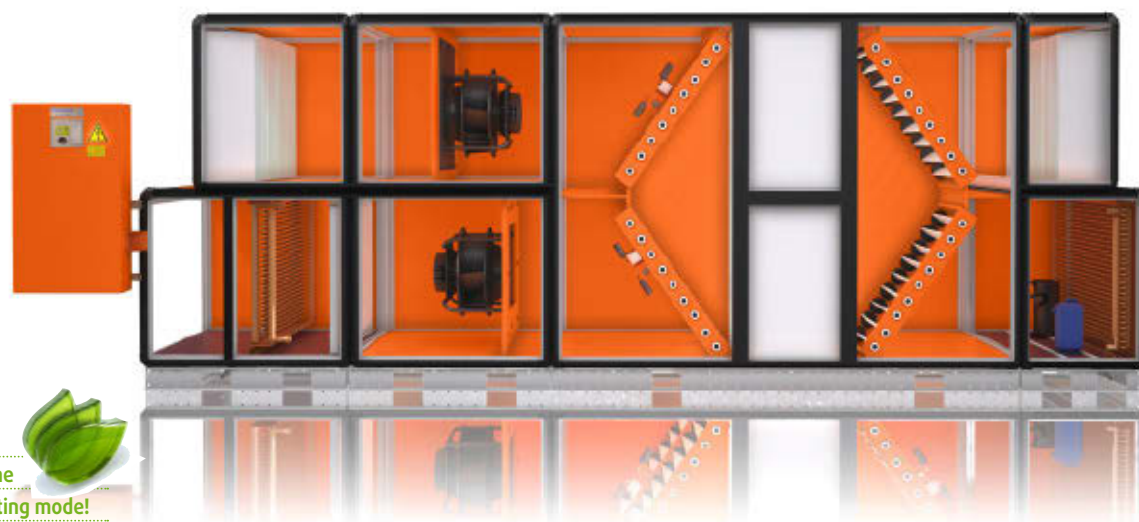


Comfort air conditioning unit with highly efficient regenerative heat storage packages



Resolair 68 10 01 - simplified illustration

Automatically selects the most economical operating mode!

Resolair 64 and 68

AIR VOLUME FLOW: 3,900 – 51,000 m³/h

At a glance:

- ▶ **For heat and cooling recovery**
- ▶ **Over 90% temperature efficiency**
- ▶ **Energy efficiency class H1 according to EN 13053:2012**
- ▶ **Corrosion-free heat storage packages made from polypropylene for more compact and lighter units**
- ▶ **Energy-saving EC fans**
- ▶ **Integrated compressor refrigeration system (68 series)**
- ▶ **Two-stage supply air filtration**
- ▶ **Humidity recovery up to 70%**
- ▶ **Fulfils the requirements of VDI 6022**

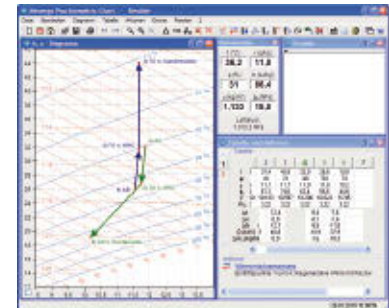
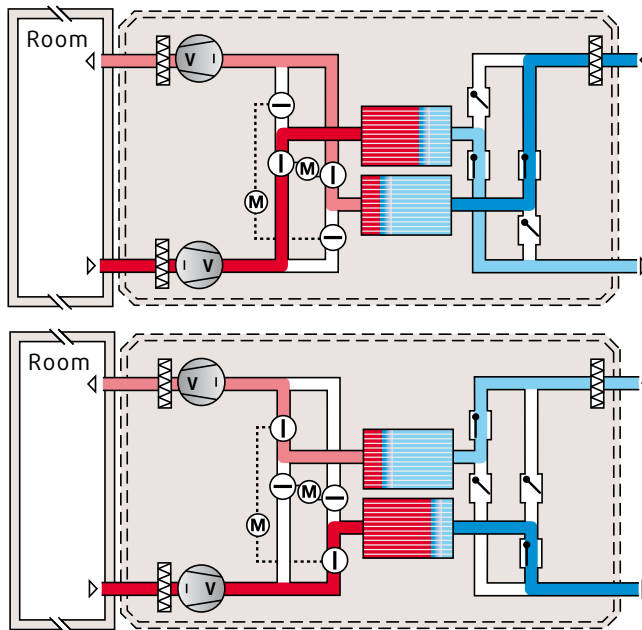
Units in the Resolair 64 and 68 series use a regenerative heat recovery system to achieve the highest heat recovery efficiency with low internal pressure losses. These are characterised by both high thermal and high electrical efficiency and are therefore appropriate for a wide range of comfort air conditioning applications. The combination of first-class

