



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 main configuration panel is divided into several sections:

- Position name:** Ventilation, shop
- Version:** [empty]
- Quantity:** 1 pcs
- AHU type:**
 - indoor type
 - rooftop
 - with crossflow heat recovery core
 - with counterflow heat recovery core
- Special requests:**
 - hygienic design acc. to VDI 6022
 - ErP 2016
 - ErP 2018
- Nominal values:**
 - Supply:**

	Required	Actual
Airflow	1400	1400
External static pressure	150	150
 - Winter operation:**

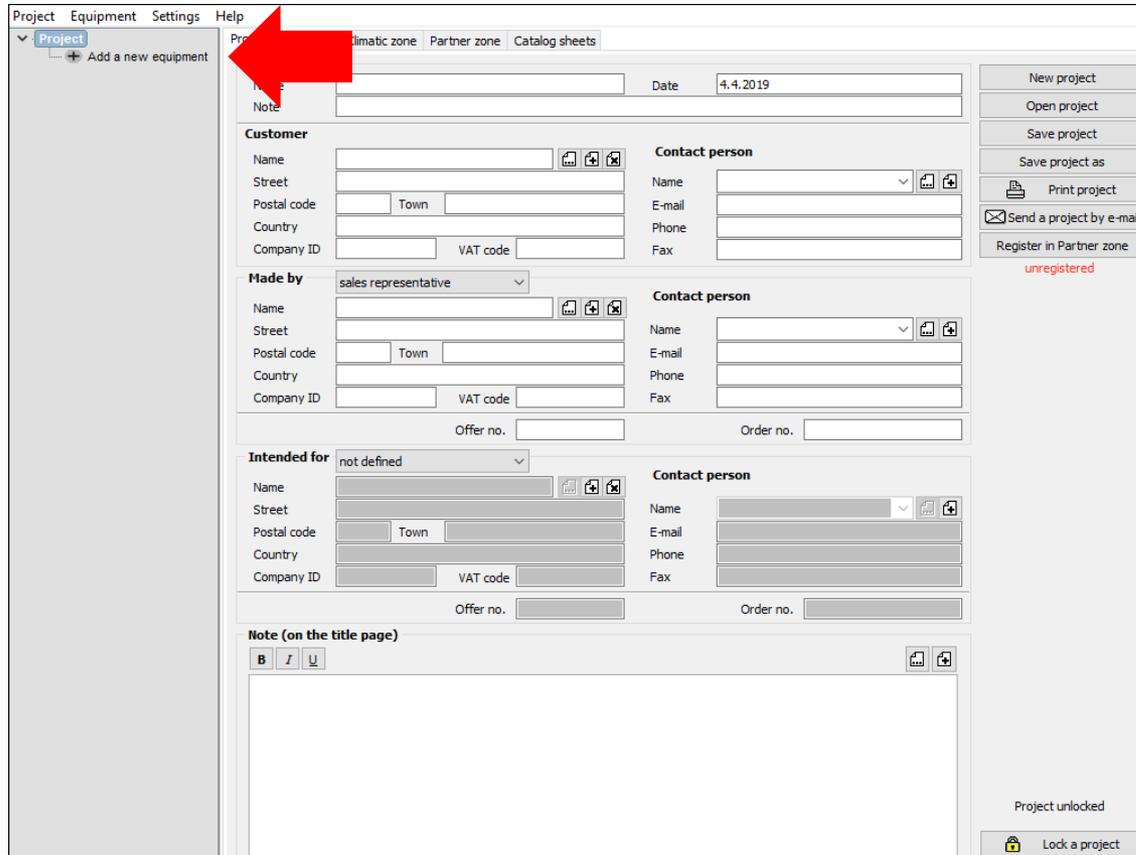
	Required	Actual
Airflow	1400	1400
External static pressure	150	150
 - Summer operation:**

	Required	Actual
Airflow	1400	1400
External static pressure	150	150
- Preheating:** no preheating
- Heating:** no heating
- Cooling:** no cooling
- Outside air temperature:** -16,0 °C
- Outside air relative humidity:** 90 %
- Supply air temperature:** 18,4 °C
- Filtration:** G4 M5 F7
- Dampers:**
 - Bypass damper
 - Mixing damper
 - Shutoff damper in the e1 port
 - standard
 - with spring-return function
- Exhaust:**

	Required	Actual
Airflow	1400	1400
External static pressure	150	150
Exhaust air temperature	20,0	25,0
Exhaust air relative humidity	40	50
- Filtration:** G4 M5 F7
- Dampers:**
 - Shutoff damper in the l1 port
 - standard
 - with spring-return function

