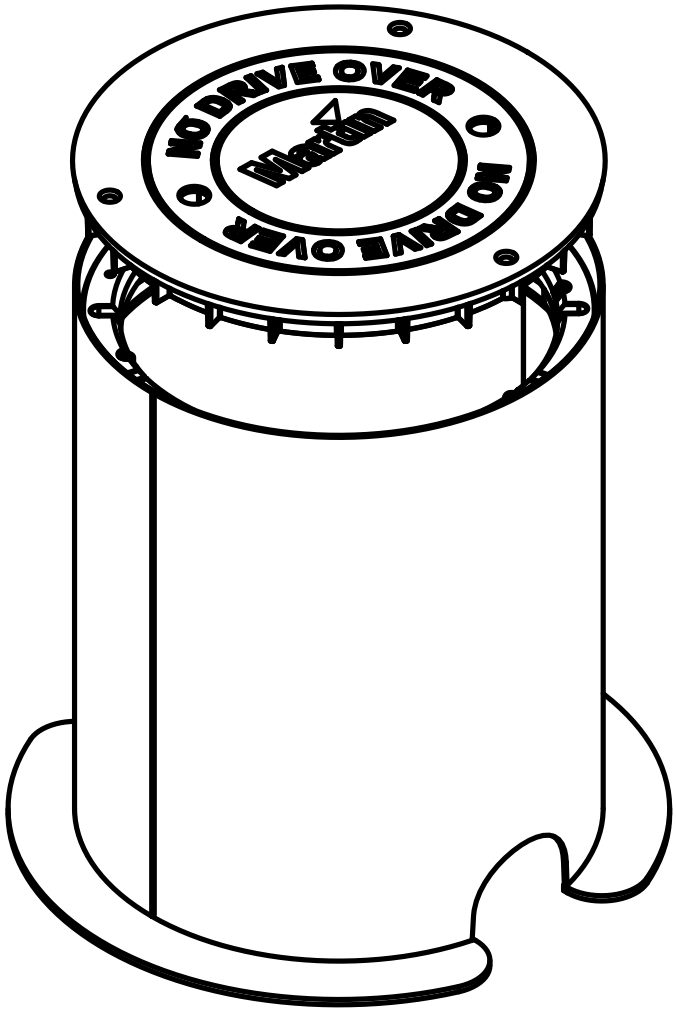


Inground 400 Series

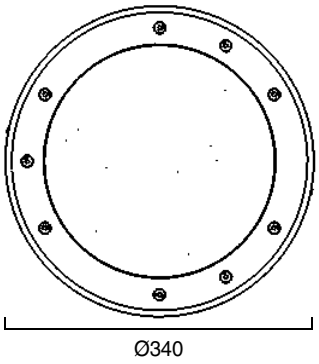
Installation Sleeve Guide

Martin® by HARMAN

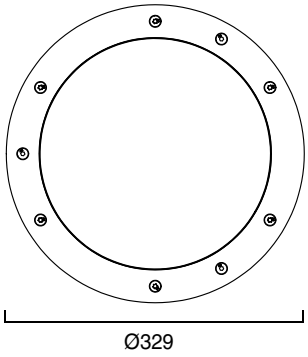
Dimensions

Top ring types on fixture

Beveled top ring

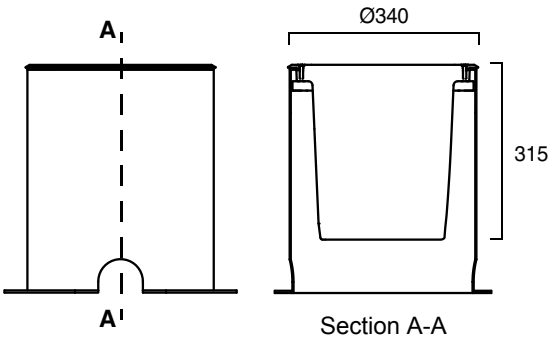


Flush top ring

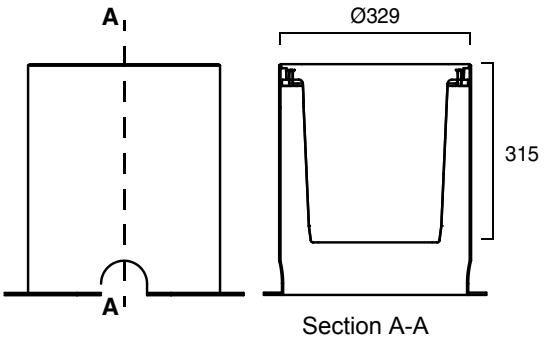


Fixture in installation sleeve

With beveled top ring



With flush top ring



All dimensions are in millimeters

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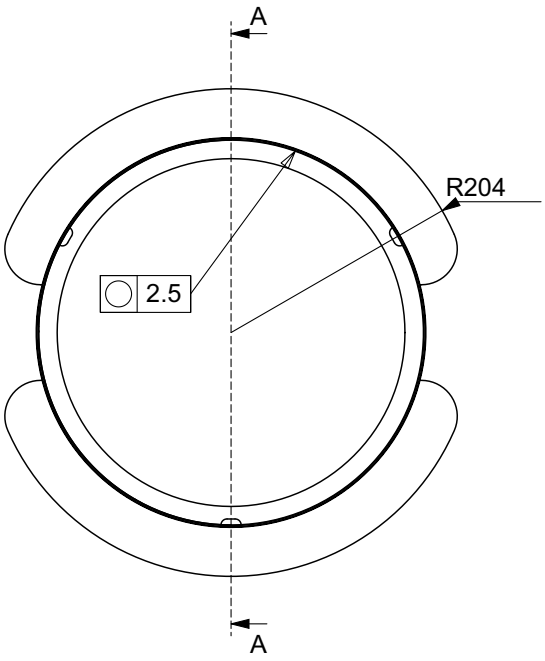
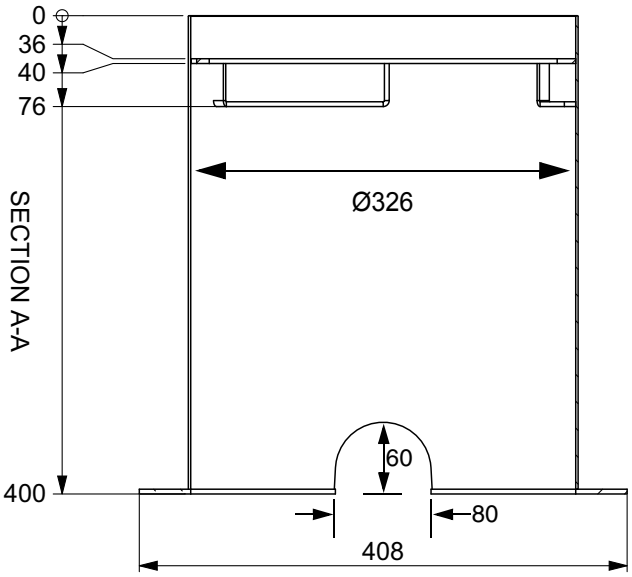
Installation sleeve only





All dimensions are in millimeters

Safety Information

WARNING!
Read the safety precautions in this section before installing, powering, operating or servicing this product.

The following symbols are used to identify important safety information on the product and in this manual:

WARNING!
Safety hazard. Risk of severe injury or death.

WARNING!
Refer to user manual.

Install, operate and service Martin products only as directed in their user manuals, or you may create a safety hazard or cause damage that is not covered by product warranties. Before using this manual, please make sure that you have the latest revision of the manual. You can download the latest revisions of all the product's user documentation from the product's Tech Docs / Product Support page at www.martin.com.

If you have any questions or if you are in any doubt about how to install, operate or service a Martin® product correctly and safely, please contact your Martin® supplier or call the Martin® 24-hour service hotline on +45 8740 0000, or in the USA on 1-888-tech-180.

