



BIM

AIRTÈCNICS REVIT FAMILIES

OPTIMA, RECESSED OPTIMA, OPTIMA WIRELESS,
RECESSED OPTIMA WIRELESS, MINIBEL

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- 1. DESCRIPTION OF THE DOCUMENT**
- 2. TECHNICAL DATA OF THE FAMILIES**

1. DESCRIPTION OF THE DOCUMENT

This document has been written as a user manual of the families of AIRTECNICS, with a wide vision on how the BIM families available by the manufacturer shall be used and focusing on one of the products (OPTIMA) with the aim to see an example.

To follow correctly this document, datasheets of every product of AIRTECNICS must be at disposal (available on the web¹) to know about the product, the available sizes, the accessories and its compatibility, ...

2. TECHNICAL DATA OF THE FAMILIES OF AIRTECNICS

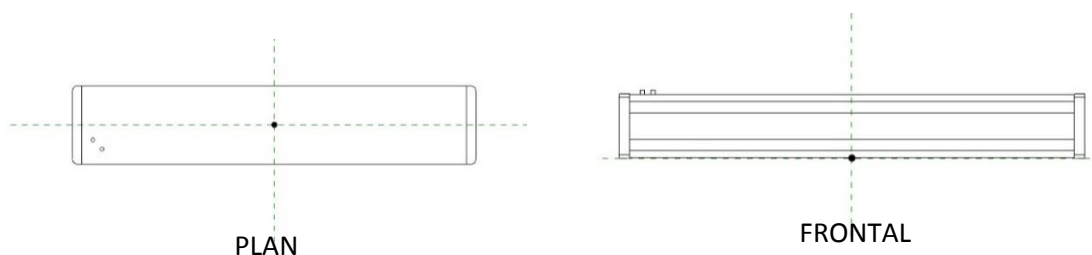
These are some data that the user shall know before using these families:

1. **Software used:** Software Revit 2016 of Autodesk
2. **Language families:** English
3. **Template of family:** Metric Generic Model.rft
4. **Nomenclature to be used for each family:**

Brand_type of product_typ of heating

(WINDBOX Air Curtain): *AIRTECNICS_AIR CURTAIN_OPTIMA_WATER HEATED (P)*

5. **Insertion point of the family:** By default, a family *metrical generic model* has two reference planes created. The plan view plane, and a base plane called reference level. Regarding the location of the family in plan it will be in the centre of the cross of these two planes, what will define the insertion point of the family in the project. In a front view, the lower part of the family will be positioned above the base level. See the example:



6. **Materials:** There is a library of AIRTECNICS with the materials pre-configured, so the user can use it when a concrete material is required. If the material were not available in the library, a new one can be created, just duplicate an existing one. There is a texture that shall be copied in a concrete address so the instructions of the file ReadMe.txt shall be followed.

¹ <https://www.airtecnics.com/products>

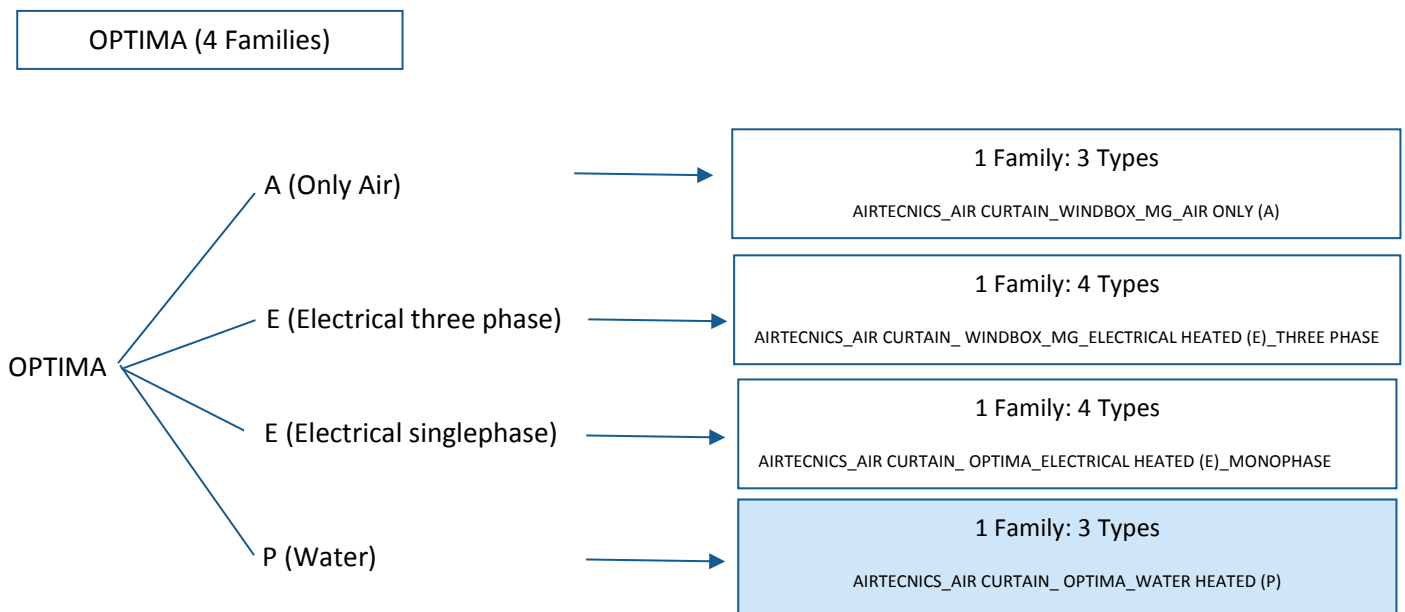
3. FAMILY OPTIMA (P)

