

Clivet. Change things

Air renewal
is essential for comfort
in buildings

So far
this **was costing**
a lot of energy

ZEPHIR³

The whole primary air plant
packed in a single System with
thermodynamic energy recovery



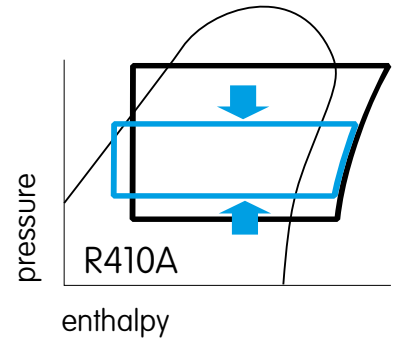
Controlled ventilation in buildings.
Indispensable but complicated.

No standardisation

Complex controls

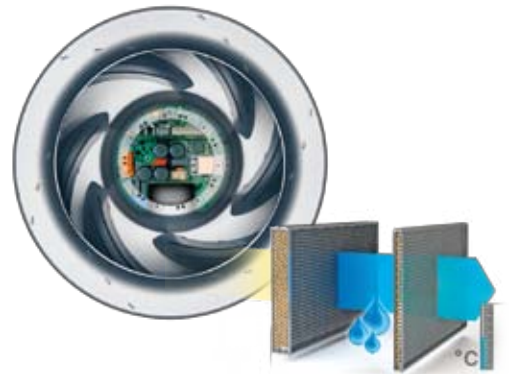
Invasive

On-site work



Excellent air quality

Air renewal
without contamination between flows
Automatic control of temperature,
humidity and CO₂



Independent and decentralized

No pipes, insulation, pumping
or hydraulic circuit adjustment
No gas or fuels, safety devices against risk of explosion
More free space in the building
Fully automatic operation



Simplified
design

Lower start-up costs
compared to traditional solutions

Sustainable investment

Primary energy consumptions reduced by 50%
CO₂ emissions reduced by more than 50%
Important contribution to LEED credits
Increase of property value
Access to tax credit
Amazing savings with the Total Life Cycle Cost

Unparalleled energy efficiency

Year-round **heat pump** operation technology

Active **thermodynamic recovery**: exhaust air as thermal source

Very high energy efficiency thanks to favourable thermodynamic cycle and **DC variable-capacity** inverter compressor

Replaces most of the power produced by the central heating and cooling unit

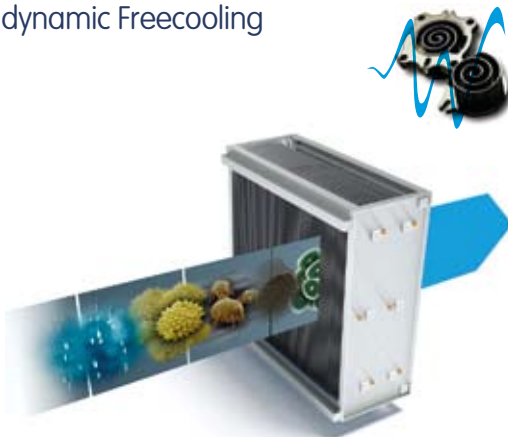
Eliminates pressure drops from passive heat recovery equipment

Integrated control system complete with **dynamic Freecooling** depending on operating conditions

High **ventilation** efficiency

No use of **fossil** fuels

Air purification with high efficiency electronic filtering:
nano-particles, PM10, bacteria, pollen



No wastage

Variable air flow depending on occupancy or actual number of zones in operation

Does away with wasteful components that have no **useful effect**, such as storage tanks, pipeworks, pumps

Free reheating through hot gas recovery, which further increases the system's efficiency



