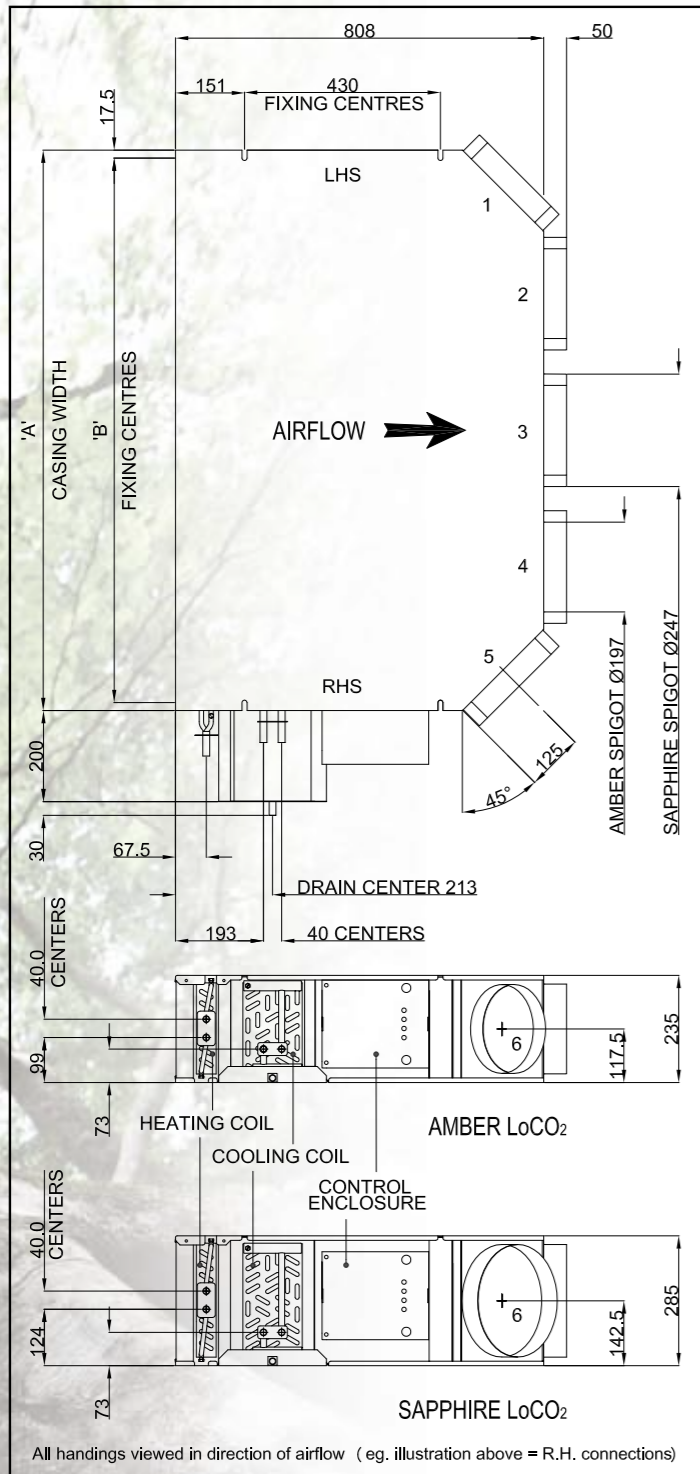


Dimensions for Amber and Sapphire



| LoCO2 Model | Dim 'A' | Dim 'B' | Spigot Options |
|-------------|---------|---------|----------------|
| AMB / SPR 1 | 630 | 595 | 1-2-3 |
| AMB / SPR 2 | 880 | 845 | 1-2-3-4/1-2-3 |
| AMB / SPR 3 | 1230 | 1195 | 1-2-3-4-5 |
| AMB / SPR 4 | 1230 | 1195 | 1-2-3-4-5 |
| AMB / SPR 5 | 1430 | 1395 | 1-2-3-4-5 |
| AMB / SPR 6 | 1430 | 1395 | 1-2-3-4-5 |
| AMB / SPR 7 | 1780 | 1745 | 1-2-3-4-5-6 |
| AMB / SPR 8 | 1780 | 1745 | 1-2-3-4-5-6 |

