HEAHU | | | | AHU-HE | 14,325 | 14,325 | 1 | 10 | 1 | 0 | 0 | 0 | 0 | |
| 3031 | asd (RECOVERED) | 1 | 16 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 3030 | FERDOWSI UNIVERCITY (RECOVERED) | 1 | 16 | | AHU01, AHU011, AHU014, AHU0... | 10,000 | 40,000 | 9 | 45 | 0 | 0 | 0 | 0 | 0 | |
| 3029 | CTG MD | | | | AHU-1-OT | 7,325 | 7,325 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | |
| 3028 | ctg medical | | | | AHU-1,2,3,4,5 & 6-OT | 7,325 | 7,325 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | |
| 3027 | SAMPLE PROJECT (irfan) | | | | %100 FRESH, COUNTERFLOW H... | 6,100 | 29,000 | 7 | 48 | 1 | 1 | 1 | 1 | 0 | |
| 3026 | KALEH CORPORATION | | | | AHU 6000 CFM | 10,194 | 10,194 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | |

## DETAILED PROJECT SEARCH

Finding previous projects will be hard when stored projects increased much. To avoid this situation users can search any value in the project. For example; users can list projects which project name includes “ROCK” or AHU airflow is greater than or equal to 50.000 m3/h or “Klingenburg” branded rotary heat recovery module including AHUs.

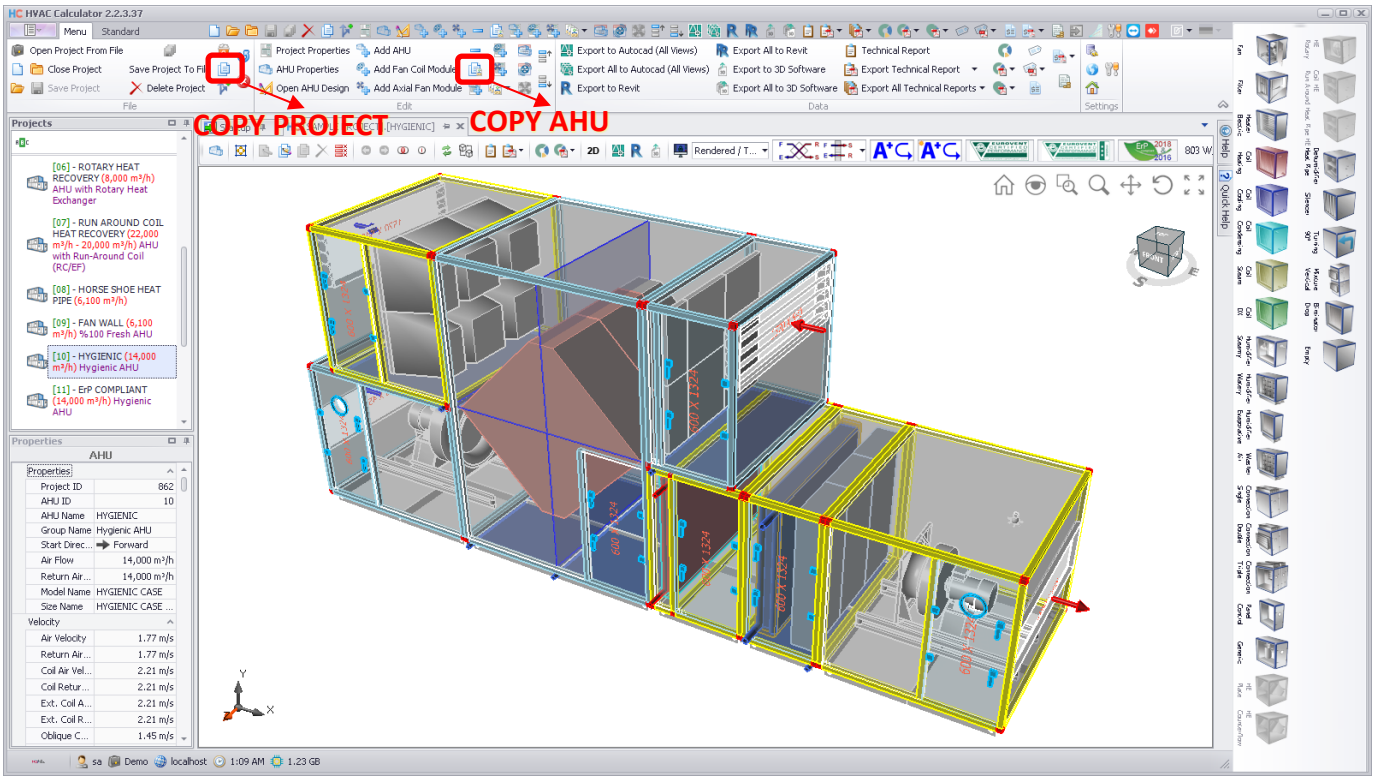



## USER FRIENDLY

Its user-friendly interface will easily adapt you into using the program. As all of the screens operate with the same standard logic, after learning how a screen is used, it will be much easier to understand and learn the others.

