

DUPLEX 220 (BP), 360 (BP)

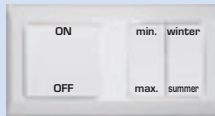
DUPLEX 550 BP

Compact unit ventilators
with heat recovery

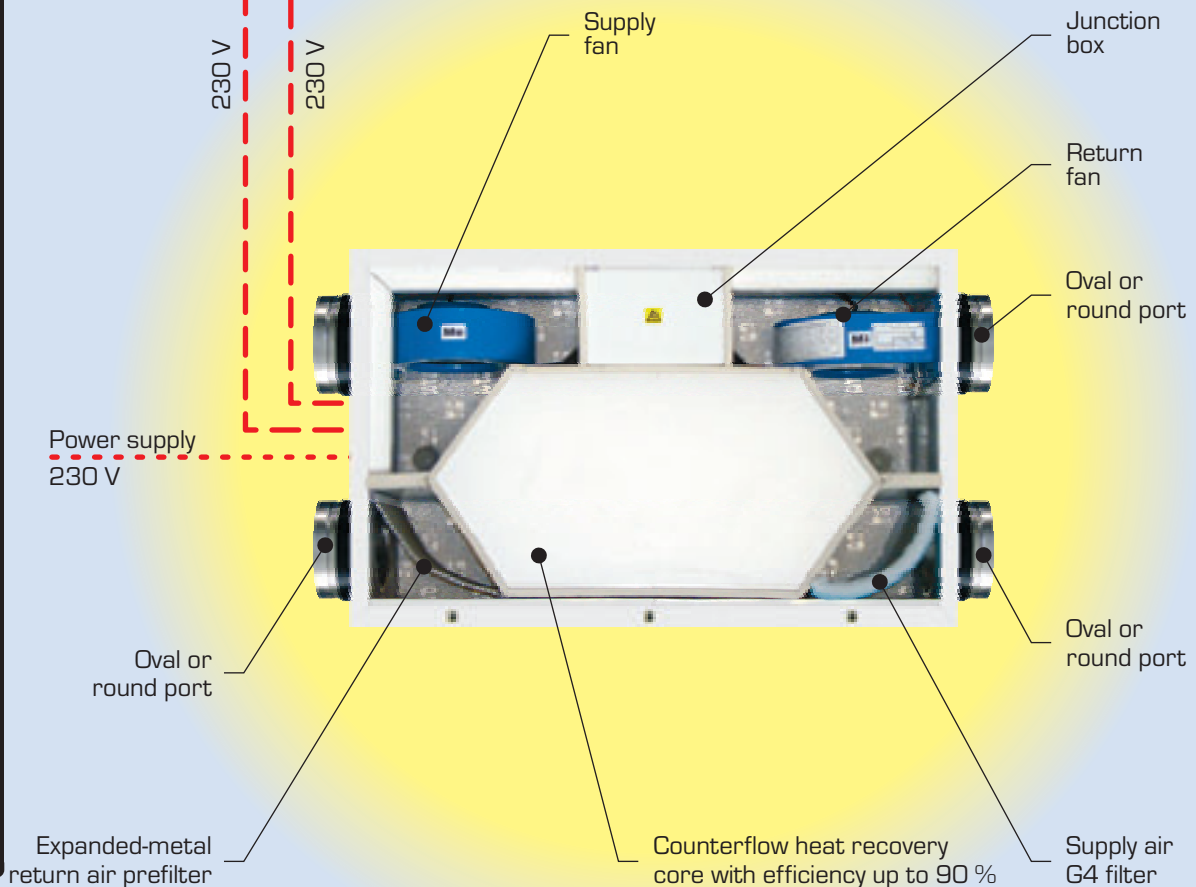


CONTROLS

Manual control



External signals



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DUPLEX 220, 220 BP, 360, 360 BP, 550 BP

