Commercial Refrigeration Catalogue 2021
Daikin is a strong challenger in the refrigeration market. We can create the ideal solution for each customer’s specific situation. As our products contain the latest technologies we ensure the highest energy efficiency. Our units are rigorously tested in order to provide you reliable operation. With the acquisition of the Zanotti, Tewis and AHT groups, we expand our refrigeration business providing a larger and more diverse product line for all aspects in the cold chain.
Refrigeration

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Any refrigeration system that contains fluorinated greenhouse gases is in scope of the F-gas regulations.

For fully/partially pre-charged equipment: contains fluorinated greenhouse gases. Actual refrigerant charge depends on the final unit construction, details can be found on the unit labels.

For non pre-charged equipment (including, but not limited to racks): its functioning relies on fluorinated greenhouse gases.

The F-gas regulations do not apply to systems that contain only natural refrigerants such as propane (R-290) and carbon dioxide (R-744).

<table>
<thead>
<tr>
<th>Refrigerant</th>
<th>GWP AR4</th>
<th>GWP AR5</th>
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<td>R-744</td>
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</table>

For latest data, please consult my.daikin.eu
We know refrigeration inside out

• We have over 100 years of experience in the Refrigeration business.
• We can meet all refrigeration needs from farm to fork, thanks to our wide range of refrigeration products.
• Innovative and Reliable own technology and expertise on Refrigerants, controls and compressors!
• Your advisor for solutions to meet your needs in line with legislation (F-gas regulation, ecodesign,...) and with focus on reliability, safety, Total Equivalent Warming impact (see page 7) and running cost.

Why choose Daikin?
Controlled temperatures throughout the whole supply chain

We can meet all refrigeration needs from farm to fork

Our extended product line-up is able to provide solutions for:

- **FOOD RETAIL**
- **EVENT SPACES**
- **COLD STORAGE**
- **CATERING**
- **CHILLED TRANSPORT**
- **HOTELS**
- **ICE SKATING RINKS**
- **CLEANROOMS/HOSPITALS**
- **BREWERY**
- **BAR**
- **FISHERY**
- **SEASONING (CHEESE/MEAT)**
- **BUTCHERS**
- **RESTAURANTS**
- **INDUSTRY**

We can fulfill any refrigeration need
Hubbard Products Ltd., is one of the UK’s leading designers, manufacturers and suppliers of commercial cooling equipment and has earned an enviable Global reputation for innovation and design-led excellence.

Daikin Europe N.V. is a major European producer of air conditioners, heating systems and refrigeration equipment, with approximately 5,500 employees throughout Europe and major manufacturing facilities based in Belgium, the Czech Republic, Germany, Italy, Turkey and the UK. Globally, Daikin is renowned for its pioneering approach to product development and the unrivalled quality and versatility of its integrated solutions.

Daikin Chemicals is one of the world’s foremost manufacturer of fluorochemical products and is a leading expert in that field. We strive to find new possibilities for living and industry by making the most of fluorine characteristics using our own exclusively developed technologies.

AHT develops, manufactures and sells refrigerating and freezing showcases specifically suited for food retailers. Leading the “plug-in” type showcases segment, AHT leads the market by the active launch of new products corresponding to evolving store layouts. Furthermore, utilizing its technological capabilities and business resources, AHT serves large accounts which include major food retail chains worldwide.

Tewis is a leading company in the design and engineering of refrigeration systems. Along with their expertise in customising controls (including monitoring), Tewis offers total comprehensive solutions for Refrigeration and Climate applications. Over the last few years, Tewis has focused on developing a range of CO₂ based refrigeration systems and has established a long-lasting relationship with key Spanish and Portuguese food retailers. Its mission and philosophy to date has been to achieve high reliability and realise remarkable energy savings for their customer base.

Zanotti is a refrigeration specialist founded in 1962. With over 50 years of experience in food storing services covering the needs of commercial and industrial refrigeration, but also the needs of the transportation of fresh and frozen products. Zanotti changed the refrigeration world from the early days with the introduction of the Uniblock, an all in one plug and play refrigeration unit for cold rooms. Today they employ more than 600 people, with three production facilities and an annual turnover of approx 130 million Euro.
Meeting customer needs!

Depending on type of application, location and customers interest/values, the optimal refrigeration solution for the customer can potentially be different! Thanks to our wide product portfolio, Daikin can offer what a customer really needs!

The DNA of our Advice is:

- **Safety and Reliability**
- **Reducing the Total Equivalent Warming Impact (TEWI)**

**DIRECT warming impact**

<table>
<thead>
<tr>
<th>Refrigerant used</th>
<th>CO₂ emissions of electricity production</th>
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</table>

**INDIRECT warming impact**

<table>
<thead>
<tr>
<th>F-gas legislation</th>
<th>Eco design directive</th>
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**TEWI =**

Reduction of CO₂ emissions is one of the main priorities for the future. A refrigeration plant’s global warming effect is the combination of the possible refrigerant losses (Direct warming impact) and the CO₂ emissions caused by electricity production (Indirect warming impact). Country per country situation is different, however on average in Europe CO₂ release at energy production is quite high (average 0.45kg/kwh of Electrical Energy)! Due to this, there is a significant greenhouse effect over the lifetime of the refrigeration plant and efficiency is thus one of the crucial focus points in reducing TEWI!

When various refrigeration solutions are being compared it is thus important to take into account both aspects as in some cases optimizing the direct warming impact (eg: changing refrigerant) will have an opposite effect on the indirect warming impact!

- **Reducing your running cost**

  Through focus on reliability & quality, through extensive testing on each product, and energy efficiency our aim is to reduce your operational cost to the absolute minimum!
## Refrigeration Products overview

<table>
<thead>
<tr>
<th>Technology compressor</th>
<th>Page</th>
<th>Hermetic</th>
<th>Semi-hermetic</th>
<th>Capacity control</th>
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<tbody>
<tr>
<td>Reciprocating compressor</td>
<td>Rotary</td>
<td>Scroll</td>
<td>Reciprocating compressor</td>
<td>Screw</td>
</tr>
<tr>
<td>Plug-in coolers suitable for HoReCa</td>
<td>LT / MT</td>
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<td>(*)&amp;</td>
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<td>MT</td>
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<td>LT</td>
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<td>HT Cooling</td>
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<td>LT</td>
<td>R407F</td>
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# Refrigeration

## Products overview

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<th>Technology compressor</th>
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<th>Semi-hermetic</th>
<th>Capacity control</th>
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<td><strong>Rotary</strong></td>
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<td><strong>Screw</strong></td>
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<td><strong>DC control</strong></td>
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<td><strong>Digital scroll</strong></td>
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### Racks
- **MT**
  - R449A: 62
  - R134a: 62
  - R449A: 62
  - R407F: 62
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  - R449A: 62
  - R407F: 62

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  - R-410A: 74
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  - R-410A: 74
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  - R-410A: 74
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  - R-410A: 74

### CO2 Conveni-Pack
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  - R-410A: 76
  - R-410A: 76
- **AC**
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  - R-410A: 76
- **HR + HP**
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  - R-410A: 76

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  - R-410A: 84
- **MT**
  - R-410A: 84
  - R-410A: 84

### MIX RACK
- **AC**
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  - R-410A: 84
- **MT**
  - R-410A: 84
  - R-410A: 84

### SAS - SAR
- **MT**
  - R134a: 36
  - R404A: 36

### UAV - USV
- **MT**
  - R134a: 90
  - R404A: 90
  - R407F: 90

### Food processing

## Refrigeration and climatisation

- Integrated solutions
  - Conveni-pack
    - **MT**
      - R-410A: 74
      - R-410A: 74
      - R-410A: 74
    - **LT**
      - R-410A: 74
      - R-410A: 74
    - **AC**
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      - R-410A: 74
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      - R-410A: 74
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      - R-410A: 76
      - R-410A: 76
    - **AC**
      - R-410A: 76
      - R-410A: 76
    - **HR + HP**
      - R-410A: 76
      - R-410A: 76
  - MIX CU
    - **AC**
      - R-410A: 84
      - R-410A: 84
    - **MT**
      - R-410A: 84
      - R-410A: 84
  - MIX RACK
    - **AC**
      - R-410A: 84
      - R-410A: 84
    - **MT**
      - R-410A: 84
      - R-410A: 84

## Integrated solutions

- SAS - SAR
  - mono-block
  - bi-block

- UAV - USV
  - R134a: 90
  - R404A: 90
  - R407F: 90
### Cooling Capacity (kW)

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<th>Capacity (kW)</th>
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<th>100</th>
<th>200</th>
<th>500</th>
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<tr>
<td></td>
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<tr>
<td>Freezing (Low temperature) (-20°C / +35°C)</td>
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<tr>
<td>Chilling (Medium temperature) (0°C / +35°C)</td>
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<td>Cooling (High Temperature) (+20°C / +10°C)</td>
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<tr>
<td>Heating</td>
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#### Refrigerant Compressors

- **MT**
  - R449A: 1.6-295.0, 0.4-89.7, 0.5-88.8
  - R134a: 0.7-233.0
  - R407F: 0.5-88.8

- **LT**
  - R449A: 0.4-89.7
  - R407F: 0.5-88.8

#### Integrated Solutions

- **Convenience-pack MT**
  - R-410A: 13.7-22.8
  - AC: 14.0-26.8, 16.0-22.8

- **HR + HP**
  - R-410A: 16.8-42.0

- **CO2 Convenience Pack MT**
  - 5.8 - 21.0

- **MIX CU AC**
  - 18.0-150.0

- **MIX RACK AC**
  - 18.0-150.0

#### Food Processing

- **SAS - SAR**
  - mono-block Bi-block MT R134A 36 hermetic: 2.8-18.5
  - R404A 36 hermetic: 2.8-18.5

- **UAV - USV**
  - MT R134A 90 hermetic semi-hermetic: 6.9-155.8
  - R404A 90 hermetic semi-hermetic: 6.9-155.8
  - R407F 90 hermetic semi-hermetic: 6.9-155.8
Plug and Play solutions
for cold rooms and wine rooms
### Model Product name

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**FREEZE & CHILLING**

- **Freezing (Low temperature)** (-20°C / +35°C)
- **Chilling (Medium temperature)** (0°C / +35°C)
- **Cooling (High Temperature)** (+20°C / +10°C)
HoReCa range
Plug in, Refrigerate, Sell more!
Integral freezer and chiller cabinets

The chiller and freezer unit that maximizes your product display

> High energy-saving can be achieved in comparison to conventional open units
> Environmentally friendly with natural refrigerant propane (GWP 3)
> Brilliant LED lighting system to enhance product display & help drive sales
> Intelligent fan motor providing more further energy savings, typically 0.5 kWh daily
> Plug in models, requiring no additional installation
> Virtually maintenance-free refrigeration system
> Easy clean and hygienic food safe synthetic interior casings

Flexible location options for Paris

- Can be used as a stand alone unit
- Can be used in a line up
- Can be used as an island
- Maximizes the use of floor space with an end cabinet
- Can be either installed below shelving or integrated into existing shelving systems

EU and UK models have same specs but different electricity plugs.

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**EU and UK models have same specs but different electricity plugs.**

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1. - Energy test results are declared for climate class 3, test procedure according to EN 23953-2 (initial door openings, 12h LED switched on with door openings, one defrost per day)
2. - With process-related interior fitting

**MACAO**

Uniting latest technology and brilliant design

- Extremely low energy consumption due to RPM regulated compressor technology and electronic energy-saving fan
- AHT e-conomize: Additional energy saving potential due to extensive optimization of technology and construction
- Convincingly efficient: the island chest freezer and chiller MACAO impresses with smart, up-to-date technical features, maximum energy efficiency and a new dimension of sales potency
- Sales-boosting product visibility thanks to glass panels on all four sides
- Improved ease of use thanks to semi-automatic defrosting and easy-to-clean plastic bin
- Attractive LED interior lighting
- Robust, smooth-running, single-piece and fully extrusion-coated glass sliding lids (lockable)
Integral freezer and chiller cabinets

Create a greater impact for your customers, as they benefit from all round product visibility enhanced with LED lighting

› 100 % CFC and PFC free
› Ready to plug in
› Guaranteeing the quality of the frozen goods thanks to constant internal temperature and high power reserves
› Intelligent fan motor for more energy efficiency – saves approximately 0,5 kWh daily
› Brilliant LED lighting system
› Higher energy-saving
› Improved display area with optimum useful load
› Easy access from both sides
› Low investment and operating costs
› Maintenance-free
› Environmentally friendly with natural refrigerant propane

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(1) - Energy test results are declared for climate class 3, test procedure according to EN 23953-2 (initial door openings, 12h LED switched on with door openings, one defrost per day)
(2) - With process-related interior fitting
# Ice cream freezer - horizontal: with flat glass sliding lids

More volume, more sales. A range of freezers to meet all circumstances

- Excellent product visibility due to low cabinet height
- Ready to plug in
- Easy-to-move, 2-part, flat glass sliding lids with the proven and patented injected, one-piece AHT lid frame
- Environmentally friendly with natural refrigerant
- 100 % CFC and PFC free
- Low energy consumption
- Adjustable thermostat
- Intelligent fan motor for more energy efficiency – saves approximately 0.5 kWh daily
- Reinforced insulation (72 mm) for reserve refrigeration and low energy consumption
- Inner container made of white, pre-painted, galvanised sheet metal
- Outer-skin condenser – no dirt, no maintenance
- Modular system: same height and depth, different lengths available
- Suitable for climate class 3 to climate class 7
- Supplied in robust packaging (undersliding)
- Freezing: –14 °C to –23 °C

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Ice cream freezer - horizontal: with curved glass sliding lids

More volume, more sales. A range of freezers to meet all circumstances

- Excellent product visibility due to low cabinet height
- Ready to plug in
- Easy-to-move, 2-part, flat glass sliding lids with the proven and patented injected, one-piece AHT lid frame
- Environmentally friendly with natural refrigerant
- 100% CFC and PFC free
- Low energy consumption
- Brilliant LED lighting system which enhances product display, drives sales and reduces maintenance
- Adjustable thermostat
- Intelligent fan motor for more energy efficiency – saves approximately 0.5 kWh daily
- Reinforced insulation (72 mm) for reserve refrigeration and low energy consumption
- Inner container made of white, pre-painted, galvanised sheet metal
- Outer-skin condenser – no dirt, no maintenance
- Modular system: same height and depth, different lengths available
- Suitable for climate class 3 to climate class 7
- Supplied in robust packaging (undersliding)
- Freezing: –14 °C to –23 °C

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ICE CREAM FREEZER - HORIZONTAL: WITH CURVED GLASS SLIDING LIDS

- Excellent product visibility due to low cabinet height
- Ready to plug in
- Easy-to-move, 2-part, flat glass sliding lids with the proven and patented injected, one-piece AHT lid frame
- Environmentally friendly with natural refrigerant
- 100% CFC and PFC free
- Low energy consumption
- Brilliant LED lighting system which enhances product display, drives sales and reduces maintenance
- Adjustable thermostat
- Intelligent fan motor for more energy efficiency – saves approximately 0.5 kWh daily
- Reinforced insulation (72 mm) for reserve refrigeration and low energy consumption
- Inner container made of white, pre-painted, galvanised sheet metal
- Outer-skin condenser – no dirt, no maintenance
- Modular system: same height and depth, different lengths available
- Suitable for climate class 3 to climate class 7
- Supplied in robust packaging (undersliding)
- Freezing: –14 °C to –23 °C

ICE CREAM FREEZER - HORIZONTAL: WITH CURVED GLASS SLIDING LIDS

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# Air curtain display cooler

## For perfect merchandise presentation

- Air curtain for optimum cooling efficiency
- Energy efficient
- Low maintenance condenser
- Cooling cassette system
- Cassette replacement within 15 minutes (easy service)
- Night blind to save energy consumption (reed switch)
- Inside light
- Plug-in refrigeration
- Automatic defrost and condensate water evaporation
- Shelf supports can be fixed in inclined position
- Use of natural and efficient refrigerant R290 (propane)
- 100 % CFC and PFC free

## EU and UK models have same specs but different electricity plugs.

<table>
<thead>
<tr>
<th>AC</th>
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<th>M_UK_403785</th>
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</table>

(1) - Energy test results are declared for climate class 3, test procedure according to EN 23953-2, use of night blind for 12h, light on for 12h
(2) - With process-related interior fitting
Glass door merchandiser

For better product visibility

- Illuminated led header for maximum branding opportunities and horizontal led lighting for better product visibility
- Slim design ideal for in aisle retail placement
- Low profile, hinged door system
- Electronic temperature control with digital read out
- Spiral condenser helps improve performance and reduces maintenance time
- Low profile fixed rollers allow easy movement

EU and UK models have same specs but different electricity plugs.

<table>
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(1) - Energy test results are declared for climate class 3, test procedure according to EN 23953-2
(2) - With process-related interior fitting
EU and UK models have same specs but different electricity plugs.

| Classification acc. EN 23953-2 | CB124_EU_403765 | CB124_UK_403789 |
| Classification acc. EN 23953-2 | H1 | 3 |
| Energy efficiency index EEI % | 43.5 |
| Use | Display & Sale |

Dimensions

| Gross content | 1,034 (0.000) |
| Net content | 766 (2.000) |
| Total display area (TDA) m² | 3.00 (2.000) |
| Length Outside mm | 1,240 |
| Inside mm | 1,180 |
| Depth Outside mm | 885 |
| Inside mm | 640 |
| Height Outside mm | 2,150 |
| Inside mm | 1,420 |
| Shelf depth mm | 450 |

Net weight kg | 346 (2.000) |
Gross weight kg | 374 (2.000) |

Operation range

| Ambient temperature Min. °C | 15 |
| Max. °C | 25 |
| Relative humidity % | 60 or less |
| Product temperature Min. °C | 1 |
| Max. °C | 10 |
| Sound pressure in 1m distance dBA | 43.6 |
| Blowing agent | R-601 (HC) GWP 5 |

Daily energy consumption kWh/day | 17.40 (1.000) |
Annual energy consumption kWh/a | 6,351.00 |

HVA

| Rejected heat capacity W | 725 |
| Dehumidification Liter/day | 0 |

Refrigerant

| Type | R-290 |
| GWP | 1 |
| Charge g | 150 |
| Max. allowable operating pressure bar | 30 |

Power supply

| Phase | 1N~ |
| Voltage V | 220-240 |
| Frequency Hz | 50 |
| Nominal power acc. EN 60335-2-89 W | 1,700 |
| Nominal current acc. EN 60335-2-89 A | 7.5 |
| Nominal power LED W | 70 |
| Fuse protection RCBQ, 30mA, C16 |
| Cord length mm | 3,500 |

Promotion cooler

Maximum mobility and merchandise presentation with a high „cool factor“

» Presentation of snacks and beverages
» Sales-supporting promotion of complementary product groups
» High capacity
» COOLBOX generates high revenues with low space requirements – especially with fast-moving products
» Plug, chill & sell – immediately ready for use
» Unique condensate technology
» Multi functional usage
» 100% environment- & climate-friendly
Zanotti
Touch control

Zanotti presents the new "Touch Screen" control panel for GM monobloc units and GS split units. This new User interface consists of keypad and display and allows easy access to all manual functions of the units.

The control of the refrigeration cycle, switching the unit on and off, the lighting in the cold room, activating the manual defrost process and setting the parameters are the features that are more intuitive with the new keyboard.

› For cold rooms where it is required by law to maintain a certain temperature (Products for hospitals, Pharmaceutical products) for safety and control it is necessary to install 2 units in the same cold room, so that they can always be working in alternate hours - when one is off, the other unit is working.

› If an aggregate in full function gets blocked, the second aggregate starts automatically. When the temperature for remote controls with thermostat is not achieved for a certain period of time (product feed, open cell door for longer period of time,...), the unit changes into the standby function.

