Comfort air conditioning unit with double plate heat exchanger and adiabatic evaporative cooling system

Automatically selects the most economical operating mode!

Adsolair 58 13 01 - simplified illustration

Adsolair

Adsolair 56/58

AIR VOLUME FLOW: 2,600 – 23,100 m³/h

Eurovent seal refers to range Menerga Air, more information on page 6. Check ongoing validity of certificate: www.eurovent-certification.com or www.certiflash.com

At a glance:

- **For heat and cooling recovery**
- **Energy-saving EC fans**
- **Integrated compressor refrigeration system (58 series)**
- **Intelligent air bypass duct**
- **Two-stage supply air filtration**
- **Adiabatic evaporative cooling – Cooling without electricity**
- **Integrated defrosting function**
- **Compact design**
- **Freely configurable HVAC system**
- **Fulfils the requirements of VDI 6022**

Requirements with high thermal loads can be ideally met with the different cooling options of the units in series Adsolair. Series 56 uses adiabatic evaporative cooling an achieves to cool up to 12 K* with water. At series 58 the total cooling capacity is further enhanced with an integrated compression refrigeration system.

Further performance parameters and options:

- Filtering the air in any operating mode
- Corrosion-free heat exchanger made from polypropylene
- Pumped hot water heating coil
- 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 trial run

Options

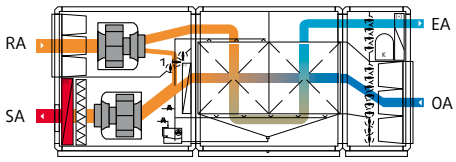
- Recirculation air heating damper
- Pumped chilled water cooling coil (56 series)
- Pressure reversal
- Sound absorber
- Reversible refrigeration system (58 series)
- Outdoor installation
- Hot water extraction, to use waste heat for heating purposes (58 series)
- Increased cooling capacity
- Remote maintenance
- And many more

* at OA = 34° C / 40% r.h.

Functional description

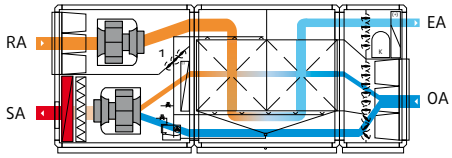
Wintertime conditions

In case of low outside temperatures the system operates completely in heat recovery mode. The standard heating coil (LPHW) compensates for ventilation and transmission heat losses of the building as required.



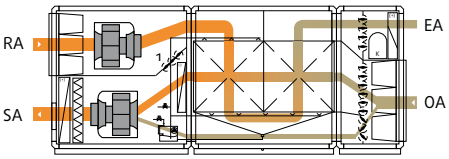
Defrosting Circuit

All recuperative heat exchangers tend to ice over in the exhaust air section in case of low outside temperatures. In defrost operation, the OA-SA bypass opens, reducing the outside air flow rate going through the recuperator. The heat contained in the return air melts any ice in the heat exchanger, while the airflow rate routed past the recuperator is regulated as required.



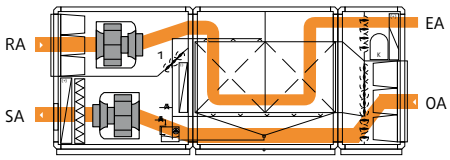
Transitional Period

As the outside air temperatures rise, the heat recovery requirement is reduced. The OA/SA bypass damper, which runs along the entire depth of the device, is continuously regulated in order to achieve the desired supply air temperature.



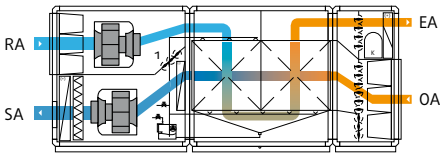
Free cooling

If the outside temperatures continue to rise, the heat recovery is bypassed. The structural design of the OA/SA bypass ensures that the pressure losses within the unit are low and that the power consumption of both fans in bypass mode is also low.



Summertime conditions

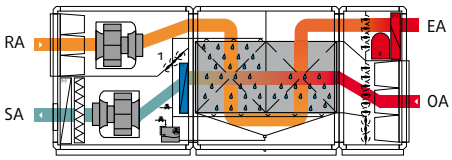
If the outside temperature rises above the return temperature, the highly efficient heat exchanger is used as a "cooling recovery system". The warm outside air is cooled by the return air.