Max Airflows / Spigot

For NR 35
 Ø 200mm = 100 l/s
 Ø 250mm = 150 l/s

For NR 30
 Ø 200mm = 66 l/s
 Ø 250mm = 100 l/s

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Part No: 06617662-03



A low carbon option for fan coils designed from a new perspective

LoCO2, a low carbon option available for the Quartz standard fan coil ranges (Sapphire and Amber), introduces a new level of energy efficiency. Designers striving to develop the most energy efficient fan coil systems are, in addition to the use of ec\dc motors, increasingly making use of free cooling (when in cooling mode) and utilising condensing boilers or heat pumps for heating. Quartz have therefore developed a low energy option that makes full use of the new technologies and results in an exceptionally energy efficient climate control system.

The main areas for energy saving are in the use of higher temperature water for cooling (enables free cooling and high chiller efficiency), lower water temperature for heating (enables the use of condensing boilers or heat pumps) and reduction in the use of energy for air movement. The LoCO2 option enables all of these areas to be addressed.

The option has a separate coil for heating designed to maintain typical heating duties whilst utilising low temperature water (typically 50/40°C) and a specialist cooling coil that will maintain cooling duties when operating with (relatively) high temperature cooling water (12/17°C). In addition, the fan coils are fitted with ec\dc motors that, if operated with the Quartz suggested strategy, modulates the fan speed with respect to occupancy thereby reducing energy use.



LoCO2 Main Features

- Special, additional heating coil designed to have negligible airflow resistance and to utilise 60/40°C or 50/40°C water for heating.
- Special cooling coil designed for optimum performance using 12/17°C water for cooling.
- Ec\dc motor with suggested strategy for optimum fan performance at minimum energy use.
- Frame filter to EU2/3 filtration standard.
- Lower capital cost than chilled beam equivalents.
- Whole life costings that are similar to current best technology.



The unit above is shown with an extended drain tray

a new perspective

a new perspective

For full design information, reference should be made to the technical manual. We reserve the right to alter designs and specifications at any time without notification.

Sapphire Technical Data

Cooling conditions; 23°C/50% RH air on, Water 12/17°C
 Heating conditions; 20°C air on, water 60/40°C

