

# Charles Utilities & Transportation Solutions

For more than 49 years, Charles Industries has been the supplier of choice for outside plant enclosures that deliver both superior environmental protection and long service life. Field proven performance, dedication to customer service, value, and US manufacturing excellence are cornerstones of Charles. Utilities (IOUs, Munis, Co-Ops) and Transportation service providers alike depend on Charles to safeguard and protect their critical infrastructures.



## Charles Universal Broadband Enclosures

CUBE cabinets house and protect a variety of communications equipment for SCADA, fiber backhaul, AMI/AMR, site support, and battery backup applications. Charles works with utility and municipality providers to create pre-wired, integrated cabinet solutions providing significant cost savings compared to traditional control rooms. A full range of sizes and mounting options (pole, wall, H-frame, pad mount) are available. CUBE cabinets are NEMA 4 (sealed) and 3R (vented) rated and offered with many integrated thermal management options. Factory integration of 3rd party equipment is available.



## Charles Below Grade Enclosures

Charles offers two series of below grade enclosures, CBGE and TRUE. CBGE are lightweight, molded polyethylene handholes available in six tapered rectangular and two round sizes. Designed for light duty placements (parkway/greenbelt applications), these sturdy below grade enclosures are constructed from high-density polyethylene (HDPE). TRUE (Tier Rated Underground Enclosures) are constructed from advanced composite materials and are designed to meet ANSI Tier 15 and Tier 22 Load Ratings. Both series are stackable and offer years of maintenance-free service and superior shelter for buried network components.



## Charles Power Distribution Pedestals

Safety is an utmost concern for secondary power service pedestals deployed in utility distribution networks. Charles non-metallic, non-conductive buried distribution pedestals deliver that safety for both technicians and customers. Their PVC material construction is tested to stringent industry standards for flammability, dielectric strength, volume resistivity, cold temperature impact, high current arc, and hot wire ignition. A two piece split base is ideal for retrofit applications around existing conduit, while a penta head bolt lock with padlock hasp prevents unauthorized entry.



## Charles Fiber Distribution Points & Fiber Cross-Connects

Fiber access points at substations and campus-like environments such as nuclear power plants and natural gas companies can be costly installations when they involve cabinets and pad placements. Charles direct buried fiber distribution points (CFDP) and cross-connects (CFXC) are an economical alternative, especially in confined areas where a smaller footprint solution is preferable. Charles non-metallic fiber distribution points feature a closed architecture design, are flood and fire resistant, and provide both superior environmental protection and long service life.



## Charles Fiber Flexibility Pedestals

CFFP offer a scalable, low cost alternative to placing centralized split points (also known as fiber distribution hubs—FDH) in the outside plant. Unlike metallic cabinets, CFFP are floodproof and can be installed in almost any location. Their compact size compared to large cabinets makes them easier to install and ideally suited to small communities and neighborhoods. Right-of-ways are no longer a concern and the units can be economically placed directly in the ground without the need for an expensive pad. CFFP are available in four sizes with up to 72, 96, 144 and 288 fiber counts.



## Charles Fiber Rack and Wall Solutions

Charles Fiber Rack Solutions (CFRS) provide flexible, multi-functional panels for patch, splice and splitter requirements within virtually any application. The efficient design of the splice area and bulkhead allows for maximum density while using just 1RU, 2RU or 4RU of valuable rack space. Front and rear access allows efficient cable management and superior technician access. Charles Fiber Wall Solutions (CFWS) provide simple, cost-effective enclosures for patch and splice requirements within virtually any indoor application. The efficient design provides easy access and uses standard LGX footprint patch plates for up to 12 fiber ports.



## 360-80 Intelligent Channel Banks

Channel banks continue to play a vital role in the communication networks of utilities and municipalities. However, many manufacturers have either discontinued or no longer support their channel bank lines. Charles recognizes the importance of T1 channel banks, and offers a full line of analog and digital channel modules to populate its popular and proven 360-80 ICB platform. At 1RU, the compact design saves space in remote applications and is ideal for legacy bank replacement.



