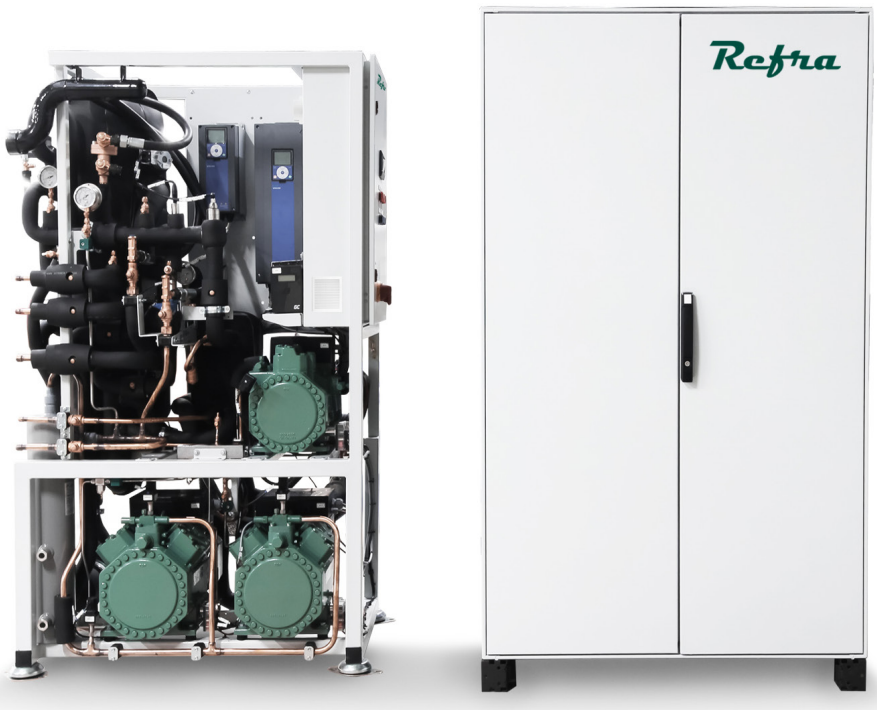


Refra

CO2 Light

Technical Parameters
Power Range Sheet
Additional Options

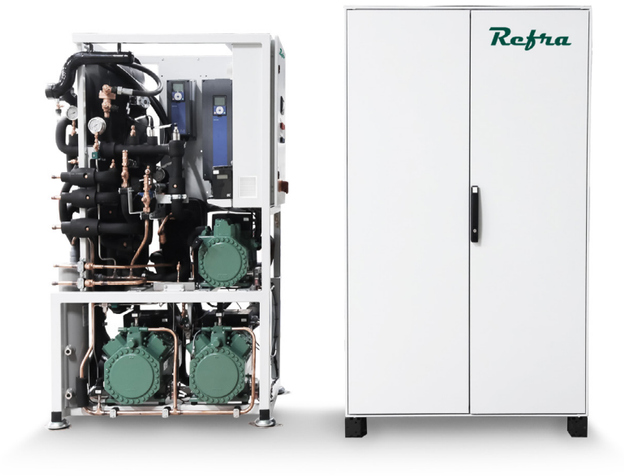
V.1

CO2 Systems

Natural refrigerants available! #R744

Choose propane or propylene and contribute to the environment!

CO2 Light



DESCRIPTION

CO2 Light is perfectly suitable for small food retail stores or gas stations because of its small scale. It can provide up to 53 kW of cooling capacity, split between medium temperature and low temperature refrigeration. These rack systems are designed with reliable refrigeration technologies that are well tested and proven in the market. Assembled with maximum of 3 compressors on a welded and powder coated frame with reliable insulation material to ensure proper unit protection and noise reduction.

