

WATER CHILLERS R407C – R134A – R22

WATER COOLED WATER CHILLERS

WITH SCREW COMPRESSORS



RWH 411

RWH... Series

1 - 2 - 3 refrigerant circuits - cooling capacities from 87 to 2.670 kW

The units of RWH series are suitable for water cooling in industrial processes and air conditioning systems

Designed for internal installation

Realized in a compact housing with painted steel structure in which heat exchangers are integrated and where all other components are installed on it

One or two refrigerant circuit assembled with copper pipes or, for higher capacities, in carbon steel

Available versions:

RWH...K with ecological gas R407C

RWH...Ka with ecological gas R134a

RWH... standard version with R22

Made up of:

High efficiency screw compressors equipped with capacity steps, oil crankcase heater and motor thermal protection.

Shell & tube evaporator, single or double circuit with thermal insulation.

One or two shell & tube condensers (depending on refrigerant circuits).

Electric panel, in compliance with CE norms, supplied with main switch lock-door type and with protection fuses.

Components of every cooling circuit: thermostatic expansion valve, sight-glass, dehydrating filter, shut-off valve on liquid line, non return valve on compressors discharge, shut-off valve on compressors discharge, high and low pressure gauges, high and low pressure switches, high and low pressure safety valves, copper or carbon steel pipes (depending on unit's capacity).

EMIPPLUS microprocessor on all units.

Compressors hour counter.

Accessories

A	Amperometer
AE	Electrical power supply different from standard
CA	Condensers for seawater
CC	Insulated condensers
CF	Soundproofed compressors cabinet with standard material
CFU	Soundproofed compressors cabinet with lead material
CS	Compressor inrush counter
DQ	Additional box for connection of power supply cables
IE	Wooden crate packing
IG	Watch card
IH	RS 485 serial interface
IM	Seawood packing
IR	Packing with wooden pallet and transparent film
LI	Liquid injection
KS	Lifting kit
M12	Modulating control capacity regulation for unit with 2 circuits
M25	Modulating control capacity regulation for unit with 1 circuit
OS	Safety oil flow switch
PA	Rubber-type vibration dampers
PF	Safety water flow switch on evaporator
PM	Spring-type vibration dampers
PQ	Remote microprocessor
PW	Part-Winding
RA	Anti-freeze heater on evaporator
RF	Power factor correction system cosφ > 0,9
RH	Shut-off valve on compressors suction side
RL	Compressors overload relays
RP	Partial heat recovery
RT	Total heat recovery
TC	Fish joints (Victaulic) and welding coupling for water connections at condensers
TE	Electronic thermostatic valve
V	Voltmeter
VB	Brine version (water temperature < 0 °C)
VS	Solenoid valve

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RWH...K Technical data with refrigerant R407C

MODEL	RWH...K	131K	161K	191K	211K	241K	301K	341K	391K	531K	611K	691K	731K	831K
Cooling capacity 1)	kW	116	145	169	196	224	281	323	371	487	554	635	726	815
Absorbed power 1)	kW	32,2	39,9	46,7	54,0	60,8	73,3	84,1	94,5	125,0	143,0	161,0	184,0	205,0
Heat capacity	kW	149	185	216	250	285	355	407	465	611	698	795	910	1.020
C.O.P	kW/kW	3,6	3,6	3,6	3,6	3,7	3,8	3,8	3,9	3,9	3,9	3,9	3,9	4,0
Shell and tube evaporator														
Quantity	n	1	1	1	1	1	1	1	1	1	1	1	1	1
Circuits	n	1	1	1	1	1	1	1	1	1	1	1	1	1
Water flow rate 1)	l/s	5,54	6,93	8,07	9,36	10,7	13,4	15,4	17,7	23,3	26,5	30,3	34,7	38,9
Water flow rate 1)	m ³ /h	20,0	24,9	29,1	33,7	38,5	48,3	55,6	63,8	83,8	95,3	109,2	124,9	140,2
Pressure drop 1)	kPa	61	67	58	52	41	71	71	71	52	68	69	72	55
Water volume	l	44	42	39	39	37	86	82	79	185	185	179	294	294
Shell and tube condenser														
Quantity	n	1	1	1	1	1	1	1	1	1	1	1	1	1
Water flow rate 1)	l/s	7,12	8,84	10,3	11,9	13,6	17,0	19,4	22,2	29,2	33,3	38,0	43,5	48,7
Water flow rate 1)	m ³ /h	25,6	31,8	37,2	43,0	49,0	61,1	70,0	80,0	105,1	120,1	136,7	156,5	175,4
Pressure drop 1)	kPa	80	85	85	87	89	77	80	78	82	81	79	84	80
Water volume	l	21	25	29	36	39	45	50	60	76	86	102	113	128
Screw compressors														
Quantity	n	1	1	1	1	1	1	1	1	1	1	1	1	1
Standard steps capacity	n	3	3	3	3	3	3	3	3	3	3	3	3	3
Continuous control capacity (option)	%	0 - 25 ÷ 100												
Nominal absorbed current 1)	A	56	69	80	91	100	124	142	159	201	238	265	301	335
Maximum absorbed current	A	86	108	128	144	162	180	216	246	330	370	420	450	450
Inrush current	A	411	508	485	585	686	801	943	1023	1.442	1.853	2.029	2.520	2.520
Part-Winding inrush current (opt.)	A	218	269	290	350	423	520	612	665	—	—	—	—	—
Delta-Star inrush current (opt.)	A	—	—	—	—	—	—	—	—	465	586	650	805	805
Sound pressure level 2)	dB(A)	70	76	76	76	77	77	80	81	82	83	84	85	87
Dimensions														
Length	mm	2.430	2.430	2.430	2.430	2.430	3.310	3.310	3.340	3.700	3.700	3.700	3.700	3.700
Width	mm	800	800	800	850	850	800	800	850	1.300	1.300	1.300	1.300	1.300
Width with CF/CFU option	mm	800	800	800	850	850	850	850	850	1.300	1.300	1.300	1.300	1.300
Height	mm	1.525	1.525	1.525	1.610	1.610	1.525	1.525	1.610	1.900	1.900	1.900	1.900	1.900
Transport weight 3)	kg	909	926	1.168	1.265	1.288	1.688	1.716	1.900	3.464	3.503	3.696	3.898	3.979
Working weight	kg	974	993	1.237	1.340	1.365	1.819	1.849	2.040	3.724	3.774	3.978	4.304	4.401
Refrigerant charge for each circuit	kg	25	24	23	45	44	50	48	94	91	86	63	77	91
Total heat recovery version RT 4)														
Cooling capacity	kW	100,1	125	146	169	193	242	278	319	419	—	—	—	—
Absorbed power	kW	39	48,3	56,5	65,3	73,5	88,7	102	114	151	—	—	—	—
Evaporator water flow rate	l/s	4,78	5,97	6,98	8,07	9,22	11,56	13,28	15,24	20,02	—	—	—	—
Evaporator water flow rate	m ³ /h	17,2	21,5	25,1	29,1	33,2	41,6	47,8	54,9	72,1	—	—	—	—
Evaporator pressure drop	kPa	45	50	43	38	30	53	52	53	39	—	—	—	—
Heat capacity	kW	139	173	202	234	266	331	379	433	569	—	—	—	—
Recuperator water flow rate	l/s	6,64	8,27	9,65	11,18	12,71	15,81	18,11	20,69	27,19	—	—	—	—
Recuperator water flow rate	m ³ /h	23,9	29,8	34,7	40,2	45,8	56,9	65,2	74,5	97,9	—	—	—	—
Recuperator pressure drop	kPa	62	66	65	67	68	69	72	56	73	—	—	—	—
Water volume	l	40	48	58	66	74	92	102	132	150	—	—	—	—
Dimensions with total heat recovery RT														
Length	mm	2.430	2.430	2.430	2.430	2.430	3.310	3.310	3.340	3.700	—	—	—	—
Width	mm	800	800	800	850	850	800	800	850	1.300	—	—	—	—
Width with CF/CFU option	mm	800	800	800	850	850	800	800	850	1.300	—	—	—	—
Height	mm	1.525	1.525	1.525	1.610	1.610	1.525	1.525	1.610	1.900	—	—	—	—
Transport weight 3)	kg	996	1.018	1.415	1.436	1.463	2.048	2.097	2.200	3.794	—	—	—	—
Working weight	kg	1.080	1.107	1.512	1.541	1.574	2.226	2.282	2.411	4.128	—	—	—	—
Refrigerant charge for each circuit with RT	kg	49	46	92	88	85	47	57	84	104	—	—	—	—
Power supply														
400 V / 50 Hz / 3 Ph + T														

— = not available

1) Nominal conditions referred to: chilled water 7/12 °C - condensing water 30/35 °C

2) Measured at 1 m in open field (ISO 3746)

3) Oil and refrigerant charge included

4) Nominal conditions referred to: chilled water 7/12 °C - Condensing water 40/45 °C

