

# CHA/IK/A 674-P÷2356-P

**A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, INVERTER SCROLL COMPRESSORS AND PLATE EXCHANGER.**



The A CLASS energy efficiency liquid Chillers and Heat Pumps of the CHA/IK/A/ 674-P÷2356-P series, with R410A refrigerant, are designed to satisfy the needs of medium and wide-sized service sector or industrial ambients.

They are used, combined with Fan Coil units, for the air conditioning or heating of the rooms or to remove the heat developed during industrial processes.

All units feature A CLASS energy efficiency and are equipped with Inverter control on Scroll compressor for a better efficiency at partial loads (SEER/SCOP). The Microchannel condensing coils, available on dedicated versions, ensure an even higher efficiency (high EER), having a better heat exchange than traditional coils. Furthermore, Inverter control is also available on circulating pumps and fans (EC Inverter) for a further efficiency improvement.

The units are characterized by multi-compressor design on double cooling circuit, to reach high energy performances, reduction of current at start-up, elimination of inertial tanks and excellent silent functioning. The use of components built in large series makes them highly reliable and the management of a high number of compressors allows increased life span with reduction of machine stopping risks and easier maintenance operations. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

Are available as option the new EC Inverter fans with high available static pressure and efficiency. The Heat Pump versions are designed for **hot water production up to 55 °C**.

**The units are compliant to the ErP Regulation.**

On request, units can be supplied with **R452B (CHA/IG/A 674-P÷2356-P)** or **R454B (CHA/IL/A 674-P÷2356-P)** refrigerant.



**INVERTER SCROLL**

**MICROCHANNEL**

## VERSION

| CHA/IK/A                    | CHA/IK/A/MC  | CHA/IK/A/WP                         |
|-----------------------------|--|-------------------------------------|
| Cooling only                | Cooling only with MICROCHANNEL condensing coils                | Reversible Heat Pump                |
| CHA/IK/A/SSL                | CHA/IK/A/MC/SSL  | CHA/IK/A/WP/SSL                     |
| Super silenced cooling only | Super silenced cooling only with MICROCHANNEL condensing coils | Super silenced reversible Heat Pump |

## FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- DC INVERTER Scroll and ON-OFF Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tube and aluminium finned coils or aluminium MICROCHANNEL coils.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch. On the Heat Pump units it is always installed an antifreeze heater.
- Cooling circuit shut-off valve on liquid line in 1004-P÷2356-P models.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

## ACCESSORIES

### FACTORY FITTED ACCESSORIES

|     |  |
|-----|--|
| IM  | Automatic circuit breakers                           |
| SL  | Unit silencing                                       |
| RFM | Cooling circuit shut-off valve on discharge line     |
| RFL | Cooling circuit shut-off valve on liquid line        |
| BT  | Low water temperature Kit                            |
| EC  | EC Inverter fans                                     |
| ECH | EC Inverter fans with high available static pressure |
| DS  | Desuperheater  |
| RT  | Total heat recovery                                  |
| TX  | Coil with pre-coated fins                            |

|      |  |
|------|--|
| TXB  | Coil with epoxy treatment                    |
| EW   | External water connections                   |
| PS   | Single circulating pump                      |
| PSI  | Inverter single circulating pump             |
| PD   | Double circulating pump                      |
| PDI  | Inverter double circulating pump             |
| FE   | Antifreeze heater for evaporator             |
| IS   | Modbus RTU protocol, RS485 serial interface  |
| IST  | Modbus TCP/IP protocol, Ethernet port        |
| ISB  | BACnet MSTP protocol, RS485 serial interface |
| ISBT | BACnet TCP/IP protocol, Ethernet port        |

|     |   |
|-----|---|
| ISL | LonWorks protocol, FT-10 serial interface     |
| ISS | SNMP protocol, Ethernet port                  |
| IAV | Remote set-point, 0-10 V signal               |
| IAA | Remote set-point, 4-20 mA signal              |
| IAS | Remote signal for second set-point activation |
| IDL | Demand limit from digital input               |

### LOOSE ACCESSORIES

|    |                                 |
|----|---------------------------------|
| MN | High and low pressure gauges    |
| CR | Remote control panel            |
| RP | Coil protection metallic guards |
| AG | Rubber shock absorbers          |
| AM | Spring shock absorbers          |

| MODEL                          |                                    | 674-P   | 784-P    | 1004-P | 1054-P | 1154-P | 1256-P | 1456-P | 1606-P | 1756-P | 2356-P |       |
|--------------------------------|------------------------------------|---------|----------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| Cooling STD versions           | Cooling capacity (1)               | kW      | 196      | 234    | 287    | 316    | 349    | 383    | 422    | 458    | 515    | 668   |
|                                | Absorbed power (1)                 | kW      | 61       | 73     | 90     | 98     | 109    | 120    | 133    | 144    | 163    | 211   |
|                                | EER (1)                            |         | 3.21     | 3.21   | 3.19   | 3.22   | 3.20   | 3.19   | 3.17   | 3.18   | 3.16   | 3.17  |
| Cooling STD versions (EN14511) | Cooling capacity (1)               | kW      | 195      | 233    | 286    | 315    | 348    | 382    | 421    | 457    | 514    | 666   |
|                                | Absorbed power (1)                 | kW      | 62       | 74     | 91     | 99     | 110    | 121    | 134    | 145    | 164    | 213   |
|                                | EER (1)                            |         | 3.15     | 3.15   | 3.14   | 3.18   | 3.16   | 3.16   | 3.14   | 3.15   | 3.13   | 3.13  |
|                                | SEER (2)                           |         | 4.39     | 4.40   | 4.44   | 4.45   | 4.41   | 4.55   | 4.67   | 4.70   | 4.68   | 4.67  |
| Cooling MC versions            | Cooling capacity (1)               | kW      | 196      | 234    | 287    | 316    | 349    | 383    | 422    | 458    | 515    | 668   |
|                                | Absorbed power (1)                 | kW      | 60       | 72     | 89     | 97     | 108    | 119    | 132    | 143    | 161    | 209   |
|                                | EER (1)                            |         | 3.27     | 3.25   | 3.22   | 3.26   | 3.23   | 3.22   | 3.20   | 3.20   | 3.20   | 3.20  |
|                                | Energy Efficiency (2)              | %       | 173      | 173    | 175    | 175    | 173    | 179    | 184    | 185    | 184    | 184   |
| Cooling MC versions (EN14511)  | Cooling capacity (1)               | kW      | 195      | 233    | 286    | 315    | 348    | 382    | 421    | 457    | 514    | 666   |
|                                | Absorbed power (1)                 | kW      | 61       | 73     | 90     | 98     | 109    | 120    | 133    | 144    | 162    | 211   |
|                                | EER (1)                            |         | 3.20     | 3.19   | 3.18   | 3.21   | 3.19   | 3.18   | 3.17   | 3.17   | 3.17   | 3.16  |
|                                | SEER (2)                           |         | 4.44     | 4.45   | 4.49   | 4.50   | 4.46   | 4.60   | 4.73   | 4.76   | 4.74   | 4.73  |
| Heating STD versions           | Heating capacity (3)               | kW      | 212      | 253    | 311    | 343    | 379    | 417    | 458    | 497    | 559    | 724   |
|                                | Absorbed power (3)                 | kW      | 63       | 75     | 93     | 102    | 112    | 124    | 137    | 148    | 169    | 218   |
|                                | COP (3)                            |         | 3.37     | 3.37   | 3.34   | 3.36   | 3.38   | 3.36   | 3.34   | 3.36   | 3.31   | 3.32  |
|                                | Energy Efficiency (2)              | %       | 175      | 175    | 177    | 177    | 175    | 181    | 186    | 187    | 187    | 186   |
| Heating STD versions (EN14511) | Heating capacity (3)               | kW      | 213      | 254    | 312    | 344    | 380    | 418    | 459    | 499    | 561    | 726   |
|                                | Absorbed power (3)                 | kW      | 65       | 77     | 95     | 104    | 115    | 127    | 140    | 151    | 172    | 223   |
|                                | COP (3)                            |         | 3.28     | 3.30   | 3.28   | 3.31   | 3.30   | 3.29   | 3.28   | 3.30   | 3.26   | 3.26  |
|                                | SCOP (4)                           |         | 3.67     | 3.57   | 3.60   | 3.52   | 3.61   | 3.52   | 3.53   | 3.48   | 3.54   | 3.53  |
| Compressor                     | Quantity                           | n°      | 2+2      | 2+2    | 2+2    | 2+2    | 2+2    | 3+3    | 3+3    | 3+3    | 3+3    | 3+3   |
|                                | Refrigerant circuits               | n°      | 2        | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2     |
|                                | Capacity steps                     | n°      | Stepless |        |        |        |        |        |        |        |        |       |
|                                | Water flow                         | l/s     | 9.36     | 11.18  | 13.71  | 15.10  | 16.67  | 18.30  | 20.16  | 21.88  | 24.61  | 31.92 |
| Evaporator                     | Pressure drops                     | kPa     | 38       | 36     | 35     | 37     | 40     | 32     | 33     | 36     | 32     | 37    |
|                                | Water connections                  | DN      | 80       | 80     | 80     | 80     | 80     | 150    | 150    | 150    | 150    | 150   |
|                                | Power supply                       | V/Ph/Hz | 400/3/50 |        |        |        |        |        |        |        |        |       |
| Electrical characteristics     | Max. running current               | A       | 137      | 156    | 194    | 211    | 173    | 250    | 202    | 320    | 355    | 460   |
|                                | Max. starting current              | A       | 305      | 334    | 407    | 424    | 386    | 428    | 415    | 534    | 617    | 800   |
|                                | Pump available static pressure     | kPa     | 160      | 140    | 170    | 185    | 170    | 165    | 145    | 185    | 175    | 145   |
| Unit with pump                 | Water connections                  | DN      | 100      | 100    | 100    | 100    | 100    | 150    | 150    | 150    | 150    | 150   |
|                                | STD versions (5)                   | dB(A)   | 71       | 73     | 75     | 74     | 74     | 74     | 75     | 75     | 76     | 77    |
| Sound pressure                 | STD versions with SL accessory (5) | dB(A)   | 68       | 69     | 71     | 71     | 71     | 71     | 72     | 72     | 73     | 74    |
|                                | SSL versions (5)                   | dB(A)   | 65       | 66     | 68     | 67     | 68     | 68     | 69     | 70     | 71     | ---   |
|                                | MC versions (5)                    | dB(A)   | 70       | 72     | 74     | 73     | 73     | 73     | 74     | 74     | 75     | 76    |
|                                | MC versions with SL accessory (5)  | dB(A)   | 67       | 68     | 70     | 70     | 70     | 70     | 71     | 71     | 72     | 73    |
|                                | MC/SSL versions (5)                | dB(A)   | 64       | 65     | 67     | 66     | 67     | 67     | 68     | 69     | 70     | ---   |
| Weights                        | Transport weight                   | Kg      | 2251     | 2384   | 2511   | 2791   | 2851   | 3186   | 3248   | 3658   | 3836   | 4392  |
|                                | Operating weight                   | Kg      | 2270     | 2410   | 2550   | 2830   | 2890   | 3230   | 3300   | 3710   | 3900   | 4470  |