- AHU performance curve:** A graph showing External static pressure (Pa) on the y-axis (0 to 1200) versus Airflow (m3/h) on the x-axis (0 to 2500). The graph displays curves for supply (blue), exhaust (red), bypass (green), and mixing (purple). The supply curve starts at approximately 150 Pa at 0 m3/h and decreases as airflow increases. The exhaust curve starts at approximately 150 Pa at 0 m3/h and increases as airflow increases. The bypass and mixing curves are relatively flat. The graph also shows a dashed line representing the total static pressure. Two ErP 2018 logos are visible in the top right corner of the graph area.
- AHU configuration:**
- AHU:** DUPLEX 1500 Multi
- Casino:** Me.119.EC1 (230 V, EC)
- 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
 - operation point: 94,2 % 16,4 kW
- Supply air filter:** F7 pleated cartri
 - inclined tube manometer
- Exhaust air filter:** M5 pleated cartri
 - inclined tube manometer

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

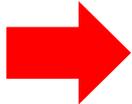


The screenshot shows the software interface with the following elements:

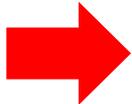
- Menu Bar:** Project, Equipment, Settings, Help
- Left Panel:** Project (expanded), Add a new equipment (highlighted with a red arrow)
- Main Content Area:**
 - Project Name: [] Date: 4.4.2019
 - Note: []
 - Customer:** Name, Street, Postal code, Town, Country, Company ID, VAT code
 - Contact person:** 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)

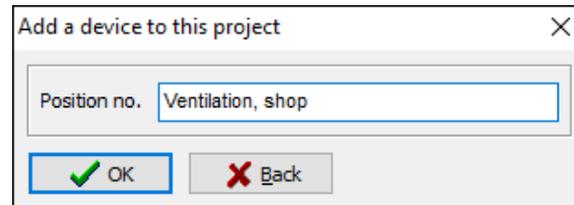
DUPLEX 1600 Flexi (2)

DUPLEX 2600 Flexi (2)

DUPLEX 3600 Flexi (2)

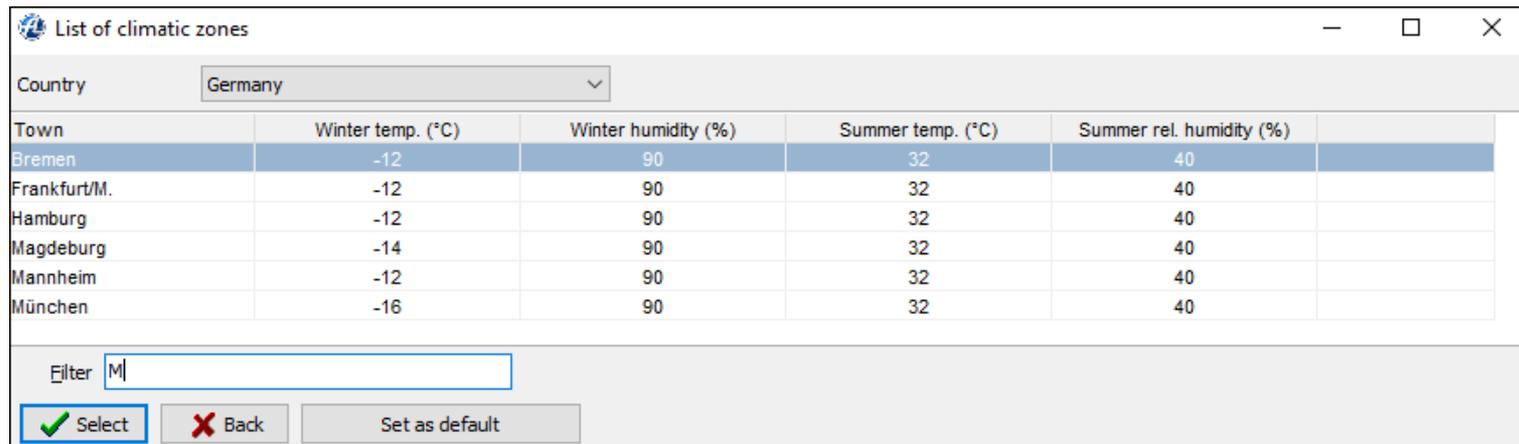
Units highlighted in bold match the selected criteria.

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 "OK" button with a checkmark icon and a grey "Back" button with a red X icon.

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. 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 "Select" button with a checkmark, a grey "Back" button with a red X, and a grey "Set as default" button.

