

CUBO₂ SMART

SCM FRIGO

Transcritical CO₂ndensing Units



CO₂
REFRIGERANT

Efficiency
EFFICIENT
SOLUTION

LOW NOISE

SMALL
FOOTPRINT

EASY
START-UP

DC
BRUSHLESS
ROTARY
COMPRESSOR

GAS
COOLER
EQUIPPED

BEIJER REF

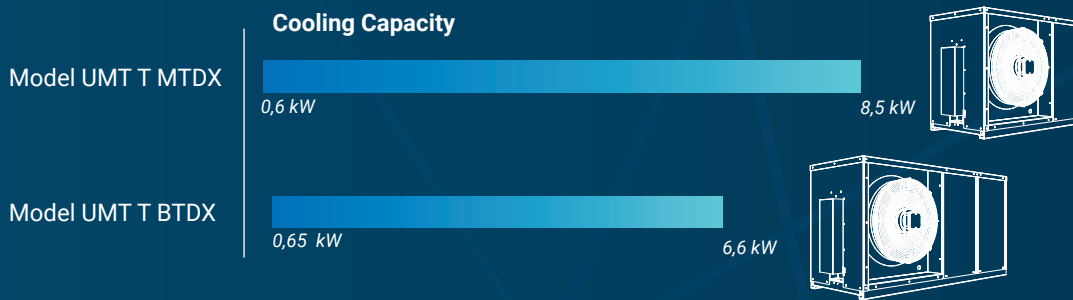
We know the art of achieving
a perfect temperature.

Download this brochure
on your device:



CO₂ Systems for medium and low temperature applications

Transcritical condensing units DX



Preliminary Data

MEDIUM TEMPERATURE

UMT T 030 MTDX

T amb [°C]	Evaporation Temperature [°C]														
	-15			-10			-5			0			5		
	Cooling Cap. [W]		COP	Cooling Cap. [W]		COP	Cooling Cap. [W]		COP	Cooling Cap. [W]		COP	Cooling Cap. [W]		COP
min	max	min		max	min		max	min		max	min		max	min	
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
20	553	2490	2,25	671	2944	2,67	804	3454	3,20	959	4029	3,88	1145	4678	4,78
MEPS	1,76 (according to Ecodesign Directive EN 2009/125/EC)								I Liquid receiver 2x2,4 liters						
V/Ph/Hz	230/1+N+PE/50								II Liquid receiver 8 liters						

UMT T 045MTDX

T amb [°C]	Evaporation Temperature [°C]														
	-15			-10			-5			0			5		
	Cooling Cap. [W]		COP	Cooling Cap. [W]		COP	Cooling Cap. [W]		COP	Cooling Cap. [W]		COP	Cooling Cap. [W]		COP
min	max	min		max	min		max	min		max	min		max	min	
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
20	836	3761	2,25	1013	4445	2,67	1214	5215	3,20	1449	6084	3,88	1729	7064	4,78
MEPS	1,76 (according to Ecodesign Directive EN 2009/125/EC)								I Liquid receiver 2x2,4 liters						
V/Ph/Hz	230/1+N+PE/50								II Liquid receiver 8 liters						

UMT T 067MTDX

T amb [°C]	Evaporation Temperature [°C]														
	-15			-10			-5			0			5		
	Cooling Cap. [W]		COP	Cooling Cap. [W]		COP	Cooling Cap. [W]		COP	Cooling Cap. [W]		COP	Cooling Cap. [W]		COP
min	max	min		max	min		max	min		max	min		max	min	
40	1038	4753	1,4	1242	5489	1,57	1459	6296	1,75	1690	7159	1,96	1822	8063	2,18
38	1061	4755	1,45	1266	5504	1,63	1485	6325	1,83	1721	7205	2,05	1975	8129	2,29
32	1094	4722	1,57	1307	5508	1,79	1541	6385	2,04	1796	7328	2,31	2042	8251	2,51
20	1375	5537	2,35	1647	6553	2,76	1952	7664	3,22	2291	8856	3,76	2581	9829	4,11
MEPS	3,44 (according to Ecodesign Directive EN 2009/125/EC)								I Liquid receiver 2x2,4 liters						
V/Ph/Hz	230/1+N+PE/50								II Liquid receiver 8 liters						