Modular system

operating only where and when needed

Industrialised system

80% less on-site works

Industrial products, optimized and tested to provide constantly reliable results



ZEPHIR³

Great result enclosed in a single System

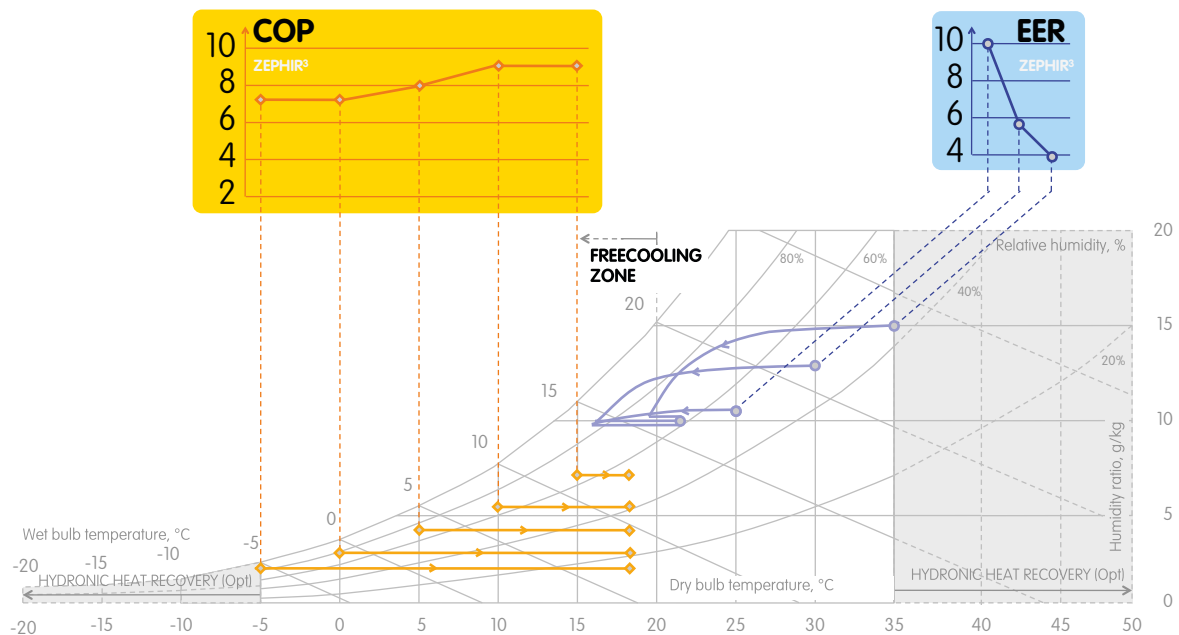


Operation with constant supply temperature

When room loads are handled by the secondary air-conditioning system

Exploits part of ZEPHIR³'s usable capacity.
Operation does not depend on the room conditions.
Accurate regulation of air delivery conditions.

