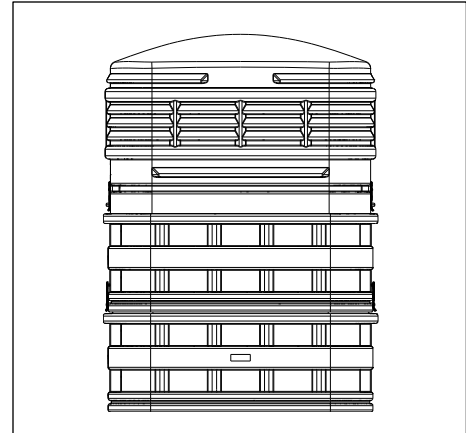


# Charles Multi-Purpose Housing

## CMPH-950DFNCU

### General Description and Installation

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**Figure 1 Front View of the CMPH**

## 1. GENERAL INTRODUCTION

### 1.1. Document Purpose

This document provides general information for the CMPH-950DFNCU multi-purpose housing. Figure 1 shows a closed front view of the enclosure.

*-NOTE-*  
*Hereafter, the Charles Universal Broadband Enclosure CMPH-950DFNCU will be referred to as the "CMPH."*

### 1.2. Product Purpose

The CMPH is a non-metallic, three-piece, rectangular, OSP enclosure that offers easy installation, superior structural strength, 360° technician access, generous internal equipment and cable storage capacity, and protection against corrosion, floods, fire, weather, dirt, insects, intrusion, dents and impacts.

### 1.3. Product Mounting and Location

The CMPH is an above-grade enclosure. The base is typically installed in a trench or hole in the ground up to the base’s ground line indicator. The ribbed or corrugated base walls provide stability in most soil types. The 2-section dome mounts on the base and protects all equipment installed or mounted inside the CMPH. Stake mounting is achieved by attaching a stake at the center of the interior side walls. Detailed mounting and installation information is covered in Section 3.

## 2. PRODUCT DESCRIPTION

The CMPH contains a base, a mid-section, and a dome. The base has corrugated or ribbed walls, an open top, and an open bottom. The open bottom allows replacement installations and underground cable access.

