



FIDAR KARA

Chiller

چیلر

مینی چیلر و چیلرهای اسکرال هوا خنک ACM ایتالیا
(ظرفیت ۱۳ الی ۸۴۰ کیلووات)



ACM - ITALY
MCAEY-SCAEY
Scroll Compressors



مشخصات چیلرهای اسکرال هوا خنک ACM:

- قابلیت ارایه بصورت FREE COOLING سری SCAEY-FC
- وزن پایین با توجه به طراحی اصولی و مهندسی دستگاهها با سطح صدا و لرزش بسیار کم
- کمپرسور از نوع SCROLL به همراه هیتر و وسایل حفاظتی کنترل اضافه بار جهت کارکرد با گاز R410a دوستدار محیط زیست
- قابلیت ارائه آب گرم مصرفی در صورت سفارش
- جریان راه اندازی پایین و راندمان بالا با کلاس انرژی A
- قابلیت ارایه پمپ و مخزن تا ظرفیت ۵۵ کیلو وات
- اواپراتور از نوع پوسته و لوله (SHELL & TUBE) با لوله‌های مسی درون شیار دار جهت افزایش راندمان دستگاه و مجهز به Differential Pressure Switch که در صورت نبود جریان آب، دستگاه را متوقف و از یخ‌زدگی دستگاه جلوگیری می‌کند.
- بکارگیری تکنولوژی ضد خوردگی دولایه

- امکان مدولار شدن چند دستگاه در کنار یکدیگر بطور همزمان
- هر مدار شامل قطعات و موارد حفاظتی:
 - Filter dryer - ۱
 - Sight glass - ۲
 - Electronic expansion valve - ۳
 - Service valve - ۴
 - Manual reset high pressure switch - ۵
 - Automatic reset low pressure switch - ۶
 - Antifreeze thermostat - ۷
- تست کامل تمامی قطعات و عملکرد نهایی چیلر در کارخانه و اطمینان کامل از کارکرد مناسب و بهینه
- قابل ارائه در سه سری LOW NOISE ، STANDARD و VERY LOW NOISE
- دارای گواهینامه‌ها و استانداردهای بین المللی روز دنیا در طراحی و ساخت شامل:
 - (EUROVENT, CE, ASHRAE 15, ISO 9001-2000, ARI550/59, ...)
- سطح صدای دستگاه‌ها مطابق استاندارد BS ISO 3744 و راندمان مطابق با استاندارد ASHRAE 90.1 می‌باشد.
- دست یابی به ضریب عملکرد (C.O.P) قابل ملاحظه نسبت به نمونه‌های مشابه و استفاده از کنترلرهای میکروپروسسور برای کنترل ظرفیت کمپرسور و در نتیجه راندمان بسیار بالا و مصرف بهینه انرژی
- مجهز به PLC با صفحه نمایشگر لمسی (Touch-LCD) جهت ارائه وضعیت کاری چیلر (دمای ورود و خروج آب چیلر و ...) با قابلیت برنامه ریزی و گزارش گیری با قابلیت اتصال به سیستم BMS ساختمان
- موارد قابل نصب به صورت سفارشی بر روی دستگاه‌ها:
 - Power correction condenser - ۱
 - Numbered elect. Wires - ۲
 - Condensing control valve - ۳
 - Flow switch not mounted - ۴
 - FAN SPEED CONTROL - ۵
 - Water pumps with higher ESP - ۶
 - Compressor discharge and liquid line shut-off valves - ۷
 - HP/LP Gauges - ۸
 - Programmer clock-card - ۹
 - Remote control panel - ۱۰
 - Evaporator electric heater - ۱۱
 - Wooden crate packing - ۱۲

SIZE			15/1	17/1	19/1	21/1	25/1
Cooling mode MCAEY							
Cooling capacity	(1)	kW	15	17	19	21	24
Abs. power	(2)	kW	4.6	5.4	6.4	6.5	7.7
EER	(2)	-	3.2	3	3	3.2	3.1
Compressor (scroll)							
Quantity	n°		1				
Refrigerant circuit	n°		1				
Capacity step	n°		1				
Refrigerant	-		R410A				
Refrigerant quantity	Kg		3,1	3,1	3,2	4,6	4,7
Evaporator							
Water flow rate	m³/h		2.5	2.9	3.3	3.6	4.1
Pressure drop	kPa		11	14	12	14	11
Water volume	l		1.1	1.1	1.5	1.5	1.9
Water connections	Ø		1"1/4	1"1/4	1"1/4	1"1/4	1"1/4
Condenser (STD / LN)							
Axial fan	n°		1	1	1	1	1
Max abs. power	kW		0.5	0.5	0.5	0.5	0.5
max abs. current	A		3.1	3.1	3.1	3.1	3.1
Unit electrical data							
Max Abs. Current	(4)	A	19	23	23	24	29
Max LRC	(4)	A	72	83	109	109	119
Electrical supply	V/f/Hz		400 / 3+N / 50				
Sound pressure level at 1m			(4)				
Version STD		dB(A)	66	66	67	65	65
Version LN		dB(A)	64	64	65	63	63
Version VLN		dB(A)	Contact factory				

