Inorax Outdoor Enclosures

Protected like a bunker for all harsh environments
**Inorax Outdoor Enclosures**

Inorax Outdoor enclosures and climate control components are built to withstand even the toughest environmental conditions—sunlight, rain, flood, humidity, dust etc. From basic requirements such as humidity, temperature fluctuations and sunlight, to extreme conditions such as sea-water resistance or vibration / earthquake resistance, and protection against vandalism, Inorax has the answer. We ensure that there are no limits to our customers’ applications including DSLAM, MSAN, VDSL, 3G and 4G GSM mobile networks, railway, energy, traffic monitoring and transmission applications. The Inorax aluminium, stainless steel and galvanized-steel based outdoor cabinets offer maximum protection against environmental impacts, vandalism, EMC and extreme thermal conditions. Inorax Outdoor Climate Control solutions provide everything you need to protect your electronic equipment investment. All weather-tested enclosure air conditioners, heat exchangers, fans and heaters are specially designed for extreme outdoor conditions to ensure constant interior temperature performance.

**Double-Layer Aluminium**

**Double-Layer Stainless / Galvanized Steel**

**Highlights**
- IP 55 protection
- Solid extruded aluminium profile construction - completely weld-free structure
- Double layer doors and panels with natural ventilation system and integrated insulation material
- Double layer construction (sandwich technology) ensures maximum heat dissipation by reducing the influence of solar radiation and offers maximum sealing effect
- Special sun-reflective and graffiti-resistant outdoor paint ensures up to 6°C isolation
- Humidity absorbent interior paint traps humidity on the inner surface of the roof
- Ventilated top ensures maximum ventilation via a chimney effect
- Special texture on all doors and panels disables advertisement material posting on surfaces which could adversely affect the ventilation required for heat exchangers and AC units
- Anti-vandal design
- Unauthorised access restricted by hidden hinges
- Robust stainless steel locking system
- Maximum protection against environmental impacts, vandalism, EMC and extreme thermal effects
- 19” mounting rails for active equipment
- Separate battery, 19”, MDF and other sections according to customers’ requirements
- Customer-specific solutions for installation and future expansion
- Fully integrated heat exchangers, air-conditioning and internal heating are available upon request

**Highlights**
- IP 55 protection
- Double layer doors and panels with isolation material
- Double layer construction (sandwich technology) ensures maximum heat dissipation by low influence of sun irradiation and offers maximum sealing effect
- Special outdoor paint resistant to adverse weather conditions
- Separate battery, 19”, MDF and other sections according to customers' requirements
- Anti-vandal design
- Robust stainless steel locking system
- Maximum protection against environmental impacts, vandalism, EMC and extreme thermal effects
- 19” mounting rails for active equipment
- Customer-specific solutions for installation and future expansion
- Fully integrated heat exchangers, air-conditioning and internal heating are available upon request
**Technical Features**

**Material:** Frame fabricated from Extruded Aluminium with doors and panels from double-layer aluminium / stainless / galvanized steel up to 4mm thick.

**Protection & Finish:** Protected to IP55 and finished in graffiti-resistant and solar-reflective polyester epoxy outdoor paint, with DIN50939 chromating if required.

**Layout:** 3 separate sections: 19” area, MDF, Power. 3 doors. Top-mounted heat exchanger.

**Tested to:** ETS 300019 and IEC 68-2-57 (Earthquake, shock, vibration, transportation tests), EN 60529 and IEC5291 (IP55 dust and waterproof tests), EN 60950 (Electrical and mechanical safety tests).

**Dimensions (mm):** Height 1700, Width 1155, Depth 414.

**Related Accessories:** Rack Monitoring System, Power Distribution Units

**Ordering Information:** OAD-7-1001

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**Thermal Test**

Thermal Study for extreme climatic conditions undertaken by approved laboratories

- **Solar Load (1120 W/m²)**
- **Surface Convection**
- **Insulation Layer**
- **Heat Generation**

**Temperature Distributions**

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**MDF Section**
Outdoor Enclosures

Outdoor Cabinet

Technical Features

**Material:** Frame fabricated from Extruded Aluminium with doors and panels from double-layer aluminium / stainless / galvanized steel up to 4mm thick.

**Protection & Finish:** Protected to IP55 and finished in graffiti-resistant and solar-reflective polyester epoxy outdoor paint, with DIN50939 chromating if required.

**Layout:** 4 separate sections: 2 x 19” areas, MDF, Battery. 7 doors. Heat exchangers and AC units can be mounted on the doors.

**Tested to:** ETS 300019 and IEC 68-2-57 (Earthquake, shock, vibration, transportation tests), EN 60529 and IEC5291 (IP55 dust and waterproof tests), EN 60950 (Electrical and mechanical safety tests).