CO2 Light can be manufactured with two different frame types - open type and closed type. The open type frame construction is designed to house the system indoors. It is a conveniently assembled refrigeration unit that can be easily brought in and installed inside the premises. If there is no room for the refrigeration system indoors, the CO2 Light model can be made with a special protective frame, which allows you to install the equipment outdoors and connect it to the premises. This type of system can be easily serviced as it is equipped with both front and side doors.

GREEN SOLUTIONS | This unit is a part of Refra's environmentally friendly product group, as it is made using CO2 refrigerant. Such low GWP solutions are designed to have better efficiencies and capacities, as well as less environmental damage.

AVAILABLE SYSTEMS:

CO2 transcritical rack MT 2x0
CO2 transcritical booster MT+LT 2x1

STANDARD EQUIPMENT:

Open type welded, powder coated frame;
Anti-vibration legs;
Carel controllers;
Reciprocating Bitzer compressors;
Frequency inverters on lead compressor;
Low level liquid switch;
Filters (strainers);
Filter (drier) on LL (liquid line);
75L Liquid receiver;
Safety valves;
Manometers;

CONDITIONAL EQUIPMENT:

Internal heat exchanger, if required by conditions;
Liquid injection with AKV valve, only in booster systems.

Technical Parameters

CALCULATIONS ARE MADE FOR BASIC UNITS WITHOUT ADDITIONAL OPTIONS

Model		CL 140	CL 204	CL 274	CL 422	CL 530
Standard version						
Refrigerant	Type	R744				
Maximum MT capacity	kW	14	20,4	27,4	42,2	53
Number of MT compressors	n	2	2	2	2	2
Receiver volume	L	75	75	75	75	75
Design pressure						
High pressure	bar	120	120	120	120	120
Receiver pressure	bar	80	80	80	80	80
MT suction pressure	bar	80/60/52/45	80/60/52/45	80/60/52/45	80/60/52/45	80/60/52/45
LT suction pressure	bar	80/60/30	80/60/30	80/60/30	80/60/30	80/60/30
Sound pressure level in 10m	dB	45	45	45	52	52
Power supply						
Max. power consumption	A	30,2	41,2	49,8	70	85,2
Open frame dimensions						
Length	mm	1090	1090	1090	1090	1090
Width	mm	670	670	670	670	670
Height	mm	1845	1845	1845	1845	1845
Operating weight	kg	800	800	850	920	940

TECHNICAL PARAMETERS OF ADDITIONAL OPTIONS

Enclosed frame dimensions						
Length	mm	1200	1200	1200	1200	1200
Width	mm	800	800	800	800	800
Height	mm	2120	2120	2120	2120	2120
Operating weight	kg	920	920	970	1040	1060
Heat recovery module 30 plates						
10-60 °C	kW	12	16	21	29	34
25-45 °C	kW	11	15	20	28	33
Heat recovery module 50 plates						
10-60 °C	kW	15	21	27	38	45
25-45 °C	kW	14	19	25	36	43

*Ambient temperature +35 °C, Gas Cooler outlet +37 °C, Evaporating temperature MT/LT -10/-30 °C.
*Sound pressure level at a distance of 10m in the free field and at the extended point, tolerance +/-2dB(A).
*Heat recovery simulation based on 60% mass flow, 110 °C, 80 bar. Capacity may vary with actual compressor pack.