Notes:

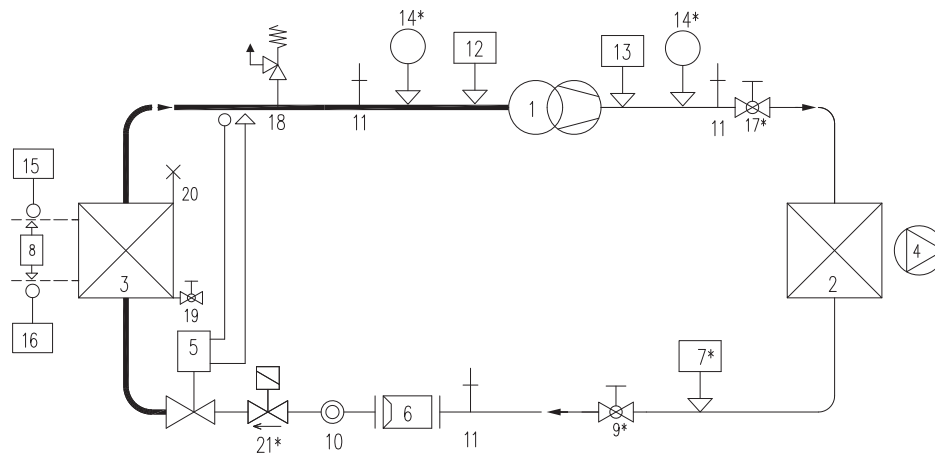
- 1) Cooling mode: water temperature 12/7°C; air temperature 35°C;
Heating mode: water temperature 40/45°C; air temperature 7°C db, 6°C wb
- 2) Compressors + fans only. No water pump(s)
- 3) Only for water flow declared
- 4) Without water pump(s), STD version

SIZE			30/1	35/1	40/1	45/1	50/1
Cooling mode MCAEY							
Cooling capacity	(1)	kW	29.5	32.5	36	44	52.5
Abs. power	(2)	kW	8.6	9.8	11.4	13	17.7
EER	(2)	-	3.4	3.3	3.1	3.3	2.9
Compressor (scroll)							
Quantity	n°		1				
Refrigerant circuit	n°		1				
Capacity step	n°		1				
Refrigerant	-		R410A				
Refrigerant quantity	Kg		6.1	6.3	6.3	9.3	9.3
Evaporator							
Water flow rate	m³/h		5.1	5.6	6.2	7.5	9
Pressure drop	kPa		17	13	17	15	21
Water volume	l		1.9	2.5	2.5	3.4	3.4
Water connections	Ø		1"1/4	1"1/4	1"1/4	1"1/4	1"1/4
Condenser (STD / LN)							
Axial fan	n°		2	2	2	2	2
Max abs. power	kW		1	1	1	1	1
max abs. current	A		6.2	6.2	6.2	6.2	6.2
Unit electrical data							
Max Abs. Current	(4)	A	32	35	41	44	50
Max LRC	(4)	A	128	128	150	184	235
Electrical supply	V/f/Hz		400 / 3+N / 50				
Sound pressure level at 1m			(4)				
Version STD		dB(A)	67	67	68	68	70
Version LN		dB(A)	65	65	66	66	68
Version VLN		dB(A)	Contact factory				

Notes:

- 1) Cooling mode: water temperature 12/7°C; air temperature 35°C;
Heating mode: water temperature 40/45°C; air temperature 7°C db, 6°C wb
- 2) Compressors + fans only. No water pump(s)
- 3) Only for water flow declared
- 4) Without water pump(s), STD version