| DIMENSIONS |                   | 674-P | 784-P | 1004-P | 1054-P | 1154-P | 1256-P | 1456-P | 1606-P | 1756-P | 2356-P |      |
|------------|-------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| L          | STD-MC            | mm    | 4000  | 4000   | 4000   | 5000   | 5000   | 5000   | 5000   | 6200   | 6200   | 7200 |
|            | SSL-MC/SSL        | mm    | 5000  | 5000   | 5000   | 6200   | 6200   | 6200   | 6200   | 7200   | 7200   | ---  |
| W          | STD-SSL-MC-MC/SSL | mm    | 2200  | 2200   | 2200   | 2200   | 2200   | 2200   | 2200   | 2200   | 2200   | 2200 |
| H          | STD-SSL-MC-MC/SSL | mm    | 2100  | 2100   | 2100   | 2100   | 2100   | 2100   | 2100   | 2100   | 2100   | 2100 |

CLEARANCE AREA

CHA/IK/A 674-P÷2356-P

500 | 1800 | 1000 | 1800



NOTES

- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  - Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  - Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
  - Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
  - Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of SSL and WP versions are specified on technical brochure.  
N.B. Data of MC versions are specified on technical brochure.

# CHA/K/AF 726-P÷24012-P

**A CLASS ENERGY EFFICIENCY AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.**



The CHA/K/AF 726-P÷24012-P liquid Chillers and Heat Pumps are characterized by A CLASS energy efficiency.

The units are characterized by multi-compressor design on double cooling circuit, to reach high energy performances, reduction of current at start-up, elimination of inertial tanks and excellent silent functioning. The use of components built in large series makes them highly reliable and the management of an high number of compressors allows increased life span with reduction of machine stopping risks and easier maintenance operations. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

Are available as option the new EC Inverter fans with high available static pressure and efficiency. The Heat Pump versions are designed for **hot water production up to 55 °C**.

**The units are compliant to the ErP Regulation.**

On request, units can be supplied with **R452B (CHA/G/AF 726-P÷24012-P)** or **R454B (CHA/L/AF 726-P÷24012-P)** refrigerant.



## VERSION

### CHA/K/AF

Cooling only

### CHA/K/AF/WP

Reversible Heat Pump

### CHA/K/AF/SSL

Super silenced cooling only

### CHA/K/AF/WP/SSL

Super silenced reversible Heat Pump

## FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch. On the Heat Pump units it is always installed an antifreeze heater.
- Cooling circuit shut-off valve on liquid line in 1048-P÷24012-P models.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

## ACCESSORIES

### FACTORY FITTED ACCESSORIES

|     |  |
|-----|--|
| IM  | Automatic circuit breakers                           |
| SL  | Unit silencement                                     |
| RFM | Cooling circuit shut-off valve on discharge line     |
| RFL | Cooling circuit shut-off valve on liquid line        |
| CT  | Condensing control down to 0 °C                      |
| CC  | Condensing control down to -20 °C                    |
| BT  | Low water temperature Kit                            |
| EC  | EC Inverter fans                                     |
| ECH | EC Inverter fans with high available static pressure |
| DS  | Desuperheater  |
| RT  | Total heat recovery                                  |
| TX  | Coil with pre-coated fins                            |
| EW  | External water connections                           |
| PS  | Single circulating pump                              |

|      |  |
|------|--|
| PSI  | Inverter single circulating pump             |
| PD   | Double circulating pump                      |
| PDI  | Inverter double circulating pump             |
| FE   | Antifreeze heater for evaporator             |
| SS   | Soft start                                   |
| IS   | Modbus RTU protocol, RS485 serial interface  |
| IST  | Modbus TCP/IP protocol, Ethernet port        |
| ISB  | BACnet MSTP protocol, RS485 serial interface |
| ISBT | BACnet TCP/IP protocol, Ethernet port        |
| ISL  | LonWorks protocol, FT-10 serial interface    |
| ISS  | SNMP protocol, Ethernet port                 |
| IAV  | Remote set-point, 0-10 V signal              |

|     |   |
|-----|---|
| IAA | Remote set-point, 4-20 mA signal              |
| IAS | Remote signal for second set-point activation |
| IDL | Demand limit from digital input               |

### LOOSE ACCESSORIES

|    |                                 |
|----|---------------------------------|
| MN | High and low pressure gauges    |
| CR | Remote control panel            |
| RP | Coil protection metallic guards |
| AG | Rubber shock absorbers          |
| AM | Spring shock absorbers          |

# CHA/K/AF 726-P÷24012-P



| MODEL                      |                                | 726-P   | 786-P    | 826-P | 906-P | 1048-P | 1128-P | 1208-P |       |
|----------------------------|--------------------------------|---------|----------|-------|-------|--------|--------|--------|-------|
| Cooling                    | Cooling capacity (1)           | kW      | 197      | 220   | 245   | 271    | 300    | 361    |       |
|                            | Absorbed power (1)             | kW      | 62       | 69    | 76    | 83     | 95     | 111    |       |
|                            | EER (1)                        |         | 3.18     | 3.19  | 3.22  | 3.27   | 3.16   | 3.13   | 3.25  |
| Cooling (EN14511)          | Cooling capacity (1)           | kW      | 196      | 219   | 244   | 270    | 299    | 328    | 360   |
|                            | Absorbed power (1)             | kW      | 63       | 70    | 77    | 84     | 96     | 105    | 112   |
|                            | EER (1)                        |         | 3.11     | 3.13  | 3.17  | 3.21   | 3.11   | 3.12   | 3.21  |
|                            | SEER (2)                       |         | 4.18     | 4.19  | 4.23  | 4.24   | 4.20   | 4.20   | 4.21  |
| Heating                    | Energy Efficiency (2)          | %       | 164      | 165   | 166   | 167    | 165    | 165    | 165   |
|                            | Heating capacity (3)           | kW      | 214      | 239   | 266   | 295    | 325    | 359    | 391   |
|                            | Absorbed power (3)             | kW      | 65       | 73    | 81    | 88     | 99     | 109    | 119   |
|                            | COP (3)                        |         | 3.29     | 3.27  | 3.28  | 3.35   | 3.28   | 3.29   | 3.29  |
| Heating (EN14511)          | Heating capacity (3)           | kW      | 215      | 240   | 267   | 296    | 327    | 360    | 393   |
|                            | Absorbed power (3)             | kW      | 67       | 75    | 83    | 90     | 102    | 112    | 122   |
|                            | COP (3)                        |         | 3.21     | 3.20  | 3.22  | 3.29   | 3.21   | 3.21   | 3.22  |
|                            | SCOP (4)                       |         | 3.35     | 3.42  | 3.35  | 3.34   | 3.37   | 3.34   | 3.35  |
| Compressor                 | Energy Efficiency (4)          | %       | 131      | 134   | 131   | 131    | 132    | 131    | 131   |
|                            | Quantity                       | n°      | 3+3      | 3+3   | 3+3   | 3+3    | 4+4    | 4+4    | 4+4   |
|                            | Refrigerant circuits           | n°      | 2        | 2     | 2     | 2      | 2      | 2      | 2     |
| Evaporator                 | Capacity steps                 | n°      | 6        |       |       | 8      |        |        |       |
|                            | Water flow                     | l/s     | 9.41     | 10.51 | 11.71 | 12.95  | 14.33  | 15.72  | 17.25 |
|                            | Pressure drops                 | kPa     | 45       | 49    | 44    | 42     | 50     | 39     | 46    |
| Electrical characteristics | Water connections              | DN      | 80       | 80    | 80    | 80     | 80     | 80     | 80    |
|                            | Power supply                   | V/Ph/Hz | 400/3/50 |       |       |        |        |        |       |
|                            | Max. running current           | A       | 152      | 166   | 187   | 199    | 224    | 241    | 258   |
| Unit with pump             | Max. starting current          | A       | 276      | 299   | 354   | 367    | 357    | 409    | 426   |
|                            | Pump available static pressure | kPa     | 155      | 135   | 205   | 185    | 180    | 185    | 170   |
| Sound pressure             | Water connections              | DN      | 100      | 100   | 100   | 100    | 100    | 100    | 100   |
|                            | STD version (5)                | dB(A)   | 72       | 73    | 74    | 74     | 74     | 74     | 74    |
|                            | With SL accessory (5)          | dB(A)   | 69       | 70    | 71    | 71     | 71     | 71     | 72    |
| Weights                    | SSL version (5)                | dB(A)   | 66       | 66    | 67    | 68     | 67     | 68     | 68    |
|                            | Transport weight               | Kg      | 1854     | 2171  | 2289  | 2317   | 2437   | 2680   | 2690  |
|                            | Operating weight               | Kg      | 1870     | 2190  | 2310  | 2340   | 2460   | 2710   | 2720  |