components with precise control and regulation systems guarantees economical operation at all times, while ensuring the highest degree of comfort air conditioning. A compressor refrigeration system integrated into the 68 series increases the cooling capacity of the overall system at high temperatures.

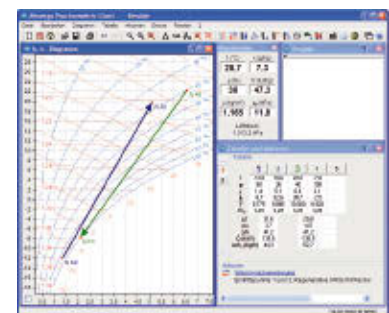
Further performance parameters and options:

- | | |
|---|--|
| <ul style="list-style-type: none"> - Filtering the air in any operating mode - Heat recovery bypass - Integrated bypass function - Thermal bridge factor TB1 - Individually controllable performance parameters - Complete unit, ready to connect, contains all structural elements for comfort air conditioning, including all control and regulation fittings - Intensive quality inspection with factory test run | <p>Options</p> <ul style="list-style-type: none"> - Recirculation air heating damper - Pumped hot water heating coil - Pumped chilled water cooling coil (64 series) - Reversible compressor refrigeration system (68 series) - Suppl air / return air airflow path exchanged (64 series) - Attenuator - Outdoor installation - Hot water extraction, to use waste heat for heating purposes (68 series) - Remote maintenance - And many more |
|---|--|

Functional description



Summertime conditions



Wintertime conditions

The unit contains two heat packets with highly sensitive accumulator mass, through which the outside and return air are transported alternately. The accumulator mass is able to capture heat from a warm air flow very rapidly and transferring this just as rapidly to the cold air flow.

A damper system is installed upstream and downstream of the packets. The damper system at RA/SA side is actuated by electric motors, while the damper system at OA/EA side operates dynamically (at series 68 also mechanical). The fans in the return air and supply air sections simultaneously supply cold outside air through one packet and warm return air through the other. One packet stores the heat from the return air, which the other packet simultaneously discharges stored heat into the outside air.

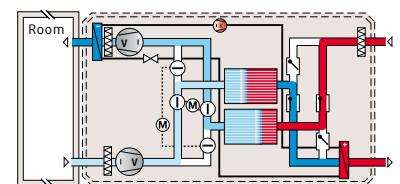
The temperature efficiency of the regenerative energy exchanger is over 90%. The unit thus obtains virtually all the heat energy back from the return air. This means that an additional supply air heating coil is not required and the internal heat load covers the transmission heat loss. Despite the very high heat recovery efficiency of the Resolair series, the regenerative heat recovery system used requires no defrost mode. The heating capacity normally needed is not required in this case.

In wintertime conditions, the humidity recovery of the regenerative heat recovery system is up to 70%, which in most applications makes an additional humidification system unnecessary in wintertime.

Where outside air temperatures are rising, variable alteration of the switching cycles allows heat recovery to be reduced all the way down to free cooling.