Indirect adiabatic evaporative cooling

The Menerga Adsolair principle uses the advantages of indirect adiabatic evaporative cooling without the disadvantages of supply air humidification. A major component of the Adsolair principle is the double plate heat exchanger, in which the return air is "adiabatically" cooled. In return, the outside air is cooled by the humid, cold exhaust air, without being humidified.

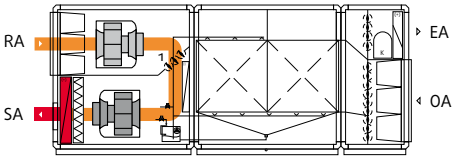
The high efficiency rate lies in the fact that both processes (adiabatic evaporative cooling of the return air + cooling of the outside air) take place simultaneously in the heat exchanger. The high degree of temperature efficiency of the double plate heat exchanger allows significant cooling of the OA-SA by over 12 K*. If required, the compressor refrigeration system will switch on and cool the supply air even further.



* at OA = 34° C / 40% r.h.

Recirculation Air Operation (heating)*

In recirculation air mode, the outdoor and exhaust air dampers are closed. The air is heated via the heating coil. Rooms which are not used all of the time, such as lecture halls or sports halls, can therefore be quickly heated before being used.

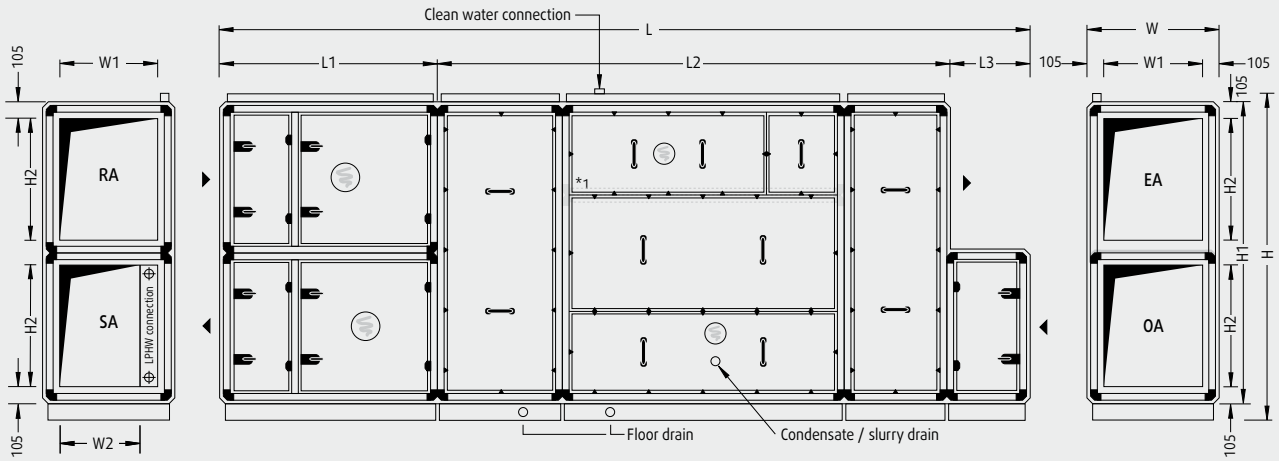


* only possible with optional recirculation air heating damper

1 Recirculation air heating damper (additional equipment)

Adsolair Type 56

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.

Proportions/details vary depending on system size.

Mirror-image design possible.

Unit type	L[1]	W[2]	H[3]	L1[1]	L2[1]	L3[1]	W1	W2	H1	H2	Weight[1]
56 03 01	4,350	790	1,700	1,240	2,510	600	580	510	1,520	580	1,100
56 05 01	4,510	1,110	1,700	1,400	2,510	600	900	830	1,520	580	1,350
56 06 01	5,630	790	2,340	1,400	3,630	600	580	420	2,160	900	1,550
56 10 01	5,630	1,110	2,340	1,400	3,630	600	900	740	2,160	900	1,850
56 13 01	5,790	1,430	2,340	1,560	3,630	600	1,220	1,060	2,160	900	2,200
56 16 01	5,790	1,750	2,340	1,560	3,630	600	1,540	1,380	2,160	900	2,520
56 19 01	5,790	2,070	2,340	1,560	3,630	600	1,860	1,700	2,160	900	2,800
56 25 01	6,430	2,070	2,980	1,560	4,270	600	1,860	1,700	2,800	1,220	3,800
56 32 01	7,230	2,070	3,620	1,560	5,070	600	1,860	1,700	3,440	1,540	4,650
56 36 01	7,230	2,390	3,620	1,560	5,070	600	2,180	2,020	3,440	1,540	5,500