› Remote control for two aggregates. Adjustable timer for alternate operation.
› In case of device failure of one the refrigeration units, the control can be switched on the other unit nearby. Alarm message through Lamp and buzzer.
› Thermostat for Safety at high Temperatures in the cold room (only with models with Thermostat).

for two units in a cold storage cell
ALTERNATIVE REMOTE CONTROL
## Uni-block system for low and medium temperature refrigeration

For wall mounted installation in small and medium sized cold rooms

- Rapid mounting on the wall of the cold room by straddle-mounting, which is ideal for new installations or through-wall mounting and refurbishment projects
- Metallic grey coloured finish of the outdoor unit
- The white colour of the evaporator blends unobtrusively with the cold room walls
- Compressor compartment insulated with suitable soundproofing material to reduce sound levels
- Microchannel condensers available in order to reduce the refrigerant charge as much as possible and ensuring higher energy efficiency
- The units are provided with a new generation control panel with an easy-to-use interface

### Installation type

![Through-wall model](image1.png)  
![Straddle model](image2.png)

---

<table>
<thead>
<tr>
<th>Low Temperature Refrigeration, Medium Temperature Refrigeration</th>
<th>GM</th>
<th>100EA11XA</th>
<th>211EA11XA</th>
<th>212EA11XA</th>
<th>315EB11XA</th>
<th>320EB11XA</th>
<th>12800Y1AAA</th>
<th>2210Y1AAA</th>
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<td>2,200</td>
<td>600</td>
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<td>3N~/50/400</td>
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<tr>
<th>Low Temperature Refrigeration, Medium Temperature Refrigeration</th>
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<th>212EB11XA</th>
<th>315EB11XA</th>
<th>320EB11XA</th>
<th>12800Y1AAA</th>
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<td>112</td>
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<tr>
<td>Condenser Air flow m³/h</td>
<td>600</td>
<td>1,200</td>
<td>1,500</td>
<td>2,200</td>
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<td>Evaporator Air throw m</td>
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<td>4 (2)</td>
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<td>-5 ~ 10</td>
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<td>0.84/1.80</td>
<td>-/-</td>
<td>0.98/2.10</td>
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</tr>
<tr>
<td>Power supply Phase/Frequency/Voltage Hz/V</td>
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<td>3N~/50/400</td>
<td>1~/50/230</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

---

(1) When normally running: 0°C / +30°C  
(2) Use air throw as a base. Air throw is affected by many factors such as height of room, product storage, location of evaporator, etc.  
(3) When normally running: -20°C / +30°C  
Contains fluorinated greenhouse gases
Uni-block system for low and medium temperature refrigeration

For wall mounted installation in medium sized cold rooms

› Rapid mounting on the wall of the cold room by through-wall mounting
› Extremely fast to assemble, reducing installation time and cost
› The white colour of the evaporator blends unobtrusively with the cold room walls
› Very compact and very efficient
› Remote electronic command station with easy-to-use user interface programmable according to various system requirements
› Low temperature models are available. Please contact your local dealer

Installation type

Drain pan connection: Ø 18 (AS235), Ø 22 (AS335-AS340)

<table>
<thead>
<tr>
<th>Low Temperature Refrigeration, Medium Temperature Refrigeration</th>
<th>AS</th>
<th>23ST02E</th>
<th>335N02E</th>
<th>33ST02E</th>
<th>340T02E</th>
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<tbody>
<tr>
<td>Refrigerating capacity, Medium temperature</td>
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<td>8.290 (1)</td>
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<tr>
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<td>Defrost</td>
<td>Hot gas</td>
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<tr>
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<td>Air throw m</td>
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<tr>
<td>Operation range, Temperature</td>
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<tr>
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<td>3N~/50/400</td>
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<td></td>
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</tr>
</tbody>
</table>

(1) When normally running: 8°C / +10°C; (2) Use air throw as a base. Air throw is affected by many factors such as height of room, product storage, location of evaporator, etc. | Contains fluorinated greenhouse gases
Uni-block system for low and medium temperature refrigeration

For roof mounted installation in small and medium sized cold rooms

- Rapid mounting on the roof of the cold room
- Ceiling assembly leaves the space inside the cold room completely free
- The white colour of the evaporator blends unobtrusively with the cold room walls
- Extremely fast to assemble, reducing installation time and cost
- Best surface-to-capacity ratio
- Remote electronic command station with easy-to-use user interface programmable according to various system requirements
- For higher capacities, please contact your local dealer

### Low Temperature Refrigeration, Medium Temperature Refrigeration

<table>
<thead>
<tr>
<th>SB</th>
<th>010DA11XX</th>
<th>087Y1AA</th>
<th>17DA11XX</th>
<th>170Y2AA</th>
<th>220DB11XX</th>
<th>2650Y3AC</th>
<th>330DB11XX</th>
<th>005EA11XX</th>
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<td>R-290/3</td>
<td>R-42A/2,241</td>
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### Low Temperature Refrigeration, Medium Temperature Refrigeration

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<th>210EB11XX</th>
<th>280Y9AA</th>
<th>315EB1XX</th>
<th>320EB11XX</th>
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<th>530EB11XX</th>
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<td>1,750</td>
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<td>3,200</td>
<td>2,900</td>
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<tr>
<td>Defrost</td>
<td>Hot gas</td>
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<td>0.40/0.57</td>
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<td>Power supply Phase/Frequency/Voltage Hz/V</td>
<td>3N–50/400</td>
<td>1–750</td>
<td>1–750</td>
<td>1–750</td>
<td>1–750</td>
<td>1–750</td>
<td>1–750</td>
<td>3N–50/400</td>
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</table>

(1) When normally running, 80 °C / +30 °C. (2) When air throw as a base. Air throw is affected by many factors such as height of room, product storage, location of evaporator, etc. (3) When normally running -20 °C / +30 °C. Contains flammable greenhouse gases
## Bi-block system for low and medium temperature refrigeration

### Condensing unit for wall mounted installation

- Wall mounted condensing unit and ceiling mounted evaporator
- Extremely rapid mounting
- Best surface-to-capacity ratio
- Low sound levels thanks to optional compressor compartment soundproofing
- New generation control panel: possibility to connect it to classic remote management systems or to a Modbus system

### Installation type

![Diagram of GS Bi-block system](image)

### Low Temperature Refrigeration, Medium Temperature Refrigeration

<table>
<thead>
<tr>
<th>Refrigerating Medium Temperature Refrigeration</th>
<th>GS</th>
<th>SB.BGS110P</th>
<th>SB.BGS112P</th>
<th>SB.BGS117P</th>
<th>SB.BGS218P</th>
<th>SB.BGS220P</th>
<th>SB.BGS330P</th>
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<tbody>
<tr>
<td>Capacity</td>
<td>kW</td>
<td>0.67/9 (3)</td>
<td>0.89/9 (3)</td>
<td>1.08/9 (3)</td>
<td>1.33/6 (3)</td>
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<tr>
<td>Dimensions Condenser unit HeightxWidthxDepth</td>
<td>mm</td>
<td>735x400x280</td>
<td>830x620x280</td>
<td>830x620x350</td>
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<tr>
<td>Evaporator unit HeightxWidthxDepth</td>
<td>mm</td>
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<td>215x1,074x410</td>
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<td>Packed condensing unit HeightxWidthxDepth</td>
<td>mm</td>
<td>490x610</td>
<td>490x740</td>
<td>600x740</td>
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<tr>
<td>Packed evaporator unit HeightxWidthxDepth</td>
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<td>Condenser Air Flow m³/h</td>
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<td>1,800</td>
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<td>Operation range Cold room Min.-Max. temperature °C</td>
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<td>Refrigerant Type/GWP</td>
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<table>
<thead>
<tr>
<th>Low Temperature Refrigeration, Medium Temperature Refrigeration</th>
<th>GS</th>
<th>SB.MGS103P</th>
<th>SB.MGS105P</th>
<th>SB.MGS106P</th>
<th>SB.MGS107P</th>
<th>SB.MGS110P</th>
<th>SB.MGS211P</th>
<th>SB.MGS212P</th>
<th>SB.MGS213P</th>
<th>SB.MGS315P</th>
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<td>1.91/2.20</td>
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<tr>
<td>Dimensions Condenser unit HeightxWidthxDepth mm</td>
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<td>Operation range Cold room Min.-Max. temperature °C</td>
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<td>Charge (kg/TCO2Eq)</td>
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<td>0.85/1.22</td>
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<td>0.75/1.07</td>
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<td>3N~/50/400</td>
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<td>3N~/50/400</td>
<td>3N~/50/400</td>
<td>3N~/50/400</td>
</tr>
</tbody>
</table>

| Note | (1)When normally running: 8°C / +30°C | (2)Use air throw as a base. Air throw is affected by many factors such as height of room, product storage, location of evaporator, etc. | (3)When normally running: -20°C / +30°C | Contains fluorinated greenhouse gases | Precharged pipe 10 m length | Precharged pipe 5 m length | Precharged pipe 2.5 m length |

GS
Bi-block system for low and medium temperature refrigeration

Condensing unit for floor standing or roof mounted installation

- Condensing unit for floor standing or roof mounted installation and ceiling mounted evaporator
- Extremely fast to assemble thanks to quick connection joints
- Reduced installation time and cost
- Best surface-to-capacity ratio

Installation type

---

### Low Temperature Refrigeration, Medium Temperature Refrigeration

<table>
<thead>
<tr>
<th>SP-O</th>
<th>SB.BSP101P</th>
<th>SB.BSP102P</th>
<th>SB.BSP111P</th>
<th>SB.BSP112P</th>
<th>SB.BSP117P</th>
<th>SB.BSP218P</th>
<th>SB.BSP220P</th>
<th>SB.BSP330P</th>
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<tbody>
<tr>
<td>Nom. kW</td>
<td>0.662 (3)</td>
<td>0.905 (3)</td>
<td>1.088 (3)</td>
<td>1.342 (3)</td>
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**Dimensions**

<table>
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<tr>
<th>Condensing unit</th>
<th>HeightxWidthxDepth mm</th>
<th>Evaporator unit</th>
<th>HeightxWidthxDepth mm</th>
<th>Packed condensing unit</th>
<th>HeightxWidthxDepth mm</th>
<th>Packed evaporator unit</th>
<th>HeightxWidthxDepth mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condensing unit</td>
<td>357x620x337</td>
<td>Evaporator unit</td>
<td>250x914x410</td>
<td>Packed condensing unit</td>
<td>520x780</td>
<td>Packed evaporator unit</td>
<td>260x470x1,780</td>
</tr>
<tr>
<td>Packed condensing unit</td>
<td>260x470x1,200</td>
<td>Packed evaporator unit</td>
<td>260x470x1,780</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

**Weight**

| Condensing unit kg | 45 | 50 | 61 | 69 | 78 |
| Evaporator unit kg | 13 | 19 | 19 | 28 | 28 |
| Packed condensing unit kg | 74 | 79 | 99 | 107 | 116 |
| Packed evaporator unit kg | 15 | 21 | 21 | 30 | 30 |

**Compressor**

<table>
<thead>
<tr>
<th>Type</th>
<th>Hermetic Reciprocating</th>
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</thead>
<tbody>
<tr>
<td>Nominal power kW</td>
<td>0.75</td>
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</tbody>
</table>

**Condenser**

- Air flow m³/h: 750
- Defrost: Electric

**Evaporator**

- Air flow m³/h: 600
- Air throw m: 4 (2)

**Operation range**

| Cold room Min.–Max. °C | -25~15 |

**Refrigerant**

- Type/GWP: R-452A/2,141
- Charge kg/TCO2Eq: 0.80/1.71 0.93/1.99 1.10/2.36 1.00/2.14 1.30/2.78

**Power supply**

- Phase/Frequency/Voltage Hz/V: 1~/50/230 3N~/50/400

---

### Medium Temperature Refrigeration

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<th>SP-O</th>
<th>SB.MSP106P</th>
<th>SB.MSP107P</th>
<th>SB.MSP212P</th>
<th>SB.MSP315P</th>
<th>SB.MSP320P</th>
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</thead>
<tbody>
<tr>
<td>Nom. kW</td>
<td>1.140 (1)</td>
<td>1.422 (1)</td>
<td>1.816 (1)</td>
<td>2.384 (1)</td>
<td>3.492 (1)</td>
</tr>
</tbody>
</table>

**Dimensions**

<table>
<thead>
<tr>
<th>Condensing unit</th>
<th>HeightxWidthxDepth mm</th>
<th>Evaporator unit</th>
<th>HeightxWidthxDepth mm</th>
<th>Packed condensing unit</th>
<th>HeightxWidthxDepth mm</th>
<th>Packed evaporator unit</th>
<th>HeightxWidthxDepth mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condensing unit</td>
<td>357x620x337</td>
<td>Evaporator unit</td>
<td>250x914x410</td>
<td>Packed condensing unit</td>
<td>520x780</td>
<td>Packed evaporator unit</td>
<td>260x470x1,780</td>
</tr>
<tr>
<td>Packed condensing unit</td>
<td>260x470x1,200</td>
<td>Packed evaporator unit</td>
<td>260x470x1,780</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Weight**

| Condensing unit kg | 43 | 59 | 69 | 79 | 79 |
| Evaporator unit kg | 13 | 19 | 28 | 30 | 30 |
| Packed condensing unit kg | 72 | 97 | 107 | 108 | 108 |
| Packed evaporator unit kg | 15 | 21 | 21 | 30 | 30 |

**Compressor**

<table>
<thead>
<tr>
<th>Type</th>
<th>Hermetic Reciprocating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal power kW</td>
<td>0.4</td>
</tr>
</tbody>
</table>

**Condenser**

- Air flow m³/h: 750
- Defrost: Electric

**Evaporator**

- Air flow m³/h: 600
- Air throw m: 4 (2)

**Operation range**

| Cold room Min.–Max. °C | -5~10 |

**Refrigerant**

- Type/GWP: R-134a/1,430
- Charge kg/TCO2Eq: 0.88/1.26 0.84/1.20 1.00/1.43 1.50/2.15

**Power supply**

- Phase/Frequency/Voltage Hz/V: 1~/50/230 3N~/50/400

---

(1) When normally running: 0°C / +30°C | (2) Use air throw as a base. Air throw is affected by many factors such as height of room, product storage, location of evaporator, etc. | (3) When normally running: -20°C / +30°C | Contains fluorinated greenhouse gases | Precharged pipe 2.5 m length | Precharged pipe 5 m length | Precharged pipe 10 m length
Bi-block system for low and medium temperature refrigeration

Condensing unit for floor standing or roof mounted installation

- Condensing unit for floor standing or roof mounted installation and ceiling mounted evaporator
- Thermostatic expansion valve ensuring optimum capacity in accordance with the required load for better energy efficiency
- Extremely fast to assemble thanks to quick connection joints
- Reduced installation time and cost
- Best surface-to-capacity ratio
- For higher capacities, please contact your local dealer

### Installation type

<table>
<thead>
<tr>
<th>Installation type</th>
<th>Condensing unit</th>
<th>Packed condensing unit</th>
<th>Evaporator unit</th>
<th>Packed evaporator unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceiling evaporator</td>
<td>Remote control</td>
<td>Ceiling evaporator</td>
<td>Floor standing condenser</td>
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### Refrigerating capacity

#### Low temperature R-452A

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<thead>
<tr>
<th>DB-O</th>
<th>SB.RDB101DA12XX</th>
<th>SB.RDB102DA12XX</th>
<th>SB.RDB107DA12XX</th>
<th>SB.RDB120DA12XX</th>
<th>SB.RDB121DA12XX</th>
<th>SB.RDB122DA12XX</th>
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</thead>
<tbody>
<tr>
<td>Nom kW</td>
<td>0.662 (1)</td>
<td>0.905 (1)</td>
<td>1.088 (1)</td>
<td>2.384 (1)</td>
<td>2.38 (1)</td>
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<tr>
<td>Condensing unit Height x Width x Depth mm</td>
<td>357 x 620 x 337</td>
<td>427 x 620 x 427</td>
<td>427 x 620 x 427</td>
<td>427 x 620 x 427</td>
<td>390 x 620 x 427</td>
<td>390 x 620 x 427</td>
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<tr>
<td>Evaporator unit Height x Width x Depth mm</td>
<td>215 x 614 x 410</td>
<td>215 x 614 x 410</td>
<td>215 x 614 x 410</td>
<td>215 x 614 x 410</td>
<td>215 x 614 x 410</td>
<td>215 x 614 x 410</td>
</tr>
<tr>
<td>Packed condensing unit Height x Width x Depth mm</td>
<td>590 x 499 x 810</td>
<td>610 x 520 x 1,010</td>
<td>610 x 520 x 1,010</td>
<td>610 x 520 x 1,010</td>
<td>610 x 520 x 1,010</td>
<td>610 x 520 x 1,010</td>
</tr>
<tr>
<td>Packed evaporator unit Height x Width x Depth mm</td>
<td>260 x 470 x 780</td>
<td>260 x 470 x 780</td>
<td>260 x 470 x 780</td>
<td>260 x 470 x 780</td>
<td>260 x 470 x 780</td>
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<tr>
<td>Weight Condensing unit kg</td>
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<td>50</td>
<td>72</td>
<td>78</td>
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<td>Evaporator unit kg</td>
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<td>28</td>
<td>37</td>
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<td>Packed condensing unit kg</td>
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<tr>
<td>Nominal power kW</td>
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<td>1.1</td>
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#### Medium temperature R-134a

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<thead>
<tr>
<th>DB-O</th>
<th>SB.RDB106DA13XX</th>
<th>SB.RDB107DA13XX</th>
<th>SB.RDB135A13XX</th>
<th>SB.RDB132DA13XX</th>
<th>SB.RDB133DA13XX</th>
<th>SB.RDB120DA13XX</th>
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<tbody>
<tr>
<td>Nom kW</td>
<td>1.140 (2)</td>
<td>1.422 (2)</td>
<td>1.422 (2)</td>
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<td>427 x 620 x 427</td>
<td>427 x 620 x 427</td>
<td>427 x 620 x 427</td>
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</tr>
<tr>
<td>Evaporator unit Height x Width x Depth mm</td>
<td>215 x 614 x 410</td>
<td>215 x 614 x 410</td>
<td>215 x 614 x 410</td>
<td>215 x 614 x 410</td>
<td>215 x 614 x 410</td>
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<tr>
<td>Packed condensing unit Height x Width x Depth mm</td>
<td>590 x 499 x 810</td>
<td>610 x 520 x 1,010</td>
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<td>610 x 520 x 1,010</td>
<td>610 x 520 x 1,010</td>
<td>610 x 520 x 1,010</td>
</tr>
<tr>
<td>Packed evaporator unit Height x Width x Depth mm</td>
<td>260 x 470 x 780</td>
<td>260 x 470 x 780</td>
<td>260 x 470 x 780</td>
<td>260 x 470 x 780</td>
<td>260 x 470 x 780</td>
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<td>Evaporator unit kg</td>
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<td>Packed condensing unit kg</td>
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<td>84</td>
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<td>247</td>
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<td>Packed evaporator unit kg</td>
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<td>53</td>
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<td>165</td>
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### Power supply

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<tr>
<th>Voltage/Phase/Frequency V/Hz</th>
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<th>SB.RDB062A12XX</th>
<th>SB.RDB063A12XX</th>
<th>SB.RDB064A12XX</th>
<th>SB.RDB065A12XX</th>
<th>SB.RDB066A12XX</th>
<th>SB.RDB067A12XX</th>
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</thead>
<tbody>
<tr>
<td>DB-O</td>
<td>SB.RDB134A13XX</td>
<td>SB.RDB135A13XX</td>
<td>SB.RDB136A13XX</td>
<td>SB.RDB137A13XX</td>
<td>SB.RDB138A13XX</td>
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<td>R-134a</td>
<td>R-134a</td>
<td>R-134a</td>
<td>R-134a</td>
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<tr>
<td>GWP</td>
<td>1,430</td>
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<tr>
<td>Air Flow m³/h</td>
<td>600</td>
<td>1,800</td>
<td>1,800</td>
<td>2,300</td>
<td>6,800</td>
<td>6,400</td>
<td>8,400</td>
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<tr>
<td>Air throw m</td>
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<td>12 (3)</td>
<td>11 (3)</td>
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<td>1,500</td>
<td>1,500</td>
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</tr>
</tbody>
</table>

### Refrigeration system

- For higher capacities, please contact your local dealer.
Wineblock - Monoblock units for high temperature refrigeration

Monoblock system suitable for through-wall installation

- Accurate humidity and temperature control to guarantee the quality of products (e.g. wines)
- Integrated humidifier available depending on model to have one unit which covers it all: perfect humidity & temperature control
- Electronic controller managing both temperature and humidity of the cold room

Installation type

<table>
<thead>
<tr>
<th>High Temperature Refrigeration</th>
<th>RCV</th>
<th>101527E</th>
<th>101527E</th>
<th>102527E</th>
<th>102528E</th>
<th>201527E</th>
<th>201528E</th>
<th>202527E</th>
<th>202528E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerating capacity</td>
<td>Nom</td>
<td>R-134a</td>
<td>kW</td>
<td>0.6</td>
<td>1</td>
<td>1.4</td>
<td>1.4</td>
<td>2.3</td>
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<tr>
<td>Heating capacity</td>
<td>Nom</td>
<td>R-134a</td>
<td>kW</td>
<td>0.7</td>
<td>1.05</td>
<td>1.4</td>
<td>1.75</td>
<td></td>
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<tr>
<td>Dimensions</td>
<td>Unit</td>
<td>HeightxWidthxDepth</td>
<td>mm</td>
<td>735x400x435</td>
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<td>90</td>
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<tr>
<td>Compressor</td>
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<tr>
<td></td>
<td>Nominal power</td>
<td>kW</td>
<td>kW</td>
<td>0.25</td>
<td>0.37</td>
<td>0.46</td>
<td>0.55</td>
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<tr>
<td>Condenser</td>
<td>Air flow</td>
<td>m³/h</td>
<td>600</td>
<td>1,200</td>
<td>1,200</td>
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<tr>
<td>Evaporator</td>
<td>Air flow</td>
<td>m³/h</td>
<td>600</td>
<td>1,200</td>
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<tr>
<td>Operation range</td>
<td>Air throw</td>
<td>m</td>
<td>4 (l)</td>
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<tr>
<td></td>
<td>Gdrom</td>
<td>Min.—Max.</td>
<td>°C</td>
<td>10—20</td>
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<td>Refrigerant</td>
<td>Type/GWP</td>
<td></td>
<td></td>
<td>R-134a/1,430</td>
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<tr>
<td></td>
<td>Charge</td>
<td>kg/CO₂qg</td>
<td>0.43/0.61</td>
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<td>0.60/0.86</td>
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<tr>
<td>Power supply</td>
<td>Phase/Frequency/Voltage</td>
<td>Hz/V</td>
<td>1~/50/230</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[1] Use air throw as a base. Air throw is affected by many factors such as height of room, product storage, location of evaporator, etc. | Contains fluorinated greenhouse gases | When normally running: +10°C / +38°C
RDV

**Wineblock - Split units for high temperature refrigeration**

Compact condensing unit and small-sized wall or ceiling mounted evaporators

- Accurate humidity and temperature control to guarantee the quality of products (e.g. wines)
- Thermostatic expansion valve ensuring optimum capacity in accordance with the required load for better energy efficiency
- Integrated humidifier available depending on model to have one unit which covers it all: perfect humidity & temperature control
- Electronic controller managing both temperature and humidity of the cold room

