TECHNICAL BROCHURE - EN

enerblue.it

PURPLE R290

NATURAL SOLUTIONS

enerblue

INSPIRED BY NATURE

COMMERCIAL / INDUSTRIAL

PURPLE

R290

NATURAL REFRIGERANT

GWP=3

ODP=0

Air to water chillers with natural refrigerant gas R290 for process application. Equipped with semihermetic reciprocating on/off compressors. The unit can be equipped, as option, with integrated hydronic kit and buffer tank (except sizes 30.1-35.1).

Low noise configuration is standard for all the series.

RANGE

Cooling capacity (A35;W7) 28 ÷ 290 kW

Only cooling

Semi-hermetic reciprocating compressors

Axial fans

Highlights of our products

ErP 2021 COMPLIANT

1

GAS LEAK DETECTOR

In case of refrigerant leak inside the compressor box:

- the power supply is disconnected
- the extraction fan (ATEX certified) is switched on to clean the compressor box.

2

ATEX

The ATEX certified extraction fan runs at nominal speed to clean the compressor box.

3

Ex ATEX

All the components inside the compressor box are ATEX certified: compressors, solenoid valves, EEV. The box is always insulated as standard.

4 Compliant with Ecodesign

TECHNICAL DATA

UNIT SIZE			12.1	15.1	20.1	22.1	25.1	30.1	32.1	34.1	35.1	40.1	45.1	50.1
Cooling (A35;W 12/7)														
Cooling capacity	(1)	kW	30,7	35,9	40,6	42,3	49,8	56,3	60,6	66,7	71,0	86,6	91,0	99,9
Total power input	(1)	kW	10,2	12,4	14,1	14,6	17,3	20,4	22,8	23,1	24,2	28,4	30,6	33,9
EER	(1)		3,0	2,9	2,9	2,9	2,9	2,8	2,7	2,9	2,9	3,0	3,0	2,9
Cooling (A35;W -2/-8)														
Cooling capacity	(2)	kW	19,2	22,4	25,6	26,5	31,3	35,6	38,1	41,1	44,3	54,0	56,6	62,2
Total power input	(2)	kW	8,6	10,2	11,2	11,7	13,7	15,8	17,7	18,2	18,9	22,9	24,6	27,3
EER	(2)		2,2	2,2	2,3	2,3	2,3	2,3	2,2	2,3	2,3	2,4	2,3	2,3
SEPR	(2)		3,63	3,6	3,5	3,6	3,6	3,4	3,3	3,3	3,5	3,8	3,7	3,7
Compressor														
Type			Semihermetic reciprocating											
Quantity / Refrigerant circuits		n°	1 / 1											
Capacity regulation - steps		n°	1											
Refrigerant charge per circuit		kg	1,5	1,5	1,7	1,7	1,9	2,9	3,5	3,5	3,5	4,4	4,4	4,5
Fans														
Type			AC Axial											
Quantity		n°	1	1	1	1	1	1	1	1	1	2	2	2
Fans power input		kW	1,4	1,4	1,6	1,6	1,6	1,6	1,6	1,4	1,4	2,8	2,6	2,8
Air flow		m3/h	15050	14993	16500	16709	17232	17159	17125	20379	20354	38082	34880	37908
User Side exchanger														
Type			Single Circuit Plate											
Quantity		n°	1	1	1	1	1	1	1	1	1	1	1	1
Water flow (A35;W12/7)	(1)	l/h	5298	6189	7000	7293	8578	9702	10440	11510	12230	14940	15690	17220
Pressure drops (A35;W12/7)	(1)	kPa	38	50	42	45	38	47	45	45	45	53	48	46
Desuperheater (accessory)														
Type			Plate											
Quantity		n°	1	1	1	1	1	1	1	1	1	1	1	1
Heating Capacity	(3)	kW	6,8	8,7	9,8	10,2	12,5	14,8	17,1	15,8	19,6	19,3	21,6	23,7
Water flow		l/h	1171	1496	1687	1753	2150	2546	2936	2721	3371	3318	3720	4078
Pressure drops		kPa	3	4	5	5	8	10	13	11	11	7	9	11
Hydraulic module (version)														
Useful pressure head		kPa	184,9	159,5	153,5	145,0	152,4	139,6	139,6	134,5	131,3	158,7	158,2	150,2
Pump power input		kW	1,3	1,3	1,3	1,3	1,4	1,4	1,4	1,4	1,4	1,7	1,7	1,7
Storage tank capacity		l	130	130	130	130	130	-	-	-	-	250	250	250
Water connections		"	1"1/2	1"1/2	1"1/2	1"1/2	1"1/2	2"	2"	2"	2"	2"	2"	2"
Acoustic data LN version														
Sound power level	(4)	dBA	75	76	76	77	77	85	85	85	85	87	87	87
Noise pressure level	(5)	dBA	58	59	59	60	60	67	67	67	67	69	69	69
Dimension Data														
Lenght		mm	1940	1940	1940	1940	1940	1874	1874	1874	1874	2888	2888	2888
Depth		mm	850	850	850	850	850	1212	1212	1212	1212	1210	1210	1210
Height		mm	2000	2000	2000	2000	2000	2388	2388	2388	2388	2388	2388	2388
Weight		kg	617	623	632	684	702	764	772	775	828	1038	1045	1059