DESCRIPTION AND APPLICATION

Application

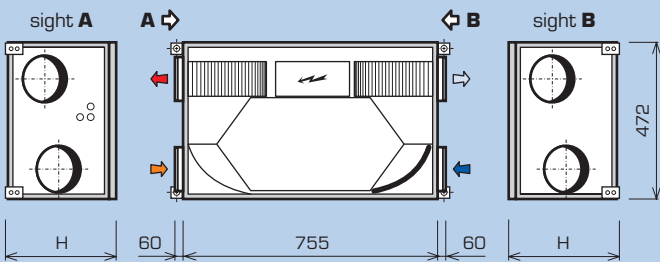
The patented DUPLEX units of the 220 (BP), 360 (BP) and 550 BP series is designed for comfort ventilation of all types of residential buildings, mainly for low-energy and passive family houses and high-rise residential buildings.

Basic description

The unit housing with a polyurethane insulation ($U = 0,95 \text{ Wm}^{-2}\text{K}^{-1}$) with no thermal bridges a built-in plastic counterflow heat recovery core (efficiency of 90 %), two centrifugal fans, supply air G4 filter, return air prefilter, built-in bypass damper with an actuator (only BP types) and a junction box. Condensate drain is located according to a unit installation position.

Round or oval connection ports are ready for connecting round flexible transitions without thermal bridges. Access to the unit through a bolted opening door.

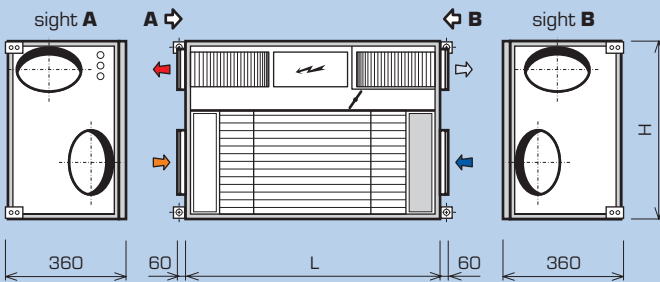
DUPLEX 220, 360



DUPLEX		220	360
Supply air - max. *	m ³ /h	220	360
Return air - max. *	m ³ /h	220	360
Max. Recovery efficiency	%	90	90
Connection ports	mm	∅ 125	∅ 160
Weight	kg	25	27
Depth H	mm	295	339
Summer bypass	-	external part (optional)	
Power supply	V	230 / 50 Hz	
Condensate drain	mm	1x ∅ 14 (optionally ∅ 26)	

* correct values according to respective performance curves

DUPLEX 220 BP, 360 BP, 550 BP



DUPLEX		220 BP	360 BP	550 BP
Supply air - max. *	m ³ /h	220	360	600
Return air - max. *	m ³ /h	220	360	600
Height	mm	360	360	360
Depth H	mm	530	530	735
Length (without ports) L	mm	750	750	830
Max. Recovery efficiency	%	90	90	90
Connection ports	mm	r.∅ 125	o. ∅ 160	r./o. ∅ 200
Weight	kg	27	29	36
By-pass	-	YES (summer / winter)		
Power supply	V	230 / 50 Hz		
Condensate drain	mm	1x ∅ 14 (optionally ∅ 26)		

* correct values according to respective performance curves

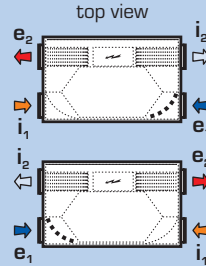
FEATURES

- 1) simple controls using standard switches enables to select low or high speed and bypass control (units equipped with no bypass switch off the return fan)
- 2) optionally supplied time relay enables to switch the unit e.g. by a bathroom switch with an adjustable delayed fan stop
- 3) excellent thermal insulation parameters of unit casing with total avoidance of thermal bridges
- 4) three possible installation positions (ceiling-suspended, wall-mounted, floor-standing) enables to install a unit in any house or apartment space
- 5) energy-optimized heat recovery exchanger reaches very economical ratio of used electric energy and air volume flow cost
- 6) small unit size enables installation even under bathroom or corridor ceiling
- 7) higher unit air volume flow enables occasional intensive air exhaust or summer ventilation
- 8) built-in by-pass for 220 BP, 360 BP and 550 BP units
- 9) general-use design enables left or right position installation by only changing position of filters and sensors during the installation