Refrigerant Circuit MCAEY



1 = Compressor

2 = Condenser

3 = Evaporator

4 = Fan

5 = Mechanic thermostatic valve

6 = Dryer filter

7 = Fan speed control*

8 = Differential pressure switch

9 = Liquid line cock*

10 = Sight glass

11 = Schrader service valve

12 = Low pressure switch

13 = High pressure switch

14 = Gauges*

15 = Temperature probe

16 = Antifreeze probe

17 = Supply cock*

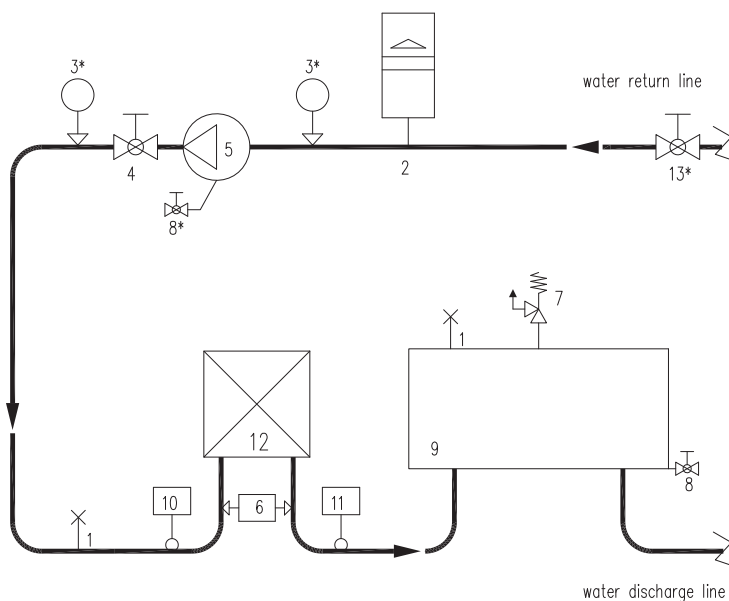
18 = Safety valve

19 = Drain/fill up valve

20 = Relief valve

21 = Solenoid valve*

Hydraulic circuit MCAEY ... PAC1



1 = Bleed valve

2 = Exp. vessel

3 = Water gauges*

4 = Setting valve

5 = Water pump

6 = Differential pressure switch

7 = Safety valve

8 = Drain/fill up valve

9 = Water tank

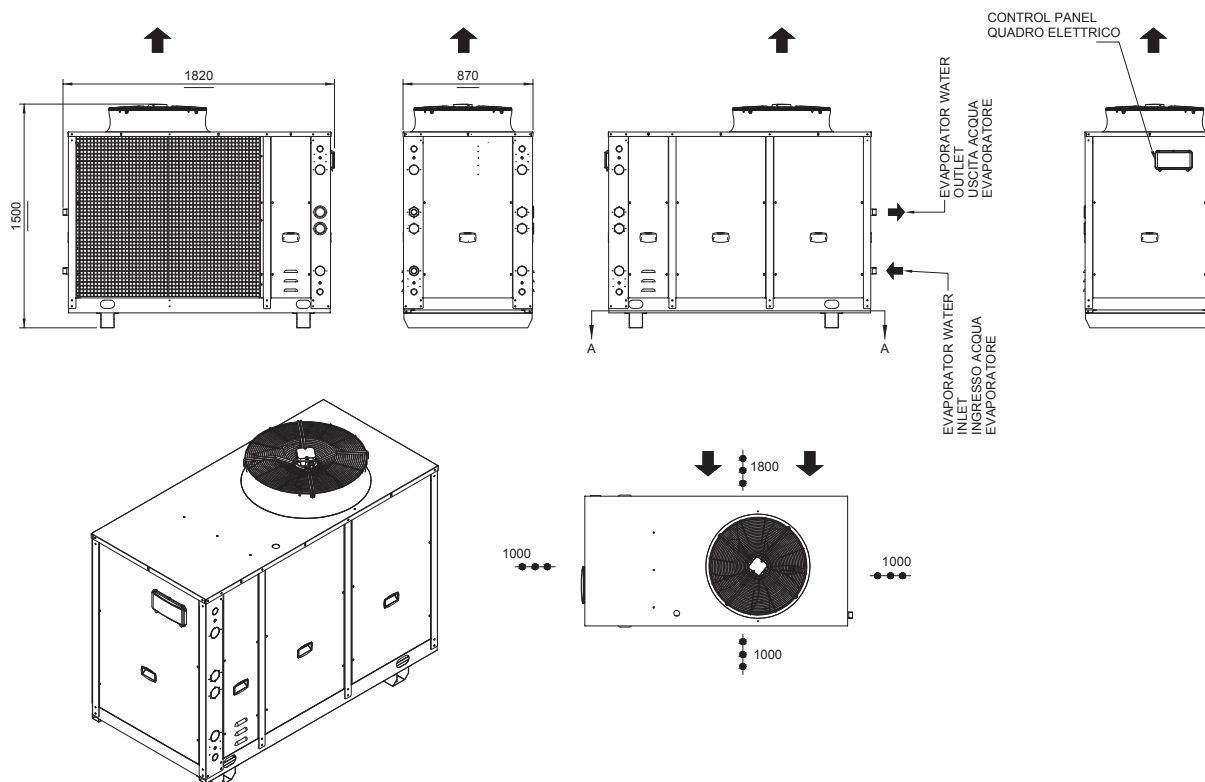
10 = Temperature probe

11 = Antifreeze probe

12 = Evaporator

13 = Shut off valve*

*The outlined components are optional



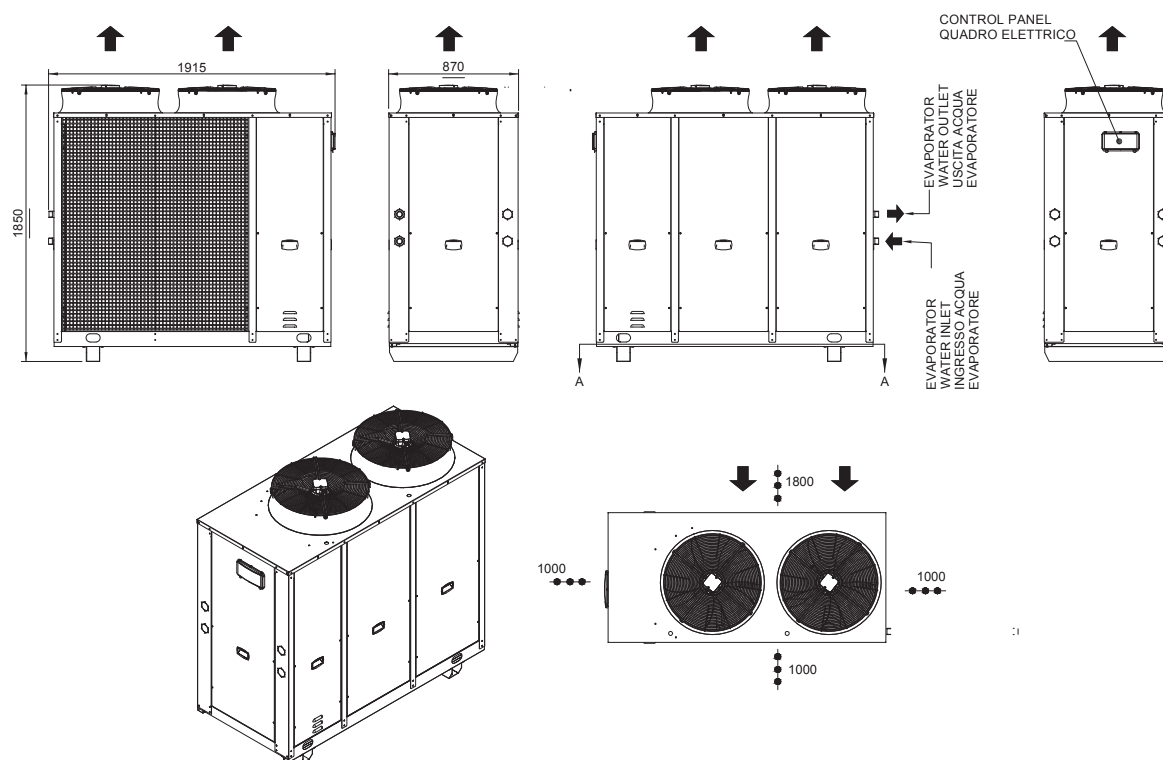
WEIGHTS Kg

VERSION	STD					LN				
Size	15/1	17/1	19/1	21/1	25/1	15/1	17/1	19/1	21/1	25/1
Kg. Operation (1)	351	351	352	362	392	356	356	357	367	397
Kg. Transport	350	350	350	360	390	355	355	355	365	395
P Version										
Kg. Operation (1)	361	361	362	372	402	371	371	372	382	412
Kg. Transport	360	360	360	370	400	370	370	370	380	410
PAC Version										
Kg. Operation (1)	490	490	490	500	525	500	500	500	510	535
Kg. Transport	380	380	380	390	420	390	390	390	400	430

(1) The data has to be added to the evaporator water volume with regard to the selected model.



DIMENSIONS MCAEY



WEIGHTS Kg

VERSION	STD					LN				
Size	30/1	35/1	40/1	45/1	50/1	30/1	35/1	40/1	45/1	50/1
Kg. Operation (1)	402	408	413	433	508	412	418	423	443	518
Kg. Transport	400	405	410	430	505	410	415	420	440	515
P Version										
