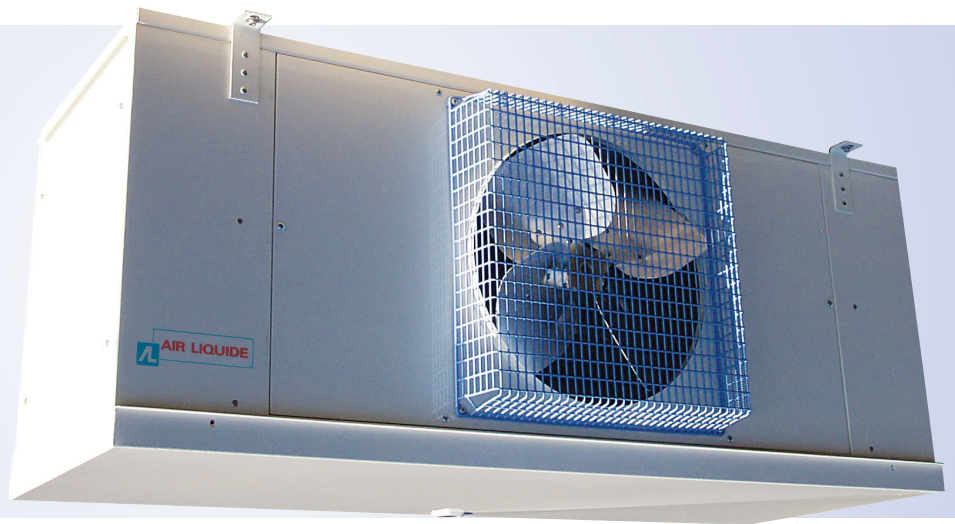
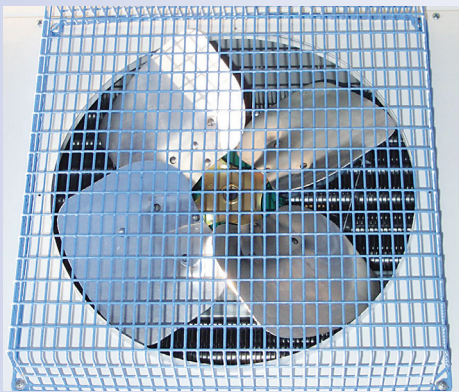


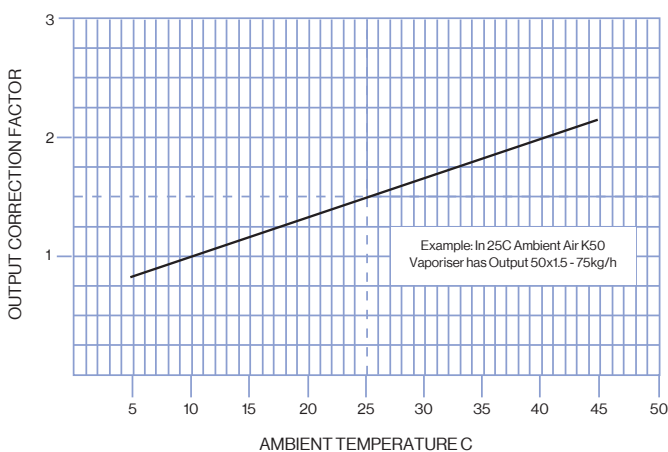
# Ambient Vaporisers for CO<sub>2</sub>



Ambient vaporisers have been developed so that low grade heat sources may be used to vaporise liquid CO<sub>2</sub> from bulk storage vessels. Typical waste heat sources which may be used include ambient air in boiler houses, air exchange from occupied buildings, heat producing processes and outside ambient air, provided it is normally above 5°C.

Vaporisation capacities are available between 50 kg/h and 750 kg/h at 10°C ambient air temperature.

At higher ambient temperatures the flow rate would be increased - see graph.



## Description

Each ambient vaporiser consists of two units – the heat exchanger assembly and the electrical control box. The heat exchanger element consists of finned copper tubing to maximise heat transfer, designed and tested to the maximum bulk liquid CO<sub>2</sub> storage vessel operating pressure of 24 bar.

The separate electrical control unit is usually wall mounted adjacent to the heat exchanger assembly.

Each of the two heat exchangers is controlled by a solenoid valve on the inlet. Only one exchanger vaporises CO<sub>2</sub> at any one time allowing the other to defrost for maximum efficiency. The switching time is controlled by a timer, enabling the vaporiser to operate 24 hours a day.