WATER CHILLERS R407C – R134A – R22

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WITH SCREW COMPRESSORS

RWH...K Technical data with refrigerant R407C

MODEL	RWH...K	252K	312K	372K	422K	472K	592K	672K	772K	1062K	1222K	1392K	1462K	1652K	1933K	2203K	2493K	
Cooling capacity 1)	kW	241	291	342	394	453	561	642	743	970	1.116	1.271	1.432	1.632	1.915	2.161	2.440	
Absorbed power 1)	kW	64,0	79,8	92,4	108,0	120,0	147,0	168,0	189,0	245	287	321	366	411	482	550	616	
Heat capacity	kW	306	371	435	502	573	708	810	932	1.215	1.403	1.592	1.798	2.043	2.397	2.711	3.056	
C.O.P	KW/KW	3,8	3,6	3,7	3,6	3,8	3,8	3,8	3,9	4,0	3,9	4,0	3,9	4,0	4,0	3,9	4,0	
Shell and tube evaporator																		
Quantity	n	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Circuits	n	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	
Water flow rate 1)	l/s	11,5	13,9	16,3	18,8	21,6	26,8	30,7	35,5	46,3	53,3	60,7	68,4	78,0	91,5	103,2	116,6	
Water flow rate 1)	m ³ /h	41,5	50,1	58,8	67,8	77,9	96,5	110,4	127,8	166,8	192,0	218,6	246,3	280,7	329,4	371,7	419,7	
Pressure drop 1)	kPa	62	71	66	61	49	70	71	46	52	36	64	44	87	68	87	36	
Water volume	l	134	134	129	129	124	185	179	294	286	271	264	461	444	648	632	615	
Shell and tube condenser																		
Quantity	n	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	
Water flow rate 1)	l/s	14,6	17,7	20,8	24,0	27,4	33,8	38,7	44,5	58,1	67,0	76,1	85,9	97,6	114,5	129,5	146,0	
Water flow rate 1)	m ³ /h	52,6	63,8	74,8	86,3	98,6	121,8	139,3	160,3	209,0	241,3	273,8	309,3	351,4	412,3	466,3	525,6	
Pressure drop 1)	kPa	69	79	71	79	75	77	80	78	70	82	79	82	80	80	83	80	
Water volume	l	43	49	59	64	75	90	101	121	162	173	205	226	257	307	338	385	
Screw compressors																		
Quantity	n	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	
Standard steps capacity	n	6	6	6	6	6	6	6	6	6	6	6	6	6	9	9	9	
Continuous control capacity (option)	%	0 - 12 ÷ 100																
Nominal absorbed current 1)	A	111	137	158	182	198	247	285	319	396	476	530	602	670	795	903	1005	
Maximum absorbed current	A	172	216	256	288	324	360	432	492	660	740	840	900	900	1260	1350	1350	
Inrush current	A	497	616	613	729	848	981	1159	1269	1.772	2.223	2.449	2970	2970	2869	3420	3420	
Part-Winding inrush current (opt.)	A	304	377	418	494	585	700	828	911	–	–	–	–	–	–	–	–	
Delta-Star inrush current (opt.)	A	–	–	–	–	–	–	–	–	795	956	1.070	1.255	1.255	1.490	1.705	1.705	
Sound pressure level 2)	dB(A)	73	79	79	79	80	80	83	84	85	86	87	88	90	89	90	92	
Dimensions																		
Length	mm	3.750	3.750	3.860	3.860	3.860	3.900	3.900	3.900	5.200	5.200	5.200	5.200	5.200	5.200	5.200	5.200	
Width	mm	750	750	900	900	900	1.000	1.000	1.000	1.300	1.300	1.300	1.300	1.300	2.000	2.000	2.000	
Height	mm	1.790	1.790	1.790	1.790	1.790	1.990	1.990	1.990	2.370	2.370	2.370	2.370	2.370	2.370	2.370	2.370	
Dimensions with CF/CFU																		
Length	mm	3.750	3.750	3.860	3.860	3.860	3.990	3.990	3.990	5.200	5.200	5.200	5.200	5.200	5.200	5.200	5.200	
Width	mm	750	750	900	900	900	1.000	1.000	1.000	1.300	1.300	1.300	1.300	1.300	2.000	2.000	2.000	
Height	mm	1.790	1.790	1.840	1.840	1.840	1.990	1.990	1.990	2.450	2.450	2.450	2.450	2.450	2.450	2.450	2.450	
Transport weight 3)	kg	1.828	1.838	2.348	2.376	2.425	3.376	3.426	3.895	6.026	6.104	6.483	7.006	7.184	9.834	10.195	10.523	
Working weight	kg	2.005	2.020	2.535	2.569	2.623	3.651	3.706	4.309	6.475	6.548	6.952	7.693	7.884	10.789	11.165	11.523	
Refrigerant charge for each circuit	kg	58	57	55	54	52	50	48	96	87	86	63	73	90	69	80	95	
Total heat recovery version RT 4)																		
Cooling capacity	kW	208	250	294	339	390	483	552	639	835	–	–	–	–	–	–	–	
Absorbed power	kW	77,5	96,6	112	130	146	177	203	229	297	–	–	–	–	–	–	–	
Evaporator water flow rate	l/s	9,94	11,9	14,0	16,2	18,6	23,1	26,4	30,5	39,9	–	–	–	–	–	–	–	
Evaporator water flow rate	m ³ /h	35,8	43,0	50,6	58,3	67,1	83,1	94,9	109,9	143,6	–	–	–	–	–	–	–	
Evaporator pressure drop	kPa	46	52	49	45	36	51	52	34	39	–	–	–	–	–	–	–	
Heat capacity	kW	285	347	406	469	535	660	755	868	1131	–	–	–	–	–	–	–	
Recuperator water flow rate	l/s	13,6	16,6	19,4	22,4	25,6	31,5	36,1	41,5	54,0	–	–	–	–	–	–	–	
Recuperator water flow rate	m ³ /h	49,0	59,7	69,8	80,7	92,0	113,5	129,9	149,3	194,5	–	–	–	–	–	–	–	
Recuperator pressure drop	kPa	65	66	66	67	68	69	72	56	72	–	–	–	–	–	–	–	
Water volume	l	80	96	116	132	146	184	204	262	298	–	–	–	–	–	–	–	
Dimensions with total heat recovery RT																		
Length	mm	3.750	3.750	3.860	3.860	3.860	3.900	3.900	3.900	5.200	–	–	–	–	–	–	–	
Width	mm	750	750	900	900	900	1.000	1.000	1.000	1.300	–	–	–	–	–	–	–	
Height	mm	1.790	1.790	1.790	1.790	1.790	1.990	1.990	2.100	2.370	–	–	–	–	–	–	–	
Dimensions with total heat recovery RT and with CF/CFU																		
Length	mm	3.750	3.750	3.860	3.860	3.860	3.990	3.990	3.990	5.200	–	–	–	–	–	–	–	
Width	mm	750	750	900	900	900	1.000	1.000	1.000	1.300	–	–	–	–	–	–	–	
Height	mm	1.790	1.790	1.840	1.840	1.840	1.990	1.990	2.100	2.450	–	–	–	–	–	–	–	
Transport weight 3)	kg	1.897	1.927	2.750	2.793	2.847	4.096	4.188	4.495	6.670	–	–	–	–	–	–	–	
Working weight	kg	2.111	2.156	2.995	3.053	3.117	4.465	4.572	5.051	7.255	–	–	–	–	–	–	–	
Refrigerant charge for each circuit with RT	kg	50	46	92	89	86	47	57	85	103	–	–	–	–	–	–	–	
Power supply																		
400 V / 50 Hz / 3 Ph + T																		

– = not available

1) Nominal conditions referred to: chilled water 7/12 °C - condensing water 30/35 °C

2) Measured at 1 m in open field (ISO 3746)

3) Oil and refrigerant charge included

4) Nominal conditions referred to: chilled water 7/12 °C - Condensing water 40/45 °C

