SCM FRIGO

CUBO2 SMART 2

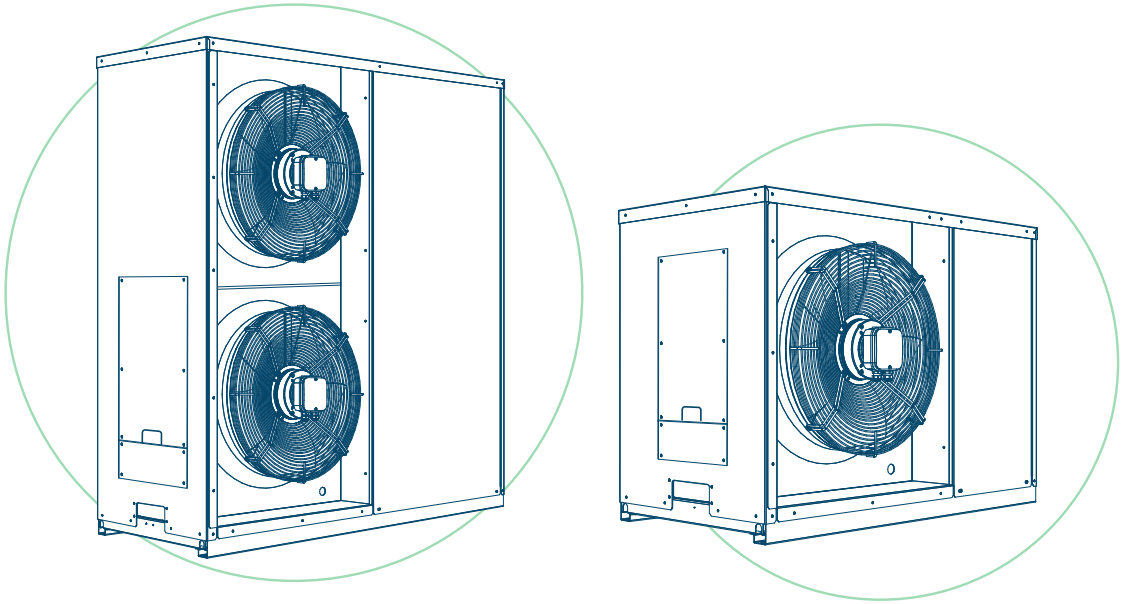
SUSTAINABLE COLD SOLUTIONS

TRANSCRITICAL CO_2 CONDENSING UNITS

ECOdesign Compliant

We know the art of achieving
a perfect temperature

BEIJER REF



Product Description

Condensing unit for transcritical CO_2 applications equipped with TOSHIBA BLDC compressor(s) with inventer, integrated gas cooler and EC fans. This is a high-efficiency solution designed to ensure a small footprint and low noise.

MAIN ADVANTAGES

- CO_2 REFRIGERANT
- EFFICIENT SOLUTION
- LOW NOISE
- SMALL FOOTPRINT
- EASY START-UP
- DC BRUSHLESS ROTARY COMPRESSOR
- GAS COOLER EQUIPPED

Cooling Capacity

Transcritical Condensing Units DX

Standard Accessories

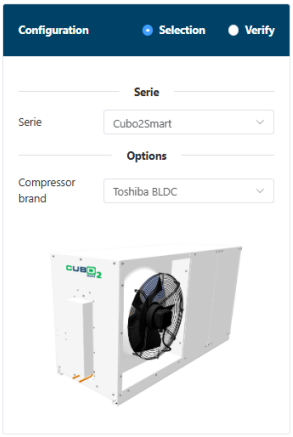
- Toshiba BLDC compressors
- Carel controller
- Inverter modulation for capacity control 25-100%
- Integrated gas cooler with EC fan
- Design pressure 130 bar (high pressure side) 80 bar (liquid line) 80 bar (suction line)
- Liquid receiver 12 liters
- K65 connections