| MODEL                      |                                | 13010-P | 15010-P  | 16812-P | 18012-P | 21012-P | 24012-P |       |
|----------------------------|--------------------------------|---------|----------|---------|---------|---------|---------|-------|
| Cooling                    | Cooling capacity (1)           | kW      | 396      | 435     | 485     | 538     | 609     | 692   |
|                            | Absorbed power (1)             | kW      | 124      | 137     | 154     | 169     | 192     | 220   |
|                            | EER (1)                        |         | 3.19     | 3.18    | 3.15    | 3.18    | 3.17    | 3.15  |
| Cooling (EN14511)          | Cooling capacity (1)           | kW      | 394      | 433     | 484     | 536     | 607     | 690   |
|                            | Absorbed power (1)             | kW      | 126      | 139     | 155     | 171     | 194     | 222   |
|                            | EER (1)                        |         | 3.13     | 3.12    | 3.12    | 3.13    | 3.13    | 3.11  |
|                            | SEER (2)                       |         | 4.48     | 4.56    | 4.59    | 4.57    | 4.56    | 4.60  |
| Heating                    | Energy Efficiency (2)          | %       | 176      | 179     | 181     | 180     | 179     | 181   |
|                            | Heating capacity (3)           | kW      | 431      | 473     | 526     | 586     | 663     | 754   |
|                            | Absorbed power (3)             | kW      | 129      | 143     | 162     | 176     | 202     | 231   |
|                            | COP (3)                        |         | 3.34     | 3.31    | 3.25    | 3.33    | 3.28    | 3.26  |
| Heating (EN14511)          | Heating capacity (3)           | kW      | 433      | 475     | 528     | 588     | 665     | 756   |
|                            | Absorbed power (3)             | kW      | 133      | 147     | 165     | 181     | 206     | 236   |
|                            | COP (3)                        |         | 3.26     | 3.23    | 3.20    | 3.25    | 3.23    | 3.20  |
|                            | SCOP (4)                       |         | 3.36     | 3.32    | 3.36    | 3.31    | 3.33    | 3.43  |
| Compressor                 | Energy Efficiency (4)          | %       | 131      | 130     | 131     | 129     | 130     | 134   |
|                            | Quantity                       | n°      | 5+5      | 5+5     | 6+6     | 6+6     | 6+6     | 6+6   |
|                            | Refrigerant circuits           | n°      | 2        | 2       | 2       | 2       | 2       | 2     |
| Evaporator                 | Capacity steps                 | n°      | 8        |         | 10      |         |         |       |
|                            | Water flow                     | l/s     | 18.92    | 20.78   | 23.17   | 25.70   | 29.10   | 33.06 |
|                            | Pressure drops                 | kPa     | 49       | 49      | 33      | 41      | 34      | 32    |
| Electrical characteristics | Water connections              | DN      | 80       | 80      | 150     | 150     | 150     | 150   |
|                            | Power supply                   | V/Ph/Hz | 400/3/50 |         |         |         |         |       |
|                            | Max. running current           | A       | 274      | 324     | 358     | 391     | 446     | 500   |
| Unit with pump             | Max. starting current          | A       | 407      | 492     | 525     | 558     | 623     | 678   |
|                            | Pump available static pressure | kPa     | 155      | 125     | 185     | 170     | 160     | 145   |
| Sound pressure             | Water connections              | DN      | 100      | 100     | 100     | 100     | 150     | 150   |
|                            | STD version (5)                | dB(A)   | 76       | 76      | 75      | 76      | 77      | 77    |
|                            | With SL accessory (5)          | dB(A)   | 73       | 73      | 72      | 73      | 74      | 74    |
| Weights                    | SSL version (5)                | dB(A)   | 69       | 69      | 69      | 70      | ---     | ---   |
|                            | Transport weight               | Kg      | 2869     | 3004    | 3512    | 3642    | 4420    | 4458  |
|                            | Operating weight               | Kg      | 2900     | 3040    | 3560    | 3690    | 4480    | 4520  |

| DIMENSIONS |         | 726-P | 786-P | 826-P | 906-P | 1048-P | 1128-P | 1208-P | 13010-P | 15010-P | 16812-P | 18012-P | 21012-P | 24012-P |
|------------|---------|-------|-------|-------|-------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| L          | STD     | mm    | 4000  | 4000  | 4000  | 4000   | 5000   | 5000   | 5000    | 5000    | 6200    | 6200    | 7200    | 7200    |
|            | SSL     | mm    | 5000  | 5000  | 5000  | 5000   | 6200   | 6200   | 6200    | 6200    | 7200    | 7200    | ---     | ---     |
| W          | STD/SSL | mm    | 2200  | 2200  | 2200  | 2200   | 2200   | 2200   | 2200    | 2200    | 2200    | 2200    | 2200    | 2200    |
| H          | STD/SSL | mm    | 2100  | 2100  | 2100  | 2100   | 2100   | 2100   | 2100    | 2100    | 2100    | 2100    | 2100    | 2100    |

## CLEARANCE AREA

CHA/K/AF 726-P÷24012-P

500 | 1800 | 1000 | 1800



## NOTES

- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  - Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  - Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
  - Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
  - Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of SSL and WP versions are specified on technical brochure.

Electrical board side

# CHA/K/A/WP 726-P÷24012-P

**A CLASS ENERGY EFFICIENCY AIRCOOLED REVERSIBLE HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.**



The CHA/K/A/WP 726-P÷24012-P reversible Heat Pumps are characterized by A CLASS energy efficiency.

The units are characterized by multi-compressor design on double cooling circuit, to reach high energy performances, reduction of current at start-up, elimination of inertial tanks and excellent silent functioning. The use of components built in large series makes them highly reliable and the management of an high number of compressors allows increased life span with reduction of machine stopping risks and easier maintenance operations. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

Are available as option the new EC Inverter fans with high available static pressure and efficiency. Units are designed for **hot water production up to 55 °C.**

**The units are compliant to the ErP Regulation.**

On request, units can be supplied with **R452B (CHA/G/A/WP 726-P÷24012-P)** or **R454B (CHA/L/A/WP 726-P÷24012-P)** refrigerant.



## VERSION

**CHA/K/A/WP**

Reversible Heat Pump

**CHA/K/A/WP/SSL**

Super silenced reversible Heat Pump

## FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch. On the units it is always installed an antifreeze heater.
- Cooling circuit shut-off valve on liquid line in 1048-P÷24012-P models.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.
- Functioning in heating mode with outside air temperature down to -15 °C.
- Microprocessor control and regulation system.

## ACCESSORIES

### FACTORY FITTED ACCESSORIES

|     |  |
|-----|--|
| IM  | Automatic circuit breakers                           |
| SL  | Unit silencement                                     |
| RFM | Cooling circuit shut-off valve on discharge line     |
| RFL | Cooling circuit shut-off valve on liquid line        |
| CT  | Condensing control down to 0 °C                      |
| CC  | Condensing control down to -20 °C                    |
| BT  | Low water temperature Kit                            |
| EC  | EC Inverter fans                                     |
| ECH | EC Inverter fans with high available static pressure |
| DS  | Desuperheater  |
| RT  | Total heat recovery                                  |
| TX  | Coil with pre-coated fins                            |
| EW  | External water connections                           |

|      |  |
|------|--|
| PS   | Single circulating pump                      |
| PSI  | Inverter single circulating pump             |
| PD   | Double circulating pump                      |
| PDI  | Inverter double circulating pump             |
| SS   | Soft start                                   |
| IS   | Modbus RTU protocol, RS485 serial interface  |
| IST  | Modbus TCP/IP protocol, Ethernet port        |
| ISB  | BACnet MSTP protocol, RS485 serial interface |
| ISBT | BACnet TCP/IP protocol, Ethernet port        |
| ISL  | LonWorks protocol, FTT-10 serial interface   |
| ISS  | SNMP protocol, Ethernet port                 |

|     |   |
|-----|---|
| IAV | Remote set-point, 0-10 V signal               |
| IAA | Remote set-point, 4-20 mA signal              |
| IAS | Remote signal for second set-point activation |
| IDL | Demand limit from digital input               |

### LOOSE ACCESSORIES

|    |                                 |
|----|---------------------------------|
| MN | High and low pressure gauges    |
| CR | Remote control panel            |
| RP | Coil protection metallic guards |
| AG | Rubber shock absorbers          |
| AM | Spring shock absorbers          |

# CHA/K/A/WP 726-P÷24012-P



| MODEL                      |                                | 726-P   | 786-P    | 826-P | 906-P | 1048-P | 1128-P | 1208-P |       |  |
|----------------------------|--------------------------------|---------|----------|-------|-------|--------|--------|--------|-------|--|
| Heating                    | Heating capacity (1)           | kW      | 227      | 256   | 272   | 294    | 342    | 369    | 389   |  |
|                            | Absorbed power (1)             | kW      | 66       | 75    | 81    | 85     | 102    | 106    | 112   |  |
|                            | COP (1)                        |         | 3.44     | 3.41  | 3.36  | 3.46   | 3.35   | 3.48   | 3.47  |  |
| Heating (EN14511)          | Heating capacity (1)           | kW      | 228      | 257   | 273   | 295    | 343    | 370    | 390   |  |
|                            | Absorbed power (1)             | kW      | 68       | 77    | 83    | 87     | 105    | 108    | 115   |  |
|                            | COP (1)                        |         | 3.35     | 3.34  | 3.29  | 3.39   | 3.27   | 3.43   | 3.39  |  |
|                            | SCOP (2)                       |         | 3.40     | 3.47  | 3.40  | 3.39   | 3.42   | 3.39   | 3.40  |  |
| Cooling                    | Energy Efficiency (2)          | %       | 133      | 136   | 133   | 133    | 134    | 133    | 133   |  |
|                            | Cooling capacity (3)           | kW      | 194      | 217   | 239   | 259    | 294    | 322    | 339   |  |
|                            | Absorbed power (3)             | kW      | 68       | 75    | 78    | 85     | 100    | 107    | 113   |  |
|                            | EER (3)                        |         | 2.85     | 2.89  | 3.06  | 3.05   | 2.94   | 3.01   | 3.00  |  |
| Cooling (EN14511)          | Cooling capacity (3)           | kW      | 193      | 216   | 238   | 258    | 293    | 321    | 338   |  |
|                            | Absorbed power (3)             | kW      | 69       | 76    | 79    | 86     | 101    | 108    | 114   |  |
|                            | EER (3)                        |         | 2.80     | 2.84  | 3.01  | 3.00   | 2.90   | 2.97   | 2.96  |  |
|                            | SEER (4)                       |         | 4.05     | 4.06  | 4.10  | 4.11   | 4.07   | 4.07   | 4.08  |  |
| Compressor                 | Energy Efficiency (4)          | %       | 159      | 159   | 161   | 161    | 160    | 160    | 160   |  |
|                            | Quantity                       | n°      | 3+3      | 3+3   | 3+3   | 3+3    | 4+4    | 4+4    | 4+4   |  |
| Evaporator                 | Refrigerant circuits           | n°      | 2        | 2     | 2     | 2      | 2      | 2      | 2     |  |
|                            | Capacity steps                 | n°      | 6        |       |       |        |        |        | 8     |  |
|                            | Water flow                     | l/s     | 9.27     | 10.37 | 11.42 | 12.37  | 14.05  | 15.38  | 16.20 |  |
| Electrical characteristics | Pressure drops                 | kPa     | 44       | 55    | 42    | 38     | 49     | 37     | 41    |  |
|                            | Water connections              | DN      | 80       | 80    | 80    | 80     | 80     | 80     | 80    |  |
|                            | Power supply                   | V/Ph/Hz | 400/3/50 |       |       |        |        |        |       |  |
| Unit with pump             | Max. running current           | A       | 152      | 166   | 187   | 199    | 224    | 241    | 258   |  |
|                            | Max. starting current          | A       | 276      | 299   | 354   | 367    | 357    | 409    | 426   |  |
|                            | Pump available static pressure | kPa     | 155      | 130   | 205   | 190    | 180    | 185    | 175   |  |
| Sound pressure             | Water connections              | DN      | 100      | 100   | 100   | 100    | 100    | 100    | 100   |  |
|                            | STD version (5)                | dB(A)   | 72       | 71    | 71    | 72     | 72     | 73     | 74    |  |
|                            | With SL accessory (5)          | dB(A)   | 69       | 68    | 68    | 69     | 69     | 70     | 71    |  |
| Weights                    | SSL version (5)                | dB(A)   | 65       | 65    | 65    | 66     | 66     | 67     | 67    |  |
|                            | Transport weight               | Kg      | 1954     | 2291  | 2409  | 2437   | 2567   | 2820   | 2830  |  |
|                            | Operating weight               | Kg      | 1970     | 2310  | 2430  | 2460   | 2590   | 2850   | 2860  |  |