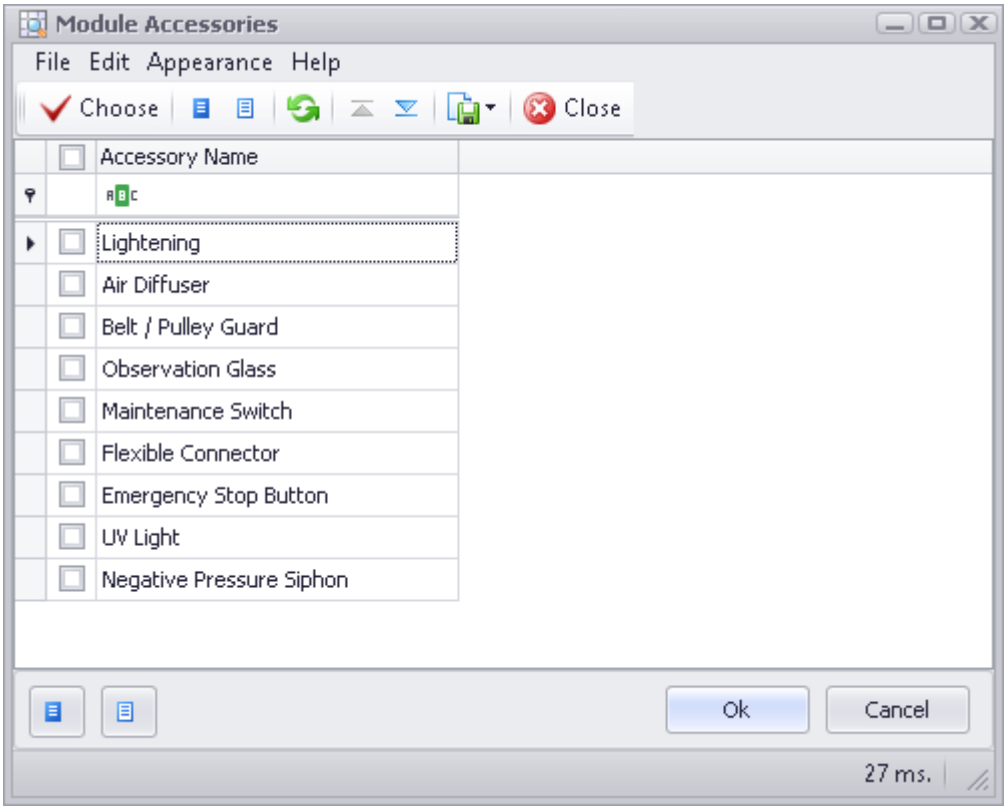
# PROJECT / AHU COPYING

You can copy and edit the previously prepared project / AHU with a single button and save as a new project / AHU.



