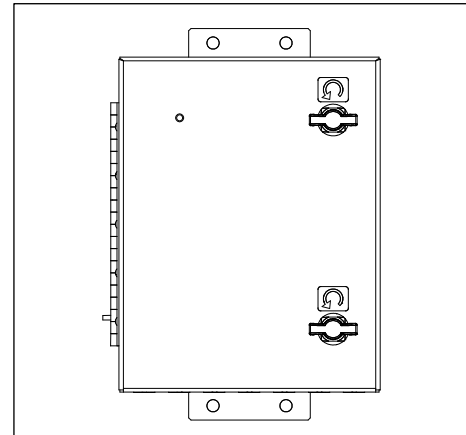


# Charles Universal Broadband Enclosure

## CUBE-MP1310

### General Description and Installation

|  |          |
|--|----------|
| <b>1. GENERAL INTRODUCTION .....</b>                   | <b>1</b> |
| 1.1. Document Purpose .....                            | 1        |
| 1.2. Product Purpose.....                              | 1        |
| 1.3. Product Mounting and Location.....                | 1        |
| <b>2. PRODUCT DESCRIPTION.....</b>                     | <b>2</b> |
| <b>3. INSTALLATION .....</b>                           | <b>4</b> |
| 3.1. Inspecting the Product.....                       | 4        |
| 3.2. Following and Using Safety Precautions.....       | 4        |
| 3.3. Obtaining Tools and Equipment.....                | 4        |
| 3.4. Preparing the Installation Site.....              | 4        |
| 3.5. Lifting the CUBE.....                             | 5        |
| 3.6. Mounting the CUBE.....                            | 5        |
| 3.7. Conduit Seals.....                                | 5        |
| 3.8. Verifying the Installation.....                   | 5        |
| <b>4. PERIODIC MAINTENANCE.....</b>                    | <b>5</b> |
| <b>5. TECHNICAL ASSISTANCE AND REPAIR SERVICE.....</b> | <b>6</b> |
| <b>6. WARRANTY &amp; CUSTOMER SERVICE .....</b>        | <b>6</b> |
| <b>7. SPECIFICATIONS.....</b>                          | <b>6</b> |



**Figure 1 Front View of the CUBE**

## 1. GENERAL INTRODUCTION

### 1.1. Document Purpose

This document provides general information for the CUBE-MP1310 of the Charles Industries’ Universal Broadband Enclosure (CUBE) product line. Figure 1 shows a closed front view of the enclosure.

*-NOTE-*  
*Hereafter, the Charles Universal Broadband Enclosure CUBE-MP1310 will be referred to as the “CUBE.”*

### 1.2. Product Purpose

The CUBE consists of a protective enclosure for an integrated system of electronic components and equipment that can serve fiber and copper interfaces.

### 1.3. Product Mounting and Location

This enclosure is suitable for outside plant-type (OSP) locations and those that may require NEC compliance. The outdoor, weather-resistant CUBE is to be mounted on a wall. The installer connects the power, fiber, and copper connections. Detailed mounting and installation information is covered in Section 3.

## 2. PRODUCT DESCRIPTION

The CUBE is a single compartment that houses two 20A breakers and two single-pole relays.

Figure 2 shows the CUBE dimensions. Figure 3 shows the main components of the CUBE.