UMT T 100 MTDX

T amb [°C]	Evaporation Temperature [°C]														
	-15			-10			-5			0			5		
	Cooling Cap. [W]		COP	Cooling Cap. [W]		COP	Cooling Cap. [W]		COP	Cooling Cap. [W]		COP	Cooling Cap. [W]		COP
min	max	min		max	min		max	min		max	min		max	min	
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	1619	7047	1,53	1933	8211	1,73	2273	9491	1,97	2644	10866	2,25	3048	12314	2,52
20	1976	7997	2,22	2371	11096	3,05	2390	12834	3,52	3306	14670	4,05	3852	15064	4,22
MEPS	3,45 (according to Ecodesign Directive EN 2009/125/EC)								II Liquid receiver 8 liters						
V/Ph/Hz	400/3+N+PE/50														

**MTDX
Inverter
modulation**

from 25 to 100%
(1500 ---> 6000 rpm)

Dimensions/weight

mm 1150x620x805
kg 150

STANDARD LIQUID
RECEIVER

PED I
Liquid receiver 2x2,4
liters

OPTIONAL LIQUID
RECEIVER

PED II
Liquid receiver 8 liters

Refrigeration
connection

Suction inch 3/8"
(exc. UMTT 100: 1/2")
Liquid inch 3/8"

Sound Pressure

☀ Day Operation:
dB(A) 44
🌙 Night Operation:
dB(A) 35

(based on freefield area with
semi-spherical sound emission
in 10 m distance)

Design is compact and units are easy to install and maintain.
Units are equipped with gas cooler and electrical panel, tested and factory programmed for an easy start-up.

- Inverter modulation 25% - 100%
- EC fans
- K65 connections
- Design pressure:
120 bar (high pressure side)
80 bar (liquid line)
80 bar (suction)

OPTION ON REQUEST

- Water cooled gas cooler
- Adiabatic System
(suggested for ambient temperatures > +35°)

Preliminary Data

LOW TEMPERATURE

UMT T 030 BTDX

T amb [°C]	Evaporation Temperature [°C]											
	-35			-30			-25			-20		
	min	max	COP	min	max	COP	min	max	COP	min	max	COP
40	579	2315	1,20	704	2814	1,33	780	3119	1,44	890	3558	1,58
38	579	2315	1,25	704	2814	1,37	780	3119	1,49	890	3558	1,64
32	579	2315	1,40	704	2814	1,42	780	3119	1,55	890	3558	1,70
20	579	2315	1,98	704	2814	2,11	780	3119	2,30	890	3558	2,61
MEPS	2,32 (according to Ecodesign Directive EN 2009/125/EC)						II Liquid receiver 8 liters					
V/Ph/Hz	230/1+N+PE/50											

UMT T 045 BTDX

T amb [°C]	Evaporation Temperature [°C]											
	-35			-30			-25			-20		
	min	max	COP	min	max	COP	min	max	COP	min	max	COP
40	877	3507	1,20	1066	4263	1,33	1208	4830	1,47	1342	5369	1,59
38	877	3507	1,25	1066	4263	1,38	1208	4830	1,52	1342	5369	1,65
32	877	3507	1,40	1066	4263	1,43	1208	4830	1,57	1342	5369	1,71
20	877	3507	1,98	1066	4263	2,12	1208	4830	2,31	1342	5369	2,62
MEPS	2,32 (according to Ecodesign Directive EN 2009/125/EC)						II Liquid receiver 8 liters					
V/Ph/Hz	230/1+N+PE/50											

UMT T 067 BTDX

T amb [°C]	Evaporation Temperature [°C]											
	-35			-30			-25			-20		
	min	max	COP	min	max	COP	min	max	COP	min	max	COP
40	1307	5227	1,22	1554	6216	1,30	1725	6899	1,44	1886	7544	1,58
38	1307	5227	1,29	1554	6216	1,40	1725	6899	1,49	1886	7544	1,64
32	1307	5227	1,41	1554	6216	1,45	1725	6899	1,55	1886	7544	1,71
20	1307	5227	1,93	1554	6216	2,07	1725	6899	2,31	1886	7544	2,62
MEPS	2,26 (according to Ecodesign Directive EN 2009/125/EC)						II Liquid receiver 8 liters					
V/Ph/Hz	400/3+N+PE/50											