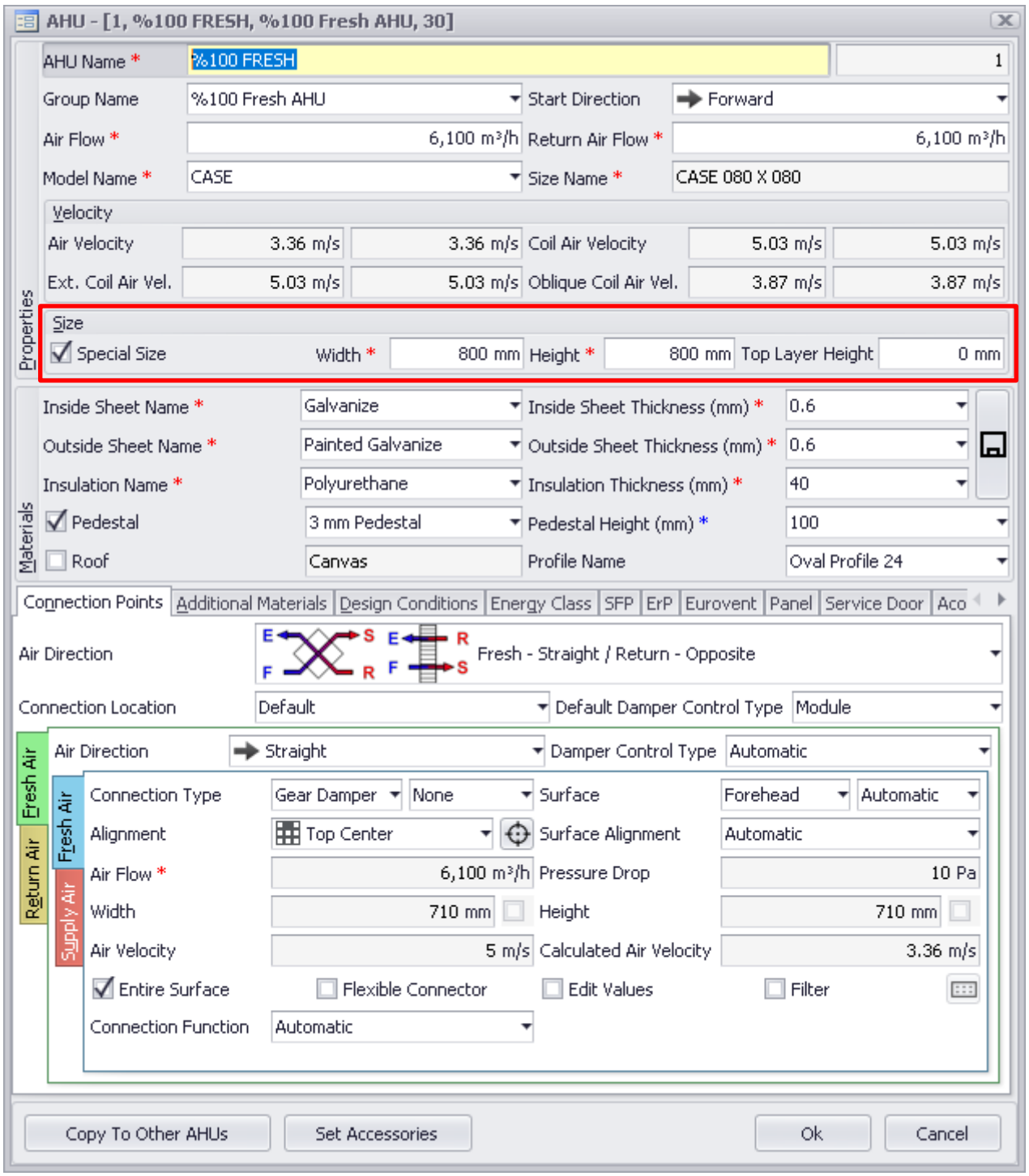

# ACCESSORIES

You can define new module-based accessory types, select them in your preferred AHUs and add automatically to the cost of AHU.



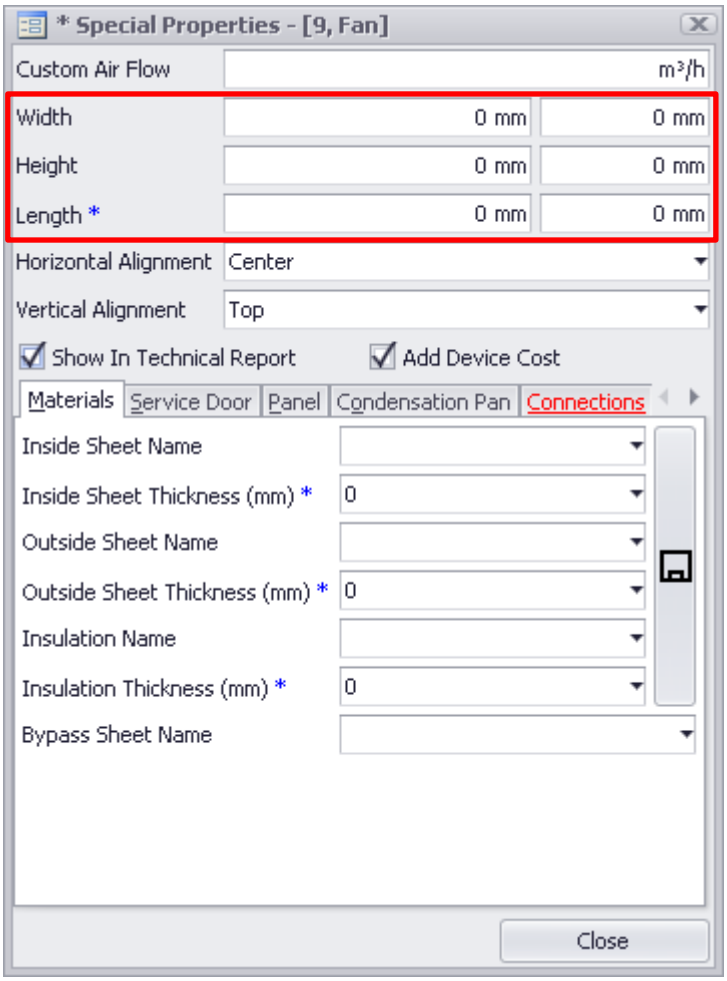
# CUSTOM SIZE

You can specify a new AHU dimension specific for that AHU except the standard AHU modules during selection. It is also possible to specify module-based special dimension within the AHU.