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

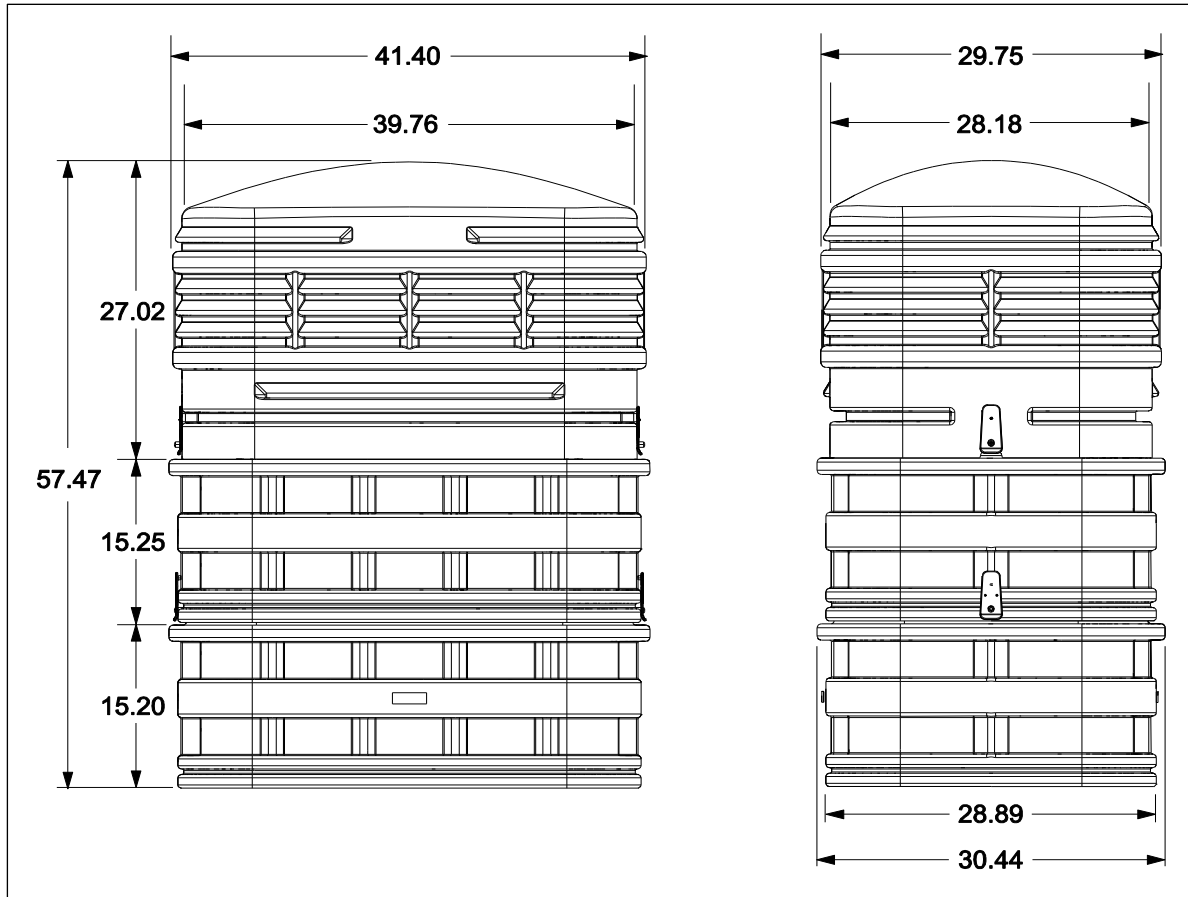
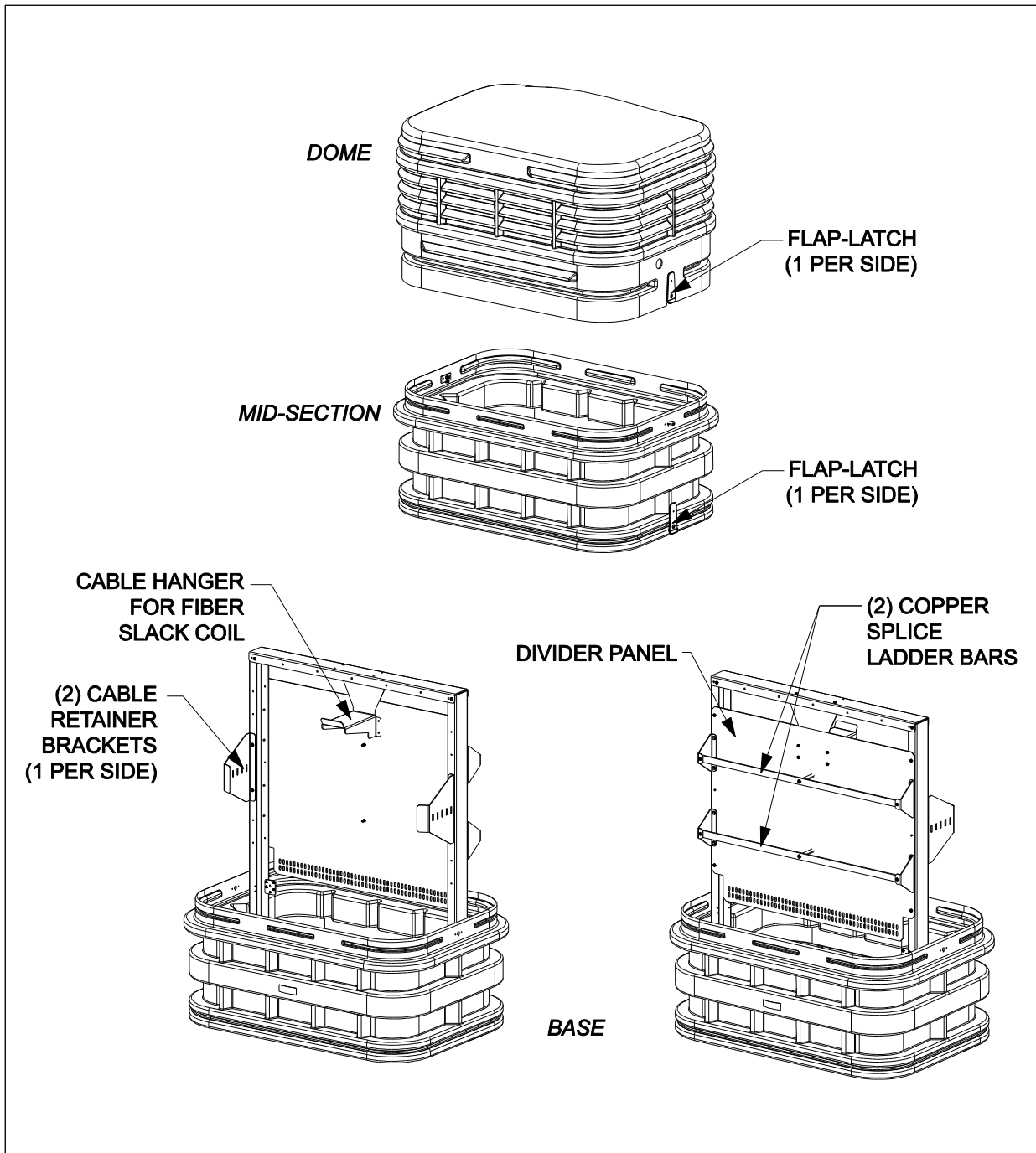