- 3.1 Diagram of the product
- 3.2 Description of the product
- 3.3 Load of the family in the project
- 3.4 Selection and configuration of the product in the project
- 3.5 Placement of the families in the project

3. FAMILY OPTIMA (P)

3.1 Diagram of the product

The product OPTIMA is used as an example of family for the development of this document, specifically the family *AIRTECNICS_AIR CURTAIN_OPTIMA_WATER HEATED (P)*. This product is composed by four families with their respective types. The families are defined according to the heating (only air, singlephase electrical heated, three phase electrical heated and water heated) and the types are defined depending on the length of the curtain. The families and types of the product are defined hereafter:



This family has 3 Types:

- ▣ AIRTECNICS_AIR CURTAIN_OPTIMA_WATER HEATED (P)
 - └── OPT 1000 P
 - └── OPT 1500 P
 - └── OPT 2000 P

It is categorised in Revit as a *Mechanical Equipment*.

Regarding instances, the following configurations are available selecting an option of each instance parameters subgroup. It will depend on each air curtain:

OPTIMA

A (Only Air)	E (Electrical Heated) Monophase	E (Electrical Heated) Three Phase	P (Water Heated)
<ul style="list-style-type: none"> · Position <ul style="list-style-type: none"> - Horizontal · Others <ul style="list-style-type: none"> - Supports - Materials and Finishes 	<ul style="list-style-type: none"> · Posición <ul style="list-style-type: none"> - Horizontal · Heating <ul style="list-style-type: none"> - E Standard - E Limited 1/3 - E Limited 2/3 · Others <ul style="list-style-type: none"> - Supports - Materials and Finishes 	<ul style="list-style-type: none"> · Posición <ul style="list-style-type: none"> - Horizontal · Heating <ul style="list-style-type: none"> - E Standard - E Limited 1/3 - E Limited 2/3 · Others <ul style="list-style-type: none"> - Supports - Materials and Finishes 	<ul style="list-style-type: none"> · Position <ul style="list-style-type: none"> - Horizontal · Heating <ul style="list-style-type: none"> - P86 - 80/60°C - 2 ROWS · Water Pipes Position <ul style="list-style-type: none"> - Water Pipes_P2 · Others <ul style="list-style-type: none"> - Supports - Materials and Finishes

3.2 Product description

The product OPTIMA of AIRTÈCNICS is a compact air curtain of elegant and friendly design with rounded shape and edges. Its external casing is customizable in any RAL color to adapt to the internal aesthetics of any premises. The models “P” include a hot water coil. The models “E” include an electrical heating element with two stages and regulation. The models “A” do not have heating, only air.

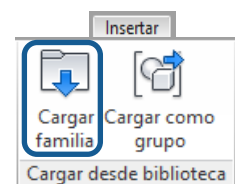
This product may have several finishing. The most requested materials for the housing of the curtain are included in the families. If the user cannot find the requested material, it can be created in the materials library of AIRTÈCNICS and assign it to the respective parameter. It can be seen in following sections of this manual.

3.3 Load of the family in the project

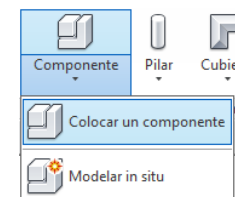
The process between the acquisition of the RFA family and the positioning and configuration inside a Revit project are shown in this section:

1. The families of AIRTÈCNICS are available in the web of the manufacturer.
2. Open a Revit Project and select an appropriate view for the insertion of the family.

3. Select the tab “Insert” and click the “Load family” icon. Select the family that has been previously downloaded.



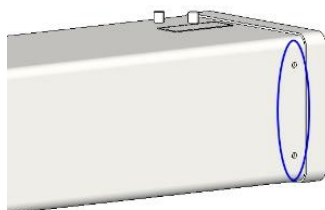
4. Once inserted, the family can be incorporated to the project. Select the tab “Architecture”, select “Component” and click “Place a component”.