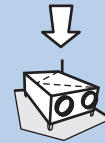
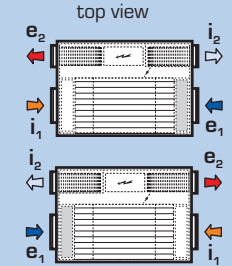
POSSIBLE INSTALLATION POSITIONS

FLOOR-STANDING FLAT

DUPLEX 220, 360

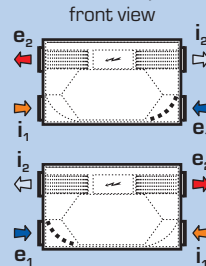


DUPLEX 220 BP, 360 BP, 550 BP

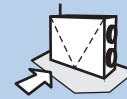
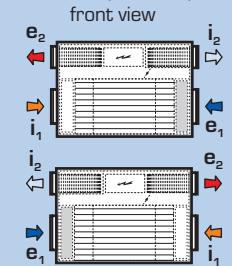


FLOOR-STANDING

DUPLEX 220, 360

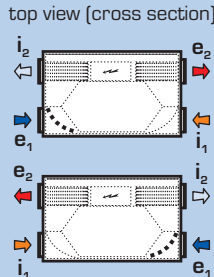


DUPLEX 220 BP, 360 BP, 550 BP

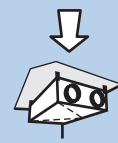
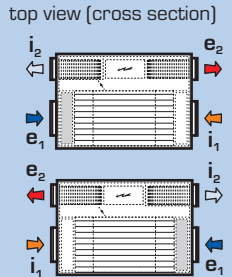


CEILING-SUSPENDED

DUPLEX 220, 360



DUPLEX 220 BP, 360 BP, 550 BP

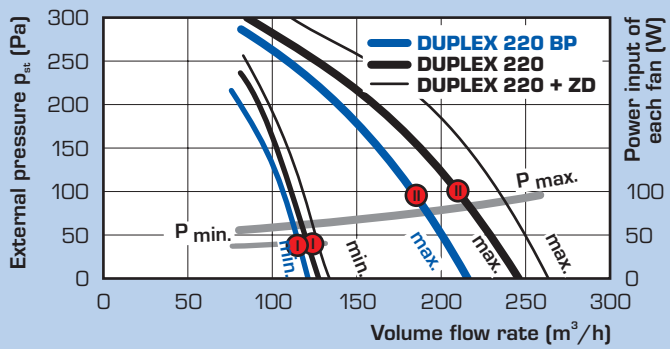


The units have a universal design to be installed in all three mentioned installation positions.

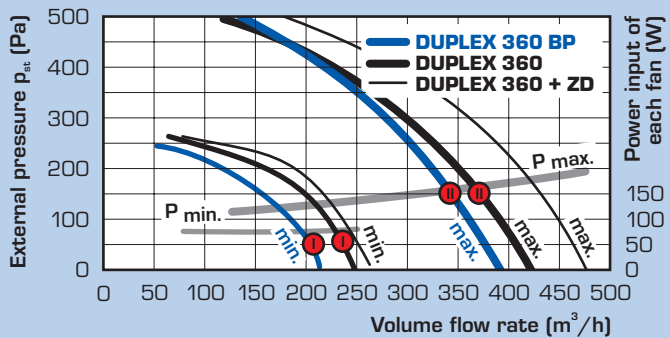
Legend:

- e₁ fresh outdoor air inlet
- e₂ fresh filtered supply air outlet
- i₁ stale return air inlet
- i₂ exhaust air outlet