Respect all locally applicable laws, codes and regulations when installing, operating or servicing a Martin® product. Refer any operation not described in this manual to a qualified technician.

Follow the safety precautions below and observe all warnings in this guide and printed on the product.

- Install the Inground 400 range fixture:
  - In an installation sleeve from Martin® or in a similar recess. There must be free airflow in the sleeve or recess.
  - Outdoors or in a well-ventilated area.
  - At least 1 meter (40 inches) away from any combustible materials.
  - In an area where accidental contact with the top glass is unlikely, since the fixture becomes hot during normal operation.
  - With an anti-skid top glass in pedestrian traffic areas (an anti-skid top glass with an engraved design is one of the configuration options available when ordering).
- Ensure that:
  - The installation sleeve is free of anything that could prevent free airflow around the fixture.
  - Vehicles or other potential fire risks cannot be positioned over or near the fixture. This is particularly important in situations where a vehicle (for example) may be left unattended over or near a fixture that is not switched on at the time, but where the fixture may be switched on later.
  - No fixtures or empty installation sleeves create a hazard that might result in falls or injuries. To avoid accidents during installation or service, restrict access to the site and place both warning notices and barriers around all work areas until work is completed and the site is safe.
- Fasten Martin® temporary installation lids into the tops of installation sleeves to protect pedestrians from injury until fixtures are installed in the sleeves. Installation lids will not support the weight of a vehicle. Restrict access so that it is impossible to drive a vehicle or position a heavy object over an installation lid.

Contents

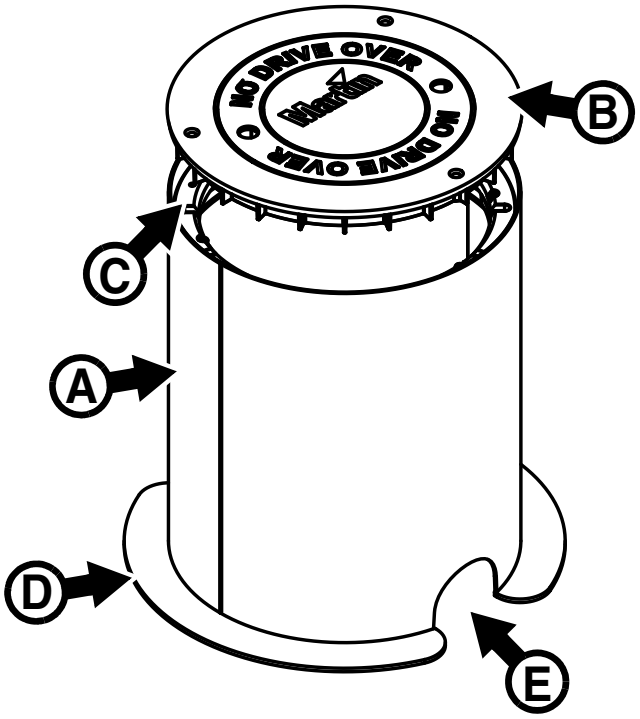
Introduction

The lighting fixtures in the Inground 400 range of uplights from Martin® are designed to be installed below ground level in installation sleeves. Martin® supplies rugged installation sleeves that are designed specifically for the Inground 400 range and have a drive-over rating of 40 000 N (8800 lbs.). Sleeves and fixtures are ordered separately.

Martin® also supplies temporary lids that can be used to cover the tops of installation sleeves at times when fixtures are not installed in the sleeves. The lids eliminate the risk of falls and injury to persons walking around the installation site, and they also prevent dirt and debris falling into the sleeve.

This guide explains how to install the Martin® Inground 400 Series Installation Sleeve and Installation Sleeve Lid.

Overview



A - Installation sleeve

B - Temporary lid

C - Mounting ring (can be rotated)

D - Base flange

E - Cutout for cable entry

Figure 1: Sleeve and lid – overview

Physical installation

General guidelines

Warning! Read "Safety Information"* on page 4 *before installing an installation sleeve or a fixture from the Inground 400 range.

