

CANNON C-TYPE OUTDOOR CABINET

OUTDOOR ENCLOSURE PROTECTION FOR PASSIVE & HARDENED EQUIPMENT



Cannon Technologies has been manufacturing cabinets for Indoor and Outdoor applications for over four decades. Cannon has a long history of product development both for military and civilian applications. This broad based experience has been fundamental to the development of a wide range of integrated outdoor railway/trackside enclosure systems. In addition to the cabinets shown Cannon offers thermal and diagnostic systems.

Among these are:

- **Conventional cooling:** using natural ambient air cooling
- **FanCell:** forced air cooling
- **CoolCell:** compact forced air high efficient heat exchangers
- **ChillCell:** Solid State chilling unit
- **FreezeCell:** compact air conditioning unit
- **CannonGuard:** a fully integrated life support system for the control and monitoring of all critical functions. Remote and attended diagnostic facility offering 40 or more discreet alarms.

Product Range

Cannon has an extensive range of outdoor roadside & trackside enclosure systems for the transportation and communications markets, these include:

- FTTx – Copper/Fibre Optic Cabinets
- SISS/CIS Cabinets for security & info
- MK2 Telecommunications Cabinets
- StreetWise Active Cabinets
- Termination Boxes
- Type C Cabinets (For copper cables)
- CatWalk Pedestal Cabinets
- Apparatus/Location Cases (NR approved)

Products can also be manufactured to meet clients precise requirements.

Over its history Cannon has produced over 150 different designs of outdoor enclosures; these break out into four distinct categories. Cannon has named these differing types as follows:

- **A-TYPE**
- **C-TYPE**
- **D-TYPE**
- **S-TYPE**

The “C-TYPE” range of cabinets are often the smaller, have less technical and modest thermal requirements. This range of cabinets are designed to house hardened/passive equipment which have a higher tolerance to temperature, dust and moisture.

As standard the cabinet’s interior is cooled by the use of natural convection and as such the internal air temperature will always be greater, between a Δt of 20/30°C above the external ambient air surrounding the cabinet. Fans can also be integrated to reduce this Δt figure further.

The temperature increase is dependant on the internal active equipment and the heat being dissipating. High equipment temperatures can result in a reduction of up to 50% of their expected life therefore fans may need to be integrated.

As an aid to the natural convection of the cabinet’s air flow, vents are provided at both top and bottom of the cabinet, these are positioned discreetly under the roofs overhang and base of the door to avoid drawing attention to the would-be vandal.



FEATURES:

- Secure Stainless Steel level handle locking system with optional Electronic Remote Access Locks
- Sensors (Thermal, humidity, alarms etc.) and Alarm via SNMP and web based application.
- Up-to I55 sealing
- Thermal solution matched to equipment requirements
- Optional main Power Distribution and RCD Power sockets provide a tailored solution ready for deployment.

THERMAL:

- Multiple cooling solutions available including Passive, Forced Ambient Air Fan Cooling, Air Conditioning Unit, Heat Exchanger Unit, Peltier Chiller/Heater Device
- High volume air particle filters provide a degree of clean ambient air to provide and cool integrated equipment.
- Energy efficient cooling options.



FEATURES:

- Verified and proven Multi-Point locking system.
- Maximum open access area via anti-vandal Stainless Steel hinge system.
- Single and multiple door access options.
- Fibre/Copper cable management, equipment support shelves and brackets available as standard options.
- Base mounting options including plinth & root
- Cable entry options available via base, roof, side panel.

The cabinet is constructed from a single skin and consequently the inside surface will be subject to condensation during extremes of temperature. It is important that these conditions are considered when selecting the cabinet best suited to your requirements. If in doubt always ask Cannon Technical Support staff for advice.

Due to the type of equipment housed within the enclosure i.e. low/medium heat dissipating equipment. The heat being dissipated from the equipment is often 0W to 500W. The equipment demands medium standards of cleanliness meaning that IP ratings of IP55 are common.

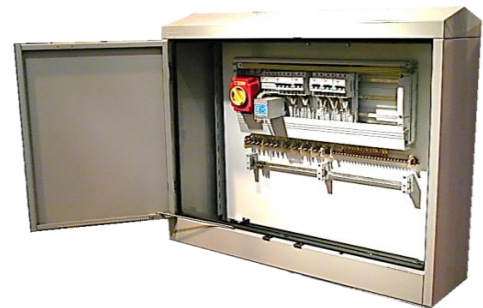
C-TYPE active communications equipment enclosure's are designed to provide a secure and reliable housing with single or multi-chamber options to house all types of standard 19"/ETSI equipment & non rack mounting protocol products.

Our New Milton test facility can provide thermal testing to our enclosures along with written reports. Thermal loads can be either simulated or for effective heat analysis active customer equipment can be configured within the enclosure. The ambient air temperature can be maintained to within $\pm 1^{\circ}\text{C}$ of that specified.