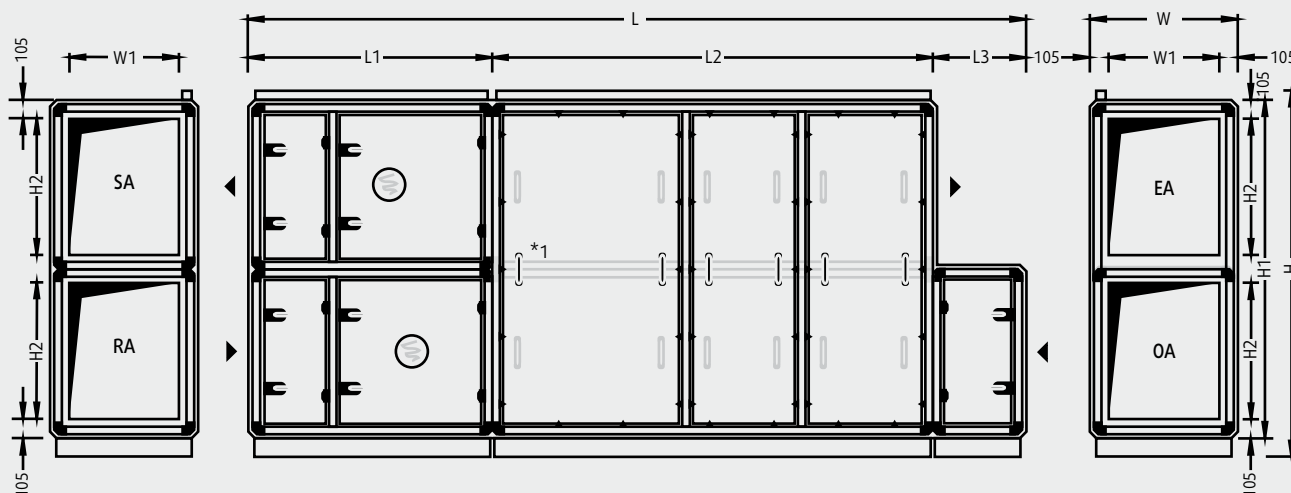
If the outside temperatures exceed the indoor temperature, the unit switched back into the basic cycle and then operates in "cooling recovery mode" with the same high degree of efficiency as for heat recovery.

For the removal of higher internal heat loads at high outside air temperatures the integrated compression refrigeration system is switched on (68 series).



Resolair Type 64

System dimensions and weights



Important! Where a system is operated in parallel, the supply air and return air ducts of the two units have to be brought together.

Where units are run in parallel, each unit has a controls cabinet.

Mirror-image design possible.
Supply air / return air airflow path exchanged optionally possible

*1 starting at unit type 64 21 01
horizontal cube partition

Unit type	L	W ¹	H ²	L1	L2	L3	W1	H1	H2	Weight
64 05 01	4,330	1,110	1,700	1,400	2,330	600	900	1,520	580	1,300
64 07 01	4,650	1,110	2,340	1,400	2,650	600	900	2,160	900	1,650
64 10 01	4,810	1,430	2,340	1,560	2,650	600	1,220	2,160	900	2,050
64 12 01	4,810	1,750	2,340	1,560	2,650	600	1,540	2,160	900	2,350
64 15 01	4,970	2,070	2,340	1,560	2,810	600	1,860	2,160	900	2,600
64 21 01	5,610	2,070	2,980	1,560	3,450	600	1,860	2,800	1,220	3,550
64 26 01	5,930	2,070	3,620	1,560	3,770	600	1,860	3,440	1,540	4,000
64 32 01	5,930	2,390	3,620	1,560	3,770	600	2,180	3,440	1,540	4,400

For service work, a clearance corresponding to dimension W is required on the operating side of the unit. If dimension W is smaller than one metre, please leave a clearance of one metre. For service work above the unit, please allow 50 mm working height clearance above the cable duct.

Please comply with the dimensions for body size, air duct connections and electrical switch cabinet.

All lengths are given in mm, weights in kg, weight incl. Controls cabinet.

- 1 Door fitting assembly increase unit width by 65 mm each operating side
 - 2 incl. 120 mm base frame, incl. 60 mm cable duct
- * Further partitioning for smaller apertures possible (at extra cost).