Warning! The safety and suitability of the installation location and electrical installation is the responsibility of the installer. All local safety regulations and legal requirements must be observed when installing and connecting fixtures. Installation must be carried out by qualified professionals only.

Warning! Contact your Martin supplier for assistance if you have any questions about how to install this product safely.

Warning! Empty installation sleeves present a hazard to any person walking at the installation site. Install a temporary lid as described below or prevent pedestrian access to the site until fixtures have been installed in all sleeves. Prevent vehicle access to the site until fixtures have been installed in all sleeves.

Important! The installation location and method must be chosen carefully in order to avoid heat buildup and flooding, and to ensure satisfactory performance over the product's lifetime. If items are not installed as described in this user manual, product performance may be unsatisfactory and damage may be caused that is not covered by the product warranty. Martin® will gladly provide assistance in planning and carrying out installation.

Flush-mount and beveled top rings

See Figure 2. Fixtures in the Inground 400 range are available with two types of top ring (trim ring):

- Flush-mount top rings that sit flush with the surface around the fixture, and
- Beveled top rings that sit higher than the surface around the fixture.

Before you install an installation sleeve, find out which type of top ring is mounted on the fixture that will be installed in the sleeve, and then:

1. Make sure that the top of the sleeve is at the correct depth below terrain for that type of top ring.
2. Use the correct type of temporary lid (if you are going to use temporary lids) for that type of top ring.

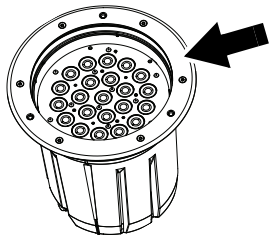


Figure 2: Top ring (trim ring) on top of fixture

Temporary lids for installation sleeves

Warning! The temporary installation sleeve lids available from Martin® can support the weight of a pedestrian, but they are not designed to support the weight of a vehicle. Prevent vehicle access to the site until fixtures have been installed in all sleeves.

If an installation sleeve is installed in the ground but stands empty until an Inground fixture is installed in it, the opening at the top of the sleeve can present a hazard to any person walking at the installation site. Dirt, construction materials and other debris can also collect in the sleeve, making installing the fixture difficult. To avoid these problems, Martin® can supply temporary installation lids that fit into the tops of installation sleeves and cover the sleeve temporarily while waiting for fixtures to be installed or if fixtures are removed for service.

Two types of installation sleeve lid are available: one for use in sleeves that will accept flush-mount top ring fixtures, and one slightly thicker lid for use in sleeves that will accept beveled top ring fixtures.

We especially recommend that you install lids during paving or tarmac work around installation sleeves. This will help avoid damage to sleeves and prevent surfacing material falling into the sleeve. Finish tarmac or paving at the same level as the top of the installation lid.

Cooling

The Inground 400 range regulates light output to control its internal temperature and ensure that all components operate within their thermal specification.

The fixture is cooled by the convection of air in the installation sleeve or recess in which it is installed and conduction to the surrounding material in the installation site. Do not install the sleeve in material with insulating properties. Make sure that there is free airflow inside the installation sleeve.

Water resistance and drainage

The fixture has an ingress protection rating of IP67. This means that it can withstand immersion for 30 minutes and low-pressure water jets. However, it is not designed to withstand constant immersion, so take the following into account when planning the installation site:

- The base of Inground 400 fixtures must not be submerged in water other than for very short periods.
- See Figure 3. Effective drainage that can prevent any buildup of water in the installation sleeve is absolutely essential and must be provided and tested before the fixture is installed. It must be possible for water from rain, melting snow, flooding or other sources to drain out of the installation sleeve *at least* as fast as it can enter it. If water is present in the installation well for extended periods, the product warranty will be invalidated.
- If in doubt about a particular site, consult a geotechnical engineer.
- See Figure 4. To minimize the risk of flooding or waterlogging, install the fixture in a location which is above the level of the surrounding area and/or make sure that water drains away from the installation sleeve and not into it.