The whole assembly is enclosed in a galvanised steel cover with powder coated paint finish. Detachable end covers give easy access to the control valves and electrical connections. A rigidised aluminium drain tray collects condensate for piping away.

Defrost heaters are available as an option to allow operation of the vaporiser at low temperatures.

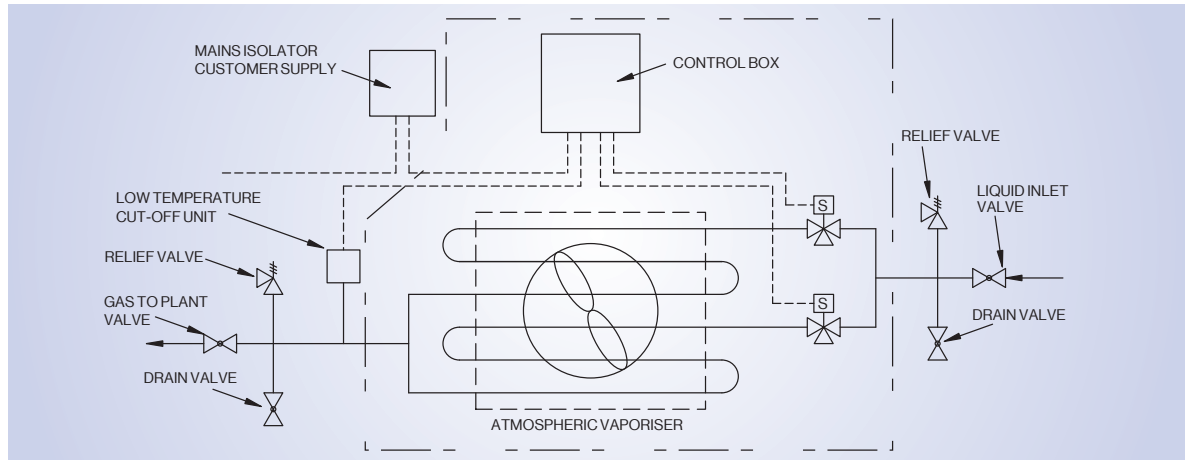
The heat exchanger assemblies can either be suspended from the ceiling, mounted on a framework, or floor standing using optional legs (25000031 or 25000032 for Model L700).

# Overloading

A low temperature cut-off control unit should always be installed with the vaporiser to safeguard downstream equipment from the effects of liquid CO<sub>2</sub> carry-over. The unit isolates the flow of CO<sub>2</sub> automatically and so prevents

freezing of the vaporiser or damage to reducing valves or process plant. A pressure relief device must be fitted to protect the vaporiser against over-pressure.

## Layout



## Specification

Model	K50	K150	L300	L500	L700
Part Number	22000029	22000031	22000033	22000035	25000021
Model	K50L defrost	K150L defrost	L300L defrost	L500L defrost	L700L defrost
Part Number	22000028	22000030	22000032	22000034	25000022
Maximum Working Pressure	24	24	24	24	24
Output (approx.) Gaseous CO <sub>2</sub> from Bulk Liquid CO <sub>2</sub> at 20.7 bar (-17°C) and at 10°C Ambient Air Temperature (kg/h)	50	150	300	550	860
Minimum Ambient Operating Temperature	10°C (may be reduced by addition of defrost heater)				
Electrical Supply	230 V - 1ph 50 Hz	230 V - 1ph 50 Hz	230 V - 1ph 50 Hz	230 V - 1ph 50 Hz	400 V - 3 ph 50 Hz
Electrical Load	1 x 70 W motor	1 x 190 W motor	2 x 190 W motors	4 x 190 W motors	2 x 600 W motors
Dimensions	Height (mm)	416	575	575	1575
	Width (mm)	876	1007	1682	2732
	Depth (mm)	524	536	536	536
Weight (kg)	35	88	144	231	435
Mounting	Ceiling, with floor option, indoors or outdoors				
Connections CO <sub>2</sub> (in o.d.)	3/8 stub	3/8 stub	inlet 3/8 stub outlet 1/2 stub	inlet 3/8 stub outlet 1/2 stub	inlet 1/2 stub outlet 1 1/2 stub
Drain	G1	G1	G1 1/2	G1 1/2	G1 1/2
Control Box - Non Defrosted Model	25000023	25000023	25000025	25000027	25000029
Control Box - Defrost Model	25000024	25000024	25000026	25000028	25000030

This equipment meets the requirements of EC Low Voltage Directive 73/23/EEC.

## Air Liquide CO<sub>2</sub> Equipment: Freeze, Pump, Vaporise, Protect



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