WATER CHILLERS R407C – R134A – R22

WATER COOLED WATER CHILLERS

WITH SCREW COMPRESSORS

RWH...Ka Technical data with refrigerant R134a

MODEL	RWH...	91Ka	111Ka	131Ka	151Ka	171Ka	211Ka	241Ka	271Ka	321Ka	361Ka	421Ka	481Ka	541Ka	621Ka
Cooling capacity 1)	kW	86,6	107	127	150	165	195	213	278	311	352	411	476	534	589
Absorbed power 1)	kW	19,2	23,9	29,5	32,4	36,6	42,8	47,8	58,8	65,8	75,2	86	98,6	114	125
Heat capacity	kW	106	131	156	182	201	238	261	337	377	427	497	575	648	713
C.O.P	kW/kW	4,5	4,5	4,3	4,6	4,5	4,6	4,5	4,7	4,7	4,7	4,8	4,8	4,7	4,7
Shell and tube evaporator															
Quantity	n	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Circuits	n	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Water flow rate 1)	l/s	4,14	5,11	6,07	7,17	7,88	9,32	10,2	13,3	14,9	16,8	19,6	22,7	25,5	28,1
Water flow rate 1)	m ³ /h	14,9	18,4	21,8	25,8	28,4	33,5	36,6	47,8	53,5	60,5	70,7	81,9	91,8	101,3
Pressure drop 1)	kPa	58	53	65	57	53	54	64	59	57	47	48	58	59	60
Water volume	l	42	39	37	86	86	56	56	129	124	119	179	173	294	286
Shell and tube condenser															
Quantity	n	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Water flow rate 1)	l/s	5,06	6,26	7,45	8,70	9,60	11,4	12,5	16,1	18,0	20,4	23,7	27,5	31,0	34,1
Water flow rate 1)	m ³ /h	18,2	22,5	26,8	31,3	34,6	40,9	44,9	58,0	64,8	73,4	85,5	98,9	111,5	122,6
Pressure drop 1)	kPa	23	27	30	32	32	26	23	24	30	32	30	30	30	29
Water volume	l	9	11	13	15	16	19	22	27	27	30	35	40	45	50
Screw compressors															
Quantity	n	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Standard steps capacity	n	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Continuous control capacity (option)	%	0-25 ÷ 100													
Nominal absorbed current 1)	A	37	43	52	59	65	75	81	102	116	131	145	162	194	211
Maximum absorbed current	A	56	65	79	98	124	144	162	182	215	231	280	310	310	360
Inrush current	A	305	338	355	449	485	585	686	801	943	1.023	1.364	1.442	1.853	2.029
Part-Winding inrush current (opt.)	A	153	169	206	267	290	350	423	520	612	665	—	—	—	—
Delta-Star inrush current (opt.)	A	—	—	—	—	—	—	—	—	—	—	436	465	586	650
Sound pressure level 2)	dB(A)	68	74	74	74	75	76	77	79	80	81	81	82	83	84
Dimensions															
Length	mm	2.430	2.430	2.430	2.430	2.430	3.350	3.350	3.350	3.350	3.350	3.700	3.700	3.700	3.700
Width	mm	800	800	800	800	800	800	800	800	800	800	1.300	1.300	1.300	1.300
Width with CF/CFU option	mm	800	800	800	800	800	850	850	850	850	850	1.300	1.300	1.300	1.300
Height	mm	1.525	1.525	1.525	1.525	1.525	1.525	1.525	1.525	1.525	1.525	1.900	1.900	1.900	1.900
Transport weight 3)	kg	674	683	1.113	1.187	1.197	1.254	1.264	1.707	1.732	1.755	3.239	3.268	3.453	3.505
Working weight	kg	725	733	1.164	1.288	1.299	1.329	1.342	1.863	1.882	1.903	3.453	3.481	3.792	3.841
Refrigerant charge for each circuit	kg	15	14	30	31	30	62	60	60	61	61	61	60	61	60
Total heat recovery version RT 4)															
Cooling capacity	kW	74,5	92,4	109	129	142	168	184	239	267	303	353	409	459	506
Absorbed power	kW	23,1	28,6	35,4	38,9	43,9	51,4	57,3	70,5	79	90,2	103	118	137	150
Evaporator water flow rate	l/s	3,56	4,41	5,21	6,16	6,78	8,03	8,79	11,4	12,8	14,5	16,9	19,5	21,9	24,2
Evaporator water flow rate	m ³ /h	12,8	15,9	18,7	22,2	24,4	28,9	31,6	41,1	45,9	52,1	60,7	70,3	78,9	87,0
Evaporator pressure drop	kPa	43	39	48	42	39	40	48	44	42	35	35	43	44	44
Heat capacity	kW	98	121	144	168	186	219	241	310	346	393	456	528	596	656
Recuperator water flow rate	l/s	4,66	5,78	6,88	8,03	8,89	10,5	11,5	14,8	16,5	18,8	21,8	25,2	28,5	31,3
Recuperator water flow rate	m ³ /h	16,8	20,8	24,8	28,9	32,0	37,7	41,5	53,3	59,5	67,6	78,4	90,8	102,5	112,8
Recuperator pressure drop	kPa	18	22	24	29	26	20	19	22	24	26	25	25	25	24
Water volume	l	20	22	26	26	32	38	42	50	52	60	70	82	92	106
Dimensions with total heat recovery RT															
Length	mm	2.430	2.430	2.430	2.430	2.430	3.350	3.350	3.350	3.350	3.350	3.700	3.700	3.700	3.700
Width	mm	800	800	800	800	800	800	800	800	800	800	1.300	1.300	1.300	1.300
Width with CF/CFU option	mm	800	800	800	800	800	850	850	850	850	850	1.300	1.300	1.300	1.300
Height	mm	1.525	1.525	1.525	1.525	1.525	1.525	1.525	1.525	1.525	1.525	1.900	1.900	1.900	1.900
Transport weight 3)	kg	903	916	1.146	1.220	1.315	1.288	1.304	1.752	1.781	1.961	3.451	3.486	3.678	3.894
Working weight	kg	964	978	1.209	1.332	1.434	1.382	1.402	1.931	1.957	2.140	3.701	3.741	4.063	4.285
Refrigerant charge for each circuit with RT	kg	26	26	25	26	48	53	51	49	50	97	95	92	89	72
Power supply															
400 V / 50 Hz / 3 Ph + T															

— = not available
 1) Nominal conditions referred to: chilled water 7/12 °C - condensing water 30/35 °C
 2) Measured at 1 m in open field (ISO 3746)
 3) Oil and refrigerant charge included
 4) Nominal conditions referred to: chilled water 7/12 °C - Condensing water 40/45 °C