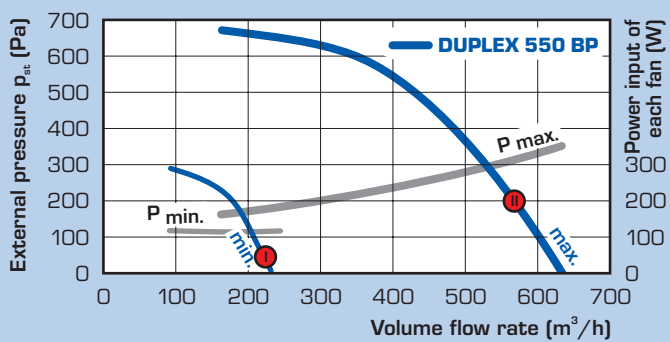
DUPLEX 220, 220 BP



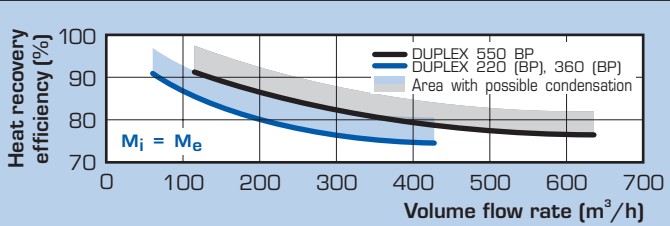
DUPLEX 360, 360 BP



DUPLEX 550 BP

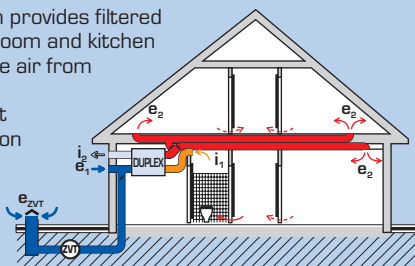


HEAT RECOVERY EFFICIENCY



ATREA AIR-HANDLING SYSTEM FOR LOW-ENERGY AND PASSIVE HOUSES

The air-handling system provides controlled equal-pressure ventilation with heat recovery for family houses and high-rise buildings with efficient utilization of all internal and external energy gains. The system provides filtered fresh air supply to each room and kitchen as well as exhaust of stale air from bathrooms and kitchen. For low-energy buildings it supplements the ventilation system with a heating system (radiators, floor heating, etc.).



- i_1 stale return air from bathrooms and kitchen
- i_2 exhaust air outlet after heat recovery
- e_{ZVT} fresh air supplied by a ground heat exchanger (option)
- e_1 fresh air from facade
- e_2 fresh air supply to rooms
- DUPLEX** unit ventilator of DUPLEX series
- ZVT** ground heat exchanger (option)

SOUND POWER LEVEL L_w (dB)

		dB(A)	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz
DUPLEX 220									
intake	I.	53,5	69,3	63,9	55,1	50,7	44,3	39,9	33,3
	II.	56,2	71,8	67,2	57,5	53,1	46,8	42,9	33,9
outlet	I.	63,0	66,4	66,8	64,8	59,6	58,5	52,0	47,6
	II.	71,0	71,3	71,3	70,3	65,9	65,8	64,1	59,7
To ambient	I.	51,8	57,6	49,0	50,2	49,9	47,6	42,9	34,2
	II.	55,1	59,3	51,0	52,1	52,4	51,0	47,5	40,0

DUPLEX 220 BP

intake	I.	53,2	59,9	57,7	58,9	49,7	44,7	38,9	28,9
	II.	54,2	68,6	58,4	59,3	50,9	45,9	39,9	30,2
outlet	I.	65,1	69,1	69,8	67,8	61,7	59,7	54,4	49,7
	II.	71,1	72,5	72,5	71,5	65,9	65,4	64,4	58,9
To ambient	I.	52,6	58,2	49,8	50,8	50,5	48,2	44,6	35,2
	II.	55,4	60,1	51,9	53,6	52,8	51	47,5	39,5