Largest transport unit *

Unit Type	L[1]	W[2]	H[3]	Weight[1]
56 03 01	2,510	790	1,700	600
56 05 01	2,510	1,110	1,700	750
56 06 01	3,630	790	2,340	950
56 10 01	3,630	1,110	2,340	1,120
56 13 01	3,630	1,430	2,340	1,300
56 16 01	3,630	1,750	2,340	1,500
56 19 01	3,630	2,070	2,340	1,680
56 25 01	4,270	2,070	2,980	2,400
56 32 01	5,070	2,070	3,620	3,150
56 36 01	5,070	2,390	3,620	3,500

Operating weight

Unit Type	Weight[1]
56 03 01	1,140
56 05 01	1,390
56 06 01	1,600
56 10 01	1,920
56 13 01	2,290
56 16 01	2,630
56 19 01	2,940
56 25 01	3,990
56 32 01	4,880
56 36 01	5,790

Controls cabinet

Unit Type	H x W x D[1]	Position at unit
56 03 01	1,120 x 640 x 210	SA/RA side
56 05 01	1,120 x 640 x 210	SA/RA side
56 06 01	1,120 x 640 x 210	SA/RA side
56 10 01	1,120 x 640 x 210	SA/RA side
56 13 01	1,120 x 640 x 210	SA/RA side
56 16 01	1,120 x 640 x 210	SA/RA side
56 19 01	1,120 x 640 x 210	SA/RA side
56 25 01	1,120 x 640 x 210	SA/RA side
56 32 01	1,280 x 640 x 210	SA/RA side
56 36 01	1,280 x 640 x 210	SA/RA side

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 May change depending on choosen option
2 Door fitting assembly increase unit width by 65 mm each operating side
3 incl. 120 mm base frame, plus 60 mm cable duct

* Partitioning of unit for smaller apertures possible (at extra cost).

