

CANNON D-TYPE OUTDOOR CABINET

IP65 PROTECTION FOR PASSIVE COMMUNICATIONS 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**

“D-TYPE” is a range of enclosure developed for the communications and fibre jointing sector, in particular where passive equipment is being deployed. The presents of moisture upon the equipment or fibre joint could cause premature failure of the connection leading to serious consequences. The enclosure consists of an outer skin with a fully insulated inner chamber. The insulated inner chamber creates a temperature differential preventing the inner skin from reaching a temperature where dewing on the surface is likely to occur.

The Cannon D-TYPE cabinet provides IP65 protection and is available as standard: 1350mm high x 1250mm wide x 500mm deep with the option via its modular construction to provide customer specific sizes. The base of the cabinet has a plinth system enabling it to be fitted directly to a standard Network Rail Location Case pre-cast concrete block No BRS-SC 31.

Designed primarily for copper and/or fibre cable termination, the star-punching of the metal backboard allows the cabinet to be fitted out with a variety of termination equipment/connectors to customers’ requirements.

Fitted with a removable inner thermal chamber to eliminate condensation, this is a genuine and proven IP65 design with NAMAS test house approvals and being manufactured from Cannon specified high quality materials shows significant savings on true life costs.

The D-TYPE has undergone cyclic climatic and rapid change of temperature tests at the MOD’s climatic laboratories of the Defence Test and Evaluation Organisation, as well as dust and water protection, vibration, EMC shielding effectiveness, impact resistance, panel rigidity and rigorous paint adhesion testing.

Cannon Type ‘OC’ Cabinets are fully approved by Network Rail to 97/U/C/024 and registered with PADS No 86/009967.

The enclosure is used in remote locations where power is not available preventing the use of electrical panel/ anti condensation heaters.

THERMAL:

- Cabinet tested to BS 2011 part 2:1 Db Damp Heat, Cyclic
- Cabinet tested to BS 2011 part 2:1 Nb Rapid Change of Temperature
- The Thermal Transmittance Coefficient (U-Value) of the cabinet is $\leq 1.6W/m^2$
- Totally sealed with no ventilation or change of air between outside ambient and internal air

FEATURES:

- IP65 Protection Rating.
- Double secure doors with dual seal, dual insulation and door stays.
- Separate removable thermal chamber with thermal barrier supports, bottom cable entry gland system and fully insulated.
- Cabinet can be tailored with various copper termination modules or fibre storage systems



The equipment demands high standards of cleanliness meaning that IP ratings of IP65 are common.

D-TYPE 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.

The enclosure is constructed with a multiple layer and dual layer skin; this secondary skin acts as an insulator to reduce the effect of solar gain radiating into the equipment chamber.

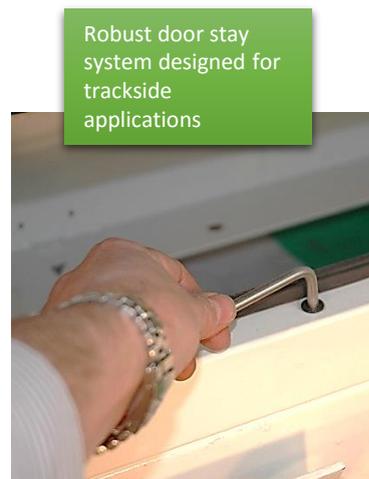
Project Pedigree:

Cannon has over forty years been involved in many prestigious projects, below is a small example of these.

- Rural and business broadband projects for WarwickNET and Truespeed.
- Tram projects: Nottingham Light Railway, London Tramlink, Edinburgh Tram
- ABB Offshore - special fibre cabinets used offshore to create a fibre ring around the oil platforms in Belize.
- West Coast Mainline Re-signalling - Cannon has been involved with many of the alliances working on this project.
- Bombardier Paddington and Euston re-signalling.
- SISS Station and platform enclosures with ACU climate control for: New Bromsgrove Train Station, Birmingham New Street Station Upgrade, Goring & Streatley etc.

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.



Robust door stay system designed for trackside applications



Our secure & proven stainless steel lever lock system operates a multi-point lock rod arrangement.



CHAMBER THERMAL PROTECTION:

- Insulation is the key to regulating the climate inside the cabinet without power.
- By combining a double skin cabinet and double sealed doors lined with an insulation material providing a typical 'U' value of 0.668W/m²K, Cannon has significantly reduced the threat of condensation, dust and moisture caused by sudden temperatures and poorly sealed cabinets.
- Robust design tested to BS2011 part 2.1Nb.
- Single or double hinged doors with secure multi-point lock system

The enclosure can also be designed and configured with a number of chambers which can be used to separate 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 enclosures have been used in all extremes of temperature from areas such as Alaska to Nevada, Rural and business broadband to MOD naval applications for surveillance systems. We have been a major supplier to the various alliances working for the rail and telecoms industry etc. We are confident that what ever your requirements Cannon will be able to provide a solution to your enclosure needs.



OPTIONS:

- Electronic Remote Access Locks
- Electronic Key Pads / RFID / Bio-Metrics
- Sensors (Thermal, humidity, alarms etc.) and Display/Alarm via SNMP and web based application
- Thermal solution matched to equipment requirements
- Multiple chambers providing compartments to suit specific equipment mounting and thermal requirements.

BENEFITS:

- Proven Designs both in test lab and in field, track and street-side operation.
- Thermal Solutions sized to provide energy efficient and operations cost savings.
- IP65 testing completed at an independent test house.
- Modular designs that can be modified to suit customer specific requirements



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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