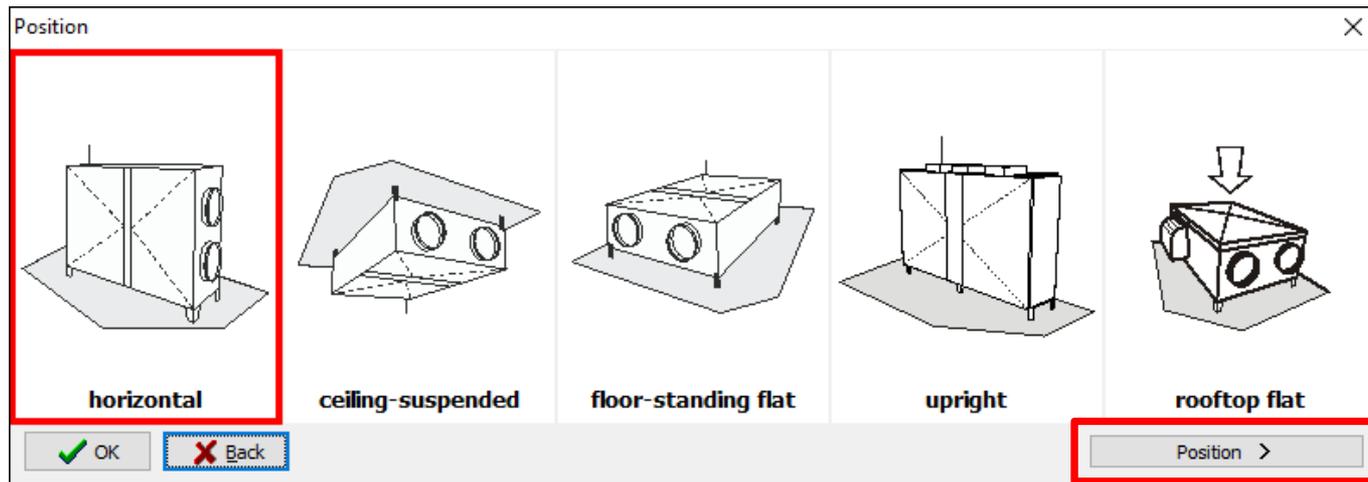
Town	Winter temp. (°C)	Winter humidity (%)	Summer temp. (°C)	Summer rel. humidity (%)
Bremen	-12	90	32	40
Frankfurt/M.	-12	90	32	40
Hamburg	-12	90	32	40
Magdeburg	-14	90	32	40
Mannheim	-12	90	32	40
München	-16	90	32	40

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 has 'standard' selected for condensate drain and 'with hinges' for door fastening. The 'Drawing' section shows a side view of the unit 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

Exhaust

	Required		Actual		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

Component	Model	Operation point	Power (kW)
Casing	DUPLEX 1500 Multi		
Supply fan	Me.119.EC1 (230 V, EC)	230 V, 50 Hz	0,34
Exhaust fan	Mi.119.EC1 (230 V, EC)	230 V, 50 Hz	0,37
Heat recovery core	S7.C	94,2 %	16,4
Supply air filter	F7 pleated cartri	<input type="checkbox"/> inclined tube manometer	
Exhaust air filter	M5 pleated cartri	<input type="checkbox"/> 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: 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		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: G4 M5 F7

Dampers:

 Bypass damper

 Mixing damper

 Shutoff damper in the e1 port

 standard

 with spring-return function

Exhaust

	Required		Actual		Unit
	Required	Actual	Required	Actual	
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: G4 M5 F7

Dampers:

 Shutoff damper in the i1 port

 standard

 with spring-return function

[Select suitable AHU](#)

AHU performance curve

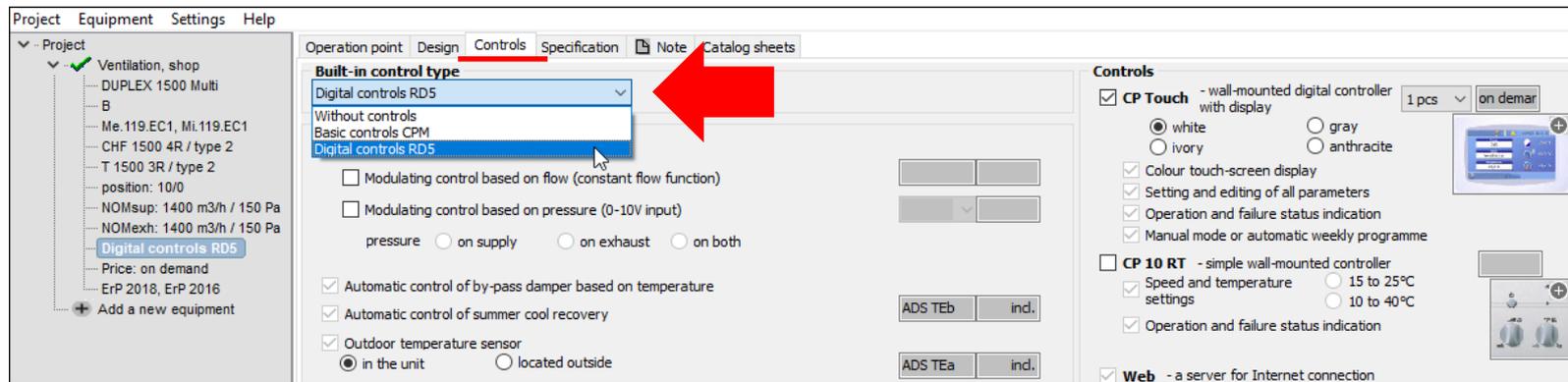
Legend: supply (red), exhaust (blue), Bypass (green), Mixing (purple)

