



ATREA Leader in ventilation and heat recovery

Selection software for DUPLEX units - first steps

The screenshot shows the software interface for selecting a DUPLEX unit. The interface is divided into several sections:

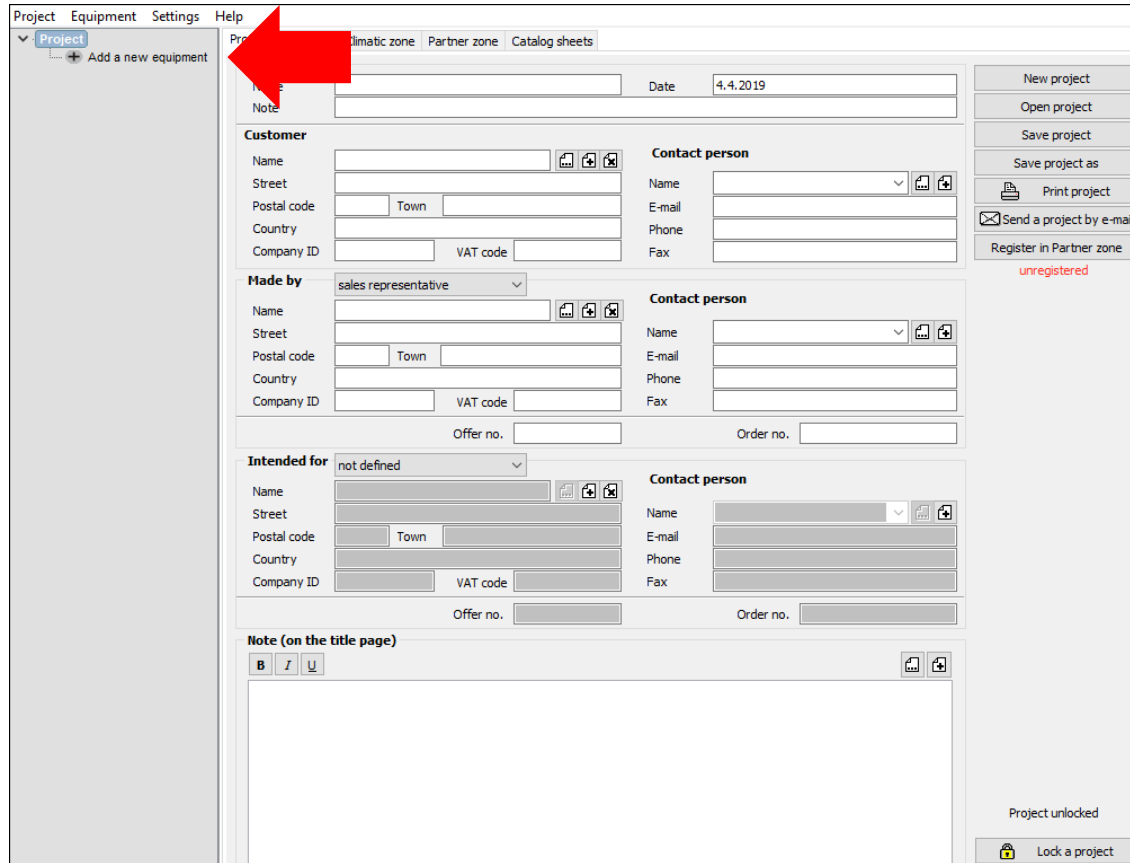
- Project Tree (Left):** Shows a hierarchy starting with 'Ventilation_shop', followed by 'DUPLEX 1500 Multi', 'B', and 'Me.119.EC1, Mi.119.EC1'. It lists various specifications like 'position: 100', 'NOI sup: 1400 m3/h / 150 Pa', 'NOM exh: 1400 m3/h / 150 Pa', 'Digital controls RDS', 'Price: on demand', and 'ErP 2018, ErP 2016'.
- Main Configuration Panel (Center):**
 - Position name:** 'Ventilation_shop', **Version:** (empty), **Quantity:** '1 pcs'.
 - AHU type:** Radio buttons for 'indoor type', 'roof top', 'with crossflow heat recovery core', and 'with counterflow heat recovery core'.
 - Special requests:** Checkboxes for 'hygienic design acc. to VDI 6022', 'ErP 2016', and 'ErP 2018'.
 - Nominal values:** A section for defining required and actual values for winter and summer operations.
 - Supply:**