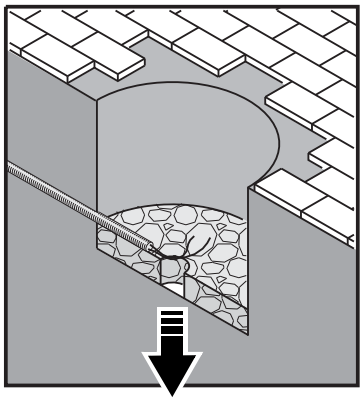


Figure 3: Drainage

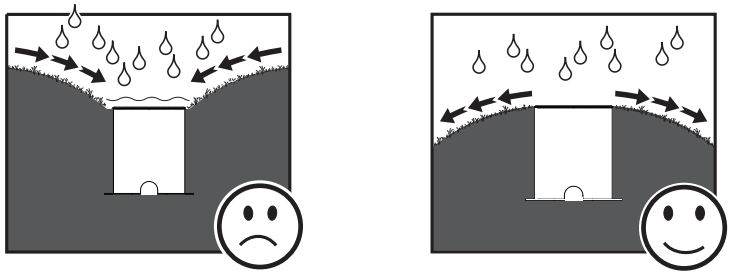


Figure 4: Avoiding flooding

Support and load-bearing

See Figure 5. Provide supporting material under the flange at the base of the sleeve. The material must be stable enough to bear the weight without sinking when the maximum load expected at the site is applied to the top of the fixture. In a drive-over installation, the sleeve should be able to withstand a load of up to 40 000 N (8800 lbs.) applied to the top of the fixture.

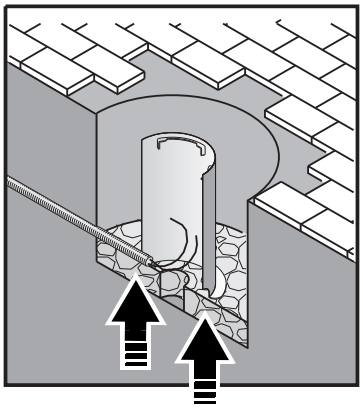


Figure 5: Stable support

Installing a sleeve

To install an Inground 400 installation sleeve:

1. See Figure 3. Make sure that drainage at the bottom of the installation well can evacuate water from the well at least as fast as the water can enter.
2. See Figure 5. Make sure that the material under the sleeve's base flange can support the maximum load that is expected to be placed on the fixture.
3. See Figure 6 below. The top of the installation sleeve must sit:
   - 8 mm below terrain level if the sleeve is going to accept a fixture with a flush-mount top ring, or
   - 3 mm below terrain level if the sleeve is going to accept a fixture with a beveled top ring.

