



## Technical guide



### CDU-L R06A2C 400V 3ph

1. Main product specifications
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3. Cooling capacities
4. Electric power input

July2021

100% CO2 Condensing Units

## ECO-FRIENDLY REVOLUTION

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## 1. Main product specifications

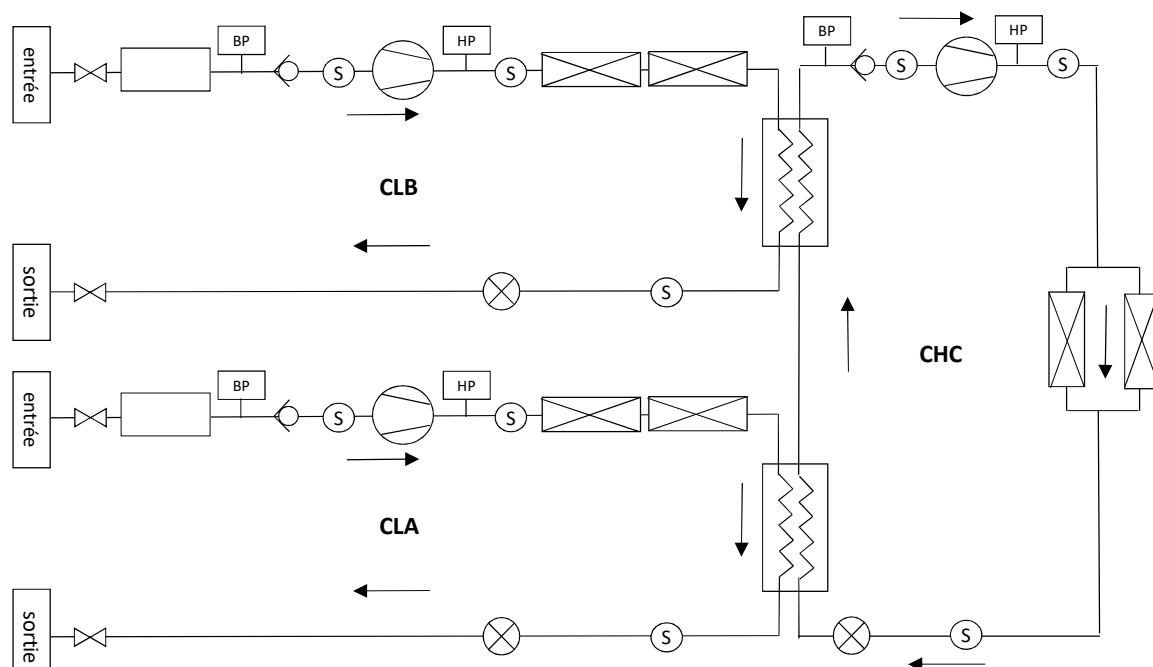
|                                                    |                          | CDU-L R06A2C                  |                |
|----------------------------------------------------|--------------------------|-------------------------------|----------------|
|                                                    |                          | T°C evap -35°C                | T°C evap -10°C |
| 32°C ambient/ Maximum cooling capacity             | (kW)                     | 3,95                          | 9,67           |
|                                                    | <i>Per loop (1)</i> (kW) | 1,98                          | 4,84           |
| 32°C amb / Max electric power input                | (kW)                     | 4,02                          | 5,87           |
| 32°C amb / Minimum cooling capacity                | (kW)                     | 1,64                          | 3,99           |
|                                                    | <i>Per loop (1)</i> (kW) | 0,82                          | 2,00           |
| 38°C amb / Maximum cooling capacity                | (kW)                     | 3,66                          | 7,99           |
|                                                    | <i>Per loop (1)</i> (kW) | 1,83                          | 4,00           |
| 43°C amb / Maximum cooling capacity                | (kW)                     | 2,97                          | 5,36           |
|                                                    | <i>Per loop (1)</i> (kW) | 1,49                          | 2,68           |
| Seasonal performance SEPR                          |                          | 1,48                          | 2,89           |
| Maximum volume with associated evaporator          | (L)                      | 5                             | 15             |
| Maximum piping diameter with associated evaporator | (mm)                     | 9,52 (3/8") *                 | 9,52 (3/8") *  |
| Maximum length to evaporator                       | (m)                      | 30                            | 30             |
| Evaporating temperature range (Min/Max)            | (°C)                     | -35 ~ +5                      |                |
| Ambient temperature range (Min/Max)                | (°C)                     | -25 ~ +43                     |                |
| Dimensions Height/Width/Depth                      | (mm)                     | 1300 / 1105 / 285 **          |                |
| Weight                                             | (kg)                     | 141                           |                |
| Noise pressure level (2)                           | dB(A) @1m                | 53                            |                |
| Compressor (x3)                                    |                          | Inverter hermetic Scroll      |                |
| <i>Speed range</i>                                 | (Hz)                     | 30 - 80                       |                |
| Gascooler                                          | Type                     | Aluminium microchannel        |                |
| Refrigerant                                        | Type / GWP               | R744 (CO2) / 1                |                |
| Power supply                                       |                          | 3ph+N / 400 VAC / 50/60 Hz    |                |
| Communication                                      | Standard                 | Modbus                        |                |
| PED                                                | Category                 | 1                             |                |
| Maximum working pressure                           | MWP                      | 9MPa (LP) / 14 MPa (HP)       |                |
| Valves dimensions                                  | LP / HP                  | 3/8" (9,52mm) / 1/4" (6,35mm) |                |
| Casing color /RAL                                  |                          | RAL 7032                      |                |



