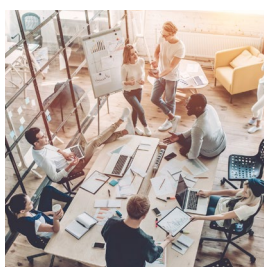
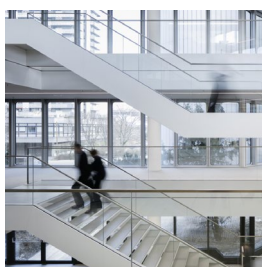
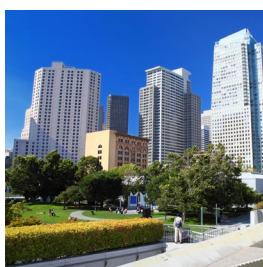
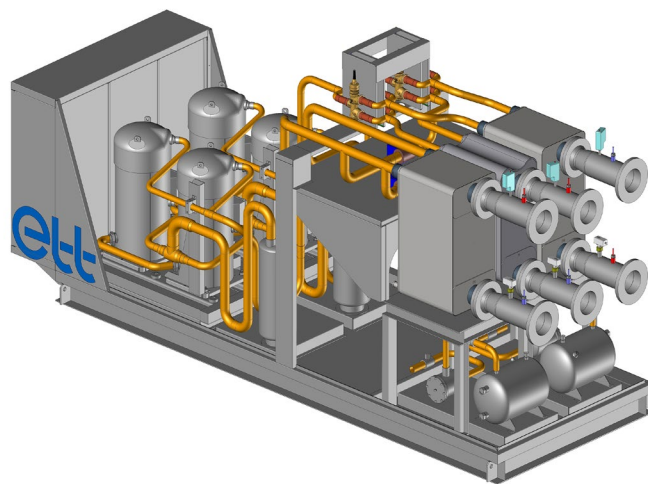
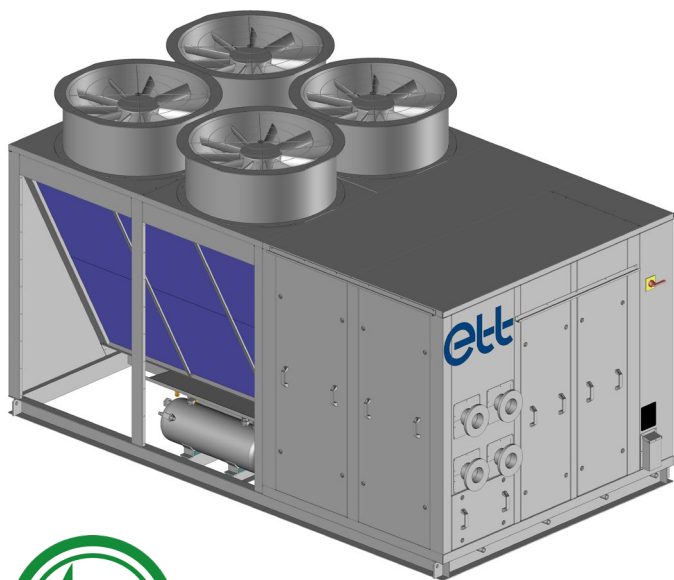