**Dimensions (mm):** Height 1500, Width 1900, Depth 900.

**Related Accessories:** Rack Monitoring System, Power Distribution Units

**Ordering Information:** OAD-7-1002

Outdoor Cabinet

Technical Features

**Material:** Frame fabricated from Extruded Aluminium with doors and panels from double-layer aluminium / stainless / galvanized steel up to 4mm thick.

**Protection & Finish:** Protected to IP55 and finished in graffiti-resistant and solar-reflective polyester epoxy outdoor paint, with DIN50939 chromating if required.

**Layout:** 3 separate sections: 19” areas, MDF, Battery. 4 doors. Heat exchangers and AC units can be mounted on the doors.

**Tested to:** ETS 300019 and IEC 68-2-57 (Earthquake, shock, vibration, transportation tests), EN 60529 and IEC5291 (IP55 dust and waterproof tests), EN 60950 (Electrical and mechanical safety tests).

**Dimensions (mm):**

- **OAD-7-1003:** Height 1500, Width 1900, Depth 900.
- **OAD-7-1004:** Height 1390, Width 1250, Depth 805.

**Related Accessories:** Rack Monitoring System, Power Distribution Units

**Ordering Information:** OAD-7-1003, OAD-7-1004

Side View
Outdoor Enclosures

Technical Features

**Material:** Frame fabricated from Extruded Aluminium with doors and panels from double-layer aluminium / stainless / galvanized steel up to 4mm thick.

**Protection & Finish:** Protected to IP55 and finished in graffiti-resistant and solar-reflective polyester epoxy outdoor paint, with DIN50939 chromating if required.

**Layout:** 7 separate sections: 19” areas, MDF, Power distribution, Power meter, Fans, 2 x Battery. Front, side, rear and top access.

**Tested to:** ETS 300019 and IEC 68-2-57 (Earthquake, shock, vibration, transportation tests), EN 60529 and IEC5291 (IP55 dust and waterproof tests), EN 60950 (Electrical and mechanical safety tests).

**Dimensions (mm):** Height 1620, Width 920, Depth 450.

**Ordering Information:** OAD-7-1005

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Outdoor Cabinet

Technical Features

**Material:** Frame fabricated from Extruded Aluminium with doors and panels from double-layer aluminium / stainless / galvanized steel up to 4mm thick.

**Protection & Finish:** Protected to IP55 and finished in graffiti-resistant and solar-reflective polyester epoxy outdoor paint, with DIN50939 chromating if required.

**Layout:** 7 separate sections: 19” areas, MDF, Power distribution, Power meter, Fans, Battery. Cable Storage. Front, side, rear and top access, with cable storage at bottom.

**Tested to:** ETS 300019 and IEC 68-2-57 (Earthquake, shock, vibration, transportation tests), EN 60529 and IEC5291 (IP55 dust and waterproof tests), EN 60950 (Electrical and mechanical safety tests).

**Dimensions (mm):** Height 830, Width 536, Depth 260.

**Ordering Information:** OAD-7-1006
Outdoor Enclosures

**inorax-20 Outdoor Cabinet**

**Technical Features**

**Material:** Frame fabricated from aluminium with doors and panels from double-layer aluminium / stainless / galvanized steel up to 4mm thick.

**Protection & Finish:** Protected to IP55 and finished in graffiti-resistant and solar-reflective polyester epoxy outdoor paint, with DIN50939 chromating if required.

**Layout:** 3 separate sections: 19” area, MDF, Power. 4 Doors. Door-mounted heat exchanger.

**Tested to:** ETS 300019 and IEC 68-2-57 (Earthquake, shock, vibration, transportation tests), EN 60529 and IEC5291 (IP55 dust and waterproof tests), EN 60950 (Electrical and mechanical safety tests).

**Dimensions (mm):** Height 1475, Width 1687, Depth 566.

**Related Accessories:** Rack Monitoring System, Power Distribution Units

**Ordering Information:** OAD-7-1007

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**inorax-13 Outdoor Cabinet**

**Technical Features**

**Material:** Frame fabricated from aluminium / stainless / galvanized steel, with doors and panels from double-layer aluminium / stainless / galvanized steel up to 4mm thick.

**Protection & Finish:** Protected to IP55 and finished in graffiti-resistant and solar-reflective polyester epoxy outdoor paint, with DIN50939 chromating if required.

**Layout:** 4 separate sections: 2 x 19” areas, MDF, Battery. 5 doors. Heat exchangers and AC units can be mounted on the doors.