WATER CHILLERS R407C – R134A – R22

WATER COOLED WATER CHILLERS

WITH SCREW COMPRESSORS

RWH...Ka Technical data with refrigerant R134a

MODEL	RWH...	182Ka	222Ka	252Ka	292Ka	332Ka	412Ka	472Ka	542Ka	642Ka	732Ka	842Ka	972Ka	1092Ka	1232Ka	1253Ka	1453Ka	1633Ka	1793Ka	
Cooling capacity 1)	kW	174	213	254	301	330	385	427	560	622	702	815	947	1.069	1.173	1.299	1.434	1.592	1.746	
Absorbed power 1)	kW	38,4	47,8	58,9	64,6	73,1	85,6	96	118	132	150	172	197	228	250	258	296	342	374	
Heat capacity	kW	213	261	313	366	403	470	522	677	753	852	987	1.144	1.297	1.423	1.487	1.730	1.934	2.121	
C.O.P	kW/kW	4,5	4,5	4,3	4,7	4,5	4,5	4,5	4,7	4,7	4,7	4,7	4,8	4,7	4,7	5,0	4,8	4,7	4,7	
Shell and tube evaporator																				
Quantity	n	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Circuits	n	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	
Water flow rate 1)	l/s	8,31	10,2	12,1	14,4	15,8	18,4	20,4	26,8	29,7	33,5	38,9	45,2	51,1	56,0	62,1	68,5	76,1	83,4	
Water flow rate 1)	m ³ /h	29,9	36,6	43,7	51,8	56,8	66,2	73,4	96,3	107,0	120,7	140,2	162,9	183,9	201,8	223,4	246,6	273,8	300,3	
Pressure drop 1)	kPa	48	64	50	54	42	56	51	54	40	56	44	45	87	50	90	89	47	57	
Water volume	l	59	56	129	124	124	119	113	168	286	279	271	461	444	435	444	648	648	632	
Shell and tube condenser																				
Quantity	n	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	
Water flow rate 1)	l/s	10,2	12,5	15,0	17,5	19,3	22,5	24,9	32,3	36,0	40,7	47,2	54,7	62,0	68,0	71,0	82,7	92,4	101,3	
Water flow rate 1)	m ³ /h	36,6	44,9	53,8	63,0	69,3	80,8	89,8	116,4	129,5	146,5	169,8	196,8	223,1	244,8	255,8	297,6	332,6	364,8	
Pressure drop 1)	kPa	18	27	23	21	26	25	23	24	30	32	30	30	30	28	30	30	29	28	
Water volume	l	20	20	25	30	30	38	43	54	54	59	69	80	90	101	104	120	135	151	
Screw compressors																				
Quantity	n	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	
Standard steps capacity	n	6	6	6	6	6	6	6	6	6	6	6	6	6	6	9	9	9	9	
Continuous control capacity (option)	%	0 - 12 ÷ 100													0 - 8 ÷ 100					
Nominal absorbed current 1)	A	73	86	104	117	131	151	162	204	232	262	290	323	389	422	435	485	583	632	
Maximum absorbed current	A	112	130	158	196	248	288	324	364	430	462	560	620	720	780	840	930	930	1.080	
Inrush current	A	361	403	434	547	609	729	848	983	1.158	1.254	1.644	1.752	2.163	2.389	1.924	2.062	2.473	2.749	
Part-Winding inrush current (opt.)	A	209	234	285	365	414	578	613	801	808	879	—	—	—	—	—	—	—	—	
Delta-Star inrush current (opt.)	A	—	—	—	—	—	—	—	—	—	—	716	775	896	1.010	996	1.085	1.206	1.370	
Sound pressure level 2)	dB(A)	71	77	77	77	78	79	80	82	83	84	84	85	86	87	86	87	88	89	
Dimensions																				
Length	mm	3.750	3.750	3.860	3.860	3.860	3.860	3.860	3.900	3.900	3.900	5.200	5.200	5.200	5.200	5.200	5.200	5.200	5.200	
Width	mm	750	750	900	900	900	900	900	1.000	1.000	1.000	1.300	1.300	1.300	1.300	2.000	2.000	2.000	2.000	
Height	mm	1.710	1.710	1.790	1.790	1.790	1.790	1.790	1.990	2.030	2.030	2.370	2.370	2.370	2.370	2.370	2.370	2.370	2.370	
Dimensions with CF/CFU																				
Length	mm	3.750	3.750	3.860	3.860	3.860	3.860	3.860	3.990	3.990	3.990	5.200	5.200	5.200	5.200	5.200	5.200	5.200	5.200	
Width	mm	750	750	900	900	900	900	900	1.000	1.000	1.000	1.300	1.300	1.300	1.300	2.000	2.000	2.000	2.000	
Height	mm	1.710	1.710	1.900	1.790	1.790	1.840	1.840	1.990	2.030	2.030	2.450	2.450	2.450	2.450	2.450	2.450	2.450	2.450	
Transport weight 3)	kg	1.255	1.261	1.807	1.851	1.863	2.386	2.414	3.329	3.516	3.556	5.562	5.958	6.132	6.229	8.221	8.528	8.764	8.993	
Working weight	kg	1.334	1.337	1.961	2.005	2.016	2.542	2.571	3.551	3.856	3.894	5.902	6.499	6.666	6.764	8.769	9.296	9.548	9.776	
Refrigerant charge for each circuit	kg	30	31	30	29	29	61	60	60	62	61	60	59	59	58	59	64	62	61	
Total heat recovery version RT 4)																				
Cooling capacity	kW	150	184	218	259	284	331	367	481	535	603	701	814	920	1.009	1.057	1.233	1.369	1.502	
Absorbed power	kW	46,1	57,3	71	77,5	87,8	103	115	141	158	180	206	237	274	299	310	355	410	449	
Evaporator water flow rate	l/s	7,17	8,79	10,42	12,4	13,6	15,8	17,5	23,0	25,6	28,8	33,5	38,9	44,0	48,2	50,5	58,9	65,4	71,8	
Evaporator water flow rate	m ³ /h	25,8	31,6	37,5	44,5	48,8	56,9	63,1	82,7	92,0	103,7	120,6	140,0	158,2	173,5	181,8	212,1	235,5	258,3	
Evaporator pressure drop	kPa	35	48	37	40	31	42	38	40	30	41	33	33	64	37	67	66	35	42	
Heat capacity	kW	196	241	289	337	371	434	482	623	692	784	907	1.051	1.193	1.308	1.367	1.588	1.779	1.951	
Recuperator water flow rate	l/s	9,36	11,5	13,8	16,1	17,7	20,7	23,0	29,8	33,1	37,5	43,3	50,2	57,0	62,5	65,3	75,9	85,0	93,2	
Recuperator water flow rate	m ³ /h	33,7	41,5	49,7	58,0	63,8	74,6	82,9	107,2	119,0	134,8	156,0	180,8	205,2	225,0	235,1	273,1	306,0	335,6	
Recuperator pressure drop	kPa	18	27	18	17	20	20	19	22	24	26	25	25	24	67	66	35	42		
Water volume	l	36	36	54	64	64	74	86	100	106	120	142	162	184	210	318	366	411	474	
Dimensions with total heat recovery RT																				
Length	mm	3.750	3.750	3.860	3.860	3.860	3.860	3.860	3.900	3.900	3.900	5.200	5.200	5.200	5.200	5.200	5.200	5.200	5.200	
Width	mm	750	750	900	900	900	900	900	1.000	1.000	1.000	1.300	1.300	1.300	1.300	2.000	2.000	2.000	2.000	
Height	mm	1.710	1.710	1.790	1.790	1.790	1.790	1.790	1.990	2.030	2.030	2.370	2.370	2.370	2.370	2.370	2.370	2.370	2.370	
Dimensions with total heat recovery RT and with CF/CFU																				
Length	mm	3.750	3.750	3.860	3.860	3.860	3.860	3.860	3.990	3.990	3.990	5.200	5.200	5.200	5.200	5.200	5.200	5.200	5.200	
Width	mm	750	750	900	900	900	900	900	1.000	1.000	1.000	1.300	1.300	1.300	1.300	2.000	2.000	2.000	2.000	
Height	mm	1.710	1.710	1.790	1.790	1.790	1.840	1.840	1.990	2.030	2.030	2.450	2.450	2.450	2.450	2.450	2.450	2.450	2.450	
Transport weight 3)	kg	1.279	1.286	2.303	2.359	2.370	2.455	2.493	3.418	3.615	3.967	5.986	6.395	6.582	7.006	8.857	9.183	9.439	10.160	
Working weight	kg	1.373	1.377	2.486	2.547	2.558	2.648	2.691	3.686	4.006	4.367	6.398	7.019	7.209	7.651	9.514	10.075	10.362	11.107	
Refrigerant charge for each circuit with RT	kg	26	27	56	55	55	53	51	50	50	97	94	90	88	69	92	96	91	73	
Power supply																				
400 V / 50 Hz / 3 Ph + T																				
— = not available																				
1) Nominal conditions referred to: chilled water 7/12 °C - condensing water 30/35 °C																				
2) Measured at 1 m in open field (ISO 3746)																				
3) Oil and refrigerant charge included																				
4) Nominal conditions referred to: chilled water 7/12 °C - Condensing water 40/45 °C																				