| MODEL                      |                                | 13010-P | 15010-P  | 16812-P | 18012-P | 21012-P | 24012-P |       |
|----------------------------|--------------------------------|---------|----------|---------|---------|---------|---------|-------|
| Heating                    | Heating capacity (1)           | kW      | 420      | 476     | 532     | 566     | 677     | 762   |
|                            | Absorbed power (1)             | kW      | 125      | 141     | 157     | 169     | 202     | 226   |
|                            | COP (1)                        |         | 3.36     | 3.38    | 3.39    | 3.35    | 3.35    | 3.37  |
| Heating (EN14511)          | Heating capacity (1)           | kW      | 422      | 478     | 533     | 568     | 679     | 764   |
|                            | Absorbed power (1)             | kW      | 128      | 144     | 160     | 172     | 206     | 230   |
|                            | COP (1)                        |         | 3.30     | 3.32    | 3.33    | 3.30    | 3.30    | 3.32  |
|                            | SCOP (2)                       |         | 3.41     | 3.37    | 3.41    | 3.36    | 3.38    | 3.48  |
| Cooling                    | Energy Efficiency (2)          | %       | 133      | 132     | 133     | 131     | 132     | 136   |
|                            | Cooling capacity (3)           | kW      | 359      | 421     | 475     | 512     | 597     | 671   |
|                            | Absorbed power (3)             | kW      | 127      | 144     | 162     | 172     | 207     | 241   |
|                            | EER (3)                        |         | 2.83     | 2.92    | 2.93    | 2.98    | 2.88    | 2.78  |
| Cooling (EN14511)          | Cooling capacity (3)           | kW      | 358      | 419     | 474     | 510     | 595     | 669   |
|                            | Absorbed power (3)             | kW      | 128      | 146     | 163     | 174     | 209     | 243   |
|                            | EER (3)                        |         | 2.80     | 2.87    | 2.91    | 2.93    | 2.85    | 2.75  |
|                            | SEER (4)                       |         | 4.35     | 4.42    | 4.45    | 4.55    | 4.55    | 4.55  |
| Compressor                 | Energy Efficiency (4)          | %       | 171      | 174     | 175     | 179     | 179     | 179   |
|                            | Quantity                       | n°      | 5+5      | 5+5     | 6+6     | 6+6     | 6+6     | 6+6   |
|                            | Refrigerant circuits           | n°      | 2        | 2       | 2       | 2       | 2       | 2     |
| Evaporator                 | Capacity steps                 | n°      | 8        |         | 10      |         |         |       |
|                            | Water flow                     | l/s     | 17.15    | 20.11   | 22.69   | 24.46   | 28.52   | 32.06 |
|                            | Pressure drops                 | kPa     | 46       | 46      | 32      | 37      | 33      | 30    |
| Electrical characteristics | Water connections              | DN      | 80       | 80      | 150     | 150     | 150     | 150   |
|                            | Power supply                   | V/Ph/Hz | 400/3/50 |         |         |         |         |       |
|                            | Max. running current           | A       | 274      | 324     | 358     | 391     | 446     | 500   |
| Unit with pump             | Max. starting current          | A       | 407      | 492     | 525     | 558     | 623     | 678   |
|                            | Pump available static pressure | kPa     | 160      | 130     | 185     | 175     | 160     | 145   |
|                            | Water connections              | DN      | 100      | 100     | 100     | 100     | 150     | 150   |
| Sound pressure             | STD version (5)                | dB(A)   | 74       | 76      | 76      | 76      | 76      | 77    |
|                            | With SL accessory (5)          | dB(A)   | 71       | 73      | 73      | 73      | 73      | 74    |
|                            | SSL version (5)                | dB(A)   | 67       | 68      | 69      | 70      | ---     | ---   |
| Weights                    | Transport weight               | Kg      | 3019     | 3164    | 3702    | 3832    | 4660    | 4698  |
|                            | Operating weight               | Kg      | 3050     | 3200    | 3750    | 3880    | 4720    | 4770  |

| DIMENSIONS |         | 726-P | 786-P | 826-P | 906-P | 1048-P | 1128-P | 1208-P | 13010-P | 15010-P | 16812-P | 18012-P | 21012-P | 24012-P |
|------------|---------|-------|-------|-------|-------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| L          | STD     | mm    | 2800  | 4000  | 4000  | 4000   | 4000   | 5000   | 5000    | 5000    | 6200    | 6200    | 7200    | 7200    |
|            | SSL     | mm    | 4000  | 4000  | 5000  | 5000   | 5000   | 5000   | 5000    | 6200    | 6200    | 7200    | ---     | ---     |
| W          | STD/SSL | mm    | 2200  | 2200  | 2200  | 2200   | 2200   | 2200   | 2200    | 2200    | 2200    | 2200    | 2200    | 2200    |
| H          | STD/SSL | mm    | 2100  | 2100  | 2100  | 2100   | 2100   | 2100   | 2100    | 2100    | 2100    | 2100    | 2100    | 2100    |

## CLEARANCE AREA

CHA/K/A/WP 726-P÷24012-P  
500 | 1800 | 1000 | 1800



Electrical board side

## NOTES

1. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
  2. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
  3. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  4. Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  5. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of SSL version are specified on technical brochure.

# CHA/K 726-P÷36012-P

**AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.**



The liquid Chillers and Heat Pumps of the CHA/K 726-P÷36012-P series, with R410A refrigerant, are designed for large-sized service sector or industrial ambients.

The units are characterized by multi-compressor design on double cooling circuit, to reach high energy performances, reduction of current at start-up, elimination of inertial tanks and excellent silent functioning. The use of components built in large series makes them highly reliable and the management of an high number of compressors allows increased life span with reduction of machine stopping risks and easier maintenance operations. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

Are available as option the new EC Inverter fans with high available static pressure and efficiency.

**Cooling only units are compliant to the ErP 2021 Regulation for process cooling application; for comfort cooling application they are compliant if provided with EC or ECH accessory (EC Inverter fans).**

**Heat pump models 726-P÷13010-P are compliant to the ErP Regulation; models 15010-P÷36012-P are compliant if provided with EC or ECH accessory (EC Inverter fans).**

On request, units can be supplied with **R452B (CHA/G 726-P÷36012-P)** or **R454B (CHA/L 726-P÷36012-P)** refrigerant.



## VERSION

|                             |                                     |
|-----------------------------|-------------------------------------|
| <b>CHA/K</b>                | <b>CHA/K/WP</b>                     |
| Cooling only                | Reversible Heat Pump                |
| <b>CHA/K/SSL</b>            | <b>CHA/K/WP/SSL</b>                 |
| Super silenced cooling only | Super silenced reversible Heat Pump |

## FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch. On the Heat Pump units it is always installed an antifreeze heater.
- Cooling circuit shut-off valve on liquid line in 1048-P÷36012-P models.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.
- Microprocessor control and regulation system.

## ACCESSORIES

### FACTORY FITTED ACCESSORIES

|     |  |
|-----|--|
| IM  | Automatic circuit breakers                           |
| SL  | Unit silencing                                       |
| RFM | Cooling circuit shut-off valve on discharge line     |
| RFL | Cooling circuit shut-off valve on liquid line        |
| CT  | Condensing control down to 0 °C                      |
| CC  | Condensing control down to -20 °C                    |
| BT  | Low water temperature Kit                            |
| EC  | EC Inverter fans                                     |
| ECH | EC Inverter fans with high available static pressure |
| DS  | Desuperheater  |
| RT  | Total heat recovery                                  |
| TX  | Coil with pre-coated fins                            |
| EW  | External water connections                           |
| PS  | Single circulating pump                              |

|      |  |
|------|--|
| PSI  | Inverter single circulating pump             |
| PD   | Double circulating pump                      |
| PDI  | Inverter double circulating pump             |
| FE   | Antifreeze heater for evaporator             |
| SS   | Soft start                                   |
| IS   | Modbus RTU protocol, RS485 serial interface  |
| IST  | Modbus TCP/IP protocol, Ethernet port        |
| ISB  | BACnet MSTP protocol, RS485 serial interface |
| ISBT | BACnet TCP/IP protocol, Ethernet port        |
| ISL  | LonWorks protocol, FT-10 serial interface    |
| ISS  | SNMP protocol, Ethernet port                 |
| IAV  | Remote set-point, 0-10 V signal              |

|     |   |
|-----|---|
| IAA | Remote set-point, 4-20 mA signal              |
| IAS | Remote signal for second set-point activation |
| IDL | Demand limit from digital input               |