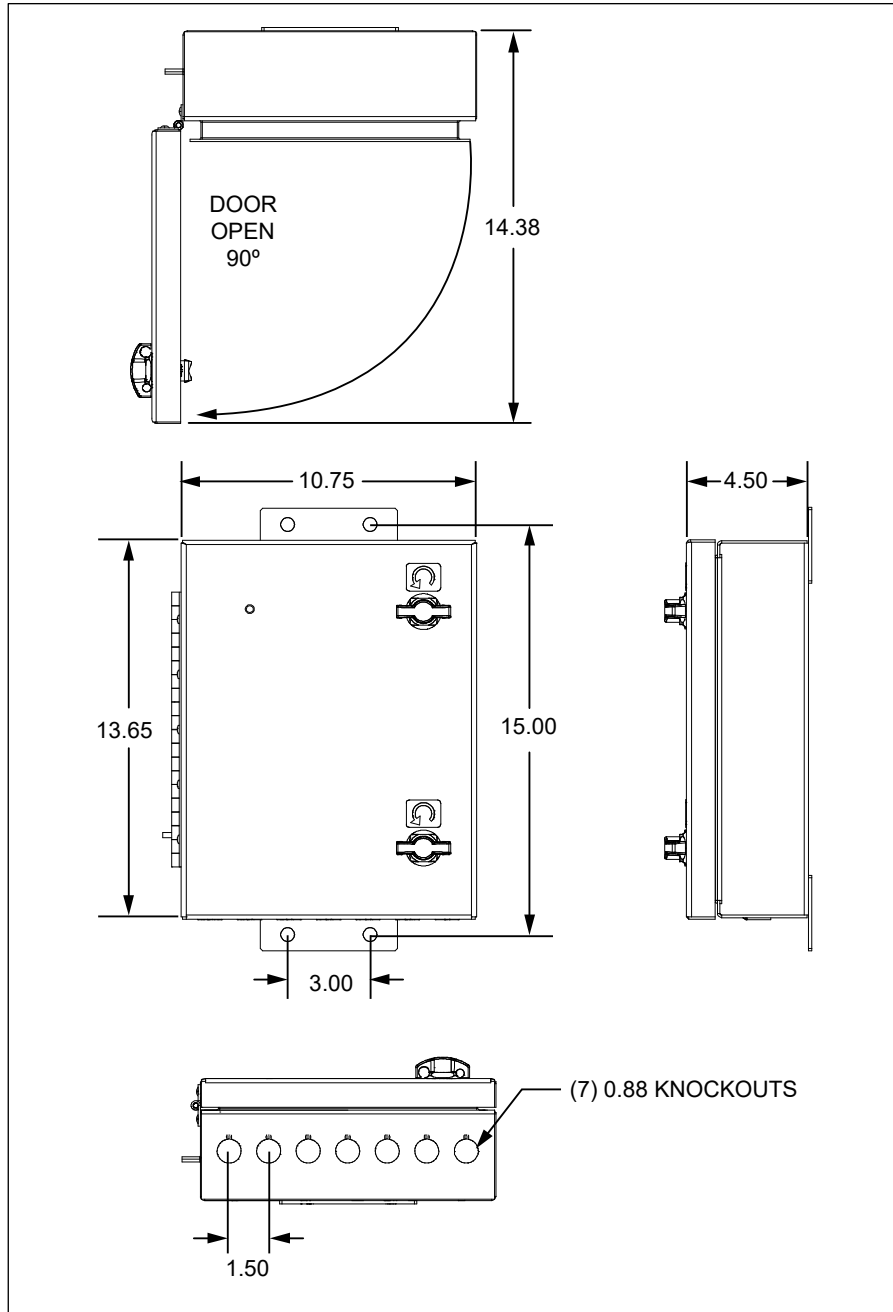
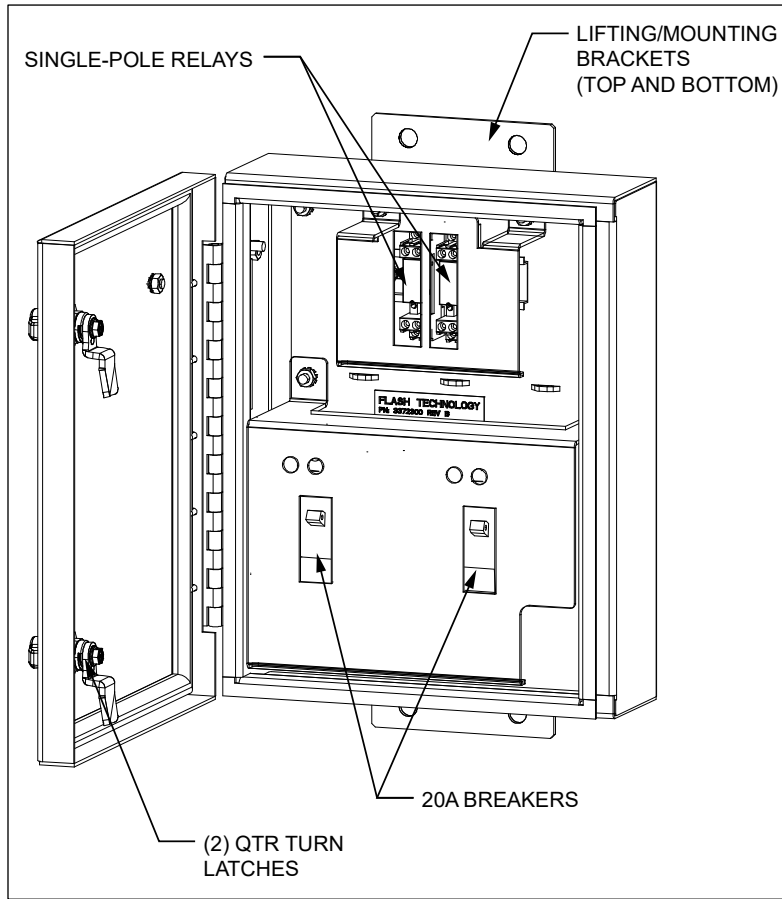