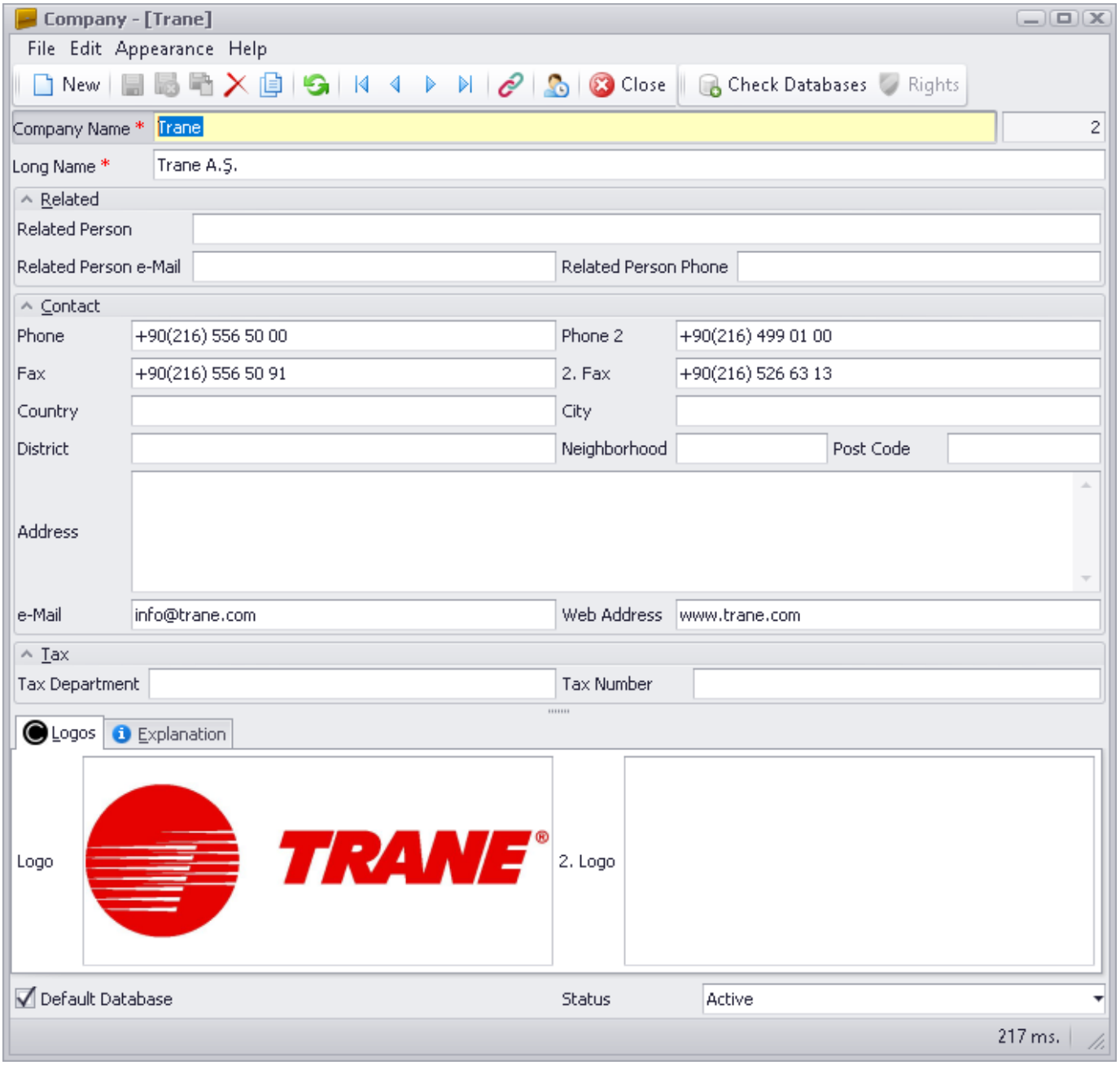
# CUSTOM MODULE SIZE

It is also possible to specify module-based special dimension within the AHU.



