ENG

SCM FRIGO

CUBO $_2$ SMART 2

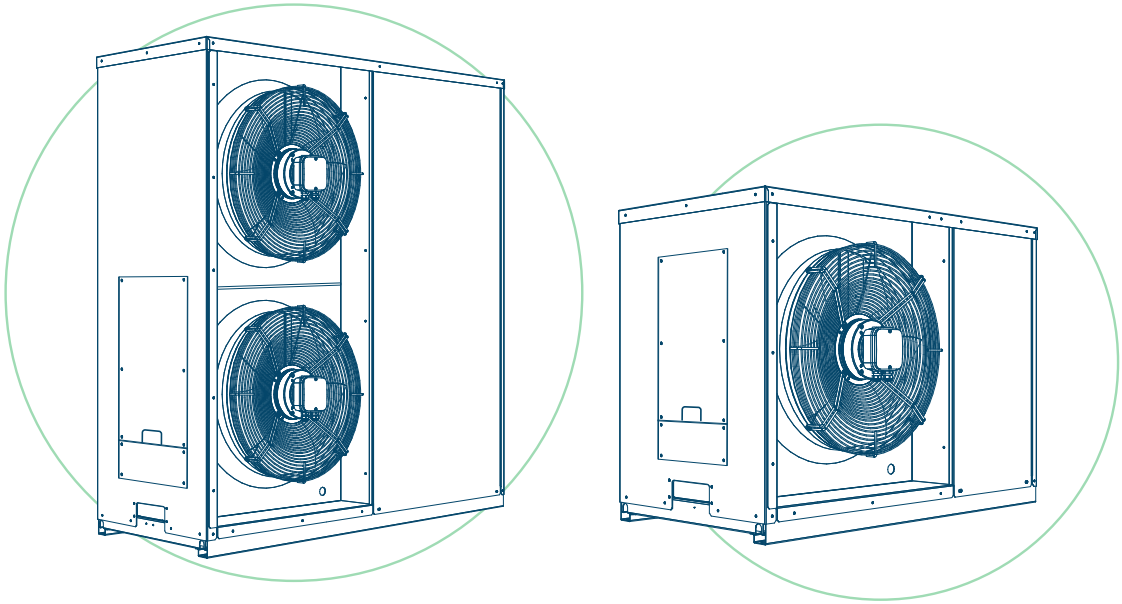
SUSTAINABLE COLD SOLUTIONS

Transcritical CO_2 ndensing units

ECOdesign Compliant

We know the art of achieving
a perfect temperature

BEIJER REF



Condensing unit for transcritical CO2 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

- CO2 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

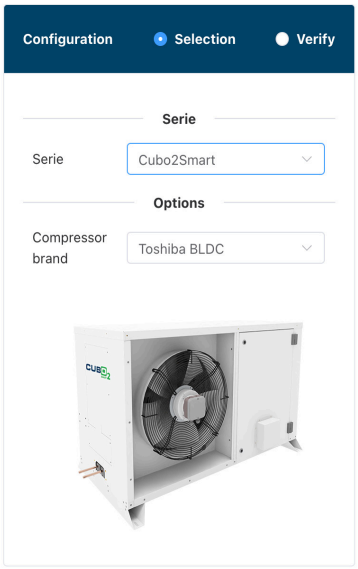
- Toshiba BLDC compressors
- Carel controller
- Inverter modulation for capacity control 25 - 100%
- Integrated gas cooler with EC fan
- Design pressure 130 bar (high pressure side) 80 bar (liquid line) 80 bar (suction line)
- Liquid receiver 12 liters
- K65 connections

