

**Single-compressor air conditioners**  
**Water/water heat pumps with hermetic scroll compressors**

**SIGMA**

Water chiller

**Unit frame**

Galvanized steel frame finished with epoxy-polyester powder paint (colour RAL 7032) baked. Removable panels with internal sound-absorbing mat insulation.

**Compressors**

Hermetic scroll compressors with thermal overload cut-out and crankcase heater.

**Refrigerant circuits**

Independent with liquid shut-off valve, charging connection, sight glass, drier filter, thermostatic expansion valve, high and low-pressure switches, and safety device.

**Evaporators**

Braze-welded plate type with no-frost protection and mechanical flow switch.

**Condensers:**

Braze-welded plate type.

**Electrical panel**

With main switch, contactors, power and control circuit protection, and compressor contactors.

**Microprocessor** controlled with function display.

**Testing**

Units are factory tested and supplied with refrigerant charge and oil.

**SIGMA /HP**

Reversible heat pump

In addition to the components featured on model Sigma: four-way diverting valve and second thermostatic expansion valve. Second mechanical flow switch.

**ACCESSORY VERSIONS****SIGMA /LN**

Low noise unit: compressor sound proofing by means of sound-absorbing mat in expanded polyurethane with internal lead layer.

**ACCESSORIES**

- Rubber antivibration mounts;
- water manifolds;
- condensing pressure control with pressure control valve;
- double set point: settable via control panel. In any event switching is automatic according to the water temperature;
- RS 485 microprocessor serial interface card for remote supervision or tele-assistance via personal computer. Carel communication protocol;
- pressure gauges;
- remote shared terminal (in addition to version on board unit);
- liquid line solenoid valve.

## SIGMA - R407C TECHNICAL DATA

Unit size		182	192	202
<b>Nominal cooling capacity (*)</b>	kW	42.4	51.1	59.8
<b>Nominal heating capacity (**)</b>	kW	54.1	65.0	75.9
<b>Compressors</b>				
Quantity/Refrigerant circuits	n°	2/2	2/2	2/2
Cooling power input(*)	kW	9,9	11,7	13,5
Heating power input (**)	kW			
Capacity steps	%	0 - 50 -100	0 - 41 -100	0 - 50 -100
<b>Evaporator characteristics</b>				
Water content	l	2 x 1.9	2 x 2.6	2 x 2.6
Water flow rate	l/s	2.025	2.441	2.857
Water pressure drops	kPa	28.9	22.0	30.
<b>Condenser characteristics</b>				
Water content	l	2 x 1.9	2 x 2.6	2 x 2.6
Water flow rate	l/s	2.497	3.000	3.503
Water pressure drops	kPa	43.3	32.6	44.2
<b>Noise levels (***)</b>				
Basic unit	dB(A)	57.2	58.0	58.1
LN version	dB(A)	54.7	55.1	55.4
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50
<b>Basic unit dimensions and weights</b>				
Length	mm	1356	1356	1356
Depth	mm	773	773	773
Height	mm	960	960	960
Shipping weight (#)	kg	356	377	393

Unit size		262	282	302	322
<b>Nominal cooling capacity (*)</b>	kW	68.9	78.0	84.0	89.9
<b>Nominal heating capacity (**)</b>	kW	87.7	99.5	107.1	114.7
<b>Compressors</b>					
Quantity/Refrigerant circuits	n°	2/2	2/2	2/2	2/2
Cooling power input (*)	kW	3.3	4.1	4.9	5.9
Heating power input (**)	kW	19,6	22,2	24,1	26,0
Capacity steps	%	0 -45 -100	0 - 50 -100	0 - 46 -100	0 -50 -100
<b>Evaporator characteristics</b>					
Water content	l	2 x 2,9	2 x 2,9	2 x 3,6	2 x 3,6
Water flow rate	l/s	3,292	3,727	4,012	4,296
Water pressure drops	kPa	32,7	41,8	33,1	37,8
<b>Condenser characteristics</b>					
Water content	l	2 x 2,9	2 x 2,9	2 x 3,6	2 x 3,6
Water flow rate	l/s	4,045	4,587	4,939	5,291
Water pressure drops	kPa	48,6	62,2	49,3	56,5
<b>Noise levels (***)</b>					
Basic unit	dB(A)	59,6	60,0	60,1	60,5
LN version	dB(A)	56,8	57,2	57,4	57,6
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50	
<b>Basic unit dimensions and weights</b>					
Length	mm	1356	1356	1356	1356
Depth	mm	773	773	773	773
Height	mm	960	960	960	960
Shipping weight (#)	kg	409	425	438	451

Unit size		392	422	522
<b>Nominal cooling capacity (*)</b>	kW	104,4	119,3	143,4
<b>Nominal heating capacity (**)</b>	kW	132,0	153,2	185,6
<b>Compressor</b>				
Quantity/refrigerant circuits	n°	2/2	2/2	2/2
Cooling power input(*)	kW	27,4	33,4	41,6
Heating power input (**)	kW	31,6	38,3	47,9
Capacity steps	%	0 - 50 -100	0 - 50 -100	0 - 50 -100
<b>Evaporator characteristics</b>				
Water content	l	2 x 4,2	2 x 5,2	2 x 6,3
Water flow rate	l/s	4,989	5,702	6,849
Water pressure drops	kPa	34,8	29,7	30,2
<b>Condenser characteristics</b>				
Water content	l	2 x 7,5	2 x 7,5	2 x 8,7
Water flow rate	l/s	6,298	7,299	8,836
Water pressure drops	kPa	16,8	22,3	24,4
<b>Noise levels (***)</b>				
Basic unit	dB(A)	60,6	60,7	61,4
LN version	dB(A)	57,8	57,8	58,6
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50
<b>Basic unit dimensions and weights</b>				
Length	mm	1856	1856	1856
Depth	mm	798	798	798
Height	mm	960	960	960
Shipping weight (#)	kg	583	591	601

(\*) evaporator inlet/outlet water temperature 12-7°C; condenser inlet/outlet water temperature 30-35°C.

(\*\*) condenser inlet/outlet water temperature 40-45°C; evaporator inlet/outlet water temperature 10-15°C.

(\*\*\*) Sound pressure levels measured in free field conditions at 1m from the unit.

(#) For heat pump units increase weight by 3%.

# SIGMA

Basic unit	182	192	202
SIGMA	12.809,00	13.377,00	13.996,00
SIGMA/HP	15.133,00	15.856,00	16.579,00
Reduction of basic unit price for R22 refrigerant, 2%.			

Accessory	182	192	202
LN (low noise version)	651,00	651,00	651,00

Refrigerant circuit accessories	182	192	202
Condensing cntrl. with pressure control valve for well water (chiller)	1.085,00	1.085,00	1.085,00
Condensing cntrl. with pressure control valve for well water (for HP)	1.653,00	1.653,00	1.653,00
Double Set Point (low/high temperature) (1)	3.099,00	3.099,00	3.099,00
Pressure gauges	326,00	326,00	326,00
Compressor discharge and suction shut-off valves	930,00	930,00	930,00
Sigma liquid line solenoid valve	393,00	393,00	393,00
Sigma/HP liquid line solenoid valve	620,00	620,00	620,00

Hydraulic circuit accessories	182	192	202
Water manifolds (installation by client) SIGMA-SIGMA/HP	1.137,00	1.137,00	1.137,00

Electrical accessories	182	192	202
RS 485 serial interface	274,00	274,00	274,00
Power factor correction to $\cos\phi \geq 0,9$ (on external electrical panel)	1.188,00	1.188,00	1.188,00
Single operation voltage-free contacts	62,00	62,00	62,00
Remote shared terminal (in addition to the standard one)	310,00	310,00	310,00

Miscellaneous accessories	182	192	202
Rubber antivibration mounts	470,00	470,00	470,00
Wooden crate packaging	336,00	336,00	336,00
Special pallet/slide for shipping in container	207,00	207,00	207,00
"RAL" paint finish	620,00	620,00	620,00

### Supply of totally pre-assembled units:

- all models can be supplied pre-assembled (without extra charge).  
In this case, the unit is delivered without refrigerant and testing.

### The basic unit comprises:

- Certification to directive 97/23 EEC (PED);
- Main switch;
- Compressor fuses;
- Hour counter;
- Automatic compressor rotation;
- Flowswitch.

- (1) With double thermostat valves + solenoid valves, the evaporator of the "double set point" unit is sized according to operation at high temperatures. The change of set-point is possible via the control panel only.

# SIGMA

262	282	302	322	392	422	522
15.081,00	16.113,5	16.579,00	16.785,00	21.743,00	23.551,00	23.964,00
17.818,00	19.109,00	19.574,00	19.884,00	25.668,00	27.786,00	28.302,00

262	282	302	322	392	422	522
651,00	651,00	651,00	651,00	651,00	651,00	651,00

262	282	302	322	392	422	522
1.085,00	1.085,00	2.686,00	2.686,00	2.686,00	2.686,00	2.686,00
1.653,00	1.653,00	3.409,00	3.409,00	3.409,00	3.409,00	3.409,00
3.099,00	3.099,00	3.099,00	3.099,00	3.099,00	3.099,00	3.099,00
326,00	326,00	326,00	326,00	326,00	326,00	326,00
930,00	930,00	930,00	930,00	930,00	930,00	930,00
393,00	393,00	393,00	393,00	393,00	393,00	393,00
620,00	620,00	620,00	620,00	620,00	620,00	620,00

262	282	302	322	392	422	522
1.137,00	1.137,00	1.137,00	1.137,00	1.137,00	1.137,00	1.137,00

262	282	302	322	392	422	522
274,00	274,00	274,00	274,00	274,00	274,00	274,00
1.240,00	1.292,00	1.292,00	1.292,00	1.292,00	1.343,00	1.343,00
62,00	62,00	62,00	62,00	62,00	62,00	62,00
310,00	310,00	310,00	310,00	310,00	310,00	310,00

262	282	302	322	392	422	522
470,00	470,00	470,00	470,00	708,00	708,00	708,00
336,00	336,00	336,00	336,00	414,00	414,00	414,00
207,00	207,00	207,00	207,00	259,00	259,00	259,00
620,00	620,00	620,00	620,00	1.085,00	1.085,00	1.085,00

**Water chillers and water/water heat pumps with reciprocating semi-hermetic compressors**



**OMEGA**

Water chiller

**Unit frame**

In galvanized steel frame finished with epoxy-polyester powder paint (colour RAL 7032) baked.

**Compressors**

reciprocating semi-hermetic type, each with two capacity steps, equipped with crankcase heater and thermal overload cutout. Part-Winding start-up.

**Refrigerant circuits**

Independent with anti-vibration mounts on gas pipelines (except for mod. 501-702-802-1002), liquid valve, charging connection, sight glass, drier filter, thermostatic expansion valve, high and low-pressure switches and gauges, safety relief valve.

**Evaporators**

Braze-welded plate type with no-frost protection and mechanical flow switch.

**Condensers:**

Braze-welded plate type.

**Electrical panel**

With main switch, contactors, power and control circuit protection, and compressor contactors.

**Microprocessor** control with function display.

**Testing**

Units are factory tested and supplied with refrigerant charge and oil.

**OMEGA /HP**

Reversible heat pump

In addition to the components featured on model Omega: four-way diverting valve and second thermostatic expansion valve. Second mechanical flow switch.

**ACCESSORY VERSIONS**

**OMEGA /DC**

Unit with 100% heat recovery condenser.

Not available for all /HP versions.

**OMEGA /DS**

Unit with desuperheaters for partial recovery of heat rejection (20%).

**OMEGA /LN**

Low noise unit: anti-vibration mounts on gas pipelines, silencer on compressor discharge line and metal removable panels with internal soundproofing mat insulation in expanded polyurethane.

**ACCESSORIES**

- rubber or spring type anti-vibration mounts;
- electronic Soft Starters (in electrical panel located on the opposite side to the standard panel);
- water manifolds;
- condensing pressure control with pressure control valve for well water;
- double set point: on units with 2 compressors the set points can be entered via the control panel or digital input (specify on order). In any event switching is automatic according to the water temperature;
- microprocessor serial interface card for remote supervision or tele-assistance via personal computer. RS485 on single compressor units, RS422 on 2-compressor units, both with Carel communication protocol;
- liquid receivers;
- liquid line solenoid valve.