Example application referring to Size 5



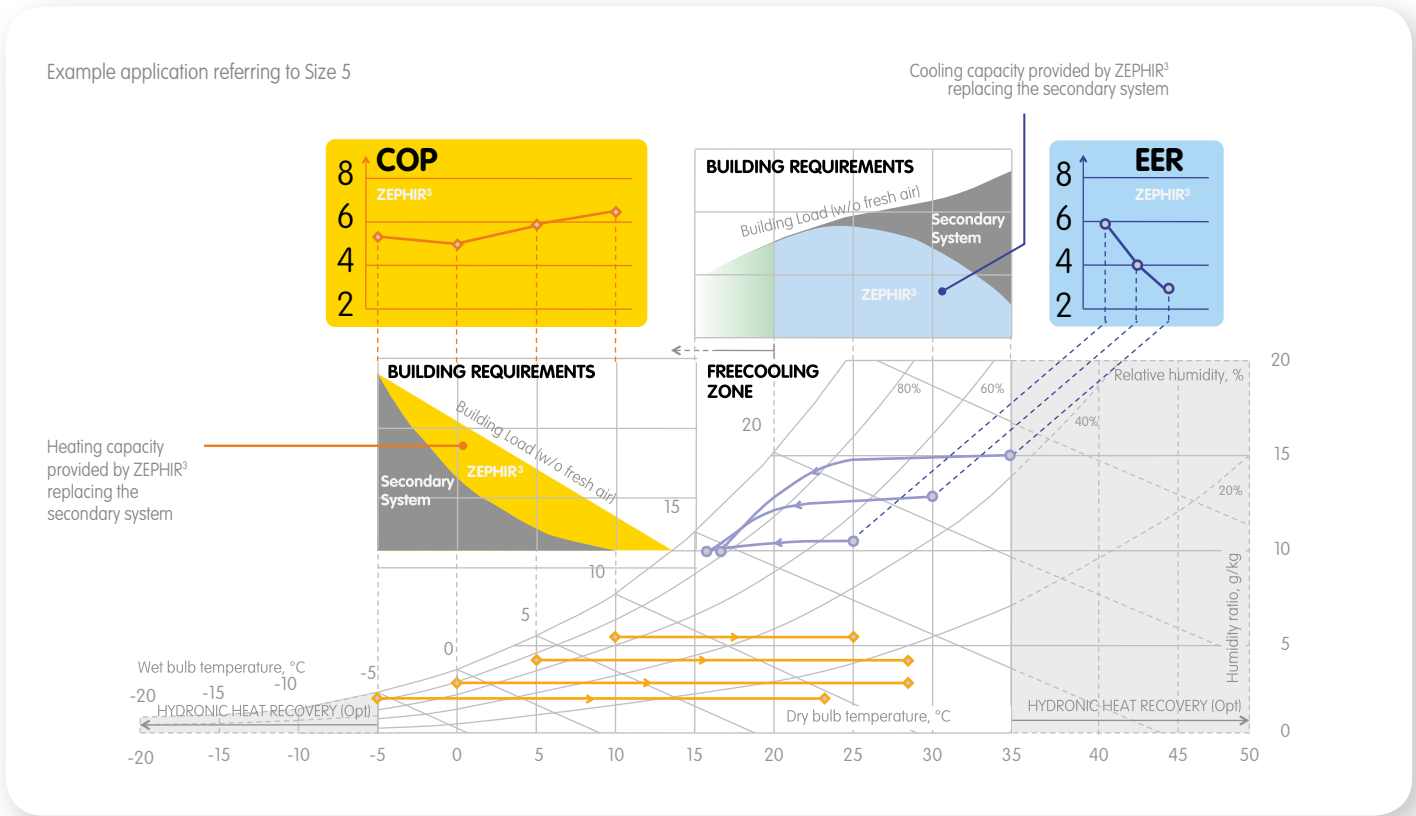
Ambient air (mean)		-5°C / 85%		0°C / 80%		5°C / 75%		10°C / 70%		15°C / 65%		20°C / 60%		25°C / 57%		30°C / 50%		35°C / 40%		ANNUAL ENERGY OUTPUT (MWh)	ANNUAL ABSORBED ENERGY (MWh)	ANNUAL ENERGY EFFICIENCY															
Hours / Year		403		1166		1511		1461		1581		1461		945		231		1																			
Design indoor air		20°C / 40%																		26°C / 50%																	
Constant Supply		18°C																		17°C - 22°C				22°C / 10g/kg													
		Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency																		
Size 1	Capacity	11,0	-	8,5	-	6,0	-	3,6	-	1,3	-	2,9	-	5,2	-	8,9	-	11,4	-	44,8	4,5	9,9															
	Reheating capacity	-	6,7	-	8,4	-	10,2	-	10,3	-	10,4	-	∞	-	11,3	-	6,0	-	3,9																		
	Input	1,6	-	1,0	-	0,6	-	0,4	-	0,1	-	0,0	-	0,7	-	1,9	-	3,4	-																		
Size 2	Capacity	18,7	-	14,3	-	10,2	-	6,2	-	2,2	-	4,9	-	8,8	-	15,0	-	18,5	-	76,6	8,4	9,1															
	Reheating capacity	-	6,6	-	7,9	-	8,6	-	8,8	-	9,2	-	∞	-	10,6	-	5,9	-	3,6																		
	Input	2,9	-	1,8	-	1,2	-	0,7	-	0,2	-	0,0	-	1,2	-	3,3	-	6,2	-																		
Size 3	Capacity	39,1	-	30,0	-	21,3	-	12,8	-	4,6	-	10,2	-	16,5	-	32,1	-	41,1	-	155,5	16,0	9,7															
	Reheating capacity	-	7,3	-	8,6	-	9,2	-	8,8	-	8,4	-	∞	-	11,6	-	7,4	-	4,5																		
	Input	5,4	-	3,5	-	2,3	-	1,5	-	0,6	-	0,0	-	2,0	-	5,6	-	11,1	-																		
Size 4	Capacity	61,3	-	47,1	-	33,2	-	20,7	-	7,2	-	15,9	-	22,9	-	50,3	-	64,4	-	238,1	24,5	9,7															
	Reheating capacity	-	7,9	-	9,6	-	9,3	-	8,5	-	9,3	-	∞	-	9,2	-	6,4	-	3,7																		
	Input	7,8	-	4,9	-	3,6	-	2,4	-	0,8	-	0,0	-	3,3	-	10,2	-	20,9	-																		
Size 5	Capacity	80,9	-	61,9	-	43,9	-	26,7	-	9,5	-	21,0	-	33,6	-	63,9	-	86,1	-	318,8	36,1	8,8															
	Reheating capacity	-	7,4	-	7,4	-	8,0	-	9,2	-	9,2	-	∞	-	10,0	-	5,7	-	3,9																		
	Input	11,0	-	8,4	-	5,5	-	2,9	-	1,0	-	0,0	-	4,7	-	14,2	-	26,9	-																		
Size 6	Capacity	101,9	-	78,2	-	55,4	-	33,4	-	12,1	-	26,5	-	37,6	-	81,8	-	107,2	-	393,9	47,1	8,4															
	Reheating capacity	-	7,5	-	7,2	-	7,1	-	9,1	-	9,8	-	∞	-	8,3	-	5,6	-	4,0																		
	Input	13,5	-	10,8	-	7,8	-	3,7	-	1,2	-	0,0	-	6,0	-	18,4	-	32,2	-																		

Example of continuous-cycle operation, e.g., as in hospitals: round-the-clock operation, 365 days/year, at nominal air flow (with variable air flow the system's energy efficiency is even higher)
Location: Milan, Italy. Source of climate data: U.S. Department of Energy.
Capacity: heating / cooling depending on the operation mode. Reheating capacity: thermal power delivered by hot-gas recovery reheating.
Power input: compressor power input.
Efficiency: total capacity supplied / compressor power input (in Freecooling mode the capacity is supplied with compressors off).

Operation at maximum available capacity

When you want to use the full heating and cooling capacity of ZEPHIR³

Operation also depends on the room conditions.
Optimal coverage of building's requirements.
Additional capacity in replacement of secondary air-conditioning system.