### Installation type

#### High Temperature Refrigeration

<table>
<thead>
<tr>
<th>Refrigerating capacity</th>
<th>RDV</th>
<th>SB.RDV 201523E</th>
<th>SB.RDV 201524E</th>
<th>SB.RDV 202523E</th>
<th>SB.RDV 202524E</th>
<th>SB.RDV 202525E</th>
<th>SB.RDV 202529E</th>
<th>SB.RDV 202532E</th>
<th>SB.RDV 202534E</th>
<th>SB.RDV 202535E</th>
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<tbody>
<tr>
<td>High Refrigerating Temperature</td>
<td>R-134a</td>
<td>kW</td>
<td>0.600 (2)</td>
<td>1.000 (2)</td>
<td>1.400 (2)</td>
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<td>1.050 (2)</td>
<td>1.400 (2)</td>
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<tr>
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<td>Condensing unit</td>
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<td>357 x 682 x 337</td>
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<td>Weight (kg)</td>
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<td>60</td>
<td>63</td>
<td>68</td>
<td>62</td>
<td>60</td>
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<tr>
<td>Compressor Type</td>
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<tr>
<td>Power supply Phase/Frequency/Voltage Hz/V</td>
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#### High Temperature Refrigeration

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Seasoning units
**Monoblock and bi-block units for**
- Meat drying and seasoning
- Cheese seasoning

For small and medium size coldrooms

- Quick and easy installation
- Low noise and vibration
- Electronic control
- Constant and detailed control of temperature and humidity level during operation
- Compact and functional, with removable panels to allow easy access to internal components
- More units available suitable for large coldrooms

**Drying units / Seasoning units: SAS**
- Coldroom temperature: +10°C to +25°C till 60%
- Humidity:

**Special treatment units: SAR**
- Coldroom temperature: +2°C to +4°C till 40%
- Humidity:

**Cooling capacity:**
- from 2.900 to 18.500 Watt

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<th>SAS135TR01E</th>
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Condensing units
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![Graph showing capacity for different units and temperatures](image)

- **Freezing (Low temperature)** (-20° C)
- **Chilling (Medium temperature)** (0° C)
Condensing unit for commercial refrigeration with reciprocating technology

Refrigeration solution for small food retailers

› Designed specifically for small capacity refrigeration applications in small food stores (e.g. in bakeries and butchers), cold rooms, bottle coolers and display cabinets
› Compact and lightweight for even the smallest of city centre locations
› All components can be accessed, making maintenance quick and easy
› Ideal for urban applications: sound proofing and low operating sound levels mean the unit is quiet
› The optimised compressor range and increased condenser surface deliver high levels of energy efficiency and reliability is ensured by using high quality components and production processes
› Micro channel heat exchanger technology reduces the amount of refrigerant used in the system, lowering environmental impact

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<tr>
<th>Medium Temperature Refrigeration</th>
<th>JEHCCU-CM1/CM3</th>
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</tr>
<tr>
<td>R-449A</td>
<td>3.18</td>
<td>5.69</td>
<td>-</td>
<td>2.64</td>
<td>4.51</td>
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<tr>
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<td>Height</td>
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<td>607 x 676 x 420</td>
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<td>Piston displacement m³/</td>
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<td>Piping connections</td>
<td>Liquid line connection inch</td>
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<tr>
<td>Suction line connection inch</td>
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<td>Refrigerant Type/GWP</td>
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<td>Type 3 - GWP Type 3</td>
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<tr>
<td>Power supply</td>
<td>Phase/Frequency/Voltage</td>
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</tbody>
</table>

(1) Refer to condition: Outside ambient temperature = 32°C, Evaporation temperature = -10°C, and Return Gas 20°C (medium temperature application) (2) Average sound pressure level is measured at 10m in anechoic room
Condensing unit for commercial refrigeration with scroll technology

Refrigeration solution for small food retailers

- Designed specifically for small capacity refrigeration applications in small food stores (e.g., bakeries and butchers), cold rooms, bottle coolers and display cabinets
- Compact and lightweight for even the smallest of city centre locations
- All components can be accessed, making maintenance quick and easy
- Ideal for urban applications: sound proofing and low operating sound levels mean the unit is quiet
- The optimised compressor range and increased condenser surface deliver high levels of energy efficiency and reliability is ensured by using high quality components and production processes
- Micro channel heat exchanger technology reduces the amount of refrigerant used in the system, lowering environmental impact

### Medium Temperature Refrigeration

| JEHSCU-CM1/CM3 | Refrigerating capacity | Medium temperature | (°C) | Nom kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
|-----------------|-----------------------|-------------------|------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| **R-54A**       | 2.15                   | 2.24              | 3.48 | 3.80  | 4.37 | 8.21 | 10.75 |
| **R-45A**       | 6.45                   | 6.95              | 7.45 | 7.86  | 8.37 | 11.2 | 13.7 |
| **R-46A**       | 3.31                   | 3.62              | 3.94 | 4.58  | 5.73 | 6.75 | 8.18 | 9.59 | 12.9 |
| **R-48A**       | 5.33                   | 5.82              | 6.33 | 7.04  | 8.66 | 10.1 | 12.6 |
| **R-49A**       | 3.31                   | 3.62              | 3.94 | 4.58  | 5.73 | 6.75 | 8.18 | 9.59 | 12.9 |

### Seasonal energy performance ratio

<table>
<thead>
<tr>
<th>SEPR</th>
<th><strong>R-54A</strong></th>
<th><strong>R-45A</strong></th>
<th><strong>R-46A</strong></th>
<th><strong>R-48A</strong></th>
<th><strong>R-49A</strong></th>
<th><strong>R-46A</strong></th>
<th><strong>R-49A</strong></th>
<th><strong>R-48A</strong></th>
<th><strong>R-49A</strong></th>
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</thead>
<tbody>
<tr>
<td>1.92</td>
<td>2.19</td>
<td>2.08</td>
<td>2.36</td>
<td>2.36</td>
<td>3.10</td>
<td>3.37</td>
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<td>3.92</td>
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### Annual electricity consumption (Q)

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</thead>
<tbody>
<tr>
<td>3.16</td>
<td>3.51</td>
<td>3.74</td>
<td>4.07</td>
<td>4.33</td>
<td>4.57</td>
<td>4.81</td>
<td>5.03</td>
<td>5.24</td>
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### Piping connections

<table>
<thead>
<tr>
<th>Liquid line connection (inch)</th>
<th><strong>3/8”</strong></th>
<th><strong>1/2”</strong></th>
<th><strong>3/4”</strong></th>
<th><strong>1”</strong></th>
<th><strong>1.1/4”</strong></th>
<th><strong>1.1/2”</strong></th>
<th><strong>2”</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>R-54A</strong></td>
<td>3.80</td>
<td>4.20</td>
<td>4.60</td>
<td>5.00</td>
<td>5.40</td>
<td>5.80</td>
<td>6.20</td>
</tr>
<tr>
<td><strong>R-45A</strong></td>
<td>5.20</td>
<td>5.60</td>
<td>6.00</td>
<td>6.40</td>
<td>6.80</td>
<td>7.20</td>
<td>7.60</td>
</tr>
<tr>
<td><strong>R-46A</strong></td>
<td>6.60</td>
<td>7.00</td>
<td>7.40</td>
<td>7.80</td>
<td>8.20</td>
<td>8.60</td>
<td>9.00</td>
</tr>
<tr>
<td><strong>R-48A</strong></td>
<td>8.00</td>
<td>8.40</td>
<td>8.80</td>
<td>9.20</td>
<td>9.60</td>
<td>10.00</td>
<td>10.40</td>
</tr>
<tr>
<td><strong>R-49A</strong></td>
<td>9.40</td>
<td>9.80</td>
<td>10.20</td>
<td>10.60</td>
<td>11.00</td>
<td>11.40</td>
<td>11.80</td>
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</table>

### Weight

<table>
<thead>
<tr>
<th>Unit</th>
<th><strong>kg</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>R-54A</strong></td>
<td>70</td>
</tr>
<tr>
<td><strong>R-45A</strong></td>
<td>72</td>
</tr>
<tr>
<td><strong>R-46A</strong></td>
<td>74</td>
</tr>
<tr>
<td><strong>R-48A</strong></td>
<td>112</td>
</tr>
<tr>
<td><strong>R-49A</strong></td>
<td>119</td>
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### Dimensions

<table>
<thead>
<tr>
<th>Unit</th>
<th><strong>Height x Width x Depth (mm)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>R-54A</strong></td>
<td>662 x 1,101 x 444</td>
</tr>
<tr>
<td><strong>R-45A</strong></td>
<td>872 x 1,353 x 575</td>
</tr>
<tr>
<td><strong>R-46A</strong></td>
<td>1,727 x 1,348 x 641</td>
</tr>
</tbody>
</table>

### Power supply

<table>
<thead>
<tr>
<th>Phase/Frequency/Voltage</th>
<th><strong>1~/50/230</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>R-54A</strong></td>
<td>8.48 kW</td>
</tr>
<tr>
<td><strong>R-45A</strong></td>
<td>10.6 kW</td>
</tr>
<tr>
<td><strong>R-46A</strong></td>
<td>11.9 kW</td>
</tr>
<tr>
<td><strong>R-48A</strong></td>
<td>13.2 kW</td>
</tr>
<tr>
<td><strong>R-49A</strong></td>
<td>14.5 kW</td>
</tr>
</tbody>
</table>

(1) Refer to condition: Outside ambient temperature = 32°C, Evaporation temperature = -10°C and Return Gas 20°C (medium temperature application) (2) Average sound pressure level is measured at 10m in anechoic room
Condensing unit for commercial refrigeration with scroll / reciprocating technology

Refrigeration solution for small food retailers

- Designed specifically for small capacity refrigeration applications in small food stores (e.g. in bakeries and butchers), cold rooms, bottle coolers and display cabinets
- Compact and lightweight for even the smallest of city centre locations
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- Micro channel heat exchanger technology reduces the amount of refrigerant used in the system, lowering environmental impact

### Low Temperature Refrigeration

<table>
<thead>
<tr>
<th>JEHCCU-CL1</th>
<th>JEHSCU-CL1</th>
<th>JEHCCU-CL3</th>
<th>JEHSCU-CL3</th>
</tr>
</thead>
<tbody>
<tr>
<td>0105CL1</td>
<td>0135CL1</td>
<td>0180CL1</td>
<td>0200CL1</td>
</tr>
<tr>
<td>0200CL1</td>
<td>0300CL1</td>
<td>0400CL1</td>
<td>0500CL1</td>
</tr>
<tr>
<td>0600CL1</td>
<td>0750CL1</td>
<td>0950CL1</td>
<td>EVI</td>
</tr>
</tbody>
</table>

**Refrigerating capacity**

- Medium temperature: R-407F
  - Nom kW 2.29
  - Rated kW 2.01

- Low Temperature: R-407F
  - Nom kW 3.73
  - Rated kW 1.99

### Seasonal energy performance ratio (SEPR)

| R-407F | Te -35°C | -1.67 | 1.67 | 1.64 | -1.76 |
| R-449A | Te -35°C | -1.06 | 1.36 | 1.62 | 2.53 |
| R-464A | Te -35°C | -0.98 | 1.36 | 1.62 | 2.53 |
| R-462A | Te -35°C | 0.64  | 0.81 | 1.13 | 1.53 |

### Weight

<table>
<thead>
<tr>
<th>Unit</th>
<th>kg</th>
<th>kg</th>
<th>kg</th>
<th>kg</th>
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<tbody>
<tr>
<td>0105CL1</td>
<td>61</td>
<td>55</td>
<td>55</td>
<td>55</td>
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<tr>
<td>0135CL1</td>
<td>83</td>
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<td>78</td>
<td>78</td>
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<tr>
<td>0180CL1</td>
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<td>79</td>
</tr>
<tr>
<td>0200CL1</td>
<td>81</td>
<td>79</td>
<td>79</td>
<td>79</td>
</tr>
<tr>
<td>0300CL1</td>
<td>132</td>
<td>132</td>
<td>133</td>
<td>133</td>
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<td>0400CL1</td>
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<td>0500CL1</td>
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<tr>
<td>0600CL1</td>
<td>41</td>
<td>41</td>
<td>41</td>
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</tbody>
</table>

### Dimensions

- Length x Width x Height (mm)
  - 602 x 876 x 420
  - 602 x 876 x 530
  - 872 x 1,353 x 575

### Power supply

- Phase/Frequency/Voltage Hz/V
  - 1~/50 /230
  - 3~/50 /400

---

(1) Refers to condition: Outside ambient temperature = 32°C, Evaporation temperature = -35°C and Return Gas 20°C (low temperature application)
(2) Average sound pressure level is measured at 10m in anechoic room
* Condition with high discharge temperature

---

41
Condensing unit for outdoor installation with semi hermetic compressors

General features:

› Capacity for MT cooling: 1,37 kW to 72,3 kW
› Capacity for LT cooling: 0,77 kW to 35,2 kW
› Ambient temperature range: - 25°C - +43°C
› R134A a, R 449A, R 448A, R452A R407F, R 407A
› Bitzer, Dorin, Frascold
› Copeland Digital scroll and Stream reciprocation compressors

Conditions:

MT: Ambient temperature: 35°C Evp. Temperature: -10°C
LT: Ambient temperature: 35°C Evp. Temperature: -35°C

General Description:
Compact air cooled condensing unit floor mounting, low noise, with semi hermetic compressors. Designed specifically for small capacity refrigeration applications in small and medium sized food stores (e.g. in bakeries and butchers), cold rooms, bottle coolers and display cabinets. All components can be accessed, allowing for quick and easy maintenance. The optimized compressor range and increased condenser surface deliver high levels of energy efficiency and reliability is ensured by using high quality components and production processes.

Standard characteristics:

› Semi-hermetic compressors
› Crankcase heater - Kiwan
› Curved condenser with 6-pole fan motor
› Electrical box with terminal strip
› Liquid receiver with safety pressure relief valve for PED units
› Liquid line filter dryer, liquid line sight glass
› Dual HP/LP adjustable switch with auto reset
› Suction vibration eliminator
› Frequency driver (only with Inverter option)
› Bitzer VariSpeed compressor (only for Inverter option)
› Electrical box with running processor (only for Inverter)

Normal cooling

<table>
<thead>
<tr>
<th>Condensing unit</th>
<th>GCU</th>
<th>1010</th>
<th>1015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2040</th>
<th>3050</th>
<th>3060</th>
<th>4090</th>
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</thead>
<tbody>
<tr>
<td>Refrigeration capacity</td>
<td>0°C</td>
<td>W</td>
<td>2,786</td>
<td>3,189</td>
<td>4,248</td>
<td>5,133</td>
<td>5,943</td>
<td>7,334</td>
<td>9,596</td>
<td>11,711</td>
</tr>
<tr>
<td></td>
<td>-10°C</td>
<td>W</td>
<td>1,929</td>
<td>2,335</td>
<td>2,957</td>
<td>3,550</td>
<td>4,361</td>
<td>5,155</td>
<td>6,897</td>
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<td>Power input</td>
<td>kW</td>
<td>0,98</td>
<td>1,15</td>
<td>1,5</td>
<td>1,5</td>
<td>1,5</td>
<td>2,15</td>
<td>2,87</td>
<td>3,4</td>
<td>4,2</td>
</tr>
<tr>
<td>COP 32°C (1)</td>
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<td>2,14</td>
<td>2,09</td>
<td>2,36</td>
<td>2,43</td>
<td>2,35</td>
<td>2,4</td>
<td>2,39</td>
<td>2,42</td>
<td>2,35</td>
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<tr>
<td>COP 25°C (1)</td>
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<td>2,43</td>
<td>2,83</td>
<td>2,84</td>
<td>2,75</td>
<td>2,8</td>
<td>2,81</td>
<td>2,83</td>
<td>2,74</td>
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<td>COP 43°C (1)</td>
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<td>1,66</td>
<td>1,81</td>
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<td>SEPR (1)</td>
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<td>3,37</td>
<td>3,39</td>
<td>3,32</td>
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<td>12,520</td>
<td>15,180</td>
<td>19,331</td>
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<td>800</td>
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<td>550</td>
<td>550</td>
<td>550</td>
<td>550</td>
<td>550</td>
<td>550</td>
<td>750</td>
</tr>
<tr>
<td>Condenser air flow m³/h</td>
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<td>1,830</td>
<td>3,600</td>
<td>3,600</td>
<td>3,370</td>
<td>3,050</td>
<td>3,050</td>
<td>6,740</td>
<td>6,740</td>
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</tr>
<tr>
<td>Compressor</td>
<td>Bitzer reciprocating compressor</td>
<td></td>
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<tr>
<td>Refrigerant</td>
<td>Type/GWP</td>
<td>R-134a/1430</td>
<td></td>
<td></td>
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<tr>
<td>Power supply</td>
<td>V/~/Hz</td>
<td>400/3~/50</td>
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<td></td>
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Deep freezing

<table>
<thead>
<tr>
<th>Condensing unit</th>
<th>HCU</th>
<th>1007</th>
<th>1010</th>
<th>1015</th>
<th>1020</th>
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<th>2025</th>
<th>2030</th>
<th>2040</th>
<th>3060</th>
<th>4090</th>
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<tr>
<td>Refrigeration capacity</td>
<td>-25°C</td>
<td>W</td>
<td>971</td>
<td>1,193</td>
<td>1,562</td>
<td>1,875</td>
<td>3,099</td>
<td>4,025</td>
<td>5,657</td>
<td>7,563</td>
<td>8,823</td>
<td>9,358</td>
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<tr>
<td></td>
<td>-35°C</td>
<td>W</td>
<td>536</td>
<td>690</td>
<td>886</td>
<td>1,097</td>
<td>1,854</td>
<td>2,478</td>
<td>3,497</td>
<td>4,677</td>
<td>5,394</td>
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<td>Power input</td>
<td>kW</td>
<td>0,54</td>
<td>0,64</td>
<td>0,8</td>
<td>1</td>
<td>1,19</td>
<td>1,188</td>
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<td>3,47</td>
<td>3,81</td>
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<td>COP 32°C (1)</td>
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<td>1,09</td>
<td>1,1</td>
<td>1,33</td>
<td>1,32</td>
<td>1,35</td>
<td>1,42</td>
<td>1,44</td>
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<tr>
<td>COP 25°C (1)</td>
<td>-</td>
<td>1,15</td>
<td>1,2</td>
<td>1,27</td>
<td>1,29</td>
<td>1,53</td>
<td>1,52</td>
<td>1,53</td>
<td>1,55</td>
<td>1,61</td>
<td>1,62</td>
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<tr>
<td>COP 43°C (1)</td>
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<td>0,68</td>
<td>0,75</td>
<td>0,74</td>
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<td>1,07</td>
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<td>1,04</td>
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<tr>
<td>SEPR (1)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,73</td>
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<td>1,83</td>
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<td>Annual Electricity Consumption (1)</td>
<td>Kwh/a</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>10,695</td>
<td>14,882</td>
<td>19,427</td>
<td>21,964</td>
<td>23,562</td>
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<tr>
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<td>Height mm</td>
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<td>625</td>
<td>625</td>
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<td>550</td>
<td>550</td>
<td>550</td>
<td>550</td>
<td>750</td>
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<tr>
<td>Condenser air flow m³/h</td>
<td>1,830</td>
<td>1,830</td>
<td>1,830</td>
<td>1,830</td>
<td>3,600</td>
<td>3,600</td>
<td>3,050</td>
<td>7,200</td>
<td>6,740</td>
<td>6,740</td>
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<tr>
<td>Compressor</td>
<td>Bitzer reciprocating compressor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Power supply</td>
<td>V/~/Hz</td>
<td>400/3~/50</td>
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</tbody>
</table>

Other refrigerants, compressors and options available on request (1) Nominal operating conditions according to Ecodesign EN 13215: Ambient temperature 32°C/25°C/43°C, Evaporation temperature -10°C-35°C, 20°C suction gas temperature, Sub cooling OK.
Twin condensing unit for outdoor installation with twin-semi hermetic compressors

General features:
› Capacity for MT cooling: 8.5 kW to 26 kW
› Capacity for LT cooling: 7.5 kW to 12 kW
› Ambient temperature range: -25°C to +43°C
› R134A, R 449A, R448A, R452A R407F
› Reciprocating: Bitzer, Dorin, Frascold
› Copeland Digital scroll and Stream reciprocation compressors
› Conditions:
  MT: Ambient temperature: 35°C Evp. Temperature: -10°C
  LT: Ambient temperature: 35°C Evp. Temperature: -35°C

General Description:
Compact air cooled condensing unit floor mounting, low noise, with hermetic compressors. Designed specifically for small capacity refrigeration applications in small food stores (e.g. in bakeries and butchers), cold rooms, bottle coolers and display cabinets. All components can be accessed, making maintenance quick and easy.
The optimized compressor range and increased condenser surface deliver high levels of energy efficiency and reliability is ensured by using high quality components and production processes.