Power Range Sheet | CO2 Light

Technical data for power selection | CO2 Light

LT Capacity kW		-10°C MT Capacity kW*			
-30	Model	32°C	33°C	34°C	35°C
0 kW	CL 140	15,9	15,5	15,0	14,7
0 kW	CL 204	23,0	22,5	21,9	21,4
0 kW	CL 274	31,2	30,4	29,5	28,8
0 kW	CL 422	47,3	46,2	45,1	44,1
0 kW	CL 530	59,8	58,4	56,9	55,6
4,2 kW	CL 140	10,9	10,5	10,1	9,7
4,2 kW	CL 204	18,1	17,5	16,9	16,3
4,2 kW	CL 274	26,3	25,4	24,6	23,8
4,2 kW	CL 422	42,4	41,2	40,1	39,0
4,2 kW	CL 530	54,8	53,3	51,8	50,4
6,7 kW	CL 204	15,2	14,6	14,0	13,5
6,7 kW	CL 274	23,3	22,5	21,7	20,9
6,7 kW	CL 422	39,5	38,3	37,2	36,1
6,7 kW	CL 530	51,9	50,4	49,0	47,6
9,1 kW	CL 204	12,3	11,8	11,2	10,7
9,1 kW	CL 274	20,4	19,6	18,8	18,0
9,1 kW	CL 422	36,5	35,4	34,2	33,2
9,1 kW	CL 530	49,0	47,5	46,1	44,7
11,9 kW	CL 274	17,4	16,5	15,8	15,0
11,9 kW	CL 422	33,4	32,2	31,1	30,1
11,9 kW	CL 530	45,9	44,4	43,0	41,6
14 kW	CL 422	30,9	29,7	28,6	27,6
14 kW	CL 530	43,4	41,9	40,5	39,1
17,8 kW	CL 422	26,6	25,4	24,4	23,3
17,8 kW	CL 530	39,0	37,6	36,2	34,8

*Data depends on the outlet temperature of the gas cooler kW.

REFRIGERATION
Refra®
Power Range Sheet | CO2 Light

LT Capacity kW		-10°C MT Capacity kW*			
-30	Model	36°C	37°C	38°C	40°C
0 kW	CL 140	14,3	14,0	13,7	13,0
0 kW	CL 204	20,9	20,4	19,9	18,9
0 kW	CL 274	28,1	27,4	26,7	25,4
0 kW	CL 422	43,1	42,2	41,2	39,3
0 kW	CL 530	54,3	53,0	51,9	49,5
4,2 kW	CL 140	9,4	9,0	8,7	x
4,2 kW	CL 204	15,8	15,3	14,8	13,9
4,2 kW	CL 274	23,1	22,4	21,6	20,3
4,2 kW	CL 422	37,9	36,9	35,9	34,1
4,2 kW	CL 530	49,1	47,7	46,5	44,2
6,7 kW	CL 204	13,0	12,5	12,0	x
6,7 kW	CL 274	20,2	19,5	18,8	x
6,7 kW	CL 422	35,1	34,1	33,1	31,2
6,7 kW	CL 530	46,2	44,9	43,6	41,2
9,1 kW	CL 204	10,1	9,7	x	x
9,1 kW	CL 274	17,3	16,6	15,9	x
9,1 kW	CL 422	32,2	31,2	30,2	28,4
9,1 kW	CL 530	43,4	42,1	40,8	38,4
11,9 kW	CL 274	14,3	13,5	x	x
11,9 kW	CL 422	29,0	28,1	27,1	25,3
11,9 kW	CL 530	40,3	39,0	37,8	35,3
14 kW	CL 422	26,6	25,6	24,6	22,8
14 kW	CL 530	37,8	36,5	35,3	32,9
17,8 kW	CL 422	22,3	21,3	20,4	x
17,8 kW	CL 530	33,5	32,2	31,0	28,6

*Data depends on the outlet temperature of the gas cooler kW.

Additional Options

AVAILABLE ADDITIONAL OPTIONS FOR CO2 LIGHT

LT SL Compressor

SL compressor series offer improved energy efficiency and optimal performance. In addition, the application limits are pushed to a higher condensing temperature, whilst the admissible pressure load is expanded on the high and low pressure side (53/30 bar).

LT ME Compressor

ME compressor series combine high standstill pressures, high efficiency, smooth running and high reliability in combination with the CO2 refrigerant (100/100 bar).

MT Compressor with LSPM

Offers enhanced efficiency and reliable performance of transcritical CO2 systems. Equipped with advanced Line-Start Permanent-Magnet (LSPM) technology that fully exploits the high motor efficiency and low heat input into the refrigerant, this reciprocating compressor delivers efficient performance and 14% higher SEPR.