Largest transport unit*

Unit type	L	W	H ²	Weight
64 05 01	2,330	1,110	1,700	700
64 07 01	2,650	1,110	2,340	960
64 10 01	2,650	1,430	2,340	1,220
64 12 01	2,650	1,750	2,340	1,370
64 15 01	2,810	2,070	2,340	1,550
64 21 01	3,450	2,070	2,980	2,200
64 26 01	3,770	2,070	3,620	2,600
64 32 01	3,770	2,390	3,620	2,800

Controls cabinet

Unit Type	H x W x D	Position at unit
64 05 01	1,120 x 640 x 210	SA/RA side
64 07 01	1,120 x 640 x 210	SA/RA side
64 10 01	1,120 x 640 x 210	SA/RA side
64 12 01	1,120 x 640 x 210	SA/RA side
64 15 01	1,120 x 640 x 210	SA/RA side
64 21 01	1,120 x 640 x 210	SA/RA side
64 26 01	1,120 x 640 x 210	SA/RA side
64 32 01	1,280 x 640 x 210	SA/RA side

Technical specifications and services

Unit Type		64 05 01	64 07 01	64 10 01	64 12 01	64 15 01	64 21 01	64 26 01	64 32 01	64 xx xx
Optimum flow rate	m³/h	3,900	6,000	7,900	9,800	11,800	15,800	19,900	23,100	up to 51,000 *
Max. volume flow rate ¹	m³/h	6,200	8,400	11,400	14,100	17,100	22,700	28,400	34,200	
Heat recovery efficiency ²	%	over 90								
"Cooling recovery system" ³	kW	6.3	9.7	12.9	16.1	19.1	25.6	32.1	37.0	
Coefficient of power efficiency according to EN 13053:2012	%	90	90	90	90	90	90	90	90	
Recovery of humidity	%	up to 70								
Total electrical power rating ⁴	kW	2.21	3.66	4.38	5.33	7.86	10.32	14.70	16.92	
Current consumption ⁴	A	5.2	9.2	14.6	14.6	16.5	29.2	31.4	39.8	
Operating voltage		3 / N / PE 400 V 50 Hz								
Ext. pressure loss										
Supply and fresh air channel	Pa	300	300	300	300	400	400	500	500	
Return and exhaust air channel	Pa	300	300	300	300	400	400	500	500	
Sound power level ⁵										
Supply air vent	dB(A)	68	73	72	72	76	77	78	80	
RA connection	dB(A)	64	71	67	69	71	71	74	75	
Outside air vent	dB(A)	58	65	61	64	68	66	72	71	
EA connection	dB(A)	62	68	65	66	69	70	72	72	
Acoustic pressure at a distance of 1 m from the device ⁵	dB(A)	52	57	56	56	60	61	62	64	
Fan units										
Rated fan input for supply air ⁶	kW	1.20	1.98	2.43	2.92	4.36	5.64	8.10	9.30	
Rated fan input for return air ⁶	kW	1.01	1.68	1.95	2.41	3.50	4.68	6.60	7.62	
SFP category supply air return air		1 2	1 2	1 1	1 1	2 2	1 2	2 3	2 3	
Nominal rating supply air return air	kW	1.7 1.7	3.0 3.0	4.7 4.7	4.7 4.7	6.0 4.7	9.4 9.4	11.0 9.4	16.5 9.4	
Efficiency classes according to EN 13053:2012										
Heat recovery class		H1	H1	H1	H1	H1	H1	H1	H1	
Power consumption of fans SA RA		P1 P1	P1 P1	P1 P1	P1 P1	P1 P1	P1 P1	P2 P1	P1 P2	
Air velocity class		V2	V2	V2	V2	V2	V2	V2	V2	
Filtration according to DIN EN 779										
Supply air Outside air		F7 M5								
Return Air		M5								
LPHW (optional) ⁷										
Heating capacity SA=22°C ⁸	kW	3.1	4.6	6.4	7.9	8.7	12.2	14.9	17.3	
Heating capacity SA=30°C ⁸	kW	13.5	20.6	27.4	34.1	40.6	54.4	68.1	79.0	
Additional power consumption for supply air ⁶	W	50	60	100	80	100	160	160	240	
Water flow rate and pressure losses										
LPHW	m³/h kPa	0.88 4.0	1.39 4.5	2.14 3.7	2.14 4.3	2.13 5.0	3.82 3.9	4.81 3.7	4.81 4.1	
LPHW (pump warm water) valve	m³/h kPa	0.35 4.8	0.53 4.5	0.71 8.1	0.85 4.5	0.97 5.9	1.35 4.6	1.68 7.1	1.91 9.2	
Connections										
LPHW connection	DN	32	32	40	40	40	50	50	65	
LPHW control valve connection	DN	15	15	15	15	20	25	25	25	
LPCW (optional) ^{7,9}										
Cooling capacity SA ≈ 17°C ^{3,10}	kW	20.7	31.7	41.4	51.2	66.3	89.7	114.3	136.4	
Additional power consumption for supply air ⁶	W	300	230	320	370	480	660	750	960	
Water flow rate and pressure losses										
LPCW	m³/h kPa	2.96 14.4	4.54 9.8	5.92 7.8	7.32 6.6	9.48 9.7	12.82 9.5	16.35 9.8	19.51 16.3	
LPCW valve	m³/h kPa	2.96 22.0	4.54 20.6	5.92 13.7	7.32 8.6	9.48 14.4	12.82 10.3	16.35 16.7	19.51 23.8	
Connections										
LPCW connection	DN	40	50	50	65	80	80	80	100	
LPCW control valve-connection	DN	20	25	32	40	40	50	50	50	

