Charles Z14 and Z24 Generation 2 Louvered Low Profile Housing General Description and Installation

1. GENERAL INTRODUCTION

1.1 Document Purpose

This document provides installation instructions for the Charles Industries' Z14 and Z24 Generation 2 Louvered Low-Profile Housing (G2-LLPH). Figure 1 shows the Z14 G2-LLPH and the Z24 G2-LLPH.

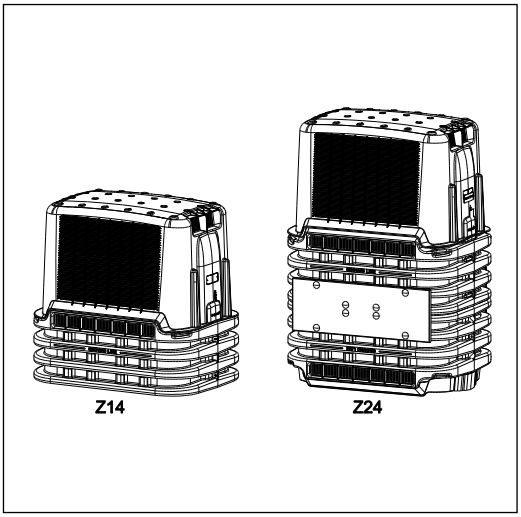


Figure 1 Z14 and Z24 G2-LLPH

-NOTE-
Hereafter, the Charles Z14 and Z24 Generation 2 Louvered Low-Profile Housings will be referred to as the "Z14," "Z24," or "Z housings."

1.2 Product Purpose

Molded of high density polyethylene (HDPE), the lightweight and rugged Z housings can be easily transported to and installed at equipment sites to provide a secure housing for optical node devices and related RF equipment. The units are the identical, except that the Z24 has a deeper base.

1.3 Product Mounting and Location

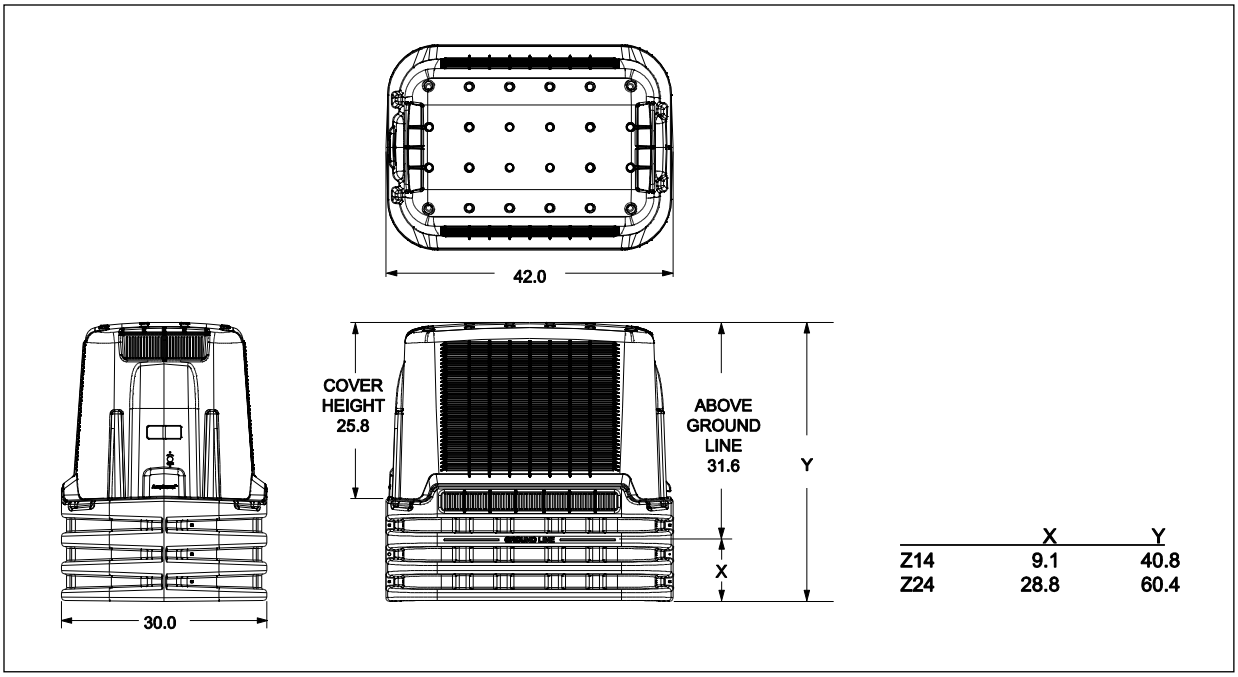
The outdoor, weather-resistant Z housings are intended for use with high-heat generating optical and RF equipment used in cable telecommunications networks. Detailed installation information is covered in Section 3.

1.4 Site Selection

The Z14 is designed for a site with a level grade. The Z24, with its extended depth base, can accommodate installations in sloped grades. For severely sloped grades, use local practices to build up and support the grade. For example, install retaining wall blocks or landscape timbers to build up the grade and prevent erosion.