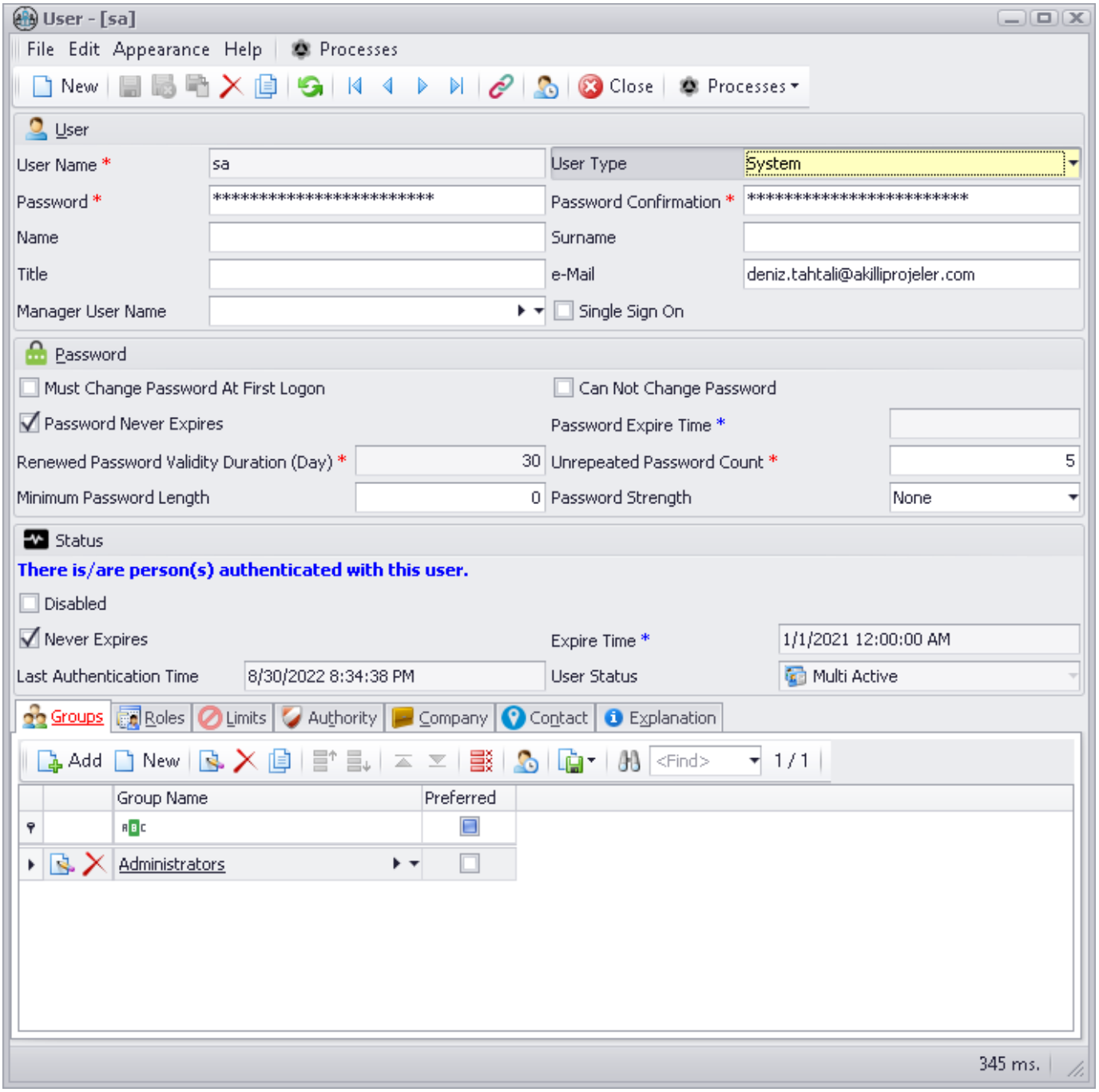
# COMPANIES

You can authorize a person/company outside your own company who prepares an external project to access the projects prepared by that person or company and you can also access to those projects. You might not permit that person or company to view your production costs, specify a multiplier for the company-based prices they will see and give prices for each organization with special profit margin.



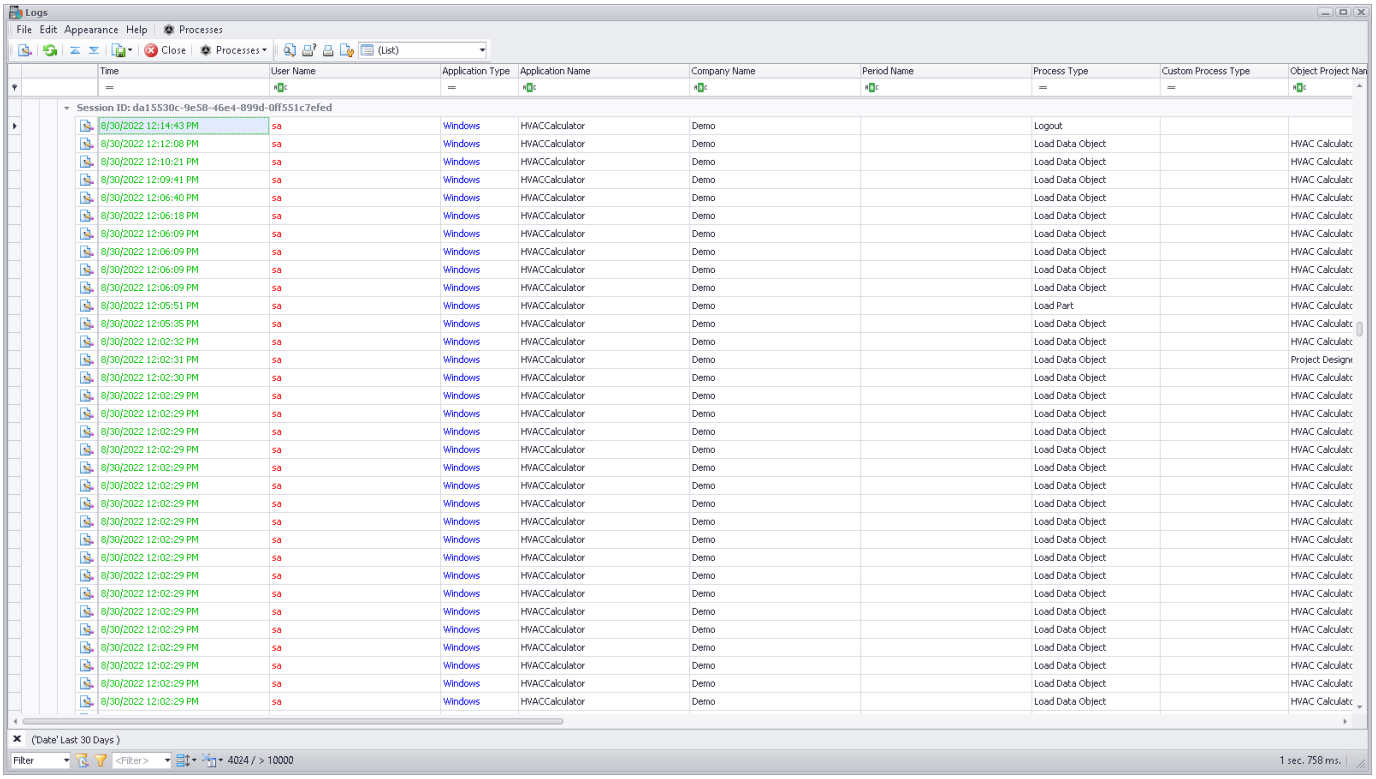
# SECURITY / AUTHORIZATION

Every user can use software with their own user name and password, users can not use software without user name and password. You can authorize the application in a very detailed way. For instance; at the BackOffice part of application, we can authorize a single user for updating the prices of materials by permitting that user's access to only section of materials, and not permitting adding new records and deleting those. We can turn off that user's authorization to access all other sections, thereby preventing user based faults.