## OMEGA - R407C TECHNICAL DATA

Unit size		501	601	701	702
<b>Nominal cooling capacity (*)</b>	kW	127,5	156,5	177,5	180,8
<b>Nominal heating capacity (**)</b>	kW	166,9	200,8	232,0	235,0
<b>Compressors</b>					
Quantity/Refrigerant circuits	n°	1/1	1/1	1/1	2/2
Cooling power input (*)	kW	36,4	42,6	49,5	51,4
Heating power input (**)	kW	43,3	50,0	58,8	61,0
Capacity steps	%	66-100	75-100	75-100	33-50-83-100
<b>Evaporator characteristics</b>					
Water content	l	1 x 10,5	1 x 14,3	1 x 15,7	2 x 8,4
Water flow rate	l/s	6,089	7,478	8,481	8,639
Pressure drops	kPa	40,3	42,2	46,5	32,6
<b>Condenser characteristics</b>					
water content	l	1 x 15,0	1 x 17,5	1 x 18,7	2 x 10,0
Water flow rate	l/s	7,828	9,512	10,846	11,094
Pressure drops	kPa	30,9	35,4	45,8	31,8
<b>Noise levels (***)</b>					
Basic unit	dB(A)	69,5	71,0	72,0	72,0
LN version	dB(A)	66,0	67,0	67,0	68,0
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50
<b>Dimensions and weight</b>					
Length	mm	1056	1056	1056	1806
Depth	mm	1056	1056	1056	1056
Height	mm	1700	1700	1700	1700
Shipping weight (#)	kg	642	757	774	1011

Unit size		802	1002	1202	1502
<b>Nominal cooling capacity (*)</b>	kW	207,7	254,9	313,1	355,0
<b>Nominal heating capacity (***)</b>	kW	268,1	333,8	401,7	464,0
<b>Compressors</b>					
Quantity/Refrigerant circuits	n°	2/2	2/2	2/2	2/2
Cooling power input (*)	kW	60,1	72,8	85,1	99,0
Heating power input (**)	kW	70,1	86,6	100,1	117,5
Capacity steps	%	33-50-83-100	33-50-83-100	38-50-88-100	38-50-88-100
<b>Evaporator characteristics</b>					
evaporator water content	l	2 x 8,4	2 x 10,5	2 x 14,3	2 x 15,7
Water flow rate	l/s	0.828	1.028	1.425	1.778
Pressure drops	kPa	3.4	3.1	4.0	21.4
<b>Condenser characteristics</b>					
condenser water content	l	2 x 11,2	2 x 15,0	2 x 17,5	2 x 18,7
Water flow rate	l/s	12,798	15,655	19,025	21,693
Pressure drops	kPa	30,2	30,9	35,4	45,8
<b>Noise levels (***)</b>					
Basic unit	dB(A)	73,0	73,0	74,0	74,0
LN version	dB(A)	68,5	69,0	70,0	70,0
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50
<b>Dimensions and weight</b>					
Length	mm	1806	1806	1806	1806
Depth	mm	1056	1056	1056	1056
Height	mm	1700	1700	1700	1700
Shipping weight (#)	kg	1075	1179	1408	1444

(\*) evaporator inlet/outlet water temperature 12-7 °C; condenser inlet/outlet water temperature 30-35 °C.

(\*\*) condenser inlet/outlet water temperature 40-45 °C; evaporator inlet/outlet water temperature 15-10 °C.

(\*\*\*) Sound pressure levels measured in free field conditions at 1m from the unit on the side of the electrical panel.

(#) For heat pump units increase weight by 3%.

# OMEGA

Basic unit	501	601
OMEGA	21.898,00	24.790,00
OMEGA/HP	26.288,00	29.748,00
Reduction on the basic unit price for R22 refrigerant, 2%.		

Accessory	501	601
DC - Total recovery (100% of heat rejection) excluding HP unit	4.545,00	4.907,00
DS - Partial recovery (20% of heat rejection)	1.705,00	1.705,00
LN (Low noise version)	2.046,00	2.170,00

Refrigerant circuit accessories	501	601
Condensing cntrl. with pressure control valve for well water (chiller)	1.953,00	1.953,00
Condensing cntrl. with pressure control valve for well water (for HP)	2.986,00	2.986,00
Double Set Point (low/high temperature) (1)	2.015,00	2.015,00
Capacity 3-step	1.963,00	1.963,00
Capacity 6-step	-	-
Liquid receivers (standard on DC versions)	724,00 (1x24L)	724,00 (1x24L)
Compressor suction valves	414,00 620,00 620,00	827,00 827,00
Omega liquid line solenoid valve	254,00	254,00
Omega/HP liquid line solenoid valve	414,00	414,00

Hydraulic circuit accessories	501	601
Water manifolds	OMEGA	-
(installation by client)	OMEGA /DS	-
	OMEGA/DC	-

Electrical accessories	501	601
Electronic Soft Starters (2)	5.630,00	5.836,00
RS 485 serial interface (RS 422 da tre gradini in poi)	274,00	274,00
Power factor correction to $\cos\theta \geq 0,9$	1.292,00	1.292,00
Single operation voltage-free contacts	31,00	31,00

Miscellaneous accessories	501	601
Spring anti-vibration mounts	749,00	749,00
Rubber antivibration mounts	470,00	470,00
Wooden crate packaging	336,00	336,00
Special skid for shipping in container	207,00	207,00

# OMEGA

701	702	802	1002	1202	1502
27.218,00	34.913,00	36.772,00	40.439,00	47.153,00	51.543,00
32.641,00	41.885,00	44.158,00	48.496,00	56.553,00	61.820,00

701	702	802	1002	1202	1502
5.113,00	7.386,00	7.799,00	9.038,00	9.865,00	10.278,00
1.963,00	3.048,00	3.048,00	3.357,00	3.357,00	3.874,00
2.170,00	2.908,00	2.991,00	2.991,00	3.234,00	3.234,00

701	702	802	1002	1202	1502
1.953,00	2.893,00	3.905,00	3.905,00	3.905,00	3.905,00
2.986,00	4.576,00	5.971,00	5.971,00	5.971,00	5.971,00
2.015,00	2.789,00	2.789,00	2.789,00	2.789,00	2.789,00
1.963,00	-	-	-	-	-
-	1.240,00	1.240,00	1.240,00	1.240,00	1.240,00
724,00 (1x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)
827,00	1.240,00	1.240,00			
254,00	501,00	501,00	501,00	501,00	501,00
414,00	827,00	827,00	827,00	827,00	827,00

701	702	802	1002	1202	1502
-	1.137,00	1.137,00	1.137,00	1.137,00	1.137,00
-	1.860,00	1.860,00	1.860,00	1.860,00	1.860,00
-	1.860,00	1.860,00	1.860,00	1.860,00	1.860,00

701	702	802	1002	1202	1502
6.043,00	11.259,00	11.259,00	11.259,00	11.672,00	12.086,00
274,00	274,00	274,00	274,00	274,00	274,00
1.343,00	1.963,00	1.963,00	2.583,00	2.583,00	2.686,00
31,00	62,00	62,00	62,00	62,00	62,00

701	702	802	1002	1202	1502
749,00	1.121,00	1.121,00	1.121,00	1.121,00	1.121,00
470,00	708,00	708,00	708,00	708,00	708,00
336,00	517,00	517,00	517,00	517,00	517,00
207,00	259,00	259,00	259,00	259,00	259,00



Miscellaneous accessories	501	601
"RAL" paint finish other than standard	1.085,00	1.085,00
Supply of pre-assembled modules (3)	-	-

### Supply of totally pre-assembled unit:

- all models can be supplied pre-assembled (with no extra charge).  
In this case, the unit is delivered without refrigerant or testing.

### The basic unit comprises:

- Certification to directive 97/23 EEC (PED);
- Main switch;
- Compressor fuses;
- Hour meter;
- Automatic compressor rotation;
- High and low pressure gauges;
- Part-Winding start-up;
- Compressor discharge steps (2 per compressor);
- Compressor delivery valves;
- Flowswitch.

- (1) With double thermostat valves + solenoid valves, the evaporator of the "double set point" unit is sized according to operation at high temperatures. The change of set-point on single compressor models is possible via the control panel only; on units with 2 compressors the set points can be entered via the control panel or digital input (specify on order).
- (2) on models with the electrical panel located on the opposite side to the standard panel:  
the overall length of the unit must be increased by 300 mm.
- (3) The unit is delivered as a single block, with the possibility of disassembly into a number of modules equal to the number of compressors. It is also already tested and charged with refrigerant gas.
- (-) Not available.

# OMEGA

701	702	802	1002	1202	1502
1.085,00	1.705,00	1.705,00	1.705,00	1.705,00	1.705,00
-	1.292,00	1.292,00	1.292,00	1.292,00	1.292,00

**Water chillers and  
water/water heat pumps  
with screw compressors**



**OMEGA.V**  
Water chiller

**Unit frame**  
In galvanized steel panels finished with stove enamelled epoxy-polyester powder coating (colour RAL 7032).

**Compressor**  
With two semi-hermetic screws, male rotor-female rotor direction transmission, each with two capacity steps, equipped with sump heater and thermal overload cutout. Delta/Star start-up

**Refrigerant circuits**  
Independent with compressor delivery valve, liquid valve, charging connection, sight glass, drier filter, thermostatic expansion valve, high and low-pressure switches, safety relief valve.

**Evaporators**  
Braze-welded plate type with no-frost protection and mechanical flow switch.

**Condensers:**  
Braze-welded plate type.

**Electrical panel**  
With main switch, contactors, power and control circuit protection, and compressor contactors.

**Microprocessor** control with function display.

**Testing**  
Units are factory tested and supplied with refrigerant charge and oil.

**OMEGA.V /HP**  
Reversible heat pump

In addition to the components featured on model Omega.V: four-way diverting valve and second thermostatic expansion valve. Additional vane flow switch.

**ACCESSORY VERSIONS**

**OMEGA.V /DC**  
Unit with 100% heat recovery condenser.  
Not available for all /HP versions.

**OMEGA.V /DS**  
Unit with desuperheaters for partial recovery of heat rejection (20%).

**OMEGA.V /LN**  
Low noise unit: metal removable panels with internal soundproofing mat insulation in expanded polyurethane.

**ACCESSORIES**

- rubber or spring type anti-vibration mounts;
- water manifolds;
- condensing pressure control with pressure control valve for well water;
- double set point: on units with 2 compressors the set points can be entered via the control panel or digital input (specify on order). In any event switching is automatic according to the water temperature;
- microprocessor serial interface card for remote supervision or tele-assistance via personal computer. RS485 on single compressor units, RS422 on 2-compressor units, both with Carel communication protocol;
- liquid receivers;
- liquid line solenoid valve.

## OMEGA.V - R407C TECHNICAL DATA

Unit size		40	50	60	80	100
<b>Nominal cooling capacity (*)</b>	kW	134,7	158,7	180,5	269,3	317,5
<b>Nominal heating capacity (**)</b>	kW	169,5	199,8	229,1	339	399,6
<b>Compressors</b>						
Quantity/Refrigerant circuits	n°	1/1	1/1	1/1	2/2	2/2
Cooling power input (*)	kW	34,9	41,2	48,2	69,8	82,3
Heating power input (**)	kW	44,2	52,1	61	88,4	104,2
Capacity steps	%	45-100	45-100	45-100	23-50-73-100	23-50-73-100
<b>Evaporator characteristics</b>						
water content	l	1 x 10,5	1 x 14,3	1 x 15,7	2 x 10,5	2 x 14,3
Water flow rate	l/s	6,433	7,584	8,626	12,867	15,168
Pressure drops	kPa	44,8	40,9	48,0	44,8	40,9
<b>Condenser characteristics</b>						
water content	l	1 x 15	1 x 17,5	1 x 18,7	2 x 15	2 x 17,5
Water flow rate	l/s	8,102	9,551	10,931	16,204	19,102
Pressure drops	kPa	33,0	33,7	46,5	33,0	33,7
<b>Noise levels (***)</b>						
Basic unit	dB(A)	69,0	70,0	71,0	72,0	73,0
LN version	dB(A)	65,0	65,0	66,0	68,0	69,0
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50
<b>Dimensions and weight</b>						
Length	mm	1056	1056	1056	1806	1806
Depth	mm	1556	1556	1556	1556	1556
Height	mm	1700	1700	1700	1700	1700
Shipping weight (#)	kg	801	837	863	1475	1550

Unit size		120
<b>Nominal cooling capacity (*)</b>	kW	361,1
<b>Nominal heating capacity (**)</b>	kW	458,1
<b>Compressors</b>		
Quantity/Refrigerant circuits	n°	2/2
Cooling power input (*)	kW	96,5
Heating power input (**)	kW	122,1
Capacity steps	%	23-50-73-100
<b>Evaporator characteristics</b>		
water content	l	2x12,5
Water flow rate	l/s	17,253
Pressure drops	kPa	48,0
<b>Condenser characteristics</b>		
water content	l	2x12,5
Water flow rate	l/s	21,862
Pressure drops	kPa	46,5
<b>Noise levels (***)</b>		
Basic unit	dB(A)	74,0
LN version	dB(A)	69,0
<b>Power supply</b>	V/f/Hz	400/3~/50
<b>Dimensions and weight</b>		
Length	mm	1806
Depth	mm	1556
Height	mm	1700
Shipping weight (#)	kg	1602

(\*) evaporator inlet/outlet water temperature 12-7 °C; condenser inlet/outlet water temperature 30-35 °C.

(\*\*) condenser inlet/outlet water temperature 40-45 °C; evaporator inlet/outlet water temperature 15-10 °C.

(\*\*\*) Sound pressure levels measured in free field conditions at 1m from the unit on the side of the electrical panel.

(#) For heat pump units increase weight by 3%.

# OMEGA.V

<b>Basic unit</b>	<b>40</b>
OMEGA.V	32.021,00
OMEGA.V/HP	38.477,00
Reduction on the basic unit price for R22 refrigerant, 2.5%.	