| Model | Spd | A'flow (l/s) | Cooling | | Heating | | Specific Fan Power w/l/s | Guide NR | Full Load Current (Amps) |
|------------|-----|--------------|-----------|------------|-------------|------|--------------------------|----------|--------------------------|
| | | | Sens (kW) | Total (kW) | Output (kW) | | | | |
| SPR1 LoCO2 | 1 | 55 | 0.54 | 0.54 | 0.81 | 0.18 | 25 | 0.15 | |
| | 2 | 100 | 0.85 | 0.85 | 1.22 | 0.16 | 30 | 0.21 | |
| | 3 | 135 | 1.05 | 1.05 | 1.60 | 0.17 | 33 | 0.31 | |
| | 4 | 160 | 1.17 | 1.17 | 1.82 | 0.19 | 35 | 0.44 | |
| | 5 | 170 | 1.22 | 1.22 | 1.91 | 0.20 | 37 | 0.50 | |
| | 6 | 180 | 1.26 | 1.26 | 2.00 | 0.21 | 40 | 0.57 | |
| SPR2 LoCO2 | 1 | 70 | 0.76 | 0.76 | 1.59 | 0.17 | 25 | 0.16 | |
| | 2 | 115 | 1.07 | 1.07 | 2.12 | 0.19 | 30 | 0.23 | |
| | 3 | 155 | 1.37 | 1.37 | 2.70 | 0.27 | 33 | 0.38 | |
| | 4 | 180 | 1.56 | 1.56 | 3.06 | 0.34 | 35 | 0.53 | |
| | 5 | 194 | 1.66 | 1.66 | 3.23 | 0.37 | 36 | 0.62 | |
| | 6 | 209 | 1.76 | 1.76 | 3.38 | 0.40 | 37 | 0.72 | |
| SPR3 LoCO2 | 1 | 75 | 0.86 | 0.86 | 1.50 | 0.16 | 25 | 0.16 | |
| | 2 | 120 | 1.22 | 1.22 | 1.74 | 0.19 | 30 | 0.24 | |
| | 3 | 160 | 1.52 | 1.52 | 2.04 | 0.27 | 33 | 0.39 | |
| | 4 | 190 | 1.73 | 1.73 | 2.40 | 0.34 | 35 | 0.56 | |
| | 5 | 205 | 1.84 | 1.84 | 2.59 | 0.37 | 36 | 0.65 | |
| | 6 | 221 | 1.94 | 1.94 | 2.75 | 0.38 | 37 | 0.72 | |
| SPR4 LoCO2 | 1 | 100 | 1.09 | 1.09 | 1.65 | 0.15 | 25 | 0.18 | |
| | 2 | 205 | 1.88 | 1.88 | 2.59 | 0.19 | 30 | 0.37 | |
| | 3 | 245 | 2.21 | 2.21 | 3.05 | 0.22 | 33 | 0.49 | |
| | 4 | 310 | 2.74 | 2.74 | 3.85 | 0.27 | 35 | 0.73 | |
| | 5 | 350 | 3.04 | 3.04 | 4.25 | 0.30 | 37 | 0.90 | |
| | 6 | 372 | 3.20 | 3.20 | 4.45 | 0.32 | 38 | 1.01 | |
| SPR5 LoCO2 | 1 | 105 | 1.25 | 1.25 | 1.99 | 0.15 | 25 | 0.18 | |
| | 2 | 210 | 2.28 | 2.28 | 2.91 | 0.20 | 30 | 0.38 | |
| | 3 | 255 | 2.75 | 2.75 | 3.45 | 0.23 | 33 | 0.52 | |
| | 4 | 325 | 3.51 | 3.51 | 4.45 | 0.29 | 35 | 0.80 | |
| | 5 | 350 | 3.73 | 3.73 | 4.65 | 0.31 | 36 | 0.92 | |
| | 6 | 371 | 3.93 | 3.93 | 4.85 | 0.32 | 37 | 1.03 | |
| SPR6 LoCO2 | 1 | 130 | 1.49 | 1.49 | 2.18 | 0.19 | 25 | 0.26 | |
| | 2 | 215 | 2.35 | 2.35 | 3.04 | 0.23 | 30 | 0.45 | |
| | 3 | 285 | 3.11 | 3.11 | 3.95 | 0.27 | 33 | 0.66 | |
| | 4 | 335 | 3.64 | 3.64 | 4.55 | 0.31 | 35 | 0.85 | |
| | 5 | 382 | 4.10 | 4.10 | 4.95 | 0.34 | 37 | 1.05 | |
| | 6 | 462 | 4.92 | 4.92 | 5.55 | 0.40 | 40 | 1.46 | |
| SPR7 LoCO2 | 1 | 140 | 1.53 | 1.53 | 2.84 | 0.17 | 25 | 0.25 | |
| | 2 | 225 | 2.16 | 2.16 | 3.47 | 0.22 | 30 | 0.45 | |
| | 3 | 290 | 2.74 | 2.74 | 4.38 | 0.26 | 33 | 0.64 | |
| | 4 | 345 | 3.23 | 3.23 | 4.97 | 0.30 | 35 | 0.84 | |
| | 5 | 395 | 3.71 | 3.71 | 5.57 | 0.33 | 37 | 1.06 | |
| | 6 | 470 | 4.35 | 4.35 | 6.28 | 0.39 | 40 | 1.45 | |
| SPR8 LoCO2 | 1 | 150 | 1.60 | 1.60 | 2.84 | 0.22 | 25 | 0.34 | |
| | 2 | 250 | 2.35 | 2.35 | 3.67 | 0.22 | 30 | 0.51 | |
| | 3 | 355 | 3.33 | 3.33 | 4.97 | 0.27 | 33 | 0.83 | |
| | 4 | 425 | 4.00 | 4.00 | 5.78 | 0.33 | 35 | 1.14 | |
| | 5 | 477 | 4.44 | 4.44 | 6.18 | 0.37 | 37 | 1.43 | |
| | 6 | 560 | 5.16 | 5.16 | 6.78 | 0.46 | 40 | 2.01 | |