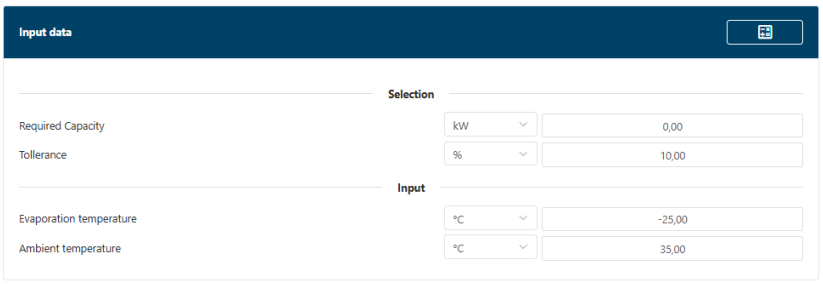
Accessories on Request

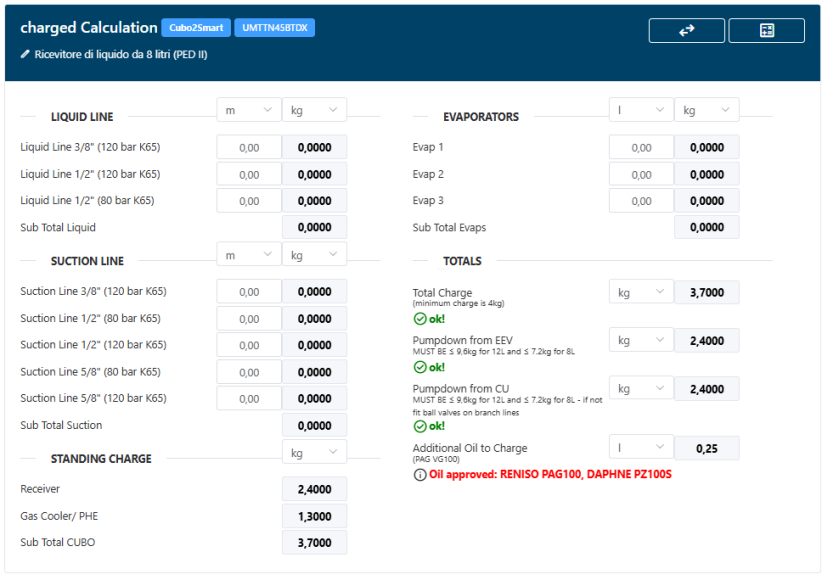
- Low noise frame (day operation 33 dB(A) @10m; night operation 30 dB(A))
- Oil management (oil separator + reservoir, oil level control, oil return solenoid valve)
- Winter kit (suggested for ambient temperature <-20°C)
- Epoxy or Electrofin gas cooler corrosion coil protection.
- Adiabatic Kit water spray, including controller

Software Calculation Tool

Select your unit and check its CO_2 charge







AT THE FOLLOWING LINK YOU CAN CHECK THE UNIT CHARGE.

https://cubo2calculation.scmfrigo.com/#/home

PRELIMINARY DATA [a]

LOW TEMPERATURE

UMT T N45 BTDX

Ambient Temperature [°C]	Evaporation Temperature[°C] -35 Capacity [W] min	-35 Capacity [W] max	-35 COP	-30 Capacity [W] min	-30 Capacity [W] max	-30 COP	-25 Capacity [W] min	-25 Capacity [W] max	-25 COP	-20 Capacity [W] min	-20 Capacity [W] max	-20 COP
40	694	**1915**	1,19	836	**2299**	1,38	975	**2668**	1,55	1148	**3110**	1,77
38	709	**1933**	1,22	857	**2318**	1,42	1002	**2687**	1,60	1181	**3129**	1,83
32	761	**2004**	1,38	926	**2393**	1,60	1090	**2764**	1,81	1288	**3204**	2,07
25	815	**2084**	1,57	995	**2477**	1,83	1174	**2850**	2,07	1389	**3289**	2,38
15	867	**2163**	1,81	1058	**2561**	2,10	1250	**2935**	2,39	1479	**3373**	2,76
5	948	**2277**	2,24	1155	**2684**	2,63	1368	**3061**	3,02	1615	**3497**	3,53

Liquid receiver volume	8 liters	**MEPS [c]**	2,39
Weight	176 kg	**Annual Energy Consumption**	8767 kWh/year
Connections	Liquid / suction 1/2"	**Power Supply**	230 V / 1+N+PE / 50 Hz
Sound pressure [b]	**day / night** 40 / 37 dB(A)		