Technical specifications and services

Unit Type		56 03 01	56 05 01	56 06 01	56 10 01	56 13 01	56 16 01
Optimum flow rate	m^3/h	2,600	3,900	4,000	6,000	7,900	9,800
Coefficient of power efficiency according to EN 13053:2012	%	69	69	67	67	68	68
Heat recovery rate according to EN 308	%	72	72	70	70	70	71
Total electrical power rating [1]	kW	2.09	2.83	2.87	4.12	5.14	6.21
Max. current consumption [1]	A	9.1	9.1	9.1	10.7	17.4	17.4
Operating voltage		3 / N / PE 400 V 50 Hz					
Ext. pressure loss							
Supply and fresh air channel	Pa	300	300	300	300	300	300
Return and exhaust air channel	Pa	300	300	300	300	300	300
Sound power level [2]							
Supply air vent	dB(A)	68	65	65	73	67	72
RA connection	dB(A)	62	65	64	69	64	68
Outside air vent	dB(A)	58	57	57	62	57	60
EA connection	dB(A)	61	61	62	67	63	67
Acoustic pressure at a distance of 1 m from the device [2]	dB(A)	54	52	52	57	54	58
Fan units							
Rated motor input for supply air [3]	kW	0.97	1.36	1.34	2.00	2.49	3.04
Rated motor input for return air [3]	kW	0.82	1.17	1.23	1.82	2.25	2.77
SFP category supply air | return air		1 | 2	1 | 2	1 | 2	1 | 2	1 | 2	1 | 2
Nominal rating supply air | return air	kW	2.5 | 2.5	2.5 | 2.5	2.5 | 2.5	2.9 | 2.9	5.0 | 5.0	5.0 | 5.0
Inner specific fan power (SFP_{int}) [4]	Ws/m^3	863	824	775	752	693	677
Evaporative cooling [5]							
Cooling capacity of adiabatic evaporative cooling system [6]	kW	9.1	13.7	13.6	20.5	27.2	33.9
Rated pump input for evaporative cooling	kW	0.3	0.3	0.3	0.3	0.4	0.4
Efficiency classes according to EN 13053:2012							
Heat recovery class		H2	H2	H2	H2	H2	H2
Power consumption of fan motors SA | RA		P1 | P1	P1 | P1	P1 | P1	P1 | P1	P1 | P1	P1 | P1
Air velocity class		V1	V1	V2	V2	V2	V2
Filtration according to DIN EN 779							
Supply air | Outside air		F7 | M5					
Return Air		M5					
LPHW							
Heating capacity SA=22° C [7]	kW	6.4	9.6	11.0	16.2	21.1	26.0
Heating capacity SA=30° C [7]	kW	13.4	20.1	21.7	32.4	42.6	52.5
Heating capacity Defrost [7,8]	kW	6.8	10.4	10.9	16.3	21.3	26.6
Water flow rate and pressure losses at heating capacity SA=22° C							
LPHW	m^3/h | kPa	0.50 | 5.2	0.88 | 4.2	0.88 | 4.7	1.38 | 4.3	2.13 | 3.5	2.16 | 4.2
LPHW valve	m^3/h | kPa	0.39 | 5.9	0.57 | 5.2	0.65 | 6.8	0.92 | 5.3	1.23 | 3.8	1.40 | 5.0
Connections							
LPHW connection	DN	32	32	32	32	40	40
LPHW control valve connection	DN	15	15	15	15	15	15
Clean water connection [9]	DN	15	15	15	15	15	20
Condensate / slurry drain	DN	40	40	40	40	40	40
Floor drains	DN	40	40	40	40	40	40
LPCW (optional) [10]							
Cooling capacity SA ≒ 17° C [11]	kW	8.7	13.3	14.1	21.6	29.0	36.6
LPCW connection	DN	32	40	40	50	50	65
LPCW control valve-connection	DN	15	20	20	25	32	40
Water flow rate and pressure losses							
LPCW	m^3/h | kPa	1.24 | 8.9	1.91 | 8.4	2.02 | 10.7	3.08 | 10.2	4.14 | 11.9	5.23 | 11.5
LPCW valve	m^3/h | kPa	1.24 | 9.6	1.91 | 9.2	2.02 | 16.3	3.08 | 14.9	4.14 | 17.2	5.23 | 17.5

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 standard density (1.204 kg/m^3), unless otherwise specified.

1 dependent on configuration of measurement and control system/unit
2 at 250 Hz mid-band frequency
3 with average filter contamination
4 according EU guideline No. 1253/2014 [Ecodesign guideline]
5 water quality of make-up water corresponds to VDI 3803 table B3 with a bacteria count < 100 CFU/ml, water hardness range "middle".
6 for RA 26° C; 55 % r.h. and OA 32° C; 40% r.h.
7 FL = 70° C
8 At OA=-15° C, SA=18° C, 66% optimum flow rate and active defrost function
9 2 bar system pressure required at 25 l/min flow rate.
10 may require of alteration of technical equipment
11 Note higher power consumption of SA fan units
12 FL = 6° C, return air condition 26° C / 55% r.h., outside air condition 32° C / 40% r.h

Please seek approval of technical data and specifications prior to start of the planning process. With every single selection we do to your individual requirements our certified selection software automatically checks the Ecodesign compliance level 1 and 2.