Technical details upon request.

Specifications of technical data relate to the optimum flow rate and return air condition 22°C / 40% r.h., outside air condition -12°C / 90% r.h. and an altitude height of zero metres above sea level, unless otherwise specified

2 depends on operating condition
 3 at OA = 32°C / 40% r.h., RA = 26°C / 55% r.h.
 4 dependent on configuration of measurement and control system/unit
 5 at 250 Hz mid-band frequency
 6 with average filter contamination
 7 note higher power consumption of SA fan units

8 FL = 70°C
 9 supplementary equipment, device length extends
 10 FL = 6°C
 * maximum possible volume flow rate

Please seek approval of technical data and specifications prior to start of the planning process.

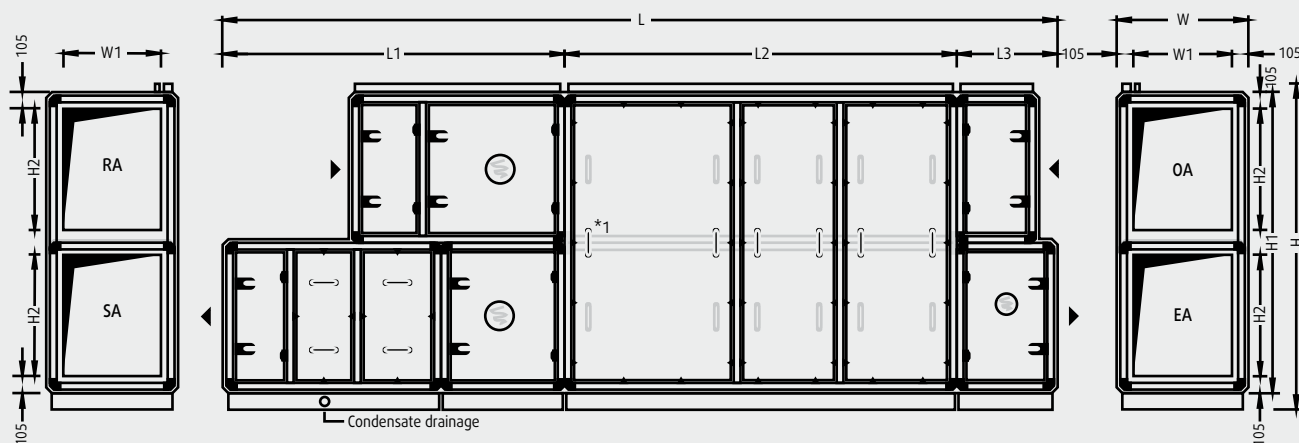
1 may require of alteration of technical equipment

Technical details upon request.