ENVIRONMENTAL
CLIMATE CONTROL
EQUIPMENT
& SOLUTIONS



ECO4



Thermorefrigerating pump - 4 pipes

Air-to-Water (RW) or Water-to-Water (WW) Multipurpose Unit

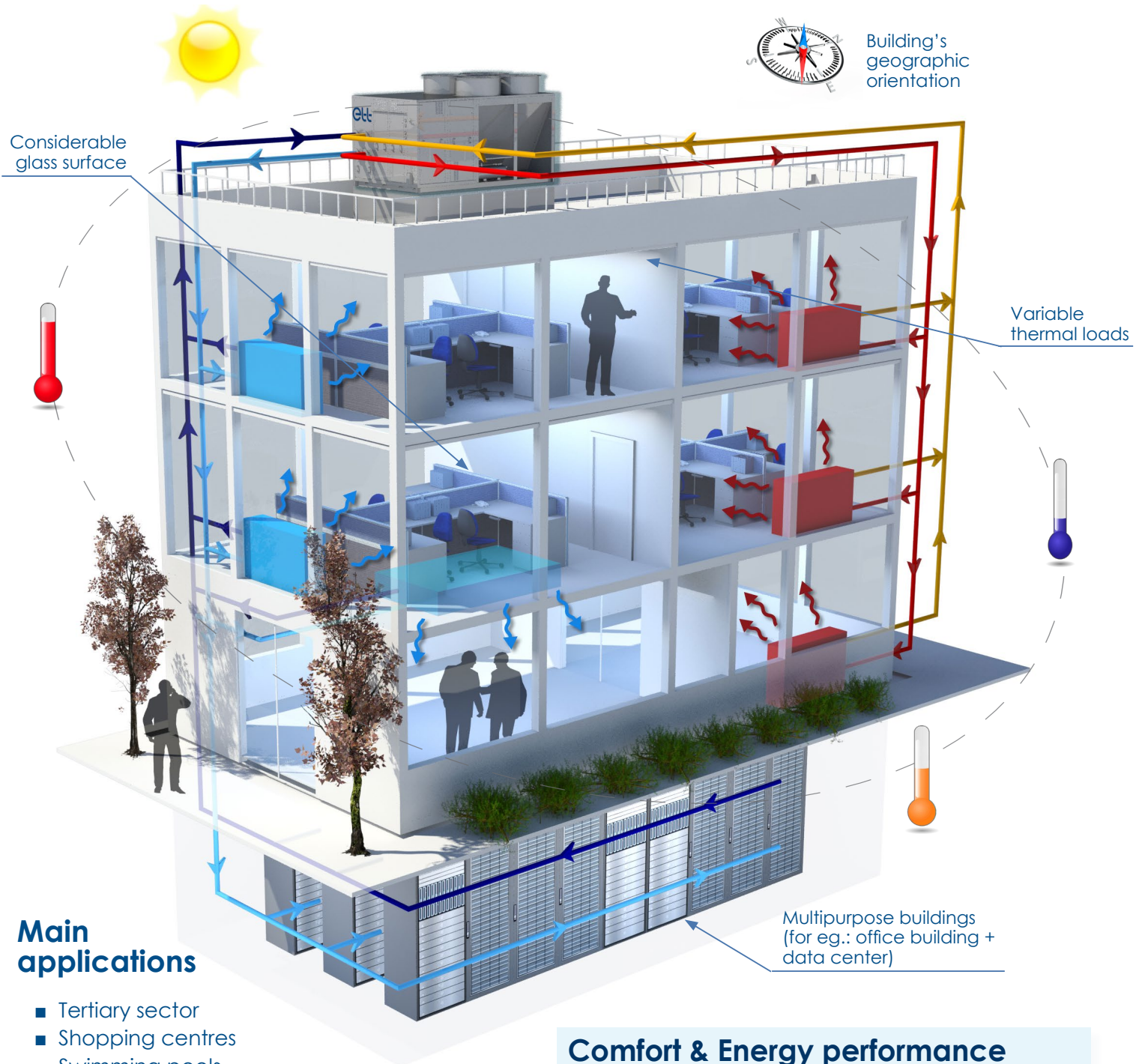


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THE multipurpose solution FOR buildings with simultaneous needs

Modern buildings impose new requirements

Office buildings are the applications that have the most important simultaneous needs in heating and cooling. Numerous cumulative factors such as the geographic orientation, the variable thermal loads and the multipurpose nature of the building result in simultaneous and/or independent needs.



Comfort & Energy performance

Today's expectations in terms of buildings' comfort and performance require adequate heating and cooling solutions.

