



# PURPLE INVERTER

Nominal cooling capacity 28 ÷ 290 kW

High efficiency air-water inverter chillers  
with EC fans and natural refrigerant R290



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High efficiency air-water inverter chillers  
with EC fans and natural refrigerants R290



Technical brochure  
**PURPLE  
INVERTER**



NATURAL  
REFRIGERANT



LN VERSION



INVERTER  
COMPRESSOR



TWO  
CIRCUITS



MICROCHANNEL

**Standard version** in 20 sizes  
Cooling capacity (A35;W7) 28 ÷ 290 kW

## STRENGTHS

- > R290 refrigerant
- > Wide operating limits and power range
- > Modularity and full accessibility
- > LN version - STANDARD
- > SLN version - on demand
- > Microchannel condensing coil
- > Inverter compressor
- > EC fans

## Technical data PURPLE INVERTER

UNIT SIZE			12.1	15.1	20.1	22.1	25.1	30.1	32.1	35.1	40.1	45.1
<b>Cooling (A35;W 12/7)</b>												
Cooling capacity	(1)	kW	28,8	34,0	38,3	43,4	48,9	56,4	63,1	77,0	86,0	101,5
Total power input	(1)	kW	9,2	11,1	12,1	13,9	16,2	17,8	20,9	25,5	27,5	33,8
EER	(1)		3,1	3,1	3,2	3,1	3,0	3,2	3,0	3,0	3,1	3,0
SEER	(2)		3,8	3,8	3,9	3,9	3,9	4,0	3,9	3,8	3,9	3,9
<b>Compressor</b>												
Type			Semihermetic Reciprocating									
Quantity		n°	1	1	1	1	1	1	1	1	1	1
Refrigerant circuits		n°	1	1	1	1	1	1	1	1	1	1
Capacity steps		n°	1	1	1	1	1	2	2	2	2	2
Refrigerant charge per circuit		kg	1,9	1,9	1,9	1,9	2,0	3,4	3,4	3,5	5,2	5,2
<b>Fans</b>												
Type			EC Axial									
Quantity		n°	1	1	1	1	1	1	1	1	2	2
Fans power input		kW	0,7	0,9	1,0	1,1	1,1	1,4	1,4	1,4	2,1	2,4
Fans current		A	1,8	1,8	1,8	1,8	1,8	2,4	2,4	2,4	5,0	5,0
Total air flow		m <sup>3</sup> /h	14330	14970	15580	16200	16260	21990	21990	21990	38730	40350
<b>User side exchanger</b>												
Type			Plates									
Quantity		n°	1	1	1	1	1	1	1	1	1	1
Nominal water flow rate	(1)	l/h	4992	5889	6626	7505	8463	9768	10920	13317	14881	17563
Pressure drop Water	(1)	kPa	35	31	39	31	38	43	40	42	46	47
<b>Desuperheater (accessory)</b>												
Type			Plates									
Quantity		n°	1	1	1	1	1	1	1	1	1	1
Heat Capacity	(5)	kW	6,0	7,4	7,9	9,2	12,0	11,5	12,4	18,7	17,0	21,6
Water flow		l/h	1028	1265	1358	1586	2067	1976	2140	3220	2917	3720
Pressure drop		kPa	2	3	3	5	7	5	8	11	6	9
<b>Hydraulic module (version)</b>												
Available pressure		kPa	187	179	159	154	156	146	146	135	164	144
Pump power input		kW	1,28	1,28	1,28	1,28	1,35	1,35	1,35	1,35	1,73	1,73
Storage tank capacity		l	130	130	130	130	130	-	-	-	250	250
<b>Acoustic data LN (STD version)</b>												
Sound power level	(3)	dBA	72	73	73	74	74	82	82	82	84	84
Noise pressure level (10 m)	(3)	dBA	44	45	45	46	46	54	54	54	56	56
<b>Dimension Data</b>												
Length		mm	1940	1940	1940	1940	1940	1885	1885	1885	2889	2889
Depth		mm	850	850	850	850	850	1213	1213	1213	1213	1213
Height		mm	2000	2000	2000	2000	2000	2388	2388	2388	2388	2388
Water fittings		"	1"1/2	1"1/2	1"1/2	2"	2"	2"	2"	2"	2"1/2	2"1/2
Weight		kg	661	662	667	682	738	809	817	865	1090	1096

(1) Air temperature 35°; Evaporator water temperature IN/OUT 12/7°C  
 (2) The total power is given by the sum of the power absorbed by the compressors and by the fans  
 (3) Lw: sound power values in free field calculated in compliance with ISO 3744. Chiller working conditions (A35;W7)  
 (3) Sound pressure levels detected at 10/5/1 m from electrical panel, not channelled in free field, in compliance with ISO 3744. Chiller working conditions (A35;W7)  
 (4) SLN version have different dimension.  
 (5) Evaporatore water 12/7°- Desuperheater 40/45°C