UMT T N67 BTDX

Ambient Temperature [°C]	Evaporation Temperature[°C] -35 Capacity [W] min	-35 Capacity [W] max	-35 COP	-30 Capacity [W] min	-30 Capacity [W] max	-30 COP	-25 Capacity [W] min	-25 Capacity [W] max	-25 COP	-20 Capacity [W] min	-20 Capacity [W] max	-20 COP
40	1125	**3058**	1,28	1366	**3645**	1,47	1601	**4192**	1,63	1871	**4807**	1,82
38	1140	**3074**	1,32	1382	**3668**	1,51	1617	**4221**	1,69	1886	**4843**	1,89
32	1196	**3146**	1,47	1440	**3759**	1,70	1675	**4333**	1,91	1943	**4976**	2,15
25	1253	**3234**	1,68	1501	**3865**	1,95	1738	**4457**	2,20	2005	**5117**	2,49
15	1308	**3326**	1,93	1560	**3971**	2,25	1799	**4578**	2,55	2067	**5254**	2,91
5	1385	**3458**	2,41	1648	**4126**	2,85	1895	**4755**	3,27	2166	**5455**	3,79

Liquid receiver volume	8 liters	**MEPS [c]**	2,39
Weight	176 kg	**Annual Energy Consumption**	13282 kWh/year
Connections	Liquid / suction 1/2"	**Power Supply**	230 V / 1+N+PE / 50 Hz
Sound pressure [b]	**day / night** 40 / 37 dB(A)		

UMT T 067 BTDX

Ambient Temperature [°C]	Evaporation Temperature[°C] -35 Capacity [W] min	-35 Capacity [W] max	-35 COP	-30 Capacity [W] min	-30 Capacity [W] max	-30 COP	-25 Capacity [W] min	-25 Capacity [W] max	-25 COP	-20 Capacity [W] min	-20 Capacity [W] max	-20 COP
40	950	**4380**	0,88	1190	**5320**	1,07	1360	**6030**	1,15	1660	**7210**	1,41
38	950	**4380**	0,91	1190	**5320**	1,14	1360	**6030**	1,18	1660	**7210**	1,50
32	950	**4380**	1,09	1190	**5320**	1,20	1360	**6030**	1,37	1660	**7210**	1,57
25	950	**4380**	1,22	1190	**5320**	1,35	1360	**6030**	1,54	1660	**7210**	1,69
15	950	**4380**	1,70	1190	**5320**	1,90	1360	**6030**	2,15	1660	**7210**	2,37
5	950	**4380**	1,97	1190	**5320**	2,23	1360	**6030**	2,41	1660	**7210**	2,68

Liquid receiver volume	12 liters	**MEPS [c]**	2,39
Weight	195 kg	**Annual Energy Consumption**	19367 kWh/year
Connections	Liquid / suction 1/2"	**Power Supply**	400 V / 3+N+PE / 50 Hz
Sound pressure [b]	**day / night** 41 / 38 dB(A)		

UMT T 100 BTDX

Ambient Temperature [°C]	Evaporation Temperature[°C] -35 Capacity [W] min	-35 Capacity [W] max	-35 COP	-30 Capacity [W] min	-30 Capacity [W] max	-30 COP	-25 Capacity [W] min	-25 Capacity [W] max	-25 COP	-20 Capacity [W] min	-20 Capacity [W] max	-20 COP
40	1520	**6540**	0,91	1890	**7900**	1,09	2140	**8940**	1,15	2600	**10650**	1,41
38	1520	**6540**	0,96	1890	**7900**	1,16	2140	**8940**	1,18	2600	**10650**	1,51
32	1520	**6540**	1,18	1890	**7900**	1,27	2140	**8940**	1,43	2600	**10650**	1,58
25	1520	**6540**	1,33	1890	**7900**	1,44	2140	**8940**	1,62	2600	**10650**	1,74
15	1520	**6540**	1,93	1890	**7900**	2,11	2140	**8940**	2,35	2600	**10650**	2,54
5	1520	**6540**	2,27	1890	**7900**	2,54	2140	**8940**	2,69	2600	**10650**	2,93

Liquid receiver volume	12 liters	**MEPS [c]**	2,39
Weight	195 kg	**Annual Energy Consumption**	28623 kWh/year
Connections	Liquid / suction 5/8"	**Power Supply**	400 V / 3+N+PE / 50 Hz
Sound pressure [b]	**day / night** 42 / 39 dB(A)		