<b>Accessory</b>	<b>40</b>
DC - Total recovery (100% of heat rejection) excluding HP unit	4.545,00
DS - Partial recovery (20% of heat rejection)	1.705,00
LN (low noise version)	2.634,00

<b>Refrigerant circuit accessories</b>	<b>40</b>
Condensing cntrl. with pressure control valve for well water (chiller)	1.953,00
Condensing cntrl. with pressure control valve for well water (with solenoid valve for HP)	2.986,00
Double Set Point (low/high temperature) (1)	2.015,00
Capacity 3-step	1.963,00
Capacity 6-step	–
Continuous capacity control (excluding HP version)	–
Liquid receivers (standard on DC versions)	724,00 (1x24L)
Compressor suction valves	620,00
Liquid line solenoid valve	254,00

<b>Hydraulic circuit accessories</b>	<b>40</b>	
Water manifolds	OMEGA.V	–
(installation by client)	OMEGA.V/DS	–
	OMEGA.V/DC	–

<b>Electrical accessories</b>	<b>40</b>
RS 485 serial interface	274,00
Power factor correction to $\cos\phi \geq 0,9$	1.292,00
Single operation voltage-free contacts	31,00

<b>Miscellaneous accessories</b>	<b>40</b>
Rubber antivibration mounts	470,00
Spring antivibration mounts	749,00
Wooden crate packaging	388,00
Special pallet/slide for shipping in container	217,00

# OMEGA.V

50	60	80	100	120
33.157,00	33.777,00	61.665,00	64.299,00	65.177,00
39.768,00	40.542,00	74.009,00	77.159,00	78.244,00

50	60	80	100	120
4.907,00	5.113,00	9.038,00	9.865,00	10.278,00
1.705,00	1.963,00	3.357,00	3.357,00	3.874,00
2.634,00	2.634,00	3.869,00	3.869,00	3.869,00

50	60	80	100	120
1.953,00	1.953,00	3.905,00	3.905,00	3.905,00
2.986,00	2.986,00	5.971,00	5.971,00	5.971,00
2.015,00	2.015,00	2.789,00	2.789,00	2.789,00
1.963,00	1.963,00	–	–	–
–	–	1.240,00	1.240,00	1.240,00
–	–	1.549,00	1.549,00	1.549,00
724,00 (1x24L)	724,00 (1x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)
620,00	620,00	1.240,00	1.240,00	1.240,00
254,00	254,00	501,00	501,00	501,00

50	60	80	100	120
–	–	1.137,00	1.137,00	1.137,00
–	–	1.860,00	1.860,00	1.860,00
–	–	1.860,00	1.860,00	1.860,00

50	60	80	100	120
274,00	274,00	274,00	274,00	274,00
1.292,00	1.343,00	2.583,00	2.583,00	2.686,00
31,00	31,00	62,00	62,00	62,00

50	60	80	100	120
470,00	470,00	708,00	708,00	708,00
749,00	749,00	1.121,00	1.121,00	1.121,00
388,00	388,00	641,00	641,00	641,00
217,00	217,00	336,00	336,00	336,00

Miscellaneous accessories	40
"RAL" paint finish other than standard	1.602,00
Supply of pre-assembled modules (2)	—

### Supply of totally pre-assembled unit:

- all models can be supplied pre-assembled (with no extra charge). In this case, the unit is delivered without refrigerant or testing.

### The basic unit includes:

- Certification to directive 97/23 EEC (PED);
- Main switch;
- Compressor fuses;
- Hour meter;
- Automatic compressor rotation;
- High and low pressure gauges;
- Delta-star start-up;
- Compressor capacity steps (2 per compressor);
- Compressor discharge valves;
- Flowswitch.

- (1) With double thermostat valves + solenoid valves, the evaporator of the "double set point" unit is sized according to operation at high temperatures. The change of set-point on single compressor models is possible via the control panel only; on units with 2 compressors the set points can be entered via the control panel or digital input (specify on order).
  - (2) The unit is delivered as a single block, with the possibility of disassembly into a number of modules equal to the number of compressors. It is also already tested and charged with gas.
- (-) Not available.

## OMEGA.V

50	60	80	100	120
1.602,00	1.602,00	3.048,00	3.048,00	3.048,00
-	-	1.292,00	1.292,00	1.292,00



## Water/water chillers with screw compressors



### OMEGA.V 2001

Water chiller

#### Unit frame

Galvanized steel framework finished with epoxy-polyester powder paint baked.

#### Compressor

With two semi-hermetic screws, male rotor-female rotor direction transmission, each with two capacity steps, equipped with crankcase heater and thermal overload cutout. Delta / Star start-up.

#### Refrigerant circuits

Independent with compressor discharge valve, liquid valve, charging connection-sight glass, drier filter, thermostatic expansion valve, high and low-pressure switches, safety device.

#### Evaporator

Dry expansion shell and tube type, casing and no-frost protection.

#### Condensers:

With shell and tube type and casing.

#### Electrical panel

With main switch, power and control circuit protection, and compressor contactors.

**Microprocessor** control with function display.

#### Testing

Units are factory tested and supplied with refrigerant charge and oil.

### ACCESSORY VERSIONS

#### OMEGA.V 2001 /DC

Unit with 100% heat recovery condenser.

#### OMEGA.V 2001 /DS

Unit with desuperheaters for partial recovery of heat rejection (20%).

#### OMEGA.V 2001 /LN

Low noise unit: compressor with sound-proofed enclosure in paint-finished steel panels, with interior sound-absorbing mat insulation for optimal sound-proofing quality.

### ACCESSORIES

- condensing pressure control with pressure control valve for well water;
- outlet water temperature control;
- double set point: the set points can be entered via the control panel or digital input (specify on order). In any event switching is automatic according to the water temperature;
- RS 485 microprocessor serial interface card for remote supervision or tele-assistance via personal computer. Carel or Modbus communication protocol integrated;
- continuous capacity control from 100% to 50% of output (from 100% to 25% also possible);
- set point variable via remote signal;
- remote shared terminal (in addition to the one on-board the unit);
- liquid line solenoid valve.

# OMEGA.V 2001 - R407C TECHNICAL DATA

Unit size		19.1	22.1	27.1	33.1	38.2	39.1	43.1	44.2
<b>Nominal cooling capacity (*)</b>	kW	188,0	217,4	270,0	322,4	376,1	380,2	424,8	434,8
<b>Compressors</b>									
Quantity/Refrigerant circuits	n°	1/1	1/1	1/1	1/1	2/2	1/1	1/1	2/2
Cooling power input (*)	kW	48,9	56,6	68,2	82,3	97,9	92,1	102,0	113,1
Capacity steps	%	50-100	50-100	50-100	50-100	25-50-75-100	50-100	50-100	25-50-75-100
<b>Evaporator characteristics</b>									
water content	l	1 x 59,6	1 x 104,6	1 x 90,3	1 x 104,3	1 x 166,7	1 x 178,6	1 x 140,1	1 x 140,1
Water flow rate	l/s	8,985	10,387	12,899	15,405	17,969	18,164	20,296	20,774
Pressure drops	kPa	23,1	29,5	63,3	75,1	56,0	35,3	59,8	39,1
<b>Condenser characteristics</b>									
water content	l	1 x 19,2	1 x 21,8	1 x 24,4	1 x 35,9	2 x 19,2	1 x 41,6	1 x 45,4	2 x 21,8
Water flow rate	l/s	11,322	13,090	16,159	19,336	22,644	22,565	25,170	26,180
Pressure drops	kPa	40,4	40,4	47,2	64,2	40,4	63,9	65,7	40,4
<b>Noise levels (***)</b>									
Basic unit	dB(A)	69,9	70,5	71,9	73,3	73,4	74,9	76,6	74,1
LN version	dB(A)	65,4	67,1	69,1	70,6	69,3	72,2	73,5	70,7
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50
<b>Dimensions and weight</b>									
Length	mm	3049	2964	2988	3388	3450	3628	3423	3450
Depth	mm	1500	1500	1500	1500	1582	1500	1500	1582
Height	mm	1687	1687	1687	1687	2097	1687	1687	2097
Shipping weight	kg	1217	1298	1474	1579	2294	1812	1884	2422

Unit size		47.1	52.1	54.2	58.1	60.2	65.2	71.2	77.2
<b>Nominal cooling capacity (*)</b>	kW	460,2	517,5	540,0	571,5	593,2	644,9	702,6	760,4
<b>Compressors</b>									
Quantity/Refrigerant circuits	n°	1/1	1/1	2/2	1/1	2/2	2/2	2/2	2/2
Cooling power input (*)	kW	110,7	127,3	136,5	143,2	150,3	164,5	174,4	184,2
Capacity steps	%	50-100	50-100	25-50-75-100	50-100	25-50-75-100	25-50-75-100	25-50-75-100	25-50-75-100
<b>Evaporator characteristics</b>									
water content	l	1 x 149,4	1 x 268,4	1 x 249,3	1 x 249,3	1 x 249,3	1 x 240,0	1 x 210,0	1 x 210,0
Water flow rate	l/s	21,987	24,724	25,798	27,306	28,340	30,810	33,569	36,329
Pressure drops	kPa	64,8	44,6	27,3	30,4	32,6	54,4	59,0	68,5
<b>Condenser characteristics</b>									
water content	l	1 x 61,0	1 x 61,0	2 x 24,4	1 x 69,6	2 x 29,2	2 x 35,9	2 x 41,6	2 x 41,6
Water flow rate	l/s	27,276	30,806	32,318	34,150	35,519	38,672	41,901	45,130
Pressure drops	kPa	44,5	56,7	47,2	52,2	51,8	64,2	64,4	63,9
<b>Noise levels (***)</b>									
Basic unit	dB(A)	76,6	77,1	75,7	79,6	75,8	75,9	77,3	78,3
LN version	dB(A)	73,6	73,8	72,6	76,3	72,9	73,2	74,5	75,5
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50
<b>Dimensions and weight</b>									
Length	mm	3623	3433	3535	3433	3535	3465	3959	3960
Depth	mm	1500	1500	1582	1500	1582	1582	1582	1582
Height	mm	1738	1738	2097	1738	2097	2097	2097	2097
Shipping weight	kg	2272	2405	2864	2580	2905	3048	3264	3396

Unit size		82.2	86.2	90.2	93.2	104.2	116.2
<b>Nominal cooling capacity (*)</b>	kW	805,0	849,6	891,1	920,4	1035,0	1143,0
<b>Compressors</b>							
Quantity/Refrigerant circuits	n°	2/2	2/2	2/2	2/2	2/2	2/2
Cooling power input (*)	kW	194,1	204,0	210,9	221,4	254,6	286,5
Capacity steps	%	25-50-75-100	25-50-75-100	25-50-75-100	25-50-75-100	25-50-75-100	25-50-75-100
<b>Evaporator characteristics</b>							
water content	l	1 x 285,0	1 x 285,0	1 x 285,0	1 x 285,0	1 x 438,0	1 x 420,0
Water flow rate	l/s	38,460	40,592	42,573	43,974	49,448	54,613
Pressure drops	kPa	28,0	31,0	34,0	36,1	85,9	79,9
<b>Condenser characteristics</b>							
water content	l	2 x 45,4	2 x 45,4	2 x 61,0	2 x 61,0	2 x 61,0	2 x 69,6
Water flow rate	l/s	47,735	50,340	42,649	54,553	61,612	68,301
Pressure drops	kPa	64,7	65,7	41,4	44,5	56,7	52,2
<b>Noise levels (***)</b>							
Basic unit	dB(A)	78,8	79,6	80,0	80,2	81,9	81,8
LN version	dB(A)	75,9	76,8	76,9	77,3	78,9	78,7
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50
<b>Dimensions and weight</b>							
Length	mm	3995	3995	4125	4140	4140	4140
Depth	mm	1582	1582	1582	1582	1582	1582
Height	mm	2128	2128	2230	2230	2281	2281
Shipping weight	kg	3601	3635	4071	4345	4599	4819

(\*) Evaporator inlet/outlet water temperature 12-7 °C; condenser inlet/outlet water temperature 30-35 °C.

(\*\*) Sound pressure levels measured in free field conditions at 1m from the unit, according to ISO 3746.

(\*\*\*) For heat pump units increase weight by 10%.

# OMEGA.V 2001

Basic unit	19.1	22.1	27.1	33.1	38.2	39.1	43.1
OMEGA.V 2001	34.809,00	38.166,00	43.899,00	48.340,00	68.844,00	57.068,00	62.078,00

Reduction on the basic unit price for R22 refrigerant 2,5%.

Accessory	19.1	22.1	27.1	33.1	38.2	39.1	43.1
DC - Total recovery (100% of heat rejection) excluding HP unit	6.043,00	6.456,00	8.935,00	8.935,00	12.085,00	9.296,00	9.296,00
DS - Partial recovery (20% of heat rejection)	2.376,00	2.531,00	2.841,00	3.460,00	4.751,00	3.641,00	3.641,00
LN (Low noise version)	2.488,00	2.488,00	2.488,00	2.488,00	4.457,00	3.371,00	3.371,00

Refrigerant circuit accessories	19.1	22.1	27.1	33.1	38.2	39.1	43.1
Condensing pressure cntrl. with pressostatic valve for well water condensers only	4.058,00	4.058,00	5.077,00	5.077,00	8.117,00	5.077,00	5.759,00
Double set point (low/high temperature) (1)	1.911,00	1.911,00	2.117,00	2.117,00	3.822,00	2.117,00	2.117,00
Pressure gauges	163,00	163,00	163,00	163,00	326,00	163,00	163,00
Capacity 3-step	620,00	620,00	620,00	620,00	-	620,00	620,00
Capacity 6-step	-	-	-	-	1.239,00	-	-
Continuous capacity control	775,00	775,00	775,00	775,00	1.549,00	775,00	775,00
Compressor suction valves	620,00	620,00	826,00	826,00	1.240,00	1.385,00	1.385,00
Liquid line solenoid valve	516,00	775,00	775,00	950,00	1.033,00	950,00	950,00
Electronic expansion valve	2.531,00	2.531,00	2.531,00	2.531,00	5.062,00	2.531,00	2.531,00

Electrical accessories	19.1	22.1	27.1	33.1	38.2	39.1	43.1
Outlet water temperature control	165,00	165,00	165,00	165,00	165,00	165,00	165,00
RS 485 serial interface	274,00	274,00	274,00	274,00	274,00	274,00	274,00
Power factor correction to $\cos\phi \geq 0,9$	1.343,00	1.343,00	1.343,00	1.808,00	2.686,00	2.137,00	2.355,00
Set point variable via remote signal (0-1V, 0-10V, 0-4mA, 0-20mA)	362,00	775,00	362,00	362,00	775,00	362,00	362,00
Single operation voltage-free contacts	60,00	60,00	60,00	60,00	120,00	60,00	60,00
Remote-shared terminal	671,00	671,00	671,00	671,00	671,00	671,00	671,00

Miscellaneous accessories	19.1	22.1	27.1	33.1	38.2	39.1	43.1
Rubber anti-vibration mounts	413,00	413,00	413,00	413,00	413,00	413,00	413,00
Spring antivibration mounts	775,00	775,00	775,00	775,00	775,00	775,00	775,00
Wooden crate packaging	1.421,00	1.603,00	1.603,00	1.635,00	1.933,00	1.661,00	1.661,00

## Supply of totally pre-assembled unit:

- all models can be supplied pre-assembled (with no extra charge).  
In this case, the unit is delivered without refrigerant and testing.