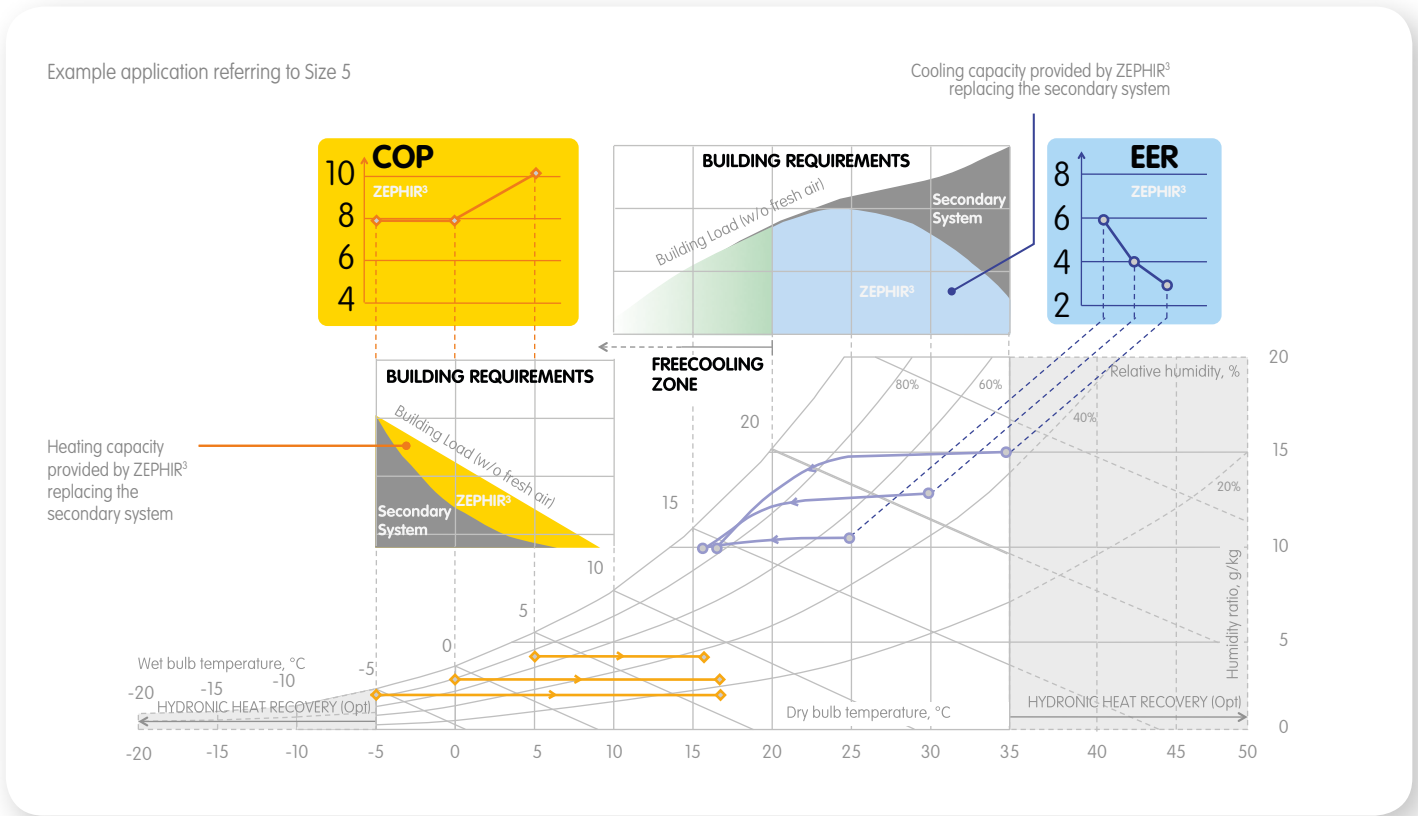
Ambient air (mean)		-5°C / 85%	0°C / 80%	5°C / 75%	10°C / 70%	15°C / 65%	20°C / 60%	25°C / 57%	30°C / 50%	35°C / 40%									
Hours / Year		403	1166	1511	1461	1581	1461	945	231	1									
Design indoor air		20°C / 40%									26°C / 50%								
Supply		23°C			28°C			25°C		12°C - 17°C		17°C - 22°C		16°C / 10g/kg		17°C / 10g/kg			
		Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency		
Size 1	Capacity	13,4	-	13,1	-	10,6	-	6,8	-	2,4	-	2,9	-	5,2	-	8,9	-	11,4	
	Reheating capacity	-	5,0	-	4,8	-	5,7	-	7,7	-	∞	-	∞	-	6,4	-	4,2	-	3,0
	Input	2,7	-	2,7	-	1,9	-	0,9	-	0,0	-	0,0	-	0,8	-	2,1	-	3,7	
Size 2	Capacity	22,7	-	22,2	-	18,0	-	11,5	-	4,1	-	4,9	-	8,8	-	15,0	-	18,5	
	Reheating capacity	-	5,1	-	4,7	-	5,6	-	7,7	-	∞	-	∞	-	5,9	-	4,1	-	2,8
	Input	4,5	-	4,7	-	3,2	-	1,5	-	0,0	-	0,0	-	1,5	-	3,7	-	6,7	
Size 3	Capacity	47,4	-	46,5	-	37,5	-	24,0	-	8,5	-	10,2	-	16,5	-	32,1	-	41,1	
	Reheating capacity	-	5,8	-	5,4	-	6,3	-	8,4	-	∞	-	∞	-	6,8	-	5,1	-	3,4
	Input	8,2	-	8,6	-	5,9	-	2,9	-	0,0	-	0,0	-	2,4	-	6,3	-	12,1	
Size 4	Capacity	74,5	-	72,7	-	58,6	-	37,5	-	13,3	-	15,9	-	22,9	-	50,3	-	64,4	
	Reheating capacity	-	5,8	-	5,2	-	6,3	-	7,9	-	∞	-	∞	-	5,8	-	4,4	-	2,8
	Input	12,8	-	14,1	-	9,3	-	4,7	-	0,0	-	0,0	-	4,0	-	11,5	-	22,8	
Size 5	Capacity	98,1	-	95,9	-	77,5	-	49,5	-	17,5	-	21,0	-	33,6	-	63,9	-	86,1	
	Reheating capacity	-	5,4	-	5,0	-	5,9	-	6,4	-	∞	-	∞	-	5,9	-	4,0	-	2,9
	Input	18,1	-	19,2	-	13,1	-	7,8	-	0,0	-	0,0	-	5,7	-	15,9	-	29,3	
Size 6	Capacity	123,9	-	121,2	-	97,8	-	62,4	-	22,1	-	26,5	-	37,6	-	81,8	-	107,2	
	Reheating capacity	-	5,8	-	5,2	-	6,1	-	6,0	-	∞	-	∞	-	5,2	-	4,0	-	3,1
	Input	21,4	-	23,1	-	16,1	-	10,4	-	0,0	-	0,0	-	7,2	-	20,6	-	35,1	

