



1600W, VCC Type, 8-12U Size

- 1600W cooling
- Optional heating accessories provide climate control
- 240V AC and 24V DC power options
- For 8U, 10U and 12U rack sizes

Description

Designed to cool 19-inch rack mounted electronic and electrical equipment, COOL Portable Air Conditioning units deliver a robust solution to keeping computer servers, telecom and satcom equipment, recording instrumentation and other systems working at their optimum, providing a convenient method of delivering cooling and heating in extreme environments and remote locations.

The Vapour Compression Cycle (VCC) design utilises conventional liquid coolant technique and provide a complete air conditioned and heated transit solution that is both efficient and highly reliable.

CP Cases COOL units deliver air conditioning and climate control for use in 19-inch racks and can be applied either as a COOL-COLLAR™ or as an integrated unit, providing a one-stop-shop for rack mount cases to maintain equipment's optimal operating conditions. All offerings can be fitted with accessories including stowage pouches, wheel kits, pressure relief valves and humidity indicators.

COOL-COLLAR™

COOL-COLLAR™ is an air conditioning capability for 19-inch racks that utilises patented sealing systems to create an airtight and waterproof fit to allow the unit to function in extreme conditions. The unit is attached to an existing rack to maintain an optimum operation temperature for equipment.

Units are available up to 1600W that can be fitted to 8U, 10U or 12U racks and collars.



Integrated Units

Built directly into the rack system, these climate control units provide cooling and heating, when required, automatically when temperature perimeters are met. Normally end-mounted, CP Cases offer the capability to integrate in a range of orientations to fit client requirements.



Specifications

Cooling Capacity	1600W
Type	Through-mount vapour compression cycle climate control unit
Power	220V to 240V AC at 50Hz
Power Requirements	24A (initial) 4.5A (after 8 mins)
Power Cable	1m flying lead, no plug. Fitted cold side. Customer option to fit to hot side
Operating Range	-10°C to +45°C
Housing	Aluminium with powdercoat finish.
Colours	Desert sand as standard; other colours are available on request.
Size	427mm H X 518mm W x 379mm D
Weight	39kg
Warranty	1 year, return to factory UK

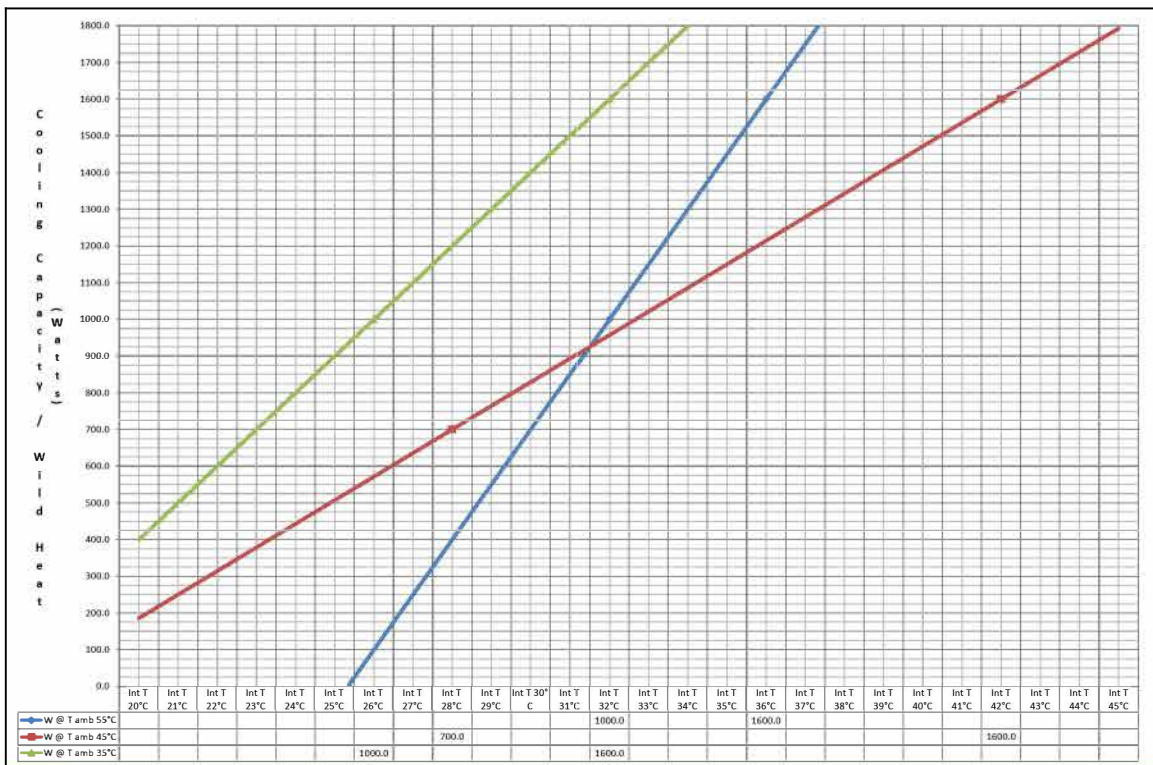
Performance Graph

The thermal performance of vapour compression cycle air conditioning units is rates in watts. This is the measure of load energy/wild heat that can be removed by the system, also referred to as Cooling Capacity.