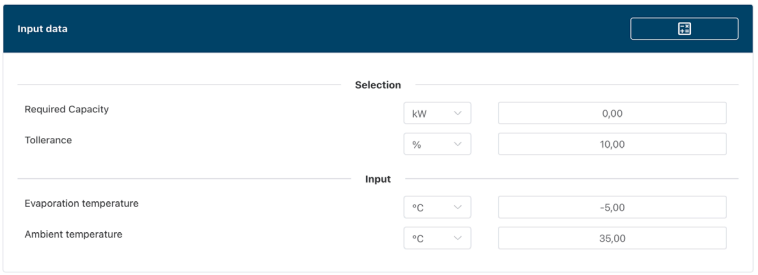
Accessories on Request

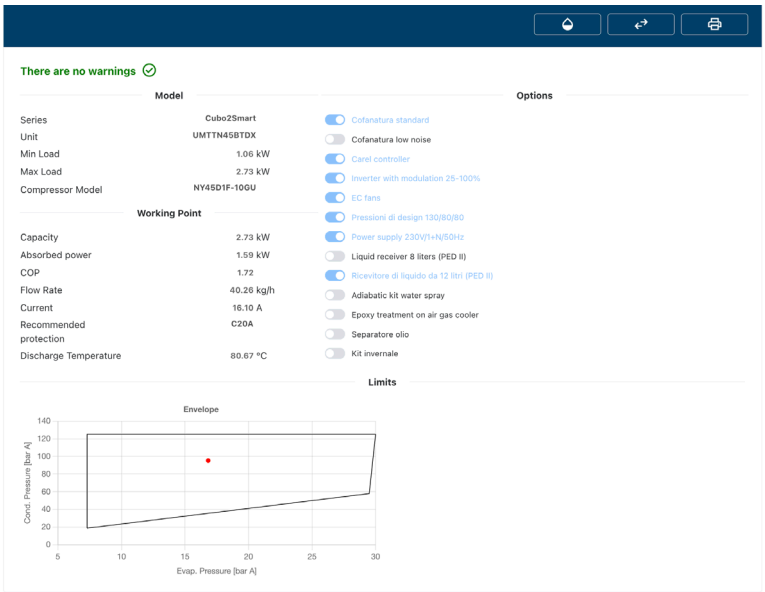
- Low noise frame (day operation 33 dB(A) @10m; night operation 30 dB(A))
- Oil management (oil separator + reservoir, oil level control, oil return solenoid valve)
- Winter kit (suggested for ambient temperature <-20°C)
- Epoxy or Electrofin gas cooler corrosion coil protection.
- Adiabatic Kit water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

Technical data Cubo$_2$ Smart [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]**	1,91
Weight	160 kg	**Annual Energy Consumption**	7898 kWh/year
Connections	Liquid / suction 1/2"	**Power Supply**	230 V / 1+N+PE / 50 Hz
Sound pressure [b]	Standard / Low noise 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]**	2,05
Weight	160 kg	**Annual Energy Consumption**	11501 kWh/year
Connections	Liquid / suction 1/2"	**Power Supply**	230 V / 1+N+PE / 50 Hz
Sound pressure [b]	Standard / Low noise 41,8 / 33,3 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**	1,18	1660	**7210**	1,41
38	950	**4380**	0,91	1190	**5320**	1,07	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**	2,50	1660	**7210**	2,79

Liquid receiver volume	12 liters	**MEPS [c]**	1,64
Weight	200 kg	**Annual Energy Consumption**	19869 kWh/year
Connections	Liquid / suction 1/2"	**Power Supply**	400 V / 3+N+PE / 50 Hz
Sound pressure [b]	Standard / Low noise 44,7 / 34,7 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**	1,18	2600	**10650**	1,41
38	1520	**6540**	0,96	1890	**7900**	1,09	2140	**8940**	1,18	2600	**10650**	1,41
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**	2,81	2600	**10650**	3,06

Liquid receiver volume	12 liters	**MEPS [c]**	2,86
Weight	200 kg	**Annual Energy Consumption**	26181 kWh/year
Connections	Liquid / suction 5/8"	**Power Supply**	400 V / 3+N+PE / 50 Hz
Sound pressure [b]	Standard / Low noise 44,7 / 34,7 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

Technical data Cubo$_2$ Smart [a]

MEDIUM TEMPERATURE

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	393	**1720**	1,24	388	**2080**	1,48	487	**2500**	1,75	600	**2960**	2,06	731	**3490**	2,42
38	331	**1880**	1,35	424	**2280**	1,61	533	**2730**	1,92	658	**3240**	2,26	801	**3820**	2,65
32	404	**2120**	1,74	509	**2560**	2,08	631	**3050**	2,48	773	**3620**	2,94	934	**4270**	3,47
25	451	**2270**	2,06	563	**2720**	2,47	694	**3250**	2,94	845	**3850**	3,49	1020	**4530**	4,14
15	608	**2770**	3,5	744	**3300**	4,21	902	**3920**	5,05	1080	**4630**	6,04	1290	**5440**	7,2
5	739	**3290**	4,65	900	**3910**	5,6	1090	**4640**	6,73	1300	**5480**	8,06	-	**-**	-