Qualification of N.R. predictions:

The N.R. guide figures quoted on the output data page are intended to show the levels which may be expected in a typical office environment provided the following apply:
 Room sizes are based on a cooling load of 120W/m2 with a c.w. flow temp. of 12°C. Units must be correctly mounted onto a solid structure, using drop rods attached to mounting points provided, in a false ceiling not less than 300mm deep, with standard 'T' bar grid and 10mm fibreboard tiles. Rooms should be carpeted, have not more than 20% glazing, or highly reflective surfaces. In open plan areas units should be mounted not less than 6m apart and return-air grilles should not be mounted directly below, or adjacent to unit inlets. 1m of non noise regenerative flexible duct should be fitted to each outlet spigot sized to maintain required N.R. level. i.e. 1.5m/s at NR25, 2m/s at NR30, 3m/s at NR35 and 4m/s at NR40.

The foregoing should ensure the 'guide' N.R. levels are met when measured at 1.5m from the nearest grille, provided the grille plenums are correctly sized and insulated.
 *For units operating on secondary chilled water an allowance of +1 or 2 dB may need to be added to the NR values due to the fact that units selected will be larger, relative to output, for a given room size.

For accurate assessment please consult our Technical Sales Department.

Amber Technical Data

All data at 30Pa external resistance
 Cooling conditions; 23°C/50% RH air on, Water 12/17°C
 Heating conditions; 20°C air on, water 60/40°C