ANNUAL ENERGY OUTPUT (MWh)	ANNUAL ABSORBED ENERGY (MWh)	ANNUAL ENERGY EFFICIENCY
61,6	9,7	6,4
104,3	16,6	6,3
216,3	30,3	7,1
335,7	49,0	6,8
445,7	69,8	6,4
558,4	86,7	6,4

Example of continuous-cycle operation, e.g., as in hospitals: round-the-clock operation, 365 days/year, at nominal air flow (with variable air flow the system's energy efficiency is even higher)
Location: Milan, Italy. Source of climate data: U.S. Department of Energy.
Capacity: heating / cooling depending on the operation mode. Reheating capacity: thermal power delivered by hot-gas recovery reheating.
Power input: compressor power input.
Efficiency: total capacity supplied / compressor power input (in Freecooling mode the capacity is supplied with compressors off).

Operation with **high room load** For high-occupancy applications

Optimal coverage of building's requirements.
Minimal use of secondary air-conditioning system.
Maximum energy efficiency.



Ambient air (mean)		-5°C / 85%		0°C / 80%		5°C / 75%		10°C / 70%		15°C / 65%		20°C / 60%		25°C / 57%		30°C / 50%		35°C / 40%							
Hours / Year		403		1166		1511		1461		1581		1461		945		231		1							
Design indoor air		20°C / 50%																							
Supply		17°C						16°C						17°C - 22°C						16°C / 10g/kg				17°C / 10g/kg	
		Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency						
Size 1	Capacity	10,6	-	8,0	-	5,7	-	4,8	-	2,4	-	2,9	-	5,2	-	8,9	-	11,4	-	3,0					
	Reheating capacity	-	7,7	-	9,8	-	12,1	-	∞	-	∞	-	∞	-	6,4	-	4,2	-	-	-					
	Input	1,4	-	0,8	-	0,5	-	0,0	-	0,0	-	0,0	-	0,0	-	0,8	-	2,1	-	3,7					
Size 2	Capacity	17,9	-	13,6	-	8,7	-	8,1	-	4,1	-	4,9	-	8,8	-	15,0	-	18,5	-	2,8					
	Reheating capacity	-	7,5	-	8,7	-	9,2	-	∞	-	∞	-	∞	-	5,9	-	4,1	-	-	-					
	Input	2,4	-	1,6	-	0,9	-	0,0	-	0,0	-	0,0	-	1,5	-	3,7	-	6,7	-	2,8					
Size 3	Capacity	37,4	-	28,4	-	18,0	-	16,9	-	8,5	-	10,2	-	16,5	-	32,1	-	41,1	-	3,4					
	Reheating capacity	-	8,1	-	9,2	-	9,4	-	∞	-	∞	-	∞	-	6,8	-	5,1	-	-	-					
	Input	4,6	-	3,1	-	1,9	-	0,0	-	0,0	-	0,0	-	2,4	-	6,3	-	12,1	-	3,4					
Size 4	Capacity	58,8	-	44,5	-	28,2	-	26,5	-	13,3	-	15,9	-	22,9	-	50,3	-	64,4	-	2,8					
	Reheating capacity	-	8,9	-	10,9	-	9,8	-	∞	-	∞	-	∞	-	5,8	-	4,4	-	-	-					
	Input	6,6	-	4,1	-	2,9	-	0,0	-	0,0	-	0,0	-	4,0	-	11,5	-	22,8	-	2,8					
Size 5	Capacity	77,3	-	58,5	-	37,2	-	35,0	-	17,5	-	21,0	-	33,6	-	63,9	-	86,1	-	2,9					
	Reheating capacity	-	7,9	-	7,9	-	10,2	-	∞	-	∞	-	∞	-	5,9	-	4,0	-	-	-					
	Input	9,8	-	7,4	-	3,7	-	0,0	-	0,0	-	0,0	-	5,7	-	15,9	-	29,3	-	2,9					
Size 6	Capacity	97,5	-	74,0	-	46,9	-	44,2	-	22,1	-	26,5	-	37,6	-	81,8	-	107,2	-	3,1					
	Reheating capacity	-	8,0	-	7,6	-	8,0	-	∞	-	∞	-	∞	-	5,2	-	4,0	-	-	-					
	Input	12,2	-	9,8	-	5,9	-	0,0	-	0,0	-	0,0	-	7,2	-	20,6	-	35,1	-	3,1					
																				ANNUAL ENERGY OUTPUT (MWh)	ANNUAL ABSORBED ENERGY (MWh)	ANNUAL ENERGY EFFICIENCY			
																				44,2	3,5	12,7			
																				73,3	6,4	11,4			
																				151,4	12,1	12,5			
																				234,5	18,2	12,9			
																				311,6	27,1	11,5			
																				389,2	36,8	10,6			