Standard characteristics:
› Two compressors parallel connected
› Level control oil system
› Curved condenser with 6-pole fan motor
› Electrical box with terminal strip
› Liquid receiver with safety pressure relief valve for PED units
› Liquid line filter dryer, liquid line sight glass
› Dual HP/LP adjustable switch with auto reset
› Suction vibration eliminator
› Electrical box with Running processor (only for Inverter)

Normal cooling

<table>
<thead>
<tr>
<th>Condensing unit</th>
<th>GCU</th>
<th>4040</th>
<th>4060</th>
<th>4080</th>
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<tr>
<td>Refrigeration capacity 0°C W</td>
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<td>15,200</td>
<td>19,200</td>
<td>27,800</td>
<td>30,400</td>
<td>36,400</td>
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<tr>
<td>-10°C W</td>
<td>8,328</td>
<td>10,596</td>
<td>13,800</td>
<td>19,783</td>
<td>21,249</td>
<td>25,694</td>
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<td>Power input kW</td>
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<td>5.7</td>
<td>8.42</td>
<td>8.3</td>
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<tr>
<td>COP/EER</td>
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<td>2.4</td>
<td>2.3</td>
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<tr>
<td>SEPR</td>
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<td>3.75</td>
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<td>Annual Electricity Consumption Kwh/a</td>
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<td>24,299</td>
<td>34,808</td>
<td>41,562</td>
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<td>Dimensions Unit Height mm</td>
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<tr>
<td>Condenser air flow m³/h</td>
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<td>7,800</td>
<td>7,300</td>
<td>15,600</td>
<td>15,600</td>
<td>14,600</td>
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</tr>
<tr>
<td>Compressor Bitzer reciprocating compressor</td>
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<td>Refrigerant Type/GWP</td>
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<tr>
<td>Power supply V/~ Hz</td>
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Deep freezing

<table>
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<th>412</th>
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<td>-35°C W</td>
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<tr>
<td>Power input kW</td>
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<td>5.3</td>
<td>6.7</td>
<td></td>
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<tr>
<td>COP/EER</td>
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<td>1.3</td>
<td>1.3</td>
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<td>Depth mm</td>
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<td>Condenser air flow m³/h</td>
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<td>7,900</td>
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<tr>
<td>Power supply V/~ Hz</td>
<td>400/3~/50</td>
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</tbody>
</table>

Other refrigerants, compressors and options available on request. (1)Nominal operating conditions according to Ecodesign EN 13215: Ambient temperature 32°C, Evaporation temperature -10°C/-35°C, 20°C suction gas temperature, Sub-cooling 0K.
Multi compressor condensing unit with scroll/digital scroll compressors

General features:

› Capacity for MT cooling: 10.5 kW to 102 kW
› Capacity for LT cooling: 7.5 kW to 48.5 kW
› Ambient temperature range: -25°C - +43°C
› R134a, R449A, R448A, R452A, R407F
› Copeland scroll and digital scroll compressors
  Other types, brands and capacities are possible on request
› Conditions:
  MT: Ambient temperature: 35°C Evp. Temperature: -10°C
  LT: Ambient temperature: 35°C Evp. Temperature: -35°C

Standard configuration:

Basic Frame Version:
Basic frame made from pre-painted steel sheet, with vertical condenser placed on 1 or 2 sides of the unit and fans (2, 3, 4, or 5) placed on frame top covering sheet.
The compressors are installed in a soundproof compartment separate from the condenser side, but allowing ventilation.
The compartment is simple soundproofing insulated (SMP).

Basic Refrigerating System:
The compressors (3 or 4) are connected in parallel, with one suction and discharge header. Each compressor is fitted with shut-off valves on suction line and discharge line.
The compressors are fixed to the frame through rubber anti-vibration supports.
The oil equalization system is composed of an oil separator and an equalization header, which are mounted on the compressor oil sight glass connection.
According to the number of compressors fitted, there are one or two oil level indicator/s, fitted onto the equalization header.
The refrigeration system is equipped with liquid receivers, if there is more than one receiver, the installation is made in parallel with a safety valve, a dehydration cartridge filter, interchangeable, liquid level alarm, liquid sight glass and shut-off valves. On suction line there is a mechanical cartridge filter, interchangeable.

The refrigeration system is fitted with:

› General high pressure switch, adjustable and autoresetting
› General low pressure switch, adjustable and autoresetting
› Emergency low pressure switch, adjustable and autoresetting
› Low pressure switches for each compressor emergency, adjustable and autoresetting
› Low pressure probe, placed on suction header for capacity control
› High pressure gauge
› Low pressure gauge

Standard electrical panel:
Standard power distribution
Disconnecting switch
Compressors protection, with overload cut-out motor protector; fuses for fans protection, thermo-contacts for each single fan.
Auxiliary circuit 230 volt through transformer 400V/230V
Electronic card XC440C
Four alarm signals: emergency (button + lamp, fans block, high pressure switch block, low pressure switch block.
Electronic speed regulator for condenser fan with pressure probe for three phase fans and with temperature probe for mono phase fans + bypass
The electrical panel is placed horizontally on the top front side of the unit, inside the panel sheets for frame 1, 2 and 3; grid, ventilation fan and double door for frames 4, 5, 6 and 7.
Multi compressor condensing unit with semi hermetic compressors

General features:
› Capacity for MT cooling: 48 kW to 150 kW
› Capacity for LT cooling: 20 kW to 85 kW
› Ambient temperature range: -25°C - +43°C
› R134a, R 449A, R448A, R452A, R407F
› Reciprocating semi hermetic compressors: Bitzer, Dorin, Frascold, Copeland stream
  Other types, brands and capacities are possible on request
› Conditions:
  MT: Ambient temperature: 35°C Evp. Temperature: -10°C
  LT: Ambient temperature: 35°C Evp. Temperature: -35°C

General description:

Basic Frame Version:
Basic frame made from folded and painted steel sheet, screwed with bolts to make a basic structure to fix the components on it.

Basic Refrigerating System:
The compressors (3 or 4) are connected in parallel, with only one suction and discharge header. Each compressor is fitted with shut-off valves on suction line and discharge line.
The compressors are fixed to the frame through rubber anti-vibration supports.
Compressors used for low temperature are complete with fan heads.
The oil equalization system is composed of an oil separator and an equalization header, which are mounted on the compressor oil sight glass connection.
According to the number of compressors fitted, there is one or two oil level indicator/s, fitted onto the equalization header.
The refrigerating system is equipped with liquid receivers, if there is more than one receiver, the installation is made in parallel with a safety valve, a dehydration cartridge filter, interchangeable, liquid level alarm, liquid sight glass and shut-off valves.
On suction line there is a mechanical cartridge filter, interchangeable.

The refrigeration system is fitted with:
› General high pressure switch, adjustable and autoresetting
› General low pressure switch, adjustable and autoresetting
› Oil pressure switch for each compressor
› Emergency low pressure switch, adjustable and autoresetting
› Low pressure switches for each compressor emergency, adjustable and autoresetting
› Electronic speed regulator for condenser fan with pressure probe for three phase fans and with temperature probe for mono phase fans + bypass
› Low pressure probe, placed on suction header for capacity control
› High pressure gauge
› Low pressure gauge

Electrical panel:
Standard power distribution
Disconnecting switch
Compressors protection, with overload cut-out motor protector; fuses for fans protection, thermal contacts for each single fan
Auxiliary circuit 230 volt through transformer 400V/230V
Electronic card XC440C
IP55 with grid and ventilation fan
On the door there is the electronic card and 4 lamps: emergency (button + lamp), fans block, high pressure switch block, low pressure switch block, and selector for on/off compressors
Condensing units with inverter driven compressor

High reliability, low cost and easy installation

- Large operating range for outdoor temperatures from -20° to +45°C and evaporation temperatures from -20°C to +5°C
- Control box
- Oil separator & condenser fan speed regulator
- Liquid receiver with safety valve
- High and low pressure switches
- Low vibration
- Low sound level: from 30 dB(A) @10 meters (free field conditions)
- Micro-channel condenser for highest efficiency
- Compatible with several low GWP refrigerants: R134a, R513A and R450A
- Factory preconfigured for easy and fast commissioning
Why choose ZEAS?

Whether it is restaurants, supermarkets or event halls – Zeas from Daikin is as individual as the requirements of the industries where it is used.

**High energy efficiency**

- Daikin DC inverter scroll compressor with economizer technology
- DC inverter fan technology
- Eco-design compliant

**Reliable operation**

- Zeas condensing units are rigorously tested on the assembly line
- Proven inverter scroll technology
- Proven onboard innovating economizer technology
- Anti-corrosion treatment on the housing ensures long life even in extreme conditions

**BENEFITS**

- **Lower energy bills**
  The use of Daikin proven DC technology results in lower energy bill compared to the use of standard ON/OFF units and even other capacity controller refrigeration units

- **Our units are future proof**
  Combining Daikin innovating economizer technology with in house DC technology results in very high efficient units allowing us to outperformed the most severe eco-design minimum performance for the coming decades

- **Optimal food conservation**
  Accurate temperature and humidity control can be easily suited to the requirements for different foods and beverages resulting in less waste of precious products

- **Longer lifetime expectation of our compressor**
  Less thermal stress on our bearings and motor windings due to the implementation of Daikin High quality DC technology in our compressor

- **Longer lifetime expectations of our units**
  The use of our innovating economizer technology in our units guarantee that our the compressor always operates within his operating envelope even in the most harvest conditions: excessive superheat at the inlet of the compressor resulting from improper quality of installation on the refrigerated cabinets side

- **No leaks**
  Each new Daikin designed unit is put on a vibration plate in the factory to be sure that no leak and component damage can occur during transport. Even further, in the assemble line the Zeas unit undergo several leak test

- **No “dead on arrival”**
  ALL units leaving the factory, have already run at the end of the assembly line

- **Lower installation cost**
  Due to the use of the onboard economizer technology and the use of the correct low GWP refrigerant we only required the use of smaller pipes compared to other traditional systems, thus also lowered the refrigerant charge of the system
Small foot print and low weight

- Extremely compact and space-saving design
- Easy to install, even in the smallest spaces
- Indoor installation possible
- Best surface to capacity ration on the market
- Low weight thanks to compact design

Peace of mind

- Quiet operation, unobtrusive for customers and neighbours
  - High grade sound on panels and compressors
  - Condenser fans designed to limit the noise
  - 4 low noise operation settings including night mode
- Wide temperature range allows multiple cabinet, freezer and cold room combinations

Intelligent control

- Unit can be connected to third party monitoring system
- Remote control of target evaporation temperature, reset errors and other functions
- Refrigeration unit can be controlled remotely through a power full interface

 BENEFITS

- Only light weight supporting structures are required
- No installation restrictions anymore
  Our mini Zeas due to his compact design, light- weight and very silent operation can be installed everywhere!
- No special crane are required
  The ZEAS units are so compact that it can fit in an elevator

 BENEFITS

- Happy neighbours and no installation restrictions anymore
  The focus on sound criteria during the design of the units results in the most silent unit(s) of the market (till 25 dB(A) @ 10 m free field conditions)

 BENEFITS

- Quick installation and commissioning
  Advanced software solution for easy system configuration and commissioning
- Peace of mind
  Easy monitoring of ZEAS unit by third party Building Management Systems through the use of our Modbus interface
ZEAS, the smart choice for medium and low temperature refrigeration

ZEAS is available in different capacity ranges from 5 to 40 HP and delivers the required refrigerating capacity to third party equipment like open showcases, glass door freezers and evaporators.

Flexible combination refrigeration system
Separate groups for medium and low temperature cooling, each with multiple cabinets and different temperatures. This flexibility and energy savings of up to 50% are only possible with ZEAS-systems.

Operating range
Ambient temperatures: -20°C to +43 °C
Evaporating temperatures: -45°C to +10°C

Why R-410A?

R-410A is a lower GWP refrigerant (less than 2500) than R404A and is fully F-gas compliant. It’s future proof: it can be used even after 2030!

Use of refrigerant in refrigeration system with a refrigeration lower than 40 kW

Contributes to reducing installation cost and refrigerant charge
R-410A is a high pressure refrigerant which for the same swept volume can deliver much more refrigeration capacity than standard mid pressure and low pressure refrigerants.

Delivered capacity per used refrigerant

This means that for the same delivered refrigeration capacity we can use smaller components, thus reducing the installation cost and the amount of refrigerant charge in the system!

R-410A is also:

› an easy to handle, common used refrigerant in the air conditioning world, therefore it is easy to find an installer which can work with this refrigerant, compared to CO₂, Ammonia and Propane.
› an A1 refrigerant, therefore no special safety measurements are required.
Mini-ZEAS condensing unit

Refrigeration solution for small food retailers

› Inverter technology guarantees optimal food conservation by ensuring an accurate temperature and humidity control
› The economized scroll contributes to a longer lifetime expectation of the refrigeration equipment and less maintenance requirement
› The use of R-410A refrigerant allows the use of smaller piping diameters, thus reducing the refrigerant content in the system helping to lower our CO2 footprint. R-410A is fully compliant with the latest F-Gas regulation and can be still used after 2020 and beyond
› The DC economized compressor improves drastically the efficiency of the unit, thus helps lowering the energy bill!
› Lowest sound level in the market down to 31 dBA. Sound level can be even further reduced thanks to the low noise modes
› The weight of the unit is very low, therefore the unit can even be mounted on the wall
› Up to 75% smaller than equivalent products in the market, ideal for those places where space is limited
› Advanced software solution for easy system configuration and commissioning

### Medium Temperature Refrigeration

<table>
<thead>
<tr>
<th>LRMEQ/LRLEQ</th>
<th>3BY1</th>
<th>4BY1</th>
<th>3BY1</th>
<th>4BY1</th>
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</thead>
<tbody>
<tr>
<td>Connectable capacity</td>
<td>Minimum–Maximum %</td>
<td>50–100</td>
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<tr>
<td>Refrigerating capacity</td>
<td>Low Nom. kW</td>
<td>2.78 (1)</td>
<td>3.62 (1)</td>
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<tr>
<td>Power input</td>
<td>Low Nom. kW</td>
<td>2.60 (1)</td>
<td>3.41 (1)</td>
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<tr>
<td>COP</td>
<td>Medium Nom. kW</td>
<td>2.53</td>
<td>3.65</td>
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<tr>
<td>Seasonal energy performance ratio SEPR</td>
<td>R-410A Te -10°C - Te -35°C</td>
<td>4.17</td>
<td>4.08</td>
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<td>Ann. energy consumption Q</td>
<td>R-410A Te -10°C - Te -35°C kWh/a</td>
<td>8,698</td>
<td>12,651</td>
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<td>Parameters at part load and ambient temp. 25°C (Point B)</td>
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<td>2.93</td>
<td>2.87</td>
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<tr>
<td>Parameters at full load and ambient temp. 32°C (Point A)</td>
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<td>2.30</td>
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<td>Parameters at full load and ambient temp. 43°C</td>
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<td>1.48</td>
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<td>Parameters at part load and ambient temp. 15°C (Point C)</td>
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<td>4.12</td>
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<td>Parameters at part load and ambient temp. 5°C (Point D)</td>
<td>Te -10°C - Te -35°C Declared COP (COPD)</td>
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### Dimensions

<table>
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<th>Unit</th>
<th>HeightxWidthxDepth mm</th>
<th>1,345x900x320</th>
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<tbody>
<tr>
<td>Weight</td>
<td>Unit kg</td>
<td>126</td>
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</tbody>
</table>

### Heat exchanger

| Type | Cross fin coil |

### Compressor

| Type | Hermetically sealed scroll compressor |
| Starting method | Direct on line (inverter driven) |

### Fan

| Type | Propeller |
| Quantity | 2 |
| Airflow rate Cooling Nom. m³/min | 106 |

### Fan motor

| Output | W | 70 |
| Drive | Direct drive |

### Sound pressure level Nom. dBA

| Nom. | 51 (1) | 51.0 (2) |

### Piping connections

| Liquid OD mm | 9.52 |
| Gas OD mm | 19.1 |

### Refrigerant

| Type/GWP | R-410A/2,0875 |
| Refrigerant | Electronic expansion valve |
| Charge kg/ton | 4.50/9.39 |

### Power supply

| Phase/Frequency/Voltage Hz/V | 3N~/50/380-415 |

---

(1) Sound pressure data: measured at 1m in front of unit, at 1.5m height | (2) Cooling: evaporating temp. -35°C; outdoor temp. 32°C; suction SH10°C; Cooling: evaporating temp. -10°C; outdoor temp. 32°C; suction SH10°C.
ZEAS condensing unit for commercial refrigeration with scroll technology

Refrigeration solution for medium to large capacity applications featuring proven VRV technology

- One model for all applications from -45°C to 10°C evaporating temperature
- Perfect solution for all cooling and freezing applications with variable load conditions and high energy efficiency requirements. In particular used in supermarkets, cold storage, blast coolers and freezers etc.
- DC inverter scroll compressor with economiser function results in high energy efficiency and reliable performance
- Reduced CO2 emissions thanks to the use of R-410A refrigerant and low energy consumption
- Factory tested and pre-programmed for quick and easy installation and commissioning
- VRV (Variable Refrigerant Volume) technology for flexible application range
- Increased installation flexibility thanks to limited dimensions
- Low sound level including „night mode“ operation
- For small freezing capacity, single ZEAS units can be connected to a booster unit
- Dedicated unit to allow multi combination of 2 x 15 HP or 2 x 20 HP resulting in less pipework or installation time

<table>
<thead>
<tr>
<th>LREQ-BY1</th>
<th>5</th>
<th>6</th>
<th>8</th>
<th>10</th>
<th>15</th>
<th>20</th>
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<tbody>
<tr>
<td>Refrigerating capacity</td>
<td>Low temperature</td>
<td>Nom. kW</td>
<td>5,51 (1)</td>
<td>6,51 (1)</td>
<td>8,33 (1)</td>
<td>10,0 (1)</td>
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<tr>
<td>Medium temperature</td>
<td>Nom. kW</td>
<td>12,5 (2)</td>
<td>15,2 (2)</td>
<td>19,8 (2)</td>
<td>23,8 (2)</td>
<td>26,5 (2)</td>
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<td>Power input</td>
<td>Low temperature</td>
<td>Nom. kW</td>
<td>4,65 (1)</td>
<td>5,88 (1)</td>
<td>7,72 (1)</td>
<td>9,27 (1)</td>
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<tr>
<td>Medium temperature</td>
<td>Nom. kW</td>
<td>5,10 (2)</td>
<td>6,56 (2)</td>
<td>8,76 (2)</td>
<td>10,6 (2)</td>
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<td>Seasonal energy performance ratio SEER</td>
<td>R-410A Te -10°C</td>
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<td>3,79</td>
<td>3,64</td>
<td>3,42</td>
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<tr>
<td>Te -35°C</td>
<td>1,80</td>
<td>1,77</td>
<td>1,84</td>
<td>1,88</td>
<td>1,80</td>
<td>1,70</td>
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<td>R-410A Te -10°C kWh/a</td>
<td>19,907</td>
<td>24,681</td>
<td>33,483</td>
<td>42,794</td>
<td>46,377</td>
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<tr>
<td>Te -35°C kWh/a</td>
<td>22,805</td>
<td>27,453</td>
<td>33,817</td>
<td>39,747</td>
<td>44,363</td>
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<td>Parameters at full load and ambient temp. 40°C</td>
<td>R-410A Te -10°C Declared COP (COP3)</td>
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<td>1,57</td>
<td>1,40</td>
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<td>Te -35°C Declared COP (COP3) 0,76</td>
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<td>0,68</td>
<td>0,70</td>
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<td>242</td>
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<td>Compressor Type</td>
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<td>3,200</td>
<td>2,100</td>
<td>3,000</td>
<td>3,400</td>
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<td>m³/h</td>
<td>11,18</td>
<td>13,85</td>
<td>19,68</td>
<td>23,36</td>
<td>25,27</td>
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<tr>
<td>Speed</td>
<td>rpm</td>
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<td>6,540</td>
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<td>6,060</td>
<td>6,960</td>
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<td>Direct on line (inverter driven)</td>
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<td>Compressor 2</td>
<td>Output</td>
<td>W</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Speed</td>
<td>rpm</td>
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<td>Output</td>
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<td>-</td>
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<td>Speed</td>
<td>rpm</td>
<td>-</td>
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<td>Type</td>
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<tr>
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<td>2</td>
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<td>Air flow rate Cooling Nom. m³/min</td>
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<td>102</td>
<td>171</td>
<td>179</td>
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<td>230</td>
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<td>Output</td>
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<td>350</td>
<td>750</td>
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<td>Drive</td>
<td>350</td>
<td>750</td>
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<tr>
<td>Fan motor 2</td>
<td>Output</td>
<td>W</td>
<td>-</td>
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<tr>
<td>Sound pressure level</td>
<td>Nom. dBA R-410A Te -10°C</td>
<td>55,0 (3)</td>
<td>56,0 (3)</td>
<td>57,0 (3)</td>
<td>59,0 (3)</td>
<td>61,0 (3)</td>
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<td>Operation range</td>
<td>Evaporator Cooling Max.-Min. °CDB 10~45</td>
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<td>Refrigerant</td>
<td>Type / GWP</td>
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<tr>
<td>Charge</td>
<td>kg</td>
<td>5,2</td>
<td>7,9</td>
<td>11,5</td>
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<tr>
<td>TCO₂eq</td>
<td>10,9</td>
<td>16,5</td>
<td>24,0</td>
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<td>Control</td>
<td>Electronic expansion valve</td>
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<tr>
<td>Power supply</td>
<td>Phase/Frequency/Voltage Hz/V 3~/50/380-415</td>
<td></td>
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</table>

(1) Cooling: evaporating temp. -10°C; outdoor temp. 32°C; suction SH 10°C
(2) Cooling: evaporating temp. -35°C; outdoor temp. 32°C; suction SH 10°C
(3) Sound pressure data: measured at 1m in front of unit, at 1.5m height | RLA is based on following conditions: outdoor temp. 32°C; DB, suction SH 10°C, saturated temperature equivalent to suction pressure -10°C

ZEAS condensing unit for commercial refrigeration with scroll technology

One model for all applications from -45°C to 10°C evaporating temperature

Perfect solution for all cooling and freezing applications with variable load conditions and high energy efficiency requirements. In particular used in supermarkets, cold storage, blast coolers and freezers etc.