Kg. Operation (1)	412	418	423	443	518	422	428	433	453	528
Kg. Transport	410	415	420	440	515	420	425	430	450	525
PAC Version										
Kg. Operation (1)	540	545	560	580	650	555	560	575	595	665
Kg. Transport	430	435	440	460	535	445	450	455	475	550

(1) The data has to be added to the evaporator water volume with regard to the selected model.

Free field sound pressure level taken at 1 m from the unit and 1,5 m from its base, compressors side and full operating unit without hydronic module. The sound pressure level may change according to the various installation and has a +/- 3 dB(A) tolerance according to ISO 3744.

Technical data shown in this booklet are not binding. ACM Kälte Klima S.r.l reserves the right to modify data without any prior notice.

SIZE			61	71	81	91	101	121
Cooling mode (version STD/LN)								
Cooling capacity	(1)	kW	49	54	62	67	82	100
Abs. power	(2)	kW	16.0	19.0	20.2	23.4	27.1	34.6
EER		-	3.06	2.86	3.04	2.88	3.04	2.89
Scroll Compressors								
Quantity	n°		2					
Refrigerant circuit	n°		1					
Capacity step	n°		2					
Refrigerant	-		R410A					
Refrigerant quantity	Kg		11	11	15	15	24	24
Shell and tube evaporator			(3)					
Water flow rate	m³/h		8.4	9.3	10.6	10.6	14.2	17.2
Pressure drop	kPa		29	35	45	54	37	54
Water volume	l		21	21	21	21	26	26
Water connections	Ø		2"	2"	2"	2"	2"1/2	2"1/2
Condenser (version STD/LN)			(4)					
Axial fans	n°		2	2	2	2	2	2
Total abs. power	kW		1.8	1.8	1.8	1.8	1.8	3.6
Total abs. current	A		4.6	4.6	4.6	4.6	4.6	8
Unit electrical data			(5)					
Max Abs. Current	A		52	54	60	72	78	87
Max LRC	A		142	150	153	181	218	272
Voltage supply	V/f/Hz		400 / 3 / 50					
Sound pressure level at 1m			(6)					
Version STD	dB(A)		69	69	70	70	70	73
Version LN	dB(A)		67	67	68	68	68	71
Version VLN	dB(A)		65	65	65	65	65	68