**Tested to:** ETS 300019 and IEC 68-2-57 (Earthquake, shock, vibration, transportation tests), EN 60529 and IEC5291 (IP55 dust and waterproof tests), EN 60950 (Electrical and mechanical safety tests).

**Dimensions (mm):** Height 1650, Width 1774, Depth 790.

**Ordering Information:** OGD-7-1001
Outdoor Enclosures

inorax Outdoor Cabinet

Technical Features

**Material:** Frame fabricated from aluminium with doors and panels from double-layer aluminium / stainless / galvanized steel up to 4mm thick.

**Protection & Finish:** Protected to IP55 and finished in graffiti-resistant and solar-reflective polyester epoxy outdoor paint, with DIN50939 chromating if required.

**Layout:** 4 separate sections: 2 x 19” areas, MDF, Battery. 5 Doors. Heat exchangers and AC units can be mounted on the doors.

**Tested to:** ETS 300019 and IEC 68-2-57 (Earthquake, shock, vibration, transportation tests), EN 60529 and IEC5291 (IP55 dust and waterproof tests), EN 60950 (Electrical and mechanical safety tests).

**Dimensions (mm):** Height 1650, Width 1190, Depth 690.

**Related Accessories:** Rack Monitoring System, Power Distribution Units

**Ordering Information:** OGD-7-1002

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inorax-21 Outdoor Cabinet

Technical Features

**Material:** Frame fabricated from aluminium with doors and panels from double-layer aluminium / stainless / galvanized steel up to 4mm thick.

**Protection & Finish:** Protected to IP55 and finished in graffiti-resistant and solar-reflective polyester epoxy outdoor paint, with DIN50939 chromating if required.

**Tested to:** ETS 300019 and IEC 68-2-57 (Earthquake, shock, vibration, transportation tests), EN 60529 and IEC5291 (IP55 dust and waterproof tests), EN 60950 (Electrical and mechanical safety tests).

**Dimensions (mm):** Height 39U, Width 600, Depth 900.

**Related Accessories:** Roxtec Special Cable Inlet, Earthing bar, depth-adjustable 19” mounting rails and 2 x vertical organisers. AC units can be mounted on the doors.

**Ordering Information:** OAD-7-1008

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Roxtec Cable Inlet

Internal Cabling & Assembly
Outdoor Enclosures

Outdoor Cabinet

This outdoor cabinet is an ideal small size solution for any 19” active equipment installation and is a perfect fibre cross-connect cabinet for FTTx applications.

Technical Features

**Material:** Single layer galvanized steel—2mm.
**Protection & Finish:** Protected to IP65 and finished in polyester epoxy outdoor paint RAL 7035.
**Layout:** 250mm high plinth is included in standard configuration.
**Related Accessories:** Rack Monitoring System, Power Distribution Units

**Highlights**

- IP 65 protection for installation of 19” active equipment and fibre distribution.
- Easy to configure with splice, patch and splitter modules.
- Secure anchor for incoming loose-tube cables.
- Easy installation and removal.
- Hidden hinges protect against unauthorised access.
- High resistance to corrosion.
- 1 pair of 19” rails as standard (optional extra pair).
- Single front door.
- CNC controlled polyurethane gasket available for all openings to provide IP65, complying with EN60529.
- 1.5mm mounting plate at rear for cable management.
- C-rail at rear for cable fixing

**Options**

- Wall-mounting brackets
- Top vent (IP55)
- Double front door
- Aluminium / Stainless steel

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Ventilation Unit Option. Top cover designed for air circulation.

Double-Door option.
Outdoor Enclosures

inorax-17 Outdoor SMC / Polycarbonate

An ultimate solution for outdoor copper cable connection and distribution applications. Special glass-fibre-reinforced polycarbonate structure makes this cabinet an ideal solution for cross-connect applications for Telecom and Cable Television companies. The structure is a blend of low weight and high mechanical strength and its functional design gives extra advantages both in installation and cable management.

Technical Features

Material: Glass-fibre-reinforced polycarbonate.
Protection: Protected to IP55.
Related Accessories: Rack Monitoring System, Power Distribution Units

Highlights

- Weatherproof outdoor cabinet for cross-connect applications.
- 2400 pairs capacity (Krone-style).
- Front and rear doors.
- 3-point locking system with 2 vertical bars and a single lock.
- Easy to install to pedestal with bottom cable entries.
- Impact resistant.
- 4 Vertical mounting rails.
- RAL 7038

Ordering Information:

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inorax-23 Outdoor SMC / Polycarbonate Cabinet

An ultimate solution for outdoor fibre cable connection and distribution applications. Special glass-fibre-reinforced polycarbonate structure makes this cabinet an ideal solution for cross-connect applications for Telecom and Cable Television companies. The structure is a blend of low weight and high mechanical strength and its functional design gives extra advantages both in installation and cable management.