| | Required | Actual |
|--------------------------|----------|--------|
| Airflow | 1400 | 1400 |
| External static pressure | 150 | 150 |
 - Preheating:** 'no preheating'.
 - Heating:** 'no heating'.
 - Cooling:** 'no cooling'.
 - Temperatures:**

| | Required | Actual |
|-------------------------------|----------|--------|
| Outside air temperature | -16,0 | 32,0 |
| Outside air relative humidity | 90 | 40 |
| Supply air temperature | 18,4 | 27,6 |
 - Filtration:** Radio buttons for 'G4', 'M5', and 'F7'.
 - Dampers:** Checkboxes for 'Bypass damper', 'Mixing damper', and 'Shutoff damper in the e1 port'. Radio buttons for 'standard' and 'with spring-return function'.
 - Exhaust:**

| | Required | Actual |
|-------------------------------|----------|--------|
| Airflow | 1400 | 1400 |
| External static pressure | 150 | 150 |
| Exhaust air temperature | 20,0 | 26,0 |
| Exhaust air relative humidity | 40 | 50 |
 - Filtration:** Radio buttons for 'G4', 'M5', and 'F7'.
 - Dampers:** Checkboxes for 'Shutoff damper in the i1 port', 'standard', and 'with spring-return function'.
- Performance Curve Graph (Right):** A graph showing 'External static pressure (Pa)' on the y-axis (0 to 1200) and 'Airflow (m3/h)' on the x-axis (0 to 2500). It features a red curve for supply, a blue curve for exhaust, and a dashed grey line for bypass. A legend at the bottom identifies the curves: supply (red), exhaust (blue), Bypass (green), and Mixing (purple). Two 'ErP 2018' logos are present in the top right of the graph area.
- AHU Details (Bottom Right):**
 - AHU:** 'DUPLEX 1500 Multi'.
 - Casino:** 'Me.119.EC1 (230 V, EC)'.
 - Supply fan:** 'Me.119.EC1 (230 V, EC)' with operation point: 230 V, 50 Hz, 0,34 kW.
 - Exhaust fan:** 'Mi.119.EC1 (230 V, EC)' with operation point: 230 V, 50 Hz, 0,37 kW.
 - Heat recovery core:** 'S7.C' with operation point: 94,2 % 16,4 kW.
 - Supply air filter:** 'F7 pleated cartri' with options for 'inclined tube manometer'.
 - Exhaust air filter:** 'M5 pleated cartri' with options for 'inclined tube manometer'.

1. Start the software you installed and select **Add a new equipment**



The screenshot shows the software interface with the following elements:

- Menu Bar:** Project, Equipment, Settings, Help
- Left Panel:** Project (expanded), Add a new equipment (highlighted with a red arrow)
- Main Content Area:**
 - Project Name: [] Date: 4.4.2019
 - Note: []
 - Customer:** Name, Street, Postal code, Town, Country, Company ID, VAT code
 - Contact person:** Name, E-mail, Phone, Fax
 - Made by:** sales representative (dropdown), Name, Street, Postal code, Town, Country, Company ID, VAT code
 - Contact person:** Name, E-mail, Phone, Fax
 - Offer no.: [] Order no.: []
 - Intended for:** not defined (dropdown), Name, Street, Postal code, Town, Country, Company ID, VAT code
 - Contact person:** Name, E-mail, Phone, Fax
 - Offer no.: [] Order no.: []
 - Note (on the title page):** []
- Right Panel:**
 - New project
 - Open project
 - Save project
 - Save project as
 - Print project
 - Send a project by e-mail
 - Register in Partner zone (unregistered)
 - Project unlocked
 - Lock a project

2. In the Add a unit wizard enter required parameters

Required air volume



Indoor or outdoor installation



Further criteria

Add a new equipment

Category
All (22)

For domestic use (0)

For commercial use (20)

For pools (0)

Independent recovery exchangers (2)

Independent accessories (0)

Heat sources (0)

Airflow
1400 m³/h

Ecodesign
 ErP 2016
 ErP 2018

Heat recovery core
All (17)

Crossflow (5)

Counterflow (11)

Rotary (2)

Location
All (17)

Indoor type (11)

Rooftop (6)

Function

Heating (15)

Cooling (15)

Mixing (11)

New (4)

Name

DUPLEX Multi Eco **DUPLEX Multi Eco-V** **DUPLEX Multi Eco-N**

A new generation of all-purpose heat recovery units, a highly efficient counter flow heat recovery exchanger, economical EC fans, for indoor use, a wide range of accessories (including built-in heating, cooling and circulation).