Technical specifications and services

Unit Type		56 19 01	56 25 01	56 32 01	56 36 01	56 xx xx
Optimum flow rate	m^3/h	11,800	15,800	19,900	23,100	< 40,800
Coefficient of power efficiency according to EN 13053:2012	%	68	68	70	70	
Heat recovery rate according to EN 308	%	71	70	73	73	
Total electrical power rating [1]	kW	8.58	10.92	15.78	18.62	
Max. current consumption [1]	A	19.0	33.6	36.4	39.7	
Operating voltage		3 / N / PE 400 V 50 Hz				
Ext. pressure loss						
Supply and fresh air channel	Pa	400	400	500	500	
Return and exhaust air channel	Pa	400	400	500	500	
Sound power level [2]						
Supply air vent	dB(A)	80	71	78	80	
RA connection	dB(A)	73	68	74	77	
Outside air vent	dB(A)	66	60	66	69	
EA connection	dB(A)	74	67	75	79	
Acoustic pressure at a distance of 1 m from the device [2]	dB(A)	65	57	70	69	
Fan units						
Rated motor input for supply air [3]	kW	4.17	5.44	7.88	9.04	
Rated motor input for return air [3]	kW	3.91	4.98	7.40	8.48	
SFP category supply air | return air		1 | 3	1 | 2	2 | 3	2 | 3	
Nominal rating supply air | return air	kW	6.0 | 5.0	10.0 | 10.0	10.0 | 10.0	12.0 | 12.0	
Inner specific fan power (SFP_{int})	Ws/m^3	690	566	665	665	
Evaporative cooling [4]						
Cooling capacity of adiabatic evaporative cooling system [5]	kW	40.7	53.9	70.8	82.4	
Rated pump input for evaporative cooling	kW	0.50	0.50	0.50	1.1	
Efficiency classes according to EN 13053:2012						
Heat recovery class		H2	H2	H2	H2	
Power consumption of fan motors SA | RA		P1 | P1	P1 | P1	P1 | P1	P1 | P1	
Air velocity class		V2	V2	V2	V2	
Filtration according to DIN EN 779						
Supply air | Outside air		F7 | M5				
Return Air		M5				
LPHW						
Heating capacity SA=22° C [6]	kW	31.1	43.5	46.2	53.5	
Heating capacity SA=30° C [6]	kW	62.8	86.0	99.6	115.7	
Heating capacity Defrost [6,7]	kW	31.9	41.3	52.2	60.8	
Water flow rate and pressure losses at heating capacity SA=22° C						
LPHW	m^3/h | kPa	2.14 | 4.8	3.86 | 3.9	4.77 | 3.5	4.77 | 3.9	
LPHW (pump warm water) valve	m^3/h | kPa	1.58 | 6.3	2.31 | 5.3	2.61 | 4.4	2.93 | 5.5	
Connections						
LPHW connection	DN	40	50	50	65	
LPHW control valve connection	DN	20	25	25	25	
Clean water connection [8]	DN	20	20	20	20	
Condensate / slurry drain	DN	40	40	40	40	
Floor drains	DN	40	40	40	40	
LPCW (optional) [9,10]						
Cooling capacity SA ≏ 17° C [11]	kW	43.7	57.8	72.7	88.5	
LPCW connection	DN	80	80	80	100	
LPCW control valve-connection	DN	40	50	50	50	
Water flow rate and pressure losses						
LPCW	m^3/h | kPa	6.24 | 11.1	8.26 | 14.0	10.40 | 11.3	12.66 | 17.6	
LPCW valve	m^3/h | kPa	6.24 | 15.2	8.26 | 17.1	10.40 | 17.3	12.66 | 25.7	

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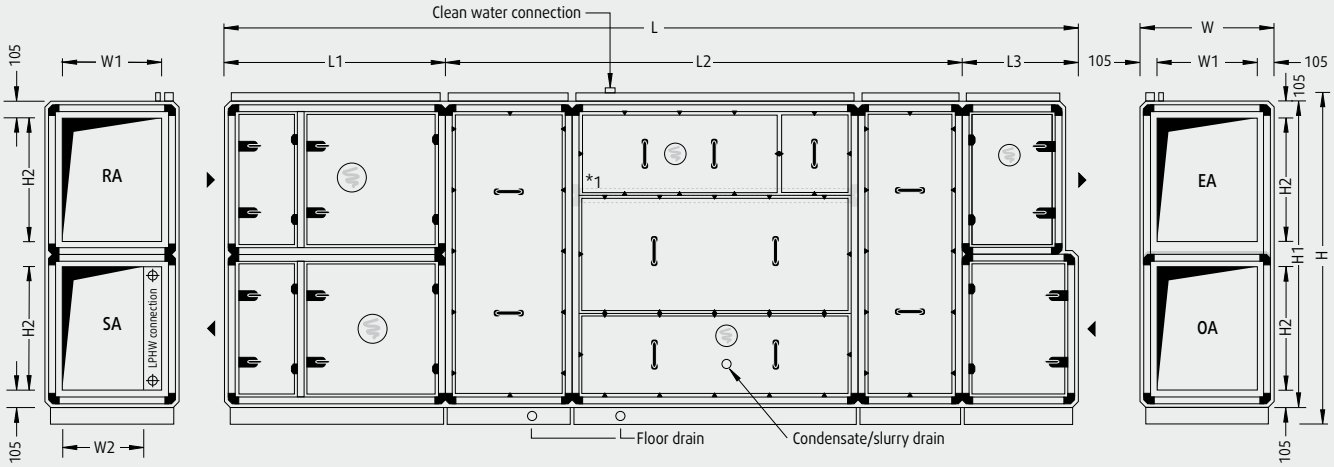
Adsolair Type 58

