CP Cases Ltd
Unit 11 Worton Hall Industrial Estate | Worton Road | Isleworth | Middlesex | TW7 6ER | UK
Tel: +44 (0) 20 8568 1881 | Fax: +44 (0) 20 8568 1141
www.cpcases.com

TRUSTED WHEN IT MATTERS

About CP Cases

CP Cases designs and manufactures high-performance, protective cases and racks used for transport, operation and storage of essential equipment in commercial and military applications.

Many of our products are accredited to MIL-STD-810F, rated IP65 and carry NATO stock numbers. With over 40 years' of expertise in producing cases, 19-inch rack solutions and rugged textile products, CP Cases has an unparalleled range of in-house skills and knowledge with materials and processes, including rotationally moulded products, plastic fabrication, aluminium, laminated plywood, HPP, textiles and CNC foam machining.

Full Capability Statement available on request.

Distributed by

ADS SC21 21st century supply chains

@cpcases

www.cpcases.com/blog

Follow us

Search CPCASES

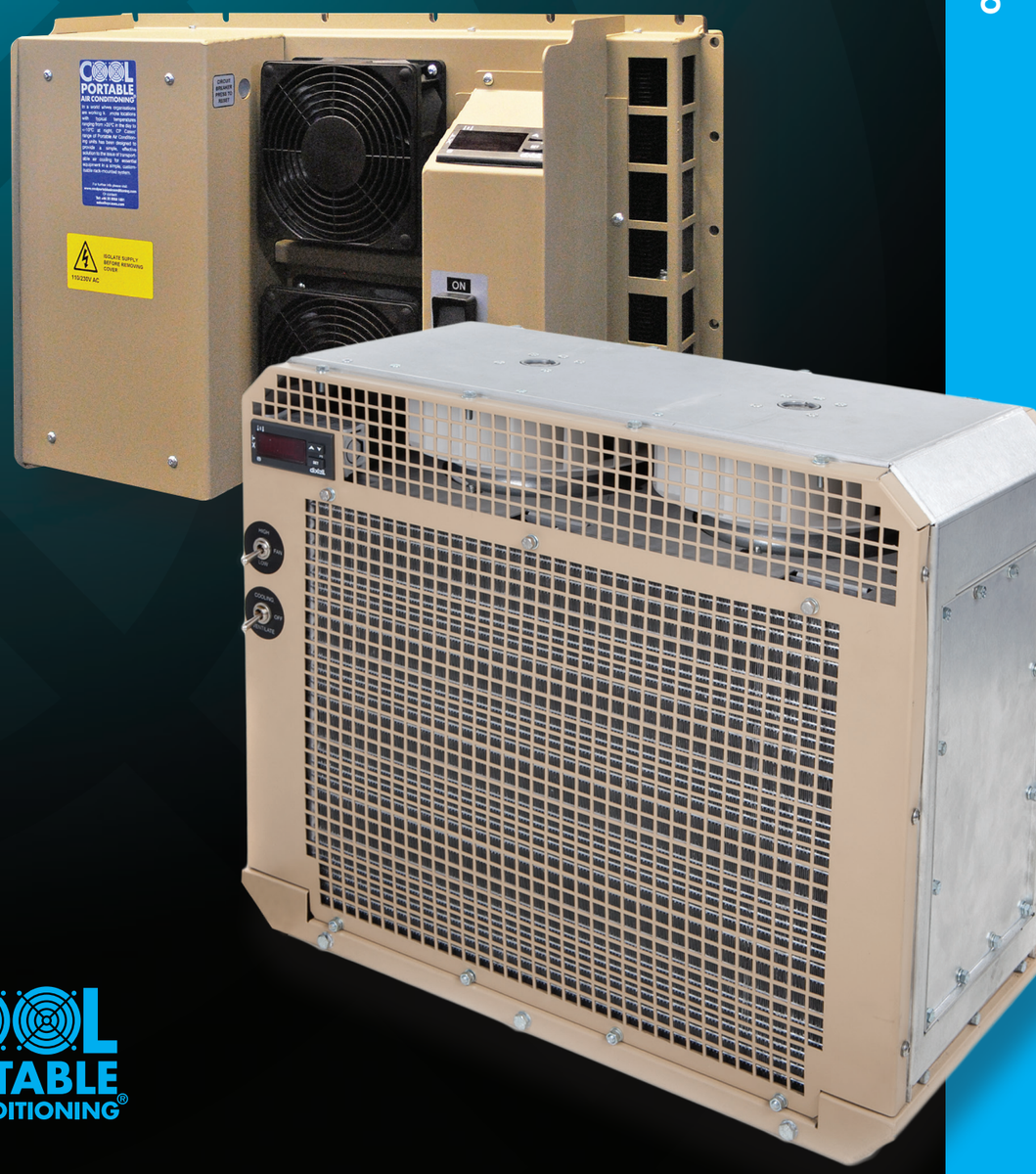
FSC www.fsc.org 100% Paper from well-managed forests FSC® C006888

Design www.walkerjansseune.co.uk

V1.1 Created April 2013. E&OE.