**The ECO4 thermodynamic 4-pipe solution
fully meets these requirements.**

THE alternative TO traditional installations easy installation & thermal comfort

Application example:

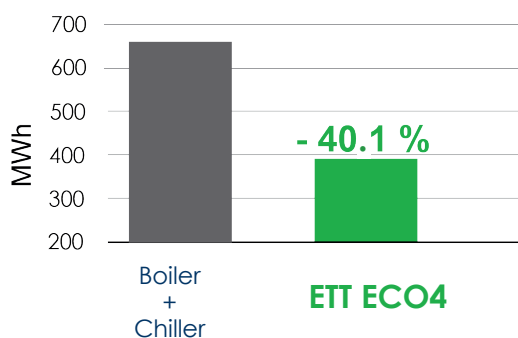
732 m² multipurpose office building equipped with a data centre - Rennes (FR)

- Occupancy from 8:30 am to 8 pm, Monday to Friday
- Ratio of yearly simultaneous needs estimated at 31%
- Heating needs: 272 kW / Cooling needs: 290 kW

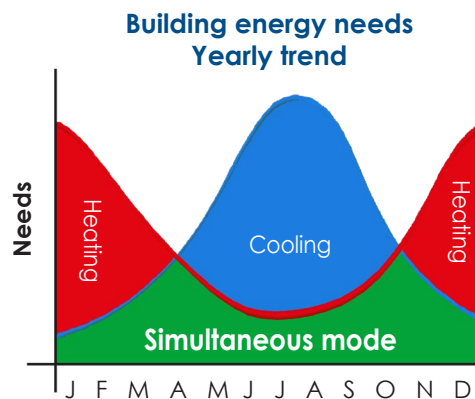
Standard solution: Natural gas boiler + R410A boiler

ECO4 RW 44 (Air-to-Water) solution

Primary energy comparative estimates



Estimated return on investment: 2.1 years

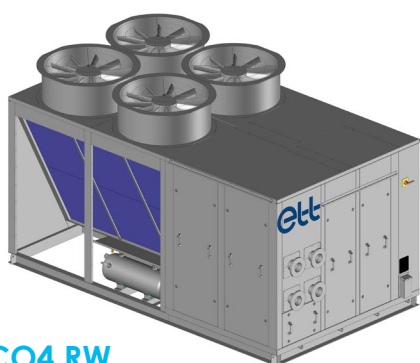


The benefits of the ECO4 solution

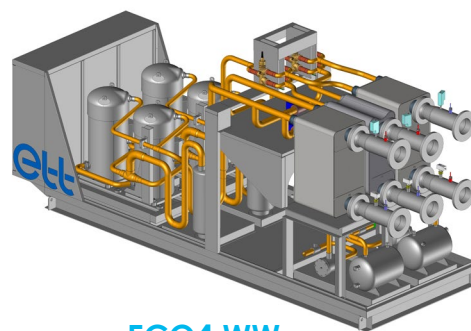
compared to a standard solution (boiler + chiller)

- Energy savings (recovery on exhaust air)
- Smaller footprint (only one unit instead of two)
- Reduced installation costs (ETT plug & play)
- Reduced maintenance costs
- Energy optimisation
- Reduced CO₂ emissions

The ECO4 range has been specially designed to adapt to complex needs.



ECO4 RW



ECO4 WW

50 kW 400

Chilled water capacity

67 kW 530

62 kW 488

Hot water capacity

76 kW 580

Large range of available capacities to meet your needs.



**20-year guarantee
against corrosion
frame - casing**

100% aluminium,
recyclable.

