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1

Installation Instructions

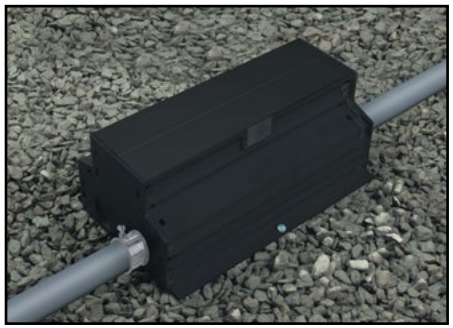
lumenfacade™ inground

Part 1

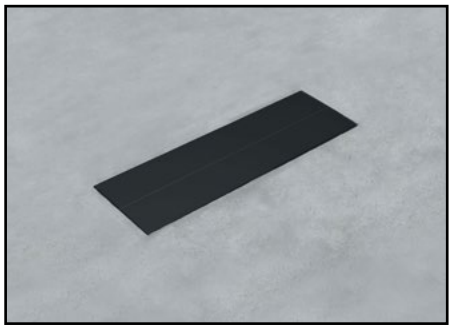
Blockout Installation

Easy Steps:

Prepare ground hole, test drainage and assemble blockout



Install electrical components. Level and anchor blockout with retainers



Install temporary cover and finish installation

Required conduit diameter

ø1½" Pipe schedule 40

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Each step must be completed to ensure proper installation of the blockout

- ☐ **1.** Prepare the ground to properly support the blockout across its full length (refer to page 7).
- ☐ **2.** Verify the efficiency of the blockout's drainage piping (refer to page 8 for drainage system specifications).
- ☐ **3.** Inspect blockout to ensure no parts are damaged (end caps fully snapped on sides, clips and supports in place). Refer to page 8 for assembly detail.
- ☐ **4.** Make sure the blockout is level and verify that the retainers are installed in one foot increments, on both sides of the blockout (refer to page12 for retainer details).
- ☐ **5.** Make sure the cover is properly installed on the blockout (cover must remain in place until optical chamber is installed).
- ☐ **6.** Fill in ground hole.
- ☐ **7.** Inspect final installation to ensure blockout is straight and blockout walls are perpendicular to end caps.

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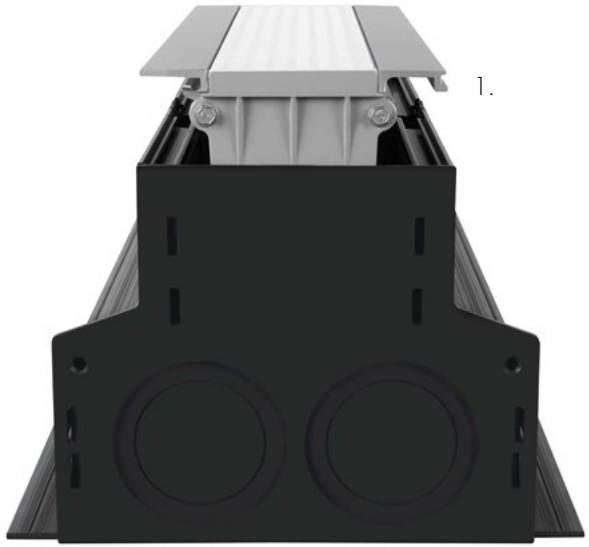