### The basic unit includes:

- Certification to directive 97/23 EEC (PED);
- Main switch
- Compressor fuses
- Hour meter
- Automatic compressor rotation

- (1) With double thermostat valves + solenoid valves, the evaporator of the "double set point" unit is sized according to operation at high temperatures. the set points can be entered via the control panel or digital input (specify on order)
- (-) Not available

# OMEGA.V 2001

44.2	47.1	52.1	54.2	58.1	60.2	65.2	71.2	77.2	82.2	86.2	90.2	93.2	104.2	116.2
73.079,00	68.276,00	76.126,00	88.366,00	83.098,00	91.878,00	96.474,00	105.306,00	110.883,00	123.691,00	129.166,00	134.124,00	139.133,00	151.270,00	165.989,00

44.2	47.1	52.1	54.2	58.1	60.2	65.2	71.2	77.2	82.2	86.2	90.2	93.2	104.2	116.2
12.912,00	9.632,00	10.019,00	17.870,00	10.019,00	13.944,00	17.869,00	18.231,00	18.592,00	18.592,00	18.592,00	18.928,00	19.264,00	20.039,00	20.039,00

5.061,00	3.770,00	3.925,00	5.681,00	3.925,00	6.301,00	6.921,00	7.101,00	7.282,00	7.282,00	7.282,00	7.411,00	7.540,00	7.850,00	7.850,00
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4.457,00	3.371,00	3.371,00	4.457,00	3.371,00	4.457,00	4.457,00	5.973,00	5.973,00	5.973,00	5.973,00	5.973,00	5.973,00	5.973,00	5.973,00
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44.2	47.1	52.1	54.2	58.1	60.2	65.2	71.2	77.2	82.2	86.2	90.2	93.2	104.2	116.2
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8.117,00	5.759,00	5.759,00	10.154,00	5.759,00	10.154,00	10.154,00	11.519,00	11.519,00	11.519,00	11.519,00	11.519,00	11.519,00	11.519,00	11.519,00
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3.822,00	2.117,00	2.117,00	4.235,00	2.117,00	4.235,00	4.235,00	4.235,00	4.235,00	4.235,00	4.235,00	4.235,00	4.235,00	4.235,00	4.235,00
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326,00	163,00	163,00	326,00	163,00	326,00	326,00	326,00	326,00	326,00	326,00	326,00	326,00	326,00	326,00
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-	620,00	620,00	-	620,00	-	-	-	-	-	-	-	-	-	-
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1.239,00	-	-	1.239,00	-	1.239,00	1.239,00	1.239,00	1.239,00	1.239,00	1.239,00	1.239,00	1.239,00	1.239,00	1.239,00
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1.549,00	775,00	775,00	1.549,00	775,00	1.549,00	1.549,00	1.549,00	1.549,00	1.549,00	1.549,00	1.549,00	1.549,00	1.549,00	1.549,00
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1.240,00	1.960,00	1.960,00	1.652,00	1.960,00	1.652,00	1.652,00	2.211,00	2.770,00	2.770,00	2.770,00	3.345,00	3.920,00	3.920,00	3.920,00
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1.549,00	950,00	1.291,00	1.549,00	1.291,00	1.725,00	1.900,00	1.900,00	1.900,00	1.900,00	1.900,00	1.900,00	1.900,00	2.582,00	2.582,00
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5.062,00	2.531,00	2.531,00	5.062,00	2.531,00	5.062,00	5.062,00	5.062,00	5.062,00	5.062,00	5.062,00	5.062,00	5.062,00	5.062,00	5.062,00
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44.2	47.1	52.1	54.2	58.1	60.2	65.2	71.2	77.2	82.2	86.2	90.2	93.2	104.2	116.2
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165,00	165,00	165,00	165,00	165,00	165,00	165,00	165,00	165,00	165,00	165,00	165,00	165,00	165,00	165,00
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274,00	274,00	274,00	274,00	274,00	274,00	274,00	274,00	274,00	274,00	274,00	274,00	274,00	274,00	274,00
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2.686,00	2.575,00	2.849,00	2.686,00	3.177,00	3.151,00	3.616,00	5.061,00	4.274,00	4.492,00	4.710,00	4.930,00	5.150,00	5.698,00	6.354,00
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775,00	362,00	362,00	775,00	362,00	775,00	775,00	775,00	775,00	775,00	775,00	775,00	775,00	775,00	775,00
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120,00	60,00	60,00	120,00	60,00	120,00	120,00	60,00	120,00	120,00	120,00	120,00	120,00	120,00	120,00
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671,00	671,00	671,00	671,00	671,00	671,00	671,00	671,00	671,00	671,00	671,00	671,00	671,00	671,00	671,00
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44.2	47.1	52.1	54.2	58.1	60.2	65.2	71.2	77.2	82.2	86.2	90.2	93.2	104.2	116.2
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413,00	413,00	413,00	826,00	413,00	826,00	826,00	826,00	826,00	826,00	826,00	826,00	826,00	826,00	826,00
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775,00	775,00	775,00	1.550,00	775,00	1.550,00	1.550,00	1.550,00	1.550,00	1.550,00	1.550,00	1.550,00	1.550,00	1.550,00	1.550,00
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1.933,00	1.661,00	1.718,00	1.984,00	1.718,00	1.984,00	1.984,00	2.262,00	2.262,00	2.365,00	2.365,00	2.365,00	2.365,00	2.365,00	2.454,00
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**Condensing units  
and water heat pumps  
with hermetic scroll compressors**



### SIGMA/LE

Condensing unit

#### Unit frame

Galvanized steel panels finished with epoxy-polyester powder paint (colour RAL 7032) baked. Removable panels with internal sound-absorbing mat insulation.

#### Compressors

Hermetic scroll compressors with thermal overload cut-out and crankcase heater.

#### Refrigerant circuits

Independent with solenoid valve, liquid valve, charging connection, sight glass, drier filter, high and low-pressure switches, safety device.

#### Condensers:

Braze-welded plate type.

#### Electrical panel

With main switch, contactors, power and control circuit protection, and compressor contactors.

**Microprocessor** control with function display.

#### Testing

Units are factory tested and supplied with oil charge.

### SIGMA/LE/HP

Reversible condensing unit (heat pump)

In addition to the components featured on model Sigma LE: four-way diverting valve and thermostatic expansion valve. mechanical flow switch.

### ACCESSORY VERSIONS

#### SIGMA/LE/LN

Low noise unit: compressor sound proofing by means of sound-absorbing mat in expanded polyurethane with internal lead layer.

### ACCESSORIES

- rubber antivibration mounts;
- condensing pressure control with pressure control valve;
- RS 485 microprocessor serial interface card for remote supervision or tele-assistance via personal computer. Carel communication protocol integrated;
- pressure gauges;
- liquid receivers;
- remote shared terminal (in addition to the one on-board the unit);

## SIGMA/LE - R407C TECHNICAL DATA

Unit size		182	192	202
<b>Nominal cooling capacity (*)</b>	kW	52,6	63,2	73,8
<b>Nominal heating capacity (**)</b>	kW	57,5	69,1	80,7
<b>Compressor</b>				
Quantity/Refrigerant circuits	n°	2/2	2/2	2/2
Cooling power input(*)	kW	9,5	11,5	13,4
Heating power input (**)	kW			
Capacity steps	%	50 -100	41 -100	50 -100
<b>condenser water content</b>				
water content	l	2 x 1,9	2 x 2,6	2 x 2,6
Water flow rate	l/s	2,97	3,57	4,17
Pressure drops	kPa	60,7	45,7	62,0
<b>Noise levels (***)</b>				
Basic unit	dB(A)	57,2	58,0	58,1
LN version	dB(A)	54,7	55,1	55,4
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50
<b>Dimensions and weight</b>				
Length	mm	1356	1356	1356
Depth	mm	773	773	773
Height	mm	960	960	960
Shipping weight (#)	kg	343	356	369

Unit size		262	282	302	322
<b>Nominal cooling capacity (*)</b>	kW	85,0	96,3	103,5	110,7
<b>Nominal heating capacity (***)</b>	kW	91,78	95,13	115,23	136,93
<b>Compressor</b>					
Quantity/Refrigerant circuits	n°	2/2	2/2	2/2	2/2
Cooling power input (*)	kW	3,3	4,1	4,9	5,9
Heating power input (**)	kW	15,8	18,0	19,4	20,8
Capacity steps	%	45 -100	50 -100	46 -100	50 -100
<b>condenser water content</b>					
water content	l	2 x 2,9	2 x 2,9	2 x 3,6	2 x 3,6
Water flow rate	l/s	4,81	5,46	5,87	6,29
Pressure drops	kPa	68,3	87,5	69,3	79,1
<b>Noise levels (***)</b>					
Basic unit	dB(A)	59,6	60,0	60,1	60,5
LN version	dB(A)	56,8	57,2	57,4	57,6
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50
<b>Dimensions and weight</b>					
Length	mm	1356	1356	1356	1356
Depth	mm	773	773	773	773
Height	mm	960	960	960	960
Shipping weight (#)	kg	384	399	410	421

Unit size		392	422	522
<b>Nominal cooling capacity (*)</b>	kW	133,6	150,1	178,6
<b>Nominal heating capacity (**)</b>	kW	148,3	170,5	205,4
<b>Compressor</b>				
Quantity/Refrigerant circuits	n°	2/2	2/2	2/2
Cooling power input(*)	kW	29,1	35,6	44,3
Heating power input (**)	kW	28,4	34,7	43,1
Capacity steps	%	50 -100	50 -100	50 -100
<b>condenser water content</b>				
water content	l	2 x 7,5	2 x 7,5	2 x 8,7
Water flow rate	l/s	7,77	8,87	10,65
Pressure drops	kPa	25,1	32,3	34,9
<b>Noise levels (***)</b>				
Basic unit	dB(A)	60,6	60,7	61,4
LN version	dB(A)	57,8	57,8	58,6
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50
<b>Dimensions and weight</b>				
Length	mm	1856	1856	1856
Depth	mm	798	798	798
Height	mm	960	960	960
Shipping weight (#)	kg	511	419	529

(\*) condenser inlet/outlet water temperature 30-35 °C; evaporator inlet/outlet water temperature 7.5 °C

(\*\*) Condensation temperature 40 °C; evaporator inlet/outlet water temperature 12-7 °C.

(\*\*\*) Sound pressure levels measured in free field conditions at 1m from the unit.

(#) For heat pump units increase weight by 3%.

# SIGMA/LE

Basic unit	182	192	202
SIGMA/LE	10.846,00	11.414,00	11.879,00
SIGMA/LE/HP	12.809,00	13.428,00	14.048,00
Accessory	182	192	202
LN (low noise version)	651,00	651,00	651,00
Refrigerant circuit accessories	182	192	202
Condensing cntrl. with pressure control valve for well water (chiller)	1.085,00	1.085,00	1.085,00
Condensing cntrl. with pressure control valve for well water (for HP version)	1.653,00	1.653,00	1.653,00
Pressure gauges	326,00	326,00	326,00
Liquid receivers (standard on HP version)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)
Compressor discharge and shut-off valves	930,00	930,00	930,00
Hydraulic circuit accessories	182	192	202
Water manifolds (installation by client) SIGMA/LE-SIGMA/LE/HP	569,00	569,00	569,00
Electrical accessories	182	192	202
RS 485 serial interface	274,00	274,00	274,00
Power factor correction to $\cos\phi \geq 0,9$ (on external electrical panel)	1.188,00	1.188,00	1.188,00
Single operation voltage-free contacts	62,00	62,00	62,00
Remote-shared terminal (in addition to the standard one)	310,00	310,00	310,00
Miscellaneous accessories	182	192	202
Rubber antivibration mounts	470,00	470,00	470,00
Supply of totally pre-assembled unit	620,00	620,00	620,00
Wooden crate packaging	336,00	336,00	336,00
Special pallet/skid for shipping in container	207,00	207,00	207,00
"RAL" paint finish other than standard	620,00	620,00	620,00

#### The basic unit comprises:

- Certification to directive 97/23 EEC (PED);
- Main switch;
- Compressor fuses;
- Hour counter;
- Automatic compressor rotation;
- Liquid line solenoid valve.

