

AIR-COOLED LIQUID CHILLERS



Air conditioning

AQUAFORCE

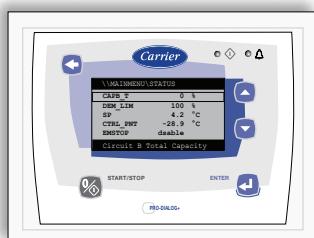
30XAS "A"

Options

- Corrosion protection, traditional coils
- Unit equipped for air discharge ducting
- IP54 control box
- Grilles
- Enclosure panels
- Winter operation
- Evaporator and hydronic module frost protection
- Heat reclaim
- Service valve
- Discharge valve
- High-pressure dual-pump hydronic module
- High energy efficiency version
- JBus, BacNet or LON gateways
- Energy Management module EMM
- Russian and Australian code compliance
- Compressor enclosure
- Traditional coils and traditional coils without slots
- Suction piping insulation
- Low and very low sound levels (second attenuation level)
- MCHE anti-corrosion protection
- Master/slave operation
- Welded Victaulic evaporator water connections
- Evaporator with aluminium jacket
- Dual relief valve with installed three-way valve

Features

- Five sizes with nominal cooling capacities from 232 to 486 kW.
- Ideal for industrial and commercial applications with optimal performances and maximum quality.
- Available in two versions: one with very low noise levels and superior energy efficiency; the other with optimal energy efficiency to minimise operating costs.
- Extremely high full load and part load energy efficiencies: Eurovent energy efficiency class A to C, in accordance with EN14511-3:2011. Standardised Eurovent values in accordance with EN 14511-3:2011: EER up to 3.2 and ESEER up to 4.
- Twin-rotor screw compressors with high-efficiency motor and a variable capacity valve for exact matching of the cooling capacity to the load.
- All-aluminium condenser (MCHE) with high-efficiency microchannels and increased corrosion resistance.
- Use of R-134a refrigerant with zero ozone depletion potential - the microchannel condensers reduce the refrigerant charge by 30%.
- Low-noise 4th generation Flying Bird fans made of composite material.
- Pro-Dialog+ capacity control system.
- Flooded shell-and-tube evaporator to increase heat exchange efficiency.
- Economizer system with electronic expansion device to increase cooling capacity.
- V-shape condenser coils allow quieter air flow across the coil.
- Simplified electrical connections.
- Units are run-tested before shipment and include a quick-test function for fast commissioning.
- Leak-tight refrigerant circuit.
- Comprehensive endurance tests.
- Aquaforce offers multiple remote control, monitoring and diagnostic possibilities.



Pro-Dialog+ operator interface

Physical data

30XAS	242	282	342	442	482
Air conditioning application as per EN14511-3 : 2011					
Nominal cooling capacity, standard unit/unit with option 119*	kW	232/245	284/285	334/345	430/461
EER, standard unit/unit with option 119*	kW/kW	2.76/2.97	3.00/3.15	3.08/3.24	2.93/3.15
Eurovent class, standard unit/unit with option 119*	C/B	B/A	B/A	B/A	C/B
ESEER part-load performance, standard unit/unit with option 119*	kW/kW	3.78/3.69	3.93/3.69	3.99/3.80	3.87/3.75
Air conditioning application (1)					
Nominal cooling capacity, standard unit/unit with option 119*	kW	233/245	285/286	335/346	432/462
EER, standard unit/unit with option 119*	kW/kW	2.78/2.99	3.03/3.18	3.11/3.28	2.96/3.18
ESEER part-load performance, standard unit/unit with option 119*	kW/kW	3.85/3.75	4.01/3.76	4.09/3.90	3.97/3.84
Operating weight**	kg	2390	2810	2870	3630
With option 116C*	kg	-	3070	3190	3990
With options 254 or 255*	kg	2540	3060	3140	3950
Compressor	06T semi-hermetic screw compressor, 50 r/s				
Refrigerant	R-134a, one refrigerant circuit				
Capacity control	PRO-DIALOG+, electronic expansion valve (EXV)				
Condensers	All aluminium micro-channel heat exchanger				
Condenser fans	Axial Flying Bird IV fans with rotating shroud				
Standard units and units with option 119 - 254*					
Quantity	4	5	6	7	8
Total air flow, standard unit/unit with option 119	l/s	13667/18055	17083/22569	20500/27083	23917/31597
Evaporator	Flooded shell-and-tube type				
Chassis paint colour	Colour code: RAL7035				
Dimensions					
Length x depth x height	mm	2410 x 2253 x 2297	3604 x 2253 x 2297	4798 x 2253 x 2297	

NOTE: For the conditions please refer to page 31.