1. Optical chamber
2. Blockout

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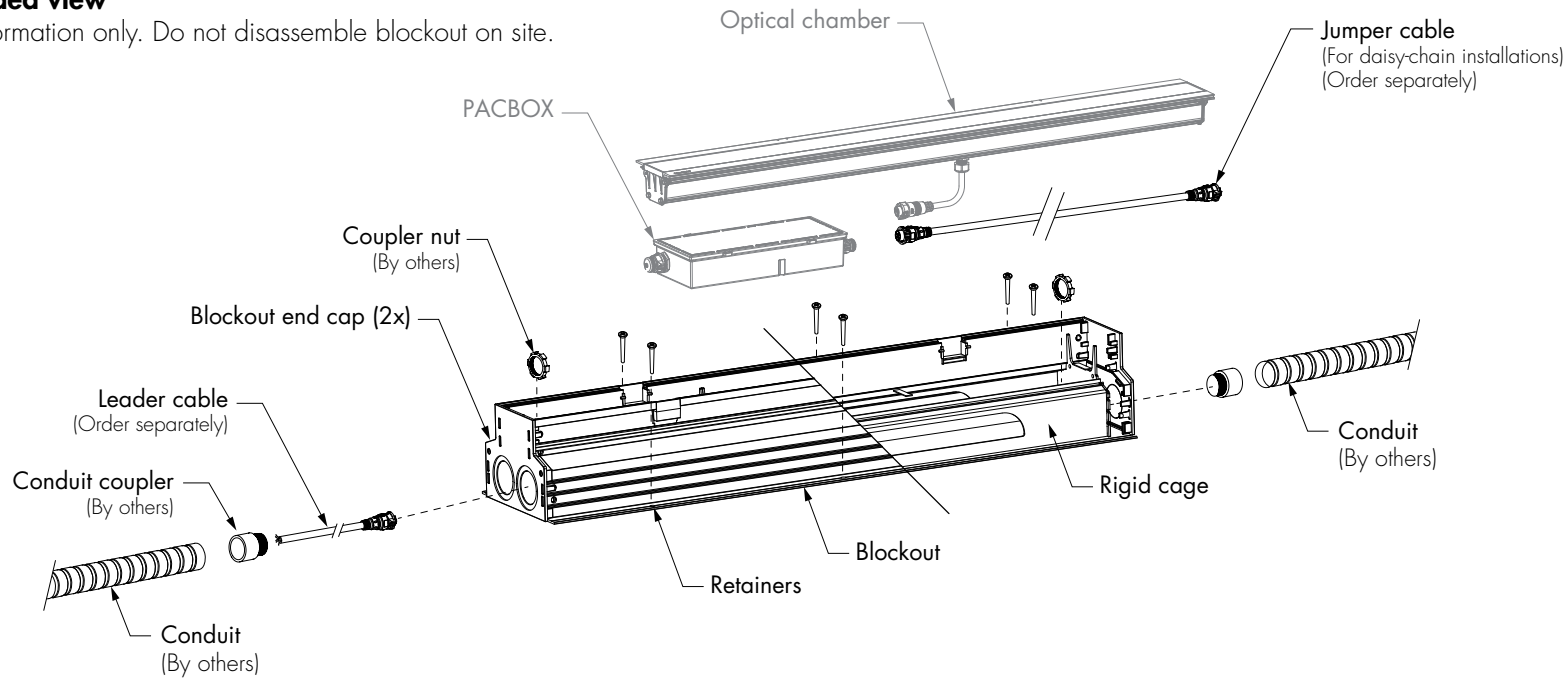
INSTALLATION INSTRUCTIONS

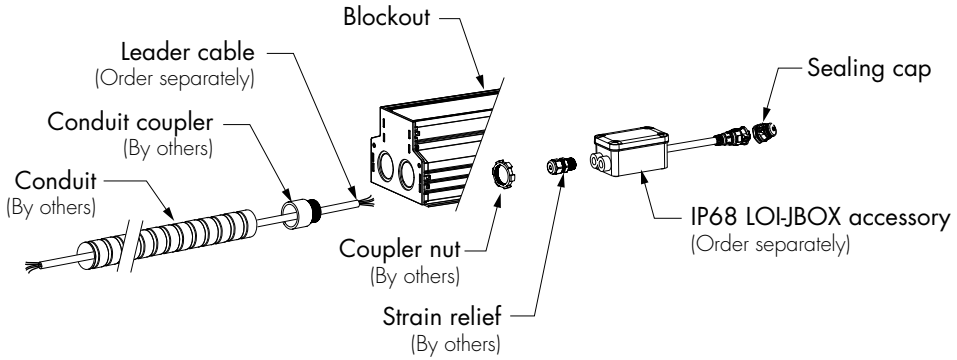
drawing number 117632

Typical installation with leader cable
Exploded view

For information only. Do not disassemble blockout on site.