# SIGMA/LE

262	282	302	322	392	422	522
12.809,00	13.687,00	14.048,00	14.203,00	18.386,00	19.884,00	20.246,00
15.133,00	16.114,00	16.579,00	16.734,00	21.640,00	23.448,00	23.861,00

262	282	302	322	392	422	522
651,00	651,00	651,00	651,00	651,00	651,00	651,00

262	282	302	322	392	422	522
1.085,00	1.085,00	2.686,00	2.686,00	2.686,00	2.686,00	2.686,00
1.653,00	1.653,00	3.409,00	3.409,00	3.409,00	3.409,00	3.409,00
326,00	326,00	326,00	326,00	326,00	326,00	326,00
1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)
930,00	930,00	982,00	982,00	982,00	982,00	1.137,00

262	282	302	322	392	422	522
569,00	569,00	569,00	569,00	569,00	569,00	569,00

262	282	302	322	392	422	522
274,00	274,00	274,00	274,00	274,00	274,00	274,00
1.240,00	1.292,00	1.292,00	1.292,00	1.292,00	1.343,00	1.343,00
62,00	62,00	62,00	62,00	62,00	62,00	62,00
310,00	310,00	310,00	310,00	310,00	310,00	310,00

262	282	302	322	392	422	522
470,00	470,00	470,00	470,00	708,00	708,00	708,00
620,00	620,00	620,00	620,00	620,00	620,00	620,00
336,00	336,00	336,00	336,00	414,00	414,00	414,00
207,00	207,00	207,00	207,00	259,00	259,00	259,00
620,00	620,00	620,00	620,00	1.085,00	1.085,00	1.085,00



**Condenserless units  
and water heat pumps  
with hermetic scroll compressors**



### SIGMA/LC

Condenserless unit.

#### Unit frame

Galvanized steel panels finished with epoxy-polyester powder paint (colour RAL 7032) baked. Removable panels with internal sound-absorbing mat insulation.

#### Compressors

Hermetic scroll compressors with thermal overload cut-out and crankcase heater.

#### Refrigerant circuits

Independent with solenoid valve, liquid valve, charging connection, sight glass, drier filter, thermostat expansion valve, high and low-pressure switches, safety device.

#### Evaporators

Braze-welded plate type with no-frost protection and mechanical flow switch.

#### Electrical panel

With main switch, contactors, power and control circuit protection, and compressor contactors.

**Microprocessor** control with function display.

#### Testing

Units are factory tested and supplied with oil charge.

### SIGMA/LC /HP

Reversible condensing unit (heat pump)

In addition to the components featured on model Sigma LC: liquid receiver and four-way diverting valve on each circuit.

### ACCESSORY VERSIONS

#### SIGMA/LC /LN

Low noise unit: compressor sound proofing by means of sound-absorbing mat in expanded polyurethane with internal lead layer.

### ACCESSORIES

- rubber antivibration mounts;
- water manifolds;
- condensing pressure control with fan speed control (air to -20 °C);
- double set point: settable via control panel. In any event switching is automatic according to the water temperature;
- RS 485 microprocessor serial interface card for remote supervision or tele-assistance via personal computer. Carel communication protocol integrated;
- pressure gauges;
- liquid receivers;
- remote-shared terminal (in addition to the one on-board the unit);

## SIGMA/LC - R407C TECHNICAL DATA

Unit size		182	192	202
<b>Nominal cooling capacity (*)</b>	kW	38,3	46,1	53,9
<b>Nominal heating capacity (**)</b>	kW	38,6	46,6	54,6
<b>Compressor</b>				
Quantity/Refrigerant circuits	n°	2/2	2/2	2/2
Cooling power input(*)	kW	12,3	14,7	17,1
Heating power input (**)	kW	13,5	16,4	19,3
Capacity steps	%	50 -100	41 -100	50 -100
<b>Evaporator characteristics</b>				
water content	l	2 x 1,9	2 x 2,6	2 x 2,6
Water flow rate	l/s	1,83	2,20	2,58
Pressure drops	kPa	23,7	18,0	24,4
<b>Noise levels (***)</b>				
Basic unit	dB(A)	57,2	58,0	58,1
LN version	dB(A)	54,7	55,1	55,4
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50
<b>Dimensions and weight</b>				
Length	mm	1356	1356	1356
Depth	mm	773	773	773
Height	mm	960	960	960
Shipping weight (#)	kg	348	361	374

Unit size		262	282	302	322
<b>Nominal cooling capacity (*)</b>	kW	62,4	70,8	76,1	81,4
<b>Nominal heating capacity (***)</b>	kW	63,1	71,6	77,2	82,8
<b>Compressor</b>					
Quantity/Refrigerant circuits	n°	2/2	2/2	2/2	2/2
Cooling power input (*)	kW	19,6	22,2	24,1	26,0
Heating power input (**)	kW	21,9	24,4	26,6	28,8
Capacity steps	%	45 -100	50 -100	46 -100	50 -100
<b>Evaporator characteristics</b>					
water content	l	2 x 2,9	2 x 2,9	2 x 3,6	2 x 3,6
Water flow rate	l/s	2,98	3,38	3,64	3,89
Pressure drops	kPa	26,8	34,4	27,2	31,2
<b>Noise levels (***)</b>					
Basic unit	dB(A)	59,6	60,0	60,1	60,5
LN version	dB(A)	56,8	57,2	57,4	57,6
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50
<b>Dimensions and weight</b>					
Length	mm	1356	1356	1356	1356
Depth	mm	773	773	773	773
Height	mm	960	960	960	960
Shipping weight (#)	kg	389	404	415	426

Unit size		392	422	522
<b>Nominal cooling capacity (*)</b>	kW	90,2	104,0	125,5
<b>Nominal heating capacity (**)</b>	kW	80,4	96,3	120,5
<b>Compressor</b>				
Quantity/Refrigerant circuits	n°	2/2	2/2	2/2
Cooling power input(*)	kW	30,5	37,0	46,3
Heating power input (**)	kW	27,1	33,0	41,4
Capacity steps	%	50 -100	50 -100	50 -100
<b>Evaporator characteristics</b>				
water content	l	2 x 4,2	2 x 5,2	2 x 6,3
Water flow rate	l/s	4,31	4,97	6,00
Pressure drops	kPa	26,3	22,9	23,4
<b>Noise levels (***)</b>				
Basic unit	dB(A)	60,6	60,7	61,4
LN version	dB(A)	57,8	57,8	58,6
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50
<b>Dimensions and weight</b>				
Length	mm	1856	1856	1856
Depth	mm	798	798	798
Height	mm	960	960	960
Shipping weight (#)	kg	513	521	531

(\*\*) Condensation temperature 50 °C; evaporator inlet/outlet water temperature 12-7 °C.

(\*\*) Condenser inlet/outlet water temperature 40-45 °C; evaporation temperature -5 °C.

(\*\*\*) Sound pressure levels measured in free field conditions at 1m from the unit.

(#) For heat pump units increase weight by 3%.

# SIGMA/LC

Basic unit	182	192	202
SIGMA/LC	11.517,00	12.034,00	12.602,00
SIGMA/LC/HP	14.040,00	14.710,00	15.330,00
Accessory	182	192	202
LN (low noise version)	651,00	651,00	651,00
Refrigerant circuit accessories	182	192	202
Double Set Point (low/high temperature) (2)	3.099,00	3.099,00	3.099,00
Pressure gauges	326,00	326,00	326,00
Liquid receivers (standard on HP version)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)
Compressor discharge and suction shut-off valve	930,00	930,00	930,00
Hydraulic circuit accessories	182	192	202
Water manifolds (installation by client) SIGMA/LC-SIGMA/LC/HP	569,00	569,00	569,00
Electrical accessories	182	192	202
RS 485 serial interface	274,00	274,00	274,00
Power factor correction to $\cos\phi \geq 0,9$ (on external electrical panel)	1.188,00	1.188,00	1.188,00
Single operation voltage-free contacts	62,00	62,00	62,00
Remote-shared terminal (in addition to the standard one)	310,00	310,00	310,00
Miscellaneous accessories	182	192	202
Rubber antivibration mounts	259,00	259,00	362,00
Supply of totally pre-assembled unit	620,00	620,00	620,00
Wooden crate packaging	336,00	336,00	336,00
Special pallet/skid for shipping in container	207,00	207,00	207,00
"RAL" paint finish other than standard	620,00	620,00	620,00

#### The basic unit includes:

- Certification to directive 97/23 EEC (PED);
- Main switch;
- Compressor fuses;
- Automatic compressor rotation;
- Hour meter;
- Flowswitch;
- Liquid line solenoid valve.

(1) Delivered disassembled.

(2) With double expansion valves + solenoid valves, the evaporator of the "double set point" unit is sized according to operation at high temperatures. The change of set-point is possible via the control panel only.

# SIGMA/LC

262	282	302	322	392	422	522
13.532,00	14.461,00	14.823,00	15.081,00	19.471,00	21.072,00	21.433,00
16.470,00	17.550,00	17.970,00	18.230,00	23.440,00	25.300,00	25.770,00

262	282	302	322	392	422	522
651,00	651,00	651,00	651,00	651,00	651,00	651,00

262	282	302	322	392	422	522
3.099,00	3.099,00	3.099,00	3.099,00	3.099,00	3.099,00	3.099,00
326,00	326,00	326,00	326,00	326,00	326,00	326,00
1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)
930,00	930,00	982,00	982,00	982,00	982,00	1.137,00

262	282	302	322	392	422	522
569,00	569,00	569,00	569,00	569,00	569,00	569,00

262	282	302	322	392	422	522
274,00	274,00	274,00	274,00	274,00	274,00	274,00
1.240,00	1.292,00	1.292,00	1.292,00	1.292,00	1.343,00	1.343,00
62,00	62,00	62,00	62,00	62,00	62,00	62,00
310,00	310,00	310,00	310,00	310,00	310,00	310,00

262	282	302	322	392	422	522
362,00	362,00	465,00	362,00	465,00	465,00	465,00
620,00	620,00	620,00	620,00	620,00	620,00	620,00
336,00	336,00	336,00	336,00	414,00	414,00	414,00
207,00	207,00	207,00	207,00	259,00	259,00	259,00
620,00	620,00	620,00	620,00	1.085,00	1.085,00	1.085,00

**Condenserless units and water heat pumps with reciprocating semi-hermetic compressors**

### OMEGA/LC

Condenserless unit

#### Unit frame

Galvanized steel panels finished with epoxy-polyester powder paint (colour RAL 7032) baked.

#### Compressors

reciprocating semi-hermetic type, each with two capacity steps, equipped with thermal overload cutout. Part-Winding start-up.

#### Refrigerant circuits

Independent with anti-vibration mounts on gas pipelines (except for mod. 501-702-802-1002), solenoid valve, liquid valve, charging connection, sight glass, drier filter, thermostatic expansion valve, high and low-pressure switches, safety device.

#### Evaporators

Braze-welded plate type with no-frost protection and mechanical flow switch.

#### Electrical panel

With main switch, contactors, power and control circuit protection, and compressor contactors.

**Microprocessor** control with function display.

#### Testing

Units are factory tested and supplied with oil charge.

### OMEGA/LC /HP

Reversible condensing unit (heat pump)

In addition to the components featured on model Omega/LC: suction separator, liquid receiver and four-way diverting valve on each circuit.

### ACCESSORY VERSIONS

#### OMEGA/LC /DC

Unit with 100% heat recovery condenser.

Not available for all /HP version.

#### OMEGA/LC /DS

Unit with desuperheaters for partial recovery of heat rejection (20%).

#### OMEGA LC /LN

Low noise unit: anti-vibration mounts on gas pipelines, silencer on compressor discharge line and metal removable panels with internal soundproofing mat insulation in expanded polyurethane.

### ACCESSORIES

- rubber or spring type anti-vibration mounts;
- electronic Soft Starters (in electrical panel located on the opposite side to the standard panel);
- water manifolds;
- condensing pressure control with fan speed control (air to -20 °C);
- double set point: on units with 2 compressors the set points can be entered via the control panel or digital input (specify on order). In any event switching is automatic according to the water temperature;
- microprocessor serial interface card for remote supervision or tele-assistance via personal computer. RS485 on single compressor units, RS422 on 2-compressor units, both with Carel communication protocol integrated;
- liquid receivers;
- liquid line solenoid valve.

## OMEGA/LC - R407C TECHNICAL DATA

Unit size		501	601	701	702
<b>Nominal cooling capacity (*)</b>	kW	118,4	144,8	164,9	167,0
<b>Nominal heating capacity (***)</b>	kW	117,1	139,8	161,2	164,4
<b>Compressors</b>					
Quantity/Refrigerant circuits	n°	1/1	1/1	1/1	2/2
Cooling power input (*)	kW	40,4	47,0	55,0	57,1
Heating power input (**)	kW	37,2	42,8	51,2	52,6
Capacity steps	%	66-100	75-100	75-100	33-50-83-100
<b>Evaporator characteristics</b>					
water content	l	1 x 10,5	1 x 14,3	1 x 15,7	2 x 8,4
Water flow rate	l/s	5,66	6,68	7,88	7,98
Pressure drops	kPa	35,1	32,2	40,4	28,0
<b>Noise levels (***)</b>					
Basic unit	dB(A)	69,5	71,0	72,0	72,0
LN version	dB(A)	66,0	67,0	67,0	68,0
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50
<b>Dimensions and weight</b>					
Length	mm	1056	1056	1056	1806
Depth	mm	1056	1056	1056	1056
Height	mm	1700	1700	1700	1700
Shipping weight (#)	kg	573	675	688	911

Unit size		802	1002	1202	1502
<b>Nominal cooling capacity (*)</b>	kW	190,5	236,8	289,6	329,7
<b>Nominal heating capacity (***)</b>	kW	185,9	234,2	279,5	322,5
<b>Compressors</b>					
Quantity/Refrigerant circuits	n°	2/2	2/2	2/2	2/2
Cooling power input (*)	kW	66,0	80,8	94,0	110,0
Heating power input (**)	kW	60,0	74,4	85,6	102,4
Capacity steps	%	33-50-83-100	33-50-83-100	38-50-88-100	38-50-88-100
<b>Evaporator characteristics</b>					
water content	l	2 x 8,4	2 x 10,5	2 x 14,3	2 x 15,7
Water flow rate	l/s	9,10	11,31	13,37	15,75
Pressure drops	kPa	35,2	35,1	32,2	40,4
<b>Noise levels (***)</b>					
Basic unit	dB(A)	73,0	73,0	74,0	74,0
LN version	dB(A)	68,5	69,0	70,0	70,0
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50
<b>Dimensions and weight</b>					
Length	mm	1806	1806	1806	1806
Depth	mm	1056	1056	1056	1056
Height	mm	1700	1700	1700	1700
Shipping weight (#)	kg	964	1040	1247	1272

(\*\*) Condensation temperature 50 °C; evaporator inlet/outlet water temperature 12-7 °C.