(1) Performance according to EN14511 - Air temperature 35°; Evaporator water temperature IN/OUT 12/7°C
(2) Performance according to EN14511-2018 UE 2015/1095 for Climat Average (Strasburg), User Application Water: -8°C, fluid ethylene glycol: 30%
(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 1m in free field, in compliance with ISO 3744. Chiller working conditions (A35;W7)

UNIT SIZE			55.1	60.1	75.1	35.2	40.2	45.2	50.2	55.2	60.2	75.2	80.2
Cooling (A35;W 12/7)													
Cooling capacity	(1)	kW	109,0	122,0	131,4	145,8	173,7	182,9	200,1	218,8	241,8	262,9	291,3
Total power input	(1)	kW	39,4	44,8	48,8	49,9	56,5	60,9	67,5	78,5	89,3	97,2	106,5
EER	(1)		2,8	2,7	2,7	2,9	3,1	3,0	3,0	2,8	2,7	2,7	2,7
Cooling (A35;W -2/-8)													
Cooling capacity	(2)	kW	67,1	73,8	78,5	92,3	108,8	114,1	125,3	135,3	147,1	157,8	177,0
Total power input	(2)	kW	32,4	35,4	39,3	39,2	45,9	49,4	54,6	64,9	70,8	78,8	86,5
EER	(2)		2,1	2,1	2,0	2,4	2,4	2,3	2,3	2,1	2,1	2,0	2,0
SEPR	(2)		2,9	3,0	2,9	3,6	3,9	3,8	3,7	2,9	3,0	2,9	2,8
Compressor													
Type													
Quantity / Refrigerant circuits		n°	1 / 1			2 / 2							
Capacity regulation (min/max)		%	2			4							
Refrigerant charge per circuit		kg	4,5	5,2	5,2	7,6	9,4	9,4	10,0	10,4	10,4	10,6	11,0
Fans													
Type													
Quantity		n°	2	2	2	2	4	4	4	4	4	4	4
Fans power input		kW	3,0	2,9	2,9	3,0	5,6	5,1	5,5	5,9	5,9	5,9	5,8
Air flow		m3/h	40440	40293	40158	40039	76148	69715	75815	80874	80574	80358	79854
User Side exchanger													
Type			Single Circuit Plate			Double Circuit Plate							
Quantity		n°	1	1	1	1	1	1	1	1	1	1	1
Water flow (A35;W12/7)	(1)	l/h	18780	21020	22650	25090	29910	31490	34450	37660	41600	45250	50120
Pressure drops (A35;W12/7)	(1)	kPa	47	46	45	24	33	32	33	34	35	35	45
Desuperheater (accessory)													
Type													
Quantity		n°	1	1	1	2	2	2	2	2	2	2	2
Heating Capacity	(3)	kW	29,4	34,4	38,1	40,5	38,5	43,3	47,4	50,5	67,7	76,1	87,6
Water flow		l/h	5064	5917	6553	6959	6622	7448	8153	8684	11645	13096	15059
Pressure drops		kPa	11	14	15	12,0	7,4	9,0	10,6	11,6	14,5	14,7	14,7
Hydraulic module (version)													
Useful pressure head		kPa	159,0	152,1	144,9	183,8	164,0	161,9	153,4	142,9	128,4	153,2	136,3
Pump power input		kW	2,5	2,5	2,5	3,0	3,0	3,0	3,0	3,0	3,0	4,0	4,0
Storage tank capacity		l	250	250	250	250	450	450	450	450	450	450	450
Water connections		"	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"	3"
Acoustic data LN version													
Sound power level	(4)	dBA	87	89	89	89	91	91	91	91	93	93	93
Noise pressure level	(5)	dBA	69	71	71	71	71	71	71	71	73	73	73
Dimension Data													
Lenght		mm	2888	2888	2888	2877	5320	5320	5320	5320	5320	5320	5320
Depth		mm	1210	1210	1210	1214	1214	1214	1214	1214	1214	1214	1214
Height		mm	2388	2388	2388	2388	2388	2388	2388	2388	2388	2388	2388
Weight		kg	1140	1155	1169	1276	1832	1844	1848	2004	2032	2066	2082