For flow rates between 300 and 10 800 m³/h.

DUPLEX 500 Multi Eco

DUPLEX 800 Multi Eco

DUPLEX 1100 Multi Eco

DUPLEX 1500 Multi Eco

DUPLEX 2500 Multi Eco

DUPLEX 3500 Multi Eco

DUPLEX 4500 Multi Eco

DUPLEX 5500 Multi Eco

DUPLEX 6500 Multi Eco

DUPLEX 7500 Multi Eco

DUPLEX 9000 Multi Eco

DUPLEX Multi **DUPLEX Multi-V** **DUPLEX Multi-N**

All-purpose heat recovery units, a highly efficient counter flow heat recovery exchanger, economical EC fans, for indoor use, a wide range of accessories (including built-in heating, cooling and circulation).

For flow rates between 300 and 8 500 m³/h.

DUPLEX 500 Multi

DUPLEX 1000 Multi

DUPLEX 1500 Multi

DUPLEX 2500 Multi

DUPLEX 3500 Multi

DUPLEX 5000 Multi

DUPLEX 6500 Multi

DUPLEX 8000 Multi

DUPLEX 10000 Multi

DUPLEX 11000 Multi

DUPLEX ROTO **DUPLEX ROTO-N**

A new generation of all-purpose heat recovery units, a highly efficient rotary heat recovery exchanger, economical EC fans, for indoor use, a wide range of accessories (including built-in heating, cooling and circulation).

For flow rates between 1 500 and 16 000 m³/h.

DUPLEX 1500 Roto

DUPLEX 2500 Roto

DUPLEX 4000 Roto

DUPLEX 5000 Roto

DUPLEX 8000 Roto

DUPLEX 12000 Roto

DUPLEX 15000 Roto

DUPLEX Flexi (2G)

All-purpose heat recovery units in stock, a counter flow heat recovery exchanger, PHI certification, accessories supplied separately.

For flow rates between 50 and 4 300 m³/h.

DUPLEX 650 Flexi (2)

DUPLEX 1100 Flexi (2)

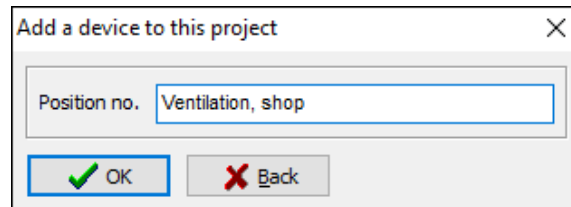
DUPLEX 1600 Flexi (2)

DUPLEX 2600 Flexi (2)

DUPLEX 3600 Flexi (2)

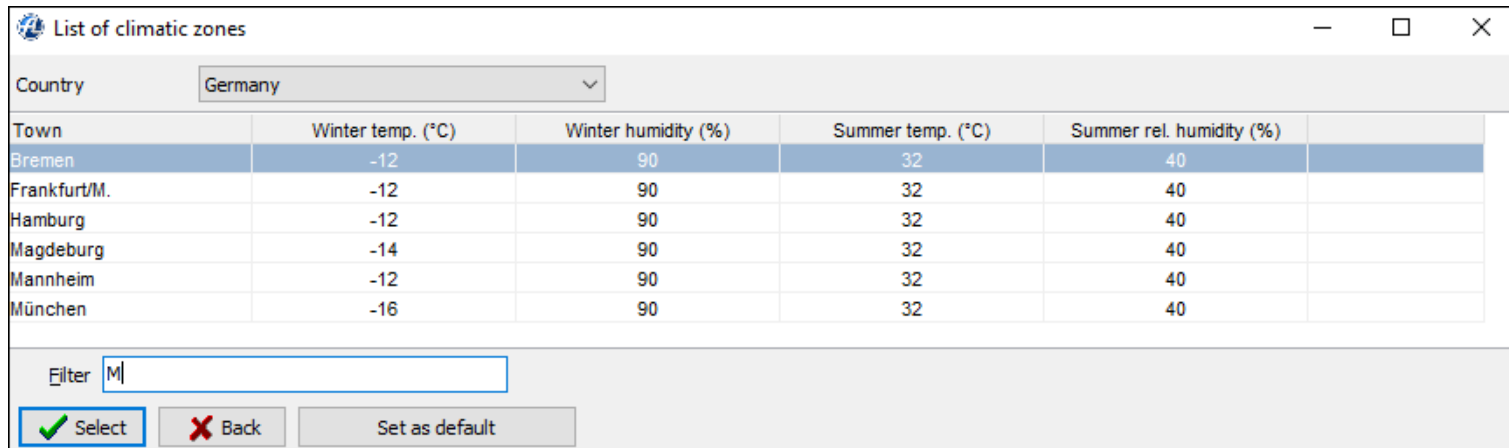
Units highlighted in bold match the selected criteria.