(\*\*) Condenser inlet/outlet water temperature 40-45 °C; evaporation temperature -5 °C.

(\*\*\*) Sound pressure levels measured in free field conditions at 1m from the unit on the side of the electrical panel.

(#) For heat pump units increase weight by 3%.

# OMEGA/LC

Basic unit		501	601
OMEGA/LC		19.471,00	22.002,00
OMEGA/LC/HP		23.860,00	26.850,00
Accessory		501	601
DC - Total recovery (100% of heat rejection) excluding HP unit		4.545,00	4.907,00
DS - Partial recovery (20% of heat rejection)		1.705,00	1.705,00
LN (Low noise version)		2.046,00	2.170,00
Refrigerant circuit accessories		501	601
Double Set Point (low/high temperature) (1)		2.015,00	2.015,00
Capacity 3-step		1.963,00	1.963,00
Capacity 6-step		-	-
Liquid receivers (standard on HP and DC versions)		724,00 (1x24L)	724,00 (1x24L)
Compressor suction valves		414,00	620,00
Hydraulic circuit accessories		501	601
Water manifolds		OMEGA/LC	-
(installation by client)		OMEGA/LC/DS	-
		OMEGA/LC/HP	-
		OMEGA/LC/HP/DS	-
Electrical accessories		501	601
Electronic Soft Starters (2)		5.630,00	5.836,00
RS 485 serial interface (RS 422 da tre gradini in poi)		274,00	274,00
Power factor correction to $\cos\theta \geq 0,9$		1.292,00	1.292,00
Single operation voltage-free contacts		31,00	31,00
Miscellaneous accessories		501	601
Rubber antivibration mounts		749,00	749,00
Rubber antivibration mounts		470,00	470,00
Supply in pre-assembled modules (3)		-	-
Supply of totally pre-assembled unit		620,00	620,00
Wooden crate packaging		336,00	336,00

# OMEGA/LC

701	702	802	1002	1202	1502
24.274,00	31.143,00	32.796,00	36.049,00	41.885,00	45.965,00
29.540,00	37.800,00	39.710,00	43.690,00	50.660,00	55.570,00

701	702	802	1002	1202	1502
5.113,00	7.386,00	7.799,00	9.038,00	9.865,00	10.278,00
1.963,00	3.048,00	3.048,00	3.357,00	3.357,00	3.874,00
2.170,00	2.908,00	2.991,00	2.991,00	3.234,00	3.234,00

701	702	802	1002	1202	1502
2.015,00	2.789,00	2.789,00	2.789,00	2.789,00	2.789,00
1.963,00	-	-	-	-	-
-	1.240,00	1.240,00	1.240,00	1.240,00	1.240,00
724,00 (1x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)
620,00	827,00	827,00	827,00	1.240,00	1.240,00

701	702	802	1002	1202	1502
-	569,00	569,00	569,00	569,00	569,00
-	1.292,00	1.292,00	1.292,00	1.292,00	1.292,00
-	569,00	569,00	569,00	569,00	569,00
-	1.292,00	1.292,00	1.292,00	1.292,00	1.292,00

701	702	802	1002	1202	1502
6.043,00	11.259,00	11.259,00	11.259,00	11.672,00	12.086,00
274,00	274,00	274,00	274,00	274,00	274,00
1.343,00	1.963,00	1.963,00	2.583,00	2.583,00	2.686,00
31,00	62,00	62,00	62,00	62,00	62,00

701	702	802	1002	1202	1502
749,00	1.121,00	1.121,00	1.121,00	1.121,00	1.121,00
470,00	708,00	708,00	708,00	708,00	708,00
-	1.292,00	1.292,00	1.292,00	1.292,00	1.292,00
620,00	1.240,00	1.240,00	1.240,00	1.240,00	1.240,00
336,00	517,00	517,00	517,00	517,00	517,00



Miscellaneous accessories	501	601
Special pallet/skid for shipping in container	207,00	207,00
"RAL" paint finish other than standard	1.085,00	1.085,00

#### The basic unit includes:

- Certification to directive 97/23 EEC (PED);
- Main switch;
- Compressor fuses;
- Hour meter;
- Automatic compressor rotation;
- High and low-pressure gauges;
- Part-Winding start-up;
- Compressor capacity steps (2 per compressor);
- Compressor discharge valves;
- Liquid line solenoid valve;
- Flowswitch.

- (1) With double thermostat valves + solenoid valves, the evaporator of the "double set point" unit is sized according to operation at high temperatures. The change of set-point on single compressor models is possible via the control panel only; on units with 2 compressors the set points can be entered via the control panel or digital input (specify on order).
- (2) The electrical panel will be located on the opposite side to the standard one: the overall length of the unit must be increased of 300 mm.
- (3) The unit is delivered as a single block, with the possibility of disassembly into a number of modules equal to the number of compressors.
- (-) Not available

# OMEGA/LC

701	702	802	1002	1202	1502
207,00	259,00	259,00	259,00	259,00	259,00
1.085,00	1.705,00	1.705,00	1.705,00	1.705,00	1.705,00

**Condenserless units  
and water heat pumps  
with screw compressors**

### OMEGA.V/LC

Condenserless unit

#### Unit frame

Galvanized steel panels finished with epoxy-polyester powder paint (colour RAL 7032) baked.

#### Compressor

With two semi-hermetic screws, male rotor-female rotor direction transmission, each with two capacity steps, equipped with crankcase heater and thermal overload cutout. Delta/Star start-up

#### Refrigerant circuits

Independent with compressor discharge valve, solenoid valve, liquid valve, charging connection, sight glass, drier filter, thermostatic expansion valve, high and low-pressure gauges and switches, safety device.

#### Evaporators

Braze-welded plate type with no-frost protection and mechanical flow switch.

#### Electrical panel

With main switch, contactors, power and control circuit protection, and compressor contactors.

**Microprocessor** control with function display.

#### Testing

Units are factory tested and supplied with oil charge.

### OMEGA.V/LC /HP

Reversible condensing unit (heat pump)

In addition to the components featured on model Omega V/LC: suction separator, liquid receiver and four-way diverging valve on each circuit.

### ACCESSORY VERSIONS

#### OMEGA.V/LC /DC

Unit with 100% heat recovery condenser.

Not available for all /HP.

#### OMEGA.V/LC /DS

Unit with desuperheaters for partial recovery of heat rejection (20%).

#### OMEGA.V/LC /LN

Low noise unit: solid removable panels with internal soundproofing mat insulation in expanded polyurethane.

### ACCESSORIES

- rubber or spring type anti-vibration mounts;
- water manifolds;
- condensing pressure control with fan speed control (air to -20 °C);
- double set point: on units with 2 compressors the set points can be entered via the control panel or digital input (specify on order). In any event switching is automatic according to the water temperature;
- microprocessor serial interface card for remote supervision or tele-assistance via personal computer. RS485 on single compressor units, RS422 on 2-compressor units, both with Carel communication protocol;
- liquid receivers;

## OMEGA.V/LC - R407C TECHNICAL DATA

Unit size		40	50	60	80	100
<b>Nominal cooling capacity (*)</b>	kW	124,6	146,9	167,2	249,3	293,9
<b>Nominal heating capacity (**)</b>	kW	123,7	145,7	167,5	247,4	291,3
<b>Compressors</b>						
Quantity/Refrigerant circuits	n°	1/1	1/1	1/1	2/2	2/2
Cooling power input (*)	kW	41,0	48,3	56,6	82,0	96,6
Heating power input (**)	kW	41,8	49,3	57,8	83,7	98,6
Capacity steps	%	45-100	45-100	45-100	23-50-73-100	23-50-73-100
<b>Evaporator characteristics</b>						
Water content	l	1x10,5	1x14,3	1x15,7	2x10,5	2x14,3
Water flow rate	l/s	5,95	7,02	7,99	11,91	14,04
Pressure	kPa	38,6	35,4	41,5	38,6	35,3
<b>Noise levels (***)</b>						
Basic unit	dB(A)	69,0	70,0	71,0	72,0	73,0
LN version	dB(A)	65,0	65,0	66,0	68,0	68,0
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50
<b>Dimensions and weight</b>						
Length	mm	1056	1056	1056	1806	1806
Depth	mm	1556	1556	1556	1556	1556
Height	mm	1700	1700	1700	1700	1700
Shipping weight (#)	kg	729	758	776	1334	1391

Unit size		120
<b>Nominal cooling capacity (*)</b>	kW	334,3
<b>Nominal heating capacity (**)</b>	kW	334,9
<b>Compressors</b>		
Quantity/Refrigerant circuits	n°	2/2
Cooling power input (*)	kW	113,3
Heating power input (**)	kW	115,6
Capacity steps	%	23-50-73-100
<b>Evaporator characteristics</b>		
Water content	l	2x15,7
Water flow rate	l/s	15,97
Pressure	kPa	41,5
<b>Noise levels (***)</b>		
Basic unit	dB(A)	74,0
LN version	dB(A)	69,0
<b>Power supply</b>	V/f/Hz	400/3~/50
<b>Dimensions and weight</b>		
Length	mm	1806
Depth	mm	1556
Height	mm	1700
Shipping weight (#)	kg	1428

(\*\*) Condensation temperature 50 °C; evaporator inlet/outlet water temperature 12-7 °C.

(\*\*) Condenser inlet/outlet water temperature 40-45 °C; evaporation temperature -5 °C.

(\*\*\*) Sound pressure levels measured in free field conditions at 1m from the unit on the side of the electrical panel.

(#) For heat pump units increase weight by 3%.

# OMEGA.V/LC

Basic unit		40	50
OMEGA.V/LC		28.509,00	29.490,00
OMEGA.V/LC/HP		34.700,00	35.840,00
Accessory		40	50
DC - Total recovery (100% of heat rejection) excluding HP unit		4.545,00	4.907,00
DS - Partial recovery (20% of heat rejection)		1.705,00	1.705,00
LN (low noise version)		2.634,00	2.634,00
Refrigerant circuit accessories		40	50
Double set point (low/high temperature) (1)		2.015,00	2.015,00
Capacity 3-step		1.963,00	1.963,00
Capacity 6-step		–	–
Continuous capacity control		–	–
Liquid receivers (standard on HP and DC versions)		724,00 (1x24L)	724,00 (1x24L)
Compressor suction valves		620,00	620,00
Hydraulic circuit accessories		40	50
Water manifolds (installation by client)	OMEGA.V/LC	–	–
	OMEGA.V/LC/DS	–	–
	OMEGA.V/LC/HP	–	–
	OMEGA.V/LC/HP/DS	–	–
Electrical accessories		40	50
RS 485 serial interface (RS 422 da tre gradini in poi)		274,00	274,00
Power factor correction to $\cos\theta \geq 0,9$		1.292,00	1.292,00
Single operation voltage-free contacts		31,00	31,00
Miscellaneous accessories		40	50
Rubber antivibration mounts		749,00	749,00
Rubber antivibration mounts		470,00	470,00
Totally pre-assembled modules (2)		–	–
Supply for totally pre-assembled unit		620,00	620,00
Wooden crate packaging		388,00	388,00

# OMEGA.V/LC

60	80	100	120
30.110,00	54.952,00	57.224,00	58.102,00
36.560,00	66.310,00	69.100,00	70.130,00

60	80	100	120
5.113,00	9.038,00	9.865,00	10.278,00
1.963,00	3.357,00	3.357,00	3.874,00
2.634,00	3.869,00	3.869,00	3.869,00

60	80	100	120
2.015,00	2.789,00	2.789,00	2.789,00
1.963,00	–	–	–
–	1.240,00	1.240,00	1.240,00
–	1.549,00	1.549,00	1.549,00
724,00 (1x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)	1.447,00 (2x24L)
620,00	1.240,00	1.240,00	1.240,00

60	80	100	120
–	569,00	569,00	569,00
–	1.292,00	1.292,00	1.292,00
–	569,00	569,00	569,00
–	1.292,00	1.292,00	1.292,00

60	80	100	120
274,00	274,00	274,00	274,00
1.343,00	2.583,00	2.583,00	2.686,00
31,00	62,00	62,00	62,00

60	80	100	120
749,00	1.121,00	1.121,00	1.121,00
470,00	708,00	708,00	708,00
–	1.292,00	1.292,00	1.292,00
620,00	1.240,00	1.240,00	1.240,00
388,00	641,00	641,00	641,00

Miscellaneous accessories	40	50
Special pallet/skid for shipping in container	217,00	217,00
"RAL" paint finish other than standard	1.602,00	1.602,00

#### The basic unit includes:

- Certification to directive 97/23 EEC (PED);
- Main switch;
- Compressor fuses;
- Hour meter;
- Automatic compressor rotation;
- High and low pressure gauges;
- Delta/Star start-up;
- Compressor capacity steps (2 per compressor);
- Compressor discharge valves;
- Liquid line solenoid valve;
- Flowswitch.