DC inverter scroll compressor with economiser function results in high energy efficiency and reliable performance

Reduced CO2 emissions thanks to the use of R-410A refrigerant and low energy consumption

Factory tested and pre-programmed for quick and easy installation and commissioning

VRV (Variable Refrigerant Volume) technology for flexible application range

Increased installation flexibility thanks to limited dimensions

Low sound level including „night mode“ operation

For small freezing capacity, single ZEAS units can be connected to a booster unit

Dedicated unit to allow multi combination of 2 x 15 HP or 2 x 20 HP resulting in less pipework or installation time
CO₂ Condensing units
Hubbard Condensing units with CO₂ refrigerant

- Transcritical CO₂ Commercial Condensing Units for food retailers
- Wide range of capacities: 2 to 10HP MT and LT
- Designed for quiet and energy-saving operation
- Inverter technology reduces energy consumption by up to 30%
- EC fans work efficiently and quietly
- Easy and flexible installation
- Designed as plug & play solutions

<table>
<thead>
<tr>
<th>Medium Temperature</th>
<th>GCU 2020 PXB1</th>
<th>GCU 2040 PXB1</th>
<th>GCU 4070 PXB1</th>
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<tbody>
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<td>Capacity *</td>
<td>HP</td>
<td>kW</td>
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<tr>
<td>Min.</td>
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<td>3.25</td>
<td>6.25</td>
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<tr>
<td>Max.</td>
<td>3.39</td>
<td>6.50</td>
<td>12.54</td>
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<tr>
<td>Power &amp; Energy</td>
<td>Ph./Hz./VAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EcoDesign (2009/125/EC)</td>
<td>FLC A</td>
<td>8.64</td>
<td>16.04</td>
</tr>
<tr>
<td>COP/SEPR</td>
<td>1.87/3.57 SEPR</td>
<td>3.24 SEPR</td>
<td>2.92 SEPR</td>
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<tr>
<td>kWh/a</td>
<td>5.840</td>
<td>12.307</td>
<td>26.393</td>
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<tr>
<td>Compressor</td>
<td>Compression</td>
<td>2 Stage (intercooler)</td>
<td>Panasonic Hermetic Rotary</td>
</tr>
<tr>
<td>Type</td>
<td></td>
<td></td>
<td>ABB Frequency Inverter</td>
</tr>
<tr>
<td>Cap. Ctrl.</td>
<td>RPM</td>
<td>2,200 ~ 4,200</td>
<td>2,200 ~ 4,800</td>
</tr>
<tr>
<td>Qty.</td>
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<td>1</td>
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</tr>
<tr>
<td>Oil</td>
<td>DAPNCE FZ685</td>
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<td></td>
</tr>
<tr>
<td>Gas cooler fans</td>
<td>Type</td>
<td></td>
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</tr>
<tr>
<td>Qty.</td>
<td>m/s</td>
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<td>Ø (dia.)</td>
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<td>450</td>
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<td>Sound pressure</td>
<td>dB(A)</td>
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<td>45.0</td>
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<td>Refrigerant</td>
<td>Type/GWP</td>
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<td>Receiver volume</td>
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<td>12.50</td>
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<td>Standard pipe run</td>
<td>m</td>
<td>25</td>
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<td>Liquid connections</td>
<td>Inch/Type</td>
<td>3/8&quot;/K65</td>
<td>1/2&quot;/K65</td>
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<tr>
<td>Suction connections</td>
<td>Inch/Type</td>
<td>3/8&quot;/K65</td>
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<td>Oil separator</td>
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<td>Oil level control</td>
<td>Standard</td>
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<td>Cappillary</td>
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<td>Dimensions</td>
<td>Unit L x D x H mm</td>
<td>1452 x 574 x 799</td>
<td>1684 x 773 x 1438</td>
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<td>Surface area</td>
<td>m²</td>
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<tr>
<td>Weight</td>
<td>kg</td>
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<tr>
<td>Controller</td>
<td>Type</td>
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<tr>
<td>High-side PRV</td>
<td>Bar</td>
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<td>Intermediate PRV</td>
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<td>80</td>
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<tr>
<td>PED 2014/68/EU</td>
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<td>Cat. III</td>
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* Nominal Tevap. -10°C | Tamb +32°C | 10K Superheat
Hubbard Condensing units with CO₂ refrigerant

- Transcritical CO₂ Commercial Condensing Units for food retailers
- Wide range of capacities: 2 to 10HP MT and LT
- Designed for quiet and energy-saving operation
- Inverter technology reduces energy consumption by up to 30%
- EC fans work efficiently and quietly
- Easy and flexible installation
- Designed as plug & play solutions

<table>
<thead>
<tr>
<th>Medium Temperature</th>
<th>HCU2020PX81</th>
<th>HCU2040PX81</th>
<th>HCU4070PX81</th>
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<td>4HP</td>
<td>10HP</td>
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<tr>
<td>Min. kW</td>
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<tr>
<td>Max. kW</td>
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<td>3.03</td>
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<td>Power &amp; Energy</td>
<td>Ph./Hz./VAC</td>
<td>3Ph/50Hz/400VAC</td>
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<tr>
<td>EcoDesign (2009/125/EC)</td>
<td>FLC A</td>
<td>8.64</td>
<td>16.04</td>
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<tr>
<td></td>
<td>COP/SEPR</td>
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<tr>
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<td>kWh/a</td>
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<td>Compression</td>
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<td></td>
<td>Type</td>
<td>Panasonic Hermetic Rotary</td>
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<td>Cap. Ctrl.</td>
<td>ABB Frequency Inverter</td>
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<td>RPM</td>
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<td>Oil</td>
<td>Daphne ABB</td>
<td>Daphne PZ685</td>
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<td>Gas cooler fans</td>
<td>Type</td>
<td>Ebmpapst EC</td>
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<tr>
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<td>Type/GWP</td>
<td>R744/1</td>
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<tr>
<td>Reciever volume</td>
<td>l</td>
<td>125</td>
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<tr>
<td>Standard pipe run</td>
<td>m</td>
<td>25</td>
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<tr>
<td>Liquid connections</td>
<td>Inch/Type</td>
<td>3/8&quot; (K65)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inch/Type</td>
<td>3/8&quot; (K65)</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>1/2&quot; (K66)</td>
<td></td>
</tr>
<tr>
<td>Oil seperator</td>
<td>Standard</td>
<td>No</td>
<td>Yes/Turboil</td>
</tr>
<tr>
<td>Oil level control</td>
<td>Standard</td>
<td>N/A</td>
<td>Capillary</td>
</tr>
<tr>
<td>Dimensions</td>
<td>l x D x H</td>
<td>1452 x 574 x 799</td>
<td>1684 x 773 x 1438</td>
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<tr>
<td>Surface area (m²)</td>
<td></td>
<td>0.83</td>
<td>1.29</td>
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<tr>
<td>Weight (kg)</td>
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<td>161</td>
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<tr>
<td>Colour</td>
<td>RAL</td>
<td>Light Grey RAL7035 (Powder Coated &amp; Baked)</td>
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<tr>
<td>Controller</td>
<td>Type</td>
<td>CAREL Rotrack pR300 Electronic Controller &amp; Ultracap</td>
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<tr>
<td>High-side PRV</td>
<td>Bar</td>
<td>N/A</td>
<td>50</td>
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<td>Intermidiate PRV</td>
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<td>80</td>
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<td>Compressor HP Switch</td>
<td>Standard</td>
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<tr>
<td>PED 2014/68/EU</td>
<td>Category</td>
<td>Cat. III</td>
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</tr>
</tbody>
</table>

* Nominal Tevap -35°C | Tamb +32°C | 10K Superheat
Standard Condensing units

Standard condensing units with transcritical cycle

› Chassis in galvanized and painted steel sheet. Bodyworking and soundproofing available
› High modular concept
› The gascooler can be disconnected from the unit
› Electrical board with all the necessary electronics for the operation of the unit
› 1 MT compressor
› (Optional) Frequency drive
› All piping done in stainless steel
› Multiple options possible to facilitate transport of the unit
› All necessary safety devices
› 3 air exit configurations
› Reduced dimensions
› Easy to transport
› Until 6 assembly options

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FC17</td>
<td>7 kW</td>
<td></td>
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</tr>
<tr>
<td>832 mm</td>
<td></td>
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</tr>
<tr>
<td>FNV42</td>
<td>18 kW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1560 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FNV58</td>
<td>38 kW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1560 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

F-Gas Free
Plug&Play
Proportional Modulation
Protective Case
Switchboard
Electronic Control
Heating Interchanger (Optional)

FNV42
FNV58
**CO₂ Condensing Units**

**Small Booster Condensing units**

Small condensing units with Transcritical cycle

- Gas cooler with Axial or Radial EC fans.
- Air connection: Three different configurations
- V-shaped gas cooler optimized for CO₂ applications
- Compressor configuration:
  - CU: 1 x MT
  - Racks: 1 x MT + 1 x LT / 2 x MT
- Racks Standard delivery:
  - Inverter: 1x MT and 1x LT compressor
  - CU: inverter optional
- High safety level with pressure relief valves, pressure switches and intelligent controls
- Stainless steel Piping
- Galvanized and painted sheet metal chassis and weather proof enclosure.
- Optional: acoustic insulation
- Electrical Panel including electronic controller and control panel
- Modular concept - The gascooler can be disassembled from the unit and assembled in different configurations

- Reduced dimensions
- Easy to transport
- Until 6 assembly options

**F-Gas Free**

**Plug & Play**

**Proportional Modulation**

**Protective Case**

**Switchboard**

**Electronic Control**

**Heating Interchanger (Optional)**

**MT**

**MT + LT**

<table>
<thead>
<tr>
<th>Model</th>
<th>Power Options</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>FNV42</td>
<td>8 kW, 18 kW, 22 kW</td>
<td>1,560 mm</td>
</tr>
<tr>
<td>FNV58</td>
<td>10 kW, 40 kW, 45 kW</td>
<td>1,560 mm</td>
</tr>
</tbody>
</table>

**Conditions:**
- LT: Tev.: -35°C SH: 8°K
- MT: Tev.: -10°C SH: 8°K
- Clime: Tev. med: 5°C SH: 8°K
Commercial Refrigeration

Compact centrally equipped for the generation of cold with CO₂ in the transcritical cycle

› Serves refrigeration services in one or two temperatures, working as a booster.
› It can include up to 1 heat exchanger and 1 parallel compressor (optional).
› Equipped with a double battery V with greater exchange surface that allows a lower flow.
› The battery can act as an evaporator in case of heat demand if it does not need cold generation (optional RHX plus NV58)
› The casing has 3 air output configurations.
› The electrical panel is equipped with the control unit and can disconnect via external control.
› There are 2 independent modules to house compressors and gas cooler.

AXIAL EC FAN

Fans
› 3x Ø500 mm
Air flow
› 24,000 m³/h
Sound pressure at 10 m
› 46 up to 57 dB(A)
Silent version available

RADIAL EC FAN

Fans
› 3x Ø500 mm
Air flow
› 22,500 m³/h
Available pressure
› 100 Pa
Sound pressure at 10 m
› 50 up to 56 dB(A)

### NV66

<table>
<thead>
<tr>
<th>Application</th>
<th>MT</th>
<th>MT + pc</th>
<th>MT + LT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling capacity (kW)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compressors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inverter compressors (nº)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recovery (max capacity) (kW)</td>
<td></td>
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<td></td>
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</tbody>
</table>

### NV66+

<table>
<thead>
<tr>
<th>Application</th>
<th>MT</th>
<th>MT + pc</th>
<th>MT + LT + cp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling capacity (kW)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compressors</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Inverter compressors (nº)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Optional equipment</td>
<td></td>
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</tr>
<tr>
<td>Recovery (max capacity) (kW)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Temperature, LT = Low Temperature, pc = Parallel compressor
Large Booster
Condensing units

Large condensing units with Transcritical cycle

- Gas cooler with Axial or Radial EC fans.
- Air connection: Three different configurations
- (Optional) Heat recovery heat exchanger to take advantage of the "free heat" for air conditioning or for sanitary application
- Galvanized and painted sheet metal chassis and weather proof enclosure.
- Optional: acoustic insulation
- Large liquid receiver
- All piping done in stainless steel
- Design adapted for loading and transportation
- (Optional) Parallel compressor(s) to improve further the efficiency of the unit. Only for FCZ range where more than 2 compressor(s) can be used
- Compressor configuration Bitzer/Dorin: MT compressor(s)
- Possibility to have combination of MT and LT compressor
- Racks Standard delivery:
  - Inverter: 1x MT and 1x LT
  - Electrical Panel including electronic controller and control panel

- High safety level with pressure relief valves, pressure switches and intelligent controls
- Visible panel of manometers and pressostats
- High modular concept.
- The gascooler can be disconnected from the unit

<table>
<thead>
<tr>
<th></th>
<th>F-Gas Free</th>
<th>Electronic Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Heating Interchanger (Optional)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parallel compressors (Optional)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mechanical Subcooler (Optional)</td>
<td></td>
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</tbody>
</table>

- MT
- MT + LT

<table>
<thead>
<tr>
<th></th>
<th>MT</th>
<th>3+2</th>
<th>3+1</th>
<th>3+2</th>
<th>4+1</th>
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<tbody>
<tr>
<td>FCZ3E</td>
<td>2.120 mm</td>
<td>15 kW</td>
<td>45 kW</td>
<td>52 kW</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCZ4E</td>
<td>2.120 mm</td>
<td>20 kW</td>
<td>63 kW</td>
<td>74 kW</td>
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<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>FCZ4F</td>
<td>2.660 mm</td>
<td>25 kW</td>
<td>75 kW</td>
<td>85 kW</td>
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<tr>
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<tr>
<td>FCZ4G</td>
<td>3.600 mm</td>
<td>30 kW</td>
<td>90 kW</td>
<td>108 kW</td>
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</table>

Conditions: LT: Tev.: -35°C SH: 8°K
MT: Tev.: -10°C SH: 8°K
Clime: Tev. med: 5°C SH: 8°K
Compressor packs & racks
Compressor packs & racks

<table>
<thead>
<tr>
<th>Model</th>
<th>Product name</th>
<th>Capacity (kW)</th>
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</thead>
<tbody>
<tr>
<td>CC Series</td>
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<tr>
<td>NS21</td>
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<tr>
<td>Racks</td>
<td>Mini racks - FNB</td>
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<tr>
<td></td>
<td>Compressor racks - FCCE</td>
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</tr>
<tr>
<td></td>
<td>Duplex racks - FUF, FUG, FUH, FUJ</td>
<td></td>
</tr>
<tr>
<td>Smart Racks</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Multi compressor units
- Open frame for multi-compressors racks
- Three or four compressors on parallel
- Many different compressor types
  - Hermetic
  - Hermetic Scroll (Brand: Copeland)
  - Semihermetic reciprocating (Brand: Bitzer, Dorin, Copeland Stream & Frascold)
  - Screw (Brand: J&E Hall (single screw) and Bitzer (twin screw))
    - Larger Refrigeration capacities or solution with screw compressors has to be selected from our technical department.
    - Consist in many models for medium and low temperature, with a refrigeration capacity up to 900,000 Watt.
- Compatible with latest refrigerants*

### Standard features
- Metal open frame with electrical switchboard
- Compressor parallel with discharge and suction header
- Liquid receiver
- Liquid line
- High and low pressure switch
- Electrical switchboard complete with electronic control

### Most common used options:
- Panels to close the frame and put it outside
- Oil equalization through mechanical floating valve
- Oil equalization through electronic valve
- Oversized liquid receiver
- Refrigerant charge

*Note: Selection from Selection software based on R404A, R134a and R407F

### Single Screw compressor
The single screw compressor consists of a main single screw and two gate rotors. They are designed for high capacities and optimal performances through the step less capacity control.

<table>
<thead>
<tr>
<th>Capacity (kW)</th>
<th>0</th>
<th>2</th>
<th>5</th>
<th>10</th>
<th>25</th>
<th>50</th>
<th>100</th>
<th>150</th>
<th>300</th>
<th>450</th>
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</thead>
<tbody>
<tr>
<td>LT</td>
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</tr>
<tr>
<td>MT</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*You Tube QR Code*
Multi compressors rack unit with Scroll/Digital scroll and hermetic reciprocating compressors

General features:

› Capacity for MT cooling: 7,2 kW to 26 kW
› Capacity for LT cooling: 6,6 kW to 12 kW
› Ambient temperature range: - 25°C - +43°C
› R134a, R 449A, R448A, R452A, R407F depending on the used compressor
› Copeland scroll/digital scroll, Tecumseh and Maneurop reciprocation hermetic compressors
Other types, brands and capacities are possible upon request
› Conditions:
  MT: Ambient temperature: 35°C Evp. Temperature: -10°C
  LT: Ambient temperature: 35°C Evp. Temperature: -35°C

Standard configuration:

Basic Frame Version:  
Basic frame made from folded and pre-painted steel sheet, with complete closed frame with simple sound proof material and anti-vibration supports (CC Standard)

Basic Refrigerating System:  
The compressors (3 or 4) are connected in parallel, with one suction and discharge header. Each compressor is fitted with shut-off valves on suction line and discharge line. The compressors are fixed to the frame through rubber anti-vibration supports.  
The oil equalization system is composed of an oil separator and an equalization header, which are mounted on the compressor oil sight glass connection. According to the number of compressors fitted, there is one or two oil level indicator/s, fitted onto the equalization header.  
The refrigerating system is equipped with liquid receivers, if there is more than one receiver, the installation is made in parallel with a safety valve, a dehydration cartridge filter, interchangeable, liquid level alarm, liquid sight glass and shut-off valves. On suction line there is a mechanical cartridge filter, interchangeable.

The refrigerating system is fitted with:

› General high pressure switch, adjustable and auto-resetting
› General low pressure switch, adjustable and auto-resetting
› Emergency low pressure switch, adjustable and auto-resetting
› Low pressure switches for each compressor emergency, adjustable and auto-resetting
› High pressure switches to control condenser fans, adjustable and auto-resetting
› Low pressure probe, placed on suction header for capacity control
› High pressure gauge
› Low pressure gauge
› With or without integrated condenser

Electrical panel:

Standard power distribution
Disconnecting switch
Compressors protection, with overload cut-out motor protector; fuses for fans protection, thermo contacts for each single fan
Auxiliary circuit 230 volt through transformer 400V/230V
Electronic card XC440C
IP55 with grid and ventilation fan
On the door there is the electronic card and 4 lamps: emergency (button + lamp), fans block, high pressure switch block, low pressure switch block, and selector for on/off compressors. Condensation control through pressure switches: 1 pressure switch every 2 fans, standard 2 pressures

Accessories:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSRD</td>
<td>Closed frame with double layer sound proofing material</td>
</tr>
<tr>
<td>AC&amp;R</td>
<td>Mechanical oil equalization system with oil reserve, oil line filter, pressure reduction valve onto oil reserve</td>
</tr>
<tr>
<td>TRAXOIL</td>
<td>Electronic oil distribution system</td>
</tr>
<tr>
<td>RIC</td>
<td>Oversized liquid receiver</td>
</tr>
<tr>
<td>LIQ</td>
<td>Compressors sound shell</td>
</tr>
<tr>
<td>CFF</td>
<td>Electronic card EWCM4180 – XC1000D – EWCM9100</td>
</tr>
<tr>
<td>FQD</td>
<td>Frequency driver</td>
</tr>
</tbody>
</table>

Other additional equipment and special requirements on request
Multi compressor rack unit with semi hermetic compressors

General features:

› Capacity for MT cooling: 25 kW to 320 kW
› Capacity for LT cooling: 13 kW to 133 kW
› Ambient temperature range: -25°C to +43°C
› R134a, R449A, R448A, R452A, R407F
› Reciprocating semi hermetic compressors: Bitzer, Dorin, Frascol, Copeland stream

Other types, brands and capacities are possible on request

Conditions:
MT: Ambient temperature: 35°C, Evp. Temperature: -10°C
LT: Ambient temperature: 35°C, Evp. Temperature: -35°C

Standard configuration:

Basic Frame Version:
Basic frame made from folded and painted steel sheet, screwed with bolts to make a basic structure to fix the components on it.

Basic Refrigerating System:
The compressors (3 or 4) are connected in parallel, with only one suction and discharge header. Each compressor is fitted with shut-off valves on suction line and discharge line. The compressors are fixed to the frame through rubber anti-vibration supports. Compressors used for low temperature are complete with fan heads. The oil equalization system is composed of an oil separator and an equalization header, which are mounted on the compressor oil sight glass connection. According to the number of compressors fitted, there is one or two oil level indicator/s, fitted onto the equalization header. The refrigerating system is equipped with oil receivers, if there is more than one receiver, the installation is made in parallel with a safety valve, a dehydration cartridge filter, interchangeable, liquid level alarm, liquid sight glass and shut-off valves. On suction line there is a mechanical cartridge filter, interchangeable.