Resolair

Resolair Type 68

System dimensions and weights



Important! Where a system is operated in parallel, the supply air and return air ducts of the two units have to be brought together.

Where units are run in parallel, each unit has a controls cabinet.

Mirror-image design possible.

*1 starting at unit type 68 21 01
horizontal cube partition

Unit Type	L	W ¹	H ²	L1	L2	L3	W1	H1	H2	Weight
68 05 01	5,380	1,110	1,700	2,290	2,330	760	900	1,520	580	1,750
68 07 01	5,700	1,110	2,340	2,290	2,650	760	900	2,160	900	2,150
68 10 01	5,860	1,400	2,340	2,450	2,650	760	1,220	2,160	900	2,700
68 12 01	6,020	1,750	2,340	2,610	2,650	760	1,540	2,160	900	3,050
68 15 01	6,180	2,070	2,340	2,610	2,810	760	1,860	2,160	900	3,500
68 21 01	6,980	2,070	2,980	2,610	3,450	920	1,860	2,800	1,220	4,450
68 26 01	7,300	2,070	3,620	2,610	3,770	920	1,860	3,440	1,540	5,100
68 32 01	7,300	2,390	3,620	2,610	3,770	920	2,180	3,440	1,540	5,500

For service work, a clearance corresponding to dimension W is required on the operating side of the unit. If dimension W is smaller than one metre, please leave a clearance of one metre. For service work above the unit, please allow 50 mm working height clearance above the cable duct.

Please comply with the dimensions for body size, air duct connections and electrical switch cabinet.

All lengths are given in mm, weights in kg, weight incl. Controls cabinet.

- 1 Door fitting assembly increase unit width by 65 mm each operating side
- 2 incl. cable duct, cold air duct and base frame

* Further partitioning for smaller apertures possible (at extra cost).

➡ Largest transport unit*

Unit Type	L	W	H ²	Weight
68 05 01	2,330	1,110	1,700	720
68 07 01	2,650	1,110	2,340	980
68 10 01	2,650	1,400	2,340	1,250
68 12 01	2,650	1,750	2,340	1,400
68 15 01	2,810	2,070	2,340	1,570
68 21 01	3,450	2,070	2,980	2,220
68 26 01	3,770	2,070	3,620	2,620
68 32 01	3,770	2,390	3,620	2,820

➡ Controls cabinet

Unit Type	H x W x D	Position at unit
68 05 01	1,120 x 640 x 210	SA/RA side
68 07 01	1,120 x 640 x 210	SA/RA side
68 10 01	1,120 x 640 x 210	SA/RA side
68 12 01	1,120 x 640 x 210	SA/RA side
68 15 01	1,280 x 640 x 210	SA/RA side
68 21 01	1,280 x 640 x 210	SA/RA side
68 26 01	1,600 x 640 x 250	SA/RA side
68 32 01	1,600 x 640 x 250	SA/RA side