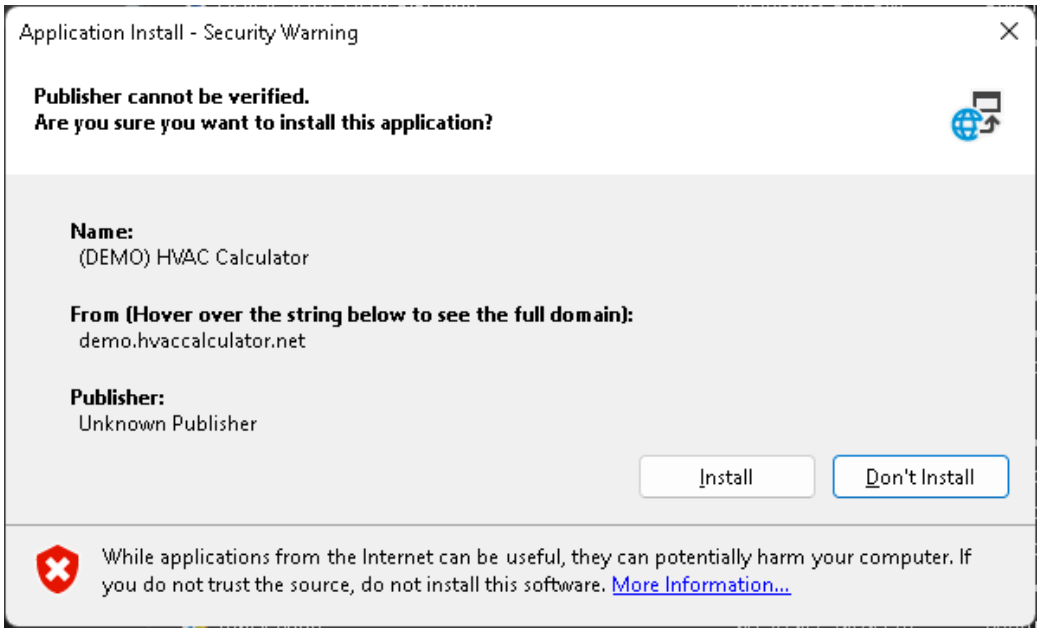
## LOGS

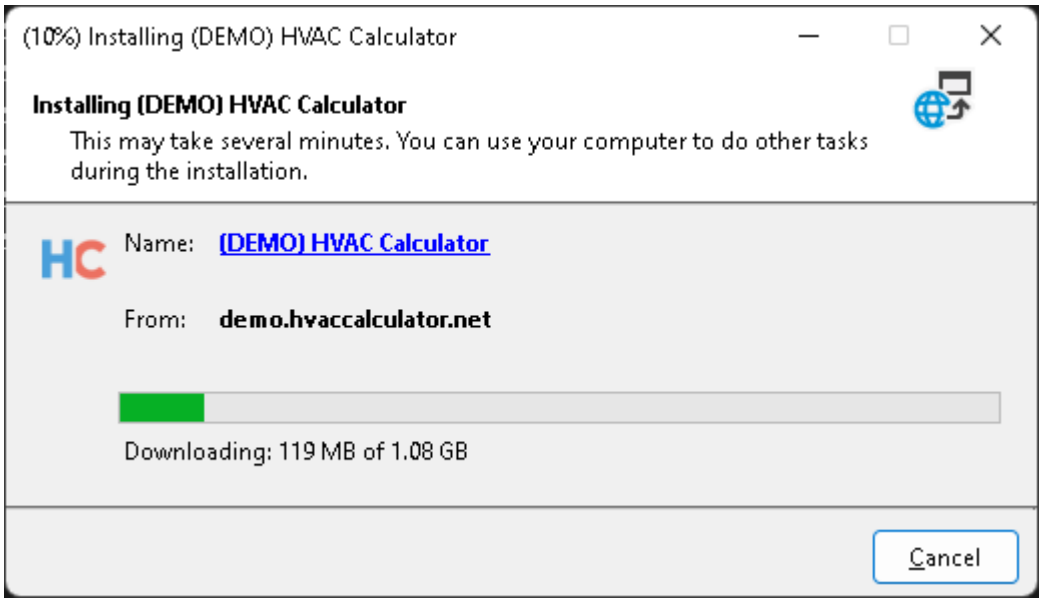
All the transactions done by users are recorded in the server. All the things about the date and time of user's log in, where exactly in the program is used, which date is added, edited or deleted, when the program was logged off, and through which IP Address, MAC Address, computer the transactions was made and by which user are recorded. Thus, any fault that might occur on the records and the user that caused it can easily be specified. Also, it is possible to bring back the changed or deleted records. By doing this, the changes in the data which are made by fault or malicious intention can be taken back.