3. Select a name under which the unit will appear in the project



A dialog box titled "Add a device to this project" with a close button (X) in the top right corner. It contains a text input field labeled "Position no." with the text "Ventilation, shop" entered. Below the input field are two buttons: a green checkmark button labeled "OK" and a red X button labeled "Back".

4. Choose a climatic zone. The software will enter summer and winter air temperature and relative humidity data



A dialog box titled "List of climatic zones" with standard window controls (minimize, maximize, close) in the top right corner. It features a "Country" dropdown menu set to "Germany". Below is a table with columns for "Town", "Winter temp. (°C)", "Winter humidity (%)", "Summer temp. (°C)", and "Summer rel. humidity (%)". The table lists six towns: Bremen, Frankfurt/M., Hamburg, Magdeburg, Mannheim, and München. At the bottom, there is a "Filter" input field containing the letter "M", and three buttons: a green checkmark button labeled "Select", a red X button labeled "Back", and a button labeled "Set as default".

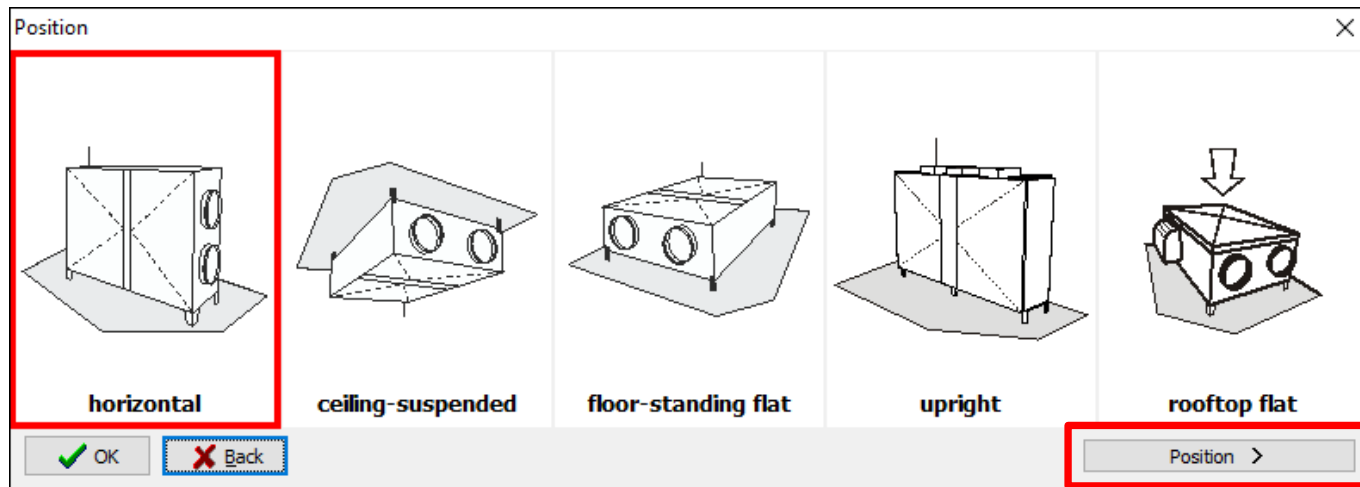
| Town | Winter temp. (°C) | Winter humidity (%) | Summer temp. (°C) | Summer rel. humidity (%) |
|--------------|-------------------|---------------------|-------------------|--------------------------|
| Bremen | -12 | 90 | 32 | 40 |
| Frankfurt/M. | -12 | 90 | 32 | 40 |
| Hamburg | -12 | 90 | 32 | 40 |
| Magdeburg | -14 | 90 | 32 | 40 |
| Mannheim | -12 | 90 | 32 | 40 |
| München | -16 | 90 | 32 | 40 |