ECO4 RW: Technical features & dimensions

Designation		11	12	13	14	21	22	23	24	
PERFORMANCES COOLING	RATED PERFORMANCES AT 35°C outs. ⁽¹⁾									
	Net cooling capacity	kW	52.0	58.0	67.0	71.5	86.6	98.5	117.6	128.6
	Absorbed electrical power	kW	17.6	20.6	24.3	26.4	29.1	34.8	42.5	49.2
	Net EER	kW/kW	2.96	2.84	2.75	2.71	2.95	2.85	2.76	2.62
	SEASONAL EFFICIENCY ⁽²⁾									
Pdesign, C	kW	52.0	58.0	67.0	71.5	86.6	98.5	117.6	128.6	
SEER	kW/kW	4.67	4.29	4.30	4.22	4.59	4.35	4.39	4.34	
ns, C	%	184	169	169	166	181	171	173	170	
PERFORMANCES HEATING	RATED PERFORMANCES AT 7°C outs. ⁽³⁾									
	Net heating capacity	kW	60.0	67.8	76.2	81.3	99.9	115.3	133.7	148.5
	Absorbed electrical power	kW	18.0	20.7	23.3	24.9	28.3	33.7	39.5	45.3
	Net COP	kW/kW	3.34	3.27	3.27	3.27	3.53	3.42	3.38	3.27
	SEASONAL EFFICIENCY ⁽⁴⁾									
Pdesign, H	kW	40.9	46.5	52.0	55.3	67.9	78.3	89.7	101.1	
SCOP	kW/kW	3.19	3.21	3.22	3.21	3.27	3.26	3.22	3.21	
ns, H	%	125	125	126	126	128	127	126	125	
PERFORMANCES RECOVERY	RATED PERFORMANCES HEAT RECOVERY MODE ⁽⁵⁾									
	Cooling capacity	kW	51.8	58.3	69.2	74.6	88.6	101.6	123.0	134.0
	Heating capacity	kW	68.0	77.1	90.3	97.2	114.7	132.2	158.6	174.5
	Absorbed electrical power	kW	17.1	19.8	22.2	23.8	27.4	32.2	37.5	42.7
	Net TER	kW/kW	7.01	6.85	7.18	7.21	7.42	7.27	7.51	7.23
GENERAL	ACOUSTICS ⁽¹⁾									
	Outside sound power level	dB(A)	76	78	79	80	78	82	84	84
	Resulting outside sound pressure at 10 m, reference 10-5 in free field	dB(A)	48	50	51	52	50	54	56	58
	DIMENSIONS AND WEIGHT									
	Overall width	mm	2,280	2,280	2,280	2,280	2,280	2,280	2,280	2,280
Overall length	mm	2,500	2,500	2,500	2,500	3,600	3,600	3,600	3,600	
Overall height	mm	1,675	1,675	1,675	1,675	1,910	1,910	1,910	1,910	
Unit weight without any option	kg	780	800	810	815	1,150	1,155	1,170	1,250	