| Model | Spd | A'flow (l/s) | Cooling | | Heating | | Specific Fan Power w/l/s | Guide NR | Full Load Current (Amps) |
|------------|-----|--------------|-----------|------------|-------------|------|--------------------------|----------|--------------------------|
| | | | Sens (kW) | Total (kW) | Output (kW) | | | | |
| AMB1 LoCO2 | 1 | 55 | 0.56 | 0.56 | 0.78 | 0.18 | 25 | 0.15 | |
| | 2 | 100 | 0.97 | 0.97 | 1.28 | 0.20 | 30 | 0.21 | |
| | 3 | 135 | 1.26 | 1.26 | 1.61 | 0.26 | 33 | 0.33 | |
| | 4 | 160 | 1.47 | 1.47 | 1.85 | 0.33 | 35 | 0.46 | |
| | 5 | 170 | 1.55 | 1.55 | 1.95 | 0.36 | 37 | 0.53 | |
| | 6 | 180 | 1.62 | 1.62 | 2.04 | 0.40 | 40 | 0.61 | |
| AMB2 LoCO2 | 1 | 70 | 0.73 | 0.73 | 1.44 | 0.17 | 25 | 0.16 | |
| | 2 | 115 | 1.10 | 1.10 | 2.19 | 0.20 | 30 | 0.23 | |
| | 3 | 155 | 1.45 | 1.45 | 2.79 | 0.28 | 33 | 0.39 | |
| | 4 | 180 | 1.64 | 1.64 | 3.06 | 0.35 | 35 | 0.54 | |
| | 5 | 195 | 1.75 | 1.75 | 3.22 | 0.39 | 36 | 0.65 | |
| | 6 | 206 | 1.81 | 1.81 | 3.34 | 0.41 | 37 | 0.72 | |
| AMB3 LoCO2 | 1 | 75 | 0.85 | 0.85 | 1.38 | 0.16 | 25 | 0.16 | |
| | 2 | 120 | 1.20 | 1.20 | 1.64 | 0.20 | 30 | 0.24 | |
| | 3 | 160 | 1.56 | 1.56 | 2.11 | 0.28 | 33 | 0.40 | |
| | 4 | 190 | 1.81 | 1.81 | 2.52 | 0.35 | 35 | 0.57 | |
| | 5 | 200 | 1.89 | 1.89 | 2.66 | 0.37 | 36 | 0.63 | |
| | 6 | 219 | 2.04 | 2.04 | 2.95 | 0.39 | 37 | 0.72 | |
| AMB4 LoCO2 | 1 | 100 | 1.06 | 1.06 | 1.52 | 0.15 | 25 | 0.18 | |
| | 2 | 200 | 1.92 | 1.92 | 2.72 | 0.20 | 30 | 0.37 | |
| | 3 | 240 | 2.27 | 2.27 | 3.22 | 0.23 | 33 | 0.49 | |
| | 4 | 300 | 2.78 | 2.78 | 3.82 | 0.28 | 35 | 0.72 | |
| | 5 | 330 | 3.02 | 3.02 | 4.22 | 0.30 | 36 | 0.86 | |
| | 6 | 360 | 3.27 | 3.27 | 4.42 | 0.33 | 38 | 1.01 | |
| AMB5 LoCO2 | 1 | 105 | 1.07 | 1.07 | 1.83 | 0.15 | 25 | 0.18 | |
| | 2 | 205 | 1.78 | 1.78 | 3.06 | 0.20 | 30 | 0.38 | |
| | 3 | 250 | 2.13 | 2.13 | 3.76 | 0.24 | 33 | 0.52 | |
| | 4 | 320 | 2.64 | 2.64 | 4.46 | 0.29 | 35 | 0.81 | |
| | 5 | 342 | 2.78 | 2.78 | 4.66 | 0.31 | 36 | 0.92 | |
| | 6 | 364 | 2.93 | 2.93 | 4.86 | 0.33 | 37 | 1.03 | |
| AMB6 LoCO2 | 1 | 130 | 1.21 | 1.21 | 1.96 | 0.19 | 25 | 0.26 | |
| | 2 | 210 | 1.80 | 1.80 | 3.14 | 0.23 | 30 | 0.44 | |
| | 3 | 280 | 2.33 | 2.33 | 4.06 | 0.28 | 33 | 0.66 | |
| | 4 | 330 | 2.68 | 2.68 | 4.56 | 0.31 | 35 | 0.85 | |
| | 5 | 375 | 2.99 | 2.99 | 4.96 | 0.35 | 37 | 1.05 | |
| | 6 | 450 | 3.57 | 3.57 | 5.56 | 0.41 | 40 | 1.46 | |
| AMB7 LoCO2 | 1 | 140 | 1.37 | 1.37 | 2.59 | 0.18 | 25 | 0.26 | |
| | 2 | 225 | 1.93 | 1.93 | 3.58 | 0.23 | 30 | 0.46 | |
| | 3 | 290 | 2.42 | 2.42 | 4.58 | 0.27 | 33 | 0.67 | |
| | 4 | 340 | 2.79 | 2.79 | 5.18 | 0.31 | 35 | 0.87 | |
| | 5 | 390 | 3.16 | 3.16 | 5.68 | 0.35 | 37 | 1.10 | |
| | 6 | 460 | 3.66 | 3.66 | 6.28 | 0.41 | 40 | 1.48 | |
| AMB8 LoCO2 | 1 | 150 | 1.41 | 1.41 | 2.57 | 0.22 | 25 | 0.34 | |
| | 2 | 250 | 2.07 | 2.07 | 3.88 | 0.22 | 30 | 0.52 | |
| | 3 | 350 | 2.84 | 2.84 | 5.18 | 0.28 | 33 | 0.83 | |
| | 4 | 420 | 3.36 | 3.36 | 5.78 | 0.33 | 35 | 1.15 | |
| | 5 | 470 | 3.73 | 3.73 | 6.18 | 0.38 | 37 | 1.43 | |
| | 6 | 550 | 4.34 | 4.34 | 6.88 | 0.47 | 40 | 2.00 | |

Qualification of N.R. predictions:

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The foregoing should ensure the 'guide' N.R. levels are met when measured at 1.5m from the nearest grille, provided the grille plenums are correctly sized and insulated.
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