Liquid receiver volume	8 liters	**MEPS** [c]	3,41
Weight	159 kg	**Annual Energy Consumption**	4590 kWh/year
Connections	Liquid / suction 1/2"	**Power Supply**	230 V / 1+N+PE / 50 Hz
Sound pressure [b]	Standard / Low noise 40,3 / 33,4 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	517	**2880**	1,19	651	**3430**	1,41	807	**4050**	1,65	985	**4740**	1,93	1190	**5520**	2,24
38	565	**3150**	1,3	712	**3750**	1,54	882	**4430**	1,81	1080	**5190**	2,11	1300	**6050**	2,45
32	680	**3490**	1,68	844	**4140**	1,98	1030	**4880**	2,33	1250	**5720**	2,74	1500	**6670**	3,2
25	751	**3680**	1,98	925	**4360**	2,34	1130	**5130**	2,76	1360	**6020**	3,25	1620	**7030**	3,81
15	978	**4350**	3,36	1190	**5140**	4	1430	**6060**	4,76	1700	**7110**	5,64	2020	**8310**	6,67
5	1180	**5120**	4,47	1420	**6050**	5,34	1710	**7130**	6,36	2040	**8370**	7,57	-	**-**	-

Liquid receiver volume	8 liters	**MEPS** [c]	3,42
Weight	159 kg	**Annual Energy Consumption**	6945 kWh/year
Connections	Liquid / suction 1/2"	**Power Supply**	230 V / 1+N+PE / 50 Hz
Sound pressure [b]	Standard / Low noise 40,3 / 33,4 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	706	**3820**	1,08	903	**4640**	1,29	1130	**5550**	1,52	1380	**6590**	1,8	1680	**7760**	2,11
38	775	**4180**	1,18	987	**5070**	1,41	1230	**6080**	1,67	1520	**7220**	1,97	1840	**8510**	2,31
32	919	**4720**	1,52	1160	**5690**	1,81	1430	**6800**	2,16	1750	**8060**	2,56	2110	**9490**	3,02
25	1010	**5050**	1,79	1270	**6060**	2,15	1560	**7220**	2,56	1890	**8560**	3,04	2280	**10070**	3,6
15	1350	**6160**	3,05	1650	**7350**	3,67	2000	**8720**	4,40	2410	**10300**	5,26	2870	**12110**	6,26
5	1640	**7310**	4,05	2000	**8710**	4,88	2420	**10330**	5,86	2900	**12200**	7,02	-	**-**	-

Liquid receiver volume	12 liters	**MEPS** [c]	3,25
Weight	160 kg	**Annual Energy Consumption**	10778 kWh/year
Connections	Liquid / suction 1/2"	**Power Supply**	230 V / 1+N+PE / 50 Hz
Sound pressure [b]	Standard / Low noise 43,2/34,2 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	1170	**5840**	1,1	1470	**7030**	1,29	1820	**8360**	1,51	2220	**9870**	1,76	2660	**11560**	2,04
38	1280	**6390**	1,2	1610	**7680**	1,41	1990	**9150**	1,65	2430	**10810**	1,93	2920	**12670**	2,23
32	1510	**7170**	1,55	1880	**8580**	1,83	2300	**10180**	2,15	2780	**12010**	2,51	3340	**14080**	2,92
25	1660	**7630**	1,84	2040	**9100**	2,17	2490	**10780**	2,55	3000	**12710**	2,99	3590	**14890**	3,5
15	2150	**9180**	3,18	2610	**10890**	3,77	3150	**12870**	4,47	3,77	**15150**	5,29	4470	**17750**	6,25
5	2600	**10840**	4,27	3140	**12860**	5,08	3780	**15190**	6,04	4510	**17890**	7,17	-	**-**	-

Liquid receiver volume	12 liters	**MEPS** [c]	3,35
Weight	160 kg	**Annual Energy Consumption**	15746 kWh/year
Connections	Liquid / suction 5/8"	**Power Supply**	400 V / 3+N+PE / 50 Hz
Sound pressure [b]	Standard / Low noise 43,2/34,2 dB(A)		