2. PRODUCT DESCRIPTION

The Z housings are designed to accommodate and protect the environmentally hardened active and passive electronic housings typically found in a cable telecommunications hybrid fiber coax (HFC) network, including optical nodes, RF amplifiers, RF directional taps, power inserter modules, and RF line passives. The Z housings are equipped with venting to allow for heat dissipation for the active electronics installed within the housing. The housing has been thermally tested to maintain a ≤60ºC operating envelope for HFC nodes with up to 160 watts of heat dissipation in an ambient environmental temperature of 46ºC (115ºF). The Z housings have an internal bracket structure, depending on the application, to allow for affixing the CATV equipment housing. The unit is designed for burial directly in the soil and includes a molded-in ground line in the mounting base for consistent installations by field technicians and contractors. Figure 2 shows the Z housing's overall dimensions.



	X	Y
Z14	9.1	40.8
Z24	28.8	60.4

Figure 2 Z14 Dimensions (in inches)

3. INSTALLATION

3.1 Warnings and Precautions

- Follow all national safety codes, OSHA requirements, and local environmental, workplace and company codes, safety procedures and practices.
- Wear approved safety gear when installing the Z14 housing
- Ensure proper tamping, compaction and leveling during all stages of installation

3.2 Tools and Equipment

- Pedestal access key, depending upon the lock type
- Appropriate digging/trenching equipment and tools according to local practices
- Tamping tools
- Gravel for leveling

3.3 Z14 Installation Procedures

⚠	**WARNING**	**Risk of injury! Always exercise caution when lifting and installing the Z14 housing.**

3.3.1 Installing the Base

1. At the installation site, dig a hole a minimum of 8" around the perimeter of the Z housing's base, approximately 50" x 38", and deep enough so that the base can be buried to the height of the molded-in ground line with the addition of a minimum of 2" of leveling gravel.
2. Route any conduits or cables so their entry depth is below the target depth pertaining to the bottom of the Z14 housing.
3. Backfill and tamp the ground around the conduit and the mounting hole, ensuring that it is securely compacted and level to avoid heaving and conduit movement issues in the future.
4. Ensure all open conduits are capped or covered. Fill the hole with approximately 2" of gravel (or per company guidelines). Tamp the gravel so that it is compact and level to ensure proper drainage and leveling of the Z housing.
5. Remove the Z housing's dome (cover) from the base. There is a lifting slot in each corner of the pedestal between the dome and base. Placing one hand in the lifting slot, using your other hand, rotate the lock counterclockwise 1/8 of a turn (using the appropriate key) and lift/tilt the dome. Once the dome is unlocked, using both hands, push the dome slightly to unhook the catch located on the far end of the dome and then lift the dome off over the interior brackets.
6. After the hole has been properly prepared, route the cables through the Z housing's base and place it into position in the hole. There is also the option to separate the base into two pieces to allow it to be placed around the cables or conduits; then reassemble the base. Re-verify the Z housing's ground line is level with the final grade; adding/removing gravel as necessary.
7. Level the Z housing base in all directions to ensure a professional installation.
8. Backfill the inside of the base with gravel or soil to a depth of two inches. This helps the Z housing retain its position during the next step.
9. Backfill around the outside of the Z housing base with removed soil until the ground line/final grade is reached. Tamp the dirt every three inches of depth to ensure that it is properly compacted. Take caution to ensure that the base's side vents are not below grade level (buried), as this will impede the airflow and heat dissipation properties of the enclosure.

3.3.2 Installing Equipment

Notes:

- It is important to keep fiber and coax cables within the confines of the base and top of the mounting bracket to allow dome closure and prevent damage to cables and equipment.
- Right angle (90º) connectors are recommended on coax and fiber entry connectors to reduce potential interference with dome closure.
- Follow all approved company methods and procedures for deployment of equipment in the Z14 housing.
- In this section, all images show the Z14 housing. The Z24 is installed in the same manner.

The Z housing is available with various internal mounting brackets. Selection depends on the user's equipment and deployment architectures. The most common bracket option is shown below.

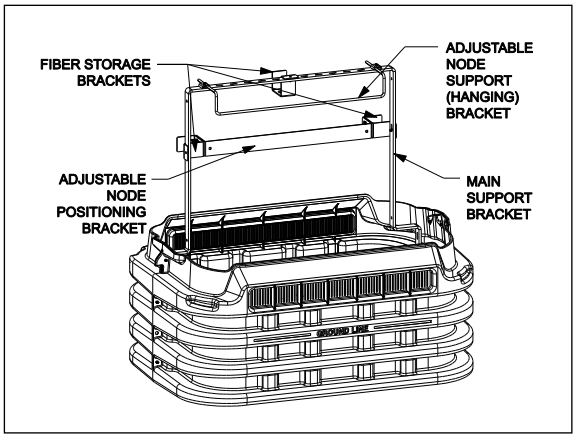


Figure 3
Z14 with Node Hanging Bracket and Fiber Slack Storage Bracket (Option 007)

Mounting an Optical Node:

1. Mount the customer supplied optical node onto the hanging bracket using the two mounting brackets that are typically installed on the node (Figure 4).
2. To optimize the position of the node hanging bracket for incoming and outgoing cables, loosen the two bolts on the top of the main support bracket and slide the node hanging bracket forward or backward. When the desired position is reached, tighten the bolts.
3. To optimize the optical node's vertical position, slide the adjustable node positioning bracket forward or backward until it rests against the node's housing.
4. Attach the coax and fiber connections to the optical node housing.
5. The feed and node fiber cable slack are typically taped together and routed to a customer supplied splice dome closure for splicing. Once fibers are spliced, coil the fiber cable bundle around the three fiber storage brackets located behind the node.