NOTES

[a] Insterstage SST variable from -5 °C to 0°C according to operating conditions. Inverter modulation from 25 - 100%, corresponding to 1500-6000 rpm

[b] based on free field area weed semi-spherical sound emission in 10m distance; tolerance ± 2 dB(A)

[c] Minimum Energy Performance Standards, calculated according to Ecodesign Directive EN 2009/125/EC

UMT T 030 MTDX

Ambient Temperature [°C]	Evaporation Temperature[°C] -15 Capacity [W] min	-15 Capacity [W] max	-15 COP	-10 Capacity [W] min	-10 Capacity [W] max	-10 COP	-5 Capacity [W] min	-5 Capacity [W] max	-5 COP	0 Capacity [W] min	0 Capacity [W] max	0 COP	5 Capacity [W] min	5 Capacity [W] max	5 COP
40	429	**2140**	1,38	523	**2507**	1,58	575	**2759**	1,59	674	**3143**	1,79	787	**3541**	2,04
38	440	**2165**	1,44	526	**2514**	1,59	622	**2889**	1,80	727	**3283**	2,04	850	**3704**	2,31
32	455	**2181**	1,54	551	**2548**	1,76	653	**2939**	2,02	768	**3362**	2,32	905	**3826**	2,68
25	506	**2350**	1,81	613	**2752**	2,09	728	**3197**	2,43	852	**3678**	2,83	988	**4188**	3,33
15	682	**3033**	3,16	816	**3577**	3,76	971	**4185**	4,56	1153	**4859**	5,64	1364	**5598**	7,18
5	814	**3564**	4,63	973	**4194**	5,70	1161	**4899**	7,20	1270	**5290**	7,25	1364	**5598**	7,18

Liquid receiver volume	8 liters	**MEPS [c]**	3,41
Weight	165 kg	**Annual Energy Consumption**	4590 kWh/year
Connections	Liquid / suction 1/2"	**Power Supply**	230 V / 1+N+PE / 50 Hz
Sound pressure [b]	day / night 40 / 37 dB(A)		

UMT T 045 MTDX

Ambient Temperature [°C]	Evaporation Temperature[°C] -15 Capacity [W] min	-15 Capacity [W] max	-15 COP	-10 Capacity [W] min	-10 Capacity [W] max	-10 COP	-5 Capacity [W] min	-5 Capacity [W] max	-5 COP	0 Capacity [W] min	0 Capacity [W] max	0 COP	5 Capacity [W] min	5 Capacity [W] max	5 COP
40	648	**3233**	1,38	789	**3785**	1,58	868	**4165**	1,59	1018	**4746**	1,79	1188	**5346**	2,01
38	665	**3270**	1,46	794	**3796**	1,59	939	**4362**	1,80	1098	**4957**	2,04	1283	**5593**	2,31
32	686	**3293**	1,54	832	**3847**	1,76	986	**4437**	2,02	1160	**5077**	2,32	1366	**5778**	2,68
25	755	**3541**	1,81	915	**4142**	2,09	1085	**4809**	2,43	1270	**5529**	2,83	1474	**6293**	3,33
15	1021	**4571**	3,14	1221	**5384**	3,76	1452	**6295**	5,64	1722	**7305**	5,64	2039	**8412**	7,17
5	1220	**5370**	4,64	1457	**6314**	5,71	1737	**7369**	7,25	1899	**7953**	7,25	2039	**8412**	7,17

Liquid receiver volume	8 liters	**MEPS [c]**	3,41
Weight	165 kg	**Annual Energy Consumption**	4590 kWh/year
Connections	Liquid / suction 1/2"	**Power Supply**	230 V / 1+N+PE / 50 Hz
Sound pressure [b]	day / night 40 / 37 dB(A)		