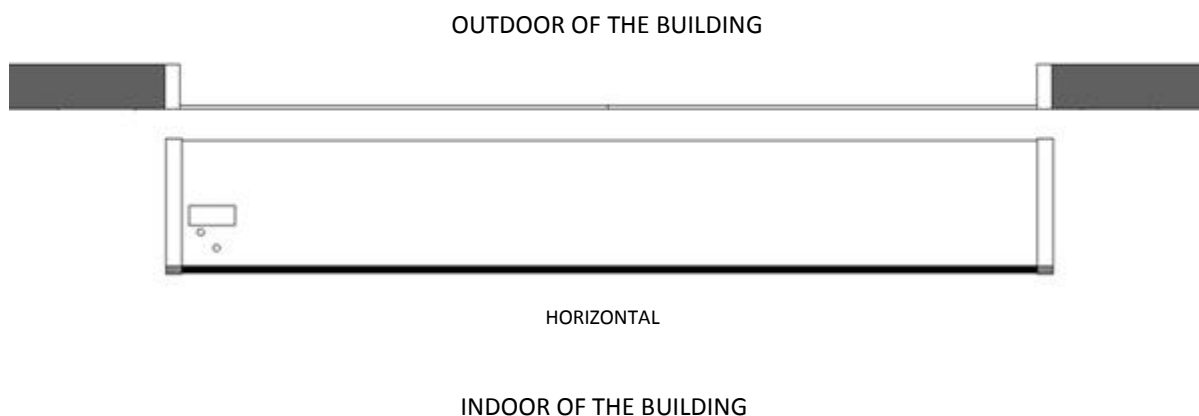
3.4 Placement of the families in the project

The families are created with no face or host, so they can be freely placed in the project. In the case of curtains OPTIMA, there are seven types of installation available:

1. **Horizontal** (by default). Select a Level before placing the family, and once placed select an *Offset* from the palette. If it were zero, it will be placed over the selected level. In case of the user would like to place also the support, only a length value regarding the parameter *Support Length* must be given. This support length starts from the housing of the curtain. OPTIMA air curtain has a second support system. This one is made by omega wall supports. In order to activate this function, just deselect the option *Supports (Horizontal)*, then the fixation nutserts will appear behind the air curtain.



Dimensions	
Supports Length	500.00
Mainfolds	2x1/2" F
D_Pipping_Connector	15.0 mm
Identity Data	
Product Description	Self-supporting casing constru...
Product Reference	OPT 2000 P
Product Heating	P
Image	
Comments	
Mark	6
Phasing	
Phase Created	Nueva construcción
Phase Demolished	None
General	
· HEATING ·	- / Select Heating / -
· POSITION ·	- / Select Curtain Position / -
Horizontal	
· PIPES POSITION ·	- / Select Pipes Position / -
Water Pipes_P2 (Std)	<input checked="" type="checkbox"/>
· OTHERS ·	- / Select Supports - Inst.Maint. ...
Supports (Horizontal)	<input checked="" type="checkbox"/>
Aspiration/Maintenance Space	<input checked="" type="checkbox"/>
Data	
Noise Level (dB(A))	54.000000
Weight	37.500 kg



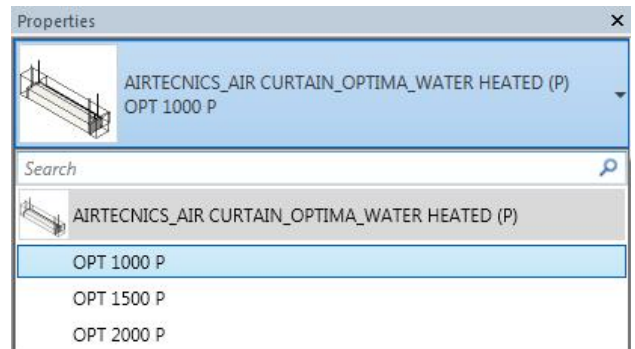
In addition, the needed space for the inlet air and the maintenance of the curtain can be selectable to be shown, with the aim to be placed correctly and not collide with any other object. The parameter *Aspiration/Maintenance Space* can be activated or deactivated for each air curtain.

· OTHERS ·	- / Select Supports - Inst.Mai...
Aspiration/Maintenance Space	<input checked="" type="checkbox"/>

3.5 Selection and configuration of the product in the project

Once the family has been positioned in the project, the type, materials, heating type and the pipe position can be configurable. Select the family and the following box will be displayed in Properties.

In this picture, all the selectable types are shown, which depends on the length (L) of the curtain and on the fan power.