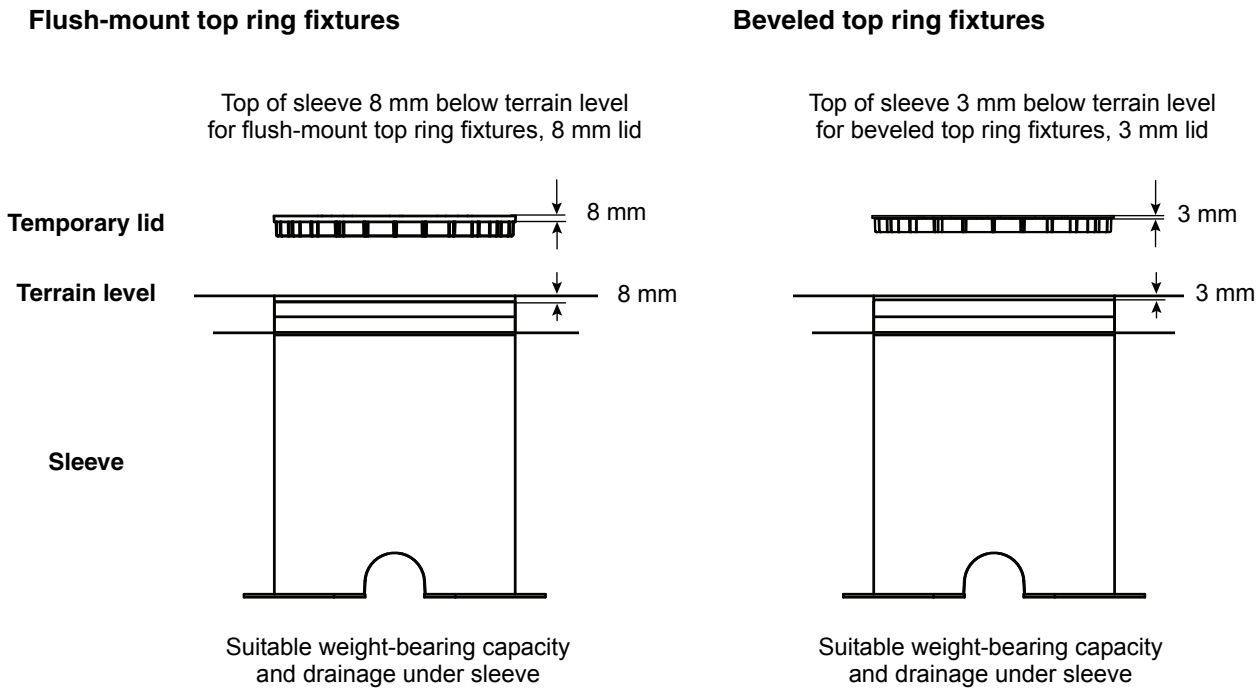


Figure 6: Installing a sleeve

4. Prepare conduit, cabling and junction boxes so that the fixture can be connected to AC power and data circuits. Make sure that all items are of a suitable type for their purpose and the environment, and that they have adequate IP ratings. Make sure that cables will not open into damp locations, otherwise expansion and contraction due to heat may suck moisture along cables into fixtures and cause condensation. Do not bury the power supply cable or data cable directly in the ground. Install all cables in conduit that is suitable for the installation environment. Make all connections inside junction boxes that are totally sealed against the entry of water through the use of potting compound, for example.
5. Fix the installation sleeve in its well in whatever orientation is easiest (for cabling, for example).
6. See Figure 7. There is a mounting ring **A** in the top of the sleeve, and there is an alignment mark **B** in the mounting ring **A**. Loosen the six screws shown in circles in the mounting ring. This loosens the clamps underneath the mounting ring and lets you rotate the mounting ring to adjust the position of the alignment mark. If a fixture with a directional or asymmetric beam will be installed in the sleeve, rotate the mounting ring **A** until the alignment mark **B** is:
   - pointing directly towards the surface to be illuminated if a directional beam fixture will be installed in the sleeve, or
   - pointing in the direction of the narrow beam angle (and therefore at 90° to the wide beam angle) if an asymmetric beam fixture will be installed in the sleeve.

When a fixture is installed in the sleeve, the alignment mark **B** must be on the opposite side of the sleeve from the Martin logo on the fixture's top glass.