AHU Details:

- 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 % efficiency, 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
 - fluid: water, 70 / 50 °C
 - hydraulic kit: 4-way (for control RD5, CPM), 1,66 kW
- 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

page 1 / 4

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.LD3.5.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	Absolut diameter
A2	A2 - outdoor air (OFA)	Ø 315 mm	
F1	F1 - extract air (EFA)	Ø 315 mm	
F2	F2 - extract air (EFA)	Ø 315 mm	
C	condensate drain	Ø 20 mm	size
T	Terminal heating coil	-T Terminal	connection dimension - hydraulic kit

Manipulation space

Accessories	min. 1000 mm	min. 500 mm	min. 200 mm
A1 - outdoor air			
C1 - condensate drain			
C2 - condensate drain			

AHU performance curve:

Water operation:
 e=supply (230 V), i=extract (230 V), b-bypass
 e=extract (230 V), i=supply (230 V)

Sound parameters:
Sound power level (L_{WA})

Frequency [Hz]	Total							
	63	125	250	500	1 k	2 k	4 k	8 k
inlet a1	86	88	91	86	80	81	85	87
inlet a2	86	85	71	82	77	78	76	69
inlet b1	89	86	67	86	82	88	81	85
inlet b2	83	89	75	78	75	75	68	67
ceiling to room	63	47	62	58	52	47	53	58

Sound pressure level (L_{pA})

Frequency [Hz]	Supply to room								Ceiling to room							
	42	47	52	58	63	68	73	77	82	87	92	97	102	107	112	
inlet a1	42	47	52	58	63	68	73	77	82	87	92	97	102	107	112	
inlet a2	42	47	52	58	63	68	73	77	82	87	92	97	102	107	112	
inlet b1	42	47	52	58	63	68	73	77	82	87	92	97	102	107	112	
inlet b2	42	47	52	58	63	68	73	77	82	87	92	97	102	107	112	
ceiling to room	42	47	52	58	63	68	73	77	82	87	92	97	102	107	112	

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)	RPM	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	

Fan: e - Me.119.EC1 (230 V), i - Me.119.EC1 (230 V)

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

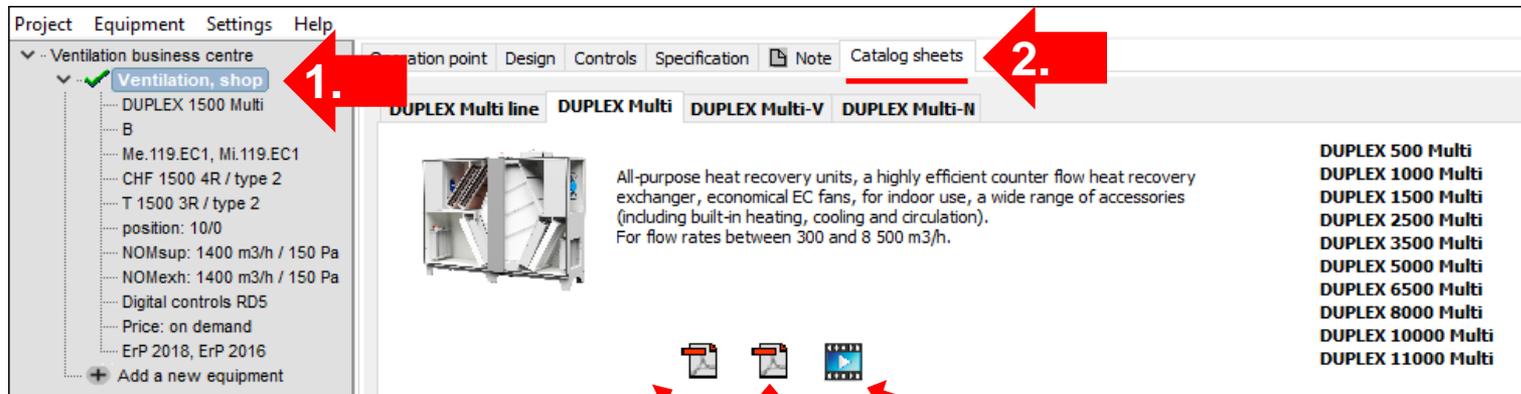
depth: 455 mm, weight: 295 kg

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.