(1) Performance according to EN14511 - Air temperature 35°; Evaporator water temperature IN/OUT 12/7°C
(2) Performance according to EN14511-2018 UE 2015/1095 for Climat Average (Strasburg), User Application Water: -8°C, fluid ethylene glycol: 30%
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(5) Sound pressure levels detected at 1m in free field, in compliance with ISO 3744. Chiller working conditions (A35;W7)

ELECTRICAL DATA

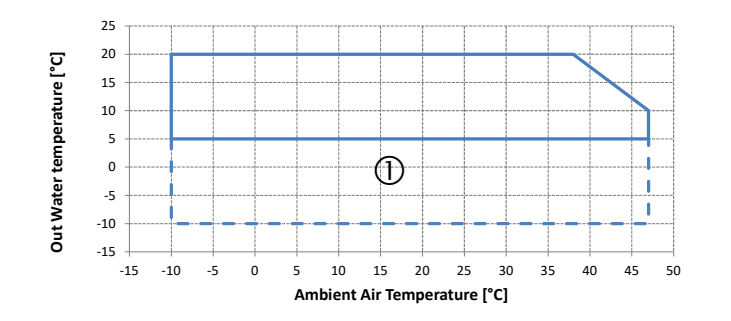
UNIT SIZE			12.1	15.1	20.1	22.1	25.1	30.1	32.1	34.1	35.1	40.1	45.1	50.1
Max. absorbed power	(1)	kW	15	17	20	18	22	26	27	28	32	39	42	46
Max. absorbed power (with pump)	(1)(2)	kW	16	19	21	20	23	27	28	30	33	40	44	48
Max. absorbed current	(3)	A	26	27	40	35	41	48	47	51	58	70	76	83
Max. absorbed current (with pump)	(2)(3)	A	28	29	43	37	44	51	50	54	61	73	79	87
Max. starting current	(4)	A	64	79	92	111	123	137	149	149	149	168	197	197
Max. starting current (with pump)	(2)(4)	A	66	82	94	113	125	139	151	151	151	171	201	201
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	50.2	55.2	60.2	75.2	80.2
Max. absorbed power	(1)	kW	49	61	60	63	78	85	93	98	123	120	131
Max. absorbed power (with pump)	(1)(2)	kW	52	64	63	66	81	88	96	101	126	124	135
Max. absorbed current	(3)	A	98	109	112	117	140	152	167	196	217	224	233
Max. absorbed current (with pump)	(2)(3)	A	103	113	117	123	146	158	173	203	224	232	241
Max. starting current	(4)	A	267	335	399	207	238	273	281	365	443	511	543
Max. starting current (with pump)	(2)(4)	A	271	339	403	214	244	280	287	371	450	519	550
Electric power supply		V/ph/Hz	400/3~/50 ± 5%										
Control power supply		V/ph/Hz	230-24/1~/50 ± 5%										