5. In the **Design** tab choose the required **Position** and **Configuration of ports**

The screenshot shows the software interface for configuring an AHU unit. The 'Design' tab is active, and the 'Position' section is highlighted with a red bracket. The 'Position' dropdown is set to 'Horizontal (10 - 11)'. The 'AHU delivery' section has 'in total' selected. The 'Other choices' section includes options for condensate drain, door fastening, and pressure output. A drawing of the unit is shown below, with ports labeled i1, i2, e1, and e2.

Click on **Position** to open the wizard

In the wizard select the required **Position**



In a similar way select the detailed **Position** and **Configuration of ports**

6. In the **Operation point** tab enter **External static pressure** needed for air transport

Operation point Design Controls Specification Note Catalog sheets

Position name Ventilation, shop **Version** **Quantity** 1 pcs

AHU type
 indoor type with crossflow heat recovery core
 rooftop with counterflow heat recovery core

Special requests
 hygienic design acc. to VDI 6022
 ErP 2016 ErP 2018

Nominal values +

Required values

| | Winter operation | | Summer operation | | m3/h |
|--------------------------|------------------|--------|------------------|--------|------|
| | Required | Actual | Required | Actual | |
| Airflow | 1400 | 1400 | 1400 | 1400 | |
| External static pressure | 150 | 150 | 150 | 150 | Pa |

Preheating no preheating
Heating no heating
Cooling no cooling

Outside air temperature: -16,0 °C (Winter) / 32,0 °C (Summer)
 Outside air relative humidity: 90 % (Winter) / 40 % (Summer)
 Supply air temperature: 18,4 °C (Winter) / 27,6 °C (Summer)

Filtration G4 M5 F7
Dampers Bypass damper Mixing damper Shutoff damper in the e1 port standard with spring-return function

| | Winter operation | | Summer operation | | m3/h |
|-------------------------------|------------------|--------|------------------|--------|------|
| | Required | Actual | Required | Actual | |
| Airflow | 1400 | 1400 | 1400 | 1400 | |
| External static pressure | 150 | 150 | 150 | 150 | Pa |
| Exhaust air temperature | 20,0 | 25,0 | 25,0 | 25,0 | °C |
| Exhaust air relative humidity | 40 | 50 | 50 | 50 | % |

Filtration G4 M5 F7
Dampers Shutoff damper in the i1 port standard with spring-return function

[Select suitable AHU](#)

AHU performance curve

External static pressure (Pa) vs. Airflow (m3/h)

Legend: supply (blue), exhaust (red), Bypass (green), Mixing (purple)

AHU
 Casing: DUPLEX 1500 Multi
 Supply fan: Me.119.EC1 (230 V, EC)
 operation point: 230 V, 50 Hz, 0,34 kW
 Exhaust fan: Mi.119.EC1 (230 V, EC)
 operation point: 230 V, 50 Hz, 0,37 kW
 Heat recovery core: S7.C, 94,2 %, 16,4 kW
 Supply air filter: F7 pleated cartri inclined tube manometer
 Exhaust air filter: M5 pleated cartri inclined tube manometer

7. Choose **Filtration** class

8. Adjust supply air temperature by adding Heating or Cooling

Project Equipment Settings Help

Operation point Design Controls Specification Note Catalog sheets

Position name Version Quantity
Ventilation, shop [] [] 1 pcs

AHU type
 indoor type with crossflow heat recovery core
 rooftop with counterflow heat recovery core