Notes:

1. Cooling mode: water temp. 12°C / 7°C; ext. air temperature 35°C; Heating mode: water temp. 40°C / 45°C; ext. air temperature 7°C db, 6°C wb
2. Compressors + fans without water pump(s)
3. It becomes condenser in SCAEY...H (heat pump) version
4. It becomes evaporator in SCAEY...H (heat pump) version
5. Without water pump(s). STD/LN version
6. Without pumps

SIZE			131	141	151	161	191	222
Cooling mode (version STD/LN)								
Cooling capacity	(1)	kW	104	122	126	146	167	198
Abs. power	(2)	kW	36.9	43.2	46.1	52.6	59.0	69.3
EER		-	2.82	2.82	2.73	2.78	2.83	2.86
Scroll Compressors								
Quantity	n°		2					4
Refrigerant circuit	n°		1					2
Capacity step	n°		2					4
Refrigerant	-		R410A					
Refrigerant quantity	Kg		24	27	27	28	28	48
Shell and tube evaporator			(3)					
Water flow rate	m³/h		17.9	21.0	21.6	25.1	28.7	34.1
Pressure drop	kPa		59	49	52	45	59	39
Water volume	l		26	32	32	38	38	43
Water connections	Ø		2"1/2	2"1/2	2"1/2	2"1/2	2"1/2	DN100
Condenser (version STD/LN)			(4)					
Axial fans	n°		2	3	3	3	3	4
Total abs. power	kW		3.5	2.7	2.7	2.7	5.3	7.0
Total abs. current	A		8	7	7	7	12	16
Unit electrical data			(5)					
Max Abs. Current	A		93	100	109	126	147	169
Max LRC	A		278	323	333	371	392	354
Voltage supply	V/f/Hz		400 / 3 / 50					
Sound pressure level at 1m			(6)					
Version STD	dB(A)		74	73	74	74	75	76
Version LN	dB(A)		71	71	72	72	73	74
Version VLN	dB(A)		68	68	69	69	69	71

Notes:

1. Cooling mode: water temp. 12°C / 7°C; ext. air temperature 35°C; Heating mode: water temp. 40°C / 45°C; ext. air temperature 7°C db, 6°C wb
2. Compressors + fans without water pump(s)
3. It becomes condenser in SCAEY...H (heat pump) version
4. It becomes evaporator in SCAEY...H (heat pump) version
5. Without water pump(s). STD/LN version
6. Without pumps

SIZE			242	262	282	312	342	382
Cooling mode (version STD/LN)								
Cooling capacity	(1)	kW	207	247	259	274	315	342
Abs. power	(2)	kW	73.8	86.6	86.5	89.0	104.0	119.0
EER		-	2.80	2.85	2.99	3.08	3.03	2.89
Scroll Compressors								
Quantity	n°		4					
Refrigerant circuit	n°		2					
Capacity step	n°		4					
Refrigerant	-		R410A					
Refrigerant quantity	Kg		48	57	57	72	77	77
Shell and tube evaporator			(3)					
Water flow rate	m³/h		35.5	42.5	44.5	47.1	54.1	58.8
Pressure drop	kPa		43	38	42	47	23	27
Water volume	l		48	58	58	58	90	90
Water connections	Ø		DN100	DN100	DN100	DN100	DN100	DN100
Condenser (version STD/LN)			(4)					
Axial fans	n°		4	6	6	6	6	6
Total abs. power	kW		7.0	5.4	10.5	10.5	10.5	10.5
Total abs. current	A		16	14	24	24	24	24
Unit electrical data			(5)					
Max Abs. Current	A		181	194	223	221	263	297
Max LRC	A		366	418	447	445	508	542
Voltage supply	V/f/Hz		400 / 3 / 50					
Sound pressure level at 1m			(6)					
Version STD	dB(A)		77	76	77	79	78	78
Version LN	dB(A)		74	74	75	76	76	76
Version VLN	dB(A)		71	71	72	73	73	72

Notes:

1. Cooling mode: water temp. 12°C / 7°C; ext. air temperature 35°C; Heating mode: water temp. 40°C / 45°C; ext. air temperature 7°C db, 6°C wb
2. Compressors + fans without water pump(s)
3. It becomes condenser in SCAEY...H (heat pump) version
4. It becomes evaporator in SCAEY...H (heat pump) version
5. Without water pump(s). STD/LN version
6. Without pumps