### LOOSE ACCESSORIES

|    |                                 |
|----|---------------------------------|
| MN | High and low pressure gauges    |
| CR | Remote control panel            |
| RP | Coil protection metallic guards |
| AG | Rubber shock absorbers          |
| AM | Spring shock absorbers          |

# CHA/K 726-P÷36012-P



| MODEL                      |  | 726-P   | 786-P    | 826-P | 906-P | 1048-P | 1128-P | 1208-P | 13010-P | 15010-P |       |
|----------------------------|--|---------|----------|-------|-------|--------|--------|--------|---------|---------|-------|
| Cooling                    | Cooling capacity (1)                           | kW      | 199      | 226   | 251   | 276    | 304    | 335    | 367     | 444     |       |
|                            | Absorbed power (1)                             | kW      | 69       | 80    | 85    | 94     | 104    | 113    | 122     | 155     |       |
|                            | EER (1)  |         | 2.88     | 2.83  | 2.95  | 2.94   | 2.92   | 2.96   | 3.01    | 3.05    | 2.86  |
| Cooling (EN14511)          | Cooling capacity (1)                           | kW      | 198      | 225   | 250   | 275    | 303    | 334    | 365     | 402     | 442   |
|                            | Absorbed power (1)                             | kW      | 70       | 81    | 86    | 95     | 105    | 115    | 124     | 134     | 157   |
|                            | EER (1)  |         | 2.84     | 2.78  | 2.89  | 2.89   | 2.87   | 2.91   | 2.95    | 3.00    | 2.81  |
|                            | SEER (2)                                       |         | 3.82     | 3.86  | 3.99  | 4.00   | 3.87   | 3.96   | 4.09    | 4.28    | 4.33  |
|                            | Energy Efficiency (2)                          | %       | 150      | 151   | 157   | 157    | 152    | 155    | 161     | 168     | 170   |
|                            | SEER with EC or ECH accessory (2)              |         | 4.13     | 4.11  | 4.17  | 4.22   | 4.15   | 4.23   | 4.34    | 4.55    | 4.56  |
|                            | Energy Efficiency with EC or ECH accessory (2) | %       | 162      | 161   | 164   | 166    | 163    | 166    | 171     | 179     | 179   |
| Heating                    | Heating capacity (3)                           | kW      | 228      | 255   | 283   | 310    | 338    | 369    | 401     | 441     | 510   |
|                            | Absorbed power (3)                             | kW      | 73       | 83    | 90    | 103    | 108    | 121    | 132     | 141     | 164   |
|                            | COP (3)  |         | 3.12     | 3.07  | 3.14  | 3.01   | 3.13   | 3.05   | 3.04    | 3.13    | 3.11  |
| Heating (EN14511)          | Heating capacity (3)                           | kW      | 228      | 255   | 283   | 311    | 338    | 370    | 402     | 442     | 511   |
|                            | Absorbed power (3)                             | kW      | 73       | 83    | 90    | 103    | 108    | 122    | 133     | 142     | 165   |
|                            | COP (3)  |         | 3.12     | 3.07  | 3.14  | 3.01   | 3.12   | 3.04   | 3.03    | 3.12    | 3.10  |
|                            | SCOP (4)                                       |         | 3.20     | 3.21  | 3.22  | 3.21   | 3.22   | 3.21   | 3.22    | 3.21    | 3.22  |
| Compressor                 | Energy Efficiency (4)                          | %       | 125      | 125   | 126   | 125    | 126    | 125    | 126     | 125     | 126   |
|                            | Quantity                                       | n°      | 3+3      | 3+3   | 3+3   | 3+3    | 4+4    | 4+4    | 4+4     | 5+5     | 5+5   |
|                            | Refrigerant circuits                           | n°      | 2        | 2     | 2     | 2      | 2      | 2      | 2       | 2       | 2     |
|                            | Capacity steps                                 | n°      | 6        |       |       | 8      |        |        | 8       |         |       |
| Evaporator                 | Water flow                                     | l/s     | 9.51     | 10.80 | 11.99 | 13.19  | 14.52  | 16.01  | 17.53   | 19.25   | 21.21 |
|                            | Pressure drops                                 | kPa     | 40       | 51    | 62    | 54     | 50     | 49     | 59      | 47      | 59    |
|                            | Water connections                              | DN      | 80       | 80    | 80    | 80     | 80     | 80     | 80      | 80      | 80    |
| Electrical characteristics | Power supply                                   | V/Ph/Hz | 400/3/50 |       |       |        |        |        |         |         |       |
|                            | Max. running current                           | A       | 152      | 166   | 179   | 191    | 216    | 233    | 250     | 274     | 316   |
|                            | Max. starting current                          | A       | 276      | 299   | 347   | 359    | 349    | 401    | 418     | 407     | 484   |
| Unit with pump             | Pump available static pressure                 | kPa     | 155      | 130   | 175   | 160    | 180    | 170    | 145     | 140     | 110   |
|                            | Water connections                              | DN      | 100      | 100   | 100   | 100    | 100    | 100    | 100     | 100     | 100   |
| Sound pressure             | STD version (5)                                | dB(A)   | 70       | 70    | 70    | 72     | 72     | 72     | 73      | 73      | 72    |
|                            | With SL accessory (5)                          | dB(A)   | 67       | 67    | 67    | 69     | 69     | 69     | 69      | 70      | 69    |
|                            | SSL version (5)                                | dB(A)   | 64       | 64    | 64    | 66     | 65     | 65     | 67      | 66      | 66    |
| Weights                    | Transport weight                               | Kg      | 1654     | 1674  | 1763  | 1961   | 2199   | 2457   | 2566    | 2610    | 3179  |
|                            | Operating weight                               | Kg      | 1670     | 1690  | 1780  | 1980   | 2220   | 2480   | 2590    | 2640    | 3210  |

| MODEL                      |  | 16812-P | 18012-P  | 21012-P | 24012-P | 27012-P | 30012-P | 33012-P | 36012-P |       |  |
|----------------------------|--|---------|----------|---------|---------|---------|---------|---------|---------|-------|--|
| Cooling                    | Cooling capacity (1)                           | kW      | 495      | 546     | 602     | 671     | 751     | 845     | 942     | 1051  |  |
|                            | Absorbed power (1)                             | kW      | 170      | 184     | 211     | 243     | 275     | 303     | 336     | 365   |  |
|                            | EER (1)  |         | 2.91     | 2.97    | 2.85    | 2.76    | 2.73    | 2.79    | 2.80    | 2.88  |  |
| Cooling (EN14511)          | Cooling capacity (1)                           | kW      | 493      | 544     | 599     | 669     | 749     | 842     | 939     | 1047  |  |
|                            | Absorbed power (1)                             | kW      | 172      | 186     | 214     | 246     | 277     | 306     | 339     | 369   |  |
|                            | EER (1)  |         | 2.87     | 2.92    | 2.81    | 2.72    | 2.70    | 2.75    | 2.77    | 2.84  |  |
|                            | SEER (2)                                       |         | 4.30     | 4.32    | 4.39    | 4.32    | 4.34    | 4.33    | 4.34    | 4.33  |  |
|                            | Energy Efficiency (2)                          | %       | 169      | 170     | 173     | 170     | 171     | 170     | 171     | 170   |  |
|                            | SEER with EC or ECH accessory (2)              |         | 4.55     | 4.55    | 4.55    | 4.56    | 4.55    | 4.56    | 4.55    | 4.55  |  |
|                            | Energy Efficiency with EC or ECH accessory (2) | %       | 179      | 179     | 179     | 179     | 179     | 179     | 179     | 179   |  |
| Heating                    | Heating capacity (3)                           | kW      | 564      | 620     | 684     | 776     | 861     | 962     | 1078    | 1210  |  |
|                            | Absorbed power (3)                             | kW      | 182      | 202     | 223     | 249     | 282     | 312     | 349     | 383   |  |
|                            | COP (3)  |         | 3.10     | 3.07    | 3.07    | 3.12    | 3.05    | 3.08    | 3.09    | 3.16  |  |
| Heating (EN14511)          | Heating capacity (3)                           | kW      | 565      | 621     | 685     | 777     | 862     | 963     | 1079    | 1211  |  |
|                            | Absorbed power (3)                             | kW      | 183      | 203     | 224     | 250     | 283     | 313     | 350     | 384   |  |
|                            | COP (3)  |         | 3.09     | 3.07    | 3.06    | 3.11    | 3.05    | 3.08    | 3.08    | 3.15  |  |
|                            | SCOP (4)                                       |         | 3.19     | 3.19    | 3.19    | 3.19    | 3.19    | 3.19    | 3.19    | 3.19  |  |
| Compressor                 | Energy Efficiency (4)                          | %       | 125      | 125     | 125     | 125     | 125     | 125     | 125     | 125   |  |
|                            | Quantity                                       | n°      | 6+6      | 6+6     | 6+6     | 6+6     | 6+6     | 6+6     | 6+6     | 6+6   |  |
|                            | Refrigerant circuits                           | n°      | 2        | 2       | 2       | 2       | 2       | 2       | 2       | 2     |  |
|                            | Capacity steps                                 | n°      | 10       |         |         |         |         |         |         |       |  |
| Evaporator                 | Water flow                                     | l/s     | 23.65    | 26.09   | 28.76   | 32.06   | 35.88   | 40.37   | 45.01   | 50.21 |  |
|                            | Pressure drops                                 | kPa     | 49       | 60      | 58      | 49      | 41      | 51      | 42      | 52    |  |
|                            | Water connections                              | DN      | 80       | 80      | 80      | 150     | 150     | 150     | 150     | 150   |  |
| Electrical characteristics | Power supply                                   | V/Ph/Hz | 400/3/50 |         |         |         |         |         |         |       |  |
|                            | Max. running current                           | A       | 350      | 375     | 422     | 485     | 545     | 598     | 676     | 746   |  |
|                            | Max. starting current                          | A       | 518      | 543     | 600     | 662     | 759     | 812     | 938     | 1007  |  |
| Unit with pump             | Pump available static pressure                 | kPa     | 165      | 145     | 135     | 125     | 165     | 140     | 130     | 100   |  |
|                            | Water connections                              | DN      | 100      | 100     | 150     | 150     | 150     | 150     | 150     | 150   |  |
| Sound pressure             | STD version (5)                                | dB(A)   | 73       | 75      | 76      | 76      | 76      | 76      | 76      | 77    |  |
|                            | With SL accessory (5)                          | dB(A)   | 70       | 72      | 73      | 73      | 73      | 73      | 73      | 74    |  |
|                            | SSL version (5)                                | dB(A)   | 67       | 69      | 70      | 70      | 69      | 70      | ---     | ---   |  |
| Weights                    | Transport weight                               | Kg      | 3294     | 3463    | 3517    | 3682    | 4200    | 4518    | 4918    | 5044  |  |
|                            | Operating weight                               | Kg      | 3330     | 3500    | 3560    | 3730    | 4260    | 4580    | 4990    | 5120  |  |