WATER CHILLERS R407C – R134A – R22

WATER COOLED WATER CHILLERS

WITH SCREW COMPRESSORS

RWH... Technical data with refrigerant R22

MODEL	RWH...	131	161	191	221	251	311	361	411	551	641	731	811	911
Cooling capacity 1)	kW	130	162	191	218	251	312	359	413	538	620	711	793	892
Absorbed power 1)	kW	30,9	37,9	43,3	51,1	57,4	68,2	79,7	90	115	136	153	174	194
Heat capacity	kW	161	200	235	269	309	380	439	503	654	756	864	966	1.086
C.O.P	kW/kW	4,2	4,3	4,4	4,3	4,4	4,6	4,5	4,6	4,7	4,6	4,6	4,6	4,6
Shell and tube evaporator														
Quantity	n	1	1	1	1	1	1	1	1	1	1	1	1	1
Circuits	n	1	1	1	1	1	1	1	1	1	1	1	1	1
Water flow rate 1)	l/s	6,21	7,74	9,13	10,4	12,0	14,9	17,2	19,7	25,7	29,6	34,0	37,9	42,6
Water flow rate 1)	m ³ /h	22,4	27,9	32,9	37,5	43,2	53,7	61,7	71,0	92,5	106,6	122,3	136,4	153,4
Pressure drop 1)	kPa	54	53	54	49	48	59	51	48	66	59	53	71	52
Water volume	l	39	37	86	86	82	129	124	119	173	294	286	279	271
Shell and tube condenser														
Quantity	n	1	1	1	1	1	1	1	1	1	1	1	1	1
Water flow rate 1)	l/s	7,69	9,56	11,2	12,9	14,8	18,2	21,0	24,0	31,2	36,1	41,3	46,2	51,9
Water flow rate 1)	m ³ /h	27,7	34,4	40,4	46,3	53,1	65,4	75,5	86,5	112,5	130,0	148,6	166,2	186,8
Pressure drop 1)	kPa	31	31	30	30	30	31	28	31	34	32	34	32	32
Water volume	l	13	16	19	21	24	27	32	35	43	50	56	66	73
Screw compressors														
Quantity	n	1	1	1	1	1	1	1	1	1	1	1	1	1
Standard steps capacity	n	3	3	3	3	3	3	3	3	3	3	3	3	3
Continuous control capacity (option)	%	0 - 25 ÷ 100												
Nominal absorbed current 1)	A	54,1	65,8	74,6	87,2	94,6	116	136	153	187	226	252	287	318
Maximum absorbed current	A	86	108	128	144	162	180	216	246	330	370	420	450	450
Inrush current	A	411	508	485	585	686	801	943	1.023	1.442	1.853	2.029	2.520	2.520
Part-Winding inrush current (opt.)	A	218	269	290	350	423	520	612	665	—	—	—	—	—
Delta-Star inrush current (opt.)	A	—	—	—	—	—	—	—	—	465	586	650	805	805
Sound pressure level 2)	dB(A)	70	76	76	76	77	77	80	81	82	83	84	85	87
Dimensions														
Length	mm	2.430	2.430	2.430	2.430	2.430	3.350	3.350	3.350	3.700	3.700	3.700	3.700	3.700
Width	mm	800	800	800	800	800	800	800	800	1.300	1.300	1.300	1.300	1.300
Width with CF/CFU option	mm	800	800	800	800	800	850	850	850	1.300	1.300	1.300	1.300	1.300
Height	mm	1.525	1.525	1.525	1.525	1.525	1.525	1.525	1.525	1.900	1.900	1.900	1.900	1.900
Transport weight 3)	kg	900	914	1.204	1.220	1.242	1.707	1.742	1.765	3.273	3.417	3.446	3.675	3.730
Working weight	kg	953	967	1.308	1.328	1.349	1.863	1.897	1.918	3.489	3.761	3.787	4.019	4.074
Refrigerant charge for each circuit	kg	29	29	29	28	28	60	59	59	59	58	58	105	104
Total heat recovery version RT 4)														
Cooling capacity	kW	112	140	165	187	216	268	309	356	463	533	611	682	767
Absorbed power	kW	37,7	46,2	52,8	62,4	70,1	83,2	97,3	110	140	166	186	212	237
Evaporator water flow rate	l/s	5,35	6,69	7,88	8,93	10,3	12,8	14,8	17,0	22,1	25,5	29,2	32,6	36,6
Evaporator water flow rate	m ³ /h	19,3	24,1	28,4	32,2	37,2	46,1	53,1	61,2	79,6	91,7	105,1	117,3	131,9
Evaporator pressure drop	kPa	18,5	20,1	25,7	29,3	24,3	16,7	18,7	24,3	35	33	46	33	52
Heat capacity	kW	150	186	217	250	286	352	406	465	604	699	798	893	1.004
Recuperator water flow rate	l/s	7,17	8,89	10,4	11,9	13,7	16,8	19,4	22,2	28,9	33,4	38,1	42,7	48,0
Recuperator water flow rate	m ³ /h	25,8	31,99	37,3	43,0	49,2	60,5	69,8	80,0	103,9	120,2	137,3	153,6	172,7
Recuperator pressure drop	kPa	29	29	27	27	27	28	25	28	28	27	29	27	27
Water volume	l	24	32	36	42	50	50	64	68	86	106	116	132	146
Dimensions with total heat recovery RT														
Length	mm	2.430	2.430	2.430	2.430	2.430	3.350	3.350	3.350	3.700	3.700	3.700	3.700	3.700
Width	mm	800	800	800	800	800	800	800	800	1.300	1.300	1.300	1.300	1.300
Width with CF/CFU option	mm	800	800	800	800	800	850	850	850	1.300	1.300	1.300	1.300	1.300
Height	mm	1.525	1.525	1.525	1.525	1.525	1.525	1.525	1.525	1.900	1.900	1.900	1.900	1.900
Transport weight 3)	kg	929	1.029	1.324	1.345	1.491	1.752	1.946	1.973	3.495	3.806	3.856	3.967	4.056
Working weight	kg	992	1.098	1.447	1.473	1.624	1.931	2.133	2.160	3.754	4.204	4.257	4.377	4.474
Refrigerant charge for each circuit with RT	kg	25	47	46	44	26	49	95	94	89	70	81	97	114
Power supply														
400 V / 50 Hz / 3 Ph + T														

— = not available

1) Nominal conditions referred to: chilled water 7/12 °C - condensing water 30/35 °C

2) Measured at 1 m in open field (ISO 3746)

3) Oil and refrigerant charge included

4) Nominal conditions referred to: chilled water 7/12 °C - Condensing water 40/45 °C

WATER CHILLERS R407C – R134A – R22

WATER COOLED WATER CHILLERS

WITH SCREW COMPRESSORS

RWH... Technical data with refrigerant R22

MODEL	RWH...	262	322	382	442	502	622	702	812	1102	1282	1462	1632	1832	1903	2193	2433	2753	
Cooling capacity 1)	kW	259	324	377	440	505	620	709	824	1.072	1.241	1.417	1.574	1.765	1.876	2.128	2.366	2.671	
Absorbed power 1)	kW	61.6	75.6	86.7	102	115	136	159	180	230	272	305	347	389	408	458	520	583	
Heat capacity	kW	321	400	464	543	620	757	869	1.004	1.302	1.513	1.723	1.921	2.154	2.284	2.586	2.886	3.254	
C.O.P	kW/kW	4.2	4.3	4.3	4.3	4.4	4.6	4.5	4.6	4.7	4.6	4.6	4.5	4.5	4.6	4.6	4.6	4.6	
Shell and tube evaporator																			
Quantity	n	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Circuits	n	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	
Water flow rate 1)	l/s	12.4	15.5	18.0	21.0	24.1	29.6	33.9	39.4	51.2	59.3	67.7	75.2	84.3	89.6	101.7	113.0	127.6	
Water flow rate 1)	m ³ /h	44.5	55.7	64.8	75.7	86.9	106.6	121.9	141.7	184.4	213.5	243.7	270.7	303.6	322.7	366.0	407.0	459.4	
Pressure drop 1)	kPa	93	64	56	54	43	47	74	41	55	43	62	31	44	65	84	104	43	
Water volume	l	56	129	124	119	179	173	168	279	461	444	435	426	417	648	648	632	599	
Shell and tube condenser																			
Quantity	n	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	
Water flow rate 1)	l/s	15.3	19.1	22.2	25.9	29.6	36.2	41.5	48.0	62.2	72.3	82.3	91.8	102.9	109.1	123.6	137.9	155.5	
Water flow rate 1)	m ³ /h	55.2	68.8	79.8	93.4	106.6	130.2	149.5	172.7	223.9	260.2	296.4	330.4	370.5	392.8	444.8	496.4	559.7	
Pressure drop 1)	kPa	24	25	34	25	26	30	27	31	34	32	34	32	32	33	34	32	32	
Water volume	l	25	30	30	40	49	54	64	69	85	101	111	131	147	151	167	197	220	
Screw compressors																			
Quantity	n	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	
Standard steps capacity	n	6	6	6	6	6	6	6	6	6	6	6	6	6	9	9	9	9	
Continuous control capacity (option)	%	0 - 12 ÷ 100												0 - 8 ÷ 100					
Nominal absorbed current 1)	A	108	131	150	174	189	232	272	305	373	452	505	574	636	679	757	862	955	
Maximum absorbed current	A	172	216	256	288	324	360	432	492	660	740	840	900	900	1.110	1.260	1.350	1.350	
Inrush current	A	497	616	613	729	848	981	1.159	1.269	1.772	2.223	2.449	2.970	2.970	2.593	2.869	3.420	3.420	
Part-Winding inrush current (opt.)	A	304	377	418	494	585	700	828	911	–	–	–	–	–	–	–	–	–	
Delta-Star inrush current (opt.)	A	–	–	–	–	–	–	–	–	795	956	1.070	1.255	1.255	1.326	1.490	1.705	1.705	
Sound pressure level 2)	dB(A)	73	79	79	79	80	80	83	84	85	86	87	88	90	88	89	90	92	
Dimensions																			
Length	mm	3.750	3.750	3.860	3.860	3.860	3.900	3.900	3.900	5.200	5.200	5.200	5.200	5.200	5.200	5.200	5.200	5.200	
Width	mm	750	750	900	900	900	1.000	1.000	1.000	1.300	1.300	1.300	1.300	1.300	2.000	2.000	2.000	2.000	
Height	mm	1.710	1.710	1.790	1.790	1.790	1.990	1.990	2.030	2.370	2.370	2.370	2.370	2.370	2.370	2.370	2.370	2.370	
Dimensions with CF/CFU																			
Length	mm	3.750	3.750	3.750	3.750	3.860	3.990	3.990	3.990	5.200	5.200	5.200	5.200	5.200	5.200	5.200	5.200	5.200	
Width	mm	750	750	750	750	900	1.000	1.000	1.000	1.300	1.300	1.300	1.300	1.300	2.000	2.000	2.000	2.000	
Height	mm	1.710	1.710	1.710	1.710	1.840	1.990	1.990	2.030	2.450	2.450	2.450	2.450	2.450	2.450	2.450	2.450	2.450	
Transport weight 3)	kg	1.288	1.367	1.863	1.904	2.545	3.322	3.371	3.519	5.968	6.060	6.110	6.562	6.664	8.656	8.720	9.481	9.768	
Working weight	kg	1.369	1.526	2.016	2.063	2.773	3.549	3.604	3.867	6.514	6.604	6.656	7.119	7.227	9.455	9.535	10.310	10.587	
Refrigerant charge for each circuit	kg	29	29	29	27	60	59	58	59	58	57	56	102	99	60	57	104	103	
Total heat recovery version RT 4)																			
Cooling capacity	kW	223	279	325	379	435	533	610	709	922	1.068	1.219	1.354	1.518	1.613	1.830	2.034	2.297	
Absorbed power	kW	75.2	92.3	106	125	140	166	194	220	281	332	373	423	474	498	559	635	711	
Evaporator water flow rate	l/s	10.7	13.3	15.5	18.1	20.8	25.5	29.1	33.9	44.1	51.0	58.2	64.7	72.5	77.1	87.4	97.2	109.7	
Evaporator water flow rate	m ³ /h	38.4	48.0	55.9	65.2	74.8	91.7	104.9	121.9	158.6	183.7	209.7	232.9	261.1	277.4	314.8	349.8	395.1	
Evaporator pressure drop	kPa	69	47	42	40	32	35	55	30	41	32	45	23	33	48	62	77	32	
Heat capacity	kW	298	371	430	503	575	700	805	928	1.203	1.399	1.592	1.777	1.992	2.111	2.389	2.669	3.008	
Recuperator water flow rate	l/s	14.2	17.7	20.5	24.0	27.5	33.4	38.5	44.3	57.5	66.8	76.1	84.9	95.2	100.9	114.1	127.5	143.7	
Recuperator water flow rate	m ³ /h	51.3	63.8	74.0	86.5	98.9	120.4	138.5	159.6	206.9	240.6	273.8	305.6	342.6	363.1	410.9	459.1	517.4	
Recuperator pressure drop	kPa	24	24	23	23	24	28	25	28	28	27	28	27	27	27	29	27	27	
Water volume	l	48	60	70	80	90	100	126	136	172	210	230	262	294	474	519	591	660	
Dimensions with total heat recovery RT																			
Length	mm	3.750	3.750	3.860	3.860	3.860	3.900	3.900	3.900	5.200	5.200	5.200	5.200	5.200	5.200	5.200	5.200	5.200	
Width	mm	750	750	900	900	900	1.000	1.000	1.000	1.300	1.300	1.300	1.300	1.300	2.000	2.000	2.000	2.000	
Height	mm	1.710	1.710	1.790	1.790	1.790	1.990	1.990	2.030	2.370	2.370	2.370	2.370	2.370	2.370	2.370	2.370	2.370	
Dimensions with total heat recovery RT and with CF/CFU																			
Length	mm	3.750	3.750	3.860	3.860	3.860	3.990	3.990	3.990	5.200	5.200	5.200	5.200	5.200	5.200	5.200	5.200	5.200	
Width	mm	750	750	900	900	900	1.000	1.000	1.000	1.300	1.300	1.300	1.300	1.300	2.000	2.000	2.000	2.000	
Height	mm	1.710	1.710	1.790	1.790	1.840	1.990	1.990	2.030	2.450	2.450	2.450	2.450	2.450	2.450	2.450	2.450	2.450	
Transport weight 3)	kg	1.774	1.865	2.380	2.425	2.624	3.410	3.781	3.934	6.411	6.837	6.930	7.147	7.317	9.822	9.950	10.358	10.747	
Working weight	kg	1.879	2.052	2.573	2.624	2.894	3.684	4.075	4.349	7.045	7.491	7.596	7.835	8.027	10.786	10.945	11.383	11.786	
Refrigerant charge for each circuit with RT	kg	56	55	53	52	50	49	94	94	88	88	79	94	110	71	81	96	113	
Power supply																			
400 V / 50 Hz / 3 Ph + T																			
– = not available																			
1) Nominal conditions referred to: chilled water 7/12 °C - condensing water 30/35 °C																			
2) Measured at 1 m in open field (ISO 3746)																			
3) Oil and refrigerant charge included																			
4) Nominal conditions referred to: chilled water 7/12 °C - Condensing water 40/45 °C																			