The refrigerating system is fitted with:
› General high pressure switch, adjustable and auto-resetting
› General low pressure switch, adjustable and auto-resetting
› Oil pressure switch for each compressor
› Emergency low pressure switch, adjustable and auto-resetting
› Low pressure switches for each compressor emergency, adjustable and auto-resetting
› High pressure switches to control condenser fans, adjustable and auto-resetting (the pressure switches control 2 fans; if there are more than 4 condenser fans, the quantity of pressure switches installed increases to a maximum of 4)
› Low pressure probe, placed on suction header for capacity control
› High pressure gauge
› Low pressure gauge

Electrical panel:
Standard power distribution
Disconnecting switch
Compressors protection, with overload cut-out motor protector, fuses for fans protection, thermal contacts for each single fan
Auxiliary circuit 230 volt through transformer 400V/230V
Electronic card XCC440C
IP55 with grid and ventilation fan
On the door there is the electronic card and 4 lamps: emergency (button + lamp), fans block, high pressure switch block, low pressure switch block, and selector for on/off compressors Condensation control through pressure switches: 1 pressure switch every 2 fans, standard

Accessories:

<table>
<thead>
<tr>
<th>INSRD</th>
<th>Closed frame with double layer sound proofing material</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC&amp;R</td>
<td>Mechanical oil equalization system with oil reserve, oil line filter, pressure reduction valve onto oil reserve</td>
</tr>
<tr>
<td>TRAXOIL</td>
<td>Electronic oil distribution system</td>
</tr>
<tr>
<td>INSRD</td>
<td>Closed frame with double layer sound proofing material</td>
</tr>
<tr>
<td>CFF</td>
<td>Compressors sound shell</td>
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<tr>
<td>FQD</td>
<td>Frequency driver</td>
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<tr>
<td>RIC. LIQ.</td>
<td>Oversized liquid receiver</td>
</tr>
<tr>
<td>FREON</td>
<td>Refrigerant charge</td>
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<tr>
<td>ELC.C</td>
<td>Electronic card EWCM4180 - XC1000D – EWCM9100</td>
</tr>
<tr>
<td>CR1</td>
<td>CR1 Capacity controller</td>
</tr>
<tr>
<td>CR2</td>
<td>CR2 Capacity controller</td>
</tr>
<tr>
<td>CAP</td>
<td>Capacity step controled compressors</td>
</tr>
</tbody>
</table>

Other additional equipment and special requirements on request
DUPLEX CD4G, CD4H, CD4J

High power CO₂ commercial racks

Full Duplex offer the highest power for the commercial cold range with CO₂ in 2 MT and LT temperatures

› Reduced assembly space with the double-deck transcritical cycle booster machines.
› The Modulation and operational reliability is ensured thanks to the number of compressor they house.
› It can include up to 3 heat exchangers and 1 parallel compressor (optional).
› Possibility of 2 RHX: 1 for Domestic Hot water and 1 for air conditioning.
› Cooling capacity ranges from 8kW up to 250kW - Heat recovery up to 190kW.
› Variable frequency drive.
› Touch screen and management synoptic available.
› High efficiency electronics and control possible (optional)
   - Tewis Machine Interface (TMI): developed to measure and send alarms both in plant and by telemanagement
   - Intuitive interface
   - Compatible with Tellevis System and open protocol for integration of Modbus RTU/TCP or BACnet MS/TP systems (optional)
   - Management of parameters and performance with selectors and light indicators
› Stainless Steel ANSI 340L used

Dimensions without gas cooler

Chassis: CD4G 3060 mm | CD4H 3600 mm | CD4J 4000 mm

<table>
<thead>
<tr>
<th>Dimensions without gas cooler</th>
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</thead>
<tbody>
<tr>
<td>Chassis: CD4G 3060 mm</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>CD4G – 3060 mm</th>
<th>CD4H – 3600 mm</th>
<th>CD4J – 4000 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>MT</td>
<td>MT + LT + pc</td>
</tr>
<tr>
<td>Cooling Capacity</td>
<td>kW</td>
<td>194 + 22</td>
</tr>
<tr>
<td>Compressors Qty.</td>
<td>n²</td>
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<tr>
<td>Inverter Compressors</td>
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</tr>
<tr>
<td>Recovery (Max)</td>
<td>kW</td>
<td>150</td>
</tr>
<tr>
<td>CD4H – 3600 mm</td>
<td>CD4J – 4000 mm</td>
<td></td>
</tr>
<tr>
<td>Application</td>
<td>MT</td>
<td>MT + LT</td>
</tr>
<tr>
<td>Cooling capacity</td>
<td>kW</td>
<td>230 + 22</td>
</tr>
<tr>
<td>Compressors Qty.</td>
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<td>4 + 2</td>
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<tr>
<td>Inverter compressors</td>
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<td>1 + 1</td>
</tr>
<tr>
<td>Recovery (max)</td>
<td>kW</td>
<td>170</td>
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<tr>
<td>CD4J – 4000 mm</td>
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<td></td>
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<tr>
<td>Application</td>
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<td></td>
</tr>
<tr>
<td>Cooling capacity</td>
<td>kW</td>
<td>220 + 22</td>
</tr>
<tr>
<td>Compressors Qty.</td>
<td>n²</td>
<td>4 + 2 + 1</td>
</tr>
<tr>
<td>Inverter compressors</td>
<td>nº</td>
<td>1 + 1 + 1</td>
</tr>
<tr>
<td>Recovery (max)</td>
<td>kW</td>
<td>170</td>
</tr>
</tbody>
</table>
Temperature, LT = Low Temperature, pc = Parallel compressor
Mini NS21

Commercial Refrigeration in a transcritical cycle

Mini compact units for the generation of cold with CO₂ in the transcritical cycle

› The unit has a footprint of less than 1m² and has been adopted for better loading and transportation.
› It serves refrigeration and freezing, working as a booster.
› The design allows easy access to the components, making easy tasks.
› Up to 2 MT compressors and 1 LT compressor.
› Frequency inverter for the first MT compressor and optional for the LT compressor.
› There is a vertical liquid container (48l) with internal exchanger prepared for its connection to the emergency unit.
› Oil separator accumulator included.
› 2 Electronic refrigerant level sensors for high and low levels
› All pipes and connections in copper.
› Possibility to connect the unit to an external RHX. In MT-models the RHX can be installed
› The switchboard with control unit and complete wiring is compatible with Tewis Remote Management Systems.
› Outdoor chassis option
› Combination with gas coolers possible.
› Soundproofing (optional)

F-Gas Free

Plug&Play

Proportional Modulation

Protective Case

Switchboard

Electronic Control

BITZER

<table>
<thead>
<tr>
<th>Application</th>
<th>MT</th>
<th>MT+LT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity MT* kW</td>
<td>18.17</td>
<td>22.63</td>
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<tr>
<td>Capacity LT* kW</td>
<td>0</td>
<td>3.9</td>
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<tr>
<td>GC Capacity kW</td>
<td>32.08</td>
<td>39.96</td>
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<tr>
<td>MT Compressors n°</td>
<td>1x 2MTE-5K + 1x 2KTE-7K</td>
<td>1x 2MTE-5K + 1x 2KTE-7K</td>
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<tr>
<td>LT Compressors n°</td>
<td>-</td>
<td>1x 2MTE-5K + 1x 2KTE-7K</td>
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</tbody>
</table>

DORIN

<table>
<thead>
<tr>
<th>Application</th>
<th>MT</th>
<th>MT+LT</th>
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</thead>
<tbody>
<tr>
<td>Capacity MT* kW</td>
<td>25.58</td>
<td>36.35</td>
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<tr>
<td>Capacity LT* kW</td>
<td>0</td>
<td>4.37</td>
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<tr>
<td>GC Capacity kW</td>
<td>45.17</td>
<td>64.18</td>
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<tr>
<td>MT Compressors n°</td>
<td>1x CD475-4.7H + 1x CD475-6.4M</td>
<td>1x CD475-4.7H + 1x CD475-6.4M</td>
</tr>
<tr>
<td>LT Compressors n°</td>
<td>-</td>
<td>1x CD475-4.7H + 1x CD475-6.4M</td>
</tr>
</tbody>
</table>

**Calculation conditions:** Tev MT -8ºC, Tev LT -32ºC, GC outlet +35ºC. | Design pressures: MP (MT suction) : 52 bar, LP (LT suction) : 30 bar, IP (Container and liquid line) : 70 bar, HP (Discharge) : 120 bar | Temperature, MT = Low Temperature, pc = Parallel compressor

**AXIAL**

<table>
<thead>
<tr>
<th>Capacity kW</th>
<th>GNV58PE</th>
<th>GNV58PE LPS</th>
<th>GNV66PE</th>
<th>GNV66PE LPS</th>
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<tbody>
<tr>
<td>Air flow m³/h</td>
<td>16.400</td>
<td>12.800</td>
<td>24.000</td>
<td>19.200</td>
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<tr>
<td>Sound pressure 10m</td>
<td>52</td>
<td>46</td>
<td>53</td>
<td>45</td>
</tr>
<tr>
<td>Fans n°</td>
<td>2x Ø500 EC</td>
<td>3x Ø500 EC</td>
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</table>

**RAD.**

<table>
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<tr>
<th>Capacity kW</th>
<th>GNV58NE</th>
<th>GNV66NE</th>
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<tbody>
<tr>
<td>Air flow m³/h</td>
<td>15.000</td>
<td>22.500</td>
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<tr>
<td>Sound pressure 10m</td>
<td>49</td>
<td>50</td>
</tr>
<tr>
<td>Fans n°</td>
<td>2x Ø500 EC</td>
<td>3x Ø500 EC</td>
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</tbody>
</table>
Mini compact cooling racks with CO₂

Compact compressor rack equipped for the generation of cold with CO₂ in the transcritical cycle

- Ideal solution for retail applications with a surface of 400m² to 1,200m²
- It serves refrigeration in 1 or 2 temperatures, working as a booster.
- Cooling capacity ranges from 40kW up to 115kW.
- It can include up to 3 heat exchangers and 1 parallel compressor (optional).
- Frequency inverter for the first MT compressor and optional for the LT compressor.
- Up to 5 compressors.
- Easy commissioning and maintenance as all connections are at the same side of the unit.
- With its compact design (width of 790mm) it can pass through every standard doorway.
- The horizontal liquid container (80/160l) with internal exchanger prepared for its connection to the emergency unit.
- Oil separator accumulator included.
- 2 Electronic refrigerant level sensors for high and low levels
- All pipes and connections in copper.

### Application Table

<table>
<thead>
<tr>
<th>Application</th>
<th>GSR2FJ_093YBX</th>
<th>GSR2FJ_049YBX</th>
<th>TSR2EJ_585XBX</th>
<th>TSR2FJ_092XBX</th>
<th>TSR2FJ_066YBX</th>
<th>TSR2FJ_089YBX</th>
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</thead>
<tbody>
<tr>
<td>Capacity MT* 70 Hz</td>
<td>kW</td>
<td>89.34</td>
<td>110.45</td>
<td>36.84</td>
<td>62.13</td>
<td>72.51</td>
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<tr>
<td>Capacity LT* 70 Hz</td>
<td>kW</td>
<td>-</td>
<td>-</td>
<td>5.79</td>
<td>5.79</td>
<td>5.79</td>
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<tr>
<td>MT Compressors m³</td>
<td>1 x 4HTC-15K (V.F.) + 2 x 4JTC-15K</td>
<td>1 x 4HTC-20K (V.F.) + 1 x 4HTC-10K</td>
<td>1 x 4HTC-20K (V.F.) + 1 x 4HTC-10K</td>
<td>1 x 4HTC-20K (V.F.) + 1 x 4HTC-10K</td>
<td>1 x 4HTC-20K (V.F.) + 1 x 4HTC-10K</td>
<td>1 x 4HTC-20K (V.F.) + 1 x 4HTC-10K</td>
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<tr>
<td>Parallel Compressors m³</td>
<td>1 x 4HTC-10K</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1 x 4MTC-10K</td>
<td>-</td>
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<tr>
<td>LT Compressors m³</td>
<td>-</td>
<td>-</td>
<td>1 x 2KSL-1K</td>
<td>1 x 2KSL-1K</td>
<td>1 x 2KSL-1K</td>
<td>1 x 2KSL-1K</td>
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<table>
<thead>
<tr>
<th>Application</th>
<th>TSR2FJ_439YBX</th>
<th>TSR2FJ_090YBX</th>
<th>TSR2FJ_490YBX</th>
<th>TSR2FJ_499YBX</th>
<th>TSR2FJ_112XBX</th>
<th>TSR2FJ_128XBX</th>
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<tbody>
<tr>
<td>Capacity MT* 70 Hz</td>
<td>kW</td>
<td>66.98</td>
<td>64.89</td>
<td>57.85</td>
<td>71.2</td>
<td>20.47</td>
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<tr>
<td>Capacity LT* 70 Hz</td>
<td>kW</td>
<td>10.46</td>
<td>12.7</td>
<td>14.16</td>
<td>14.16</td>
<td>18.5</td>
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<tr>
<td>MT Compressors m³</td>
<td>1 x 4HTC-20K (V.F.) + 1 x 4HTC-10K</td>
<td>1 x 4HTC-20K (V.F.) + 1 x 4HTC-10K</td>
<td>1 x 4HTC-20K (V.F.) + 1 x 4HTC-10K</td>
<td>1 x 4HTC-20K (V.F.) + 1 x 4HTC-10K</td>
<td>1 x 4HTC-20K (V.F.) + 1 x 4HTC-10K</td>
<td>1 x 4HTC-20K (V.F.) + 1 x 4HTC-10K</td>
</tr>
<tr>
<td>Parallel Compressors m³</td>
<td>1 x 4MTC-10K</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1 x 4MTC-10K</td>
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</tr>
<tr>
<td>LT Compressors m³</td>
<td>1 x 2KSL-1K</td>
<td>1 x 2KSL-1K</td>
<td>1 x 2KSL-1K</td>
<td>1 x 2KSL-1K</td>
<td>1 x 2KSL-1K</td>
<td>1 x 2KSL-1K</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Application</th>
<th>TSR2FJ_364XBX</th>
<th>TSR2FJ_893XBX</th>
<th>TSR2FJ_193XBX</th>
<th>TSR2FJ_895XBX</th>
<th>TSR2FJ_444XBX</th>
<th>TSR2FJ_088YBX</th>
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</thead>
<tbody>
<tr>
<td>Capacity MT* 70 Hz</td>
<td>kW</td>
<td>80.75</td>
<td>22.5</td>
<td>77.73</td>
<td>22.81</td>
<td>38.18</td>
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<tr>
<td>Capacity LT* 70 Hz</td>
<td>kW</td>
<td>18.5</td>
<td>21.06</td>
<td>21.06</td>
<td>27.08</td>
<td>27.08</td>
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<tr>
<td>MT Compressors m³</td>
<td>1 x 4HTC-20K (V.F.) + 2 x 4HTC-20K</td>
<td>1 x 4HTC-10K (V.F.) + 1 x 4HTC-20K</td>
<td>1 x 4HTC-20K (V.F.) + 2 x 4HTC-20K</td>
<td>1 x 4HTC-10K (V.F.) + 2 x 4HTC-20K</td>
<td>1 x 4HTC-10K (V.F.) + 2 x 4HTC-20K</td>
<td>1 x 4HTC-10K (V.F.) + 2 x 4HTC-20K</td>
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<tr>
<td>Parallel Compressors m³</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>LT Compressors m³</td>
<td>-</td>
<td>-</td>
<td>1 x 2HSL-3K</td>
<td>1 x 2HSL-3K</td>
<td>1 x 2HSL-3K</td>
<td>1 x 2HSL-3K</td>
</tr>
</tbody>
</table>

* Calculation conditions: Tov MT -8ºC, Tov LT -32ºC, Tsgc +35ºC.
| Design pressures: MP (MT suction) : 52 bar, LP (LT suction) : 30 bar, IP (Container and liquid line) : 70 bar, HP (Discharge) : 120 bar | Temperature, LT = Low Temperature, pc = Parallel compressor

> Stainless steel collectors
> Tubular frame
> The electrical panel is located above the compressors.
> Connection with 10° touchpad Tewis Machine Supervisor (TMS) is possible (optional).

Two different frame sizes available:
> 4 compressors: length 2,125 mm
> 5 compressors: length 2,550 mm
Compressor packs & racks

Medium Racks

Transcritical units without condenser

› Adapted design for loading and transportation
› Integrated switchboard. Easy to use via touch screen and displays an exclusive control software
› Heat recovery (optional) which allows to take advantage of the heat generated by the system discharge for air conditioning or ACS.
› Parallel compressor (optional).
› The parallel compression includes one or two compressors that extract steam from the accumulation tank, lightening the load of the rest of the compressors and improving their efficiency index.
› Possibility of incorporating up to 4 compressors
› Proportional modulation: A frequency inverter in each group of compressors adapts its operation to the specific demand of each moment, saving energy and prolonging the life of the plant.
› Mechanical subcooler exchanger, connected to an auxiliary unit that cools the discharge of the transcritical fluid, reducing steam and increasing the efficiency of the system.

### Compressor Options

- **F-Gas Free**
- **Plug & Play**
- **Proportional Modulation**
- **Protective Case**
- **Switchboard**
- **Electronic Control**
- **Heat Recovery Interchanger (Optional)**
- **Parallel Compressors (Optional)**
- **Mechanical Subcooler (Optional)**

### Units and Specifications

<table>
<thead>
<tr>
<th>Rack Type</th>
<th>Capacity (kW)</th>
<th>MT</th>
<th>MT + LT</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCCE 2.120 mm</td>
<td>10 kW</td>
<td>2</td>
<td>2+1</td>
</tr>
<tr>
<td></td>
<td>3 kW</td>
<td>3+1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 kW</td>
<td>3+2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 kW</td>
<td>4+1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>63 kW</td>
<td>2</td>
<td>2+1</td>
</tr>
<tr>
<td></td>
<td>74 kW</td>
<td>3+1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>85 kW</td>
<td>3+2</td>
<td></td>
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<tr>
<td></td>
<td>90 kW</td>
<td>4+1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>108 kW</td>
<td>5 comp.</td>
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</tbody>
</table>

**Conditions:**
- **LT:** Tev.: -35°C SH: 8°K
- **MT:** Tev.: -10°C SH: 8°K
- **Clime:** Tev. med: 5°C SH: 8°K

**Dimensions:**
- FCCE: 2130 mm
- FCCF: 2660 mm
- FCCG: 3060 mm

**L Dimension:**
- \( L \text{ dimension} \)
Compressor packs & racks

Large Racks

Transcritical double units without condenser

› Integrated switchboard. Easy to use via touch screen and displays an exclusive control software (see next page)
› Parallel compressors (optional), which increase considerably the efficiency of the system
› Possibility of incorporating up to 9 compressors
› Low and Medium temperature compressors
› Economizer: Increases the efficiency of the system by making the MT compressors give part of their power to the LT compressors group.
› Proportional modulation: A frequency inverter in each group of compressors adapts its operation to the specific demand of each moment, saving energy and prolonging the life of the plant.
› Mechanical subcooler exchanger, connected to an auxiliary unit that cools the discharge of the transcritical fluid, reducing steam and increasing the efficiency of the system
› Stainless steel in 100% of the pipes

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>MT + LT</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>FUJ 2.660 mm</td>
<td>33 kW</td>
<td>35 kW</td>
<td>45 kW</td>
</tr>
<tr>
<td>FUG 3.060 mm</td>
<td>64 kW</td>
<td>74 kW</td>
<td>83 kW</td>
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<tr>
<td>FUH 3.600 mm</td>
<td>64 kW</td>
<td>120 kW</td>
<td>127 kW</td>
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<tr>
<td>FUJ 4.000 mm</td>
<td>64 kW</td>
<td>178 kW</td>
<td>187 kW</td>
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<td></td>
<td>F-Gas Free</td>
<td>Protective Case</td>
<td>Heating Interchanger</td>
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<tr>
<td></td>
<td>Plug&amp;Play</td>
<td>Switchboard</td>
<td>Parallel compressors</td>
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<tr>
<td></td>
<td>Proportional Modulation</td>
<td>Electronic Control</td>
<td>Mechanical Subcooler</td>
</tr>
</tbody>
</table>

Options:
- F-Gas Free
- Protective Case
- Heating Interchanger (Optional)
- Parallel compressors (Optional)
- Mechanical Subcooler (Optional)
Switchboard &
electronic control

Switchboard

› Bench-mounted switchboard, including complete wiring.
› Power supply at 400V / 3F + N / 50Hz
› Frequency inverter in the first compressor in sections BT, MT and parallel
› Booster components and remote gas coolers electrically protected against overcurrents and short circuits.
› Option: electrical connections of power supply to the auxiliary unit

Electronic control

› It represents the best option for transcritical and subcritical CO₂ solutions with Booster circuit and allows to manage up to two circuits for the recovery of heat.
› Televis System compatible and open for the integration of Modbus RTU / TCP or BACnet MS / TP (optional) systems.
› Touch screen with synoptic and real-time data.
› Data logging and alarms.
› Historical charts and data tables.
› Parameter management.
Choose the better solution – with Tewis Full CO₂ refrigeration systems

Why do so many widely-known retail chains count on Tewis? Because Tewis offers a well-thought-out, complete range of efficient refrigeration systems. Especially when working with R-744 under high pressure, best quality solutions count double. Avoid problems – with Tewis features like full stainless steel piping or surprisingly intuitive control systems.

www.daikin.eu
Integrated solutions
<table>
<thead>
<tr>
<th>Model</th>
<th>Product name</th>
<th>Capacity (kW)</th>
<th>0</th>
<th>2</th>
<th>5</th>
<th>10</th>
<th>25</th>
<th>50</th>
<th>100</th>
<th>150</th>
<th>300</th>
<th>450</th>
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<tr>
<td>Conveni-Pack</td>
<td>LRYEQ-AY</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Integrated solution for chilling, freezing, comfort cooling and heating</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Conveni-Pack</td>
<td>LRYEN-AY1, LRYEN-AY1</td>
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<tr>
<td>Mini racks, Racks, Duplex</td>
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</tbody>
</table>

**Service station (Ranst, Belgium)**

Conveni-Pack

Discover why a Belgian petrol station owner chose Daikin for its shop comfort and refrigeration needs. www.youtube.com/DaikinEurope
Conveni-Pack, integrated solution for commercial refrigeration, heating and air conditioning

Why choose Conveni-Pack?

Competition in the retail food sector is fierce. This does not just affect the income you can earn from sales - operating costs are also a determining factor for success.

Energy efficient heat recovery system

› Conveni-Pack recovers up to 100% of the heat extracted from supermarket refrigeration cases and re-uses it to heat the retail space and improve shop comfort at no additional cost (heat recovery system)
› Savings of up to 50% on energy costs
› Daikin inverter scroll compressor with economizer technology

Installing a compact solution

› Easy to install, even in small spaces
› Small footprint (up to 60% smaller footprint than conventional systems) and low weight
› Reduced piping requirements
› Minimal planning groundwork and lower assembly costs

Unique combination

› First mass-produced, whole-building system to combine medium and low refrigeration, heating, air conditioning in one circuit

Reliable operation

› Error-proof component selection
› Factory leak-tested and pre-charged
Year-round climate comfort

› Quiet operation: Improved acoustics thanks to night operation mode, inverter control and inverter driven fans with optimised blades and grills
› High grade sound insulation on both panels and compressors
› Specially designed fan blades to limit sound emissions
› 4 low sound operation settings including night mode
› The heat recovered from refrigerated and freezer display cabinets can be used to provide heating for the shop.
Internationally awarded

Winner of several awards* thanks to the innovating technology used and environmental friendly solution offered:

› Winner of UK Environmental Product of the Year, Cooling Industry Awards - 2006
› Winner of Incentive Prize, German Environment Ministry - 2007
› Winner of the Innovation Trophy, equipmag (exhibition in France) - 2008
› Winner of 2014 Institute of Refrigeration Ireland (IRI) Environmental award
› Environmental Friendliness category of the Top Retail Product Awards 2014 in Germany

Reference

Edeka Buschkühle supermarket (Germany)

2 Conveni-Pack systems supply 32 meters of service counters, 12.5 meters of convenience fridges, one cooling storage room for fruit, an air curtain and 5 indoor units; the ZEAS system supplies two deep-freeze cabinets with a total capacity of 5 kW.

