

CANNON OUTDOOR TECHNICABIN

A COST EFFECTIVE ALTERNATIVE TO DEPLOYING LARGE CABINS



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 Cannon TechniCabin is a cost effective alternative to employing large cabins when housing a limited amount of rack mounted 19", ETSI or other protocol equipment in stand-alone indoor-type racks or cabinets for telecom, data transfer or similar applications. The walk-in enclosure can be composed of a single-skin or double skin construction, with or without thermal insulation, depending on the environment required for the equipment.

Alternatively they are of a bespoke design incorporating fixed equipment posts and other equipment configured as required.

Generally, these cabinets house equipment requiring some form of environmental control, which can be combined with access control and monitoring, using the highly versatile state-of-the-art CannonGuard System.

The TechniCabin incorporates a revolutionary approach to the free air cooling of large cabinets dissipating high heat loads. Typically used for the housing of factory pre-configured racks dissipating heat loads in excess of 8-k-watts normally housed within the confines of a cabin. The dual skinned thermally insulated design ensures elimination of most of the effects caused by the addition of solar gain.

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



FEATURES:

- Ingress Protection generally to IP 55 to BS EN 60529:1992
- Incorporates Cannon's Free-air cooling system for energy efficient thermal management
- Optional Integral 48-volt DC power and battery back-up available
- Dual skin and fully insulated construction for the management of high thermal loads
- All doors secured with a Multi Point Dead Locking system complete with IP dust cover
- Remotely activated, electronic locks available including CannonGuard environment control and management system provision

Removable lifting eyes provide arrangements for site installation.



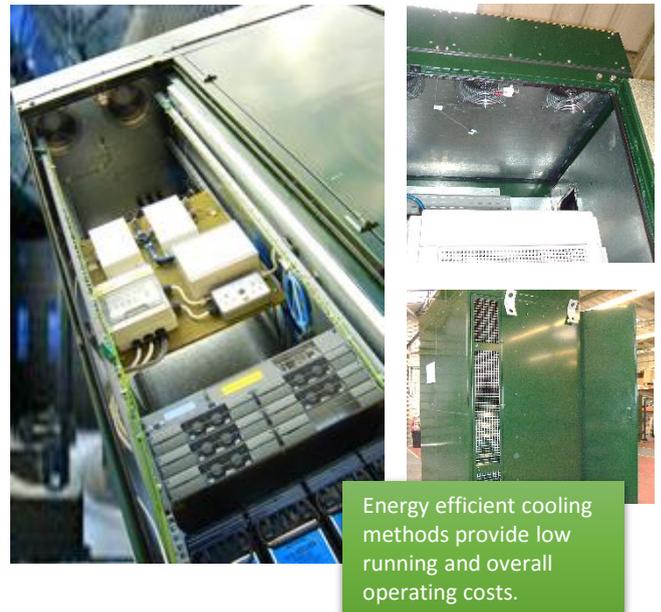
Normally this design of cabin would suffer from the ingress of moisture carried into the cabinet's interior by the sheer volume of air being moved during periods of inclement weather.

Cannon has overcome this problem by using a special multi-stage filtration system and pre-dust/water separator. This special filtration system enables high volumes of air to circulate at relatively low velocity by using air accumulators. The first stage of the process uses sand and dust filters to separate the particulate matter from the air, these contaminants can be removed from the cabinet via access panels. From this pre-filtration stage the air passes through a special coalescing filter, here the very fine water being held in suspension is trapped and held within the special filter fibres.

The moisture is held within the fibres until sufficient water droplets collide causing them to fuse together; the now larger, heavier water droplets are unable to remain adhering to the fibres and fall from the filter. This strained water is collected in a water tray where it is drained to the outside of the cabinet. The air then passes through a fine particle filter in the final stage of filtration, where particular matter down to 15µm (microns) is collected. Once leaving this final stage the air is collected in a large air reservoir before being drawn into the cabinet's equipment chamber and, if fitted, the electrical distribution section.

The air is moved around the system via a number of high volume/low noise radial fans, positioned to ensure that there is a consistent air flow around all of the equipment eliminating any risk of hot-spots.

The system provides a low-cost solution with low overall running costs for equipment dissipating high heat loads in confined spaces against the alternative options of either heat-exchangers or air-conditioning systems.



Side mounted panel inlet/exhaust filtration and duct system provide efficient and effective ambient air cooling.