# Charles Below Grade Enclosures

## Advanced Composites and Molded Polyethylene Handholes and Enclosures

Charles now offers two series of grade level enclosures for convenient access to cable slack, sealed cases, meter boxes, irrigation controls, traffic and railway signals, ground rods and other buried equipment. CBGE Series enclosures feature molded HDPE construction and are rated for light-duty (pedestrian) traffic. Eight sizes of handholes and round enclosures are offered. The TRUE (Tier Rated



Advanced Composites

Underground Enclosures) Series is constructed from a proprietary advanced composite material using a light resin transfer molding process. The result is a breakthrough enclosure that is 50% to 75% lighter than competitive enclosures while meeting and exceeding ANSI/SCTE Tier 15 or Tier 22 Load Ratings for driveway, parking lot, and off-roadway applications subject to occasional non-deliberate heavy vehicular traffic. Options for both series include molded-in colors, lock configurations, identification inserts, and EMS detection.



Molded Polyethylene

## CFIT-Flex Series Universal Enclosures (NEMA 4)

### Compact Non-Metallic Enclosures for Fiber, Copper and Coaxial

Fiber, Copper, Coaxial Cable... CFIT-Flex Universal Enclosures from Charles Industries handle it all. Universal backplanes and interchangeable feed and drop cable ports allow these versatile indoor/outdoor enclosures to house a variety of equipment and cable, and with optional swing out or fixed fiber bulkheads, meet multi-user FTTX deployment challenges regardless of splicing technique, fiber type or the use of pre-connectorized cable. CFIT-Flex are wall, pole, strand or pedestal mountable and constructed of lightweight and rugged polycarbonate. Compact size (15"H x 12"W x 5.5"D) distributes up to 24 fibers while Standard size (16"H x 22"W x 8"D) distributes up to 72 fibers. Useful for basic small equipment storage terminals as well.



## CUBE PM639 Fiber to the Substation Cabinets

### Macro Equipment Cabinets for Radio and Substation Equipment

Utilities that are replacing their leased line communication networks with their own broadband network need a highly robust solution that includes outside plant enclosures. Charles CUBE PM639 series enclosures are ideally suited to meet the deployment needs of the fiber or wireless gear necessary to implement a new network deployment. Many enclosure and integration options are available, such as separate battery chambers, AC-DC power supplies, and fiber termination, patching, and management. CUBE PM639 cabinets feature 1/8" aluminum construction, continuously welded seams to create and maintain a completely sealed environment, and thermal options that include heat exchangers, thermoelectric coolers and air conditioners. The 39 rack unit equipment chamber can be coupled with either an attached battery compartment at the bottom, or with a separate Charles Battery Backup cabinet from the CUBE BB series of cabinets.



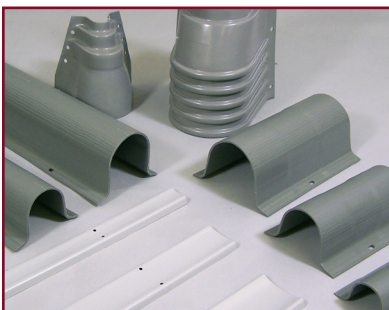
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## Riser Line Guards and Accessories

### Protection and Organization for Overhead to Underground Vertical Pole Lines



Charles Riser Line Guards, Risers and Guy Wire Markers provide total protection of vertical utility poles and cables, a necessity for a network component that is particularly vulnerable to accidental damage leading to both safety hazards and service interruptions. A small investment in riser protection can prevent damage caused by impact, mowing equipment, and other accidental cutting, and eliminate costly truck rolls for repair. Charles Riser Line Guards also create an aesthetically pleasing organization of lines and ground wires, and greatly improve safety for both technicians and pedestrians. They are constructed from molded and extruded polyethylene for superior environmental protection, and are available in 2", 3", 4" and 5" diameters in 5 ft. or 10 ft. sections with one belled end for quick installation and protection of overlapping joined ends. Available accessories include boots, adapters, couplers, backing plates, and fastener kits.



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