SIZE			442	482	522	582	642	682
Cooling mode (version STD/LN)								
Cooling capacity	(1)	kW	401	447	501	560	592	631
Abs. power	(2)	kW	133.3	145.0	178.0	187.0	204.0	223.0
EER		-	3.02	3.08	2.81	3.00	2.91	2.84
Scroll Compressors								
Quantity		n°	4			6		
Refrigerant circuit		n°	2			2		
Capacity step		n°	4			6		
Refrigerant		-	R410A					
Refrigerant quantity		Kg	90	114	116	142	142	144
Shell and tube evaporator			(3)					
Water flow rate		m³/h	69.0	76.9	86.2	96.4	102.0	109.0
Pressure drop		kPa	38	47	37	46	51	52
Water volume		l	105	105	112	112	112	121
Water connections		Ø	DN125	DN125	DN150	DN150	DN150	DN150
Condenser (version STD/LN)			(4)					
Axial fans		n°	8	8	8	10	10	10
Total abs. power		kW	14	14	14	18	18	18
Total abs. current		A	32	32	32	40	40	40
Unit eletrical data			(5)					
Max Abs. Current		A	331	365	427	469	503	537
Max LRC		A	657	691	672	795	829	863
Voltage supply		V/f/Hz	400 / 3 / 50					
Sound pressure level at 1m			(6)					
Version STD		dB(A)	81	83	80	82	83	84
Version LN		dB(A)	78	79	78	79	80	80
Version VLN		dB(A)	75	77	74	76	77	78

Notes:

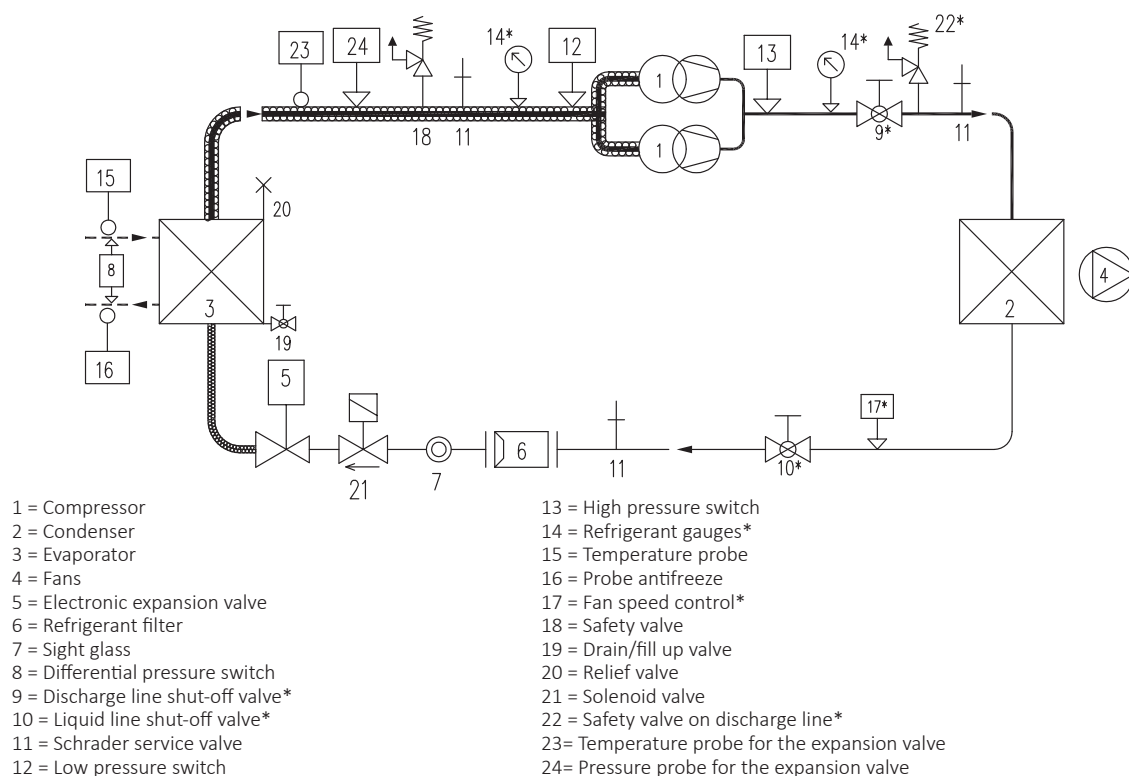
1. Cooling mode: water temp. 12°C / 7°C; ext. air temperature 35°C; Heating mode: water temp. 40°C / 45°C; ext. air temperature 7°C db, 6°C wb
2. Compressors + fans without water pump(s)
3. It becomes condenser in SCAEY...H (heat pump) version
4. It becomes evaporator in SCAEY...H (heat pump) version
5. Without water pump(s). STD/LN version
6. Without pumps

SIZE			764	804	884
Cooling mode (version STD/LN)					
Cooling capacity	(1)	kW	707	771	840
Abs. power	(2)	kW	236	270	306
EER		-	3.00	2.86	2.75
Scroll Compressors					
Quantity	n°		8		
Refrigerant circuit	n°		4		
Capacity step	n°		8		
Refrigerant	-		R410A		
Refrigerant quantity	Kg		175	177	179
Shell and tube evaporator					
Water flow rate	(3)	m ³ /h	122	133	144
Pressure drop		kPa	75	85	94
Water volume		l	161	172	182
Water connections		Ø	DN150	DN150	DN150
Condenser (version STD/LN)					
Axial fans	(4)	n°	12	12	12
Total abs. power		kW	24	24	24
Total abs. current		A	48	48	48
Unit electrical data					
Max Abs. Current	(5)	A	576	645	714
Max LRC		A	821	970	1039
Voltage supply		V/f/Hz	400 / 3 / 50		
Sound pressure level at 1m					
Version STD	(6)	dB(A)	86	89	91
Version LN		dB(A)	81	85	86
Version VLN		dB(A)	79	83	84