Designation		31	32	33	41	42	43	44	51	52	53	
PERFORMANCES COOLING	RATED PERFORMANCES AT 35°C outs. ⁽¹⁾											
	Net cooling capacity	kW	150.6	166.0	190.0	231.8	250.5	282.2	305.6	348.0	366.0	388.1
	Absorbed electrical power	kW	51.4	58.6	68.7	76.8	85.3	99.9	114.1	123.1	132.7	142.9
	Net EER	kW/kW	2.93	2.85	2.77	3.02	2.94	2.83	2.68	2.83	2.76	2.72
	SEASONAL EFFICIENCY ⁽²⁾											
Pdesign, C	kW	150.6	166.0	190.0	231.8	250.5	282.2	305.7	348.0	366.0	388.1	
SEER	kW/kW	4.68	4.15	4.10	4.51	4.55	4.43	4.45	4.56	4.68	4.61	
ns, C	%	184	163	161	177	179	174	175	179	184	181	
PERFORMANCES HEATING	RATED PERFORMANCES AT 7°C outs. ⁽³⁾											
	Net heating capacity	kW	170.5	189.3	210.8	266.1	289.1	321.6	353.2	392.9	418.2	444.1
	Absorbed electrical power	kW	50.5	55.7	64.9	77.0	85.4	99.3	112.0	122	136	148
	Net COP	kW/kW	3.37	3.40	3.25	3.46	3.38	3.24	3.15	3.23	3.08	3.01
	SEASONAL EFFICIENCY ⁽⁴⁾											
Pdesign, H	kW	116.2	125.2	152.4	181.1	197.0	220.1	242.0	271.6	287.8	304.8	
SCOP	kW/kW	3.20	3.32	3.24	3.29	3.32	3.26	3.23	3.24	3.24	3.24	
ns, H	%	125	130	127	129	130	127	126	127	126	126	
PERFORMANCES RECOVERY	RATED PERFORMANCES HEAT RECOVERY MODE ⁽³⁾											
	Cooling capacity	kW	152.6	172.5	197.2	230.6	249.1	281.3	306.7	358.6	379.6	409.1
	Heating capacity	kW	198.2	223.5	254.9	298.4	323.1	367.3	404.4	466.2	494.9	530.7
	Absorbed electrical power	kW	47.9	53.7	60.8	71.4	77.9	90.5	102.8	113.2	121.4	128.0
	Net TER	kW/kW	7.32	7.38	7.44	7.41	7.34	7.16	6.92	7.28	7.20	7.34
GENERAL	ACOUSTICS ⁽¹⁾											
	Outside sound power level	dB(A)	83	82	86	85	87	88	89	89	90	90
	Resulting outside sound pressure at 10 m, reference 10 ⁻⁵ in free field	dB(A)	55	54	58	57	60	60	62	61	62	62
	DIMENSIONS AND WEIGHT											
	Overall width	mm	2,280	2,280	2,280	2,440	2,440	2,440	2,440	2,440	2,440	2,440
Overall length	mm	4,030	4,030	4,030	6,200	6,200	6,200	6,200	7,500	7,500	7,500	
Overall height	mm	2,315	2,315	2,315	2,380	2,380	2,380	2,380	2,480	2,480	2,480	
Unit weight without any option	kg	1,600	1,750	1,765	2,350	2,350	2,560	2,560	3,220	3,220	3,220	