UMT T 067 MTDX

Ambient Temperature [°C]	Evaporation Temperature[°C] -15 Capacity [W] min	-15 Capacity [W] max	-15 COP	-10 Capacity [W] min	-10 Capacity [W] max	-10 COP	-5 Capacity [W] min	-5 Capacity [W] max	-5 COP	0 Capacity [W] min	0 Capacity [W] max	0 COP	5 Capacity [W] min	5 Capacity [W] max	5 COP
40	1038	**4753**	1,40	930	**5489**	1,57	1459	**6296**	1,75	1380	**7159**	1,96	1600	**6790**	2,18
38	1061	**4755**	1,45	955	**5504**	163	1485	**6325**	1,83	1414	**6856**	2,05	1681	**7820**	2,29
32	1094	**4722**	1,57	1086	**5508**	1,79	1320	**6385**	2,04	1580	**7328**	2,31	1866	**8383**	2,51
25	1001	**4904**	1,69	1221	**5790**	1,99	1470	**6764**	2,34	1748	**7820**	2,76	2053	**8951**	3,34
15	1479	**6466**	3,02	1779	**7638**	3,63	2121	**8969**	4,40	2509	**10470**	4,25	2945	**12149**	6,88
5	1825	**7592**	4,44	2175	**8943**	5,40	2356	**10491**	6,68	2777	**11411**	6,81	2945	**12149**	6,88

Liquid receiver volume	12 liters	**MEPS [c]**	3,28
Weight	165 kg	**Annual Energy Consumption**	10324 kWh/year
Connections	Liquid / suction 1/2"	**Power Supply**	230 V / 1+N+PE / 50 Hz
Sound pressure [b]	day / night 41 / 38 dB(A)		

UMT T 100 MTDX

Ambient Temperature [°C]	Evaporation Temperature[°C] -15 Capacity [W] min	-15 Capacity [W] max	-15 COP	-10 Capacity [W] min	-10 Capacity [W] max	-10 COP	-5 Capacity [W] min	-5 Capacity [W] max	-5 COP	0 Capacity [W] min	0 Capacity [W] max	0 COP	5 Capacity [W] min	5 Capacity [W] max	5 COP
40	1549	**7904**	1,56	1854	**8193**	1,57	2028	**9113**	1,57	2365	**10366**	1,75	2719	**11672**	1,94
38	1583	**7098**	1,45	1864	**8202**	1,58	2188	**9411**	1,77	2534	**10704**	1,98	2890	**12034**	2,18
32	1550	**7047**	1,53	1750	**8325**	1,73	2273	**9491**	1,97	2644	**10866**	2,25	3048	**12314**	2,52
25	1597	**7503**	1,76	1929	**8812**	2,04	2324	**10232**	2,35	2744	**11750**	2,71	3182	**13355**	3,12
15	2252	**9791**	3,04	2725	**11455**	3,60	3250	**13414**	4,29	3824	**15611**	5,16	4443	**18053**	6,26
5	2749	**11392**	4,44	3282	**13421**	5,36	3874	**15738**	6,57	4195	**17042**	6,48	4443	**18053**	6,26

Liquid receiver volume	12 liters	**MEPS [c]**	3,27
Weight	165 kg	**Annual Energy Consumption**	15634 kWh/year
Connections	Liquid / suction 5/8"	**Power Supply**	400 V / 3+N+PE / 50 Hz
Sound pressure [b]	day / night 42 / 39 dB(A)		

NOTES

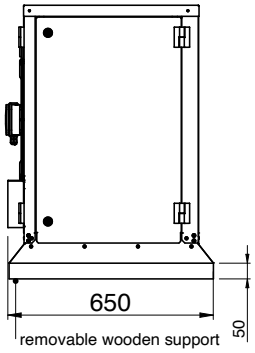
[a] Interstage SST variable from -5 °C to 0°C according to operating conditions. Inverter modulation from 25 - 100%, corresponding to 1500-6000 rpm

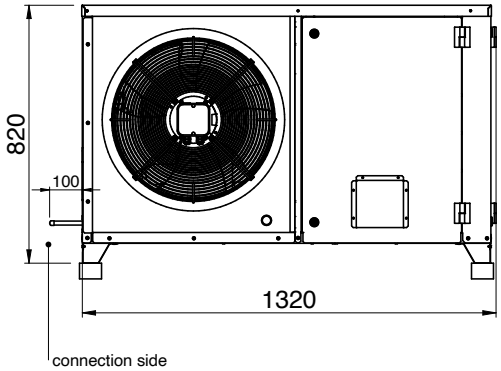
[b] based on free field area weed semi-spherical sound emission in 10m distance; tolerance ± 2 dB(A)