* Options: 116C = high-pressure dual-pump hydronic module; 119 = high energy efficiency units; 254 = units with copper/aluminium coils with slots; 255 = units with copper/aluminium coils with plain fins.

** Weights are guidelines only. The refrigerant charge is also given on the unit nameplate.

Electrical data

30XAS	242	282	342	442	482
Power circuit					
Nominal power supply	V-ph-Hz	400-3-50 ± 10%			
Control circuit		24 V via internal transformer			
Start-up current*					
Standard unit/unit with option 119	A	303	388	388	587
Maximum power input**	kW	101/105	113/118	134/139	184/190
Maximum current draw (Un)**	A	165/172	185/194	218/229	305/318

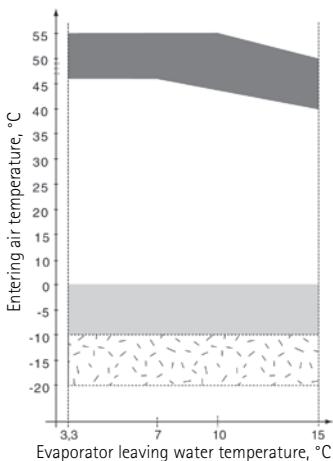
* Instantaneous start-up current (locked rotor current in star connection of the compressor).

** Values obtained at operation with maximum unit power input. Values given on the unit name plate.

Note: Motor and fan electrical data if the unit operates at Eurovent conditions (motor ambient temperature 50°C): 1.9 A, start-up current: 8.4 A, power input: 760 W.

Operating range

Standard unit



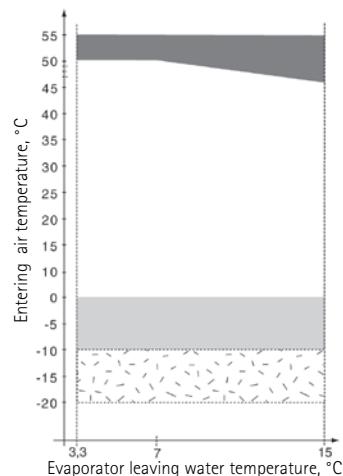
Legend

Operating range, unit equipped with option 28 "Winter operation"

Below 0°C air temperature the unit must either be equipped with the evaporator frost protection option (41A or 41B), or the water loop must be protected against frost by using a frost protection solution (by the installer).

Part load average

High energy efficiency unit or option 119



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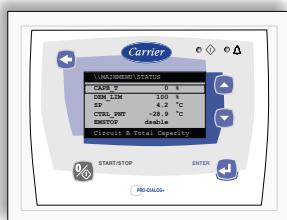
30XA "A"

Options

- Corrosion protection, traditional coils
- Low/very low temperature glycol solution
- Unit equipped for discharge ducting
- IP54 control box
- Tropical applications
- Grilles and enclosure panels
- Winter operation
- Evaporator and hydronic module frost protection
- Heat reclaim
- Single power connection point
- Service/discharge valve
- Evaporator with one pass more or less
- 21 bar evaporator
- Reversed water connections
- Low or high-pressure, single or dual-pump hydronic module
- Direct-expansion free-cooling system
- High energy efficiency version
- JBus, ModBus, BacNet/LON gateways
- Energy Management module EMM
- Pro-Dialog Touch Screen
- Dual safety valve installed with three-way valve
- Built to Swiss, Russian, Australian codes
- Traditional coils
- Insulation on evaporator entering/leaving refrigerant lines
- Low and very low sound level
- MCHE anti-corrosion protection
- Master/slave operation
- Compressor enclosure
- Welded Victaulic evaporator water connections
- Evaporator with aluminium jacket

Features

- Twenty-four sizes with nominal cooling capacities from 267 to 1682 kW.
- The ideal solution for industrial and commercial applications with optimal performances and maximum quality. Units designed to operate up to 55°C.
- Exceptional full load and part load energy efficiency: Eurovent energy efficiency class A and B (unit with high-efficiency option 119); standardised Eurovent values in accordance with EN 14511-3:2011: EER up to 3.3 and ESEER up to 4.2.
- Available in two versions: one with very low noise levels and superior energy efficiency; the other with optimal energy efficiency to minimise operating costs.
- Twin-rotor screw compressors with high-efficiency motor and a variable capacity valve for exact matching of the cooling capacity to the load.
- All-aluminium condenser (MCHE) with high-efficiency microchannels and high corrosion resistance.
- Use of R-134a refrigerant with zero ozone depletion potential - the microchannel heat exchangers reduce the refrigerant charge by 30%.
- Low-noise 4th generation Flying Bird fans made of composite material.
- Pro-Dialog+ control system.
- Flooded shell-and-tube evaporator.
- Economizer system with electronic expansion device to increase cooling capacity.
- V-shape condenser coils allow quieter air flow across the coil.
- Simplified electrical connections.
- Units are run-tested before shipment and include a quick-test function for fast commissioning.
- Leak-tight refrigerant circuit.
- Comprehensive endurance tests.
- Aquaforce offers multiple remote control, monitoring and diagnostic possibilities.