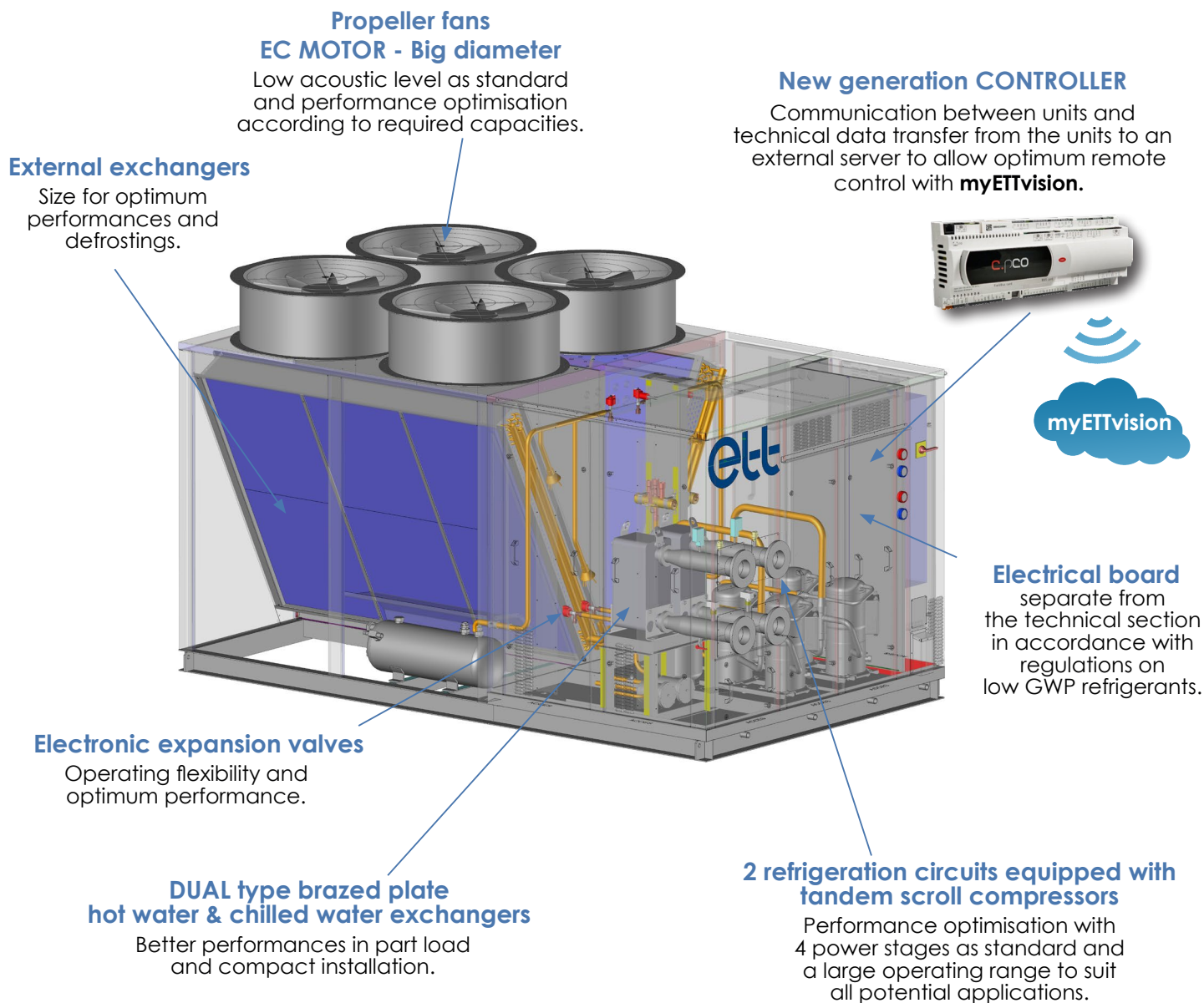
(1) According to EN 14511. Cooling Mode: Heat exchanger on the inside: 12°C / 7°C Outside conditions: 35°C DB/24°C WB.
(2) According to EcoDesign regulations 2016/2281. (For information purpose).
(3) According to EN 14511. Heating mode: Heat exchanger on the inside: 40°C / 45°C Outside conditions: 7°C DB/6°C WB.

(4) According to EcoDesign regulations 2013/813.
(5) Heat exchanger on chilled water side: 12°C - Heat exchanger on hot water side: 40°C / 45°C.
Nota: Outside temperature in Heating mode: Maximum: please contact us / Minimum: -15°C
Outside temperature in Cooling mode: Maximum: +45°C / Minimum: please contact us.

ECO4 RW: Description of the air-to-water unit

The **ECO4 RW** is a R410A thermorefrigerating pump (4-pipe version) allowing the simultaneous production of hot water and chilled water, with energy recovery on outside air.

This unit is also **available with low GWP refrigerants**, such as R454B, R452B, R134A, R32 and R513A (please contact us).



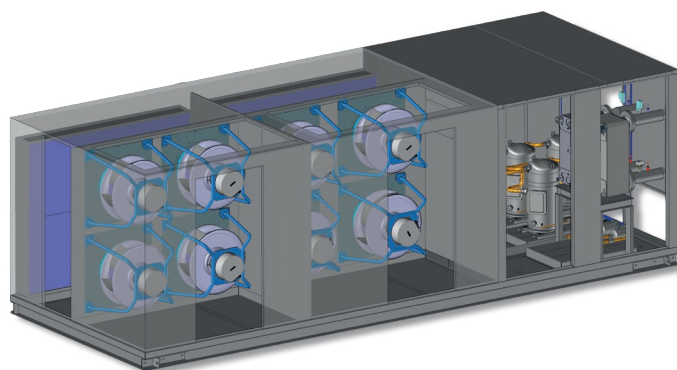
RWC option: Energy recovery on outside air for units installed in technical sections

ECO4 RWC - External centrifugal fans:

- Ductable external box
- Extra reduced sound level
- Multiple air utilities

Main available options for ECO4 RW & RWC:

- Adjustable primary or secondary distribution hydraulic module
- Variable speed compressor
- Additional acoustic insulation



Other specific requests: please contact us.