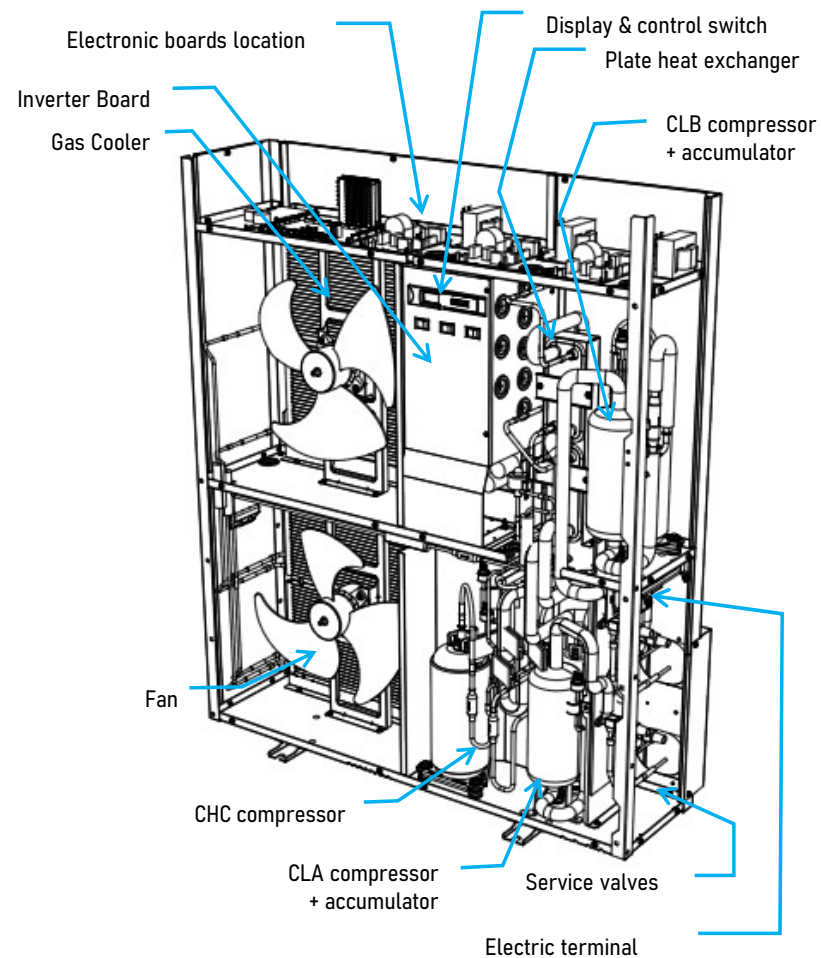
- (1) Cooling capacity distributed on 2 independent loops  
 (2) Conditions: ambient T°+32°C, Compressor Speed : 70Hz  
 \*Piping diameter inside evaporator, connection excluded  
 \*\*without pipe cover