Figure 2 CMPH Dimensions (in inches)



**Figure 3** CMPH Components

### 3. INSTALLATION

#### 3.1. Inspecting the Product

The CMPH is shipped mounted upright on a skid. 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



**Risk of serious eye damage! Never look into the end of a fiber optic line or use a magnifier in the presence of laser light or radiation. Exercise caution when installing, testing or maintaining live circuits. If eyes are exposed to laser light or radiation occurs, immediately seek treatment by a medical professional.**



**Cable and fiber cleaning solvents may contain hazardous or harmful materials. Maintain good housekeeping practices and refer to the MSDS when working with cleaning solvents or similar products.**

**Shards and cleaved glass fibers are very sharp and can easily pierce the skin. Use tweezers to pick up cut glass fibers and place them in a specifically designated container. Do not consume any food products near the cable installation site.**

**Corrugated metal or armor in feed cables is very sharp when cut or exposed. Exercise extreme caution to prevent personal injury. Use protective work gloves when handling armored cable.**



**Perform all bonding and grounding prior to making any electrical and communications connections.**

**Be careful not to damage any buried cables or service wires while digging either to expose cables or to prepare a hole or trench, or while driving stakes. Buffer tubes and fibers are sensitive to excessive bending, pulling, and crushing forces. To avoid kinking of buffer tubes and fiber damage or breakage, exercise great care when working with fiber, and do not exceed or violate minimum bend radius requirements for fibers, buffer tubes, and cables.**

#### 3.3. Obtaining Tools and Equipment

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

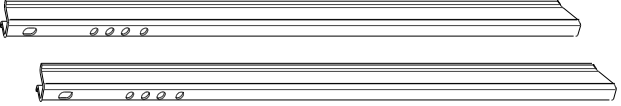
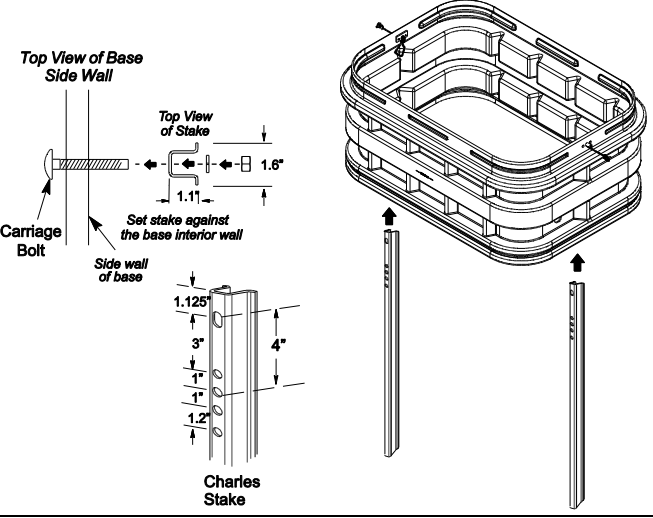
- Protective and/or insulated work gloves
- Safety glasses
- Can wrench (216 type tool)
- Scissors, knife or snips
- Level
- Tape measure
- Trenching and digging equipment and tools
- Cable grounding materials and tools
- Cable scoring, opening, and cutting tools for cable sheathing, shields, wrappings, strength members and buffer tubes
- Soil tamping tools
- Soil for backfill
- Clean, dry pea gravel (3/8" to 5/8" diameter)
- Site cleanup tools
- Conduit and conduit caps
- Wrenches or socket set
- Sufficient length and quantities of fiber cable (or pigtailed)
- Any exterior cable strain relief, per company practice