Typical installation with IP68 LOI-JBOX accessory
Exploded view



Make sure you have all necessary components before starting installation

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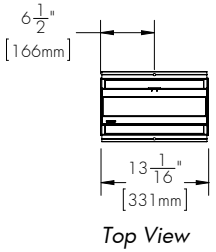
INSTALLATION INSTRUCTIONS

drawing number 117632

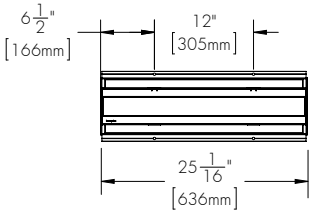
Blockout details and dimensions

12



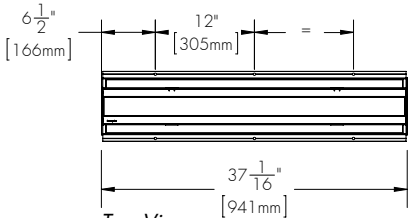
Top View

24



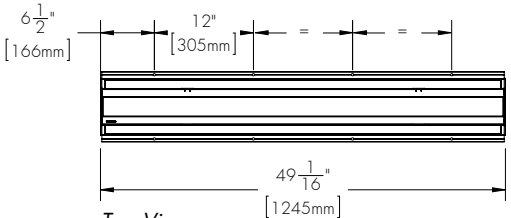
Top View

36

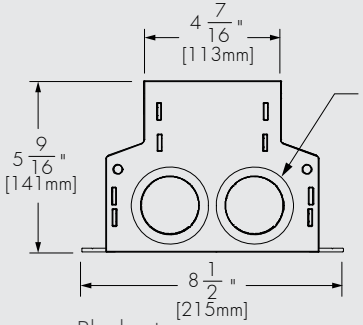


Top View

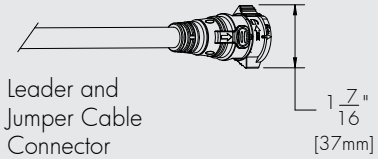
48



Top View



Blockout
Side View



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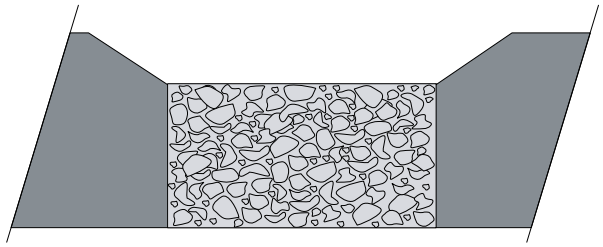
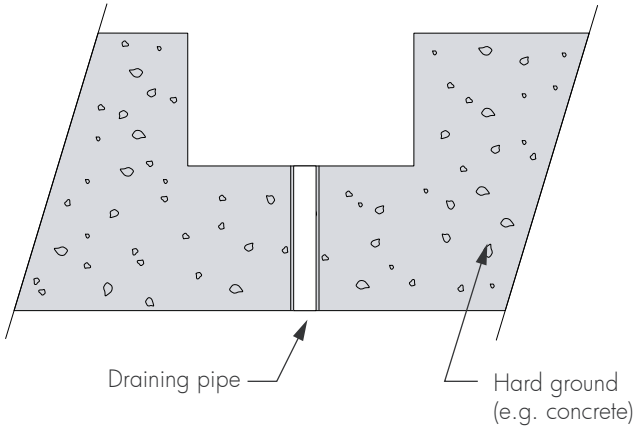
STEP 1 : Prepare Ground, Test Drainage and Assemble Blockout

1.1 Prepare Ground



Soft Ground



Hard Ground

Soil Concrete Drainage material

Option A. Soft Ground

- Proper drainage material must support the entire blockout length in order for it to reach 1000kg resistance.
- If drainage material is not used, provide support for the entire blockout length and install adequate drainage piping.