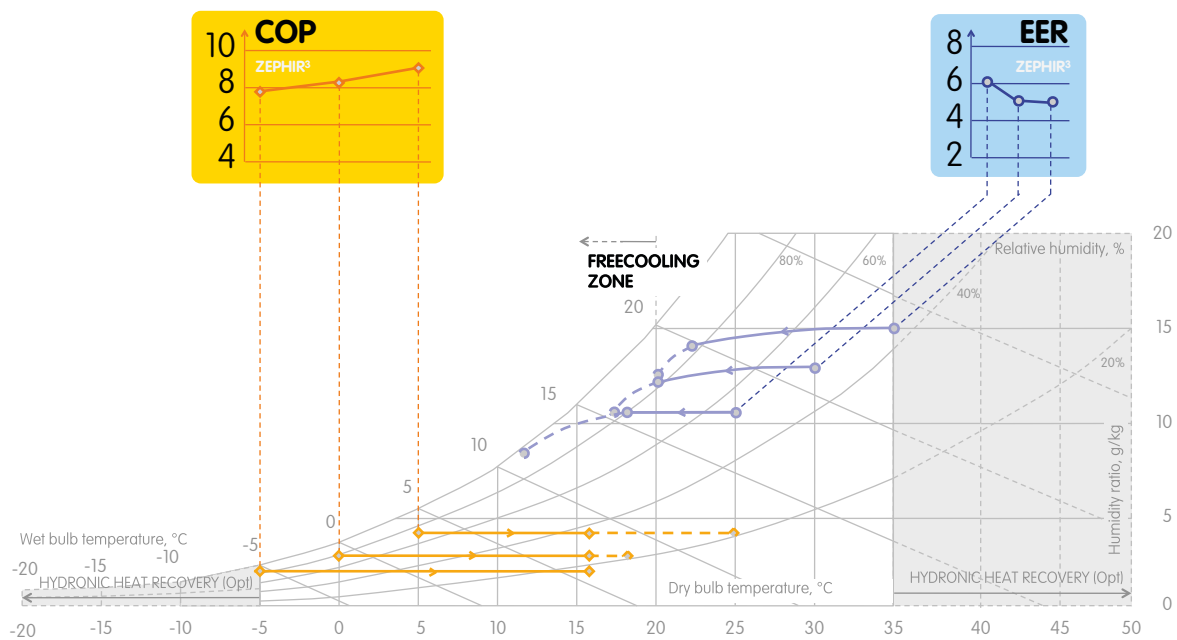
Example of continuous-cycle operation, e.g., as in hospitals: round-the-clock operation, 365 days/year, at nominal air flow (with variable air flow the system's energy efficiency is even higher)
Location: Milan, Italy. Source of climate data: U.S. Department of Energy.
Capacity: heating / cooling depending on the operation mode. Reheating capacity: thermal power delivered by hot-gas recovery reheating.
Power input: compressor power input.
Efficiency: total capacity supplied / compressor power input (in Freecooling mode the capacity is supplied with compressors off).

Operation with high airflow

When ZEPHIR³ works as an active thermodynamic recuperator and the secondary system controls room conditions

Frequent condition for shopping units in Malls.
Air handling is completed by the units of the secondary system.
Extensive use of Freecooling.