### 3.4. Installing a New CMPH Enclosure

Step	Description	
1	Dig and prepare the cable trench, per company practice. <b>Do not damage any buried cables or wires while digging.</b>	
2	Follow company practice to lay, place, and cut any cables, interduct or conduit.	
3	Unlock the CMPH using a 216 tool or can wrench at the four cup-washer screws (two at each side of the CMPH). Turn the cup-washer screws counterclockwise until they freely hang from their lanyard.	
4	Disengage the flap-latches. Each flap-latch has a hole for the round stand-off protruding from the sides of the base and mid-section collars. Pull each latch outward from the base side wall to clear the standoff. Maintain the flexed or pulled-out latch position by temporarily inserting the cup-washer screw under each latch (between the latch and the side wall). Do not pry or flex the latches too far, only enough to clear the standoff. <b>Never use the flap-latches as handles to lift the dome off the base; latch breakage and possible enclosure intrusion could result.</b>	
5	While the flap-latches are disengaged from the base and mid-section standoffs, grasp the ribs at each side of the dome and lift up to remove the dome from the mid-section. Repeat to remove the mid-section from the base. The cup-washer screws remain attached via the lanyard (or chain).	
6	Remove the red vapor barrier sheet hanging on one of the frame's splice bars or brackets. Set it aside for later use.	
7	Determine and mark the base installation location. To determine exactly where to place the base in the trench, use the base itself as a positioning template. Place it over the top of the conduit, interduct, or cables (route the cables through the base) and lower the base to the ground. Determine the final orientation and horizontal positioning in the trench or hole. Mark this final spot by removing a shallow layer of top soil from around the outside perimeter of the base about 2-4 inches wider than the base. Remove the base and set it aside.	
8	Dig a hole for the base. <b>Caution: Avoid damaging buried cables, wires, interduct, conduit, or ground equipment whenever digging.</b> At and within the marked perimeter boundary, dig straight down to a depth of 9 inches. Do not dig too deep.	
9	Stake mountings. Refer to Section 3.5 for instructions to install mounting stakes.	
10	Route the cables and conduit or interduct up through the bottom of the base, then put the base in the prepared hole or trench.	
11	Before backfilling, verify the base is at the proper depth, approximately 9 inches deep. Rest the base on solid or well-tamped soil when measuring this distance. Verify the base ground line indicator is at the same level as the final-grade ground line. Remove, add, or tamp more soil as necessary.	
12	Verify the level (or plumb) of the base. Check the level at either the top surface of the base, or against one of the interior vertical channels of the metal frame. Check the level in both directions (front to back, and side to side). Make any needed base-bottom soil adjustments.	

13	<p><b>Always follow local codes and company practice when preparing earth ground and when grounding cables or equipment.</b> If an earth ground is not present at the CMPH site and local code or practice requires an earth ground, prepare one now. Attach the earth ground to the CMPH's ground lug on the ground plate using a ground wire of proper gauge, per company practice.</p>	
14	<p>With the base in place, backfill the trench or hole outside of the base. While backfilling, tamp the soil or fill and check the base level once or twice. Continue to add and tamp the soil until the soil is at the base ground-line mark.</p> <p>Plug, cap, or cover all channel, conduit, or interduct openings inside the base. Per company practice, backfill soil inside the base, tamping soil periodically, to the ground line mark. This adds stability and prevents any company-approved gravel (Step 16) from falling or slipping under the base sides when it is added.</p>	<p>The diagram is a cross-sectional side view of the base assembly. From top to bottom, the layers are: 'Base Top' (the upper rim of the base), a layer of '3-5 inches of gravel inside the base' (indicated by a dashed line), a layer of 'Pea Gravel' (indicated by diagonal hatching), a 'Moisture Barrier' (a thin solid line), the 'Ground Line' (a horizontal line), a layer of 'Soil' (indicated by diagonal hatching), and finally the 'Base Bottom' (the lower rim of the base).</p>
15	<p>Retrieve the red vapor barrier sheet previously set aside. Place it into the base on top of the soil fill. Completely cover the soil. Fit the sheet around and encircle the cables, conduit, or interduct. Spread it outward from the center, and press all sheet edges downward where they make contact with the base walls. When installed properly, this sheet acts as a vapor barrier and aids moisture run-off into the soil. Failure to use the plastic moisture-barrier sheet on top of the soil significantly increases the risk of condensation inside the enclosure.</p>	
16	<p>Pour 3-5 vertical inches of company-approved pea gravel (gravel minimizes condensation and drains well) into the base (about to the top base rib, or 1" below any interduct or conduit opening) on top of the soil. Use 5/8" (or less) diameter pea gravel or non-porous gravel rock only (cut stone retains more moisture). Five 18-pound bags work well. Spread out and level the gravel.</p>	
17	<p>End of base installation - determine next procedure. If cable work will now be performed, continue with the next steps and consult local practices and equipment manufacturer instructions for the proper procedures. If further cable work will NOT be performed at this time, skip to Step 22 to close the CMPH enclosure.</p>	
18	<p>Per company practice and local codes, perform all cable routing, mounting, and management procedures.</p>	
19	<p>Ground or bond the cable(s) to a nearby company-approved earth ground rod. Perform cable strain relief and bonding per company practice.</p>	
20	<p>Per company practice, perform all cable opening and splicing procedures, and equipment mountings and connections.</p>	
21	<p>Re-check cable management. Verify all equipment and cabling is organized and will not contact the interior walls of the dome when installed (keep items at least 1" from the vertical plane of the base collar). This assures safe and smooth dome placement.</p>	
22	<p>Locate the mid-section and lift it up and over the interior framework and equipment. Lower the mid-section until it overlaps and self-latches to the base. Repeat for the dome section. Verify the stand-offs protrude through the holes in the latches (self-latch feature).</p>	<p>The diagram illustrates the assembly of the dome section. It shows two views: the top view shows the dome section being lowered over the base, and the bottom view shows the dome section fully seated on the base with arrows indicating the downward direction of assembly.</p>
23	<p>Lock the CMPH by re-inserting and turning the cup-washer screws clockwise into the threaded holes in the standoffs. Tighten the cup-washer screws with a 216 tool or can wrench.</p>	
24	<p>If no more equipment or cable work will be performed at this time, clean up the site, fill and tamp any trenches, replace any removed sod, restore the landscape to its original condition, pick up all equipment, and optionally leave this document inside the CMPH for future reference.</p>	