Did you know?

Gravel dust can be used to level the block-out but it is not recommended for use as a drainage material. It may harden with time and prevent proper drainage.

Option B. Hard Ground

- Prepare ground hole, including proper drainage piping. The length of the entire blockout must be supported in order to reach 1000kg resistance.
- See table below for the quantity of retainers required per blockout length. Refer to the Blockout Overview section for anchor hole positioning.

blockout length	1 ft	2 ft	3 ft	4 ft
# of retainers	2	4	6	8

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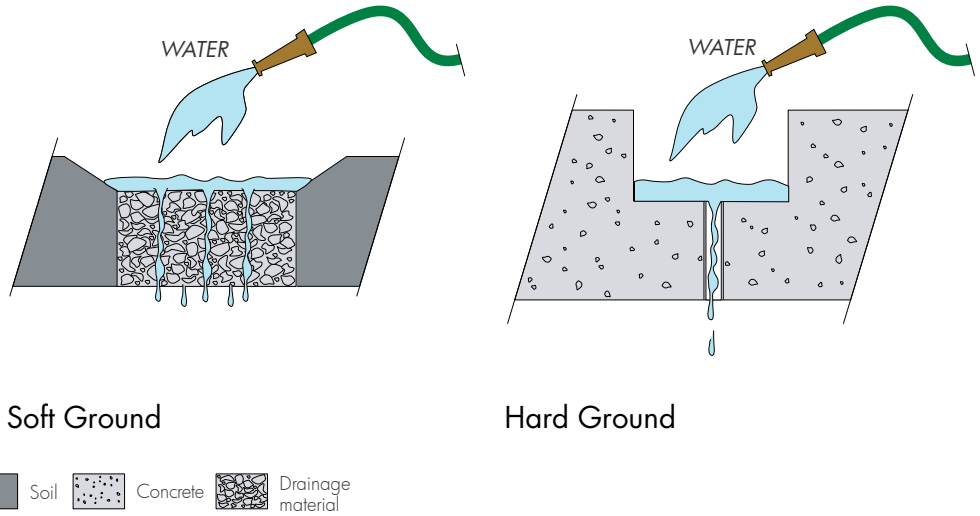
STEP 1 : Prepare Ground, Test Drainage and Assemble Blockout

1.2 Test Drainage

⚠ WARNING

Failure to provide adequate draining installation will void warranty.



Soft Ground

Hard Ground

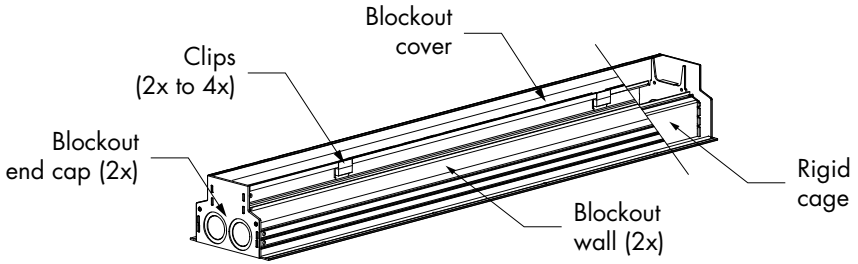
Testing the Drainage Piping

– In order to validate the efficiency of the drainage piping, a quantity of water equivalent to the volume of the blockout must completely drain in 30 minutes.