(1) Mains power supply to allow unit operation
(2) Units with storage tank and pumps or units with pumps only
(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)

OPERATING LIMITS

COOLING



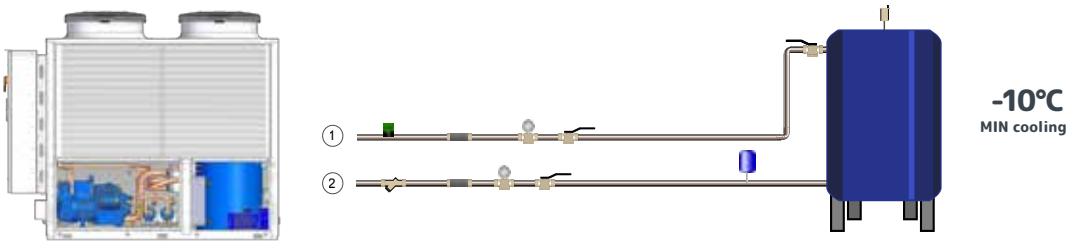
Notes
- The delta T to the user side exchanger must be between 3°C and 6°C
- ① The unit can only operate in this area with evaporator side glycol water
- To operate in this area, contact the sales office

AVAILABLE VERSIONS

STANDARD

Only cooling version, for 2-pipe-systems for process application.

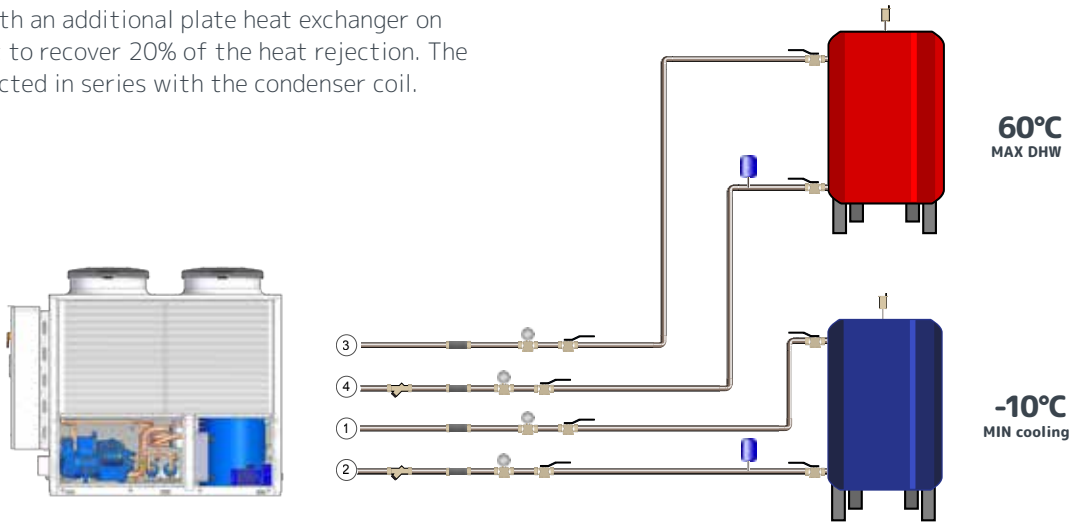
WATER
temperature limits



(1/2) In/out user side

DS VERSION – UNIT WITH DESUPERHEATER

The unit is equipped with an additional plate heat exchanger on each refrigerant circuit to recover 20% of the heat rejection. The desuperheater is connected in series with the condenser coil.



(1/2) In/out user side (3/4) In/out desuperheater

*The buffer tank and pump showed on pictures are avaialble as option.

CONFIGURATIONS

LN Low noise:

Standard

SLN Super Low noise:

The unit is provided with the following modifications:
- oversized heat exchanger (evaporation/condensation coil)
- low rpm EC fans
- complete compressor compartment soundproofing
- low noise noise setting of the fan regulation

NB: in some sizes the dimensions of SLN version could be different from standard one

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