Technical Features

Material: Glass-fibre-reinforced polycarbonate.
Protection: Protected to IP54.
Related Accessories: Rack Monitoring System, Power Distribution Units

Highlights

- Weatherproof outdoor cabinet for cross-connect applications.
- Front and rear doors.
- Latch and cylinder 3-point locking system with 2 vertical bars and a single lock.
- Large number of grommeted and knock-out cable entries.
- Plinth has four access panels for fixing and management.
- Cable clamps for up to 18mm diameter fibre cables.
- Impact resistant.
- 4 Vertical mounting rails.
- RAL 7035

Ordering Information:

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inorax Outdoor Enclosures
Thermal Management

Air Conditioner
An active air conditioner ensures that the proper temperature is maintained inside the enclosure. Conveniently mounted on front or rear doors with adjustable internal, mid or external mounting capabilities. These reliable products give you the flexibility required for your unique outdoor application.

Technical Specifications
- 300W to 3500W capacity.
- Quiet-running: 65dB (per ETS300753 class 4.1).
- IP54 environmental protection.
- AC powered.
- Designed for ease of maintenance.
- Quick-removable front casing.
- Easy filter replacement.
- Lower maintenance costs.
- CE approved.

Air to Air Heat Exchangers
Outdoor air to air heat exchangers are an alternative way to control temperature within an enclosure. Conveniently mounted on front or rear doors with adjustable internal, mid or external mounting capabilities. These reliable products give you the flexibility required for your unique outdoor application. Closed-loop cooling maintains a clean, sealed internal environment to ensure optimum performance and maximum life of the enclosed equipment while protecting against the intrusion of airborne contaminants and humidity.

Technical Specifications
- 30W/K to 120W/K.
- 75dB (per ETS300753 class 4.1E).
- IP54 environmental protection.
- 48VDC powered.
- Closed-loop cooling.
- Efficiently coated Aluminium heat-transfer core; cross-flow type.
- Speed-controlled fans.
- CE approved.

Direct Air Cooling Membrane Filter & Fan System
Unlike bulky heat exchangers and air conditioning systems, Direct Air Cooling (DAC) systems with Membrane Cooling Filters have few mechanical parts. They are also easier to incorporate into cabinet designs and require less maintenance. These cooling filters reduce ongoing operating costs because they use less energy than mechanical systems and reduce overall cabinet size to save space. Reliable protection of system electronics requires highly efficient filtering of ambient air to remove submicron particles and aerosols whilst also preventing water ingress. This is best achieved using a membrane filter which provides 99% particle filtration efficiency at the 0.3 micron level, yet still allows high airflow rates. Not only do membrane filters eliminate costly failures caused by corrosion and pollutants, but they are also maintenance-free and have longer lifetimes than non-membrane alternatives. Membrane filters have been specifically developed for outdoor cooling and protection under extreme environmental and climatic conditions.

Technical Specifications
- Nominal 500 x 500 x 40mm.
- Humidity resistant.
- EN779-F9 classification.
MCL Data Solutions is an e-commerce website set up by Mainframe Communications Ltd in 2010 to bring many of our successful products to a wider market and is a one-stop solution for fibre optics, fibre optic data network and telecommunication products and associated services. A range of optical patch cords and multi-way breakout cables, high capacity optical distribution frames, rack mounted splice and patch only units, tap boxes, switches, routers, racks, cabinets, etc can be found by visiting the website at mcldatasolutions.co.uk. The product range also includes TÜV and LUL approved products.

Mainframe Communications Ltd have been a supplier to the telecoms sector since the introduction of fibre into the European communication networks in the 1980’s. Over the years we have developed a comprehensive range of optical fibre and associated management products to serve operators of telecommunication systems.

Our modern purpose-built manufacturing facility in Southend-on-Sea has dedicated facilities for the design, manufacture and testing of optical products. This is backed up by warehousing of a wide range of standard products, available for next day delivery with the UK.

Our manufacturing operation is BS EN 9001:2008 accredited and we supply many of the leading telecommunications operators both in the UK and throughout Europe. We are known for the quality of our products, designs, build standards and for the quality of services within the UK.

We provide a quality product on time with full technical back up – in the event a fully suitable product is not available from our standard range, our specialist development team have the capability to design a bespoke product to your requirements.

A relative newcomer to our portfolio, the inorax range of outdoor cabinets contains products ideal for all kinds of telecommunications applications, whether wired or wireless, copper or fibre, active or passive—from POTS to 4G there is a cabinet waiting for your application.