NOTES

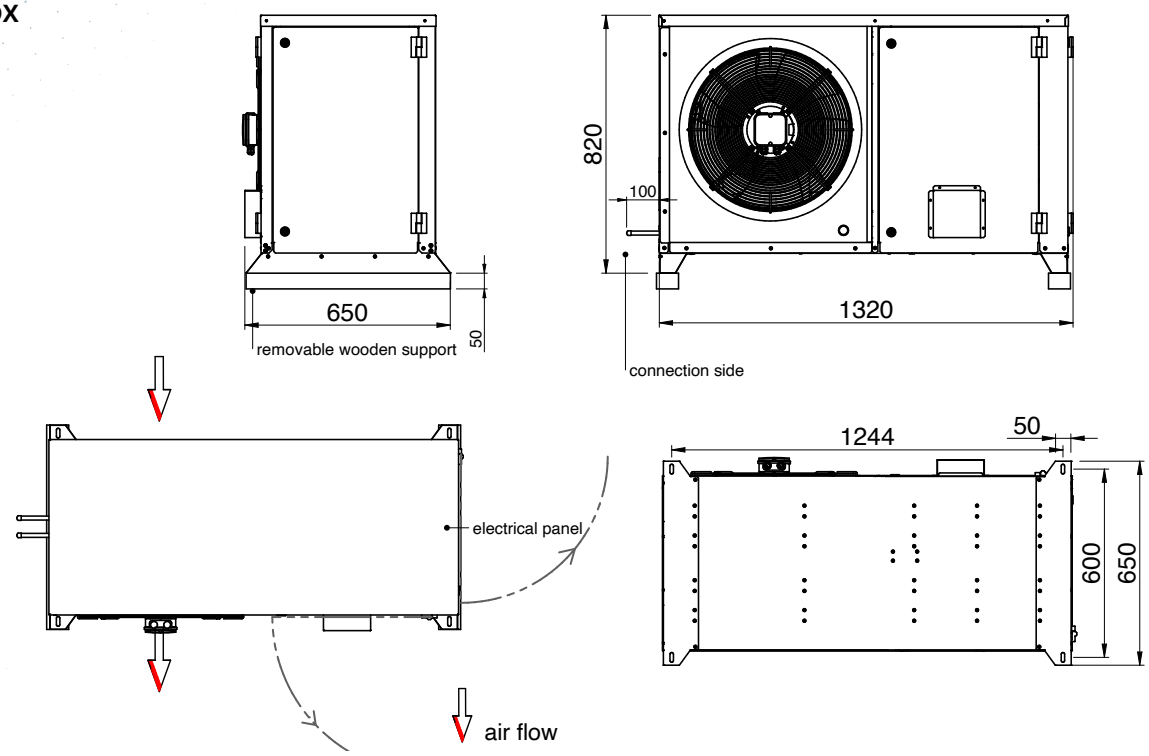
[a] Insterstage SST variable from -5 °C to 0°C according to operating conditions. Inverter modulation from 25 - 100%, corresponding to 1500-6000 rpm