DUPLEX 360

intake	I.	58,3	83,0	63,6	54,5	49,8	44,9	43,1	32,9
	II.	63,4	76,0	74,1	67,1	59,5	49,9	51,8	43,0
outlet	I.	64,0	67,3	67,3	65,6	61,2	59,8	51,7	47,7
	II.	75,6	76,2	77,3	75,2	72,4	70,8	65,9	63,8
To ambient	I.	51,8	56,2	50,2	51,1	50,0	47,7	41,8	34,4
	II.	62,7	64,3	59,9	61,8	61,3	57,9	53,6	45,3

DUPLEX 360 BP

intake	I.	52,5	67,0	61,0	54,0	47,9	47,9	37,9	28,9
	II.	61,2	74,3	70,9	65,6	55,6	53,1	47,1	38,9
outlet	I.	65,7	71,7	71,7	67,8	62,6	60,9	53,3	49,3
	II.	75,5	77,1	78,7	76	72,3	70,3	65,9	63,2
To ambient	I.	53,2	59,6	53,2	53,8	51,1	48,8	42,7	36,6
	II.	62,4	64,8	61,3	62,3	60,8	57,5	53,2	45,9

DUPLEX 550 BP

intake	I.	46,9	66,0	59,5	49,5	37,5	32,0	27,5	18,5
	II.	59,7	78,1	71,4	63,2	51,1	46,2	45,6	37,5
outlet	I.	63,1	73,0	69,4	63,4	59,9	56,5	53,9	50,9
	II.	81,9	86,1	83,9	81,4	76,6	73,5	74,5	73,5
To ambient	I.	50,9	62,0	54,3	51,3	49,0	44,9	41,5	36,1
	II.	66,3	72,3	63,3	67,4	65,2	57,8	57,6	54,3

SOUND PRESSURE LEVEL L_{p1} (dB)

		dB(A)	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz
DUPLEX 220									
To ambient	I.	40,8	46,6	38,0	39,2	38,9	36,6	31,9	23,2
	II.	44,2	48,3	40,0	41,1	41,4	40,0	36,5	29,0
DUPLEX 220 BP									
To ambient	I.	41,7	47,2	38,8	39,8	39,5	37,2	33,6	24,2
	II.	44,4	49,1	40,9	42,6	41,8	40	36,5	28,5

DUPLEX 360

To ambient	I.	40,8	45,2	39,2	40,1	39,0	36,7	30,8	23,4
	II.	51,7	53,3	48,9	50,8	50,3	47	42,6	34,3

DUPLEX 360 BP

To ambient	I.	42,2	48,6	42,2	42,8	40,1	37,8	31,7	25,6
	II.	51,4	53,8	50,3	51,3	49,8	46,5	42,2	35

DUPLEX 550 BP

To ambient	I.	39,9	51	43,3	40,3	38	33,9	30,5	25,2
	II.	55,3	61,3	52,3	56,4	54,3	46,8	46,6	43,3

Sound pressure level is stated for distance of 1 m.

DUPLEX 220, 220 BP, 360, 360 BP, 550 BP CONTROLS

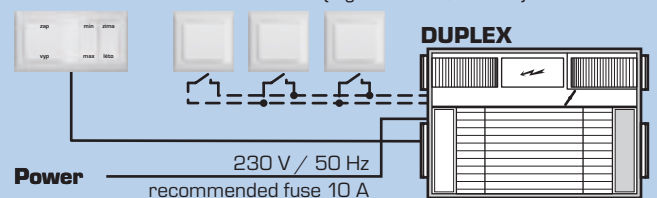
The units are controlled by three external wall-mounted switches (not supplied):

- 1) off / on
- 2) low / high speed
- 3) summer / winter mode

Each unit standardly includes a safety freeze protection thermostat for a heat recovery core and a junction box. A unit can optionally be fitted with a time relay for max. speed switching by a kitchen or a bathroom contact.