Pro-Dialog+ operator interface (standard)



Pro-Dialog Touch Screen operator interface (option)

Physical data

30XA	252	302	352	402	452	502	602	702	752	802	852	902	1002	1102	1112	1202	1212	1302	1312	1352	1382	1402	1502	1702			
Air conditioning application as per EN14511-3 : 2011																											
Nom. cooling capacity, std. unit	kW	267	291	318	378	426	473	601	654	691	759	807	875	960	1119	1107	1216	1218	1294	1285	1383	1377	1436	1443	1611		
Unit with option 119*	kW	273	298	325	391	442	499	612	679	723	785	841	886	976	1147	1144	1235	1247	1317	1326	1437	1433	1480	1525	1682		
EER, standard unit	kW/kW	3.00	2.96	2.98	3.08	2.89	2.93	3.03	3.11	2.91	2.88	2.98	2.91	2.95	3.02	3.04	2.96	3.09	2.87	2.91	2.64	2.77	2.97	2.87	3.00		
EER, unit with option 119*	kW/kW	3.13	3.10	3.09	3.21	3.08	3.15	3.13	3.31	3.08	3.10	3.24	3.12	3.09	3.24	3.27	3.09	3.23	3.09	3.16	3.09	3.06	3.20	3.19	3.22		
Eurovent class, standard unit	B	B	B	B	C	B	B	A	B	C	B	B	B	B	B	B	B	C	B	D	C	B	C	B			
Eurovent class, unit with option 119*	A	A	B	A	B	A	A	A	B	A	A	A	B	A	A	B	A	B	A	B	A	A	A	A			
ESEER part-load performance, std. unit	kW/kW	3.94	4.20	4.20	4.10	4.13	4.09	4.08	4.10	4.00	4.06	4.09	3.81	3.82	4.05	3.89	3.93	4.08	3.88	3.61	3.69	3.54	3.95	3.85	3.81		
ESEER, unit with option 119*	kW/kW	3.89	3.96	4.01	3.88	3.93	3.93	3.84	4.07	3.87	3.92	4.03	3.82	3.74	4.08	4.00	3.93	4.10	4.00	3.89	4.03	3.91	3.98	3.97	3.87		
Air conditioning application (1)																											
Nom. cooling capacity, std. unit	kW	267	291	319	379	427	475	603	656	693	761	809	878	962	1122	1109	1219	1220	1298	1288	1387	1380	1441	1447	1616		
Unit with option 119*	kW	273	298	325	392	443	500	614	681	726	787	844	889	978	1151	1146	1238	1249	1321	1329	1442	1436	1485	1530	1688		
EER, standard unit	kW/kW	3.02	2.98	3.01	3.12	2.92	2.97	3.07	3.15	2.94	2.91	3.01	2.94	2.98	3.06	3.06	2.99	3.11	2.91	2.93	2.67	2.79	3.00	2.91	3.04		
EER, unit with option 119*	kW/kW	3.15	3.12	3.25	3.12	3.19	3.18	3.35	3.12	3.13	3.28	3.15	3.13	3.28	3.30	3.13	3.25	3.13	3.19	3.13	3.09	3.24	3.23	3.27			
ESEER part-load performance, std. unit	kW/kW	4.03	4.30	4.31	4.26	4.30	4.25	4.25	4.14	4.19	4.25	3.93	3.93	4.20	3.97	4.08	4.17	4.03	3.69	3.82	3.63	4.10	4.00	3.97			
ESEER, unit with option 119*	kW/kW	3.97	4.04	4.10	4.03	4.08	4.08	4.00	4.22	4.01	4.05	4.18	3.94	3.85	4.24	4.08	4.01	4.19	4.17	4.00	4.18	4.02	4.13	4.12	4.05		
Operating weight**																											
Standard unit and option 119*	kg	3410	3450	3490	4313	4883	4814	5707	5857	6157	6457	6958	7258	7836	9590	9410	10020	9570	10410	10180	10770	10270	3953	3953	6958		
																									7776	7926	6958
Dimensions																											
Length, standard unit	mm	3604	3604	3604	4798	4798	5992	7186	7186	7186	7186	8380	8380	9574	11962	11962	11962	11962	11962	11962	11962	11962	11962	11962	11962	11962	
Depth + height	mm	2253	x 2297																								
Refrigerant		R-134a																									
Compressors		06T semi-hermetic screw compressors, 50 r/s																									
Control		Pro-Dialog, electronic expansion valve (EXV)																									
Condensers		Aluminium micro-channel heat exchangers																									
Fans		Axial Flying Bird 4 fans with rotating shroud																									
Quantity, standard unit - option 119*		6	6	6	8	8	9	11	12	12	12	14	14	16	19	19	20	20	20	20	20	20	24	24	28		
Evaporator		Flooded shell-and-tube type																									

NOTE: For the conditions please refer to page 31.