- Drainage testing should be performed prior to installation of the optical chamber.

blockout length	blockout volume	minimum drainage rate
1ft	3,533cm³	0.12L/min
	216in³	0.03gal./min
2ft	7,317cm³	0.24L/min
	447in³	0.06gal./min
3ft	11,650cm³	0.39L/min
	711in³	0.10gal./min
4ft	15,984cm³	0.53L/min
	975in³	0.14gal./min

1.3 Inspect Blockout



Items to inspect

- ☐ End caps, rigid cage and clips are all correctly assembled and solidly in place
- ☐ Cover is snapped into place
- ☐ Sides of the blockout are straight, parallel and perpendicular to the end caps

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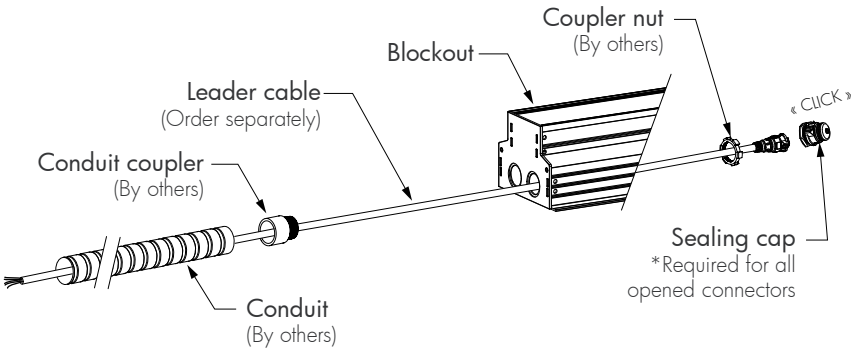
STEP 2 : Install Electrical Components

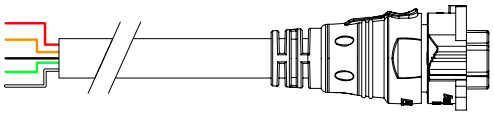
2.1 Install Conduits and Cables - leader cable

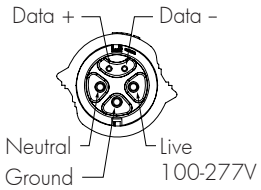
⚠ WARNING
Disconnect power before installing or servicing to avoid electrical shock.

⚠ WARNING
Unauthorized repairs or modifications will void warranty.



IP68 connector. Wiring Detail





American Color Code	*CE Color Code*	*USE*
Green	*Yellow/Green*	*Ground*
Black	*Brown*	*Live 100-277V*
White	*Blue*	*Neutral*
Red	*Black*	*Data +*
Orange	*Grey*	*Data -*

Option A. Leader Cable

- Open blockout knockout hole(s). Note this must be done at both ends for daisy-chain configurations.
- Lay down conduits. Tighten conduits loosely to the blockout using couplers. Use conduits and couplers that are appropriate for your installation.
- Run the leader cable through conduits. Run jumper cables through the conduits, from the first blockout to the next (repeat in daisy-chain installations). Leave enough cable length inside the blockout to allow easy access from the top of the blockout.
- Provide power and test connections. See Wiring Detail for reference.
- Once the electrical connections have been tested, secure conduits and couplers tightly.
- Make sure sealing caps are installed on all opened connectors.

Required conduit diameter
ø1½" Pipe schedule 40

DMX/Data Cable Specification
DMX Cable from Controller to CBX and CBX to CBX shall adhere to ANSI E1.11 – 2008 (r2013) – Entertainment Technology – USITT DMX512-A, Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories. At minimum DMX Cable shall be 1-Pair (24 AWG, 7x32 Stranding) Twisted (minimum of 4.8 twists/foot), Shielded, minimum of 100 ohms Impedance, and <25 pF/ft. Capacitance.

Combined Power & Data Cable Specification
Fixture cabling from CBX to Fixtures shall be installed per NEC and Local Codes. All cables shall be SOOW style cables with minimum of 16 AWG annealed stranded bare copper per ASTM B-174 with a minimum temperature range of -40°C to +90°C. All conductor standing must be a minimum of 26/30 and capable of handling 13 amps. Cable must be water resistant, UL Listed and CSA certified for indoor and outdoor use. Must be Ozone-sunlight (UV) and weather resistant.