| DIMENSIONS |         | 726-P | 786-P | 826-P | 906-P | 1048-P | 1128-P | 1208-P | 13010-P | 15010-P | 16812-P | 18012-P | 21012-P | 24012-P | 27012-P | 30012-P | 33012-P | 36012-P |      |
|------------|---------|-------|-------|-------|-------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------|
| L          | STD     | mm    | 2800  | 2800  | 2800  | 2800   | 4000   | 4000   | 4000    | 4000    | 5000    | 5000    | 5000    | 5000    | 5000    | 6200    | 6200    | 7200    | 7200 |
|            | SSL     | mm    | 2800  | 2800  | 2800  | 2800   | 4000   | 4000   | 4000    | 4000    | 5000    | 5000    | 5000    | 5000    | 6200    | 7200    | 7200    | ---     | ---  |
| W          | STD/SSL | mm    | 2200  | 2200  | 2200  | 2200   | 2200   | 2200   | 2200    | 2200    | 2200    | 2200    | 2200    | 2200    | 2200    | 2200    | 2200    | 2200    | 2200 |
| H          | STD/SSL | mm    | 2100  | 2100  | 2100  | 2100   | 2100   | 2100   | 2100    | 2100    | 2100    | 2100    | 2100    | 2100    | 2100    | 2100    | 2100    | 2100    | 2100 |

## CLEARANCE AREA

CHA/K 726-P÷36012-P

500 | 1800 | 1000 | 1800



Electrical board side

## NOTES

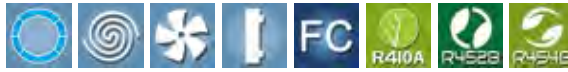
- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  - Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  - Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
  - Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
  - Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of SSL and WP versions are specified on technical brochure.





# CHA/K/FC 726-P÷36012-P

**AIRCOOLED LIQUID CHILLERS FREE-COOLING WITH AXIAL FANS, SCROLL COMPRESSORS AND PLATE EXCHANGER.**



The liquid Chillers of the CHA/K/FC 726-P÷36012-P series, with R410A refrigerant, provide advanced technology, flexible and reliable, through an intelligent control module which optimizes the operating times and the powers delivered by the Scroll compressors, according to the needs of the systems, both civil and industrial, where the production of chilled water is required in continuous service throughout the year. During the cold months, in **FREE-COOLING** operating mode, the liquid returning from the system is cooled directly, by way of the forced convection of outside air through the condensing coil, thus reducing the energy required for the Scroll compressors operation that the units are equipped with. A system of 3-way valves, controlled by the electronic microprocessor controller that manages the entire unit, can, depending on outside air temperature, operate in CHILLER, FREE-COOLING or MIXED (CHILLER and FREE-COOLING at the same time) mode. CHA/K/FC 726-P÷36012-P allows the reduction of inrush currents generated, the elimination of inertial accumulation tanks and an excellent silent functioning, as the fans adjust their speed to the actual load of the system, providing great benefits especially at night. Are available as option the new EC Inverter fans with high available static pressure and efficiency.

**multi  
power**

FREE COOLING

**The units are compliant to the ErP 2021 Regulation for process cooling application.**

On request, units can be supplied with **R452B (CHA/G/FC 726-P÷36012-P)** or **R454B (CHA/L/FC 726-P÷36012-P)** refrigerant.

## VERSION

**CHA/K/FC**

Cooling only

## FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils combined with FREE-COOLING coils.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valve on liquid line in 1048-P÷36012-P models.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, high and low pressure transducers on cooling circuit and an electrical heater on electrical board.
- Microprocessor control and regulation system.

## ACCESSORIES

### FACTORY FITTED ACCESSORIES

|     |  |
|-----|--|
| IM  | Automatic circuit breakers                           |
| SL  | Unit silencement                                     |
| RFM | Cooling circuit shut-off valve on discharge line     |
| RFL | Cooling circuit shut-off valve on liquid line        |
| BT  | Low water temperature Kit                            |
| EC  | EC Inverter fans                                     |
| ECH | EC Inverter fans with high available static pressure |
| TX  | Coil with pre-coated fins                            |
| PS  | Single circulating pump                              |
| PSI | Inverter single circulating pump                     |

|      |  |
|------|--|
| PD   | Double circulating pump                      |
| PDI  | Inverter double circulating pump             |
| SS   | Soft start                                   |
| IS   | Modbus RTU protocol, RS485 serial interface  |
| IST  | Modbus TCP/IP protocol, Ethernet port        |
| ISB  | BACnet MSTP protocol, RS485 serial interface |
| ISBT | BACnet TCP/IP protocol, Ethernet port        |
| ISL  | LonWorks protocol, FTT-10 serial interface   |
| ISS  | SNMP protocol, Ethernet port                 |

|     |   |
|-----|---|
| I/V | Remote set-point, 0-10 V signal               |
| I/A | Remote set-point, 4-20 mA signal              |
| I/A | Remote signal for second set-point activation |
| IDL | Demand limit from digital input               |

### LOOSE ACCESSORIES

|    |                                 |
|----|---------------------------------|
| MN | High and low pressure gauges    |
| CR | Remote control panel            |
| RP | Coil protection metallic guards |
| AG | Rubber shock absorbers          |
| AM | Spring shock absorbers          |

## CHA/K/FC 726-P÷36012-P

| MODEL                      |                                |         | 726-P    | 786-P | 826-P | 906-P | 1048-P | 1128-P | 1208-P | 13010-P | 15010-P |
|----------------------------|--------------------------------|---------|----------|-------|-------|-------|--------|--------|--------|---------|---------|
| Cooling                    | Cooling capacity (1)           | kW      | 208      | 236   | 263   | 290   | 328    | 365    | 401    | 441     | 483     |
|                            | Absorbed power (1)             | kW      | 76       | 87    | 88    | 98    | 108    | 123    | 132    | 147     | 163     |
|                            | EER (1)                        |         | 2.74     | 2.71  | 2.99  | 2.96  | 3.04   | 2.97   | 3.04   | 3.00    | 2.96    |
| Cooling (EN14511)          | Cooling capacity (1)           | kW      | 206      | 234   | 260   | 287   | 325    | 362    | 398    | 438     | 479     |
|                            | Absorbed power (1)             | kW      | 78       | 89    | 91    | 101   | 111    | 126    | 135    | 150     | 167     |
|                            | EER (1)                        |         | 2.64     | 2.63  | 2.86  | 2.84  | 2.93   | 2.87   | 2.95   | 2.92    | 2.87    |
|                            | SEPR (2)                       |         | 5.04     | 5.03  | 5.02  | 5.05  | 5.01   | 5.06   | 5.02   | 5.51    | 5.53    |
| Free-Cooling cycle         | Air temperature (3)            | °C      | -2.0     | -2.8  | -2.5  | -0.2  | -2.7   | -3.5   | -1.0   | -2.0    | -1.0    |
|                            | Absorbed power (3)             | kW      | 7.0      | 7.0   | 10.5  | 10.5  | 14.0   | 14.0   | 14.0   | 14.0    | 17.5    |
| Compressor                 | Quantity                       | n°      | 3+3      | 3+3   | 3+3   | 3+3   | 4+4    | 4+4    | 4+4    | 5+5     | 5+5     |
|                            | Refrigerant circuits           | n°      | 2        | 2     | 2     | 2     | 2      | 2      | 2      | 2       | 2       |
|                            | Capacity steps                 | n°      |          |       |       | 4     |        |        |        |         | 6       |
| Water circuit              | Water flow                     | l/s     | 11.02    | 12.38 | 13.87 | 15.31 | 17.32  | 19.34  | 21.21  | 23.33   | 25.52   |
|                            | Pressure drops                 | kPa     | 102      | 126   | 165   | 124   | 112    | 106    | 115    | 100     | 120     |
|                            | Water connections              | DN      | 100      | 100   | 100   | 100   | 100    | 100    | 100    | 100     | 100     |
|                            | Power supply                   | V/Ph/Hz | 400/3/50 |       |       |       |        |        |        |         |         |
| Electrical characteristics | Max. running current           | A       | 152      | 166   | 187   | 199   | 232    | 249    | 266    | 282     | 332     |
|                            | Max. starting current          | A       | 276      | 299   | 354   | 367   | 365    | 417    | 433    | 415     | 500     |
|                            | Pump available static pressure | kPa     | 150      | 115   | 70    | 100   | 95     | 80     | 105    | 115     | 85      |
| Unit with pump             | Water connections              | DN      | 100      | 100   | 100   | 100   | 100    | 100    | 100    | 100     | 100     |
|                            | STD version (4)                | dB(A)   | 70       | 70    | 71    | 73    | 73     | 73     | 74     | 75      | 74      |
| Sound pressure             | With SL accessory (4)          | dB(A)   | 68       | 67    | 68    | 70    | 70     | 70     | 71     | 72      | 71      |
|                            | Transport weight               | Kg      | 2175     | 2185  | 2360  | 2435  | 2990   | 3020   | 3220   | 3510    | 3920    |
| Weights                    | Operating weight               | Kg      | 2310     | 2320  | 2500  | 2630  | 3190   | 3220   | 3470   | 3770    | 4250    |