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.

Proportions/details vary depending on system size.

Unit Type	L[1]	W[2]	H[3]	L1[1]	L2[1]	L3[1]	W1	W2	H1	H2	Weight[1]
58 03 01	4,670	790	1,700	1,240	2,510	920	580	510	1,520	580	1,300
58 05 01	4,830	1,110	1,700	1,400	2,510	920	900	830	1,520	580	1,600
58 06 01	5,950	790	2,340	1,400	3,630	920	580	420	2,160	900	1,780
58 10 01	5,950	1,110	2,340	1,400	3,630	920	900	740	2,160	900	2,100
58 13 01	6,110	1,430	2,340	1,560	3,630	920	1,220	1,060	2,160	900	2,550
58 16 01	6,110	1,750	2,340	1,560	3,630	920	1,540	1,380	2,160	900	2,830
58 19 01	6,110	2,070	2,340	1,560	3,630	920	1,860	1,700	2,160	900	3,300
58 25 01	6,750	2,070	2,980	1,560	4,270	920	1,860	1,700	2,800	1,220	4,400
58 32 01	7,550	2,070	3,620	1,560	5,070	920	1,860	1,700	3,440	1,540	5,350
58 36 01	7,550	2,390	3,620	1,560	5,070	920	2,180	2,020	3,440	1,540	6,350

Largest transport unit *

Unit Type	L[1]	W[2]	H[3]	Weight[1]
58 03 01	2,510	790	1,700	620
58 05 01	2,510	1,110	1,700	770
58 06 01	3,630	790	2,340	980
58 10 01	3,630	1,110	2,340	1,170
58 13 01	3,630	1,430	2,340	1,370
58 16 01	3,630	1,750	2,340	1,580
58 19 01	3,630	2,070	2,340	1,770
58 25 01	4,270	2,070	2,980	2,530
58 32 01	5,070	2,070	3,620	3,350
58 36 01	5,070	2,390	3,620	3,750

Operating weight

Unit Type	Weight[1]
58 03 01	1,340
58 05 01	1,640
58 06 01	1,830
58 10 01	2,170
58 13 01	2,640
58 16 01	2,940
58 19 01	3,440
58 25 01	4,590
58 32 01	5,580
58 36 01	6,990

Controls cabinet

Unit Type	H x W x D[1]	Position at unit
58 03 01	1,280 x 640 x 210	SA/RA side
58 05 01	1,280 x 640 x 210	SA/RA side
58 06 01	1,280 x 640 x 210	SA/RA side
58 10 01	1,280 x 640 x 210	SA/RA side
58 13 01	1,280 x 640 x 210	SA/RA side
58 16 01	1,280 x 640 x 210	SA/RA side
58 19 01	1,280 x 640 x 210	SA/RA side
58 25 01	1,280 x 640 x 210	SA/RA side
58 32 01	1,280 x 640 x 210	SA/RA side
58 36 01	1,600 x 640 x 250	SA/RA side

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 May change depending on choosen option
2 Door fitting assembly increase unit width by 65 mm each operating side
3 incl. 120 mm base frame, plus 60 mm cable duct

* Partitioning of unit for smaller apertures possible (at extra cost).