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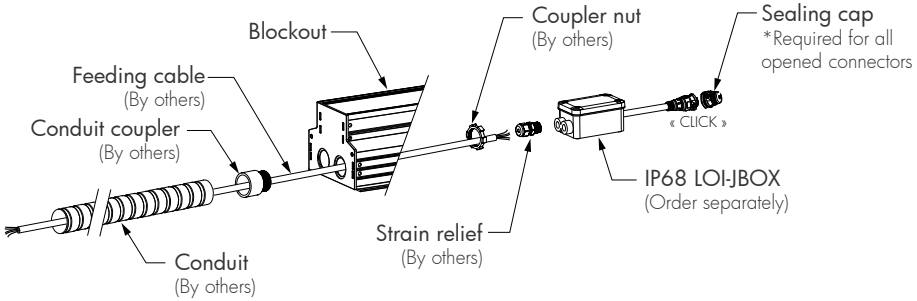
STEP 2 : Install Electrical Components

2.1 Install Conduits and Cables - LOI-JBOX leader cable option

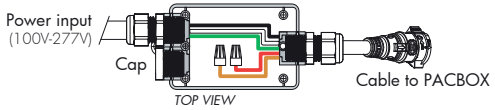
⚠ WARNING

Disconnect power before installing or servicing to avoid electrical shock.



IP68 LOI-JBOX Accessory. Wiring Detail

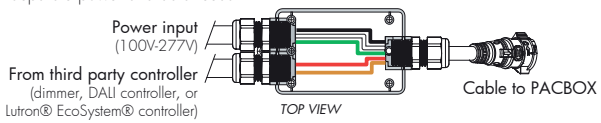
Non-Dimming, Lumentalk control options



American Color Code	*CE Color Code*	*USE*
Green	*Yellow/Green*	*Ground*
Black	*Brown*	*Live 100-277V*
White	*Blue*	*Neutral*
Red	*Black*	*Data +*
Orange	*Grey*	*Data -*

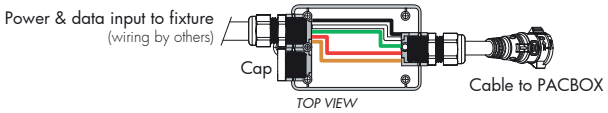
0-10V, DIM/DTW, DALI, Lutron® EcoSystem® control options

Separate power and data feeds



DMX/RDM, DMX/RDM1 control options

Combined power and data feeds



Maximum 32 DMX/RDM enabled fixtures per CBX output.

Option B. IP68 LOI-JBOX accessory - Cannot be used with 1ft LOI fixture

- Open blockout knockout hole(s). Note this must be done at both ends for daisy-chain configurations.
- Lay down conduits. Tighten conduits loosely to the blockout using couplers. Use conduits and couplers that are appropriate for your installation.
- Run feeding cable through conduits. Run jumper cables through the conduits, from first blockout to the next (repeat in daisy-chain installations). Leave enough cable length inside the blockout to allow easy access from the top of the blockout.
- Connect feeding cable to the LOI-JBOX accessory. Use strain relief connectors at junction box input. Make connections according to your control type. See Wiring Detail for reference.
- Provide power and test connections.
- Once the electrical connections are validated, mix sealing compound to fill the junction box. Follow the manufacturer's instructions, provided with the LOI-JBOX.
- Close the LOI-JBOX using the gasket and cover plate (4x screws included). Place the box inside the blockout.
- Secure conduits and couplers tightly.
- Make sure sealing caps are installed on all opened connectors.