![Image of supermarket](image)

Discover more references on
www.daikineurope.com/references

Marketing tools

Refrigeration Xpress

User-friendly design software for Conveni-Pack, CCU, SCU and ZEAS condensing units. Its detailed report includes a list of materials, piping and wiring diagrams, and device options.

![Image of software](image)

Benefits for installers/consultants

› Integrated electrical & control box
› Unit already pre-charged with refrigerant
› Established VRV technology ensuring optimised installation and maintenance
› Reduced delivery time thanks to European manufacturing plant
› Flexible system for multiple applications
› Connectable to all grocery refrigeration applications and supplied with a wide range of air conditioning indoor units to meet shop requirements
› Outdoor units can be positioned up to 35m above or 10m below the indoor units
› Piping length possible up to 130m
› Suitable for indoor installation through the use of high ESP fans

Benefits for shop owners

› Thought design for supermarkets and smaller retail outlets
› Maximised retail sales space available as Conveni-Pack has a footprint up to 60% smaller than conventional grocery refrigeration systems
› Reduced energy consumption by up to 50% through heat recovery
› Quiet operation, thus ideal for densely populated urban areas

Short videos

› Watch a short animation on the unique refrigeration solution Conveni-Pack

![QR Code](image)
Why choose CO₂ Conveni-pack?

- DX Refrigeration, Heating & Space cooling by CO₂, for those whom demand a totally natural solution
- Heat recovery, and for those colder days automatic heat pump operation
- Fully assembled & packaged unit, providing low noise levels
- Mass produced in Daikin Europe’s award winning factory
- Each unit is fully factory & run tested
- All units in stock, fast delivery
- Reduces annual energy consumption by up to 50%, compared to other manufacturers solutions.

- Hermetic swing compressor, complete with two stage compression, for lower running temperatures
- Oversized DC Brushless motor technology for improved reliability & efficiency
- Automatically balances refrigeration & space heating / cooling loads
- “Plug and Play” technology, reduced “On site” commissioning
- Optimized control logic for reliability and efficiencies
- Adaptable evaporation temperature control
Natural HVACR 4 life

Project for demonstration of innovative, integrated HVACR installations with natural refrigerant.

OBJECTIVES

- **Remove barriers** in the market for introducing integrated refrigeration and air conditioning systems that use natural refrigerants which have a lower Global Warming Potential.
- **Raise awareness** among installers, engineers, customers and general public on the potential of a combined air conditioning and refrigeration system that uses CO₂ as a natural refrigerant.
- **Contribute** to the implementation of the EU F-gas Directive.

ACTIONS

1. **Demonstrate viability**
   - test prototype in **Belgium** that integrates air conditioning and refrigeration with heat recovery in real life settings;
   - install, operate and monitor the new concept in European supermarkets, located in both temperate and warm climate zones (**Germany** and **Spain**, respectively)
2. **Organise training sessions** for installers and customers
3. **Help update** the definitions of standards and energy labelling schemes for multi-functional products by providing information on tested risk management, procedures regarding flammability and toxicity of natural refrigerants
4. **Develop a cassette-type indoor unit** using CO₂ that best provides comfort cooling and heating
5. **Research the potential of cold storage** for improving the Total Equivalent Warming Impact

For more information refer to the website: [naturalhvacr4life.eu](http://naturalhvacr4life.eu)

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**Low Temperature Showcases**

Optional CO₂ CCUs are also available for Remote LT applications (not connected to Conveni-pack)

Plugin LT showcases with propane or LT condensing units with CO₂ are available to satisfy also freezer capacity needs.
CO₂ Conveni-Pack refrigeration system with heat recovery

Refrigeration solution for food retailers featuring award winning technology for heat recovery

› Integrates high and low temperature refrigeration and air conditioning (including heating) into one system
› By using heat recovery, optimised controls and state of the art compressor technology, Conveni-pack can reduce annual energy consumption up to 50% or more, compared to conventional systems
› Lower associated CO2 emissions thanks to the heat pump technology
› Conveni-pack’s modular design allows it to be used for smaller as well as larger shops
› The modularity of the Conveni-pack system maximises installation flexibility. Outdoor units can be grouped into blocks or rows, or distributed around the building, to meet individual installation constraints
› The heat extracted from the refrigeration showcases or evaporators can be re-used for comfort heating of the shop at no extra cost
› Low sound level including „night mode“ operation

<table>
<thead>
<tr>
<th>Medium Temperature Refrigeration, Cooling Only, Heating Only</th>
<th>LRYEN</th>
<th>10AY1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions Unit HeightxWidthxDepth mm</td>
<td></td>
<td>1,680x1,930x765</td>
</tr>
<tr>
<td>Weight Unit kg</td>
<td></td>
<td>563</td>
</tr>
<tr>
<td>Heat exchanger Type Cross fin coil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compressor Type Hermetically sealed swing compressor 4,600.0 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piston displacement m³/h</td>
<td>6.16</td>
<td></td>
</tr>
<tr>
<td>Starting method Direct on line (inverter driven)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fan Quantity 3 Propeller fan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air flow Cooling Nom. m³/min</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>Fan motor Output W</td>
<td>750</td>
<td></td>
</tr>
<tr>
<td>Sound pressure level Nom. dBA</td>
<td>64.0</td>
<td></td>
</tr>
<tr>
<td>Refrigerant GWP R-744</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charge kg</td>
<td>6.30</td>
<td></td>
</tr>
<tr>
<td>Control Electronic expansion valve</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply Phase/Frequency/Voltage Hz/V</td>
<td>3N~/50/380-415</td>
<td></td>
</tr>
</tbody>
</table>

LRYEN 10AY1

LRYEN-AY1

<table>
<thead>
<tr>
<th>Compressor 1</th>
<th>Compressor 2</th>
<th>Compressor 3</th>
<th>Factory charge of unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only K65 with D.P. 120 bar is allowed to use for AC piping connections.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The safety valve pressure is indicated as gauge pressure.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only K65 with D.P. 90 bar is allowed to use for refrigeration piping.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Capacity-up module for CO₂ Conveni-Pack

- Integrates high and low temperature refrigeration and air conditioning (including heating) into one system.
- By using heat recovery, optimised controls and state of the art compressor technology, Conveni-pack can reduce annual energy consumption up to 50% or more, compared to conventional systems.
- Lower associated CO₂ emissions thanks to the heat pump technology.
- Conveni-pack’s modular design allows it to be used for smaller as well as larger shops.
- The modularity of the Conveni-pack system maximises installation flexibility. Outdoor units can be grouped into blocks or rows, or distributed around the building, to meet individual installation constraints.
- The heat extracted from the refrigeration showcases or evaporators can be re-used for comfort heating of the shop at no extra cost.
- Low sound level including „night mode“ operation.

**Medium Temperature Refrigeration**

<table>
<thead>
<tr>
<th>Model</th>
<th>Refrigeration Capacity*</th>
<th>HR Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAIKIN CO₂ CVP AC10</td>
<td>3 - 14.5 kW</td>
<td>22 kW</td>
</tr>
</tbody>
</table>

* Refrigeration capacity given under following conditions: Te = -10°C, 10 K SH and ambient = 32°C.

**Model** | **Refrigeration Capacity** | **HR Capacity**
---|---|---
DAIKIN CO₂ CVP AC10 | 3 - 14.5 kW | 22 kW

**Q-up can also easily be added later, as part of a system upgrade.**

**Model** | **Refrigeration Capacity** | **HR Capacity**
---|---|---
DAIKIN CO₂ CVP AC10 + Q-up | 3 - 21 kW | 22 kW

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8.5 kW of New Refrigeration added, Q-up installed to existing CO₂ CVP for additional capacity.
Concealed ceiling unit with medium ESP for CO₂ Conveni-pack

To respond to all shop requirements for comfort cooling and heating, a wide range of air conditioning indoor units are available:

› Slimmest unit in class, only 245mm (300mm built-in height) and therefore narrow ceiling voids are no longer a challenge.

› Medium external static pressure up to 150Pa facilitates using flexible ducts of varying lengths.

› Possibility to change ESP via wired remote control allows optimisation of the supply air volume.

› Discretely concealed in the wall: only the suction and discharge grilles are visible.

› Multi zoning kit allows multiple individually-controlled climate zones to be served by one indoor unit.

› Reduced energy consumption thanks to specially developed DC fan motor and drain pump.

› Optional fresh air intake.

› Standard built-in drain pump with 625mm lift increases flexibility and installation speed.

Automatic Airflow Adjustment function

Automatically selects the most appropriate fan curve to achieve the unit’s nominal air flow within ±10%.

Why?

After installation the real ducting will frequently differ from the initially calculated air flow resistance, the real air flow rate may be much lower or higher than nominal, leading to a lack of capacity or uncomfortable air temperature. Automatic Airflow Adjustment function will adapt the unit’s fan speed to any ducting automatically (10 or more fan curves are available on every model), making installation much faster.

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R-410A Conveni-Pack refrigeration system with heat recovery

Refrigeration solution for food retailers featuring award winning technology for heat recovery

- Integrates high and low temperature refrigeration and air conditioning (including heating) into one system
- By using heat recovery, optimised controls and state of the art compressor technology, Conveni-pack can reduce annual energy consumption up to 50% or more, compared to conventional systems
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- Conveni-pack’s modular design allows it to be used for smaller as well as larger shops
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- The heat extracted from the refrigeration showcases or evaporators can be re-used for comfort heating of the shop at no extra cost
- Low sound level including „night mode“ operation

Conveni pack, in combination with a ZEAS unit. This store was nominated by Spar as its ‘local supermarket of the year’, thanks in part to its owner’s strategic investment in a key department: Refrigeration. By installing a Conveni pack in combination with Zeas, it was possible to save around €10,000 on energy costs each year, from money that would otherwise have spent on heating SPAR, Supermarket.

### Medium Temperature Refrigeration

<table>
<thead>
<tr>
<th>LRYEQ-AY</th>
<th>kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling capacity</td>
<td>Air conditioning Nom.</td>
</tr>
<tr>
<td>Heating capacity</td>
<td>Air conditioning Nom.</td>
</tr>
<tr>
<td></td>
<td>Refrigeration Nom.</td>
</tr>
<tr>
<td></td>
<td>Refrigeration Nom.</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Unit Height mm</td>
</tr>
<tr>
<td></td>
<td>Unit Width mm</td>
</tr>
<tr>
<td></td>
<td>Unit Depth mm</td>
</tr>
<tr>
<td>Weight</td>
<td>Unit kg</td>
</tr>
<tr>
<td>Heat exchanger</td>
<td>Type</td>
</tr>
<tr>
<td>Compressor</td>
<td>Type</td>
</tr>
<tr>
<td></td>
<td>Piston displacement m³/h</td>
</tr>
<tr>
<td></td>
<td>Speed rpm</td>
</tr>
<tr>
<td></td>
<td>Output W</td>
</tr>
<tr>
<td></td>
<td>Starting method</td>
</tr>
<tr>
<td></td>
<td>Frequency ON/OFF</td>
</tr>
<tr>
<td>Compressor 2</td>
<td>Speed rpm</td>
</tr>
<tr>
<td></td>
<td>Output W</td>
</tr>
<tr>
<td>Compressor 3</td>
<td>Speed rpm</td>
</tr>
<tr>
<td></td>
<td>Output W</td>
</tr>
<tr>
<td>Fan</td>
<td>Type</td>
</tr>
<tr>
<td></td>
<td>Quantity</td>
</tr>
<tr>
<td></td>
<td>Air flow rate Cooling Nom. m³/min</td>
</tr>
<tr>
<td>Fan motor</td>
<td>Output W</td>
</tr>
<tr>
<td></td>
<td>Drive</td>
</tr>
<tr>
<td>Sound pressure level</td>
<td>Nom. dBA</td>
</tr>
<tr>
<td>Operation range</td>
<td>Evaporator Cooling Min.–Max. °CDB</td>
</tr>
<tr>
<td></td>
<td>Cooling Ambient Min.–Max. °CDB</td>
</tr>
<tr>
<td></td>
<td>Heating Ambient Min.–Max. °CDB</td>
</tr>
<tr>
<td>Refrigerant</td>
<td>Type</td>
</tr>
<tr>
<td></td>
<td>GWP</td>
</tr>
<tr>
<td></td>
<td>Charge kg</td>
</tr>
<tr>
<td></td>
<td>TCO₂eq</td>
</tr>
<tr>
<td>Control</td>
<td>Electronic expansion valve</td>
</tr>
<tr>
<td>Power supply</td>
<td>Phase/Frequency/Voltage Hz/V</td>
</tr>
</tbody>
</table>

(1) Cooling priority mode: indoor temp. 27°CDB, 19°CWB; outdoor temp. 32°CDB; piping length: 7.5m; level difference: 0m (2) Cooling priority mode: evaporating temp. -10°C; outdoor temp. 32°CDB; Suction SH: 10°C (3) Heat recovery 100% mode: indoor temp. 20°CDB; outdoor temp. 7°CDB; 5°C; refrigeration load 18kW; piping length: 7.5m; level difference: 0m (4) Saturated temperature equivalent to suction pressure (refrigeration side) -10°C (under chilled condition); connection capacity for indoor air conditioner 10HP; when heat recovery is 100%
# Indoor units and Biddle air curtains for connection to R-410A Conveni-Pack

To respond to all shop requirements for comfort cooling and heating, a wide range of air conditioning indoor units and Biddle air curtains are available.

<table>
<thead>
<tr>
<th>Model</th>
<th>Product name</th>
<th>50</th>
<th>63</th>
<th>71</th>
<th>80</th>
<th>100</th>
<th>125</th>
<th>140</th>
<th>200</th>
<th>250</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling capacity (kW)</td>
<td>FXFQ-A</td>
<td>5.6</td>
<td>7.1</td>
<td>8.0</td>
<td>9.0</td>
<td>11.2</td>
<td>14.0</td>
<td>16.0</td>
<td>22.4</td>
<td>28.0</td>
</tr>
<tr>
<td>Heating capacity (kW)</td>
<td>FXKQ-MA</td>
<td>6.3</td>
<td>8.0</td>
<td>9.0</td>
<td>10.0</td>
<td>12.5</td>
<td>16.0</td>
<td>18.0</td>
<td>25.0</td>
<td>31.5</td>
</tr>
<tr>
<td>Round flow cassette</td>
<td>FXCQ-A</td>
<td>5.6</td>
<td>7.1</td>
<td>8.0</td>
<td>9.0</td>
<td>11.2</td>
<td>14.0</td>
<td>16.0</td>
<td>22.4</td>
<td>28.0</td>
</tr>
<tr>
<td>2-way blow ceiling mounted cassette</td>
<td>FXSQ-A</td>
<td>6.3</td>
<td>8.0</td>
<td>9.0</td>
<td>10.0</td>
<td>12.5</td>
<td>16.0</td>
<td>18.0</td>
<td>25.0</td>
<td>31.5</td>
</tr>
<tr>
<td>Ceiling mounted corner cassette</td>
<td>FXMQ-P7</td>
<td>6.3</td>
<td>8.0</td>
<td>9.0</td>
<td>10.0</td>
<td>12.5</td>
<td>16.0</td>
<td>18.0</td>
<td>25.0</td>
<td>31.5</td>
</tr>
<tr>
<td>Concealed ceiling unit with inverter driven fan</td>
<td>FXMQ-MB</td>
<td>6.3</td>
<td>8.0</td>
<td>9.0</td>
<td>10.0</td>
<td>12.5</td>
<td>16.0</td>
<td>18.0</td>
<td>25.0</td>
<td>31.5</td>
</tr>
<tr>
<td>Ceiling suspended unit</td>
<td>FXHQ-A</td>
<td>5.6</td>
<td>7.1</td>
<td>8.0</td>
<td>9.0</td>
<td>11.2</td>
<td>14.0</td>
<td>16.0</td>
<td>22.4</td>
<td>28.0</td>
</tr>
<tr>
<td>4-way blow ceiling suspended unit</td>
<td>FXUQ-A</td>
<td>6.3</td>
<td>8.0</td>
<td>9.0</td>
<td>10.0</td>
<td>12.5</td>
<td>16.0</td>
<td>18.0</td>
<td>25.0</td>
<td>31.5</td>
</tr>
<tr>
<td>Floor standing unit</td>
<td>FXLQ-P</td>
<td>5.6</td>
<td>7.1</td>
<td>8.0</td>
<td>9.0</td>
<td>11.2</td>
<td>14.0</td>
<td>16.0</td>
<td>22.4</td>
<td>28.0</td>
</tr>
<tr>
<td>Concealed floor standing unit</td>
<td>FXNQ-A</td>
<td>6.3</td>
<td>8.0</td>
<td>9.0</td>
<td>10.0</td>
<td>12.5</td>
<td>16.0</td>
<td>18.0</td>
<td>25.0</td>
<td>31.5</td>
</tr>
</tbody>
</table>

1 Nominal cooling capacities are based on: indoor temperature: 27°CDB / 19°CWB, outdoor temperature: 35°CDB, piping length: 7.5m, level difference: 0m
2 Nominal heating capacities are based on: indoor temperature: 20°CDB, outdoor temperature: 7°CDB / 6°CWB, piping length: 7.5m, level difference: 0m
Booster unit for R-410A

› A booster unit allows to connect freezer showcases / rooms to ZEAS and Conveni-Pack outdoor units
› Reduced piping requirements, from 4 to 2 pipes, compared to a conventional system
› Low sound mode available reducing sound emissions significantly without giving in on Refrigerating capacity

Booster with ZEAS:
MEDIUM + LOW TEMPERATURE refrigeration

Booster with R-410A Conveni-Pack:
MEDIUM + LOW TEMPERATURE refrigeration + space air conditioning + Biddle air curtain

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**Low Temperature Refrigeration**

<table>
<thead>
<tr>
<th><strong>LCBKQ-AV1</strong></th>
<th><strong>3</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerating capacity</td>
<td>Nom. kW</td>
</tr>
<tr>
<td>Low temperature</td>
<td>3.35 (1)</td>
</tr>
<tr>
<td>Dimensions</td>
<td></td>
</tr>
<tr>
<td>Unit</td>
<td>Height mm</td>
</tr>
<tr>
<td>Unit</td>
<td>Width mm</td>
</tr>
<tr>
<td>Unit</td>
<td>Depth mm</td>
</tr>
<tr>
<td>Weight</td>
<td>Unit kg</td>
</tr>
<tr>
<td>Compressor</td>
<td>Type</td>
</tr>
<tr>
<td></td>
<td>Piston displacement m³/h</td>
</tr>
<tr>
<td></td>
<td>Number of revolutions rpm</td>
</tr>
<tr>
<td></td>
<td>Output W</td>
</tr>
<tr>
<td></td>
<td>Starting method</td>
</tr>
<tr>
<td>Fan</td>
<td>Type</td>
</tr>
<tr>
<td></td>
<td>Air flow rate Cooling Nom. m³/min</td>
</tr>
<tr>
<td>Operation range</td>
<td>Evaporator Cooling Min.–Max. °CDB</td>
</tr>
<tr>
<td></td>
<td>Ambient temperature Min.–Max. °C</td>
</tr>
<tr>
<td>Refrigerant</td>
<td>Type</td>
</tr>
<tr>
<td></td>
<td>GWP</td>
</tr>
<tr>
<td></td>
<td>Control</td>
</tr>
<tr>
<td>Piping connections</td>
<td>For outdoor unit Liquid OD mm</td>
</tr>
<tr>
<td></td>
<td>To indoor unit Liquid OD mm</td>
</tr>
<tr>
<td></td>
<td>For indoor unit Gas OD mm</td>
</tr>
<tr>
<td></td>
<td>To outdoor unit Gas OD mm</td>
</tr>
<tr>
<td>Power supply</td>
<td>Phase/Frequency/Voltage Hz/V</td>
</tr>
</tbody>
</table>

(1) Evaporating temp. -35°C; outdoor temp. 32°C; suction SH 10K; saturated temp. to discharge pressure of booster unit -10°C
Medium temperature with air conditioning

Mini racks

- MT + Air conditioning (with or w/o condenser)
  - 1+2 (max. 3)
  - FNB
    - FNV58
      - 1.560 mm
  - 18 kW
  - 27 kW
  - 45 kW

Racks

- MT + Air conditioning (with or w/o condenser)
  - 2+2 (max. 4)
  - FCCE
    - 2.120 mm
  - 18 kW
  - 40 kW
  - 52 kW
  - FCZ 3E
    - FCZ 4E
      - 2.120 mm
  - 18 kW
  - 50 kW
  - 74 kW

- MT + Air conditioning (with or w/o condenser)
  - 2+3 (max. 5)
  - FCZ4F
    - 2.660 mm
  - 36 kW
  - 70 kW
  - 85 kW
  - FCZ4G
    - FCCG
      - 3.060 mm
  - 36 kW
  - 93 kW
  - 108 kW

Duplex racks

- MT + Air conditioning (with or w/o condenser)
  - 5+4 (max. 9)
  - FU
    - 4.000 mm
  - 115 kW
  - 230 kW
  - 250 kW

Conditions: LT: Tev.: -35°C   SH: 8°K
MT: Tev.: -10°C   SH: 8°K
Clime: Tev. med: 5°C   SH: 8°K
Low temperature with air conditioning

### Racks

- **MT + LT + Air conditioning** (with or w/o condenser)
  - 1+2+1 (max. 4)

  - FCCE
    - 9 kW
    - 30 kW
    - 30 kW
    - 52 kW
  - FCZ4E
    - 9 kW
    - 30 kW
    - 50 kW
    - 74 kW

- **MT + LT + Air conditioning** (with or w/o condenser)
  - 1+2+2 (max. 5)