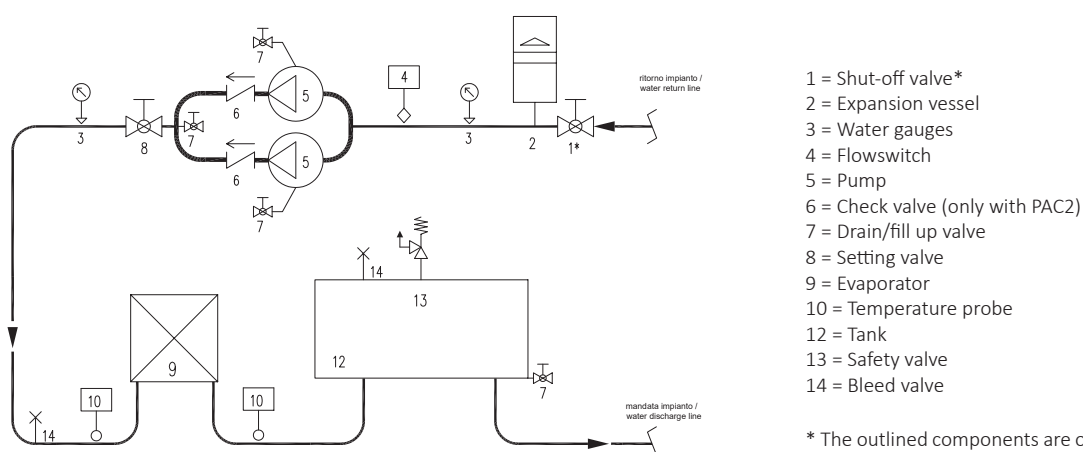
Notes:

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2. Compressors + fans without water pump(s)
3. It becomes condenser in SCAEY...H (heat pump) version
4. It becomes evaporator in SCAEY...H (heat pump) version
5. Without water pump(s). STD/LN version
6. Without pumps

Refrigerant circuit only cooling SCAEY



Hydraulic circuit PAC2 version



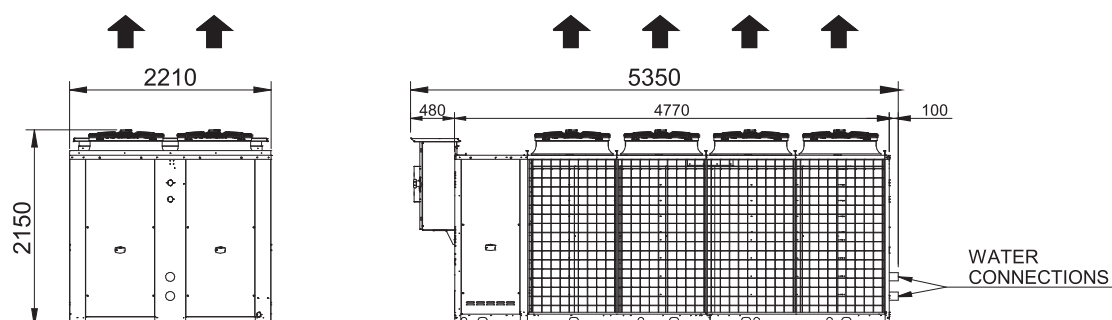
- PAC 1: n°1 Hydraulic pump
- PAC 2: n°2 Hydraulic pumps

In case of glycol mix > 30% contact factory.

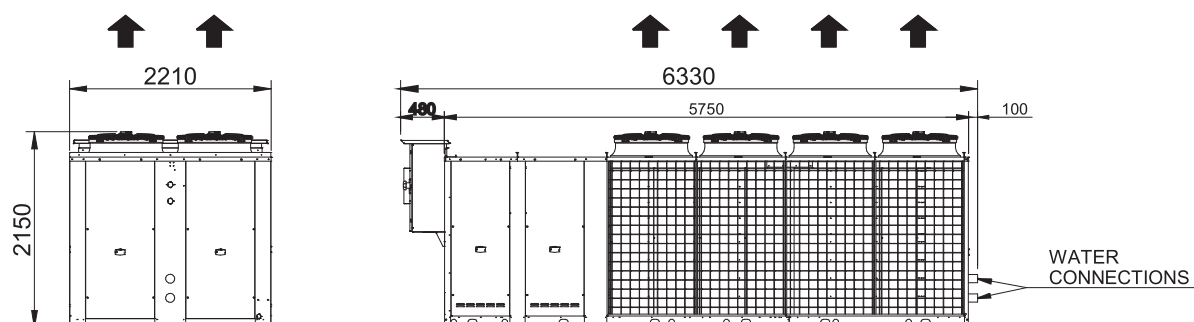
P VERSION	STD										
MOD.	61	71	81	91	101	121	131	141	151	161	191
Picture	AB							C			
Transport weight (kg)	710	720	800	830	850	950	1010	1180	1200	1230	1250
Operation weight (kg)	Transport weight added to total water volume (evaporator and tank)										
F VERSION	STD										
Picture	AB							C			
Transport weight (kg)	750	760	840	880	885	990	1050	1230	1250	1300	1320
Operation weight (kg)	Transport weight added to total water volume (evaporator and tank)										