## INSTALLATION

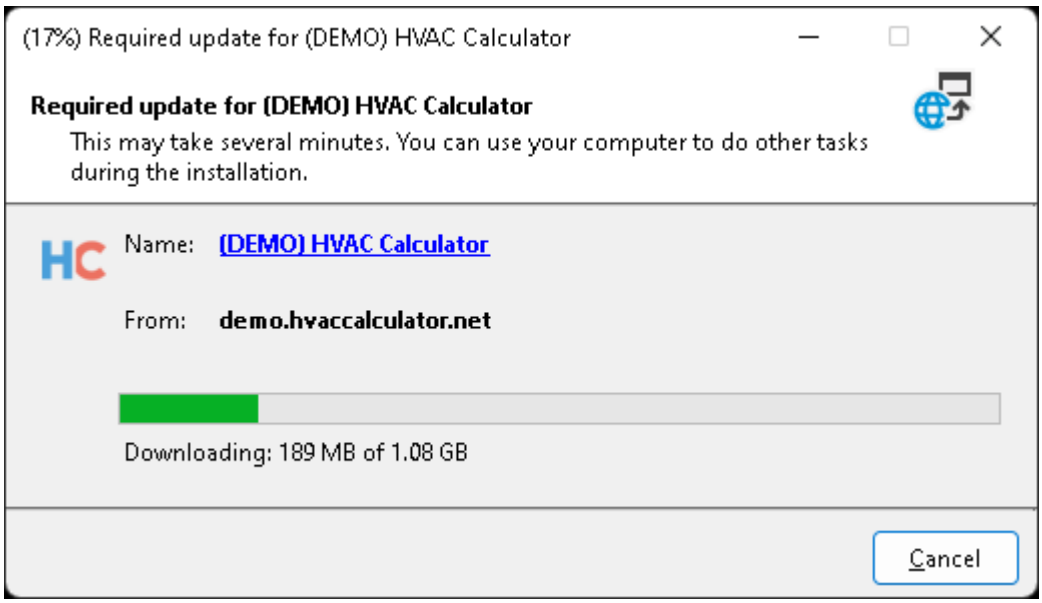
When the program is initially installed into the computer, you can start using it as logging into a web site. In order to make the installation, you will login to the web site where the application will be operated, click on a link from there and start using the application. If there are any files or programs needed for the operation of program; the program will download from Internet and there is no need for you to make any settings etc.



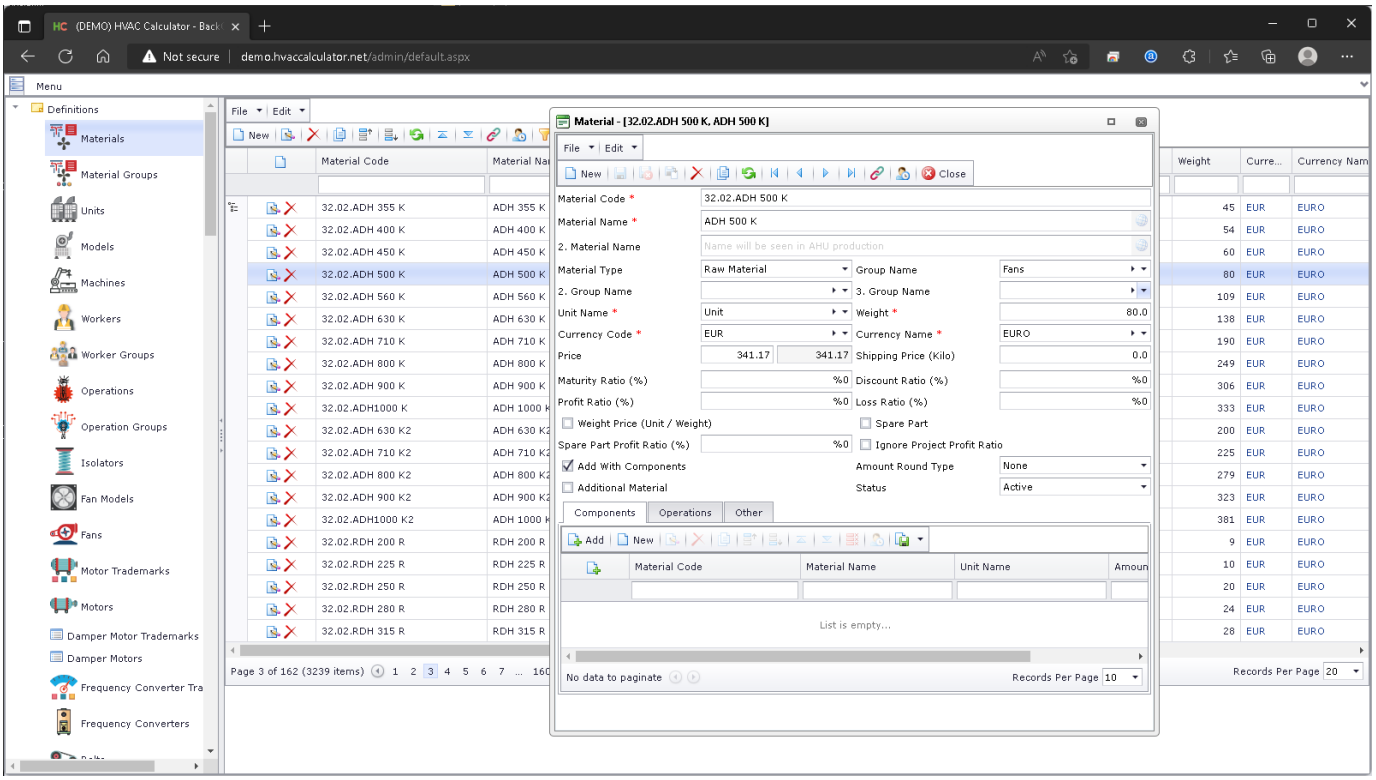
## UPDATE

The application checks at any time of operation for a new edition, downloads automatically if there is any, and user does not need to do anything.