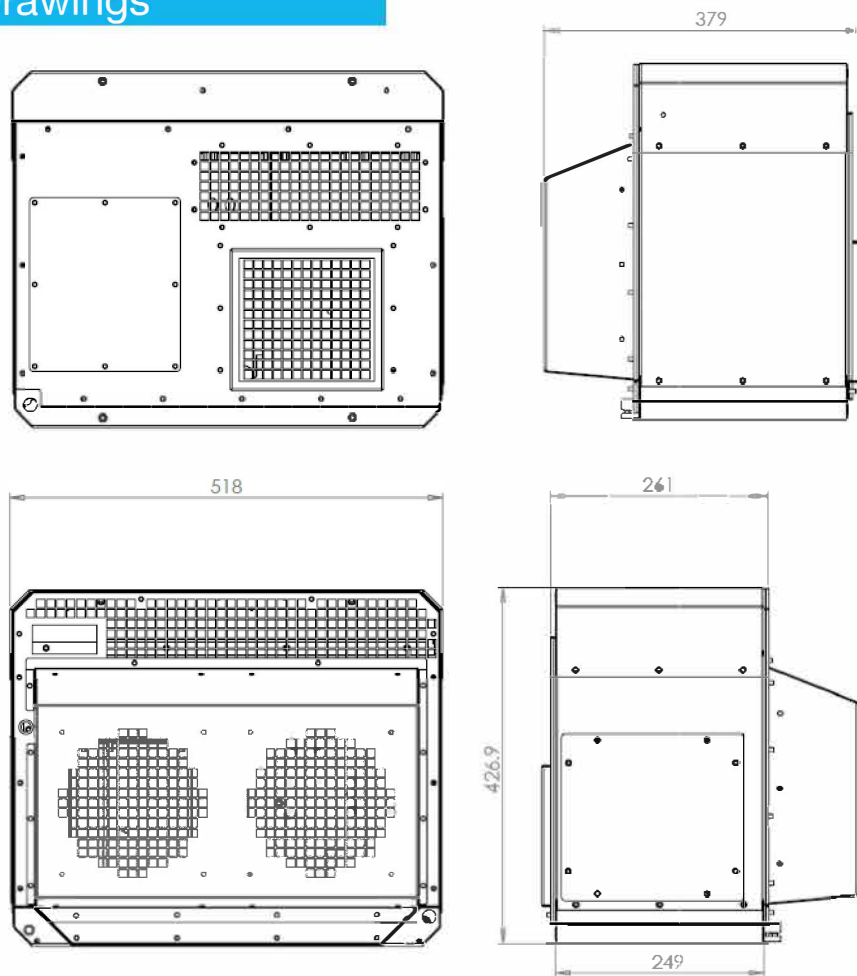
The Cooling Capacity is proportional to the difference of the require and ambient internal enclosure temperature (delta T). For example the CLV240-1600 COOL Portable Air Conditioning VCC has a capacity of 1600W in an ambient temperature of 30°C, providing a conditioned internal temperature of 33°C (delta T of +3°C).

The performance graph is a useful guide to indicate the cooling capacity at a set conditioned internal temperature, across various external ambient conditions. However there are several variable conditions that affect the values and consequently for complex mission-critical or high value applications, professional advice should be taken.

The graph below shows performance at a number of ambient temperatures. For example, if the ambient temperature is 45°C and the equipment is require to be cooled to 30°C, the COOL VCC has a cooling capacity of 825W, well within the unit's capability.



Drawings



COOL Collar Size Lists

Amazon Racks

Part Number	Description	External mm			U-Height	Handles	Latches	Wheels	Weight (kg)
		Height	Width	Depth					
AACC 0835-0707 VCC	COOL Collar 8U 2 x 70 mm lid	491	583	490	8	2	16	N	11.19 (E)
AACC 0835-0712 VCC	COOL Collar 8U 1 x 70 mm lid & 1 x 125 mm lid	491	583	545	8	2	16	Y	12.22 (E)
AACC 1035-0707 VCC	COOL Collar 10U 2 x 70 mm lid	580	583	490	10	2	20	N	13.06 (E)
AACC 1035-0712 VCC	COOL Collar 10U 1 x 70 mm lid & 1 x 125 mm lid	580	583	545	10	2	20	Y	14.24 (E)
AACC 1235-0707 VCC	COOL Collar 12U 2 x 70 mm lid	669	583	490	12	2	20	N	15.19 (E)
AACC 1235-0712 VCC	COOL Collar 12U 1 x 70 mm lid & 1 x 125 mm lid	669	583	545	12	2	20	Y	17.52 (E)