Properties	
AIRTECNICS_AIR CURTAIN_OPTIMA_WATER HEATED (P) OPT 2000 P	
Mechanical Equipment (1) Edit Typ	
Constraints	
Level	Planta baja
Host	Level : Planta baja
Offset	0.00
Materials and Finishes	
Material Curtain	AIRTECNICS_White RAL 9016
Electrical - Loads	
Current Fans	0.82 A
Power Fans	160.00 W
Apparent Load	188.24 VA
Power Fans Factor	0.850000
Control	CW-2EV-IR
Panel	
Circuit Number	
Mechanical	
System Classification	Power,Hydronic Supply,Hydronic ...
System Name	
Mechanical - Flow	
Airflow	763.89 L/s
Heating Capacity	16700.00 W
Water Drop Pressure	6550.00 Pa
Water Coil Rows	2
Water Coil Volume	1.3 L
Water Flow Connector	0.19 L/s
Dimensions	
Supports Length	500.00
Mainfolds	2x1/2" F
D_Pipping_Connector	15.0 mm
Identity Data	
Product Description	Self-supporting casing constru...
Product Reference	OPT 2000 P
Product Heating	P
Image	
Comments	
Mark	6
General	
· HEATING ·	-/ Select Heating /-
· POSITION ·	-/ Select Curtain Position /-
Horizontal	<input checked="" type="checkbox"/>
· PIPES POSITION ·	-/ Select Pipes Position /-
Water Pipes_P2 (Std)	<input checked="" type="checkbox"/>
· OTHERS ·	-/ Select Supports - Inst.Maint. ...
Supports (Horizontal)	<input checked="" type="checkbox"/>
Aspiration/Maintenance Space	<input checked="" type="checkbox"/>
Data	
Noise Level (dB(A))	54.000000
Weight	37.500 kg

Keeping in the same box, all the instance parameters every family has can be seen:

Materials and Finishes: Allows to choose a finish for the housing and other one for the panels of the curtain. There is a library of materials where the new materials can be added/created if it were necessary.

Electrical - Loads: Gives the electrical information related to the selected product.

Mechanical - Flow: Gives the heating information, the airflow and, also, the weight and the noise level of the selected product.

Dimensions: In addition to the dimensional information, it allows to give a length to the supports when the curtain is positioned horizontally, in the parameter *Supports Length*.

Identity Data: A description of the instance, the concrete reference and the type of heating selected are shown in this group.

General: The configuration of the product is completed in this group. There are six groups:

1. HEATING: The user shall choose the type of heating, which depends on each family.
2. INSTALLATION CONFIGURATION: Informs that the installation configuration is *Horizontal*.
3. PIPES POSITION: Informs that the position of the two water pipes is top left (only for the family of water heating).
4. OTHERS: If it is necessary, the space for the inlet and the maintenance can be shown (or hidden) when choosing the parameter.

Family:	AIRTECNICS_AIR_CURTAIN_OPTIMA_WATER HEATED (P)	Load...
Type:	OPT 1000 P	Duplicate... Rename...
Type Parameters		
Parameter	Value	
Materials and Finishes		
Material Grille	AIRTECNICS_Perforated_Optima_Black RAL 9005	
Electrical - Loads		
Voltage	230.00 V	
Frequency	50.00 Hz	
Cable	CB7	
Remote Control	IR-AIR	
Mechanical - Flow		
Fans Stage	2	
Dimensions		
L	1000.00	
Depth	300.00	
Height	215.00	
Length	1050.00	
Identity Data		
Manufacturer	AIRTECNICS	
Model	Air Curtain OPTIMA P	
Product Size	1000	
URL	https://www.airtecnics.com/products/air-curtain-optima	
URL_Datasheet	https://www.airtecnics.com/download/file/1941/optima.pdf	
URL_Manufacturer	https://www.airtecnics.com/	
Type Comments	Self-supporting casing construction made of galvanized steel plate, finish	
Keynote		
Assembly Code		
Cost		
Description		
Type Image	<None>	
Assembly Description		
Type Mark		
OmniClass Number	23.75.70.21.17	
OmniClass Title	Air Curtains	
Code Name		
IFC Parameters		
IfcExportAs	IfcCoilType	
IfcExportType	WATERHEATINGCOIL	
Model Properties		
BIMETRICAL Category	Coil	
Family Version	1.0	
Review Date	10/2018	
Revit Version	Revit 2016 - English	
Created by	BIMETRICAL	
BIMETRICAL	http://www.bimetric.com	
General		
Wall Supports (Horizontal)	<input type="checkbox"/>	

The type parameters the family has are shown in *Edit Type*, inside the *Properties* box. These are the main groups:

Electrical/Mechanical: In this group there are some common technical data for the instances such as the voltage, frequency or the type of control and cable.