Example application referring to Size 5



Ambient air (mean)		-5°C / 85%		0°C / 80%		5°C / 75%		10°C / 70%		15°C / 65%		20°C / 60%		25°C / 57%		30°C / 50%		35°C / 40%		ANNUAL ENERGY OUTPUT [MWh]	ANNUAL ABSORBED ENERGY [MWh]	ANNUAL ENERGY EFFICIENCY															
Hours / Year		403		1166		1511		1461		1581		1461		945		231		1																			
Design indoor air		20°C / 40%																		26°C / 50%																	
Supply		16°C						7°C - 12°C		12°C - 17°C		17°C - 22°C		18°C / 10,5g/kg		20°C / 12g/kg		22°C / 13g/kg																			
		Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency	Power (kW)	Efficiency																		
Size 1	Capacity	14,7	-	11,0	-	7,5	-	4,8	-	2,4	-	2,9	-	5,5	-	7,7	-	9,3	-	52,0	4,3	12,2															
	Reheating capacity	-	6,6	-	8,6	-	11,6	-	∞	-	∞	-	∞	-	7,9	-	7,1	-	6,6																		
	Input	2,2	-	1,3	-	0,6	-	0,0	-	0,0	-	0,0	-	0,7	-	1,1	-	1,4	-																		
Size 2	Capacity	27,1	-	20,3	-	13,7	-	8,1	-	4,1	-	4,9	-	9,6	-	14,2	-	17,2	-	93,0	8,6	10,8															
	Reheating capacity	-	6,3	-	7,9	-	9,4	-	∞	-	∞	-	∞	-	7,4	-	7,3	-	6,3																		
	Input	4,3	-	2,6	-	1,5	-	0,0	-	0,0	-	0,0	-	1,3	-	1,9	-	2,7	-																		
Size 3	Capacity	54,3	-	40,6	-	27,4	-	16,9	-	8,5	-	10,2	-	20,5	-	26,6	-	32,2	-	189,2	15,7	12,0															
	Reheating capacity	-	7,2	-	8,6	-	10,0	-	∞	-	∞	-	∞	-	8,2	-	8,8	-	8,1																		
	Input	7,6	-	4,7	-	2,7	-	0,0	-	0,0	-	0,0	-	2,5	-	3,0	-	4,0	-																		
Size 4	Capacity	71,5	-	53,5	-	36,0	-	26,5	-	13,3	-	15,9	-	30,8	-	40,2	-	45,9	-	267,0	20,5	13,0															
	Reheating capacity	-	8,2	-	10,4	-	10,8	-	∞	-	∞	-	∞	-	6,4	-	6,6	-	6,8																		
	Input	8,7	-	5,1	-	3,3	-	0,0	-	0,0	-	0,0	-	4,8	-	6,1	-	6,8	-																		
Size 5	Capacity	89,4	-	66,7	-	45,0	-	35,0	-	17,5	-	21,0	-	37,9	-	54,4	-	64,0	-	339,7	29,8	11,4															
	Reheating capacity	-	7,8	-	8,3	-	9,2	-	∞	-	∞	-	∞	-	6,1	-	5,1	-	5,0																		
	Input	11,5	-	8,1	-	4,9	-	0,0	-	0,0	-	0,0	-	6,2	-	10,6	-	12,9	-																		
Size 6	Capacity	108,8	-	81,2	-	54,6	-	44,2	-	22,1	-	26,5	-	50,1	-	68,8	-	78,8	-	422,6	40,6	10,4															
	Reheating capacity	-	8,1	-	8,0	-	8,0	-	∞	-	∞	-	∞	-	4,9	-	4,7	-	4,7																		
	Input	13,5	-	10,1	-	6,8	-	0,0	-	0,0	-	0,0	-	10,2	-	14,7	-	16,9	-																		

Example of continuous-cycle application: round-the-clock operation, 365 days/year, at nominal air flow (with variable air flow the system's energy efficiency is even higher)
Location: Milan, Italy. Source of climate data: U.S. Department of Energy.
Capacity: heating / cooling depending on the operation mode. Reheating capacity: thermal power delivered by hot-gas recovery reheating.
Power input: compressor power input.
Efficiency: total capacity supplied / compressor power input (in Freecooling mode the capacity is supplied with compressors off).