Special requests
 hygienic design acc. to VDI 6022
 ErP 2016 ErP 2018

Nominal values +
Required values

| | Winter operation | | Summer operation | | Unit |
|-------------------------------|--|--------|------------------|--------|------|
| | Required. | Actual | Required. | Actual | |
| Supply | | | | | |
| Airflow | 1400 | 1400 | 1400 | 1400 | m3/h |
| External static pressure | 150 | 150 | 150 | 150 | Pa |
| Preheating | no preheating | | | | |
| Cooling | DX coil | | | | |
| Heating | built-in water heating | | | | |
| Outside air temperature | -16,0 | | 32,0 | | °C |
| Outside air relative humidity | 90 | | 40 | | % |
| Supply air temperature | 22,0 | 22,0 | 18,0 | 18,0 | °C |
| Filtration | <input type="radio"/> G4 <input type="radio"/> M5 <input checked="" type="radio"/> F7 | | | | |
| Dampers | <input checked="" type="checkbox"/> Bypass damper <input type="checkbox"/> Mixing damper <input checked="" type="checkbox"/> Shutoff damper in the e1 port <input type="radio"/> standard <input checked="" type="radio"/> with spring-return function | | | | |
| Exhaust | | | | | |
| Airflow | 1400 | 1400 | 1400 | 1400 | m3/h |
| External static pressure | 150 | 150 | 150 | 150 | Pa |
| Exhaust air temperature | 20,0 | | 26,0 | | °C |
| Exhaust air relative humidity | 40 | | 50 | | % |
| Filtration | <input type="radio"/> G4 <input checked="" type="radio"/> M5 <input type="radio"/> F7 | | | | |
| Dampers | <input type="checkbox"/> Shutoff damper in the i1 port <input type="radio"/> standard <input checked="" type="radio"/> with spring-return function | | | | |

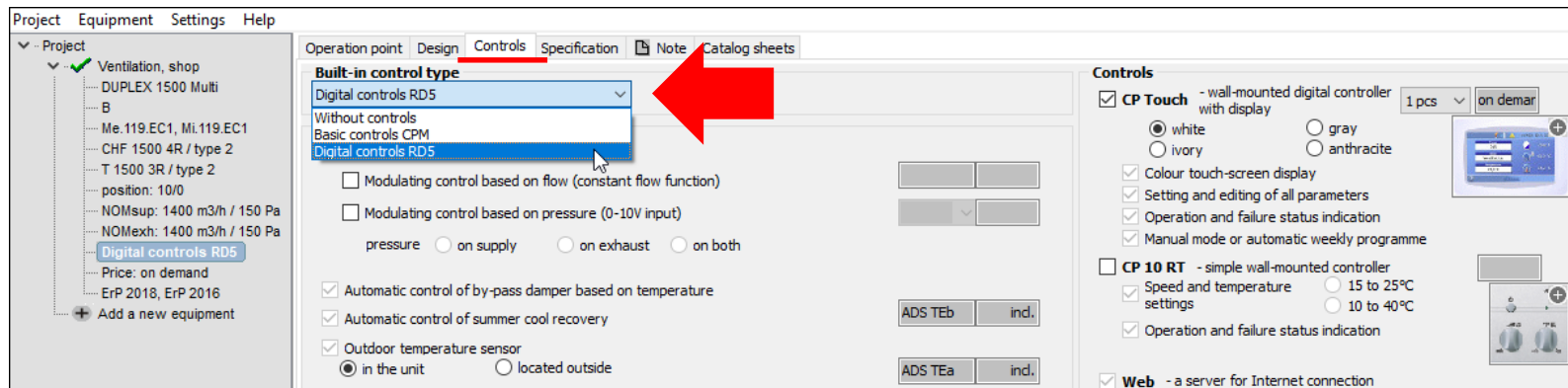
[Select suitable AHU](#)

AHU performance curve

AHU
[Casing](#) DUPLEX 1500 Multi
[Supply fan](#) Me.119.EC1 (230 V, EC)
 operation point 230 V 50 Hz 0,42 kW
[Exhaust fan](#) Mi.119.EC1 (230 V, EC)
 operation point 230 V 50 Hz 0,37 kW
[Heat recovery core](#) S7.C 94,2 % 16,4 kW
[Supply air filter](#) F7 pleated cartri inclined tube manometer
[Exhaust air filter](#) M5 pleated cartri inclined tube manometer
[Water heating coil](#) T 1500 3R / type 2 1,66 kW
 fluid water 70 / 50 °C
 hydraulic kit 4-way (for control RD5, CPM)
[DX coil](#) CHF 1500 4R / type 2 6,28 kW
 refrigerant R410A evaporating temp. 9 °C

9. Check Exhaust air temperature and relative humidity

10. In the **Controls** tab check the selected control system of the unit




The RD5 control system makes it possible to connect to the unit over the internet or use a touch-screen controller.