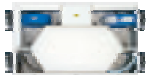
System wiring diagram

Manual control External contact (e.g. bathroom, kitchen)




ATREA MODULAR AIR-HANDLING SYSTEM



DUPLEX

	DUPLEX 220	order no. A160300	Unit ventilator with a counterflow heat recovery core, without a by-pass, with a G4 filters, operation and maintenance manual
	DUPLEX 360	order no. A160301	


DUPLEX BP

	DUPLEX 220 BP	order no. A160350	Unit ventilator with a counterflow heat recovery core, by-pass with an actuator, G4 filters, operation and maintenance manual
	DUPLEX 360 BP	order no. A160351	
	DUPLEX 550 BP	order no. A160352	

DUPLEX - OPTIONAL ACCESSORIES

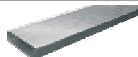





	ZD 220	order no. A160391	Shunt part for DUPLEX 220 and 360 units without a built-in by-pass is designed for equal-pressure ventilation without heat transfer in summer – fitted instead of a heat recovery core
	ZD 360	order no. A160392	
	Time relay	order no. A160390	Time relay to built in the DUPLEX units of the 220 (BP), 360 (BP) and 550 BP series is designed for switching of maximum fan speed by an external bathroom or kitchen switch

SPARE FILTRATION TEXTILES

	FT 220 - G4	order no. A170906	Spare filtration textiles with a basic G4 filtration class (10-pc set – 10 replacements) – for DUPLEX 220
	FT 220 - F7	order no. A170907	Spare filtration textiles with a higher F7 filtration class (10-pc set – 10 replacements) – for DUPLEX 220
	FT 360 - G4	order no. A170908	Spare filtration textiles with a basic G4 filtration class (10-pc set – 10 replacements) – for DUPLEX 360
	FT 360 - F7	order no. A170909	Spare filtration textiles with a higher F7 filtration class (10-pc set – 10 replacements) – for DUPLEX 360
	FT 330 EC - G4	order no. A170904	Spare filtration textiles with a basic G4 filtration class (5-pc set – 5 replacements) – for DUPLEX 220 BP and 360 BP
	FT 330 EC - F7	order no. A170905	Spare filtration textiles with a higher F7 filtration class (5-pc set – 5 replacements) – for DUPLEX 220 BP and 360 BP
	FT 500 EC - G4	order no. A160910	Spare filtration textiles with a basic G4 filtration class (5-pc set – 5 replacements) – for DUPLEX 550 BP
	FT 500 EC - F7	order no. A160911	Spare filtration textiles with a higher F7 filtration class (5-pc set – 5 replacements) – for DUPLEX 550 BP

AIR DISTRIBUTION, DISTRIBUTION ELEMENTS

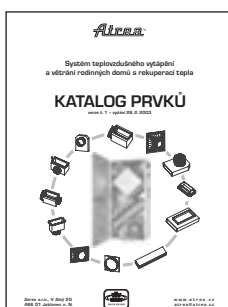
ATREA s. r. o. offers a complete air distribution system for DUPLEX units including fittings and terminal elements. For detailed specifications see the „**System of warm-air heating and ventilation of family houses with heat recovery – Designed data, product catalog**“.

	Floor ducts	160 x 40 mm air distribution ducts for floor system; 200 x 50 mm including distribution shafts, transitions and complete accessories
	Round ducts	Complete range of sturdy and flexible ducts, with acoustic and thermal insulation, sound attenuators – see the „Atrea catalog“
	Air distribution	Complete range of fitting, facade louvers, transitions, etc. – see the „Atrea catalog“
	Floor grilles	Adjustable grilles for floor supply air outlet to rooms
	Wall diffuser	Special air outlet \varnothing 100, \varnothing 125 mm for jet air supply from wall under ceiling
	Round diffusers	Wall and ceiling diffusers with lock for supply and return air – see „Atrea catalog“

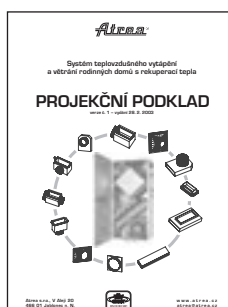
TECHNICAL AND DESIGN DATA OF ATREA SYSTEM



General description



Product catalog



Detailed design data



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