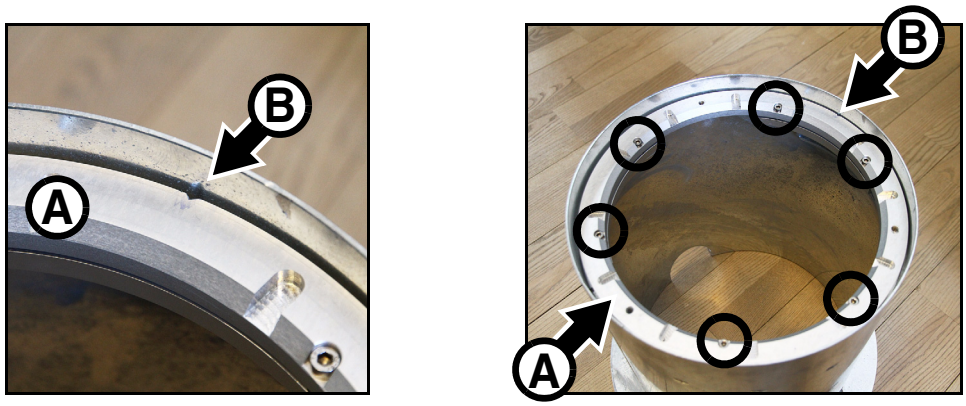


Figure 7: Orientation mark in mounting ring

7. Retighten the six screws to fasten the mounting ring in its correct orientation.

Installing a temporary lid

See Figure 6 on page 9. To cater for the two different types of top ring on fixtures, two types of temporary lid are available: one lid designed for flush-mount top ring installations and one lid designed for beveled top ring installations.

To install a temporary lid:

1. See Figure 8. After installing the installation sleeve, fasten the correct type of lid into the top of the sleeve using three M6 bolts.
2. Before leaving the site, make sure that it is impossible for any heavy objects to be placed on the lid. Use barriers and warning signs to prevent vehicles from driving over the lid.

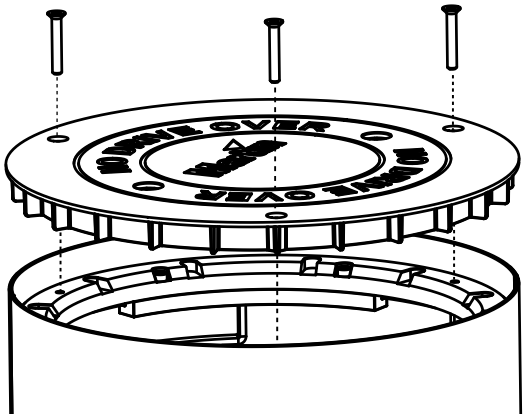


Figure 8: Installing a temporary lid

Installing a fixture in the sleeve

For instructions on how to install an Inground 400 range fixture in the installation sleeve, see the fixture's user manual.

Inground 400 range fixtures are sealed and vacuum tested at the factory to ensure that they are protected from humidity. Do not open a fixture, as this will allow humidity to enter. If you need to remove the top glass at any time, please contact Martin® Service for assistance and advice on eliminating humidity. It is not necessary to open a fixture to install it in an installation sleeve.

Specifications

Physical

Fixture

Height without top ring . . . . . .313 mm (12.4 in.)
Height with top ring installed . . . . . .321 mm (12.7 in.)
Outer diameter at top of fixture . . . . . .310 mm (12.2 in.)
Weight . . . . . 14.7 kg (32.5 lbs.)

Top ring (trim ring)

Flush-mount top ring outer diameter . . . . . :329 mm (13.0 in.)
Flush-mount top ring thickness . . . . . .7 mm (0.3 in.)
Beveled top ring outer diameter. . . . . .340 mm (13.4 in.)
Beveled top ring thickness . . . . . .5 mm (0.2 in.)

Installation sleeve

Installation sleeve height . . . . . .400 mm (15.8 in.)
Installation sleeve internal diameter. . . . . .334 mm (13.2 in.)
Installation sleeve base flange external diameter . . . . . .416 mm (16.4 in.)
Total height, installation sleeve with fixture and flush top ring . . . . . .402 mm (15.9 in.)
Total height, installation sleeve with fixture and beveled top ring. . . . . .408 mm (16.1 in.)

Ordering Information

Installation Sleeve

Installation Sleeve for Inground 400. . . . . P/N 91611841
Installation Lid for flush mount top ring installations . . . . . P/N 91616086
Installation Lid for beveled top ring installations. . . . . P/N 91616087

Installation sleeves are ordered separately from fixtures.

Specifications are subject to change without notice.

Data is valid for all models in range except where indicated.

See www.martin.com for latest specifications including full photometric data, etc.

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