- (1) With double thermostat valves + solenoid valves, the evaporator of the "double set point" unit is sized according to operation at high temperatures. The change of set-point on single compressor models is possible via the control panel only; on units with 2, 3 or 4 compressors the set points can be entered via the control panel or digital input (specify on order).
- (2) The unit is delivered as a single block, with the possibility of disassembly into a number of modules equal to the number of compressors.
- (-) Not available.

# OMEGA.V/LC

60	80	100	120
217,00	336,00	336,00	336,00
1.602,00	3.048,00	3.048,00	3.048,00



## Water type condenserless units with screw compressors

### OMEGA.V 2001/LC

Condenserless unit

#### Unit frame

Galvanized steel framework finished with epoxy-polyester powder paint baked.

#### Compressor

With two semi-hermetic screws, male rotor-female rotor direction transmission, each with two capacity steps, equipped with crankcase heater and thermal overload cutout. Delta/Star start-up

#### Refrigerant circuits

Independent with compressor discharge shut-off valve, solenoid valve, liquid valve, charging connection sight glass, drier filter, thermostatic expansion valve, high and low-pressure switches, safety device.

#### Evaporator

With dry expansion shell and tube type, casing and no-frost protection.

#### Electrical panel

With main switch, contactors, power and control circuit protection, and compressor contactors.

**Microprocess** controll with function display.

#### Testing

Units are factory tested and supplied with oil charge.

### ACCESSORY VERSIONS

#### OMEGA.V 2001/LC /DC

Unit with 100% heat recovery condenser.

#### OMEGA.V 2001/LC /DS

Unit with desuperheaters for partial recovery of heat rejection (20%).

#### OMEGA.V 2001/LC /LN

Low noise unit: compressor with sound-proofed enclosure in paint-finished sheet discharge, with interior sound absorbing foam + high density mat. for sound insulation.

### ACCESSORIES

- condensing pressure control with fan speed control (air to -20 °C) for remote condenser;
- outlet water temperature control;
- double set point: the set points can be entered via the control panel or digital input (specify on order). In any event switching is automatic according to the water temperature;
- RS 485 microprocessor serial interface card for remote supervision or tele-assistance via personal computer. Carel or Modbus communication protocol;
- continuous capacity control from 100% to 50% of compressor capacity (from 100% to 25% also possible);
- set point variable via remote signal;
- remote-shared terminal (in addition to the standard on board unit);

## OMEGA.V 2001/LC - R407C TECHNICAL DATA

Unit size		19.1	22.1	27.1	33.1	38.2	39.1	43.1	44.2
<b>Nominal cooling capacity (*)</b>	kW	170,8	197,4	245,2	296,5	341,6	348,5	389,0	394,8
<b>Compressors</b>									
Quantity/Refrigerant circuits	n°	1/1	1/1	1/1	1/1	2/2	1/1	1/1	2/2
Cooling power input (*)	kW	56,6	65,4	78,9	94,2	113,1	105,3	116,7	130,8
Capacity steps	%	50-100	50-100	50-100	50-100	25-50-75-100	50-100	50-100	25-50-75-100
<b>Evaporator characteristics</b>									
water content	l	1 x 59,6	1 x 104,6	1 x 90,3	1 x 104,3	1 x 166,7	1 x 178,6	1 x 140,1	1 x 140,1
Water flow rate	l/s	8,16	9,43	11,71	14,16	16,32	16,63	18,59	18,86
Pressure drops	kPa	19,1	24,6	52,6	63,9	46,7	29,9	50,6	32,5
<b>Noise levels (**)</b>									
Basic unit	dB(A)	69,9	70,5	71,9	73,3	73,4	74,9	76,6	74,1
LN version	dB(A)	65,4	67,1	69,1	70,6	69,3	72,2	73,5	70,7
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50

Unit size		47.1	52.1	54.2	58.1	60.2	65.2	71.2
<b>Nominal heating capacity (*)</b>	kW	423,2	469,9	494,3	523,5	540,5	588,2	643,5
<b>Compressors</b>								
Quantity/Refrigerant circuits	n°	1/1	1/1	1/1	1/1	1/1	1/1	
Cooling power input (*)	kW	126,7	147,1	158,0	163,7	173,0	188,1	199,4
Capacity steps	%	50-100	50-100	25-50-75-100	50-100	25-50-75-100	25-50-75-100	25-50-75-100
<b>Evaporator characteristics</b>								
water content	l	1 x 149,4	1 x 268,4	1 x 249,3	1 x 249,3	1 x 249,3	1 x 240,0	1 x 210,0
Water flow rate	l/s	20,21	22,45	23,62	25,01	25,82	28,10	30,74
Pressure drops	kPa	55,2	37,2	23,2	25,8	27,4	45,8	50,0
<b>Noise levels (**)</b>								
Basic unit	dB(A)	76,6	77,1	75,7	79,6	75,8	75,9	77,3
LN version	dB(A)	73,6	73,8	72,6	76,3	72,9	73,2	74,5
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50

Unit size		77.2	82.2	86.2	90.2	93.2	104.2	116.2
<b>Nominal heating capacity (*)</b>	kW	693,5	740,2	781,3	807,2	839,5	936,1	1042,8
<b>Compressors</b>								
Quantity/Refrigerant circuits	n°	1/1	1/1	1/1	1/1	1/1	1/1	
Cooling power input (*)	kW	210,5	222,1	233,5	243,1	253,0	293,9	327,2
Capacity steps	%	25-50-75-100	25-50-75-100	25-50-75-100	25-50-75-100	25-50-75-100	25-50-75-100	25-50-75-100
<b>Evaporator characteristics</b>								
water content	l	1 x 210,0	1 x 285,0	1 x 285,0	1 x 285,0	1 x 285,0	1 x 438,0	1 x 420,0
Water flow rate	l/s	33,13	35,36	37,32	38,56	40,10	44,72	49,82
Pressure drops	kPa	57,6	23,9	26,5	28,2	30,4	71,2	67,3
<b>Noise levels (**)</b>								
Basic unit	dB(A)	78,3	78,8	79,6	80,0	80,2	81,9	81,8
LN version	dB(A)	75,5	75,9	76,8	76,9	77,3	78,9	78,7
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50

(\*) Condensation temperature 50 °C; evaporator inlet/outlet water temperature 12-7°C.

(\*\*) Sound pressure levels measured in free field conditions at 1m from the unit, according to ISO 3746.

# OMEGA.V 2001/LC

Basic unit	19.1	22.1	27.1	33.1	38.2	39.1	43.1
OMEGA.V 2001 LC	30.284,00	33.205,00	38.192,00	42.056,00	59.894,00	49.650	54.008,00
Accessory	19.1	22.1	27.1	33.1	38.2	39.1	43.1
DC - Total recovery (100% of heat rejection)	6.043,00	6.456,00	8.935,00	8.935,00	12.085,00	9.296,00	9.296,00
DS - Partial recovery (20% of heat rejection)	2.376,00	2.531,00	2.841,00	3.460,00	4.751,00	3.641,00	3.641,00
LN (Low noise version)	2.488,00	2.488,00	2.488,00	2.488,00	4.457,00	3.371,00	3.371,00
Refrigerant circuit accessories	19.1	22.1	27.1	33.1	38.2	39.1	43.1
Double set point (low/high temperature) (1)	1.911,00	1.911,00	2.117,00	2.117,00	3.822,00	2.117,00	2.117,00
Pressure gauges	163,00	163,00	163,00	163,00	326,00	163,00	163,00
Capacity 3-step	620,00	620,00	620,00	620,00	-	620,00	620,00
Capacity 6-step	-	-	-	-	1.239,00	-	-
Continuous capacity control	775,00	775,00	775,00	775,00	1.549,00	775,00	775,00
Liquid receiver (standard on DC version)	For quotes, contact the sales office						
Compressor suction valves	620,00	620,00	826,00	826,00	1.240,00	1.385,00	1.385,00
Electronic expansion valve	2.531,00	2.531,00	2.531,00	2.531,00	5.062,00	2.531,00	2.531,00
Electrical accessories	19.1	22.1	27.1	33.1	38.2	39.1	43.1
outlet water temperature control	165,00	165,00	165,00	165,00	165,00	165,00	165,00
RS 485 serial interface	274,00	274,00	274,00	274,00	274,00	274,00	274,00
Power factor correction to $\cos\theta \geq 0,9$	1.343,00	1.343,00	1.343,00	1.808,00	2.686,00	2.137,00	2.355,00
Set point variation via remote signal (0-1V, 0-10V, 0-4mA, 0-20mA)	362,00	775,00	362,00	362,00	775,00	362,00	362,00
Single operation voltage-free contacts	60,00	60,00	60,00	60,00	120,00	60,00	60,00
Remote-shared terminal	671,00	671,00	671,00	671,00	671,00	671,00	671,00
Miscellaneous accessories	19.1	22.1	27.1	33.1	38.2	39.1	43.1
Rubber antivibration mounts	413,00	413,00	413,00	413,00	413,00	413,00	413,00
Spring antivibration mounts	775,00	775,00	775,00	775,00	775,00	775,00	775,00
Wooden crate packaging	1.421,00	1.603,00	1.603,00	1.635,00	1.933,00	1.661,00	1.661,00

## Totally pre-assembled units:

- all models can be supplied pre-assembled (without extra charge). In this case, the unit is delivered without refrigerant or testing.

## The basic unit includes:

- Certification to directive 97/23 EEC (PED);
- Main switch
- Compressor fuses
- Hour meter
- Automatic compressor rotation
- Liquid line solenoid valve

- (1) With double thermostat valves + solenoid valves, the evaporator of the "double set point" unit is sized according to operation at high temperatures. the set points can be entered via the control panel or digital input (specify on order)

# OMEGA.V 2001/LC

44.2	47.1	52.1	54.2	58.1	60.2	65.2	71.2	77.2	82.2	86.2	90.2	93.2	104.2	116.2
63.578,00	59.400,00	66.229,00	76.878,00	72.295,00	79.934,00	83.933,00	91.616,00	96.468,00	107.612,00	112.374,00	116.688,00	121.046,00	131.605,00	144.411,00

44.2	47.1	52.1	54.2	58.1	60.2	65.2	71.2	77.2	82.2	86.2	90.2	93.2	104.2	116.2
12.912,00	9.632,00	10.019,00	17.870,00	10.019,00	13.944,00	17.869,00	18.231,00	18.592,00	18.592,00	18.592,00	18.928,00	19.264,00	20.039,00	20.039,00

5.061,00	3.770,00	3.925,00	5.681,00	3.925,00	6.301,00	6.921,00	7.101,00	7.282,00	7.282,00	7.282,00	7.411,00	7.540,00	7.850,00	7.850,00
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4.457,00	3.371,00	3.371,00	4.457,00	3.371,00	4.457,00	4.457,00	5.973,00	5.973,00	5.973,00	5.973,00	5.973,00	5.973,00	5.973,00	5.973,00
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44.2	47.1	52.1	54.2	58.1	60.2	65.2	71.2	77.2	82.2	86.2	90.2	93.2	104.2	116.2
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3.822,00	2.117,00	2.117,00	4.235,00	2.117,00	4.235,00	4.235,00	4.235,00	4.235,00	4.235,00	4.235,00	4.235,00	4.235,00	4.235,00	4.235,00
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326,00	163,00	163,00	326,00	163,00	326,00	326,00	326,00	326,00	326,00	326,00	326,00	326,00	326,00	326,00
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-	620,00	620,00	-	620,00	-	-	-	-	-	-	-	-	-	-
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1.239,00	-	-	1.239,00	-	1.239,00	1.239,00	1.239,00	1.239,00	1.239,00	1.239,00	1.239,00	1.239,00	1.239,00	1.239,00
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1.549,00	775,00	775,00	1.549,00	775,00	1.549,00	1.549,00	1.549,00	1.549,00	1.549,00	1.549,00	1.549,00	1.549,00	1.549,00	1.549,00
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For quotes, contact the sales office

1.240,00	1.960,00	1.960,00	1.652,00	1.960,00	1.652,00	1.652,00	2.211,00	2.770,00	2.770,00	2.770,00	3.345,00	3.920,00	3.920,00	3.920,00
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5.062,00	2.531,00	2.531,00	5.062,00	2.531,00	5.062,00	5.062,00	5.062,00	5.062,00	5.062,00	5.062,00	5.062,00	5.062,00	5.062,00	5.062,00
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44.2	47.1	52.1	54.2	58.1	60.2	65.2	71.2	77.2	82.2	86.2	90.2	93.2	104.2	116.2
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165,00	165,00	165,00	165,00	165,00	165,00	165,00	165,00	165,00	165,00	165,00	165,00	165,00	165,00	165,00
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274,00	274,00	274,00	274,00	274,00	274,00	274,00	274,00	274,00	274,00	274,00	274,00	274,00	274,00	274,00
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2.686,00	2.575,00	2.849,00	2.686,00	3.177,00	3.151,00	3.616,00	5.061,00	4.274,00	4.492,00	4.710,00	4.930,00	5.150,00	5.698,00	6.354,00
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775,00	362,00	362,00	775,00	362,00	775,00	775,00	775,00	775,00	775,00	775,00	775,00	775,00	775,00	775,00
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120,00	60,00	60,00	120,00	60,00	120,00	120,00	60,00	120,00	120,00	120,00	120,00	120,00	120,00	120,00
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671,00	671,00	671,00	671,00	671,00	671,00	671,00	671,00	671,00	671,00	671,00	671,00	671,00	671,00	671,00
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44.2	47.1	52.1	54.2	58.1	60.2	65.2	71.2	77.2	82.2	86.2	90.2	93.2	104.2	116.2
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413,00	413,00	413,00	826,00	413,00	826,00	826,00	826,00	826,00	826,00	826,00	826,00	826,00	826,00	826,00
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775,00	775,00	775,00	1.550,00	775,00	1.550,00	1.550,00	1.550,00	1.550,00	1.550,00	1.550,00	1.550,00	1.550,00	1.550,00	1.550,00
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1.933,00	1.661,00	1.718,00	1.984,00	1.718,00	1.984,00	1.984,00	2.262,00	2.262,00	2.365,00	2.365,00	2.365,00	2.365,00	2.365,00	2.454,00
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## Air conditioners and split air/air heat pumps with hermetic scroll compressors



### DELTA 2002

Air conditioner

#### Unit frame

With galvanized steel frame and epoxy-polyester powder paint baked. The two sections are separate, both equipped with removable panelling insulated with an interior sound-absorbing mat.