| MODEL                      |                                |         | 16812-P  | 18012-P | 21012-P | 24012-P | 27012-P | 30012-P | 33012-P | 36012-P |
|----------------------------|--------------------------------|---------|----------|---------|---------|---------|---------|---------|---------|---------|
| Cooling                    | Cooling capacity (1)           | kW      | 536      | 590     | 665     | 738     | 827     | 920     | 1014    | 1102    |
|                            | Absorbed power (1)             | kW      | 179      | 199     | 230     | 266     | 305     | 340     | 368     | 412     |
|                            | EER (1)                        |         | 2.99     | 2.96    | 2.89    | 2.77    | 2.71    | 2.71    | 2.76    | 2.67    |
| Cooling (EN14511)          | Cooling capacity (1)           | kW      | 532      | 585     | 659     | 731     | 818     | 911     | 1004    | 1102    |
|                            | Absorbed power (1)             | kW      | 183      | 204     | 236     | 273     | 314     | 349     | 378     | 412     |
|                            | EER (1)                        |         | 2.91     | 2.87    | 2.79    | 2.68    | 2.61    | 2.61    | 2.66    | 2.67    |
|                            | SEPR (2)                       |         | 5.52     | 5.54    | 5.56    | 5.58    | 5.55    | 5.53    | 5.52    | 5.51    |
| Free-Cooling cycle         | Air temperature (3)            | °C      | -2.2     | -2.7    | -3.0    | -3.5    | -2.5    | -0.1    | 0.1     | -0.4    |
|                            | Absorbed power (3)             | kW      | 17.5     | 17.5    | 17.5    | 21.0    | 24.5    | 28.0    | 31.5    | 31.5    |
| Compressor                 | Quantity                       | n°      | 6+6      | 6+6     | 6+6     | 6+6     | 6+6     | 6+6     | 6+6     | 6+6     |
|                            | Refrigerant circuits           | n°      | 2        | 2       | 2       | 2       | 2       | 2       | 2       | 2       |
|                            | Capacity steps                 | n°      |          |         |         |         | 8       |         |         |         |
| Water circuit              | Water flow                     | l/s     | 28.28    | 31.09   | 35.11   | 38.89   | 43.64   | 48.52   | 53.51   | 58.13   |
|                            | Pressure drops                 | kPa     | 121      | 132     | 148     | 152     | 172     | 151     | 162     | 173     |
|                            | Water connections              | DN      | 125      | 125     | 125     | 150     | 150     | 150     | 150     | 150     |
|                            | Power supply                   | V/Ph/Hz | 400/3/50 |         |         |         |         |         |         |         |
| Electrical characteristics | Max. running current           | A       | 365      | 391     | 438     | 500     | 561     | 622     | 699     | 769     |
|                            | Max. starting current          | A       | 533      | 558     | 615     | 678     | 774     | 835     | 961     | 1031    |
|                            | Pump available static pressure | kPa     | 110      | 90      | 60      | 160     | 125     | 125     | 90      | 110     |
| Unit with pump             | Water connections              | DN      | 125      | 125     | 125     | 150     | 150     | 150     | 150     | 150     |
|                            | STD version (4)                | dB(A)   | 74       | 76      | 78      | 78      | 79      | 78      | 78      | 79      |
| Sound pressure             | With SL accessory (4)          | dB(A)   | 71       | 74      | 75      | 75      | 75      | 75      | 75      | 76      |
|                            | Transport weight               | Kg      | 4180     | 4220    | 5060    | 5240    | 5830    | 6880    | 7410    | 7530    |
| Weights                    | Operating weight               | Kg      | 4520     | 4560    | 5460    | 5650    | 6320    | 7600    | 8220    | 8340    |

| DIMENSIONS |     |    | 726-P | 786-P | 826-P | 906-P | 1048-P | 1128-P | 1208-P | 13010-P | 15010-P |
|------------|-----|----|-------|-------|-------|-------|--------|--------|--------|---------|---------|
| L          | STD | mm | 4000  | 4000  | 4000  | 4000  | 5000   | 5000   | 5000   | 5000    | 6200    |
| W          | STD | mm | 2200  | 2200  | 2200  | 2200  | 2200   | 2200   | 2200   | 2200    | 2200    |
| H          | STD | mm | 2360  | 2360  | 2360  | 2360  | 2360   | 2360   | 2360   | 2360    | 2360    |

| DIMENSIONS |     |    | 16812-P | 18012-P | 21012-P | 24012-P | 27012-P | 30012-P | 33012-P | 36012-P |
|------------|-----|----|---------|---------|---------|---------|---------|---------|---------|---------|
| L          | STD | mm | 6200    | 6200    | 7200    | 7200    | 8400    | 9600    | 10600   | 10600   |
| W          | STD | mm | 2200    | 2200    | 2200    | 2200    | 2200    | 2200    | 2200    | 2200    |
| H          | STD | mm | 2360    | 2360    | 2360    | 2360    | 2360    | 2360    | 2360    | 2360    |

### CLEARANCE AREA

CHA/K/FC 726-P÷36012-P

500 | 1800 | 1000 | 1800



### NOTES

- Chilled water (with ethylene glycol at 30%) from 15 to 10 °C, ambient air temperature 35 °C.
- Seasonal energy efficiency of process cooling at high temperature. According to EU Regulation n. 2016/2281.
- Ambient air temperature at which the cooling capacity indicated in point (1) is reached.
- Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.

FROM 200 KW TO 1062 KW.

# CHA/K 726÷36012

**AIRCOOLED LIQUID CHILLERS AND HEAT PUMPS WITH AXIAL FANS, SCROLL COMPRESSORS AND SHELL AND TUBE EXCHANGER**



The liquid Chillers and Heat Pumps of the CHA/K 726÷36012 series, with R410A refrigerant, are designed for large-sized service sector or industrial ambients.

The units are characterized by multi-compressor design on double cooling circuit, to reach high energy performances, reduction of current at start-up, elimination of inertial tanks and excellent silent functioning. The use of components built in large series makes them highly reliable and the management of an high number of compressors allows increased life span with reduction of machine stopping risks and easier maintenance operations. A wide range of accessories, factory fitted or supplied separately, complete the outstanding versatility and functionality of the series.

Are available as option the new EC Inverter fans with high available static pressure and efficiency.

**Cooling only units are compliant to the ErP 2021 Regulation for process cooling application; for comfort cooling application they are compliant if provided with EC or ECH accessory (EC Inverter fans).**

**Heat pump models 726÷13010 are compliant to the ErP Regulation; models 15010÷36012 are compliant if provided with EC or ECH accessory (EC Inverter fans).**

On request, units can be supplied with **R452B (CHA/G 726÷36012)** or **R454B (CHA/L 726÷36012)** refrigerant.



## VERSION

| CHA/K                       | CHA/K/WP                            |
|-----------------------------|-------------------------------------|
| Cooling only                | Reversible Heat Pump                |
| CHA/K/SSL                   | CHA/K/WP/SSL                        |
| Super silenced cooling only | Super silenced reversible Heat Pump |

## FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coils.
- Shell and tube type evaporator with two independent circuits on the refrigerant side and one on the water side, complete with water differential pressure switch.
- Cooling circuit shut-off valve on liquid line in 1048÷36012 models.
- Electronic expansion valve.
- Electronic high and low pressure gauges.
- R410A refrigerant. On request R452B or R454B refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses or magnetothermic switches, thermal protection relays for compressors and thermocontacts for fans.
- Microprocessor control and regulation system.

## ACCESSORIES

### FACTORY FITTED ACCESSORIES

|       |  |      |  |     |   |
|-------|--|------|--|-----|---|
| IM    | Automatic circuit breakers                           | TX   | Coil with pre-coated fins                    | ISL | LonWorks protocol, FTT-10 serial interface    |
| SL    | Unit silencing                                       | EW   | External water connections                   | ISS | SNMP protocol, Ethernet port                  |
| RFM   | Cooling circuit shut-off valve on discharge line     | PU   | Single circulating pump                      | IAV | Remote set-point, 0-10 V signal               |
| RFL   | Cooling circuit shut-off valve on liquid line        | PUI  | Inverter single circulating pump             | IAA | Remote set-point, 4-20 mA signal              |
| CT    | Condensing control down to 0 °C                      | PD   | Double circulating pump                      | IAS | Remote signal for second set-point activation |
| CC    | Condensing control down to -20 °C                    | PDI  | Inverter double circulating pump             | IDL | Demand limit from digital input               |
| BT    | Low water temperature Kit                            | FE   | Antifreeze heater for evaporator             |     |   |
| EC    | EC Inverter fans                                     | SS   | Soft start                                   |     |   |
| ECH   | EC Inverter fans with high available static pressure | IS   | Modbus RTU protocol, RS485 serial interface  |     |   |
| HR    | Desuperheater  | IST  | Modbus TCP/IP protocol, Ethernet port        |     |   |
| HRT/S | Total heat recovery in series                        | ISB  | BACnet MSTP protocol, RS485 serial interface |     |   |
| HRT/P | Total heat recovery in parallel                      | ISBT | BACnet TCP/IP protocol, Ethernet port        |     |   |

### LOOSE ACCESSORIES

|    |                                 |
|----|---------------------------------|
| MN | High and low pressure gauges    |
| CR | Remote control panel            |
| RP | Coil protection metallic guards |
| AG | Rubber shock absorbers          |
| AM | Spring shock absorbers          |
| FL | Flow switch                     |