Dimensions: Shows the Length of the product. This one will change depending on the type selected.

Identity Data: This group of parameters shows information regarding the manufacturer, the concrete model, description of the product, URLs, classifications, ...

IFC Parameters: Information regarding the classification IFC of the family, control data, reviews,...

Model Properties: This group of parameters shows the information about the control of the Revit's Family: created by, versions and review date.

General: Indicates if the omega wall supports are enabled or not.

4. LOGICAL CONNECTION OF THE CONNECTORS

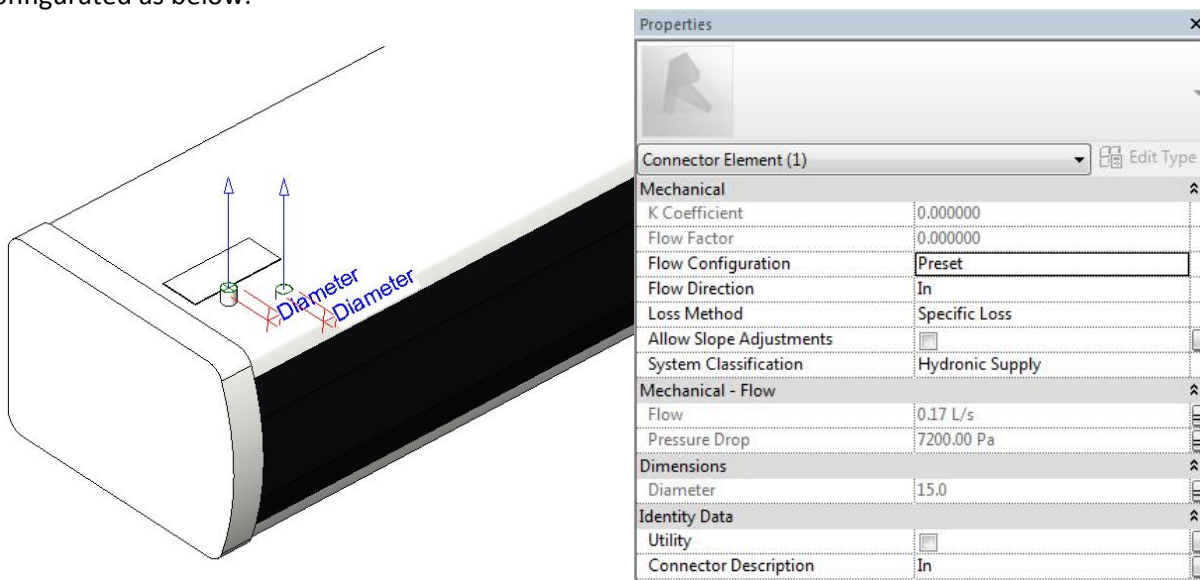
4.1 Water connectors

4.2 Electrical connectors

4. LOGICAL CONNECTION OF THE CONNECTORS

4.1 Water Connectors

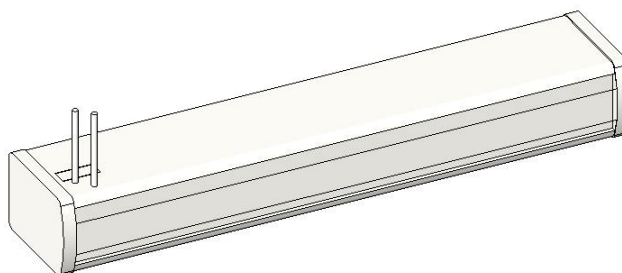
The connectors are basically logical entities which allows to dimension the facilities of a project. The products of AIRTECNICS already have the connectors configured by default. For example, and following the example of the family *AIRTECNICS_AIR CURTAIN_OPTIMA_MG_WATER HEATED (P).rfa*, the type of connector is *Pipe Connector* and, in the case of the family water (P) OPTIMA, it is configured as below:



- **Flow configuration:** *Predefined*. Because of calculation reasons, the waterflow value which demands the curtain is predefined. Also, the outlet connector (with the same flow).
- **Direction of the flow:** *Inlet*. The flow enters through the connector because it is water supply.
- **Classification of the system:** *Hydronic Supply*.
- **Loss method:** *Specific loss*. It is specified depending on the flow.
- **Load loss:** Total load loss, associated to the parameter *Water Drop Pressure*.
- **Flow:** Total Flow inside the air curtain, associated to the parameter *Water Flow Connector*.