### 3.5. Installing the CMPH with Charles Mounting Stakes

Step	Description
1	Perform Steps 1-8 of section 3.4 to open the enclosure and prepare the hole or trench and the cables or conduit. Verify the base installation site is ready and suitable for metallic stakes.
2	Mounting stakes are available (ordered separately, see Ordering Information, Table 1). Typical installations use two mounting stakes. 
3	Place the stakes against the wall of the base in the final installed position, then mark drill hole locations 4" apart where the stakes will be attached.  Set aside the stakes and drill the holes. Insert the tops of the stakes into the base, rotate each stake, and align the stake holes with the drilled holes in the base. Insert a bolt (from the outside to the inside) through each set of aligned holes. Attach the lock washers and nuts to secure the mounting stakes to the base. 
4	Verify the hole or trench accommodates the stake length. Lift the base and place it back in place in the trench or hole. If the trench is deep enough to accommodate the length of stake protruding from the bottom of the base, skip the rest of this step.  If the hole or trench is not deep enough to accept the stakes, and the weight of the base is not enough to drive the stakes the length needed to allow the base to rest at its proper depth, then once again use the base as a template to mark the exact stake locations in the ground where more soil must be removed. Remove the base from the hole, and at the stake-hole indentations, dig down just enough to accommodate the length of the stake.
5	When the hole is deep enough for the stakes, set the base into the hole, being sure to enclose within the base all cables, interduct, conduit, or equipment present at the site and intended for storage inside the enclosure.
6	Perform Steps 10 through 24 in section 3.4 to finish the installation. Be sure to backfill and firmly tamp soil into the stake holes when backfilling.

#### 4. 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>

#### 5. WARRANTY & CUSTOMER SERVICE

Charles Industries LLC offers a one-year warranty on the CMPH product. The Charles warranty is limited to the operation of the CMPH hardware as described in this documentation and does not cover equipment which 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)

#### 6. SPECIFICATIONS

Physical		
<i>Dimensions and Weight</i>	<i>U.S.</i>	<i>Metric</i>
Height, overall	58 in.	107 cm
Height, base only, incl. collar	19 in.	48 cm
Height, dome + mid-section	41 in.	68.6 cm
Depth	30 in.	76.2 cm
Width	41 in.	104 cm
Weight, dome	40 lbs.	18.2 kg
Weight, mid-section	29 lbs.	13.2 kg
Weight, base	29 lbs.	13.2 kg
Weight, two 30" stakes	5 lbs.	2.2 kg
Weight, two 36" stakes	6 lbs.	2.7 kg
Weight, two 42" stakes	7 lbs.	3.2 kg
Ordering Information and Options		
CMPH-950DFNCU	Charles Multi-Purpose Housing. CMPH-9500 series with a polyethylene base, a 2-section polyethylene dome, and 2-sided internal metallic framework supporting fiber splice closure and fiber cable slack storage and copper splicing storage. Includes ground plate, instructions, and a plastic moisture-barrier sheet.	
UMS30-STD	30-inch mounting stakes with mounting hardware, ordered in quantities of 10	
UMS36-STD	36-inch mounting stakes with mounting hardware, ordered in quantities of 10	
UMS42-STD	42-inch mounting stakes with mounting hardware, ordered in quantities of 10	

**Table 1 CMPH Specifications**