ZEPHIR³

Packaged air renewal and purification system with thermodynamic energy recovery

Technical details

Size - CPAN-XHE3		Size 1	Size 2	Size 3	Size 4	Size 5	Size 6
Number and type of compressors, refrigerant R410A	- / -	Rotary	1 Scroll	2 Scroll	2 Scroll	3 Scroll	3 Scroll
Continuous regulation of capacity	-	20-100%	20-100%	10-100%	10-100%	8-100%	8-100%
Refrigeration circuits	-	1	1	2	2	2	2
Type of exhaust and supply fans	-	Electronically commuted plug fan					
Min air flow rate	m ³ /h	1.000	1.600	3.300	5.200	7.500	9.500
Max air flow rate	m ³ /h	1.900	3.500	7.000	9.200	11.500	14.000
Nominal air flow rate	m ³ /h	1.300	2.200	4.600	7.200	9.500	12.000
Max external static pressure (supply)	Pa	630	630	630	600	420	630
Max external static pressure (extraction)	Pa	630	630	630	630	540	630
Fan absorption supply / exhaust	(1) kW / kW	0,13 / 0,12	0,24 / 0,21	0,58 / 0,53	1,03 / 0,80	1,46 / 1,30	1,75 / 1,59
► OPERATION WITH CONSTANT SUPPLY TEMPERATURE							
Total cooling capacity A30 / A35	(2) kW	8,9 / 11,4	15,0 / 18,5	32,1 / 41,1	50,3 / 64,4	63,9 / 86,1	81,8 / 107,2
System thermodynamic efficiency (EER_C) A30 / A35	(2) -	6,0 / 3,9	5,9 / 3,6	7,4 / 4,5	6,4 / 3,7	5,7 / 3,9	5,6 / 4,0
Heating Capacity A-5 / A7	(3) kW	11,0 / 5,9	18,7 / 10,0	39,1 / 21,1	61,3 / 33,0	80,9 / 43,5	101,9 / 54,9
System thermodynamic efficiency (COP_C) A-5 / A7	(3) -	6,7 / 9,3	6,6 / 8,2	7,3 / 9,1	7,9 / 9,2	7,4 / 7,5	7,5 / 6,7
► OPERATION AT MAXIMUM AVAILABLE CAPACITY							
Total cooling capacity A30 / A35	(2) kW	8,9 / 11,4	15,0 / 18,5	32,1 / 41,1	50,3 / 64,4	63,9 / 86,1	81,8 / 107,2
System thermodynamic efficiency (EER_C) A30 / A35	(2) -	4,2 / 3,0	4,1 / 2,8	5,1 / 3,4	4,4 / 2,8	4,0 / 2,9	4,0 / 3,1
Heating Capacity A-5 / A7	(3) kW	13,4 / 9,6	22,7 / 16,3	47,4 / 33,9	74,5 / 53,1	98,1 / 70,1	123,9 / 88,5
System thermodynamic efficiency (COP_C) A-5 / A7	(3) -	5,0 / 6,3	5,1 / 6,1	5,8 / 6,8	5,8 / 6,5	5,4 / 5,8	5,8 / 5,9
► OPERATION WITH HIGH ROOM LOAD							
Total cooling capacity A30 / A35	(2) kW	8,9 / 11,4	15,0 / 18,5	32,1 / 41,1	50,3 / 64,4	63,9 / 86,1	81,8 / 107,2
System thermodynamic efficiency (EER_C) A30 / A35	(2) -	4,2 / 3,0	4,1 / 2,8	5,1 / 3,4	4,4 / 2,8	4,0 / 2,9	4,0 / 3,1
Heating Capacity A-5 / A7	(3) kW	10,6 / 4,2	17,9 / 7,0	37,4 / 14,6	58,8 / 22,8	77,3 / 30,2	97,5 / 38,1
System thermodynamic efficiency (COP_C) A-5 / A7	(3) -	7,7 / 12,2	7,5 / 9,3	8,1 / 9,1	8,9 / 9,5	7,9 / 10,3	8,0 / 9,2
► OPERATION WITH HIGH AIR FLOW							
Nominal air flow rate	m ³ /h	1.900	3.500	7.000	9.200	11.500	14.000
Max external static pressure (supply)	Pa	630	470	630	450	345	630
Max external static pressure (extraction)	Pa	630	630	630	530	400	630
Fan absorption supply / exhaust	(1) kW / kW	0,21 / 0,20	0,48 / 0,40	1,13 / 0,99	1,50 / 1,17	2,04 / 1,79	2,30 / 2,08
Total cooling capacity A30 / A35	(2) kW	7,7 / 9,3	14,2 / 17,2	26,6 / 32,2	40,2 / 45,9	54,4 / 64,0	68,8 / 78,8
System thermodynamic efficiency (EER_C) A30 / A35	(2) -	7,1 / 6,6	7,3 / 6,3	8,8 / 8,1	6,6 / 6,8	5,1 / 5,0	4,7 / 4,7
Heating Capacity A-5 / A7	(3) kW	14,7 / 6,1	27,1 / 11,1	54,3 / 22,2	71,5 / 29,3	89,4 / 36,5	108,8 / 44,2
System thermodynamic efficiency (COP_C) A-5 / A7	(3) -	6,6 / 11,0	6,3 / 9,5	7,2 / 9,7	8,2 / 10,1	7,8 / 10,4	8,1 / 8,5

(1) Available static pressure is 150 Pa on supply and 100 Pa on extraction

(2) Temperature of extracted air 26°C db / 19°C wb - A30 Outdoor air temperature 30°C db / 21.7°C wb - A35 Outdoor air temperature 35°C db / 24°C wb. Only for operation with constant supply temperature: specific supply humidity 11g/kg, Supply temperature 24°C db

(3) Temperature of extracted air 20°C db - A-5 Outdoor air temperature -5°C db / -5.4°C wb - A7 Outdoor air temperature 7°C db / 6°C wb. Only for operation with constant supply temperature: Supply temperature 18°C db

In cooling mode the unit may reduce the flow to ensure that the specific humidity of the air supplied is as desired.

Size - CPAN-XHE3		Size 1	Size 2	Size 3	Size 4	Size 5	Size 6
Length (A)	mm	1895	1895	2465	2465	2465	2465
Width (B)	mm	950	950	1735	2025	2025	2330
Height (C)	mm	1625	1625	1810	2260	2260	2260

Main accessories

- Additional humidification module (immersed electrode humidifier)
- Hydronic heat recovery for extended operation range (not necessary in temperate climates)



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