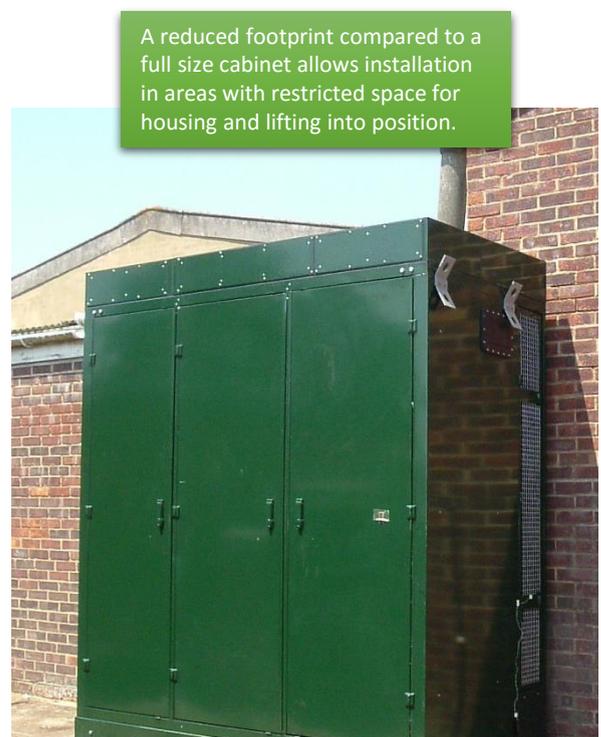


THERMAL PROTECTION:

- Insulation is the key to regulating the climate inside the cabinet without power.
- By combining a double skin cabinet and IP sealed doors lined with a insulation material provides improved 'U' values and higher resistance to solar heat gain meaning lower cooling costs.
- This method also reduces the threat of condensation, dust and moisture caused by sudden temperatures and poorly sealed cabinets.
- Single or multiple hinged doors with insulation and secure multi-point lock system

BENEFITS

- Equipped with many Anti-vandal proof features.
- Constructed from High Grade Pre-galvanised steel and coated in virgin pure polyester powder 90mm thick as standard for corrosion protection.
- Design, materials and construction all contribute to the predicted 25-year life expectancy.
- Multi-chamber design for segregation of services providing enhanced thermal management.
- Torsion bar root assembly for better stability making easier root installation.
- Detachable lifting/transport lifting brackets.
- Reduces the need to deploy expensive large cabins.
- No additional vandal resistant fencing required.
- Easier to site because of the reduced weight & footprint.
- Optional service engineer/operator weather shielding canopies etc. available upon request



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.

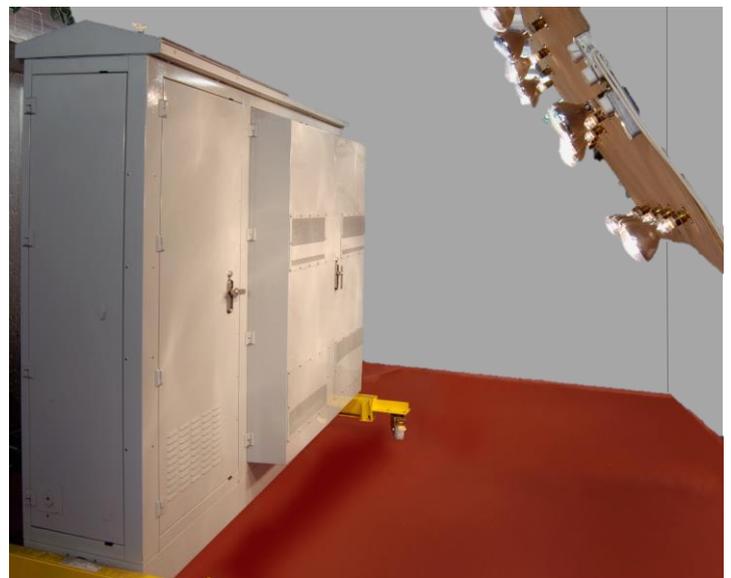


Our New Milton test facility can provide thermal testing to our enclosures along with written reports. Thermal loads can be either simulated or for effective heat analysis active customer equipment can be configured within the enclosure. The ambient air temperature can be maintained to within $\pm 1^{\circ}\text{C}$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

BENEFITS of CANNON OUTDOOR:

- 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/m^2

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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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