

CO₂-evaporation employing heat of environmental air by CALDYN-evaporator CL

Applications

Evaporation of liquid CO₂ in the

- drinks industry
- breweries
- food industry
- inerting of silos and foundries

Main Advantages

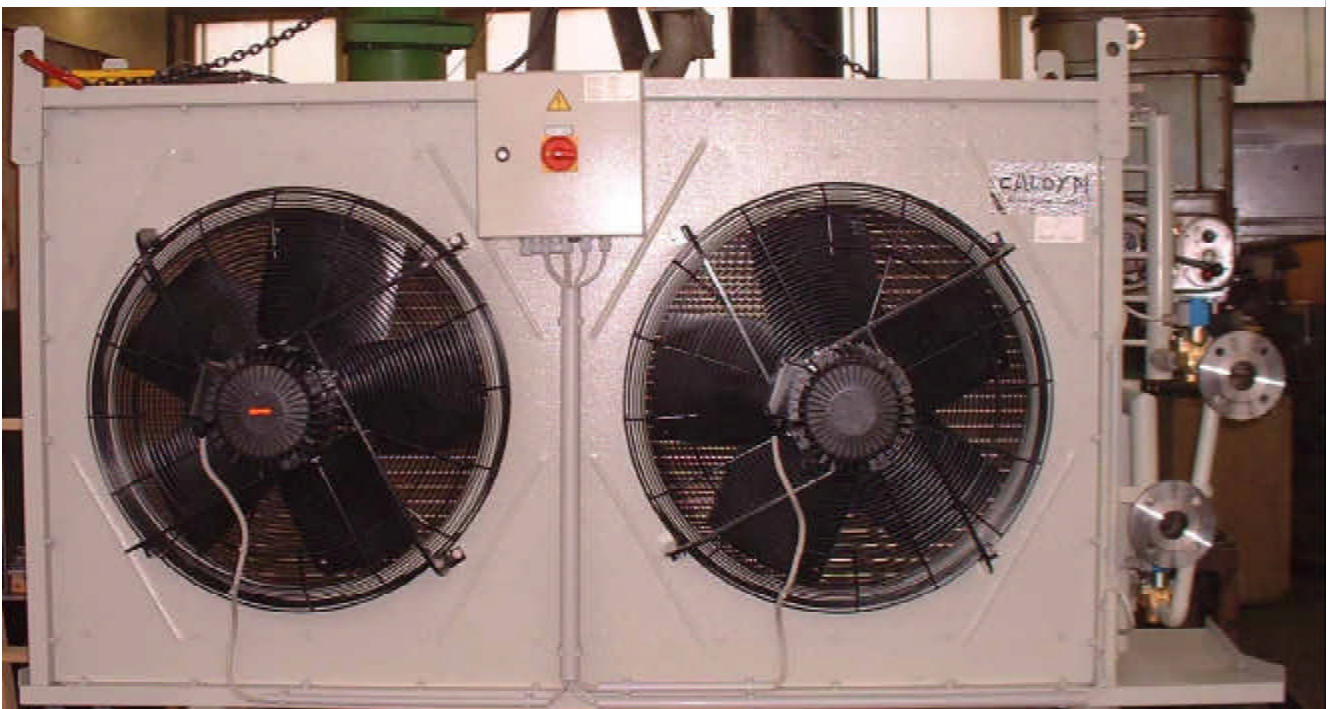
- 97 % energy saving
- short pay-back period
- easy modifying of existing plants
- automatic operation
- in general no inspection or supervision duty
- long operational period

Description of the system

Mostly the evaporation temperature of CO₂ is lower than the ambient temperature. Hence it is practical to use the energy of the environmental air for the evaporation. CALDYN evaporator CL can be used with any air temperatures and will be delivered with automatical defrosting. The only energy consumption of this evaporator at temperatures higher than +5°C is for the blowers for air flow through the evaporator.

Liquid carbon dioxide is taken from a tank, completely evaporated in the evaporator and fed to the point of use. In order to ensure safe defrosting of the evaporator, two units connected are operated in parallel. The units are switched over at specific intervals using a time switch. While one unit is in operation, the other one is being defrosted. The air blowers remain in continuous operation. For safeguarding the CO₂-outlet temperature, CALDYN offers the installation of a temperature switch.

In order to run the evaporator CL through the whole year it should be installed inside a building. When erected outside, the availability through the year can be achieved by an additional CO₂-evaporator or an air preheater.



Technical Datasheet

	Design Data				Design: The CALDYN-evaporator CL can be manufactured of CU-tubes and AL-fins or of stainless steel tubes and gold laquer fins. The stainless steel design is resistant against corrosion.								
	N	A	B	C									
air temp.	+ 10° C	+ 10° C	+ 10° C	+ 10° C									
CO ₂ -outlet temp.	- 20° C	+/- 0° C	- 10° C	+/- 0° C									
CO ₂ -pressure	15 bar abs	15 bar abs	20 bar abs	20 bar abs									
										Dimensions			
	CO ₂ -flow rate N	CO ₂ -flow rate A	CO ₂ -flow rate B	CO ₂ -flow rate C	Evaporation capacity	Number of blowers	Blower power supply	Volume of sound	Weight	B	T	H	Flange
								L _w					PN 40
Typ CL	kg/h	kg/h	kg/h	kg/h	kW		kW	dB(A)	kg	mm	mm	mm	DN
80	80	57	61	51	7,2	1	0,11	72	40	900	500	750	15
81	100	80	84	70	9	1	0,11	72	45	1000	500	750	15
82	150	123	124	107	13,5	1	0,5	77	60	1000	550	900	15
83	200	157	156	136	18	1	0,5	77	65	1200	550	900	20
84	250	200	198	173	22,5	1	0,5	77	80	1400	550	900	20
85	300	246	249	216	27	2	1	80	100	1800	550	900	20
86	400	313	311	273	36	2	1	80	120	2100	550	900	25
87	500	400	396	346	45	2	1	80	140	2400	550	900	25
88	600	450	465	400	54	3	1,5	81,5	170	3000	550	900	25
89	750	625	600	540	67,5	3	1,5	81,5	200	3400	550	900	32
90	1000	780	840	690	90	2	4,4	93,5	300	2500	1000	1350	32
91	1300	1020	1030	890	117	2	4,4	93,5	320	2500	1000	1350	40
92	1500	1320	1250	1130	135	2	4,4	93,5	370	2500	1000	1350	40
93	2000	1620	1570	1400	180	3	6,6	95	470	3500	1000	1350	50
94	2300	1930	1860	1660	207	3	6,6	95	550	3500	1000	1350	50
95	3000	2400	2330	2080	270	4	8,8	96,5	720	4500	1000	1350	65

References

CALDYN supplied CO₂ evaporators to companies such as:



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