## Technical data PURPLE INVERTER

UNIT SIZE			55.1	60.1	75.1	35.2	40.2	45.2	55.2	60.2	75.2	80.2
<b>Cooling (A35;W 12/7)</b>												
Cooling capacity	(1)	kW	115,8	122,8	133,4	158,8	173,7	195,6	227,8	250,6	271,9	293,6
Total power input	(1)	kW	38,3	41,7	46,3	54,4	55,6	65,0	75,5	83,6	93,5	100,9
EER	(1)		3,0	2,9	2,9	2,9	3,1	3,0	3,0	3,0	2,9	2,9
SEER	(2)		3,8	3,8	3,8	3,8	4,0	3,8	3,9	3,8	3,8	3,8
<b>Compressor</b>												
Type			Semihermetic Reciprocating									
Quantity		n°	1	1	1	2	2	2	2	2	2	2
Refrigerant circuits		n°	1	1	1	2	2	2	2	2	2	2
Capacity steps		n°	2	2	2	4	4	4	4	4	4	4
Refrigerant charge per circuit			5,4	5,5	5,6	3,8	5,7	5,8	5,8	6,2	6,3	6,3
<b>Fans</b>												
Type			EC Axial									
Quantity		n°	2	2	2	2	4	4	4	4	4	4
Fans power input		kW	2,6	2,8	2,9	2,9	4,2	4,7	5,2	5,6	5,9	5,9
Fans current		A	5,0	5,0	5,0	5,0	9,9	9,9	9,9	9,9	9,9	9,9
Total air flow		m <sup>3</sup> /h	41650	42640	43330	43330	77690	80230	83200	85380	86660	86660
<b>User side exchanger</b>												
Type			Plates									
Quantity		n°	1	1	1	1	1	1	1	1	1	1
Nominal water flow rate	(1)	l/h	20018	21215	23039	27407	30094	33768	39303	43252	46933	50706
Pressure drop Water	(1)	kPa	42	41	37	28	32	33	31	32	42	46
<b>Desuperheater (accessory)</b>												
Type			Plates									
Quantity		n°	1	1	1	2	2	2	2	2	2	2
Heat Capacity	(3)	kW	26,5	31,7	35,5	43,7	33,9	40,3	50,5	57,7	64,8	73,2
Water flow		l/h	4563	5456	6110	7516	5838	6937	8684	9918	11146	12594
Pressure drop		kPa	10	12	12	9,0	6,0	8,4	11,6	14,3	18,2	21,8
<b>Hydraulic module (version)</b>												
Available pressure		kPa	163	157	153	187	177	169	161	152	148	141
Pump power input		kW	2,45	2,45	2,45	3,00	3,00	3,00	3,00	3,00	4,00	4,00
Storage tank capacity		l	250	250	250	250	450	450	450	450	450	450
<b>Acoustic data LN (version)</b>												
Sound power level	(4)	dBA	84	86	86	86	88	88	88	90	90	90
Noise pressure level (10 m)	(3)	dBA	56	58	58	58	60	60	60	62	62	62
<b>Dimension Data</b>												
Length		mm	2889	2889	2889	2889	5329	5329	5329	5329	5329	5329
Depth		mm	1213	1213	1213	1213	1213	1213	1213	1213	1213	1213
Height		mm	2388	2388	2388	2388	2291	2291	2291	2388	2388	2388
Water fittings		"	2"1/2	2"1/2	2"1/2	2"1/2	2"1/2	2"1/2	2"1/2	2"1/2	3"	3"
Weight		kg	1234	1237	1242	1418	1886	1906	1912	2172	2182	2198

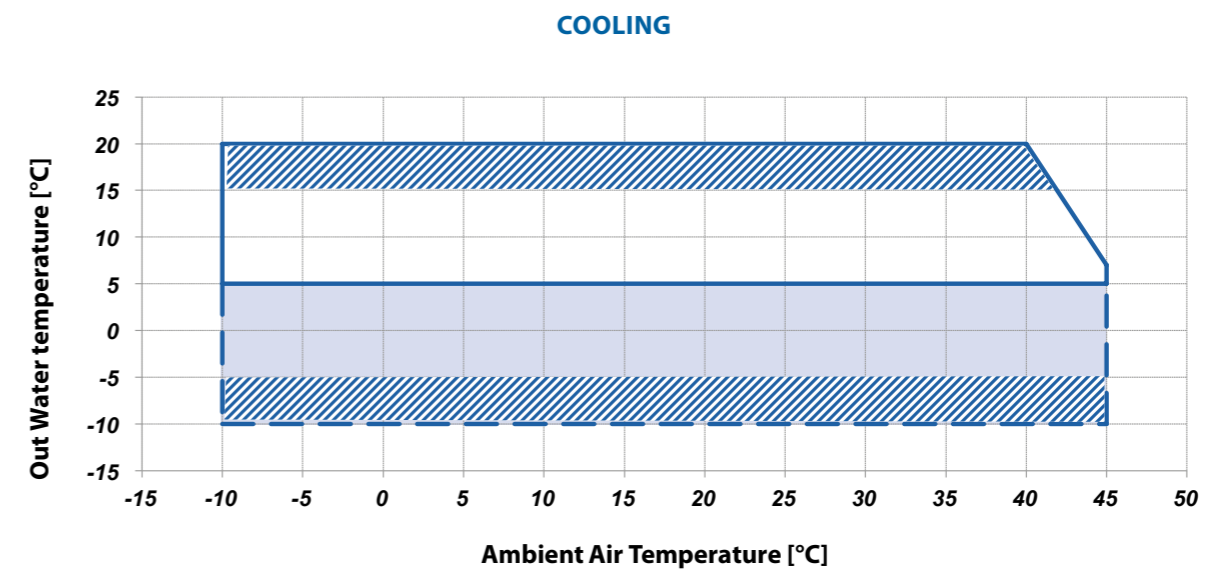
(1) Performance according to EN14511 - Air temperature 35°; Evaporator water temperature IN/OUT 12/7°C  
 (2) Performance according to EN14511 - EN14825 for Climat Average(Strasbourg) User Application Fan Coil (W7) Outlet temperature Variable  
 (3) In/out water temperature: Evaporator 12/7°- Desuperheater 40/45°C  
 (4) Lw: sound power values in free field calculated in compliance with ISO 3744. Chiller working conditions (A35;W7)  
 (5) Sound pressure levels detected at 10m in free field, in compliance with ISO 3744. Chiller working conditions (A35;W7)