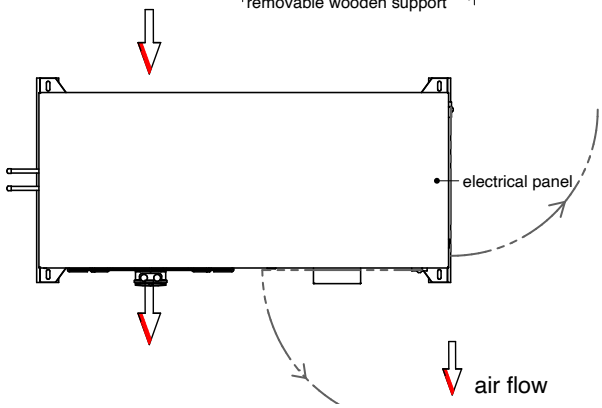
[c] Minimum Energy Performance Standards, calculated according to Ecodesign Directive EN 2009/125/EC

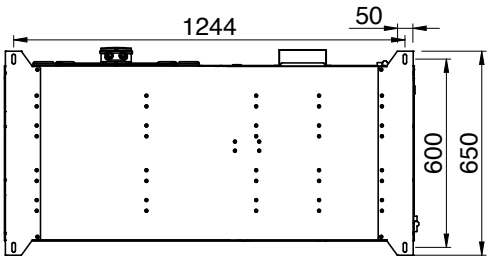
Dimensional Data

BTDX - MTDX
Standard

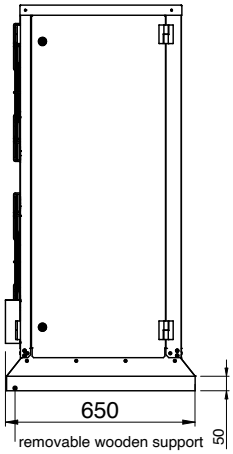


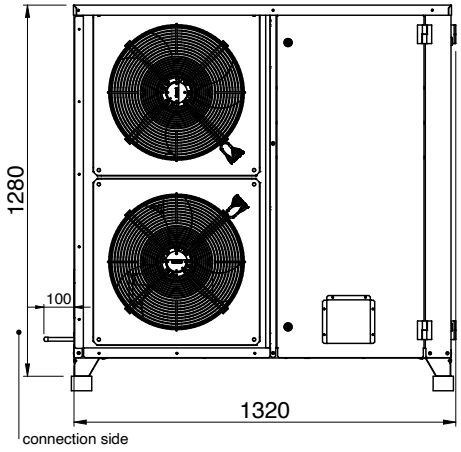


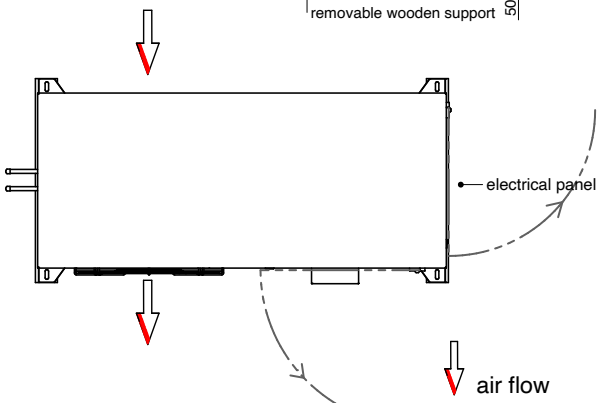


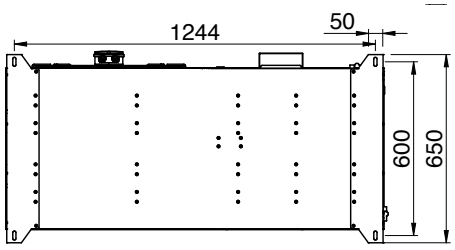


BTDX - MTDX
Low Noise