CORRECTION FACTOR FOR COOLING CAPACITY R22

Ethylene glycol		Water evaporator outlet °C																						
		%										10%			20%			30%						
Condenser outlet water °C		17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5
	25	1.514	1.473	1.429	1.384	1.340	1.296	1.262	1.224	1.185	1.146	1.107	1.068	0.983	0.950	0.916	0.883	0.850	0.816	0.783	0.752	0.727	0.702	0.677
	26	1.507	1.461	1.417	1.373	1.329	1.285	1.244	1.214	1.175	1.136	1.097	1.059	0.974	0.941	0.908	0.875	0.842	0.809	0.776	0.744	0.719	0.695	0.670
	27	1.493	1.450	1.405	1.362	1.318	1.274	1.234	1.203	1.164	1.126	1.087	1.049	0.965	0.933	0.900	0.867	0.834	0.801	0.769	0.737	0.712	0.687	0.663
	28	1.481	1.438	1.394	1.350	1.307	1.263	1.223	1.192	1.154	1.116	1.078	1.039	0.956	0.924	0.891	0.859	0.826	0.794	0.761	0.729	0.705	0.680	0.656
	29	1.468	1.427	1.382	1.339	1.295	1.252	1.212	1.181	1.143	1.105	1.068	1.030	0.948	0.915	0.883	0.851	0.819	0.786	0.754	0.722	0.697	0.673	0.649
	30	1.456	1.415	1.371	1.327	1.284	1.241	1.206	1.170	1.133	1.095	1.058	1.020	0.939	0.907	0.875	0.843	0.811	0.779	0.747	0.714	0.690	0.666	0.641
	31	1.441	1.399	1.356	1.314	1.271	1.235	1.197	1.159	1.121	1.084	1.047	1.010	0.929	0.897	0.865	0.833	0.802	0.770	0.738	0.706	0.681	0.657	0.633
	32	1.427	1.385	1.343	1.301	1.259	1.221	1.184	1.147	1.110	1.073	1.036	0.999	0.918	0.887	0.856	0.824	0.793	0.761	0.730	0.697	0.673	0.649	0.624
	33	1.413	1.371	1.330	1.288	1.246	1.209	1.172	1.135	1.098	1.062	1.025	0.988	0.908	0.877	0.846	0.815	0.784	0.752	0.721	0.689	0.664	0.640	0.616
	34	1.399	1.357	1.316	1.275	1.234	1.196	1.160	1.124	1.087	1.050	1.014	0.977	0.988	0.867	0.836	0.805	0.774	0.744	0.713	0.680	0.656	0.632	0.607
	35	1.384	1.344	1.303	1.262	1.221	1.184	1.148	1.112	1.075	1.037	1	0.966	0.888	0.857	0.827	0.796	0.765	0.735	0.704	0.672	0.647	0.623	0.599
	36	1.369	1.329	1.288	1.248	1.211	1.173	1.136	1.099	1.062	1.026	0.990	0.954	0.878	0.847	0.816	0.786	0.755	0.724	0.694	0.664	0.639	0.615	0.590
	37	1.353	1.314	1.274	1.235	1.197	1.160	1.122	1.085	1.049	1.013	0.977	0.941	0.867	0.837	0.806	0.776	0.745	0.714	0.684	0.656	0.632	0.607	0.582
	38	1.337	1.299	1.260	1.221	1.180	1.144	1.108	1.071	1.036	1.000	0.965	0.929	0.857	0.827	0.796	0.765	0.735	0.704	0.673	0.648	0.624	0.599	0.574
	39	1.322	1.284	1.246	1.207	1.167	1.130	1.094	1.058	1.023	0.987	0.952	0.917	0.847	0.816	0.786	0.755	0.724	0.694	0.663	0.640	0.616	0.591	0.566
	40	1.306	1.269	1.231	1.194	1.151	1.115	1.080	1.044	1.008	0.973	0.938	0.905	0.837	0.806	0.776	0.745	0.714	0.684	0.653	0.633	0.608	0.583	0.558
	41	1.290	1.251	1.213	1.174	1.136	1.101	1.065	1.029	0.995	0.961	0.926	0.892	0.824	0.794	0.764	0.734	0.703	0.673	0.643	0.622	0.597	0.573	0.548
	42	1.273	1.235	1.198	1.160	1.121	1.086	1.050	1.015	0.981	0.947	0.913	0.879	0.812	0.782	0.752	0.722	0.692	0.662	0.632	0.612	0.587	0.563	0.538
	43	1.257	1.220	1.184	1.145	1.105	1.071	1.036	1.001	0.967	0.934	0.900	0.866	0.800	0.770	0.741	0.711	0.681	0.652	0.622	0.601	0.577	0.553	0.528
44	1.241	1.202	1.163	1.127	1.090	1.056	1.021	0.987	0.953	0.920	0.887	0.853	0.888	0.758	0.729	0.700	0.670	0.641	0.612	0.591	0.567	0.543	0.519	
45	1.224	1.186	1.153	1.116	1.075	1.041	1.007	0.973	0.940	0.906	0.873	0.840	0.776	0.746	0.717	0.688	0.659	0.630	0.601	0.580	0.556	0.533	0.509	
46	1.207	1.169	1.133	1.098	1.062	1.026	0.990	0.957	0.924	0.892	0.859	0.827	0.763	0.734	0.705	0.677	0.648	0.619	0.591	0.569	0.545	0.522	0.498	
47	1.190	1.153	1.117	1.081	1.046	1.010	0.975	0.941	0.909	0.877	0.845	0.813	0.750	0.721	0.693	0.665	0.636	0.608	0.580	0.588	0.534	0.511	0.488	
48	1.173	1.136	1.101	1.066	1.031	0.996	0.961	0.926	0.894	0.863	0.831	0.799	0.737	0.709	0.681	0.653	0.625	0.597	0.569	0.546	0.523	0.500	0.477	
49	1.155	1.122	1.087	1.052	1.016	0.981	0.946	0.910	0.879	0.848	0.817	0.786	0.724	0.696	0.669	0.641	0.613	0.586	0.558	0.535	0.512	0.489	0.466	
50	1.136	1.105	1.068	1.031	0.997	0.963	0.929	0.895	0.864	0.833	0.803	0.772	0.711	0.684	0.656	0.629	0.602	0.575	0.548	0.524	0.500	0.478	0.456	
51	1.119	1.085	1.050	1.016	0.982	0.948	0.913	0.879	0.848	0.818	0.788	0.757	0.697	0.670	0.643	0.616	0.589	0.562	0.535	0.511	0.487	0.465	0.444	
52	1.099	1.065	1.031	0.998	0.964	0.931	0.897	0.863	0.833	0.803	0.772	0.742	0.683	0.656	0.629	0.603	0.576	0.549	0.522	0.499	0.475	0.453	0.432	
53	1.071	1.039	1.007	0.976	0.944	0.912	0.880	0.848	0.818	0.787	0.757	0.727	0.669	0.642	0.616	0.589	0.563	0.536	0.509	0.486	0.463	0.441	0.419	
54	-	-	-	-	-	0.930	0.897	0.865	0.832	0.802	0.772	0.742	0.712	0.655	0.628	0.602	0.576	0.549	0.523	0.497	0.474	0.450	0.429	-
55	-	-	-	-	0.916	0.883	0.883	0.850	0.816	0.787	0.757	0.697	0.641	0.615	0.589	0.562	0.536	0.510	0.484	0.461	-	-	-	-