COOL Portable Air Conditioning®

cpcases



COOL PORTABLE AIR CONDITIONING®

COOL Portable Air Conditioning®

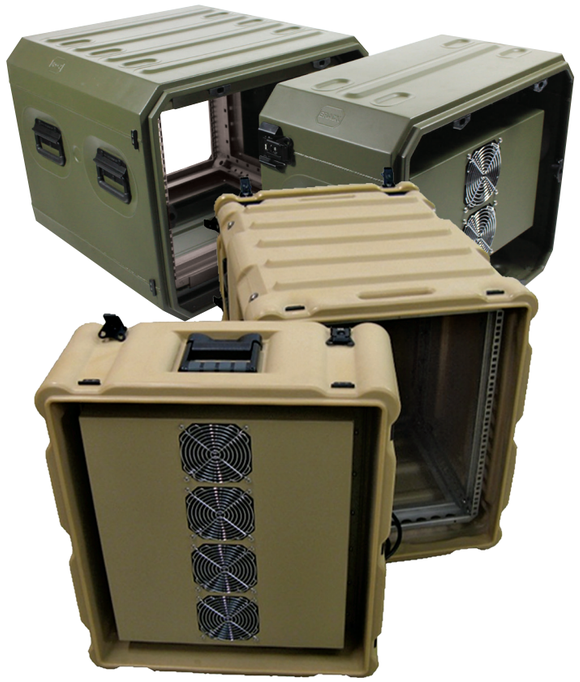
COOL Portable Air Conditioning®

In a world where organisations are working in remote locations with typical temperatures ranging from >35°C in the day to <-10°C at night, CP Cases' range of COOL Portable Air Conditioning units has been designed to provide a simple, effective solution to the issue of transportable air cooling for essential equipment in a simple, customisable rack-mounted system.

Utilising CP Cases' Amazon Rack and ERack systems and build processes, COOL systems are robust, easy to set up and use, and enhance the operating effectiveness of the equipment or environment they are used in.

Either of these rack systems are ideal for housing and transporting communication, encryption, surveillance or other electronic equipment, the addition of COOL Portable Air Conditioning provides the temperature control required to protect sensitive components from damaging heat, dust, moisture and corrosion – and most importantly, failure in the field.

Standard and customisable systems are available, in both Thermo-Electric and Vapour Compression Cycle air conditioning formats, to deliver a solution for cooling equipment and personnel in an array of mission critical situations.



Thermo-Electric Unit (TEU)

The COOL Thermo-Electric Unit systems, from CP Cases, are portable climate control units designed specifically to provide a convenient way to deliver cooling and heating in remote locations.

Supplied either as a COOL collar (removable rack body extension) or as an integrated unit mounted directly onto a bulkhead at the rear of the rack body, the user removes the outer case cover exposing the radiator fans which expel hot air to the atmosphere. The operating temperature is then set on the digital display prior to operation.

TEUs operate on the thermoelectric or Peltier principle where DC voltage is applied to the solid state electronic assembly and one side of the junction becomes cold and the other side becomes hot. Cooled air from the TEU is forcibly directed onto the electronic equipment via a distribution plate and 2 x 100mm diameter axial fans, and warm air returning from the equipment is ducted back through the plate into the TEUs and a closed circuit is maintained. The return-air temperature is measured via a user-adjustable, electronic thermostat mounted on the distribution plate and when the temperature cools down sufficiently to reach the set point on the thermostat, the TEU is switched off with the circulation fans remaining on.

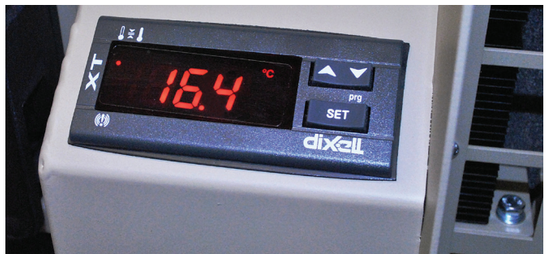
There are no moving parts other than fans which blow the cold air into the transit case (cold side) and fans that extract the hot air from the external, ambient (hot side).