UMT T 100 BTDX

T amb [°C]	Evaporation Temperature [°C]											
	-35			-30			-25			-20		
	min	max	COP	min	max	COP	min	max	COP	min	max	COP
40	2019	8075	1,22	2297	9187	1,30	2513	10050	1,44	2705	10818	1,58
38	2019	8075	1,29	2297	9187	1,40	2513	10050	1,49	2705	10818	1,64
32	2019	8075	1,41	2297	9187	1,45	2513	10050	1,55	2705	10818	1,71
20	2019	8075	1,93	2297	9187	2,06	2513	10050	2,31	2705	10818	2,62
MEPS	2,26 (according to Ecodesign Directive EN 2009/125/EC)						II Liquid receiver 8 liters					
V/Ph/Hz	400/3+N+PE/50											

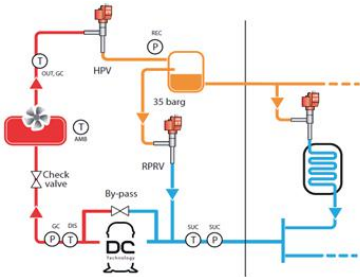
Note: Interstage SST variable from -10°C to 0°C

BTDX Inverter modulation	Dimensions/weight	STANDARD LIQUID RECEIVER	Refrigeration connection	Sound Pressure
from 25 to 100% (1500 --> 6000 rpm)	mm 1525x620x805 kg 176	PED II Liquid receiver 8 liters	Suction inch 3/8" Liquid inch 3/8"	☼ Day Operation: dB(A) 44 ☾ Night Operation: dB(A) 35

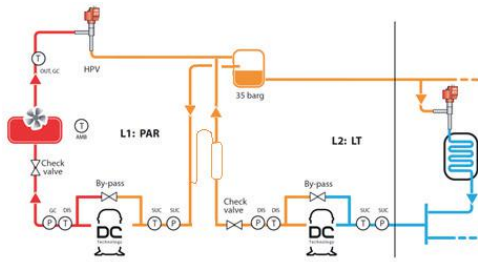
(based on freefield area with semi-spherical sound emission in 10 m distance)

Unit Configuration

Model UMT T MTDX



Model UMT T BTDX



- Management of one BLDC compressor
- Communication with cabinets (MPXPRO or ULTRACELLA)
- Management of two BLDC compressor (LT and parallel compressors)
- Communication with cabinets (MPXPRO or ULTRACELLA)
- Floating receiver pressure (-10 / 0 °C)

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 below 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).

Check the unit charge/receiver size

CUBO ₂ Smart/AQUA Refrigerant Charge Calculator V 4.0			
UMT MODEL	Cubo2 Smart		
Liquid Receiver model	8 L		
LIQUID LINE			
Receiver (100' (30.48 m))	0,00		
Receiver (150' (45.72 m))	0,00		
Receiver (200' (60.96 m))	0,00		
Sub Total Liquid	0,00		
SUCTION LINE			
Receiver (100' (30.48 m))	0,00		
Receiver (150' (45.72 m))	0,00		
Receiver (200' (60.96 m))	0,00		
Receiver (250' (76.20 m))	0,00		
Sub Total Suction	0,00		
FLUORE CARBON			
Receiver	2,40		
Sub Total CUBO	3,70		
EVAPORATORS			
Unit 1	0,00		
Unit 2	0,00		
Unit 3	0,00		
Sub Total Evaps	0,00		
Total Charge	kg	3,70	ok
Pumpdown from 620' (188,97 m)			
BE 1 7.5kg for 60' and 4.5 kg for 200' (60.96 m)	kg	2,40	ok
Pumpdown from 620' (188,97 m) Outlet 1			
Outlet 1 7.5kg for 60' and 4.5 kg for 200' (60.96 m) for both valves to be used	kg	2,40	ok
Additional Oil to Charge	ml	250	ok

In our website at the following link:
www.scmfrigo.com/en/products/co2-condensing-unit/



Cooling Capacity:
 MT from 0,6 kW up to 8,5 kW - BT from 0,65 kW up to 6,6 kW

CUBO₂ Smart is an high efficiency condensing unit for CO₂ transcritical application equipped with BLDC variable speed compressor. It is compact, easy to install and can directly communicate with the refrigerated units. Thanks to these features it is a very efficient (even at partial load) without any compromise with the food conservation.

DOWNLOAD BROCHURE

Click here to download >

CO₂ CHARGE CALCULATION V4.0

F.A.Q. Section

Visit **FAQ section** on the SCM Frigo website:



scmfrigo.com/en/faq/