## WEB

Our BackOffice program is operated as a Windows application from the Web and it can also be operated on “Internet Explorer”, “Firefox”, “Chrome”, “Safari”, “Opera” browsers without any installation.



# MODULES / CELLS

| | |
|---|---|
| | Fan (Nicotra, Nicotra-Gebhardt, Ziehl-Abegg, Yilida, Comefri, Punker, Soler&Palau, Kruger, EbmPapst, Sanmu) |
| | Filter (Panel, Bag, Hepa, Carbon Cartridge, Compact) |
| | Electric Heater |
| | Coil (Heating, Cooling, Condensing, Steam, DX) (Friterm, Coils32) |
| | Steam Humidifier |
| | Watery Humidifier |
| | Evaporative Humidifier |
| | Single Connection |
| | Double Connection Mixture |
| | Triple Connection Mixture |
| | Vertical Mixture |
| | Crossflow Heat Exchanger (Recuperator, Heatex, Klingenburg, Hoval, Karyer, Barbor) |
| | Counterflow Heat Exchanger (Klingenburg, Eri, Hoval) |
| | Rotary Heat Exchanger (Recuperator, Heatex, Klingenburg, Enventus, DRI, Hoval, Karyer) |
| | Double Coil / Run Around Coil Heat Exchanger (Friterm, Coils32) |
| | Silencer |
| | 90° Turning |
| | Drop Eliminator |
| | Empty |

# SUPPORTED BRANDS

NICOTRA Gebhardt fan|tastic solutions | ZIEHL-ABEGG | comefri | Yilida
punker | S&P | KRUGER | ebmpapst

## SUPPORTED CERTIFICATES

Supported certificates are listed below and users are able to define new certificates in the BackOffice.

# HARDWARE AND SOFTWARE REQUIREMENTS

**Supported operating systems;**

- Microsoft Windows 7/8/10
- Microsoft Windows Server 2008/2012/2016/2109

**Hardware Requirements;** (First value is minimum, second value is recommended)

- 1.2-2 GHZ
- 2-4 Logical CPU
- 4-8 GB RAM
- 5-10 GB HD Space

**Server Hardware Requirements;** (First value is minimum, second value is recommended)

- 2-3 GHZ
- 4-8 Logical CPU
- 8-16 GB RAM
- 100-150 GB HD Space (SSD HD if possible)

**Client Software Requirements;**

- Microsoft Windows 7/8/10 Operating System

**Server Software Requirements;**

- Microsoft Windows Server 2008/2012/2016/2019 Operating System
- Microsoft Windows SQL Server 2008/2012/2014/2016/2019 Database Server (Express Edition can be used)

# REFERENCES

| | | | |
|---|---|---|---|
| SÖNMEZ | CAN KLİMATEKNİK | TRANE | iMEKSAN |
| YORK | Johnson Controls | AIR TRADE CENTRE Durable HVAC Solutions | HEINEN & HOPMAN |
| teknoklima | BOREAS | Fita Teknik | VENTAS |
| DOĞU İKLİMLENDİRME \| HVAC SYSTEMS | AIR PLUS | ACS Air Conditioning Systems | TEKNOGEN SIMPLY THE BEST SOLUTIONS \| HVAC SYSTEMS |
| impelair efficiently fresh | hy Klima | BSK HAVALANDIRMA A.Ş. | TermoFan |
| LIROK | MG ESPECIALISTAS EN CLIMATIZACIÓN Y VENTILACIÓN INDUSTRIAL | KLIMA HVAC Solutions | STJÖRNUBLIKK |
| GEA group | NEKSAS | metadec www.metadec-ahu.com | BENDIG TM air handling unit |
| UNI-Aire Air Conditioning Experts | CHE Cooling & Heating Equipment AHU's, FCU's, ERV, HRC, Chillers, Fans, Fabric Duct | LNCE | MAC |
| AR PASSION TO SAVE ENERGY | AirCoil Experts In Heat Transfer | ACMV | CERTUS |
| CLBK | DCM DELTA CONSTRUCTION MANUFACTURING | ECO COOLER | HNB GROUP |
| MANELLI COOLING , HEATING , AIR CONDITIONING | پویش تهویه POOYESH TAHVIEH cooling solutions | ventox | ANALYST |

| | | | |
|---|---|---|---|
| ATMOSFERVENT | FORM 55 | H.Y.T HAVALANDIRMA YALITIM TESİSAT 10.yıl | KLİSEF |
| VENSAART İKLİMLENDİRME \| HVAC SYSTEMS | AERA air innovation | KHS | VIACLIMATE |
| tezel | AERO SYSTEM | HALCON Ventilation Solutions | ACTIVENT |
| AKTİF MOTOR Havalandırma Sistemleri | smart AIR | MASVENT Master Ventilation | GMC AIR |
| Akal | GÜNTER | Fanexfan | BVN VENTILATION SYSTEMS & ELECTRICAL MOTORS |
| SAYFAN | AIRONN | DOĞUŞ TEKNİK | |