Figure 2 CUBE Dimensions (in inches)



**Figure 3 CUBE Components**

### 3. INSTALLATION

#### 3.1. Inspecting the Product

The CUBE is shipped in a carton. Unpack the unit, and dispose of the packaging material.

*-INSPECTION NOTE-*

*Visually inspect the unit for damages prior to installation. If the equipment was damaged in transit, immediately report the extent of the damage to the transportation company.*

#### 3.2. Following and Using Safety Precautions

Read the following site and safety tips, cautions, and warnings, then proceed with the paragraphs that follow.

- For installation, follow all National Electrical Codes (NEC) ANSI/NFPA 70, local, environmental, workplace, and company codes, safety procedures, and practices.
- Minimum spacing between the accessories and components and the housing for ITE equipment shall be maintained for safe operation of the equipment when installed in accordance with NEC ANSI/NFPA 70.
- Read all instructions, warnings and cautions on the equipment and in the documentation shipped with the product.
- Always connect ground connections first.
- Do not place this product on weak or unstable surfaces which may allow the product to fall, resulting in potentially serious damage(s) to persons or product.
- Only authorized trained personnel shall install the CUBE.

#### 3.3. Obtaining Tools and Equipment

Obtain the following recommended or needed items for installing the CUBE.

- Sufficient length and quantities of fiber cable (or pigtails)
- Cable scoring, opening, and cutting tools for cable sheathing, shields, wrappings, strength members and buffer tubes
- Wire strippers
- Crimpers
- Cable, tube, wire, and fiber cleaning materials
- Protective and/or insulated work gloves
- Safety glasses
- Tape measure
- #6 ground wire or rod and earth ground materials
- Any exterior cable strain relief, per company practice
- Slotted, hex, and Phillips screwdrivers
- Torque wrench
- Assorted cable ties, clips, or fasteners (optional)
- Level

#### 3.4. Preparing the Installation Site

Observe the following site preparation recommendations.

- Leave adequate horizontal and vertical space between multiple installations to allow for proper cable access, as well as enough room around the enclosure to open the door(s).
- The site must meet minimal personnel and equipment safety requirements.
- The distance from the cable entry point should be consistent with local installation practices.
- The wall must be able to support the weight of the CUBE.
- Run all fiber and copper facilities to the site.

### 3.5. Lifting the CUBE

Use adequate lifting equipment per company practice when moving and installing the CUBE.

### 3.6. Mounting the CUBE

Mount the CUBE on a wall. Refer to Figure 2 for mounting dimensions for positioning mounting hardware. Charles recommends using a minimum SAE Grade 2, corrosion-resistant, 3/8” diameter bolts, washers and nuts. Bolts need to be of sufficient length depending on the wall. A minimum of 3/4” thick plywood or similar surface is required for wall mounting. Ensure that the unit is level.

#### 3.6.1. Torque Requirements

Torque all hardware as shown below (unless otherwise noted). These values apply to SAE Grade 1 & 2 Low Carbon Steel, ASTM A307 Low Carbon Steel, and Stainless Steel Grade 18-8.