#### Compressors

Hermetic scroll compressors, connected in parallel (tandem). Equipped with crankcase heater, thermal cutout, sight glass and oil equalisation line.

#### Refrigerant circuit

Includes: solenoid valve on liquid line, liquid valve, charging connection, sight glass, drier filter, thermostat expansion valve, high and low-pressure switches, safety device

#### Condenser

High performance finned coil with metal guard.

#### Condenser side fans

Centrifugal with 4-pole electric 3-phase motors, belt/pulley drive and safety guard on delivery outlet. Vertical air flow (horizontal on request).

Axial version on request with directly coupled 6-pole electric motors and safety guard.

#### Evaporator

High performance finned coil with copper tubes and aluminium fins.

#### Evaporator side fans

Centrifugal with 4-pole electric 3-phase motors, belt/pulley drive and safety guard on delivery outlet. Horizontal air flow (vertical on request).

#### Air filter

Synthetic, regenerable and self-extinguishing with EU3 filtration grade. Mounted on suction and accessible from both sides.

#### Electrical panel

With main switch, power and control circuit protection, contactors for compressors and fans, terminals for external enabling, voltage-free contacts for general alarm.

**Microprocessor** control with function display and control panel for remote installation.

#### Testing

Units are factory tested and supplied with oil charge.

Refrigerant fluid charged in condensing unit section; evaporating section supplied with nitrogen charge.

### DELTA 2002 /HP

Reversible heat pump

In addition to the components featured on model Delta 2002: liquid receiver, four-way diverting valve and additional thermostatic expansion valve. Cycle inversion defrost function.

### ACCESSORY VERSIONS

#### DELTA /LN

Low noise unit: soundproofed compressor's vane with interior sound-absorbing mat insulation for optimal soundproofing quality.

### ACCESSORIES

- condensing pressure control:
  - with modulating damper (air to -12 °C), for units with centrifugal fans;
  - with fan speed control (air to -20 °C), for units with axial fans.
 in both cases signals are delivered from pressure transducers;
- electric heating coil;
- water heating coil, with or without 3-way valve;
- condenser coils with special treatments;
- liquid receivers;
- RS 485 microprocessor serial interface card for remote supervision or tele-assistance via personal computer. Carel communication protocol integrated;
- user terminal on board condensing unit.

## DELTA 2002 - R407C TECHNICAL DATA

Unit size		3.2	4.2	5.2
<b>Total nominal cooling capacity (*)</b>	kW	39,5	47,5	55,5
<b>sensible nominal cooling capacity (*)</b>	kW	25,7	30,7	35,7
<b>Nominal heating capacity (**)</b>	kW	36,8	45,2	52,6
<b>Compressors</b>				
Quantity/Refrigerant circuits	n°	2/1	2/1	2/1
Cooling power input (*)	kW	12,2	14,8	17,1
Heating power input (**)	kW	9,9	12,3	14,3
Capacity steps	%	50-100	50-100	50-100
<b>Evaporator characteristics</b>				
Air flow	m³/s	3,333	3,333	4,028
Available static pressure	Pa	80	80	80
N° fan motors x installed power	n° x kW	1 x 1,5	1 x 1,5	1 x 2,2
<b>Condenser characteristics (centrifugal fans)</b>				
Air flow	m³/s	5,278	5,278	5,278
Available static pressure	Pa	50	50	50
N° fan motors x installed power	n° x kW	2 x 1,5	2 x 1,5	2 x 1,5
<b>Noise levels</b>				
Basic unit condensing section (***)	dB(A)	71,4	71,8	71,9
LN version condensing section (***)	dB(A)	68,9	69,4	69,3
Evaporating section (****)	dB(A)	69,0	69,0	72,1
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50
<b>Condensing section dimensions and weight</b>				
Length	mm	2.203	2.203	2.203
Depth	mm	1.090	1.090	1.090
Height (vertical delivery)	mm	1.630	1.630	1.630
Shipping weight (#)	kg	658	669	676
<b>Evaporating section dimensions and weight</b>				
Length	mm	2.203	2.203	2.203
Depth	mm	1.143	1.143	1.143
Height	mm	1.100	1.100	1.100
Shipping weight	kg	298	298	306

Unit size		6.2	7.2	8.2
<b>Total nominal cooling capacity (*)</b>	kW	65,5	74,3	85,4
<b>sensible nominal cooling capacity (*)</b>	kW	41,9	47,4	55,4
<b>Nominal heating capacity (**)</b>	kW	60,6	68,7	79,8
<b>Compressors</b>				
Quantity/Refrigerant circuits	n°	2/1	2/1	2/1
Cooling power input (*)	kW	19,6	22,2	26,0
Heating power input (**)	kW	16,4	18,6	21,6
Capacity steps	%	50-100	50-100	50-100
<b>Evaporator characteristics</b>				
Air flow	m³/s	4,028	4,028	4,444
Available static pressure	Pa	80	80	100
N° fan motors x installed power	n° x kW	1 x 3,0	1 x 3,0	1 x 3,0
<b>Condenser characteristics (centrifugal fans)</b>				
Air flow	m³/s	5,833	5,833	6,111
Available static pressure	Pa	50	50	50
N° fan motors x installed power	n° x kW	2 x 2,2	2 x 2,2	2 x 3,0
<b>Noise levels</b>				
Basic unit condensing section(***)	dB(A)	72,4	72,6	73,6
LN version condensing section (***)	dB(A)	69,9	69,9	70,9
Evaporating section (****)	dB(A)	72,3	72,3	74,0
<b>Power supply</b>	V/f/Hz	400/3~/50	400/3~/50	400/3~/50
<b>Condensing section dimensions and weight</b>				
Length	mm	2.203	2.203	2.203
Depth	mm	1.090	1.090	1.090
Height (vertical delivery)	mm	1.630	1.630	1.630
Shipping weight (#)	kg	725	739	782
<b>Evaporating section dimensions and weight</b>				
Length	mm	2.203	2.203	2.203
Depth	mm	1.143	1.143	1.143
Height	mm	1.100	1.100	1.100
Shipping weight	kg	318	338	338

(\*) Ambient air temperature 35°C; evaporator air inlet temperature 26°C DB, 19°C WB.

(\*\*) Ambient. air temperature 8°C DB, 50% R.H.; condenser air inlet temperature 20°C DB.

(\*\*\*) Sound pressure levels measured in free field conditions at 1m from the unit on the side of the electrical panel, according to ISO 3746.

(\*\*\*\*) Sound pressure levels referred to fans only, measured at 1 metre from the delivery outlet at a 45° angle

(#) For heat pump units increase weight by 10%.

# DELTA 2002

Basic unit	3.2	4.2
DELTA 2002	17.399,00	18.573,00
DELTA 2002/HP	21.647,00	22.850,00
Reduction for condensing unit with axial fans	- 758,00	- 854,00
Reduction on the basic unit price for R22 refrigerant, 2.5%.		
Accessory	3.2	4.2
LN (Low noise version)	671,00	671,00
Refrigerant circuit accessories	3.2	4.2
Condens. cntrl. with fan speed control (-20 °C) (A) and Microchiller control	981,00	981,00
Condens, cntrl. with fan speed control ( -20 °C) (A) and Pco control	2.014,00	2.014,00
Condens. control with modulating damper (-12 °C) (B)	1.549,00	1.549,00
Pressure gauges	325,00	325,00
Liquid receivers (standard on HP and DC versions)	465,00 (1x18L)	465,00 (1x18L)
Compressor suction and discharge shut-off valves	930,00	930,00
Air circuit accessories	3.2	4.2
Water heating coil, without 3-way valve	976,00	976,00
Water heating coil, with 3-way modulating valve (1)	2.784,00	2.784,00
Electric heating coil (20 kW 2st - conditioner / heat pump) (2)	1.307,00	1.307,00
EU 5 air filter(with standard fan pressure only)	444,00	444,00
Condensing section with horizontal air delivery (B)	372,00	372,00
Increased fan available pressure on air supply fan 150-200Pa (Reg.+/- 30Pa)	248,00	248,00
Increased fan available pressure on air supply fan 250-300Pa (Reg.+/- 30Pa)	336,00	336,00
Increased fan available pressure on condensing section 100-250Pa (Reg.+/- 30Pa)	227,00	227,00
Electrical accessories	3.2	4.2
Clogged filter alarm	310,00	310,00
Pco control (3)	516,00	516,00
Double electric control panel (for remote installation and on board machine)	387,00	387,00
RS 485 serial interface	274,00	274,00
Power factor correction to $\cos\phi \geq 0,9$	1.188,00	1.188,00
Single operation voltage-free contacts (compressors, fans)	124,00	124,00
Miscellaneous accessories	3.2	4.2
Rubber antivibration mounts on condensing section	473,00	473,00

# DELTA 2002

5.2	6.2	7.2	8.2
19.340,00	20.497,00	21.213,00	23.110,00
23.673,00	24.608,00	25.616,00	27.802,00
- 854,00	- 992,00	-1.044,00	- 1.066,00

5.2	6.2	7.2	8.2
671,00	671,00	671,00	671,00

5.2	6.2	7.2	8.2
981,00	981,00	981,00	981,00
2.014,00	2.014,00	2.014,00	2.014,00
1.549,00	1.549,00	1.549,00	1.549,00
325,00	325,00	325,00	325,00
465,00 (1x18L)	568,00 (1x18L)	568,00 (1x18L)	568,00 (1x18L)
930,00	930,00	930,00	981,00

5.2	6.2	7.2	8.2
976,00	976,00	976,00	976,00
2.784,00	2.784,00	2.784,00	2.784,00
1.307,00	1.307,00	1.307,00	1.307,00
444,00	444,00	444,00	444,00
372,00	372,00	372,00	372,00
248,00	248,00	248,00	248,00
336,00	336,00	336,00	336,00
227,00	227,00	227,00	227,00

5.2	6.2	7.2	8.2
310,00	310,00	310,00	310,00
516,00	516,00	516,00	516,00
387,00	387,00	387,00	387,00
274,00	274,00	274,00	274,00
1.188,00	1.239,00	1.239,00	1.291,00
124,00	124,00	124,00	124,00

5.2	6.2	7.2	8.2
473,00	473,00	473,00	473,00



# DELTA 2002

Miscellaneous accessories	3.2	4.2
Rubber antivibration mounts on evaporating section	473,00	473,00
Pre-painted aluminium condensing coil	310,00	310,00
Condensing coil in copper/copper	1.498,00	1.498,00
Condensing coil in copper/tinned copper	2.531,00	2.531,00
Condensing coil with Blygold Polual treatment	1.291,00	1.291,00
Supply of totally pre-assembled unit	780,00	780,00
Wooden crate packaging	1.085,00	1.085,00
Special pallet/skid for shipping in container	930,00	930,00
Condensing coil protection mesh with metal filter	325,00	325,00
"RAL" paint finish other than standard	930,00	930,00

## The basic unit includes:

- Certification to directive 97/23 EEC (PED);
- Main switch
- Compressor fuses
- Condensing coil protection mesh
- Hour meter
- Compressor suction valves
- Automatic compressor rotation
- Electronic remote control panel
- Liquid line solenoid valve
- Evaporating section with centrifugal fans and horizontal discharge (vertical discharge on request)
- Condensing section with centrifugal fans and vertical discharge (horizontal discharge accessory)

- (A) Condensing unit with axial fans.  
 (B) Condensing unit with centrifugal fans.  
 (1) The "Pco control" accessory is required for operation  
 (2) The "Pco control" accessory is required for operation of DELTA 2002/HP  
 (3) Required for unit operation with accessories:  
     water heating coil, with 3-way valve,  
     Electric heating coil.

# DELTA 2002

5.2	6.2	7.2	8.2
473,00	473,00	473,00	473,00
310,00	413,00	413,00	620,00
1.498,00	2.117,00	2.117,00	3.150,00
2.531,00	3.512,00	3.512,00	5.268,00
1.291,00	1.704,00	1.704,00	1.704,00
780,00	780,00	780,00	780,00
1.085,00	1.085,00	1.085,00	1.085,00
930,00	930,00	930,00	930,00
325,00	325,00	325,00	325,00
930,00	930,00	930,00	930,00