# CDU-L R06A2C

## 2. Product diagram



- Service valve
- Strainer
- Check valve
- Electronic Expansion Valve
- Compressor (Scroll type)
- Accumulator
- Air Gascooler (micro channel type)
- Plate Heat Exchanger



## 3.1 Cooling capacities & installation sizing

### 1. Cooling capacity

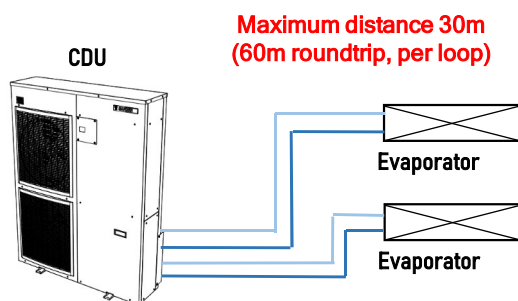
|                             |          | CDU-L R06A2C Cooling capacity (kW) |      |      |                                 |       |       |       |
|-----------------------------|----------|------------------------------------|------|------|---------------------------------|-------|-------|-------|
| Ambient Temperature<br>(°C) |          | Evaporating temperature LT (°C)    |      |      | Evaporating temperature MT (°C) |       |       |       |
|                             |          | -35                                | -30  | -25  | -10                             | -5    | 0     | 5     |
| 32                          | total    | 3,95                               | 5,05 | 5,92 | 9,67                            | 11,15 | 11,66 | 12,33 |
|                             | Per loop | 1,98                               | 2,53 | 2,96 | 4,84                            | 5,58  | 5,83  | 6,16  |
| 35                          | total    | 3,81                               | 4,80 | 5,46 | 9,25                            | 10,71 | 11,05 | 11,72 |
|                             | Per loop | 1,90                               | 2,40 | 2,73 | 4,62                            | 5,35  | 5,53  | 5,86  |
| 38                          | total    | 3,66                               | 4,56 | 5,00 | 7,99                            | 9,24  | 9,40  | 11,11 |
|                             | Per loop | 1,83                               | 2,28 | 2,50 | 3,99                            | 4,62  | 4,70  | 5,55  |
| 40                          | total    | 3,56                               | 4,23 | 4,61 | 7,39                            | 7,86  | 7,88  | 8,50  |
|                             | Per loop | 1,78                               | 2,12 | 2,31 | 3,70                            | 3,93  | 3,94  | 4,25  |

- The cooling capacity is linked to the evaporating temperature of the group of the condensing unit and the reference outside temperature of the project
- Notes: The cooling balance of refrigerated showcase is to correlate with the temperature around the furniture (the insulation of the building, or the air conditioning of the sales area can have an impact). In addition, remember to take into account in this balance that the production of cold is generated by an external unit (greater cooling demand compared to centralized cold production)
- SandenVendo Gmbh is not responsible for defining the installation's cooling requirement (cooling balance)
- We recommend to keep 10% margin between the cooling capacity and cooling needs required for the installation
- Consider performance loss depending on the distance between the evaporator and the condensing unit (see next page)

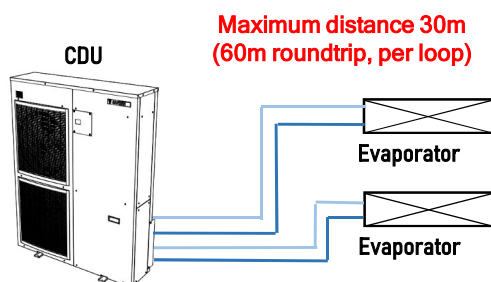
## 3.2 Cooling capacities & installation sizing