11. Print your project or save it as a PDF file

Choose **Project > Print or Export to PDF**

| Project | Equipment | Settings | Help |
|-------------------------------------|-----------|----------|--------------|
| New | | | Ctrl+N |
| Open | | | Ctrl+O |
| Open in a new window... | | | Shift+Ctrl+O |
| Welcome window | | | |
| Save | | | Ctrl+S |
| Save as ... | | | Shift+Ctrl+S |
| Lock a project ... | | | |
| Print | | | Ctrl+P |
| Print summary | | | Ctrl+R |
| Insert summary to the clipboard ... | | | |
| Export to PDF ... | | | |
| Send by e-mail | | | |
| End | | | Alt+F4 |



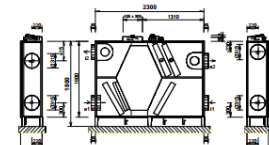
Technical specification
Nominal values
Project no.: 123456
Project: Ventilation business centre
Position no.: Ventilation, shop

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AHU DUPLUX 1500 Multi Specification: DUPLEX 1500 Multi / 100 - Me.119.EC1 - Me.119.EC1 - ST.C - Fe.K7 - FK3 - B.LMD2A - T.3 - CHF.4 - CO.CHT - R6.LF2A - RE.TPO.LMD2A-SH - H.LD3.1.TE - FT - HD5 - RD4-ID - PFE - PFI - SW - CM.a - CPTOUCH.B.Wh - ErP 2016, 2018

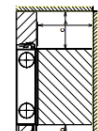
AHU type
- Indoor with a counter-flow heat exchanger
- AHU complies ErP (Ecodesign) - EU 1253/2014 regulation, valid from 1.1.2016 and 1.1.2018.

Position **10/0** horizontal front view (from the door side)
Weight: approx. 295 kg, AHU supply as one piece



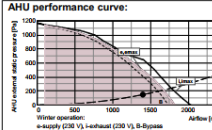
| Legend | Symbol | Dimension | Accessories |
|--------|------------------------|-----------|--------------------------------------|
| A1 | A1 - outdoor air (OFA) | Ø 315 mm | Air duct diameter |
| A2 | A2 - outdoor air (OFA) | Ø 315 mm | |
| F1 | F1 - extract air (EA) | Ø 315 mm | |
| F2 | F2 - extract air (EA) | Ø 315 mm | |
| C | Condensate drain | Ø 20 mm | Size |
| T | Terminal heating coil | -2 Term. | connection dimension - hydraulic kit |

Manipulation space



| A | door width | min. 1300 mm |
|---|-------------|--------------|
| C | door height | min. 900 mm |
| D | door width | min. 200 mm |

AHU performance curve:

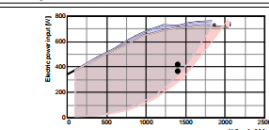


Sound parameters:

| Frequency [Hz] | Sound power level [dB(A)] | | | | | | | | |
|----------------|---------------------------|----|-----|-----|-----|----|----|----|-----|
| | total | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k |
| inlet a1 | 86 | 86 | 81 | 86 | 86 | 81 | 86 | 81 | 77 |
| inlet a2 | 86 | 85 | 71 | 82 | 77 | 78 | 78 | 69 | 63 |
| outlet a1 | 85 | 85 | 47 | 86 | 82 | 86 | 81 | 76 | <55 |
| outlet a2 | 83 | 83 | 75 | 78 | 75 | 75 | 75 | 68 | 62 |