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

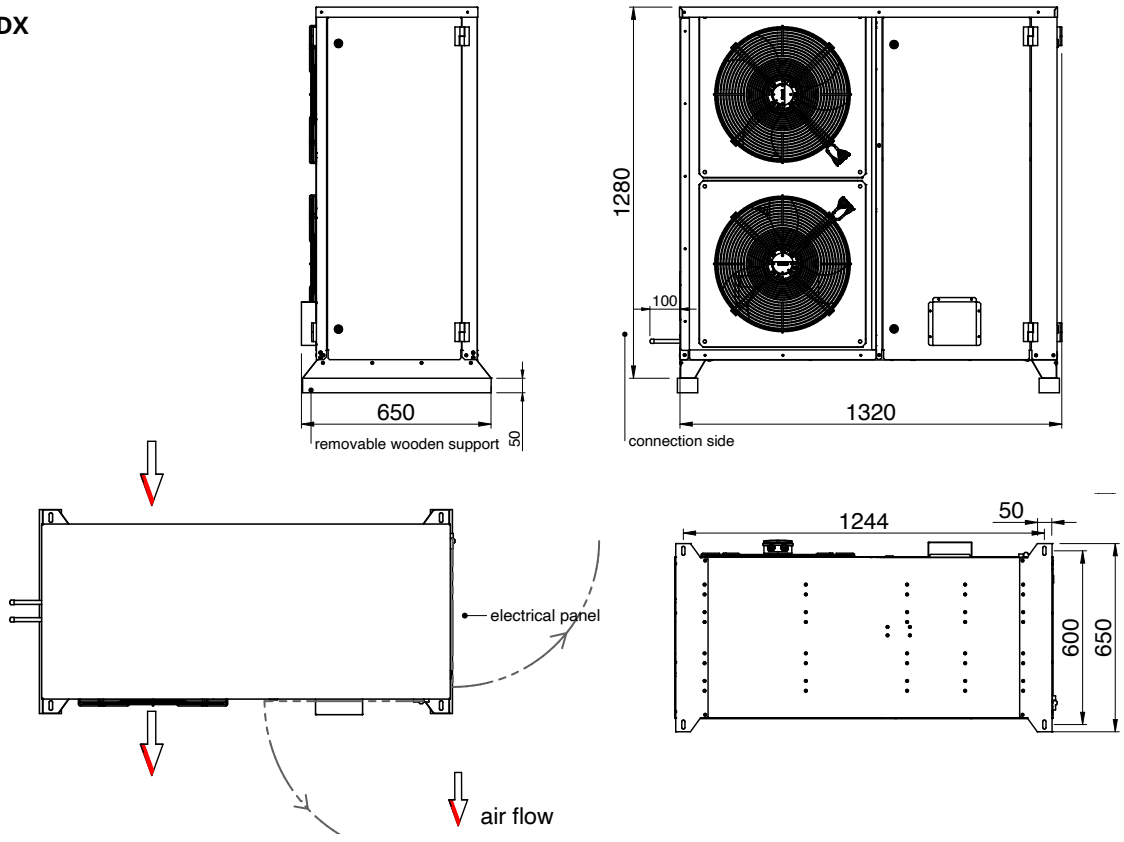
[c] Minimum Energy Performance Standards, calculated according to Ecodesign Directive EN 2009/125/EC

Dimensional Data

BTDX - MTDX
Standard

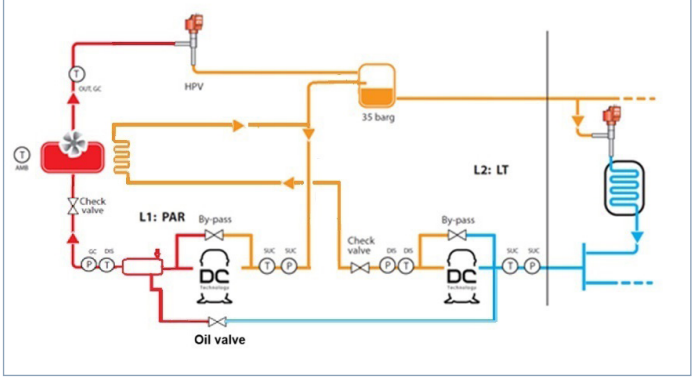


BTDX - MTDX
Low Noise

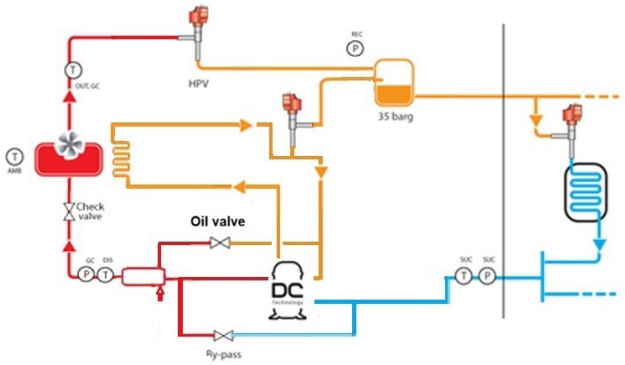


Unit Configuration

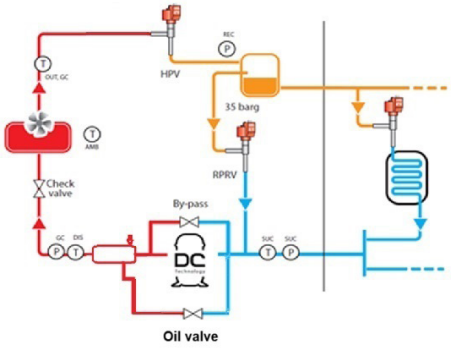
MODEL UMT T BTDX - 2 compressors



MODEL UMT T BTDX
2 - stage compressor



MODEL UMT T MTDX



Installation Design

Multi-Split

Branch

Pipe Connections (Multi-Split or Branch)