Wurm Animus controller

Monitors and regulates the temperature of refrigeration system providing advanced features such as energy management, remote monitoring, and data logging. This allows to optimize performance, reduce energy consumption, and troubleshoot issues.

Danfoss MiniPack controller

AK-PC 572 MiniPack controller provides a reliable, compact and cost-effective set of solutions for CO2 systems. All essential functionality comes with a with a pre-configured wizard, optimized for the fast and simple setup of CO2 systems, resulting in reduced complexity and ease of use.

Eliwell EWCM controller

EWCM 9000 PRO (HF) controller is designed for temperature and humidity control applications. Advanced features and flexible programming options allow precise regulation and monitoring of environmental conditions, thus helping identify issues and maintain optimal operation of CO2 systems.

Energy meter kit

Measures the electrical energy consumption of the compressor and other electrical components in a refrigeration system. It provides valuable data on the system's operating efficiency and can help identify opportunities for energy savings.

High level liquid switch

Designed to detect the liquid level of CO2 refrigerant to help maintain proper system operation. The switch works by using a float that rises and falls with the liquid level and sends a signal to a control system, when the level reaches a certain point.

Additional Options

AVAILABLE ADDITIONAL OPTIONS FOR CO2 LIGHT

Enclosed AB frame

Galvanized steel frame, with epoxy-polyester powder coating and reliable insulation material protects the refrigeration system and reduces noise levels. Two access points at the front and from the side enables fast and convenient service while additional, elongated legs provide anti-vibration features and can be mounted by the customer on demand.

Heat recovery module

Consisting of a heat exchanger, on/off three-way valve and heat temperature sensors the module efficiently captures and utilizes waste heat from a refrigeration system, maximizing energy efficiency by recovering and repurposing waste heat, reducing energy consumption and promoting sustainability.

Safety Valve Collector

Helps to protect the system from overpressure and ensures safe operation by collecting the discharge from multiple safety relief valves and routes it to a safe location, preventing damage to the system and ensuring safe venting of refrigerant.

Gas Cooler

Wide capacity range gas cooler series, created for transcritical CO2 systems with high pressure. Available heat capacity is up to 500 kW upon nominal conditions (when Tin is 115°C, Tout is 33°C and Tamb is 35°C and pressure is 91,7 bar). Sound pressure level is <=45 dB(A) at 10 m.

HT Discharge Line Insulation

Additional protection for the discharge line and work safety. The insulation reduces the risk of corrosion under insulation (CUI) and has a built-in UV-resistance for long service life. It is a flexible closed-cell elastomeric foam insulation for use in high-temperature applications of up to 150°C.

UD Full Unit Insulation

Flexible technical insulation material with fire class BL-s1,d0 that exhibits 10 times less smoke in a fire than a standard elastomeric foam. Because of its low thermal conductivity and high resistance to water vapour diffusion, it ensures reliable condensation control and high energy savings in the long-term.

Varipack

Intelligent frequency inverter that controls AC motors efficiently and intelligently, allowing for precise speed regulation.

Register the Varipack product code along with the Bitzer compressor code and get a 2-year compressor warranty! https://bit.ly/BitzerWarranty

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About us

Launched in 1994, Refra is a well-known manufacturer of refrigeration equipment in Europe today. Distinguished by a highly complex and unique offer of refrigeration products, the company can design and manufacture non-standard products, fully customized and completed according to customer requirements.

During the company's 20 years of operation, the company's employees can offer impeccable dedication to customers, the most efficient solutions and the highest quality equipment. Refra has projects throughout Europe, Scandinavia and the Middle East.

Visit our website and browse 80+ product catalogue

R744

Refra, like other progressive businesses, is working to help reduce pollution in the world, so it is paying more and more attention to natural refrigerants. Our green systems are actively replacing old ones with restricted refrigerants and saving our customers a lot of resources every year.

We can make it simple