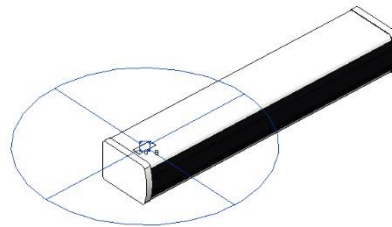
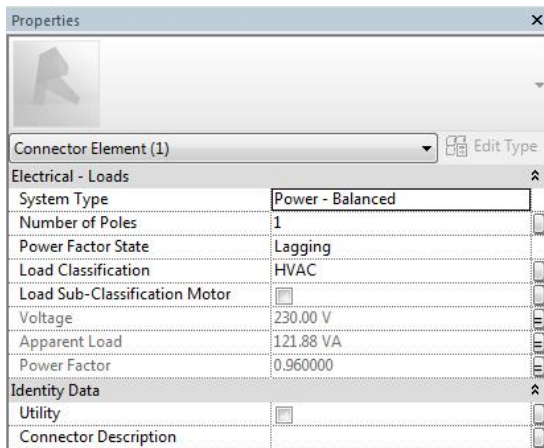
Possible positions for the water pipes:

P2

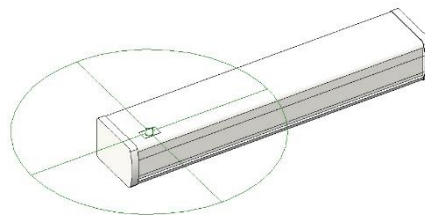


4.2 Electrical Connector

The electrical connector of the Only Air and Water Heated families of the product OPTIMA is located in one point of the air curtain and, the connector of the Electrical Heated Families is located in other point of the air curtain. Following the same example that with the water connectors:



Only Air or
Water Heated



Electrical Heated

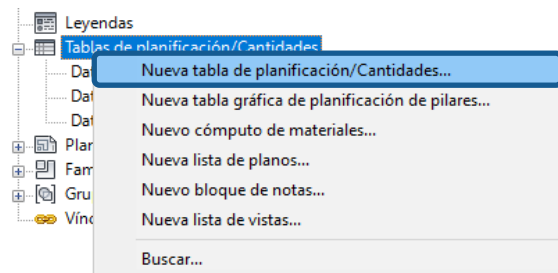
- **Type of system:**
 - o Electrical heating family: Power – Unbalanced (only ventilation line)
 - o Without heating and water heating families: Power – Balanced
- **Number of poles:**
 - o Electrical heating family: 3 poles
 - o Without heating and water heating families: 1 pole
- **Status of the power factor:** Phase delay.
- **Classification of load:** HVAC has been defined as a constant calculation method and a demand factor of the 100%.
- **Voltage:**
 - o Three phase Electrical heating family: 400V
 - o Without heating, Monophase Electrical heating and Water heating families: 230V
- **Phase 1,2,3 of apparent load:** Depending on the parameter(s) of apparent load.
- **Power factor:** Value of the relation between the fan power (kW) and the apparent load of them (VA). In case of electrical type this field can be empty, and an informative field is added with the fan power factor.

5. SCHEDULES

5. SCHEDULES

Once the modelling is finished, the information can be extracted by different means. One of them is with the “Schedules”. Hereafter, some examples of schedules that the user can create following the steps are shown:

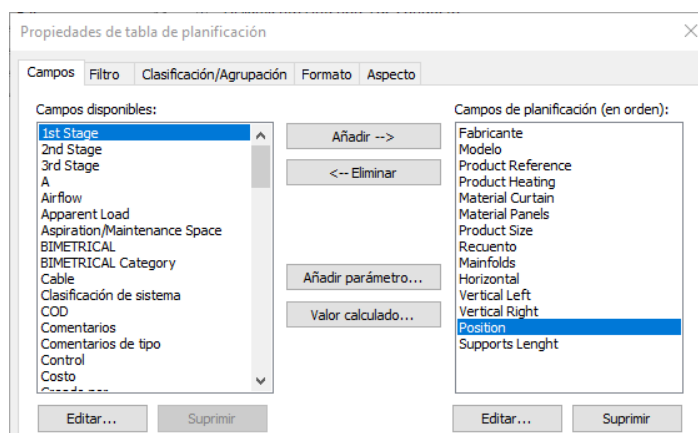
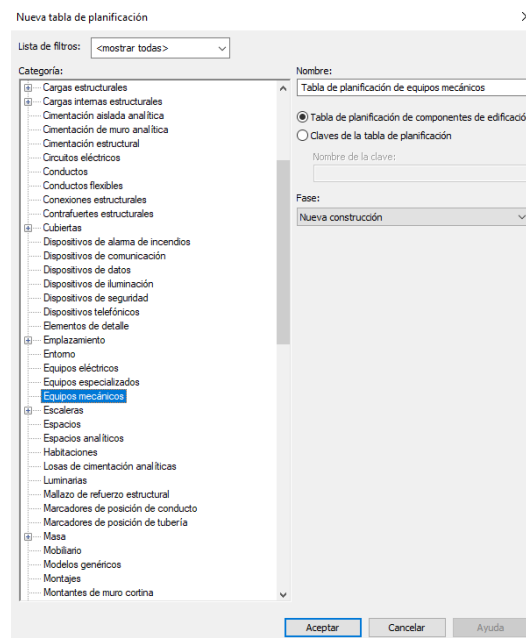
1. Go to the “Project browser” and click with the right button in “Schedules/Quantities” and chose de option “New Schedule/Quantities”.