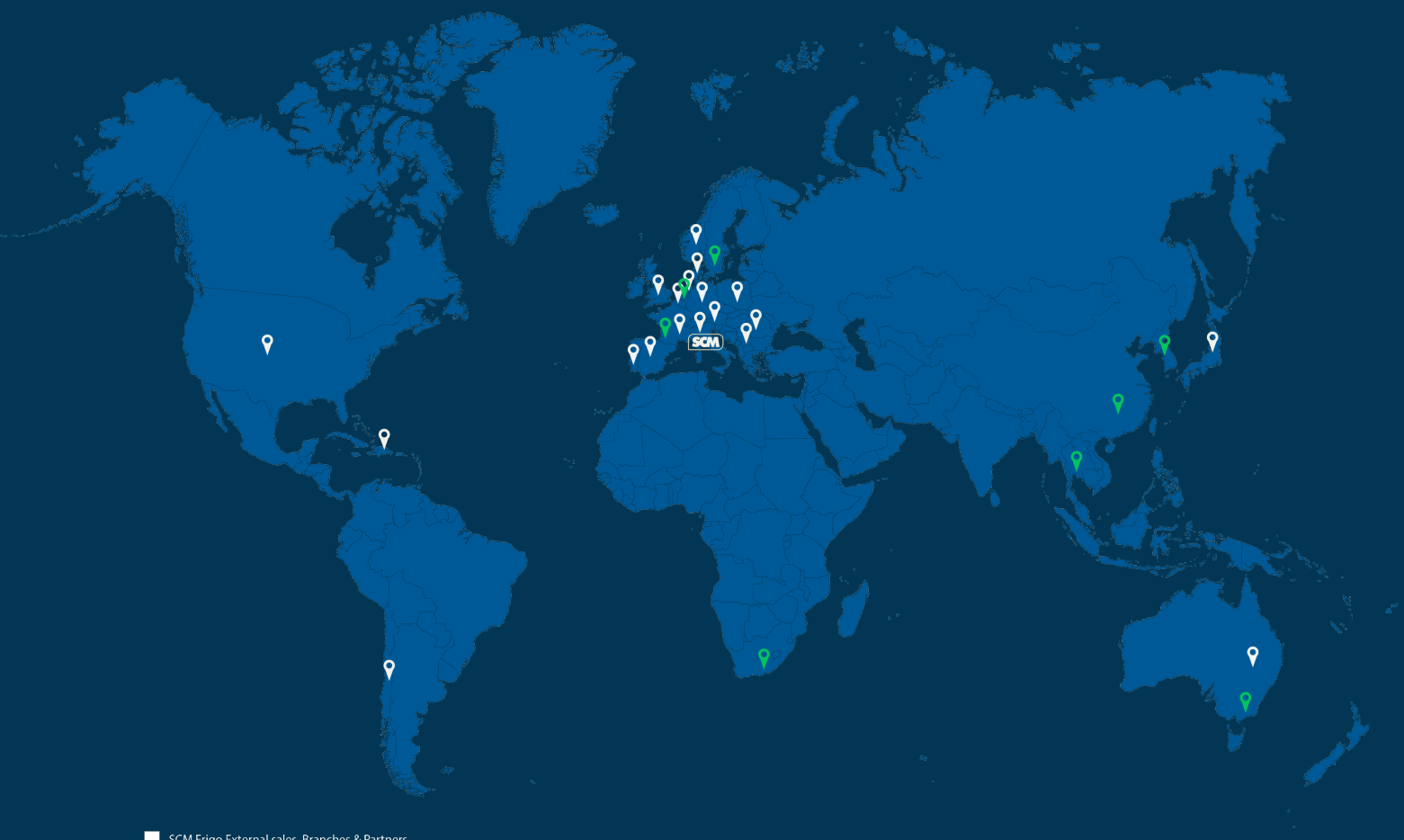
The connection between the Condensing Unit and more remote evaporators can be the same one used for Multi-Split or branch system.

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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