# CHA/K 726÷36012



| MODEL                      |  | 726     | 786      | 826   | 906   | 1048  | 1128  | 1208  | 13010 | 15010 |       |
|----------------------------|--|---------|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| Cooling                    | Cooling capacity (1)                           | kW      | 200      | 224   | 248   | 270   | 302   | 328   | 367   | 404   | 445   |
|                            | Absorbed power (1)                             | kW      | 70       | 80    | 86    | 97    | 105   | 115   | 121   | 136   | 158   |
|                            | EER (1)  |         | 2.86     | 2.80  | 2.88  | 2.78  | 2.88  | 2.85  | 3.03  | 2.97  | 2.82  |
| Cooling (EN14511)          | Cooling capacity (1)                           | kW      | 199      | 223   | 247   | 269   | 301   | 326   | 365   | 403   | 444   |
|                            | Absorbed power (1)                             | kW      | 71       | 81    | 87    | 98    | 106   | 117   | 123   | 137   | 159   |
|                            | EER (1)  |         | 2.80     | 2.75  | 2.84  | 2.74  | 2.84  | 2.79  | 2.97  | 2.94  | 2.79  |
|                            | SEER (2)                                       |         | 3.80     | 3.83  | 3.96  | 3.99  | 3.85  | 3.96  | 4.07  | 4.27  | 4.31  |
|                            | Energy Efficiency (2)                          | %       | 149      | 150   | 155   | 157   | 151   | 155   | 160   | 168   | 169   |
|                            | SEER with EC or ECH accessory (2)              |         | 4.13     | 4.11  | 4.17  | 4.22  | 4.15  | 4.23  | 4.34  | 4.56  | 4.56  |
|                            | Energy Efficiency with EC or ECH accessory (2) | %       | 162      | 161   | 164   | 166   | 163   | 166   | 171   | 179   | 179   |
| Heating                    | Heating capacity (3)                           | kW      | 229      | 252   | 280   | 304   | 336   | 362   | 401   | 442   | 512   |
|                            | Absorbed power (3)                             | kW      | 74       | 83    | 91    | 106   | 109   | 123   | 130   | 145   | 167   |
|                            | COP (3)  |         | 3.09     | 3.04  | 3.08  | 2.87  | 3.08  | 2.94  | 3.08  | 3.05  | 3.07  |
| Heating (EN14511)          | Heating capacity (3)                           | kW      | 229      | 252   | 280   | 305   | 336   | 363   | 402   | 443   | 513   |
|                            | Absorbed power (3)                             | kW      | 74       | 83    | 91    | 107   | 109   | 124   | 131   | 146   | 168   |
|                            | COP (3)  |         | 3.09     | 3.04  | 3.08  | 2.86  | 3.07  | 2.93  | 3.07  | 3.04  | 3.06  |
|                            | SCOP (4)                                       |         | 3.22     | 3.20  | 3.21  | 3.22  | 3.21  | 3.22  | 3.23  | 3.21  | 3.20  |
| Energy Efficiency (4)      |  | %       | 126      | 125   | 125   | 126   | 125   | 126   | 126   | 125   | 125   |
|                            | Quantity                                       | n°      | 3+3      | 3+3   | 3+3   | 3+3   | 4+4   | 4+4   | 4+4   | 5+5   | 5+5   |
| Compressor                 | Refrigerant circuits                           | n°      | 2        | 2     | 2     | 2     | 2     | 2     | 2     | 2     |       |
|                            | Capacity steps                                 | n°      | 6        |       |       | 8     |       |       | 8     |       |       |
| Evaporator                 | Water flow                                     | l/s     | 9.44     | 10.58 | 11.71 | 12.75 | 14.26 | 15.49 | 17.33 | 19.08 | 21.01 |
|                            | Pressure drops                                 | kPa     | 45       | 42    | 45    | 50    | 48    | 56    | 55    | 45    | 33    |
|                            | Water connections                              | DN      | 100      | 100   | 100   | 100   | 100   | 100   | 100   | 125   | 125   |
| Electrical characteristics | Power supply                                   | V/Ph/Hz | 400/3/50 |       |       |       |       |       |       |       |       |
|                            | Max. running current                           | A       | 152      | 166   | 179   | 191   | 216   | 233   | 250   | 274   | 316   |
|                            | Max. starting current                          | A       | 276      | 299   | 347   | 359   | 349   | 401   | 418   | 407   | 484   |
| Unit with pump             | Pump available static pressure                 | kPa     | 150      | 140   | 195   | 170   | 180   | 165   | 150   | 140   | 135   |
|                            | Water connections                              | DN      | 100      | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   |
| Sound pressure             | STD version (5)                                | dB(A)   | 70       | 70    | 70    | 72    | 72    | 72    | 73    | 73    | 72    |
|                            | With SL accessory (5)                          | dB(A)   | 67       | 67    | 67    | 69    | 69    | 69    | 69    | 70    | 69    |
|                            | SSL version (5)                                | dB(A)   | 64       | 64    | 64    | 66    | 65    | 65    | 67    | 66    | 66    |
| Weights                    | Transport weight                               | Kg      | 1703     | 1723  | 1813  | 2003  | 2253  | 2532  | 2642  | 2691  | 3283  |
|                            | Operating weight                               | Kg      | 1750     | 1770  | 1860  | 2050  | 2310  | 2600  | 2710  | 2780  | 3380  |

| MODEL                      |  | 16812   | 18012    | 21012 | 24012 | 27012 | 30012 | 33012 | 36012 |       |  |
|----------------------------|--|---------|----------|-------|-------|-------|-------|-------|-------|-------|--|
| Cooling                    | Cooling capacity (1)                           | kW      | 510      | 551   | 614   | 684   | 766   | 862   | 961   | 1062  |  |
|                            | Absorbed power (1)                             | kW      | 174      | 186   | 214   | 250   | 281   | 307   | 340   | 369   |  |
|                            | EER (1)  |         | 2.93     | 2.96  | 2.87  | 2.74  | 2.73  | 2.81  | 2.83  | 2.88  |  |
| Cooling (EN14511)          | Cooling capacity (1)                           | kW      | 508      | 549   | 611   | 682   | 763   | 858   | 958   | 1058  |  |
|                            | Absorbed power (1)                             | kW      | 176      | 188   | 217   | 252   | 284   | 311   | 343   | 373   |  |
|                            | EER (1)  |         | 2.89     | 2.92  | 2.82  | 2.71  | 2.69  | 2.76  | 2.79  | 2.84  |  |
|                            | SEER (2)                                       |         | 4.29     | 4.31  | 4.39  | 4.32  | 4.33  | 4.31  | 4.34  | 4.32  |  |
|                            | Energy Efficiency (2)                          | %       | 169      | 169   | 173   | 170   | 170   | 169   | 171   | 170   |  |
|                            | SEER with EC or ECH accessory (2)              |         | 4.55     | 4.55  | 4.55  | 4.56  | 4.55  | 4.56  | 4.55  | 4.55  |  |
|                            | Energy Efficiency with EC or ECH accessory (2) | %       | 179      | 179   | 179   | 179   | 179   | 179   | 179   | 179   |  |
| Heating                    | Heating capacity (3)                           | kW      | 581      | 626   | 698   | 791   | 878   | 981   | 1100  | 1222  |  |
|                            | Absorbed power (3)                             | kW      | 186      | 204   | 226   | 257   | 288   | 316   | 353   | 388   |  |
|                            | COP (3)  |         | 3.12     | 3.07  | 3.09  | 3.08  | 3.05  | 3.10  | 3.12  | 3.15  |  |
| Heating (EN14511)          | Heating capacity (3)                           | kW      | 582      | 627   | 699   | 792   | 879   | 982   | 1101  | 1223  |  |
|                            | Absorbed power (3)                             | kW      | 187      | 205   | 227   | 258   | 289   | 317   | 354   | 389   |  |
|                            | COP (3)  |         | 3.12     | 3.06  | 3.08  | 3.07  | 3.04  | 3.10  | 3.11  | 3.14  |  |
|                            | SCOP (4)                                       |         | 3.19     | 3.19  | 3.19  | 3.19  | 3.19  | 3.19  | 3.19  | 3.19  |  |
| Energy Efficiency (4)      |  | %       | 125      | 125   | 125   | 125   | 125   | 125   | 125   | 125   |  |
|                            | Quantity                                       | n°      | 6+6      | 6+6   | 6+6   | 6+6   | 6+6   | 6+6   | 6+6   | 6+6   |  |
| Compressor                 | Refrigerant circuits                           | n°      | 2        | 2     | 2     | 2     | 2     | 2     | 2     | 2     |  |
|                            | Capacity steps                                 | n°      | 10       |       |       |       |       |       |       |       |  |
| Evaporator                 | Water flow                                     | l/s     | 24.08    | 26.02 | 28.99 | 32.30 | 36.17 | 40.71 | 45.38 | 50.15 |  |
|                            | Pressure drops                                 | kPa     | 43       | 54    | 59    | 46    | 55    | 62    | 47    | 52    |  |
|                            | Water connections                              | DN      | 125      | 125   | 125   | 150   | 150   | 150   | 150   | 150   |  |
| Electrical characteristics | Power supply                                   | V/Ph/Hz | 400/3/50 |       |       |       |       |       |       |       |  |
|                            | Max. running current                           | A       | 350      | 375   | 422   | 485   | 545   | 598   | 676   | 746   |  |
|                            | Max. starting current                          | A       | 518      | 543   | 600   | 662   | 759   | 812   | 938   | 1007  |  |
| Unit with pump             | Pump available static pressure                 | kPa     | 165      | 150   | 130   | 130   | 150   | 125   | 125   | 95    |  |
|                            | Water connections                              | DN      | 100      | 100   | 150   | 150   | 150   | 150   | 150   | 150   |  |
| Sound pressure             | STD version (5)                                | dB(A)   | 73       | 75    | 76    | 76    | 76    | 76    | 76    | 77    |  |
|                            | With SL accessory (5)                          | dB(A)   | 70       | 72    | 73    | 73    | 73    | 73    | 73    | 74    |  |
|                            | SSL version (5)                                | dB(A)   | 67       | 69    | 70    | 70    | 69    | 70    | ---   | ---   |  |
| Weights                    | Transport weight                               | Kg      | 3383     | 3565  | 3605  | 3840  | 4385  | 4705  | 5210  | 5330  |  |
|                            | Operating weight                               | Kg      | 3480     | 3670  | 3720  | 3970  | 4540  | 4860  | 5470  | 5590  |  |

| DIMENSIONS |         | 726 | 786  | 826  | 906  | 1048 | 1128 | 1208 | 13010 | 15010 | 16812 | 18012 | 21012 | 24012 | 27012 | 30012 | 33012 | 36012 |      |
|------------|---------|-----|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| L          | STD     | mm  | 2800 | 2800 | 2800 | 2800 | 4000 | 4000 | 4000  | 4000  | 5000  | 5000  | 5000  | 5000  | 5000  | 6200  | 6200  | 7200  | 7200 |
|            | SSL     | mm  | 2800 | 2800 | 2800 | 2800 | 4000 | 4000 | 4000  | 4000  | 5000  | 5000  | 5000  | 5000  | 6200  | 7200  | 7200  | ---   | ---  |
| W          | STD/SSL | mm  | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200  | 2200  | 2200  | 2200  | 2200  | 2200  | 2200  | 2200  | 2200  | 2200  | 2200 |
| H          | STD/SSL | mm  | 2100 | 2100 | 2100 | 2100 | 2100 | 2100 | 2100  | 2100  | 2100  | 2100  | 2100  | 2100  | 2100  | 2100  | 2100  | 2100  | 2100 |

## CLEARANCE AREA

CHA/K 726÷36012

500 | 1800 | 1000 | 1800



## NOTES

- Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  - Seasonal energy efficiency of cooling at low temperature. According to EU Regulation n. 2016/2281.
  - Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
  - Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
  - Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of SSL and WP versions are specified on technical brochure.