2. First, the user must choose the category. In this case, “Mechanical Equipment”.

Once the schedule has been created, the parameters from which the information must be extracted shall be configured. The parameter in the list on the left side must be selected, and then click in the icon “Add-->”. It allows to filter, order and classify the parameters, and to change the appearance of the schedule or change the units of the parameters. In short, it allows to adapt the schedule according to the information the user wants to present.

Consider that calculated values of the parameters to be inserted in the schedules can also be created. For example, to obtain the *Position* of the curtain according to the selectors selected:



Fórmula: `if(Horizontal, "Horizontal", if(and(Vertical Left, not(Horizontal)), "Vertical Left", "Vertical Right"))`

3. Examples

Schedule: Quantities

<01-AIRTECNICS - Air Curtains - OPTIMA_Quantities>							
A	B	C	D	E	F	G	H
Manufacturer	Model	Product Referen	Material Curtain	Product Size	Mainfolds	Supports L	Count
AIRTECNICS	Air Curtain OPTIMA P	OPT 1000 P	AIRTECNICS_White RAL 9016	1000	2x1/2" F	500.00	1
AIRTECNICS	Air Curtain OPTIMA P	OPT 2000 P	AIRTECNICS_White RAL 9016	2000	2x1/2" F	500.00	1
AIRTECNICS	Air Curtain OPTIMA P	OPT 1500 P	AIRTECNICS_White RAL 9016	1500	2x1/2" F	500.00	1
AIRTECNICS	Air Curtain OPTIMA P	OPT 1000 P	AIRTECNICS_White RAL 9016	1000	2x1/2" F	500.00	1
AIRTECNICS	Air Curtain OPTIMA P	OPT 2000 P	AIRTECNICS_White RAL 9016	2000	2x1/2" F	500.00	1
AIRTECNICS	Air Curtain OPTIMA P	OPT 2000 P	AIRTECNICS_White RAL 9016	2000	2x1/2" F	500.00	1
AIRTECNICS	Air Curtain OPTIMA P	OPT 2000 P	AIRTECNICS_White RAL 9016	2000	2x1/2" F	500.00	1

Schedule: Technical Data

<02-AIRTECNICS - Air Curtains - OPTIMA_Technical Data>											
A	B	C	D	E	F	G	H	I	J	K	L
Manufacturer	Model	Product Reference	Current Fans	Power Fans	Water Flow	Water Drop Pressure	Mainfolds	Noise Level (dB(A))	Control	Cable	Count
AIRTECNICS	Air Curtain OPTIMA P	OPT 1000 P	0.41 A	80 W	0.111 L/s	7090.0 Pa	2x1/2" F	50	CW-2EV-IR	CB7	1
AIRTECNICS	Air Curtain OPTIMA P	OPT 2000 P	0.82 A	160 W	0.194 L/s	6550.0 Pa	2x1/2" F	54	CW-2EV-IR	CB7	1
AIRTECNICS	Air Curtain OPTIMA P	OPT 1500 P	0.53 A	117 W	0.167 L/s	7200.0 Pa	2x1/2" F	52	CW-2EV-IR	CB7	1
AIRTECNICS	Air Curtain OPTIMA P	OPT 1000 P	0.41 A	80 W	0.111 L/s	7090.0 Pa	2x1/2" F	50	CW-2EV-IR	CB7	1
AIRTECNICS	Air Curtain OPTIMA P	OPT 2000 P	0.82 A	160 W	0.194 L/s	6550.0 Pa	2x1/2" F	54	CW-2EV-IR	CB7	1
AIRTECNICS	Air Curtain OPTIMA P	OPT 2000 P	0.82 A	160 W	0.194 L/s	6550.0 Pa	2x1/2" F	54	CW-2EV-IR	CB7	1
AIRTECNICS	Air Curtain OPTIMA P	OPT 2000 P	0.82 A	160 W	0.194 L/s	6550.0 Pa	2x1/2" F	54	CW-2EV-IR	CB7	1

6. COMPATIBILITY PRODUCT TABLE

Optima
Recessed Optima
Optima Wireless
Recessed Optima Wireless
Minibel

6. COMPATIBILITY PRODUCT TABLE

On this table there are the compatibilities of the characteristics between OPTIMA and other products, regarding their configuration on each Revit Family.