CORRECTION FACTOR FOR ABSORBED CAPACITY R22

Ethylene glycol		Water evaporator outlet °C																						
		%										10%			20%			30%						
Condenser outlet water °C		17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	-1	-2	-3	-4	-5
	25	1.012	0.990	0.973	0.956	0.942	0.928	0.911	0.898	0.886	0.874	0.862	0.851	0.826	0.817	0.808	0.799	0.791	0.782	0.773	0.767	0.761	0.755	0.748
	26	1.016	1.001	0.985	0.970	0.955	0.940	0.925	0.910	0.898	0.886	0.875	0.863	0.839	0.831	0.822	0.813	0.805	0.796	0.787	0.781	0.775	0.768	0.762
	27	1.028	1.013	0.996	0.981	0.967	0.952	0.937	0.922	0.910	0.899	0.887	0.876	0.853	0.844	0.836	0.827	0.819	0.810	0.801	0.795	0.789	0.782	0.776
	28	1.039	1.024	1.008	0.993	0.978	0.963	0.948	0.934	0.922	0.911	0.900	0.888	0.866	0.858	0.849	0.841	0.832	0.824	0.816	0.808	0.802	0.796	0.790
	29	1.050	1.035	1.020	1.005	0.990	0.975	0.960	0.946	0.934	0.923	0.912	0.901	0.880	0.871	0.863	0.855	0.846	0.838	0.830	0.822	0.816	0.810	0.804
	30	1.061	1.047	1.031	1.016	1.001	0.987	0.972	0.958	0.947	0.936	0.925	0.914	0.893	0.885	0.877	0.869	0.860	0.852	0.844	0.836	0.830	0.824	0.818
	31	1.076	1.061	1.046	1.031	1.016	0.996	0.984	0.973	0.962	0.951	0.940	0.929	0.899	0.891	0.883	0.876	0.868	0.860	0.852	0.846	0.840	0.834	0.828
	32	1.091	1.076	1.061	1.046	1.031	1.009	0.998	0.988	0.977	0.966	0.955	0.945	0.925	0.917	0.909	0.901	0.893	0.884	0.876	0.868	0.862	0.856	0.850
	33	1.106	1.091	1.076	1.061	1.046	1.025	1.014	1.003	0.992	0.982	0.971	0.960	0.941	0.933	0.925	0.917	0.909	0.900	0.892	0.884	0.878	0.872	0.866
	34	1.121	1.106	1.091	1.076	1.061	1.041	1.030	1.018	1.008	0.997	0.986	0.976	0.958	0.949	0.941	0.933	0.925	0.917	0.908	0.900	0.894	0.888	0.882
	35	1.136	1.121	1.105	1.089	1.076	1.057	1.045	1.034	1.022	1.011	1	0.991	0.974	0.965	0.957	0.949	0.941	0.933	0.924	0.917	0.910	0.904	0.898
	36	1.154	1.138	1.122	1.106	1.085	1.074	1.062	1.051	1.041	1.030	1.020	1.009	0.991	0.983	0.975	0.967	0.958	0.950	0.942	0.934	0.928	0.921	0.915
	37	1.171	1.155	1.139	1.122	1.102	1.091	1.080	1.069	1.058	1.048	1.038	1.028	1.009	1.001	0.992	0.984	0.976	0.968	0.960	0.952	0.946	0.939	0.932
	38	1.189	1.172	1.155	1.139	1.122	1.110	1.098	1.086	1.076	1.066	1.056	1.046	1.026	1.018	1.010	1.002	0.994	0.985	0.977	0.970	0.963	0.956	0.949
	39	1.206	1.189	1.172	1.155	1.139	1.127	1.116	1.104	1.094	1.084	1.074	1.064	1.044	1.036	1.028	1.019	1.011	1.003	0.995	0.988	0.981	0.974	0.967
	40	1.224	1.206	1.189	1.171	1.159	1.148	1.136	1.124	1.114	1.104	1.094	1.082	1.061	1.053	1.045	1.037	1.029	1.020	1.012	1.006	0.999	0.991	0.984
	41	1.244	1.228	1.212	1.199	1.180	1.168	1.156	1.144	1.133	1.123	1.112	1.102	1.081	1.073	1.065	1.056	1.048	1.040	1.031	1.025	1.017	1.009	1.001
	42	1.264	1.248																					

RWH... AND PWH... SERIES

OPERATION LIMITS AND CORRECTION FACTORS

CORRECTION FACTOR FOR COOLING CAPACITY R407C

		Water evaporator outlet °C										
		15	14	13	12	11	10	9	8	7	6	5
Condenser outlet water °C	30	1.396	1.351	1.309	1.265	1.221	1.172	1.133	1.095	1.063	0.961	0.930
	31	1.384	1.338	1.295	1.251	1.208	1.161	1.122	1.085	1.053	0.950	0.919
	32	1.371	1.325	1.281	1.238	1.194	1.149	1.111	1.076	1.039	0.939	0.909
	33	1.358	1.311	1.267	1.224	1.181	1.138	1.099	1.067	1.025	0.927	0.898
	34	1.347	1.298	1.253	1.210	1.168	1.127	1.088	1.053	1.011	0.916	0.888
	35	1.326	1.284	1.239	1.196	1.154	1.116	1.077	1.039	1	0.958	0.877
	36	1.310	1.268	1.224	1.182	1.140	1.102	1.064	1.025	0.987	0.946	0.865
	37	1.294	1.252	1.208	1.167	1.125	1.088	1.050	1.012	0.974	0.934	0.853
	38	1.278	1.236	1.193	1.152	1.110	1.074	1.036	0.999	0.961	0.922	0.841
	39	1.262	1.220	1.178	1.137	1.095	1.060	1.022	0.985	0.948	0.910	0.829
	40	1.246	1.204	1.163	1.122	1.081	1.046	1.009	0.972	0.935	0.898	0.818
	41	1.227	1.186	1.145	1.105	1.065	1.029	0.993	0.956	0.920	0.884	0.804
	42	1.208	1.168	1.127	1.087	1.050	1.013	0.977	0.941	0.905	0.869	0.791
	43	1.189	1.149	1.109	1.070	1.034	0.997	0.961	0.926	0.890	0.854	0.778
	44	1.170	1.131	1.092	1.052	1.019	0.981	0.946	0.910	0.875	0.839	0.764
	45	1.151	1.112	1.074	1.035	1.004	0.965	0.930	0.895	0.860	0.825	0.751
	46	1.133	1.093	1.055	1.018	0.985	0.947	0.912	0.878	0.844	0.809	0.737
	47	1.114	1.074	1.037	1.000	0.967	0.930	0.895	0.861	0.827	0.794	0.723
	48	1.096	1.055	1.019	0.982	0.949	0.912	0.877	0.844	0.811	0.778	0.710
	49	1.078	1.036	1.001	0.965	0.931	0.895	0.860	0.827	0.795	0.763	0.696
50	1.060	1.018	0.982	0.947	0.912	0.877	0.842	0.811	0.779	0.747	0.682	