P VERSION	STD						
MOD.	222	242	262	282	312	342	382
Picture	D		E				
Transport weight (kg)	1960	2110	2230	2340	2450	2470	2500
Operation weight (kg)	Transport weight added to total water volume (evaporator and tank)						
F VERSION	STD						
Picture	D		E				
Transport weight (kg)	2020	2170	2300	2450	2500	2600	2620
Operation weight (kg)	Transport weight added to total water volume (evaporator and tank)						

Picture **F**) from mod. 442 to 482



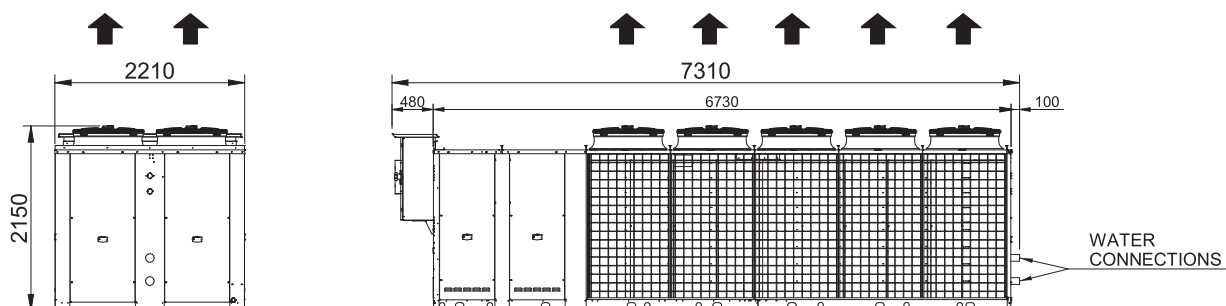
Picture **G**) from mod. 522



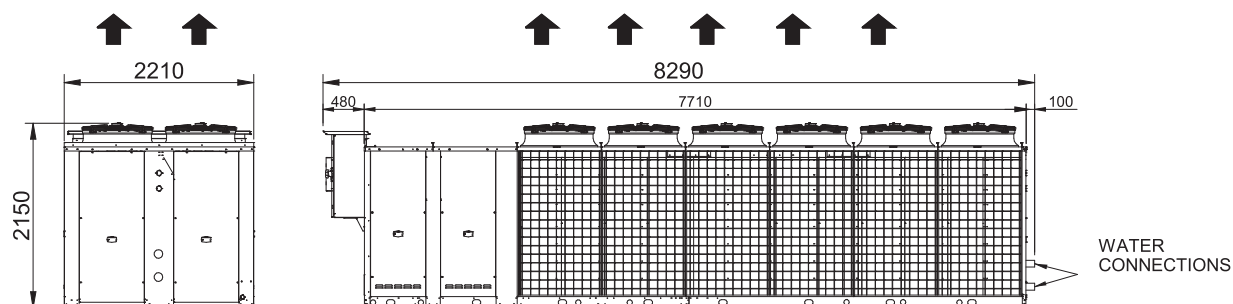
WEIGHTS Kg

P VERSION	STD		
MOD.	442	482	522
Picture	F		G
Transport weight (kg)	3000	3300	4000
Operation weight (kg)	Transport weight added to total water volume (evaporator and tank)		
F VERSION	STD		
Picture	F		G
Transport weight (kg)	3100	3400	4250
Operation weight (kg)	Transport weight added to total water volume (evaporator and tank)		

Picture **H**) from mod. 582 to 682



Picture **I**) from mod. 764 to 884



WEIGHTS Kg

P VERSION	STD					
MOD.	582	642	682	764	804	884
Picture	H			I		
Transport weight (kg)	4100	4150	4250	Not available		
Operation weight (kg)	Transport weight added to total water volume (evaporator and tank)					
F VERSION	STD					
Picture	H			I		
Transport weight (kg)	4270	4350	4450	6100	6150	6200
Operation weight (kg)	Transport weight added to total water volume (evaporator and tank)					

Free field sound pressure level taken at 1 m from the unit and 1,5 m from its base, compressors side and full operating unit without hydronic module. The sound pressure level may change according to the various installation and has a +/- 3 dB(A) tolerance according to ISO 3744.

The technical data in this booklet are not binding. ACM Kälte Klima S.r.l reserves the right to modify data without any prior notice.



سیستم‌های تهویه مطبوع
چیلر، مینی چیلر، هواساز، فن‌کویل،
داکت اسپیلت، برج خنک‌کننده