Technical specifications and services

Unit Type		58 03 01	58 05 01	58 06 01	58 10 01	58 13 01	58 16 01
Optimum flow rate	m^3/h	2,600	3,900	4,000	6,000	7,900	9,800
Total cooling capacity[1]	kW	18.0	25.8	23.9	36.8	46.6	59.2
Energy Efficiency Ratio [1,2]	EER	7.8	9.6	10.4	11.2	12.3	10.4
Coefficient of power efficiency according to EN 13053:2012	%	69	69	67	67	68	68
Heat recovery rate according to EN 308	%	72	72	70	70	70	71
Total electrical power rating[3]	kW	4.26	5.43	5.08	7.42	8.92	11.97
Max. current consumption[3]	A	16.1	17.3	16.4	21.2	29.4	34.6
Operating voltage		3 / N / PE 400 V 50 Hz					
Ext. pressure loss							
Supply and fresh air channel	Pa	300	300	300	300	300	300
Return and exhaust air channel	Pa	300	300	300	300	300	300
Sound power level [4]							
Supply air vent	dB(A)	70	67	67	72	68	75
RA connection	dB(A)	63	64	65	70	65	68
Outside air vent	dB(A)	57	56	56	60	55	60
EA connection	dB(A)	63	62	62	68	64	69
Acoustic pressure at a distance of 1 m from the device[4]	dB(A)	55	53	53	58	55	60
Fan units							
Rated fan input for supply air [5]	kW	1.09	1.50	1.49	2.21	2.75	3.34
Rated fan input for return air [5]	kW	0.87	1.23	1.29	1.91	2.37	2.93
SFP category supply air | return air		2 | 3	2 | 2	2 | 2	1 | 2	1 | 2	1 | 2
Nominal rating supply air | return air	kW	2.5 | 2.5	2.5 | 2.5	2.5 | 2.5	2.9 | 2.9	5.0 | 5.0	5.0 | 5.0
Inner specific fan power (SFP_{int}) [6]	Ws/m	865	815	765	747	692	672
Evaporative cooling [1,7]							
Cooling capacity of adiabatic evaporative cooling system	kW	9.1	13.7	13.6	20.5	27.2	33.9
Rated pump input for evaporative cooling	kW	0.3	0.4	0.4	0.5	0.5	1.1
Compressor refrigeration system							
Filling volume for refrigerant type R410A	kg	3.0	4.0	4.0	5.0	7.0	8.0
Rated compressor input	kW	2.0	2.3	1.9	2.8	3.3	4.6
Mechanical cooling capacity [1,8]	kW	8.9	12.1	10.3	16.3	19.4	25.3
Efficiency classes according to EN 13053:2012							
Heat recovery class		H2	H2	H2	H2	H2	H2
Power consumption of fans SA | RA		P1 | P1	P1 | P1	P1 | P1	P1 | P1	P1 | P1	P1 | P1
Air velocity class		V1	V1	V2	V2	V2	V2
Filtration according to DIN EN 779							
Supply air | Outside air		F7 | M5					
Return Air		M5					
LPHW							
Heating capacity SA=22° C [9]	kW	6.3	9.4	10.9	16.1	21.0	25.9
Heating capacity SA=30° C [9]	kW	13.3	20.0	21.7	32.3	42.5	52.4
Heating capacity Defrost [9,10]	kW	6.8	10.4	10.6	16.3	21.3	26.5
Water flow rate and pressure losses at heating capacity SA=22° C							
LPHW	m^3/h | kPa	0.50 | 5.2	0.88 | 4.2	0.88 | 4.8	1.38 | 4.43	2.13 | 3.5	2.16 | 4.2
LPHW (pump warm water) valve	m^3/h | kPa	0.38 | 5.8	0.57 | 5.1	0.56 | 5.0	0.92 | 5.3	1.23 | 3.8	1.40 | 4.9
Connections							
LPHW connection	DN	32	32	32	32	40	40
LPHW control valve connection	DN	15	15	15	15	15	15
Clean water connection [11]	DN	15	15	15	15	15	20
Condensate / slurry drain	DN	40	40	40	40	40	40
Floor drains	DN	40	40	40	40	40	40

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 standard density (1.204 kg/m³), unless otherwise specified.