* Option 119 = high energy efficiency.

** Weights are guidelines only. The values for sizes 1402, 1502 and 1702 are for modules 1 and 2.

Note: Unit sizes 30XA 1402 to 1702 are supplied in two field-assembled modules.

Electrical data

30XA	252	302	352	402	452	502	602	702	752	802	852	902	1002	1102	1112	1202	1212	1302	1312	1352	1382	1402	1502	1702	
Power circuit																									
Nominal power supply	V-ph-Hz	400-3-50 ± 10%																							
Control circuit	24 V	via internal transformer																							
Max. start-up current, circuits A + B/C + D*																									
Standard unit	A	269	269	287	402	505	505	574	606	773	803	805	893	941	574/587	587/772	773/587	587/772	803/587	772/772	891/587	772/772	893/587	941/587	805/805
High-energy efficiency unit	A	274	274	292	407	510	510	583	616	782	812	815	905	954	583/587	587/772	782/587	587/772	812/587	772/772	901/587	772/772	905/587	954/587	815/815
Max. power input, circuits A + B/C + D**																									
Standard unit	kW	121	131	141	165	185	204	247	267	293	312	343	359	420	247/210	182/279	293/210	211/302	342/210	258/278	388/209	278/299	390/210	420/210	343/343
High-energy efficiency unit	kW	126	136	147	172	192	212	257	278	304	323	356	372	435	257/217	186/286	304/217	216/309	353/217	262/284	400/216	284/305	405/217	435/217	356/356
Max. unit current draw, circuits A + B/C + D**																									
Standard unit	A	198	215	233	270	303	335	404	436	492	522	572	611	707	404/354	313/459	492/354	359/496	568/354	426/456	655/352	456/491	661/354	707/354	572/572
High-energy efficiency unit	A	208	226	243	284	316	350	423	457	512	542	596	635	734	423/367	321/470	512/367	367/508	588/367	436/466	678/364	466/501	688/367	734/367	596/596

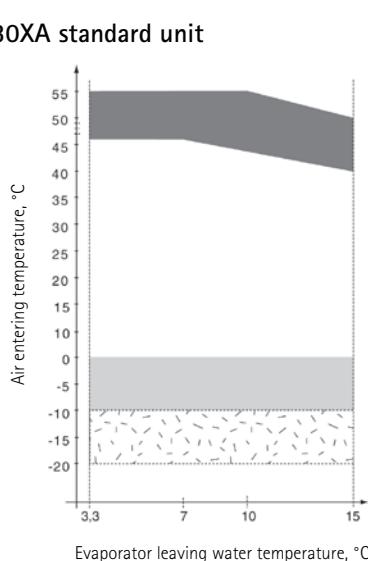
* Instantaneous start-up current (operating current of the smallest compressor + fan current + locked rotor current in star connection of the largest compressor). Values obtained at operation with maximum unit power input.

** Values obtained at operation with maximum unit power input. Values given on the unit name plate. Circuit D for size 1702 only.

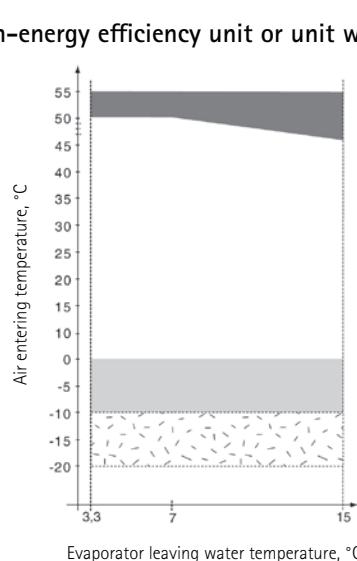
Note: Unit sizes 30XA 1102 to 1702 have two power connection points (circuits A + B and circuits C + D).

Operating range

30XA standard unit



30XA high-energy efficiency unit or unit with option 119



Legend

[...] Operating range, unit equipped with option 28 (winter operation)

[] Below 0°C air temperature the unit must either be equipped with the evaporator frost protection option (41A or 41B), or the water loop must be protected against frost by using a frost protection solution (by the installer).

[] Part load average