ERack

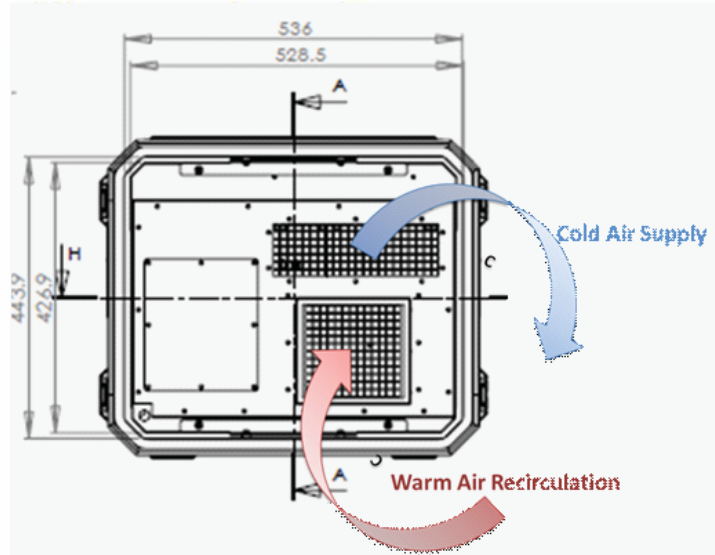
Part Number	Description	External mm			U Height	Handles	Latches	Wheels	Weight (kg)
		Height	Width	Depth					
RRCC 0829-0707 VCC	COOL Collar 8U 2 x 70 mm lid	508	615	416	8	2	10	N	10.13 (E)
RRCC 1029-0707 VCC	COOL Collar 10U 2 x 70 mm lid	597	615	416	10	2	12	N	11.63 (E)
RRCC 1229-0707 VCC	COOL Collar 12U 2 x 70 mm lid	686	615	416	12	4	12	N	13.18 (E)

Weight listed is for COOL-Collar only. Please contact CP Cases for air conditioner weights.

VCC Airflow

The VCC provides cold air with a significant flow rate. The airflow direction is indicated in the diagram below. This generally ensures sufficient circulation of cold air for most application with 19-inch equipment mounted in Amazon or ERacks, regardless of where the air intakes of the equipment are located.

The diagram below identifies how the VCC airflow is configured.

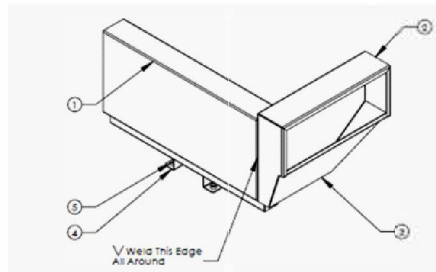


However, where large equipment is mounted to the rear of the rack case, airflow can be compromised with much of the cold air being immediately re-ingested into the warm air recirculation.

This problem can be overcome with the introduction of additional components to direct the airflow; this can be done in one of two ways:

A Direct Plenum:

A 'trunk' can be installed that fits over the cold air supply, and directs the flow into the air intake vent of the equipment in the rack. The plenum can be mounted onto a shelf with foam 'seals' where the plenum openings push onto the cold air supply and the equipment intake vent.



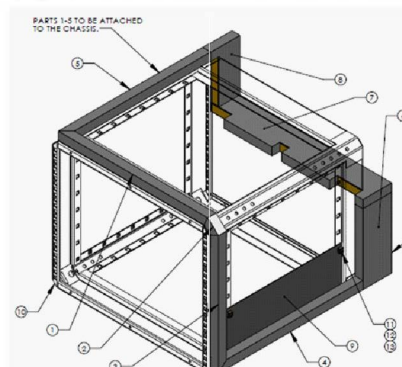
Air Damming:

The rack case can be fitted with deflectors that create:

- A 'cold chamber' between the cold air supply and the equipment intake vents;

- A 'warm chamber' between the equipment exhaust vent and the VCC warm air recirculation return.

In the example shown below, a combination of foam and polypropylene components are used to create a cold chamber to direct the supplied cold air into the right-hand side of the equipment housed within the chassis.



COOL Portable Air Conditioning VCC Units CLV110~240-1600

VCC Optional Heater

The VCC does not provide a heating function. However an optional Heater Mat can be integrated into the associated case. This is a flexible self-adhesive heater, affixed to a mounting plate that is attached below the rack chassis.

The standard specification of the heater mat is as follows:

AC variant:

Size: 430mm x 200mm

Power Supply: 110/230V AC

Heating Capacity: 150 Watts

Surface Temperature Safety Limiter: ½" disc limiter set to 70°C wired separately

These mats can be installed in multiples to achieve higher heating capacity, limited by the physical chassis depth as follows:

480mm Chassis:

1 off mat - 150W

2 off mat – 300W

610mm and 740mm Chassis:

1 off mat - 150W

2 off mat – 300W

3 off mat – 450W

870mm Chassis:

1 off mat - 150W

2 off mat – 300W

3 off mat – 450W

4 off mat - 600W

Custom sizes and heating capacities can be manufactured for specific customer needs.