1 for RA 26° C; 55 % r.h. and OA 32° C; 40% r.h.
2 incl. evaporative cooling capacity taking into account power consumption for adiabatic pump(s)
3 dependent on configuration of measurement and control system/unit
4 at 250 Hz mid-band frequency
5 with average filter contamination
6 according EU guideline No. 1253/2014 [Ecodesign guideline]
7 water quality of make-up water corresponds to VDI 3803 table B3 with a bacteria count < 100 CFU/ml, water hardness range "middle".
8 at supply air ≈ 17° C
9 FL = 70° C
10 At OA=-15° C, SA=18° C, 66% of optimum flow rate and active defrost function
11 2 bar system pressure required at 25 l/min flow rate

Please seek approval of technical data and specifications prior to start of the planning process. With every single selection we do to your individual requirements our certified selection software automatically checks the Ecodesign compliance level 1 and 2.

Technical specifications and services

Unit Type		58 19 01	58 25 01	58 32 01	58 36 01	58 xx xx
Optimum flow rate	m^3/h	11,800	15,800	19,900	23,100	< 40,800
Total cooling capacity[1]	kW	72.3	92.3	118.9	132.4	
Energy Efficiency Ratio [1, 2]	EER	11	12.6	12.6	14.2	
Coefficient of power efficiency according to EN 13053:2012	%	68	68	70	70	
Heat recovery rate according to EN 308	%	71	70	73	73	
Total electrical power rating[3]	kW	15.14	18.54	25.50	27.80	
Max. current consumption[3]	A	41.9	56.3	69.0	71.8	
Operating voltage		3 / N / PE 400 V 50 Hz				
Ext. pressure loss						
Supply and fresh air channel	Pa	400	400	500	500	
Return and exhaust air channel	Pa	400	400	500	500	
Sound power level [4]						
Supply air vent	dB(A)	77	73	80	80	
RA connection	dB(A)	74	68	74	77	
Outside air vent	dB(A)	64	59	65	67	
EA connection	dB(A)	76	68	75	77	
Acoustic pressure at a distance of 1 m from the device[4]	dB(A)	66	59	66	68	
Fan units						
Rated fan input for supply air [5]	kW	4.48	5.98	8.36	9.66	
Rated fan input for return air [5]	kW	4.06	5.26	7.74	8.84	
SFP category supply air | return air		2 | 2	2 | 3	2 | 3	2 | 3	
Nominal rating supply air | return air	kW	6.0 | 6.0	10.0 | 10.0	12.0 | 10.0	12.0 | 12.0	
Inner specific fan power (SFP_{int}) [6]	Ws/m	681	572	666	660	
Evaporative cooling [1,7]						
Cooling capacity of adiabatic evaporative cooling system	kW	40.7	53.9	70.8	82.4	
Rated pump input for evaporative cooling	kW	1.1	1.1	1.5	1.5	
Compressor refrigeration system						
Filling volume for refrigerant type R410A	kg	12.0	18.0	21.0	22.0	
Rated compressor input	kW	5.5	6.2	7.9	7.8	
Mechanical cooling capacity [1, 8]	kW	31.6	38.4	48.1	50.0	
Efficiency classes according to EN 13053:2012						
Heat recovery class		H2	H2	H2	H2	
Power consumption of fans SA | RA		P1 | P1	P1 | P1	P1 | P1	P1 | P1	
Air velocity class		V2	V2	V2	V2	
Filtration according to DIN EN 779						
Supply air | Outside air		F7 | M5				
Return Air		M5				
LPHW						
Heating capacity SA=22° C [9]	kW	31.0	43.2	46.1	53.3	
Heating capacity SA=30° C [9]	kW	62.7	85.5	99.6	115.4	
Heating capacity Defrost [9,10]	kW	31.9	41.1	52.1	60.6	
Water flow rate and pressure losses at heating capacity SA=22° C						
LPHW	m^3/h | kPa	2.13 | 4.8	3.86 | 3.9	4.77 | 3.5	4.77 | 3.9	
LPHW (pump warm water) valve	m^3/h | kPa	1.58 | 6.3	2.30 | 5.3	2.61 | 4.4	2.92 | 5.4	
Connections						
LPHW connection	DN	40	50	50	65	
LPHW control valve connection	DN	20	25	25	25	
Clean water connection [11]	DN	20	20	20	20	
Condensate / slurry drain	DN	40	40	40	40	
Floor drains	DN	40	40	40	40	

Technical details upon request.

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