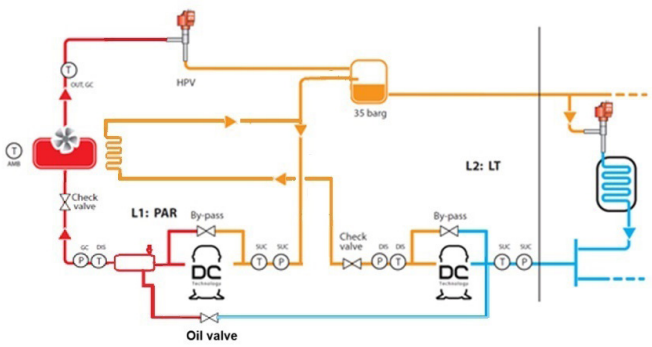




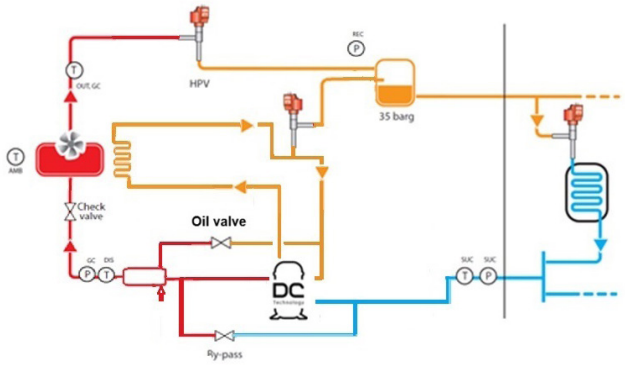


Unit Configuration

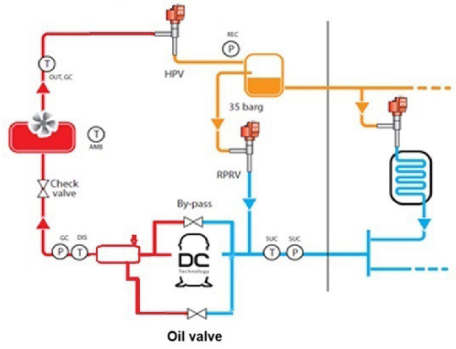
MODEL UMT T BTDX - 2 COMPRESSORS



MODEL UMT T BTDX
2 - STAGE COMPRESSOR

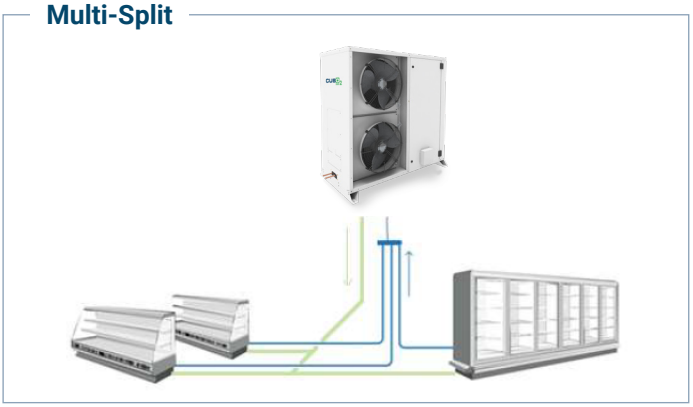


MODEL UMT T MTDX

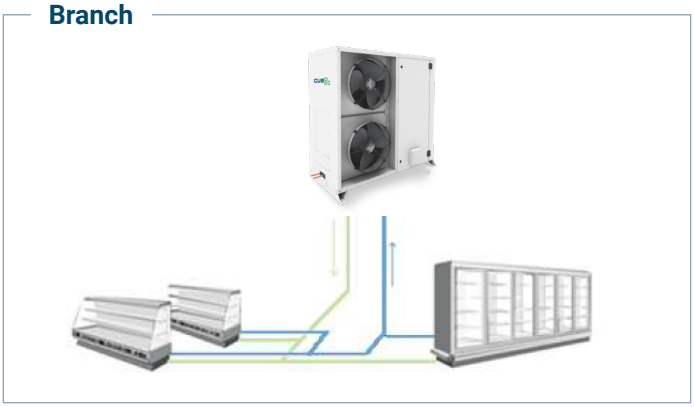


Installation Design

Multi-Split



Branch



Pipe Connections (Multi-Split or Branch)