ECO4 WW: Technical features & dimensions

PERFORMANCES COOLING	Designation		11	12	13	14	21	22	23	24
	RATED PERFORMANCES ⁽¹⁾									
	Net cooling capacity	kW	60.2	68.0	80.6	87.0	101.8	116.8	145.7	159.6
	Absorbed electrical power	kW	13.6	16.3	18.2	19.9	22.8	26.6	30.4	34.4
	Net EER	kW/kW	4.43	4.17	4.43	4.38	4.47	4.39	4.79	4.64

PERFORMANCES HEATING	RATED PERFORMANCES ⁽²⁾									
	Net heating capacity	kW	69.1	78.7	91.5	99.0	116.2	134.6	162.8	180.2
	Absorbed electrical power	kW	16.8	19.5	21.9	23.6	27.2	32.0	37.1	42.3
	Net COP	kW/kW	4.11	4.03	4.17	4.19	4.27	4.21	4.39	4.26

PERFORMANCES RECOVERY	RATED PERFORMANCES HEAT RECOVERY MODE ⁽³⁾									
	Cooling capacity	kW	53.6	60.3	71.8	77.7	91.0	104.4	129.2	141.6
	Heating capacity	kW	69.5	78.9	92.6	100.1	116.8	134.8	164.4	181.7
	Absorbed electrical power	kW	16.8	19.5	21.9	23.6	27.2	31.9	37.1	42.2
	Net TER	kW/kW	7.34	7.14	7.51	7.54	7.65	7.49	7.92	7.65

GENERAL	ACOUSTICS ⁽¹⁾									
	Outside sound power level	dB(A)	70	71	73	72	72	73	75	75
	Resulting outside sound pressure at 10 m, reference 10 ⁻⁵ in free field	dB(A)	39	40	42	41	41	42	44	44
	Weight and dimensions									
	Overall width	mm	1,220	1,220	1,220	1,220	1,220	1,220	1,220	1,220
	Overall length	mm	2,490	2,490	2,490	2,490	2,890	2,890	2,890	2,890
	Overall height	mm	1,400	1,400	1,400	1,400	1,600	1,600	1,600	1,600
	Unit weight without any option	kg	580	600	615	620	720	770	770	850

PERFORMANCES COOLING	Designation		31	32	33	41	42	43	44	51	52	53
	RATED PERFORMANCES ⁽¹⁾											
	Net cooling capacity	kW	178.9	201.4	230.7	264.5	286.9	341.1	380.6	411.8	436.9	468.2
	Absorbed electrical power	kW	38.7	44.7	50.7	59.2	64.8	74.0	84.9	90.0	96.4	102.0
	Net EER	kW/kW	4.62	4.51	4.55	4.47	4.43	4.61	4.48	4.58	4.53	4.59

PERFORMANCES HEATING	RATED PERFORMANCES ⁽²⁾											
	Net heating capacity	kW	202.8	230.2	261.9	300.3	325.8	384.5	432.7	463.9	494.2	529.1
	Absorbed electrical power	kW	47.6	53.5	60.6	71.4	78.1	89.9	103.1	110	121	128
	Net COP	kW/kW	4.26	4.31	4.33	4.21	4.17	4.28	4.20	4.22	4.10	4.13