CORRECTION FACTOR FOR ABSORBED CAPACITY R407C

		Water evaporator outlet °C										
		15	14	13	12	11	10	9	8	7	6	5
Condenser outlet water °C	30	1.035	1.012	0.995	0.982	0.970	0.956	0.942	0.925	0.916	0.895	0.881
	31	1.050	1.029	1.013	1.00	0.986	0.973	0.959	0.942	0.933	0.910	0.898
	32	1.065	1.046	1.031	1.017	1.003	0.989	0.976	0.959	0.948	0.925	0.915
	33	1.079	1.063	1.048	1.034	1.020	1.006	0.992	0.976	0.965	0.941	0.931
	34	1.098	1.079	1.066	1.051	1.037	1.023	1.009	0.994	0.983	0.956	0.948
	35	1.113	1.102	1.084	1.069	1.053	1.040	1.021	1.011	1	0.988	0.965
	36	1.132	1.121	1.103	1.088	1.072	1.058	1.041	1.030	1.019	1.007	0.984
	37	1.152	1.139	1.122	1.107	1.091	1.076	1.060	1.049	1.038	1.026	1.003
	38	1.171	1.158	1.141	1.126	1.110	1.094	1.079	1.068	1.056	1.045	1.022
	39	1.191	1.176	1.160	1.145	1.129	1.112	1.098	1.087	1.075	1.063	1.041
	40	1.210	1.195	1.179	1.163	1.148	1.130	1.118	1.106	1.094	1.082	1.059
	41	1.233	1.217	1.200	1.185	1.169	1.152	1.140	1.128	1.116	1.105	1.082
	42	1.255	1.238	1.221	1.207	1.190	1.175	1.163	1.151	1.139	1.127	1.105
	43	1.278	1.260	1.243	1.228	1.211	1.197	1.185	1.173	1.161	1.149	1.127
	44	1.301	1.282	1.264	1.250	1.232	1.220	1.208	1.196	1.183	1.171	1.150
	45	1.323	1.304	1.285	1.271	1.253	1.242	1.230	1.218	1.206	1.194	1.172
	46	1.348	1.330	1.311	1.297	1.280	1.269	1.256	1.244	1.232	1.220	1.198
	47	1.372	1.356	1.337	1.323	1.307	1.295	1.282	1.270	1.258	1.247	1.224
	48	1.396	1.381	1.363	1.349	1.334	1.321	1.308	1.296	1.285	1.273	1.250
	49	1.421	1.407	1.389	1.375	1.360	1.347	1.334	1.322	1.311	1.300	1.276
50	1.445	1.433	1.415	1.401	1.387	1.373	1.360	1.349	1.337	1.326	1.302	

If the machine runs with evaporator water outlet temperature below 5 °C it is absolutely necessary to use a mixture of water and glycol in the percentages listed in the table showed at the relevant section of the present catalogue.

Emicon AC SpA disclaims all responsibilities in case of damages deriving from violation of this instructions.

For further clarifications or informations, you are kindly request to contact our sales department.

N.B.

The listed coefficients are mean values referred to different units, so the performances calculated by the tables could be different up to 5% from the data for a specific unit.

CORRECTION FACTOR FOR COOLING CAPACITY R134a

		Water evaporator outlet °C										
		15	14	13	12	11	10	9	8	7	6	5
Condenser outlet water °C	30	1.395	1.341	1.298	1.256	1.209	1.171	1.124	1.089	1.047	1.012	0.977
	31	1.383	1.333	1.288	1.245	1.199	1.160	1.114	1.079	1.037	1.002	0.967
	32	1.371	1.326	1.277	1.234	1.189	1.149	1.104	1.069	1.028	0.993	0.958
	33	1.358	1.314	1.266	1.223	1.179	1.138	1.094	1.059	1.019	0.984	0.949
	34	1.346	1.300	1.255	1.212	1.169	1.127	1.084	1.049	1.009	0.974	0.940
	35	1.333	1.287	1.244	1.202	1.159	1.116	1.074	1.039	1	0.965	0.930
	36	1.320	1.275	1.231	1.189	1.146	1.104	1.062	1.028	0.989	0.955	0.920
	37	1.306	1.262	1.218	1.176	1.134	1.091	1.058	1.016	0.978	0.944	0.910
	38	1.295	1.250	1.205	1.163	1.121	1.079	1.047	1.005	0.967	0.934	0.900
	39	1.283	1.237	1.191	1.150	1.108	1.067	1.033	0.994	0.957	0.923	0.890
	40	1.267	1.223	1.178	1.137	1.096	1.054	1.019	0.983	0.946	0.913	0.880
	41	1.253	1.209	1.165	1.124	1.083	1.043	1.007	0.971	0.934	0.901	0.868
	42	1.240	1.196	1.152	1.112	1.071	1.031	0.996	0.959	0.922	0.890	0.857
	43	1.226	1.182	1.139	1.099	1.059	1.019	0.984	0.947	0.911	0.878	0.845
	44	1.212	1.169	1.126	1.086	1.047	1.008	0.972	0.936	0.899	0.866	0.833
	45	1.198	1.155	1.112	1.074	1.035	0.996	0.960	0.924	0.888	0.855	0.822
	46	1.184	1.141	1.098	1.060	1.022	0.984	0.948	0.912	0.876	0.843	0.811
	47	1.171	1.128	1.084	1.046	1.009	0.971	0.936	0.900	0.864	0.832	0.800
	48	1.158	1.114	1.071	1.032	0.995	0.959	0.924	0.888	0.853	0.821	0.788
	49	1.145	1.101	1.057	1.018	0.982	0.947	0.911	0.876	0.841	0.809	0.777
50	1.132	1.087	1.043	1.004	0.969	0.934	0.899	0.864	0.839	0.798	0.766	

CORRECTION FACTOR FOR ABSORBED CAPACITY R134a

		Water evaporator outlet °C										
		15	14	13	12	11	10	9	8	7	6	5
Condenser outlet water °C	30	0.979	0.971	0.957	0.950	0.943	0.934	0.927	0.915	0.912	0.904	0.896
	31	0.998	0.986	0.975	0.968	0.961	0.953	0.945	0.933	0.929	0.922	0.915
	32	1.016	1.000	0.993	0.986	0.979	0.971	0.963	0.951	0.947	0.940	0.933
	33	1.034	1.019	1.012	1.004	0.997	0.989	0.981	0.969	0.965	0.958	0.951
	34	1.053	1.037	1.030	1.023	1.015	1.008	0.999	0.987	0.982	0.976	0.970
	35	1.071	1.055	1.048	1.041	1.033	1.026	1.017	1.005	1	0.994	0.988
	36	1.092	1.081	1.070	1.062	1.055	1.047	1.036	1.026	1.021	1.015	1.009
	37	1.112	1.102	1.091	1.084	1.076	1.068	1.045	1.047	1.042	1.035	1.029
	38	1.131	1.122	1.113	1.105	1.097	1.089	1.073	1.069	1.062	1.056	1.050
	39	1.151	1.142	1.134	1.126	1.118	1.110	1.095	1.090	1.083	1.077	1.071
	40	1.171	1.163	1.156	1.148	1.140	1.131	1.118	1.111	1.104	1.098	1.092
	41	1.196	1.188	1.180	1.171	1.163	1.154	1.142	1.134	1.127	1.121	1.115
	42	1.220	1.212	1.203	1.195	1.187	1.177	1.166	1.158	1.151	1.145	1.139
	43	1.244	1.236	1.227	1.219	1.210	1.200	1.190	1.182	1.174	1.168	1.162
	44	1.268	1.260	1.251	1.243	1.234	1.223	1.214	1.206	1.198	1.192	1.186
	45	1.292	1.284	1.275	1.266	1.258	1.246	1.238	1.230	1.221	1.215	1.209
	46	1.320	1.311	1.302	1.293	1.284	1.272	1.264	1.256	1.248	1.242	1.236
	47	1.347	1.338	1.329	1.320	1.310	1.299	1.291	1.282	1.274	1.268	1.262
	48	1.374	1.365	1.356	1.346	1.336	1.326	1.317	1.309	1.300	1.294	1.288
	49	1.402	1.392	1.383	1.373	1.362	1.352	1.344	1.335	1.327	1.321	1.315
50	1.429	1.420	1.410	1.400	1.388	1.379	1.370	1.362	1.353	1.347	1.341	

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