## Electrical data

UNIT SIZE			12.1	15.1	20.1	22.1	25.1	30.1	32.1	35.1	40.1	45.1
Max. absorbed power	(1)	kW	12,1	14,0	15,1	16,9	19,3	21,4	26,3	29,2	34,5	40,9
Max. absorbed power (with pump)	(1) (2)	kW	13,2	15,1	16,2	18,0	20,4	22,5	27,4	30,3	36,2	42,6
Fan rated power		kW	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3
Fan rated current		A	3,6	3,6	3,6	3,6	3,6	3,6	3,6	3,6	3,6	3,6
Pump rated power		kW	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,1	1,7	1,7
Pump rated current		A	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4	3,2	3,2
Electric power supply		V/ph/Hz	400/3~/50 ± 5%									
Control power supply		V/ph/Hz	230-24/1~/50 ± 5%									

UNIT SIZE			55.1	60.1	75.1	35.2	40.2	45.2	55.2	60.2	75.2	80.2
Max. absorbed power	(1)	kW	45,3	48,7	53,6	61,7	69,7	79,4	90,1	98,4	107,9	115,8
Max. absorbed power (with pump)	(2)	kW	47,7	51,2	56,0	64,7	72,7	82,4	93,1	101,4	111,9	119,8
Max. absorbed current	(3)	A	82,1	91,1	100,1	133,1	149,2	164,2	194,2	218,2	255,2	267,2
Max. absorbed current (with pump)	(2)(3)	A	86,6	95,6	104,6	139,5	155,6	170,6	200,6	224,6	263,0	275,0
Max. starting current		A	82	91	100	236	263	290	385	452	487	499
Max. starting current with pump	(2)	A	87	96	105	242	269	297	391	458	495	507
Fan		kW	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3
Fan		A	3,6	3,6	3,6	3,6	3,6	3,6	3,6	3,6	3,6	3,6
Pump		kW	2,5	2,5	2,5	3,0	3,0	3,0	3,0	3,0	4,0	4,0
Pump		A	4,5	4,5	4,5	6,4	6,4	6,4	6,4	6,4	7,8	7,8
Electric power supply		V/ph/Hz	400/3~/50 ± 5%									
Control power supply		V/ph/Hz	230-24/1~/50 ± 5%									

## Operation limits PURPLE INVERTER



### Notes

- > The thermal gradient to the utility side exchanger must be between 3°C and 6°C
- > The unit can only operate in this area with evaporator side glycol water
- > To operate in this area, contact the sales office

## Correction factor for antifreeze solutions

% ETHYLENE GLYCOL BY WEIGHT		5%	10%	15%	20%	25%	30%	35%	40%
Freezing temperature	°C	-2,0	-3,9	-6,5	-8,9	-11,8	-15,6	-19,0	-23,4
Safety temperature	°C	3,0	1,0	-1,0	-4,0	-6,0	-10,0	-14,0	-19,0
Cooling Capacity Factor	nr	0,995	0,990	0,985	0,981	0,977	0,974	0,971	0,968
Compressor Input Factor	nr	0,997	0,993	0,990	0,988	0,986	0,984	0,982	0,981
Internal exchanger Glycol solution flow Factor	nr	1,003	1,010	1,020	1,033	1,050	1,072	1,095	1,124
Pressure drop Factor	nr	1,029	1,060	1,090	1,118	1,149	1,182	1,211	1,243

The correction factors shown refer to water and glycol ethylene mixes used to prevent the formation of frost on the exchangers in the water circuit during inactivity in winter.

(1) Mains power supply to allow unit operation

(2) Units with storage tank and pumps or units with exclusively pumps

(3) Maximum current before safety cut-outs stop the unit. This value is never exceeded and must be used to size the electrical supply cables and relevant safety devices (refer to electrical wiring diagram supplied with the unit)

(4) Maximum starting current calculated considering the bigger size compressor starting current plus the maximum absorbed power of the other electrical devices (pumps, fans)