  - FCZ4F
    - 9 kW
    - 30 kW
    - 60 kW
    - 85 kW
  - FCZ4G
    - 9 kW
    - 30 kW
    - 70 kW
    - 108 kW

### Duplex racks

- **MT + LT + Air conditioning** (with or w/o condenser)
  - 2+3+4 (max. 9)

  - FUJ
    - 18 kW
    - 100 kW
    - 200 kW
    - 250 kW
Other products
Evaporators range

Evaporators with or without TEV for different operations and refrigerants

General features:
- Capacity for LT/MT cooling: 0.5 to 213 kW
- Ambient/cooling room temperature range: -40°C - +25°C
- Refrigerants: R134a, R449A, R448A, R452A, R407F, R407A
- Fin distance: from 3 mm to 11 mm
- Fin materials: Al
- Tube materials: Cu
- Conditions:
  - MT: Ambient temperature: 35°C, Evp. Temperature: -10°C
  - LT: Ambient temperature: 35°C, Evp. Temperature: -35°C

Options:
- Electric defrost heating
- Hot gas defrost
- Drain pan heating
- Fan ring heater
- High efficient EC fans
- Wiring on terminal box
- Included valves and regulation
- Fin materials AISI 304, AISI 316
- Tube materials AISI 304, AISI 316
- Casing in stainless steel (Inox)

Dimensions

Types:
- flat evaporator
- double flow
- cubic design
- Evaporator only
- Evaporator + EEV/TEV
- Evaporator + EEV/TEV + electronic controller

For technical selection, prices, accessories and delivery time please use the Zanotti software and contact our technical department. We are happy to help you.
### Other Monoblocks

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Small - Monoblock for wall mounting</strong>&lt;br&gt;These units are perfect for cold rooms built on trailers and therefore liable to continuous moving.&lt;br&gt;For small to medium-sized cold rooms.</td>
<td>0°C: 5,906 kW ~ 11,872 kW&lt;br&gt;20°C: 4,113 kW ~ 8,755 kW&lt;br&gt;Referring refrigerant R404A</td>
</tr>
<tr>
<td><strong>AS-R, AS-E</strong></td>
<td></td>
</tr>
</tbody>
</table>

- **Standard refrigerant:**<br>MT: R404A, R34a<br>LT: R290, R1270<br>- **Defrost:** hot gas<br>- **Compressor type:** Hermetic<br>- **Refrigerated volume (R404A):**<br>MT (0°C): 73m³ ~ 182m³<br>LT (-20°C): 48m³ ~ 158m³

| **Large - Monoblock for shock freezing.**<br>Direct mounting through the wall and outside installation without any protection.<br>For medium and large-sized cold rooms. | 0°C: 1,914 kW ~ 40,157 kW<br>20°C: 1,447 kW ~ 36,025 kW<br>Referring refrigerant R404A |
| **RS** |                                                     |

- **Standard refrigerant:**<br>MT: R404A, R34a<br>LT: R407F<br>- **Defrost:** Electric<br>- **Compressor type:** Hermetic, semi-hermetic<br>- **Refrigerated volume:**<br>MT (0°C): 19m³ ~ 951m³<br>LT (-20°C): 9.4m³ ~ 1,130m³<br>- **Multi temperature (+5°C ~ -25°C) and freezing versions (-30°C ~ -50°C) available**

| **Large - Monoblock for shock freezing.**<br>Duct connection.<br>Direct mounting through the wall and floorstanding outside installation without any protection.<br>For large-sized cold rooms. | 0°C: 42,266 kW ~ 63,311 kW<br>20°C: 28,522 kW ~ 51,514 kW<br>Referring refrigerant R404A |
| **BX** |                                                     |

- **Standard refrigerant:**<br>MT: R404A, R34a<br>LT: R452A<br>- **Defrost:** Electric<br>- **Compressor type:** Semi-Hermetic<br>- **Refrigerated volume:**<br>MT (0°C): 1,137m³ ~ 1,949m³<br>LT (-20°C): 838m³ ~ 1,938m³<br>- **Multi temperature (+5°C ~ -25°C) and freezing versions (-30°C ~ -50°C) available**

---

For technical selection, prices, accessories and delivery time please use the Zanotti software and contact our technical department. We are happy to help you.
# Other Bi-blocks

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small- Bi-Block with cubic evaporator. For medium-sized cold rooms</td>
<td>0°C 1,088 kW ~ 12,973 kW</td>
</tr>
<tr>
<td></td>
<td>Low noise condensing unit and evaporator with accessories installed, supplied without piping. Thermostatatic expansion valve and remote control panel. Suitable for outdoor use.</td>
</tr>
<tr>
<td></td>
<td>Model: DB-S</td>
</tr>
<tr>
<td></td>
<td>Refrigerant:</td>
</tr>
<tr>
<td></td>
<td>• MT: R404A, R134a</td>
</tr>
<tr>
<td></td>
<td>• LT: R407F</td>
</tr>
<tr>
<td></td>
<td>Defrost: Electric</td>
</tr>
<tr>
<td></td>
<td>Compressor type: Hermetic</td>
</tr>
<tr>
<td></td>
<td>Refrigerated volume:</td>
</tr>
<tr>
<td></td>
<td>• MT (0°C): 7.6m³ ~ 256m³</td>
</tr>
<tr>
<td></td>
<td>• LT (-20°C): 2.8m³ ~ 270m³</td>
</tr>
<tr>
<td></td>
<td>Multi temperature (+5°C ~ -25°C) version available</td>
</tr>
<tr>
<td>Bi-Block with cubic evaporator for medium and big sized cold rooms. Condensing unit and evaporator supplied with accessories. Suitable for outdoor installation without any protection.</td>
<td>0°C 1,914kW ~ 63,311kW</td>
</tr>
<tr>
<td></td>
<td>Model: DB-D</td>
</tr>
<tr>
<td></td>
<td>Refrigerant:</td>
</tr>
<tr>
<td></td>
<td>• MT: R404A, R134a</td>
</tr>
<tr>
<td></td>
<td>• LT: R407F</td>
</tr>
<tr>
<td></td>
<td>Defrost: Electric</td>
</tr>
<tr>
<td></td>
<td>Compressor type: Hermetic, semi-hermetic</td>
</tr>
<tr>
<td></td>
<td>Refrigerated volume:</td>
</tr>
<tr>
<td></td>
<td>• MT (0°C): 19m³ ~ 1,949m³</td>
</tr>
<tr>
<td></td>
<td>• LT (-20°C): 9.4m³ ~ 1,938m³</td>
</tr>
<tr>
<td></td>
<td>Multi temperature (+5°C ~ -25°C) and freezing versions (-30°C ~ -50°C) available</td>
</tr>
</tbody>
</table>

For technical selection, prices, accessories and delivery time please use the Zanotti software and contact our technical department. We are happy to help you.
### Model Details

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Small Mono and Bi-Block seasoning conditioner unit for meat and cheeses maturity process.</strong></td>
<td>Equipped with an electronic temperature and humidity control system, complete with the operation and standby times. SAR models are used for the resting time of raw hams.</td>
</tr>
<tr>
<td><strong>SAS - SAR</strong></td>
<td>SAR models are used for the resting time of raw hams.</td>
</tr>
<tr>
<td><strong>Large mobile grain process and seasoning conditioner DUK</strong></td>
<td>Water Chiller available in 1 or 2 circuits to cool glycol water with different ranges of temperature. Air condenser, welded plate gas and liquid heat exchanger, electronic control panel.</td>
</tr>
<tr>
<td><strong>Water Chiller ZC</strong></td>
<td>Large Mono and Bi-Block seasoning conditioner unit for meat and cheeses maturity process. Suitable for medium to large industrial cooling cells. The air treatment unit (AISI304 stainless steel) is placed on the floor inside the cooling environment and contains all the cooling and electrical equipment. Control is done via the station that supervises: temperature and humidity levels, airflow inside the cell (by means of ducts).</td>
</tr>
<tr>
<td><strong>UAV - USV</strong></td>
<td>Zanotti’s Universal Air/UA/USV models are used for the resting time of raw hams.</td>
</tr>
<tr>
<td><strong>ZH</strong></td>
<td>Open frame condensing units with Bitzer semi hermetic compressor.</td>
</tr>
</tbody>
</table>

#### refrigerant details

**SAR**
- **Refrigerant:** R404A - R407F - R134a
- **Defrost:** Hot gas
- **Compressor type:** Hermetic

**DUK**
- **Refrigerant:** R404A - R407F - R134a
- **Defrost:** Hot gas
- **Compressor type:** Hermetic

**ZC**
- **Refrigerant:** R134a, R404A, R407C
- **Compressor type:** Semi-hermetic or Scroll

**UAV - USV**
- **Refrigerant:** R134a, R404A, R407F

**ZH**
- **Refrigerant:** R134a, R407H, R449A
- **Liquid receiver with safety pressure relief valve for PED units**
- **Many different options and accessories available upon request.**

For technical selection, prices, accessories and delivery time please use the Zanotti software and contact our technical department. We are happy to help you.
## Options for ZEAS and Conveni-Pack

<table>
<thead>
<tr>
<th>Digital pressure gauge kit</th>
<th>LRYEN1AY1</th>
<th>LRYUNSAAY1</th>
<th>LRYEQ16AY</th>
<th>LREQ8BY1</th>
<th>LREQ18BY1</th>
<th>LREQ18BY1</th>
<th>LREQ18BY1</th>
<th>LREQ18BY1</th>
<th>LREQ18BY1</th>
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<tbody>
<tr>
<td>Pressure gauge kit</td>
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<tr>
<td>Pressure Reduction Kit</td>
<td>EKPRV1</td>
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<tr>
<td>a+b+c+d) kit</td>
<td>KPS26C504</td>
<td>KPS26C160</td>
<td>KPS26C504</td>
<td>KPS26C160</td>
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<tr>
<td>a. Air outlet</td>
<td>KPS26C504T</td>
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<td>KPS26C504T</td>
<td>KPS26C160</td>
<td>KPS26C504T</td>
<td>KPS26C160</td>
<td>KPS26C504T</td>
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<td>KPS26C504T</td>
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<td>KPS26C504T</td>
<td>KPS26C160</td>
<td>KPS26C504T</td>
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<tr>
<td>b. Air inlet (left)</td>
<td>KPS26C504B</td>
<td>KPS26C160</td>
<td>KPS26C504L</td>
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<td>Air outlet</td>
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<td>Snowbreak hood</td>
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<tr>
<td>Central drain pan kit</td>
<td>KWC26C450**</td>
<td>KWC26C160</td>
<td>KPS26C280</td>
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<td>KPS26C450</td>
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<td>Modbus communication kit</td>
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<td>Suction branch pipe for multi</td>
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<td>Refnet joint</td>
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<tr>
<td>Intelligent Controller</td>
<td>DSC601CS1</td>
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<tr>
<td>Intelligent Manager</td>
<td>DCM601AS1</td>
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</tbody>
</table>

* Snowbreak hoods are field-supplied. For technical drawings and more information, contact your dealer. It is recommended to install a snowbreak hood when regular snowfall occurs.

** In cold areas, provide a drain pan heater (field supply) to prevent drained water from freezing up in the drain pan.

*** required for each module

**** software update required (to be executed during commissioning)

***** mandatory
Digital pressure gauge kit

BHGP26A1

The digital measurement display allows you to diagnose a unit at a glance and it can be used with all ZEAS and R-410A Conveni-Pack systems.

› Digital measurement display for fixed installation or service applications.
› Displays high and low pressure.
› Displays error codes in the event of a fault.
› Displays up to 32 operating parameters.
› Displays error code history (last three).
› Scrolls and stores output values.
› Automatically returns to normal operating display mode.

Modbus communication kit

BRR9A1V1

The Daikin Modbus Communication Interface lets you fully integrate Daikin ZEAS and Daikin R-410A Conveni-Pack systems with building control automation networks and other monitoring systems.

The interface allows you to read all the operational parameters and control important values using the Modbus protocol. This unifying component transforms ZEAS and Conveni-Pack into a transparent, customisable refrigeration unit and means that you can create object-specific and energy-optimised shop concepts, including remote monitoring application.

Pro interfaces can be used to connect up to 32 ZEAS units, and are also suitable for use with R-410A Conveni-Pack systems and the Booster.

Control values

› Target evaporation temperature
› Low pressure level for on and off points
› Forced stop
› Error messages can be cancelled remotely

Display values

› Model information and operating status
› Refrigerant operating pressure and temperatures
› Electrical operating data and temperatures for components
› Target values
› Fan stage and compressor frequency, operating hours
› Warning and error messages as well as system safety functions
### Options

#### Options which need to be ordered with the unit

<table>
<thead>
<tr>
<th>Option</th>
<th>GM</th>
<th>SB</th>
<th>AS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter kit 1: Condenser fan pressure switch + Crankcase heater</td>
<td>PRS VNT + RES CAR + SOL SBR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter kit 2: Condenser fan speed regulator with temperature control + Double defrost solenoid valve</td>
<td>VVE TER + RES CAR + SOL SBR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter kit 3: Condenser fan speed regulator with pressure control + Crankcase heater + Double defrost solenoid valve</td>
<td>VVE PRS + RES CAR + SOL SBR</td>
<td></td>
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<tr>
<td>Winter kit 4: BEST COP condenser fan speed regulator + Crankcase heater + Double defrost solenoid valve</td>
<td>VVEBCO + RES CAR + SOL SBR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simple low noise housing</td>
<td>INS SEM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaporator cataphoresis treatment</td>
<td>FRS EVP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condenser cataphoresis treatment</td>
<td>FRS CND</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter kit remote control panel with 5 m cable</td>
<td>PAN SNG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Watercooled condenser</td>
<td>CON ACQ</td>
<td></td>
<td></td>
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<tr>
<td>Voltage monitor</td>
<td>MON TEN</td>
<td></td>
<td></td>
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<tr>
<td>Phase sequence control</td>
<td>CTR FAS</td>
<td>Only for scroll</td>
<td></td>
</tr>
<tr>
<td>3 m cable for door heater (for MT only, standard for LT)</td>
<td>RES POR</td>
<td></td>
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<tr>
<td>Remote control panel for 2-3-4 units</td>
<td>PAN MUL</td>
<td></td>
<td>Only for scroll</td>
</tr>
<tr>
<td>Audible and visual alarm</td>
<td>ALR SNV</td>
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<tr>
<td>Prearrangement for supervising system</td>
<td>KIT SUP</td>
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<tr>
<td>Kit long distance (more than 10 meters)</td>
<td>KIT DIS</td>
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<tr>
<td>Kit for through wall construction</td>
<td>KIT PAN</td>
<td>Std</td>
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</table>

#### Option where afterwards installation is possible

<table>
<thead>
<tr>
<th>Option</th>
<th>GM</th>
<th>SB</th>
<th>AS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple low noise housing</td>
<td>FRS CND</td>
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<tr>
<td>Condensate drain electrical heater</td>
<td>RES SCC</td>
<td>X (Std LT)</td>
<td>X (Std LT)</td>
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<tr>
<td>Evaporator cataphoresis treatment</td>
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<tr>
<td>Condenser cataphoresis treatment</td>
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<tr>
<td>Water-cooled condenser</td>
<td>CON ACQ</td>
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<tr>
<td>Voltage monitor</td>
<td>MON TEN</td>
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<tr>
<td>3 m micro-switch door cable</td>
<td>MIC POR</td>
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<tr>
<td>1 m cold room lightning cable</td>
<td>CAV LCE</td>
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<tr>
<td>3 m cable for door heater</td>
<td>RES POR</td>
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<tr>
<td>Remote control panel for 2-3-4 units</td>
<td>PAN MUL</td>
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<tr>
<td>Audible and visual alarm</td>
<td>ALR SNV</td>
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<tr>
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<td>KIT SUP</td>
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<tr>
<td>Kit long distance (more than 10 meters)</td>
<td>KIT DIS</td>
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<tr>
<td>cold room lamp</td>
<td>KIT LCE</td>
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### Zanotti Uniblock

#### Options

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<tbody>
<tr>
<td>Winter kit 1: Condenser fan pressure switch + Crankcase heater</td>
<td>PRS VNT + RES CAR + SOL SBR</td>
<td></td>
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</tr>
<tr>
<td>Winter kit 2: Condenser fan speed regulator with temperature control + Double defrost solenoid valve</td>
<td>VVE TER + RES CAR + SOL SBR</td>
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</tr>
<tr>
<td>Winter kit 3: Condenser fan speed regulator with pressure control + Crankcase heater + Double defrost solenoid valve</td>
<td>VVE PRS + RES CAR + SOL SBR</td>
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<tr>
<td>Winter kit 4: BEST COP condenser fan speed regulator + Crankcase heater + Double defrost solenoid valve</td>
<td>VVEBCO + RES CAR + SOL SBR</td>
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<tr>
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<td>FRS CND</td>
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<tr>
<td>Winter kit remote control panel with 5 m cable</td>
<td>PAN SNG</td>
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<tr>
<td>Watercooled condenser</td>
<td>CON ACQ</td>
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<tr>
<td>Voltage monitor</td>
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<tr>
<td>Phase sequence control</td>
<td>CTR FAS</td>
<td>Only for scroll</td>
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<tr>
<td>3 m cable for door heater (for MT only, standard for LT)</td>
<td>RES POR</td>
<td></td>
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<tr>
<td>Remote control panel for 2-3-4 units</td>
<td>PAN MUL</td>
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<td>Only for scroll</td>
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<tr>
<td>Audible and visual alarm</td>
<td>ALR SNV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prearrangement for supervising system</td>
<td>KIT SUP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kit long distance (more than 10 meters)</td>
<td>KIT DIS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kit for through wall construction</td>
<td>KIT PAN</td>
<td>Std</td>
<td>Std</td>
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</table>

### Zanotti Bi-block

#### Options

<table>
<thead>
<tr>
<th>Option</th>
<th>GS</th>
<th>SPO</th>
<th>DBO</th>
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</thead>
<tbody>
<tr>
<td>Simple low noise housing</td>
<td>FRS CND</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condensate drain electrical heater</td>
<td>RES SCC</td>
<td>X (Std LT)</td>
<td>X (Std LT)</td>
</tr>
<tr>
<td>Evaporator cataphoresis treatment</td>
<td>FRS EVP</td>
<td></td>
<td></td>
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<tr>
<td>Condenser cataphoresis treatment</td>
<td>FRS CND</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water-cooled condenser</td>
<td>CON ACQ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage monitor</td>
<td>MON TEN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 m micro-switch door cable</td>
<td>MIC POR</td>
<td></td>
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<tr>
<td>1 m cold room lightning cable</td>
<td>CAV LCE</td>
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<tr>
<td>3 m cable for door heater</td>
<td>RES POR</td>
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<tr>
<td>cold room lamp</td>
<td>KIT LCE</td>
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### Zanotti Wineblock

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<tr>
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<th>RCV</th>
<th>RDV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter kit 1: Condenser fan pressure switch + Crankcase heater</td>
<td>PRS VNT + RES CAR</td>
<td></td>
</tr>
<tr>
<td>Winter kit 2: Condenser fan speed regulator with temperature control + Double defrost solenoid valve</td>
<td>VVE TER + RES CAR + SOL SBR</td>
<td></td>
</tr>
<tr>
<td>Winter kit 3: Condenser fan speed regulator with pressure control + Crankcase heater + Double defrost solenoid valve</td>
<td>VVE PRS + RES CAR + SOL SBR</td>
<td></td>
</tr>
<tr>
<td>Winter kit 4: BEST COP condenser fan speed regulator + Crankcase heater + Double defrost solenoid valve</td>
<td>VVEBCO + RES CAR + SOL SBR</td>
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</tr>
<tr>
<td>Evaporator cataphoresis treatment</td>
<td>FRS EVP</td>
<td></td>
</tr>
<tr>
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<td>FRS CND</td>
<td></td>
</tr>
<tr>
<td>Water-cooled condenser</td>
<td>CON ACQ</td>
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<tr>
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## Zanotti condensing units

| RES CAR | Crankcase heater |   |   |   |
| PRO TRM | Thermal overload protection |   |   |   |
| VVE BCO | BESTCOP Condenser fan speed controller |   |   |   |
| VVE PRS | Pressure condenser fan speed controller |   |   |   |
| VVE TER | Temperature condenser fan speed controller |   |   |   |
| PRS LPF | LP switch (fixed calibration) |   |   |   |
| SEP ASP | Suction liquid separator |   |   |   |
| SEP OIL | Oil separator |   |   |   |
| VEN RAD | Radial type condenser fans |   |   |   |
| REG POT | Compressors capacity controller |   |   |   |
| SOL LIQ | Liquid line solenoid valve |   |   |   |
| CON ACQ | Watercooled condensation |   |   |   |
| VLT DIF | Different voltage |   |   |   |
| FRS CND | Anti-corrosion protection on condenser coil |   |   |   |
| FRS EVP | Anti-corrosion protection on evaporator coil |   |   |   |
| IMB FUM | Fumigation according to ISPM15 |   |   |   |
| PRS VNT | Condenser fan pressure switch |   |   |   |
| PRS HPR | HP switch with auto reset |   |   |   |
| MON TEN | Voltage monitor |   |   |   |
| INS SEM | Simple low noise housing |   |   |   |
| INS DOP | Enhanced low noise housing |   |   |   |
| QUA ELE | Power control box with magneto thermic switches |   |   |   |
| RES CAR | Crankcase heater |   |   |   |
| FQD | Frequency driver |   |   |   |

### Multi compressor condensing unit

| INSRD | Closed frame with double layer sound proofing material |   |   |
| AC&R | Mechanical oil equalization system with oil reserve, oil line filter, pressure reduction valve onto oil reserve |   |   |
| TRAXOIL | Electronic oil distribution system |   |   |
| RIC.LIQ. | Oversized liquid receiver |   |   |
| CFF | Compressors sound shell |   |   |
| ELC.C | Electronic card EWCM4180 - XC1000D - EWCM9100 |   |   |
CO₂ refrigeration solutions for reliable performance