Technical specifications and services

Unit Type		68 05 01	68 07 01	68 10 01	68 12 01	68 15 01	68 21 01	68 26 01	68 32 01	68 xx xx
Optimum flow rate	m³/h	3,900	6,000	7,900	9,800	11,800	15,800	19,900	23,100	up to 51,000 *
Max. volume flow rate ¹	m³/h	6,200	8,400	11,400	14,100	17,100	22,700	28,400	34,200	
Heat recovery efficiency ²	%	over 90								Technical details upon request.
"Cooling recovery system" ³	kW	6.3	9.8	12.9	16.0	19.1	25.4	32.0	37.1	
Coefficient of power efficiency according to EN 13053:2012	%	90	90	90	90	90	90	90	90	
Recovery of humidity	%	up to 70								
Total electrical power rating ⁴	kW	8.27	11.62	16.56	16.84	23.59	28.22	37.56	43.93	
Current consumption ⁴	A	22.2	31.2	41.6	48.6	67.9	79.2	107.5	107.8	
Operating voltage		3 / N / PE 400 V 50 Hz								
Ext. pressure loss										
Supply and fresh air channel	Pa	300	300	300	300	400	400	500	500	
Return and exhaust air channel	Pa	300	300	300	300	400	400	500	500	
Sound power level ⁵										
Supply air vent	dB(A)	72	70	71	70	74	76	77	79	
RA connection	dB(A)	65	71	76	70	72	71	74	76	
Outside air vent	dB(A)	66	65	63	64	71	68	74	72	
EA connection	dB(A)	60	65	63	64	66	68	69	70	
Acoustic pressure at distance of 1 m from device ⁵	dB(A)	58	58	58	57	61	62	64	65	
Fan units										
Rated fan input for supply air ⁶	kW	1.49	2.20	2.72	3.24	4.68	6.14	8.70	9.97	
Rated fan input for return air ⁶	kW	1.08	1.79	2.11	2.58	3.83	5.00	6.94	8.00	
SFP category supply air return air		2 2	2 2	1 2	1 2	2 2	2 2	3 3	2 3	
Nominal rating supply air return air	kW	3.0 1.7	3.0 3.0	4.7 4.7	4.7 4.7	10.8 4.7	9.4 9.4	16.2 9.4	16.5 9.4	
Compressor refrigeration system										
Filling volume for refrigerant type R410A	kg	7.0	10.5	17.5	19.5	21.0	30.5	39.5	42.5	
Rated compressor input	kW	5.7	7.6	11.8	11.1	15.3	17.2	22.1	26.1	
Mechanical cooling capacity ^{2,7}	kW	17.2	26.7	37.4	41.0	52.5	66.2	83.4	97.6	
Energy Efficiency Ratio ⁸	EER	4.1	4.8	4.3	5.1	4.7	5.3	5.2	5.2	
Efficiency classes according to EN 13053:2012										
Heat recovery class		H1	H1	H1	H1	H1	H1	H1	H1	
Power consumption of fans SA RA		P1 P1	P1 P1	P1 P1	P1 P1	P1 P1	P1 P1	P2 P1	P1 P1	
Air velocity class		V2	V2	V2	V2	V2	V2	V2	V2	
Filtration according to DIN EN 779										
Supply air Outside air		F7 M5								
Return Air		M5								
LPHW (optional) ⁹										
Heating capacity SA=22°C ¹⁰	kW	2.9	4.5	6.2	7.9	8.7	11.8	14.3	16.8	
Heating capacity SA=30°C ¹⁰	kW	13.3	20.5	27.2	34.0	40.5	54.1	67.8	78.6	
Additional power consumption for supply air ⁶	W	70	10	90	110	120	200	240	270	
Water flow rate and pressure losses										
LPHW	m³/h kPa	0.88 4.4	1.40 4.6	2.13 3.7	2.13 4.3	2.14 5.0	3.87 4.0	4.80 3.7	4.81 4.1	
LPHW (pump warm water) valve	m³/h kPa	0.34 4.6	0.53 4.4	0.71 8.0	0.84 4.4	0.97 5.9	1.34 4.5	1.67 7.1	1.90 9.1	
Connections										
LPHW connection	DN	32	32	40	40	40	50	50	65	
LPHW control valve connection	DN	15	15	15	15	15	20	20	20	

Specifications of technical data relate to the optimum flow rate and return air condition 22°C / 40% r.h., outside air condition -12°C / 90% r.h. and an altitude height of zero metres above sea level, unless otherwise specified

1 may require of alteration of technical equipment

2 depends on operating condition

3 at OA = 32°C / 40% r.h., RA = 26°C / 55% r.h.

4 dependent on configuration of measurement and control system/unit

5 at 250 Hz mid-band frequency

6 with average filter contamination

7 at SA ≈ 17°C

8 incl. „cooling recovery“

9 note higher power consumption of SA fan units

10 FL = 70°C

* maximum possible volume flow rate

Please seek approval of technical data and specifications prior to start of the planning process.

Technical details upon request.

Resolair