PERFORMANCES RECOVERY	RATED PERFORMANCES HEAT RECOVERY MODE ⁽³⁾											
	Cooling capacity	kW	159.0	180.2	206.4	236.9	256.7	304.2	340.1	365.3	387.3	415.4
	Heating capacity	kW	204.1	230.9	264.0	304.8	331.0	389.7	438.1	472.3	501.8	537.2
	Absorbed electrical power	kW	47.5	53.4	60.6	71.4	78.2	90.0	103.2	112.6	120.5	128.1
	Net TER	kW/kW	7.64	7.70	7.77	7.58	7.52	7.71	7.54	7.44	7.38	7.43

GENERAL	ACOUSTICS ⁽¹⁾											
	Outside sound power level	dB(A)	78	79	80	85	85	85	85	84	86	87
	Resulting outside sound pressure at 10 m, reference 10 ⁻⁵ in free field	dB(A)	47	48	49	54	54	54	54	53	55	56
	Weight and dimensions											
	Overall width	mm	1,370	1,370	1,370	1,370	1,370	1,370	1,370	1,380	1,380	1,380
	Overall length	mm	3,190	3,190	3,190	3,690	3,690	3,690	3,690	3,990	3,990	3,990
	Overall height	mm	1,700	1,700	1,700	1,800	1,800	1,800	1,800	1,824	1,824	1,824
	Unit weight without any option	kg	960	1,000	1,100	1,380	1,380	1,630	1,630	1,770	1,770	1,820

(1) According to EN 14511. Water on user side (inlet/outlet) 12°C/07°C; Water on source side (inlet/outlet) 30°C / 35°C.

(2) According to EN 14511. Water on user side (inlet/outlet) 40°C/45°C; Water on source side (inlet/outlet) 10°C / 07°C.

(3) Water on user side (inlet/outlet) 12°C/07°C; Water on user side (inlet/outlet) 40°C / 45°C.

Note: Hot water and Chilled water operating limits: please contact us.

ECO4 WW: Description of the water-to-water unit

The **ECO4 WW** is a R410A thermorefrigerating pump (4-pipe version) allowing the simultaneous production of hot water and chilled water, with energy recovery on water loop.

This unit is **also available with low GWP refrigerants**, such as R454B, R452B, R134A, R32 and R513A (please contact us).

DUAL type brazed plate Hot water & Chilled water exchangers

Better performances in part load and compact installation.

Modulating 3-way valves

Capacity optimum adjustment according to your needs.

New generation CONTROLLER

Communication between units and technical data transfer from the units to an external server to allow optimum remote control with myETTVision.



Electronic expansion valves

Operating flexibility and optimum performance.

2 refrigeration circuits equipped with tandem scroll compressors

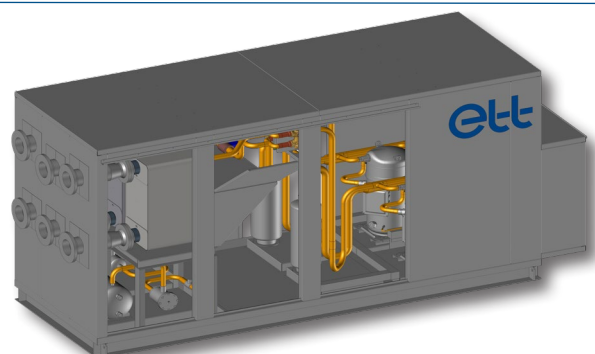
Performance optimisation with 4 power stages as standard and a large operating range to meet your needs.

Electrical board

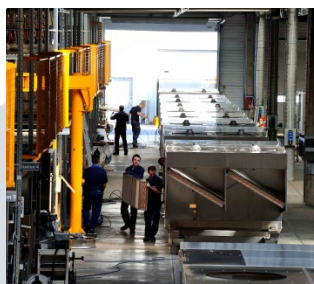
separate from the technical section in accordance with regulations on low GWP refrigerants.

Main options for the ECO4 WW:

- ALUMINIUM casing (for outdoor units)
- Adjustable primary or secondary distribution hydraulic module
- Variable speed compressor
- Additional acoustic insulation



Other specific requests: please contact us.



Reference: MARK-BRO_31-EN_B

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