

PHOENIX PLUS

AIR COOLED WATER CHILLERS FEATURING DOUBLE SCREW SEMIHERMETIC COMPRESSORS.
COOLING CAPACITY 322 – 1241 KW.



BENEFITS

- ESEER seasonal performance index up to 4,4;
- Precise control of water temperature and adaptation to user demands thanks to continuous capacity control of the compressors (from 25 to 12,5 % of maximum loads in units with respectively 2 and 4 compressors);
- 20 different basic models to match the specific requirements of the installation;
- Facility to choose between three different sound insulation configurations;
- High efficiency version with the majority of models in energy efficiency Class A;
- Quietest acoustic configurations on the market;
- Allows start-up and operation in even the most severe conditions;
- Maximum ease of access to all components and coils for routine cleaning operations.

MAIN OPTIONS

- Electronic expansion valves;
- Electronic fan speed control;
- Filters to protect the condenser coils;
- Refrigerant-water exchangers protected with antifreeze heaters;
- Condenser coils with anticorrosion treatment;
- Replicated remote user terminal or simple remote control;
- Antivibration mounts;
- Protocols for supervision systems;
- Special applications with partial or total heat recovery exchangers;
- Special applications for water temperatures down to -10 °C;
- Special very high efficiency applications.

STANDARD FEATURES

- R134a ecological refrigerant with zero ozone depletion potential;
- Microprocessor controller;
- Semi-hermetic dual screw compressors expressly developed for use with R134a;
- Tube core evaporator expressly designed for use with R134a;
- "Victaulic" hydraulic connections;
- Condensers with transverse "V" formation and subcooling section;
- Check valve on compressor discharge and shut-off valves on discharge and suction lines;
- Shut-off valve and solenoid valve on the liquid line;
- Limitation of peak current by means of part-winding device;
- Muffler and flexible hoses on compressor suction and discharge (SSN version);
- Refrigerant charge, non-freezing oil, and factory testing;
- IP54 electric protection rating;
- Inspections and tests performed in factory as per all MTA products and components.

VERSIONS

- Chiller;
- HE: High efficiency;
- Version for -20 °C external air temperature;
- Acoustic configurations:
 - N (standard);
 - SN (low noise);
 - SSN (very low noise).

Model PNP		160	170	180	190	200	220	250	265	280	310	330	360	390	405	420	440	470	500	530	560
Cooling capacity	kW	322	342	362	394	423	480	526	568	611	673	721	771	831	873	934	987	1014	1048	1155	1241
Absorbed power	kW	114	123	131	134	145	159	180	191	202	221	239	260	280	291	306	322	340	358	385	407
ESEER	-	3,58	3,72	3,78	3,80	3,85	3,92	3,62	3,95	4,06	3,95	3,95	3,84	3,93	4,01	4,17	4,06	3,87	3,66	4,01	4,17
IPLV	-	3,79	3,94	4,00	4,02	4,08	4,13	3,83	4,18	4,28	4,12	4,13	3,98	4,09	4,18	4,34	4,22	4,00	3,77	4,15	4,31
Max external air temp. vers. N	°C	44	44	44	44	44	46	44	44	44	46	46	44	44	44	44	45	44	44	44	44
Max external air temp. vers. HE	°C	49	49	49	49	49	49	49	50	50	49	49	49	49	50	50	48	48	47	46	44

Power supply	V/Ph/Hz	400±10%/3/50																			
Circuit / Compressors	N°	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
Sound pressure version N	dB(A)	68,9	68,9	68,9	70,1	70,1	71,0	71,1	71,0	70,9	72,4	72,7	72,8	72,8	72,7	72,6	74,0	74,1	74,1	74,0	73,9
Sound pressure version SN	dB(A)	61,4	61,4	61,4	62,3	62,3	63,0	62,9	62,9	63,0	64,7	64,8	64,7	64,6	64,6	64,6	66,0	66,0	65,9	65,9	65,9
Sound pressure version SSN	dB(A)	55,1	55,0	55,0	56,2	56,1	57,0	56,8	56,9	56,9	58,2	58,8	58,7	58,6	58,6	58,6	61,2	61,1	61,1	61,1	61,1
Sound pressure version HE	dB(A)	70,2	70,0	69,9	71,6	71,5	72,7	72,6	72,4	72,2	73,7	74,4	74,4	74,2	74,1	73,9	75,3	75,2	75,2	75,0	74,9
Depth	mm	4530	4530	4530	4530	4530	4530	4530	4530	4530	6510	6510	6510	6510	6510	6510	8490	8490	8490	8490	8490
Width	mm	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190
Height	mm	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360
Installed weight	Kg	3467	3509	3554	4137	4288	4702	4866	4949	5033	6511	6907	7286	7391	7472	7627	9085	9306	9349	9833	10000

All data refers to standard units at the following nominal conditions:

Chiller: evaporator water inlet-outlet 12-7 °C, external air temperature 35 °C.

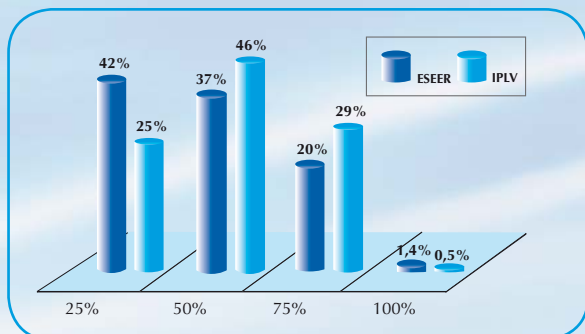
Sound pressure level in hemispherical field at 10 m from condenser side and 1.6 m from ground. Values with tolerance ± 2 dB.

The sound levels refer to operation of the unit under full load in nominal conditions.

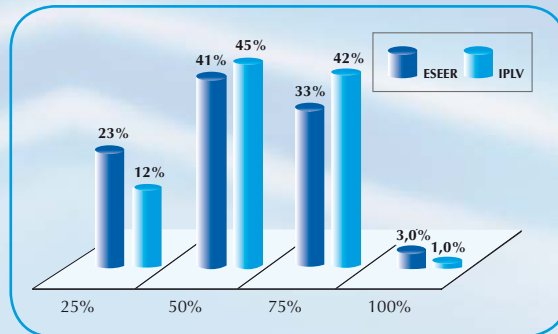


IMPORTANCE OF OPERATION AT PARTIAL LOAD

ESEER and IPLV operating time percentages



ESEER and IPLV energy weights



The standardised IPLV and ESEER indices establish the average weighted efficiency of a chiller and provides insight – in a more accurate manner than the EER value – into the relationship between the useful effect (energy removed from the rooms) and the energy expended (electrical power consumption) of an air conditioning unit throughout an entire season of operation.

The graphs show the importance of operation at partial load from the energy standpoint; specifically, in the interval of 50-75 % of rated capacity the unit develops significantly 70-80% of the useful effect, i.e. the cooling energy produced.

Semi-graphic backlit PGD terminal.



Electronic thermostatic expansion valves.



Maximum accessibility to compressors.