### 2. Piping lenght and performance loss

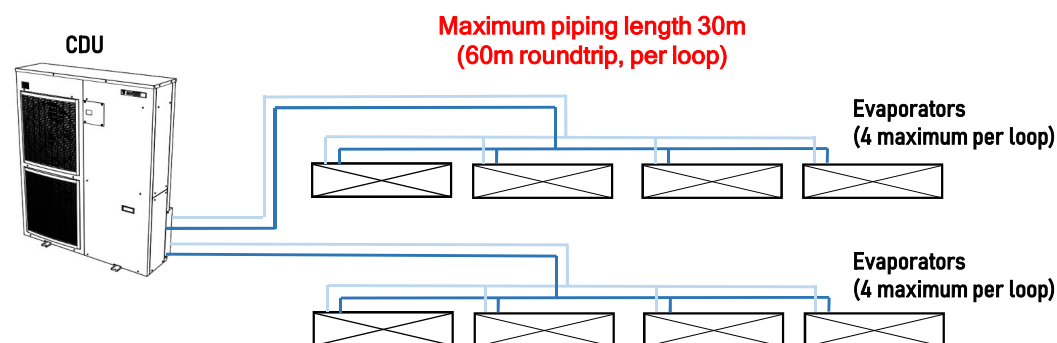
Single evaporator installation – positive temperature



Single evaporator installation – Low temperature



Multi evaporators installation – Positive Temperature



Installation beyond these distances will result with poor performances and poor return of oil to the compressor

In addition, piping length has an impact on the cooling capacity. See below, the coefficients to be considered for a reduction in cooling capacity depending on the distance from the evaporator.

| Length to the evaporator (m) | 10    | 20    | 30    |
|------------------------------|-------|-------|-------|
| MT (positive @Te -5°C)       | 1,40% | 2,80% | 4,10% |
| LT (negative @Te -30°C)      | 2,80% | 5,50% | 8,10% |

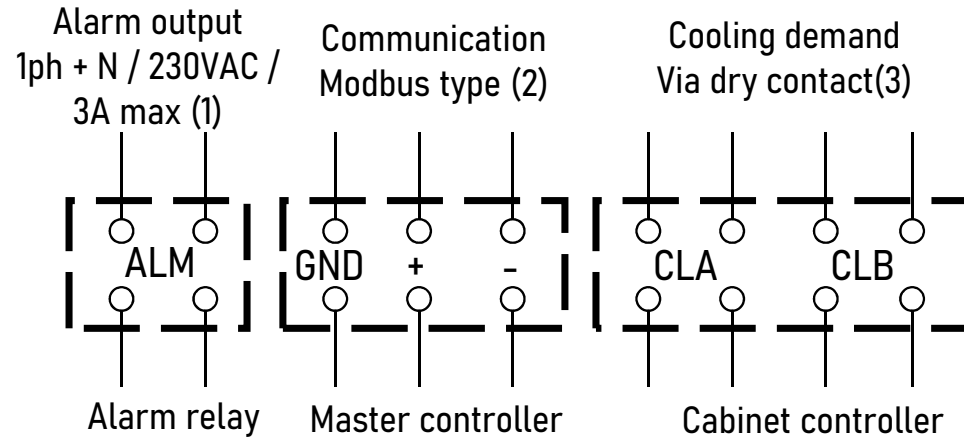
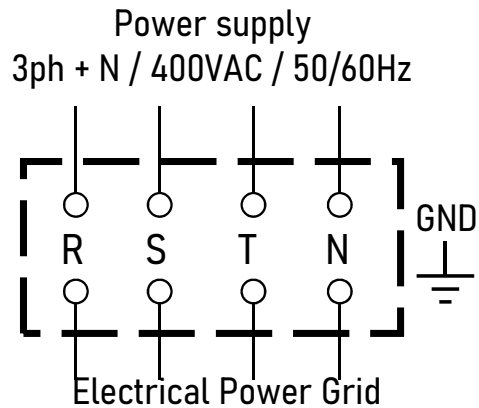
### 3. Evaporator volume

Medium Temperature: 15 liters maximum (bad oil return if > 15L)

Low temperature: 5 liters maximum (bad oil return if > 5L)

Maximum piping diameter inside evaporator 9,52mm / 3/8" (connection excluded)

## 4. Electric power input



- (1) Alarm delivering 230V in case of error
- (2) Use a shielded cable to connect the modbus
- (3) Cooling demand on dry contact

|                        |                   |
|------------------------|-------------------|
| Rated Power            | 6,2kW             |
| Voltage                | 400Vac / 3 phases |
| Frequency              | 50/60Hz           |
| Electrical consumption | 6,2kW             |
| Rated current          | 10,1A             |
| Electrical power       | 6,9kVA            |
| Circuit breaker        | 12A               |