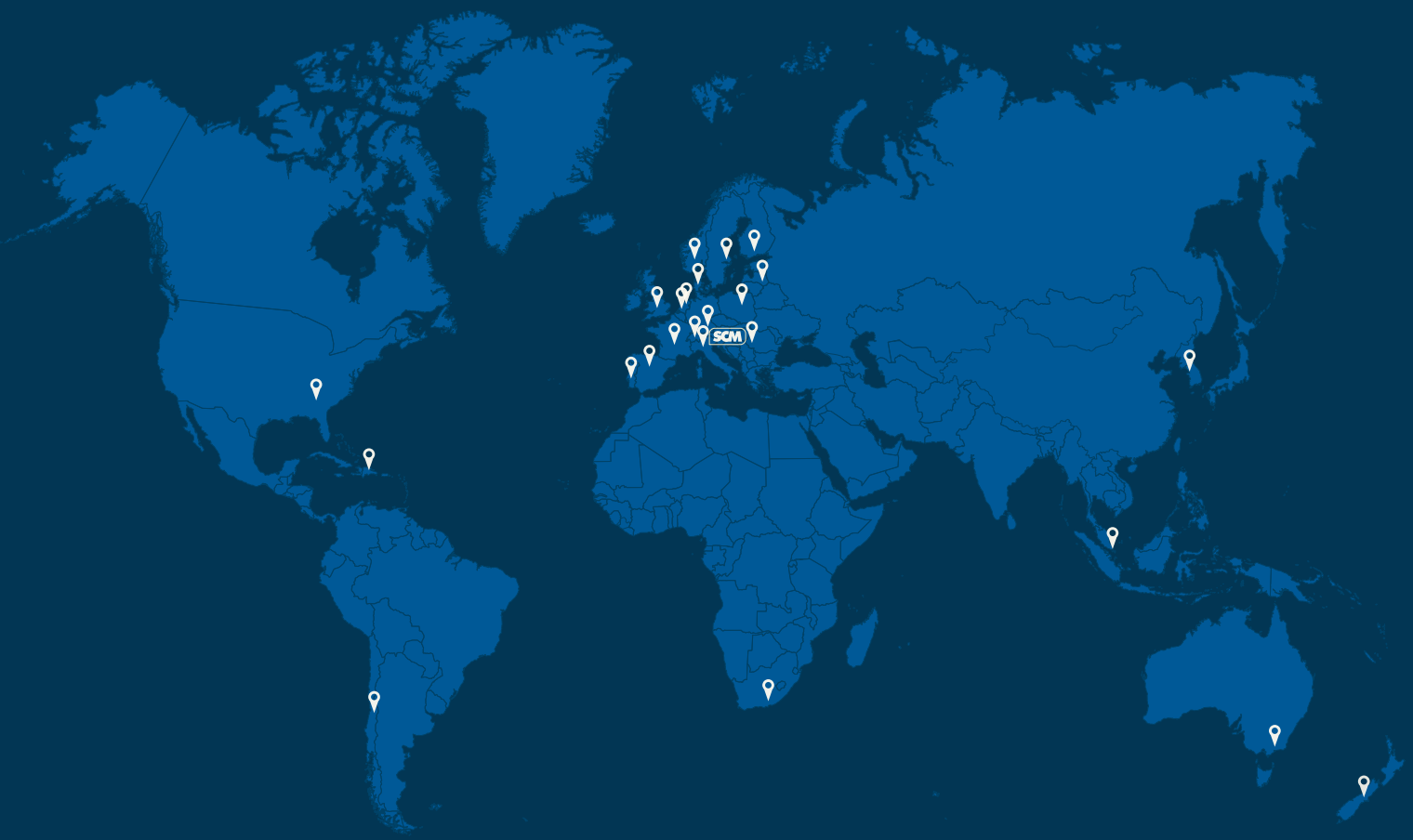
The connection between the Condensing Unit and more remote evaporators can be the same one used for Multi-Split or branch system.

The preferred one is the one is able to guarantee the highest gas velocity in the suction line (for a good oil return) with a low pressure drop.

For Multi-Split layout, the system requires a dedicated suction line for each evaporator that will be collected by a manifold installed close to the condensing unit.

Please refer to the example reported in the pictures.

- Liquid line must be properly sized to supply the farther evaporators (liquid velocity < 1 m/s is suggested).
- Suction line must be properly sized to have a good oil return with a low pressure drop (gas velocity min 5m/s).



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