PRODUCTS	Size / Type Configuration	Materials and Finishes Configuration	Only Air Configuration	Three Phase Electrical Configuration	Singlephase Electrical Configuration	Water Configuration	Horizontal Supports	Wall Supports	Maintenance Area Configuration
Optima	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recessed Optima	✓	✓	✓	✓	✓	✓	✓	✓	✓
Optima Wireless	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recessed Optima Wireless	✓	✓	✓	✓	✓	✓	✓	✓	✓
Minibel	✓	✓	✓	✗	✓	✗	✗	✓	✓

7. PRODUCT DISTICTIVE FEATURES: CONFIGURATION

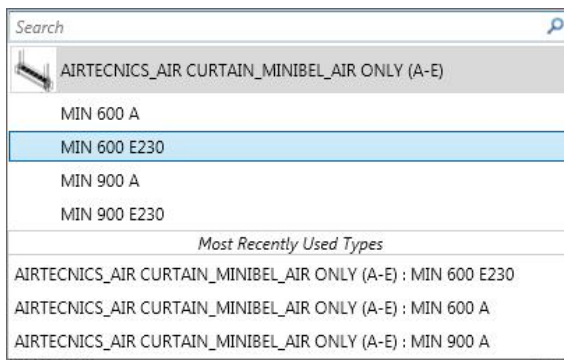
7.1 Minibel

7. PRODUCT DISTINCTIVE FEATURES

7.1 Minibel

Minibel air curtain is recommended for openings up to 1.8 m high like small doors, kiosks or drive through windows. Also, can be used as an electrical over door heater for higher entrances in order to provide a warm welcome.

This family is different than the others. In one family there are unheated and electrical heated models. The user can change between electrical heated and unheated using the instance selector.



Unheated properties schedule

Properties	
AIRTECNICS_AIR CURTAIN_MINIBEL_AIR ONLY (A-E) MIN 600 A	
Mechanical Equipment (1) Edit Type	
Offset	0.00
Materials and Finishes	
Material Curtain	AIRTECNICS_White RAL 9016
Electrical - Loads	
Current Fans	0.52 A
Power Fans	60.00 W
Voltage	230.00 V
Apparent Load	120.00 VA
Power Fans Factor	0.500000
Control	ON/OFF Switch
Panel	
Circuit Number	
Mechanical	
System Classification	Power
System Name	
Mechanical - Flow	
Airflow	116.67 L/s
Heating Capacity	0.00 W
Dimensions	
Supports Length	500.00
Identity Data	
Product Description	Self-supporting casing constru...
Product Reference	MIN 600 A
Product Heating	Only Air
Image	
Comments	
Mark	6
Phasing	
Phase Created	Nueva construcción
Phase Demolished	None
General	
. POSITION -	- / Select Curtain Position / -
Horizontal	<input checked="" type="checkbox"/>
. OTHERS -	- / Select Supports - Inst.Maint. ...
Supports (Horizontal)	<input checked="" type="checkbox"/>
Wall Supports (Horizontal)	<input type="checkbox"/>
Aspiration/Maintenance Space	<input checked="" type="checkbox"/>
Data	
Noise Level (dB(A))	46.000000
Weight	9.000 kg

Electrical Heated properties schedule

Properties	
AIRTECNICS_AIR CURTAIN_MINIBEL_AIR ONLY (A-E) MIN 600 E230	
Mechanical Equipment (1) Edit Type	
Offset	0.00
Materials and Finishes	
Material Curtain	AIRTECNICS_White RAL 9016
Electrical - Loads	
Current Fans	0.52 A
Power Fans	60.00 W
Voltage	230.00 V
Apparent Load	120.00 VA
Power Fans Factor	0.500000
Control	ON/OFF Switch
Panel	
Circuit Number	
Mechanical	
System Classification	Power
System Name	
Mechanical - Flow	
Airflow	116.67 L/s
Heating Capacity	2500.00 W
Dimensions	
Supports Length	500.00
Identity Data	
Product Description	Self-supporting casing constru...
Product Reference	MIN 600 E230
Product Heating	Electrical
Image	
Comments	
Mark	6
Phasing	
Phase Created	Nueva construcción
Phase Demolished	None
General	
. POSITION -	- / Select Curtain Position / -
Horizontal	<input checked="" type="checkbox"/>
. OTHERS -	- / Select Supports - Inst.Maint. ...
Supports (Horizontal)	<input checked="" type="checkbox"/>
Wall Supports (Horizontal)	<input type="checkbox"/>
Aspiration/Maintenance Space	<input checked="" type="checkbox"/>
Data	
Noise Level (dB(A))	46.000000
Weight	12.500 kg



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