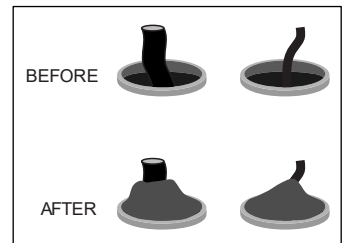
| Thread Size | In-lbs  | Ft-lbs  |
|-------------|---------|---------|
| 4-40        | 4±10%   |         |
| 6-32        | 8±10%   |         |
| 8-32        | 16±10%  |         |
| 10-32       | 26±10%  |         |
| 12-24       | 50±10%  |         |
| 1/4-20/M6   | 60±5%   | 5±5%    |
| 5/16-18     | 125±5%  | 10.4±5% |
| 3/8-16      | 180±5%  | 15.0±5% |
| 1/2-13      | 500±2%  | 41.7±2% |
| 5/8-11      | 1000±1% | 83.3±1% |

#### 3.6.2. Fiber and Copper Entry

The CUBE has multiple Ø0.88” knockouts on the bottom that accommodate Ø0.5” conduit fittings. See Figure 2 for knockout locations.

### 3.7. Conduit Seals

All internal and external conduit openings on the CUBE must be completely sealed with a duct seal compound to prevent moisture from entering the equipment compartment. Use a moldable, flame-retardant putty style duct seal material. Do not use an expanding foam seal. Mold the putty so that the open space around the wire or conduit is completely sealed, as shown in Figure X. If the openings must be accessed at any time, remove the putty and set it aside. When work is complete, re-mold the putty to re-seal the opening.



**Figure X** Applying Putty Seal

### 3.8. Verifying the Installation

Verify that earth ground and all grounding and bonding is complete and functional. After verifying that all installer connections are secure and complete, apply voltage.

## 4. PERIODIC MAINTENANCE

In the event that the enclosure must be opened in freezing conditions, use a narrow, pointed metallic object such as a screwdriver or chisel, along with a non-metallic device like a rubber mallet, to remove excessive ice buildup around the door and locking mechanism. A commercial aerosol de-icer spray can be used to free up locks and latches if needed. Use protective gloves and safety glasses when applying de-icer sprays.

**5. TECHNICAL ASSISTANCE AND REPAIR SERVICE**

For questions on product repair or if technical assistance is required, contact Charles Technical Support.

847-806-8500  
[techserv@charlesindustries.com](mailto:techserv@charlesindustries.com) (email)  
<http://www.charlesindustries.com/techserv.htm>

**6. WARRANTY & CUSTOMER SERVICE**

Charles Industries LLC offers a one-year warranty on the CUBE product. The Charles warranty is limited to the operation of the CUBE hardware as described in this documentation and does not cover equipment that may be integrated by a third party. The terms and conditions applicable to any specific sale of product shall be defined in the resulting sales contract. For questions on warranty or other customer service assistance, contact your Charles Customer Service Representative.

847-806-6300  
[mktserv@charlesindustries.com](mailto:mktserv@charlesindustries.com) (email)  
[http://www.charlesindustries.com/main/telecom\\_sales\\_support.htm](http://www.charlesindustries.com/main/telecom_sales_support.htm)

**7. SPECIFICATIONS**

|  |   |
|--|---|
| <b>Physical</b>                          |   |
| Dimensions                               | 13"Hx10"Wx5"D                             |
| Weight                                   | Approx. 57 lbs. as shipped                |
| Materials                                | 0.125" aluminum                           |
| Color                                    | Boss Gray                                 |
| <b>Electrical</b>                        |   |
| Breakers                                 | 20A, Square D QO220C                      |
| Relays                                   | 1-pole, SPDT, 230VAC, ABB 1SVR405600R3000 |
| <b>Environmental</b>                     |   |
| Operating Temp. Range, Outside Enclosure | -40° to +115°F, -40° to 46°C              |
| Operating Temp Range, Inside Enclosure   | -40° to +149°F, -40° to 65°C              |
| Humidity                                 | 0 to 95% (non-condensing)                 |
| Altitude                                 | Up to 2,000 meters (6560 feet)            |
| <b>Kits and Replacement Parts</b>        |   |
| Touch-up Paint                           | 02-000632-0                               |
| 1/4 Turn Latch                           | 39-000420-0                               |

**Table 1 CUBE Specifications**