Solar gain can also be applied to the surface of the enclosure to simulate the effect upon the internal equipment when subjected to long periods of sun light in different locations and upon various surface treatments.



Single, Multi-door and multi-compartment options available. The separation of installed devices, power, UPS, electronic and electrical equipment etc. can provide differing cooling options along with different layers of access for engineers and contractors.



FEATURES:

- Secure multi-door access options providing access for Front, Rear or Sides.
- Up-to IP55 rating proven and tests completed by independent test house.
- Multiple or single mounting practise including DIN rail, 19"/ETSI rails, customer specific mounting options designing and engineered by Cannon.
- Easy access, high volume door mounted filters provide the right amount of air volume for equipment cooling.
- Single skin with optional insulated design.



CHAMBER SEPERATION:

- Can provide additional security via different key number/type especially beneficial when separating equipment from distribution , power side.
- Provides the ability to cool different chambers at different temperatures saving product and operating costs e.g. batteries/UPS requiring chiller cooling compared to active equipment utilising ambient air free cooling.



The enclosure can be configured with a number of chambers which can be used to separate the different technologies. Battery chambers are normally separated from the main active equipment to ensure that any hydrogen given off during recharge periods is vented to atmosphere without any risk of it coming into contact with equipment. It is also easier to maintain the temperature recommended by the battery manufacturer in a separate chamber.

The chamber can be manufactured to suit various manufacturers' batteries, size and numbers; shelves can be fixed or telescopic and designed to withstand loads of 500-kilos. The cabinets can be designed to accept both shock and vibration, high EMC emission protection and to IP65. Cannon offers a variety of lock options from simple cam through to full remote activation.

Cannon has been manufacturing enclosures for over four decades and has supplied many enclosures for both track-side and road side applications. Our C-TYPE enclosures have been used in all vertical markets including Rural and Business broadband to MOD surveillance applications. We have been a major supplier to the various alliances working for the rail and telecoms industry etc., and are confident that what ever your requirements, Cannon will be able to provide a answer to your enclosure needs.

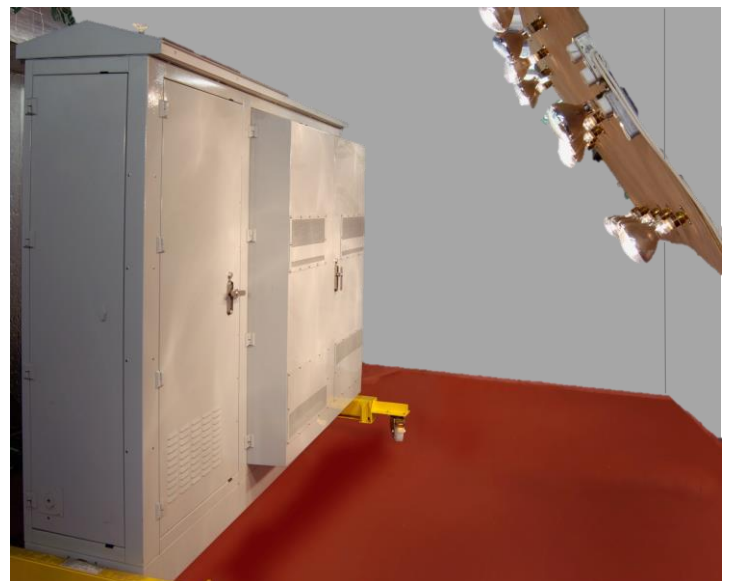


FEATURES:

- Modular Generally to IP 55 to BS EN 60529:1992 (Ingress Protection)
- Single and multi-door arrangements available
- Internal mounting to customers requirements
- Doors secured with Stainless steel multi-point dead locking system
- Painted to customers specific colour requirement
- Full 5-stage cleaning and pre-treatment prior to receiving an 80-micron powder coating
- Constructed from High Grade Pre-galvanised Sheet as standard
- Installed using Direct bury in-ground root system

BENEFITS:

- Proven Designs both in test lab and in field and street-side operation.
- Thermal Solutions sized to provide energy efficient and operations cost savings.
- Design, material and construction all contribute to the predicted 25-year life expectancy.
- Modular designs that can be modified to suit customer specific requirements.
- Building techniques allow for customer design contribution.



Chamber capable of maintaining air temperatures above the local ambient up-to a maximum 60°C with a solar gain of 1.1kW/m²

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Additional Products available from Cannon Technologies Group :

- Modular Data Centres
- Cannon Data Campus
- Cannon GLOBE TROTTER
- Cannon GMDC
- Cannon Mini/Micro DC
- Ruggedized DC Cases
- IT Infrastructure
- 19" Server Cabinets
- Patch Frames
- Free Form Containment
- Cold/Hot Aisle Containment
- Air Management
- Cooling Solutions
- UPS & Power
- Techni-Cabins
- Mobile-Cell & Mast Stations
- Outdoor Cabinets & Enclosures

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