Any condensate that collects during the operation of COOL TEU is automatically drained out of the system and is extracted through a drain vent on the Hot Side. The drain vent is set up with a short length of flexible plastic hose to 'run to ground' or be collected in a small reservoir.

Climate Control

By reversing the polarity of the input DC, COOL TEU can act as a 'Climate Control' system, where you set the desired temperature and the thermal management system delivers either hot or cold as required, relevant to the ambient air temperature.

- No moving parts
- Not sensitive to orientation
- Compact & Lightweight
- Robust construction
- Long lifetime
- Low maintenance
- Climate control
- No refrigerant
- No brownout during voltage fluctuations



Vapour Compression Cycle (VCC)

The COOL Vapour Compression Cycle system, from CP Cases, is a portable compressor based air conditioning unit designed to provide a convenient way to deliver high level, efficient air cooling in remote locations and meet the demands of defence and civil operations in extreme environments.

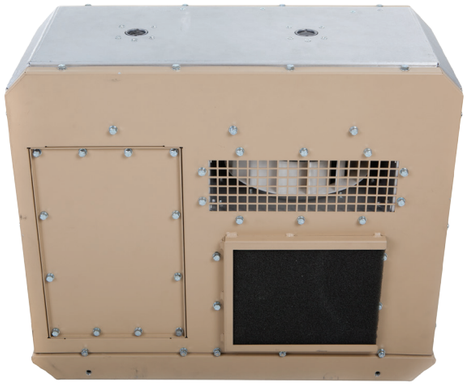
Installed within CP Cases' established Amazon Racks or ERacks, COOL VCC is robust, easy to set up and use, and ensures the operating effectiveness of the equipment it is used in conjunction with.

The COOL VCC system consists of an evaporator section that provides cold air into the case, a vapour compression unit and a condenser section where the heat from the case is expelled from the unit. The system is supplied with an external drain system to allow for extraction of any condensate from the cooling process.

The heart of COOL VCC is the digital controller that drives the entire system. The controller operates and manages the evaporator fan system and controls the compressor. Tetrafluoroethane, an environmentally friendly refrigerant commonly known as R134a, is circulated around the cooling circuit and heat energy from inside the transit case is transferred to the refrigerant and is then, in turn, expelled at the condenser section. The condenser section has two fans that extract the heated air out of, and away from, the condenser section. Initially, both fans will operate at low speed; however, if the temperature, and therefore, system pressure, rises to a sufficient level, the fans will automatically step up into their higher gear to operate at optimum speed. This feature enables reduced power consumption and a reduction in external noise when full power is not required.

Removal of the rear lid, during set-up of the system, exposes the condenser section, or heat rejection component, of the case and the drain vent can be accessed. Any water that collects during the operation of COOL VCC, from the cold side of the system will drain out and be extracted from the system via a vent. The drain vent is set up to enable a short length of hose to be fitted to the system so that the condensate can be piped away into a suitable container.

- Robust construction
- Easy to operate
- Low maintenance
- Highly efficient
- Automatically adjusts to high demand
- Can be used as forced air fan assisted cooling (refrigerator disengaged) or with refrigerator working to provide 1.6kW of delivered cold air.



Technical Specification

	340W TEU	700W TEU	1.6 kW VCC
Refrigeration Method	TEU	TEU	VCC
Filtration	**Thermo-Electric Cooling** Uses the Peltier Effect. Solid-state active heat pump transfers heat from one side of the device to the other, with consumption of electrical energy.	**Thermo-Electric Cooling** Uses the Peltier Effect. Solid-state active heat pump transfers heat from one side of the device to the other, with consumption of electrical energy.	**Vapour-Compression Cycle** Circulation and compression of a refrigerant as in a household fridge.Washable reticulated polyester foam filter.
Cooling Capacity	340W	700W	1,600W
Power Requirement	Less than 3A	Less than 6A	Less than 8A
Weight	18.5kg	TBC	35kg
MTBF	65,000 hours L10 (fans)	65,000 hours L10 (fans)	4000 hrs
Operating Temperature Range	-10°C to +50°C	-10°C to +50°C	0°C to +50°C
Qualification	Planned: CE, NEMA 4X & MIL STD810	Planned: CE, NEMA 4X & MIL STD810	Planned: CE, NEMA 4X & MIL STD810