   Note: Cable slack storage capacity is approximately 120 feet of 0.70" o.d. cable.

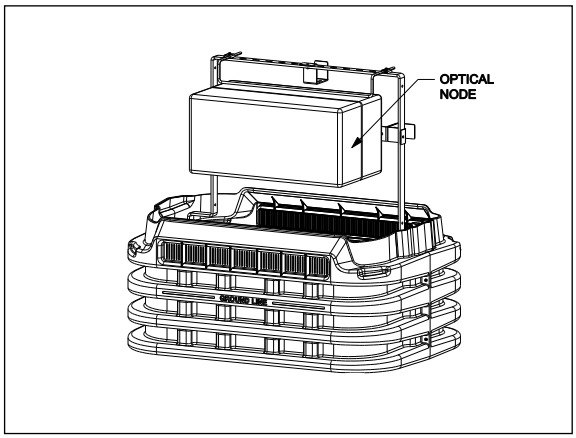


Figure 4
Z14 with Optical Node

6. Position the fiber splice dome closure at approximately a 45º angle, with the dome's end resting on the bottom of the pedestal Alternatively, the closure can be hung from the adjustable node positioning bracket using two user supplied Deltec™-style straps.

Figures 5 and 6 show the Z housing (dome removed) with an optical node and a Charles Fiber Optical Dome Closure (FODC) installed inside. The FODC is used for splicing operations.

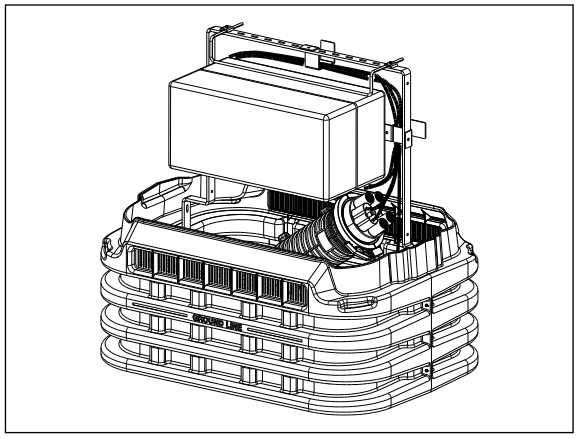


Figure 5
Z14 with Optical Node, FODC

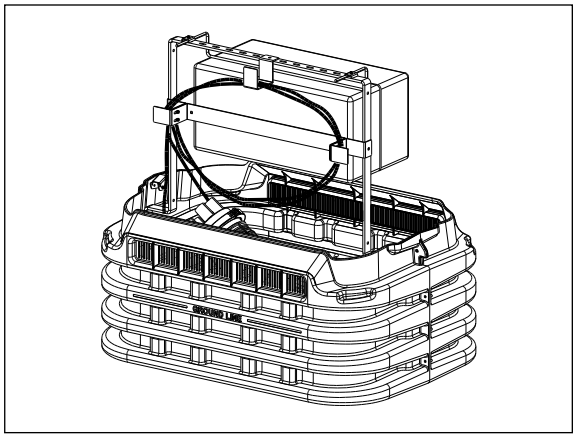


Figure 6
Z14 with Optical Node, FODC, Slack Storage Side

3.3.3 Closing the Z Housing

Replace the Z housing dome when the installation is complete by inserting the base's catch into the dome's slot. Confirm the dome is secured by lifting up on the dome at both ends of the pedestal.

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 (email)
http://www.charlesindustries.com/techserv.htm

5. WARRANTY & CUSTOMER SERVICE

Charles Industries LLC offers a one-year warranty on the Z14 and Z24 product. The Charles warranty is limited to the operation of the Z14 and Z24 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 (email)
http://www.charlesindustries.com/main/telecom_sales_support.htm

6. SPECIFICATIONS

Physical	
Dimensions and Weight	Z14: 42”W x 30”D x 41”H, Approx. 69 lbs. as shipped Dome weight: Approx. 32 lbs Z24: 42”W x 30”D x 60”H, Approx. 117 lbs. as shipped Dome weight: Approx. 32 lbs
Standard Pallet	Z14: 4 units per skid, 61”W x 44”D x 86H, 326 lbs. Z24: 2 units per skid, 61”W x 44”D x 66”H, 284 lbs.

Table 1 Z Housing Specifications