Fans

| | supply | exhaust | |
|---|-------------------|---------|------|
| Volume flow | m ³ /h | 1430 | 1400 |
| AHU external static pressure | Pa | 150 | 150 |
| Voltage (nominal) | V | 230 | 230 |
| Power input (at operation point) | kW | 0,42 | 0,37 |
| Speed (at operation point) | RP/M | 2487 | 2300 |
| Max. power input (to make power connection) | kW | 0,78 | 0,78 |
| Max. current (to make power connection) | A | 3,9 | 3,9 |
| Fan types | Me.119 | Me.119 | |
| Fan kinds (with variable speed) | EC1 | EC1 | |



Program version: 8.90.231 / CZ / 0 of 27.2.2019
Made by Atrea s.r.o., Jiri Rejman
File: Shopping mall.ahu Printing date: 4.4.2019

12. Save your data in DXF or IFC (BIM)

Choose **Design > Export to DXF / BIM**

Operation point **Design** Controls Specification Note Catalog sheets

Position
Position
Horizontal (10 - 11) ▾
Position 10 ▾
Ports configuration 0 ▾
Coils order
1. cooler - 2. heater ▾

AHU delivery
 in total
 in parts

Other choices
Condensate drain
 standard with ball
Door fastening
 with hinges without hinges
 Pressure output (supply and exhaust fan) for simple volume flow measurement

Connection ports
[Supply air connection port e1](#)
[Supply air connection port e2](#)
[Exhaust air connection port i1](#)
[Exhaust air connection port i2](#)

Drawing
Current view access door side view (from the front) ▾

Show
 manipulation space

Dimensioning
 total dimensions
 connection ports
 control module
 condensate drains

Connection port :
e1 - outdoor air (ODA)
e2 - supply air (SUP)
i1 - extract air (ETA)
i2 - exhaust air (EHA)
K - condensate drain
3x Ø 32/40 mm

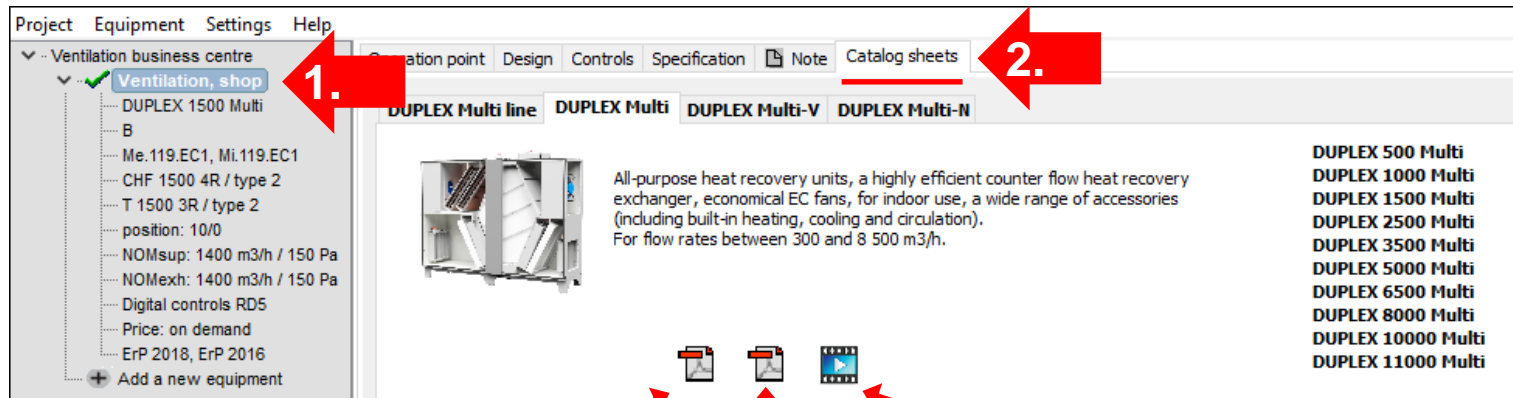
depth: 455 mm, weight: 295 kg

To edit move the mouse over the respective part of the unit

AHU placement method Psychrometric chart Air-side diagram Print dimensional drawing **Export to DXF/BIM**

Unit catalog

For more information about our units see the catalog included in the SW. Click on the unit you added to your project and select **Catalog sheets**.



Data sheet

Marketing brochure

Video presentation

For more information go the selection SW website at www.atrea.com/en/duplex-en and the manufacturer's website at www.atrea.com.



Thank you for your attention.