Required conduit diameter

ø1½" Pipe schedule 40

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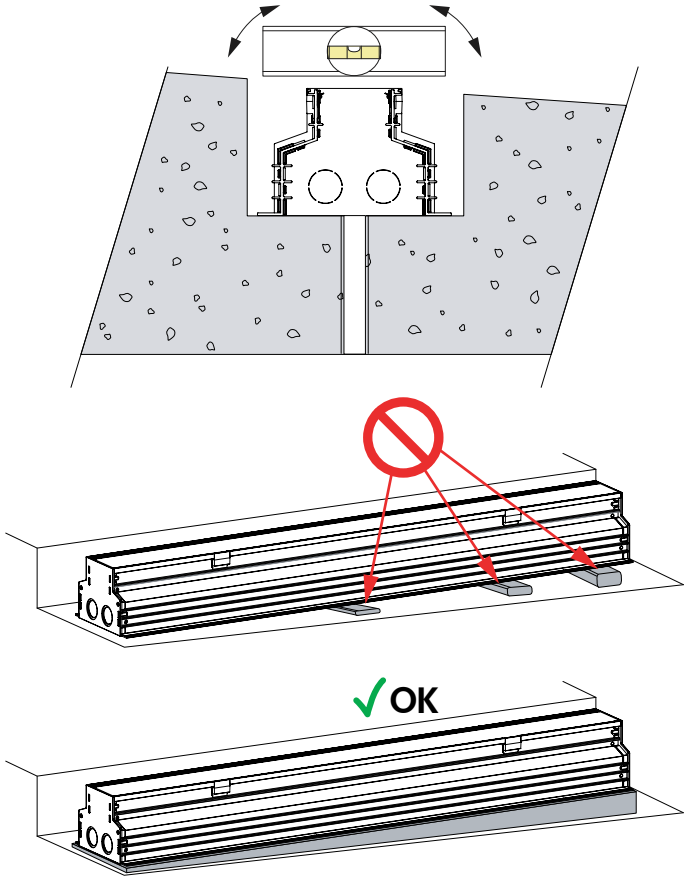
STEP 3 : Level and Fix Blockout

3.1 Level Blockout



Soil Concrete Drainage material

Level and adjust blockout

- Lay blockout in place.

- Adjust mounting surface to level blockout.

Note: a sloped installation will affect the light distribution of a fixture. Consider ground level when selecting a tilt setting for your application.

Did you know?

The blockout is perfectly symmetrical: the optical chamber can be rotated 180 degrees without the need to modify installation.

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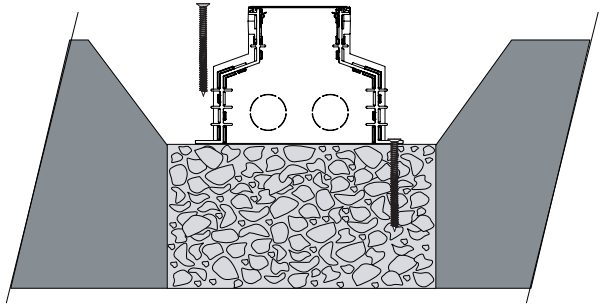
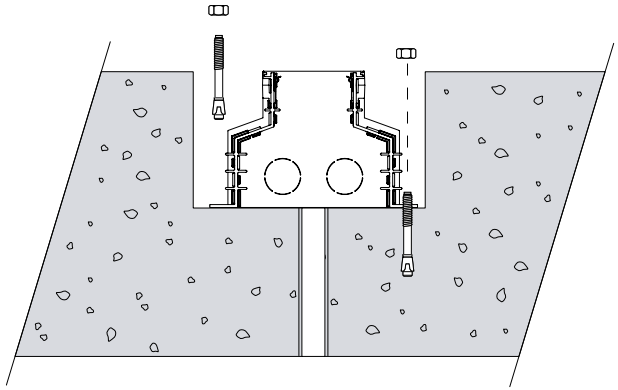
STEP 3 : Level and Fix Blockout

3.2 Fix Blockout

⚠ WARNING
Use suitable retainers for your location and application.



Soft Ground



Hard Ground

Soil Concrete Drainage material

Install retainers

Install retainers in every mounting hole (Ø1/4" [7mm]). See table below for the quantity of retainers required per blockout length.

blockout length	1 ft	2 ft	3 ft	4 ft
# of retainers	2	4	6	8

Did you know?

Retainers are required to prevent blockout movement during installation. Retainers are included but it is important to ensure they're of a suitable length for your location and application. Select other retainer types as needed. Remember, the level cannot be adjusted after the next step in the installation process.

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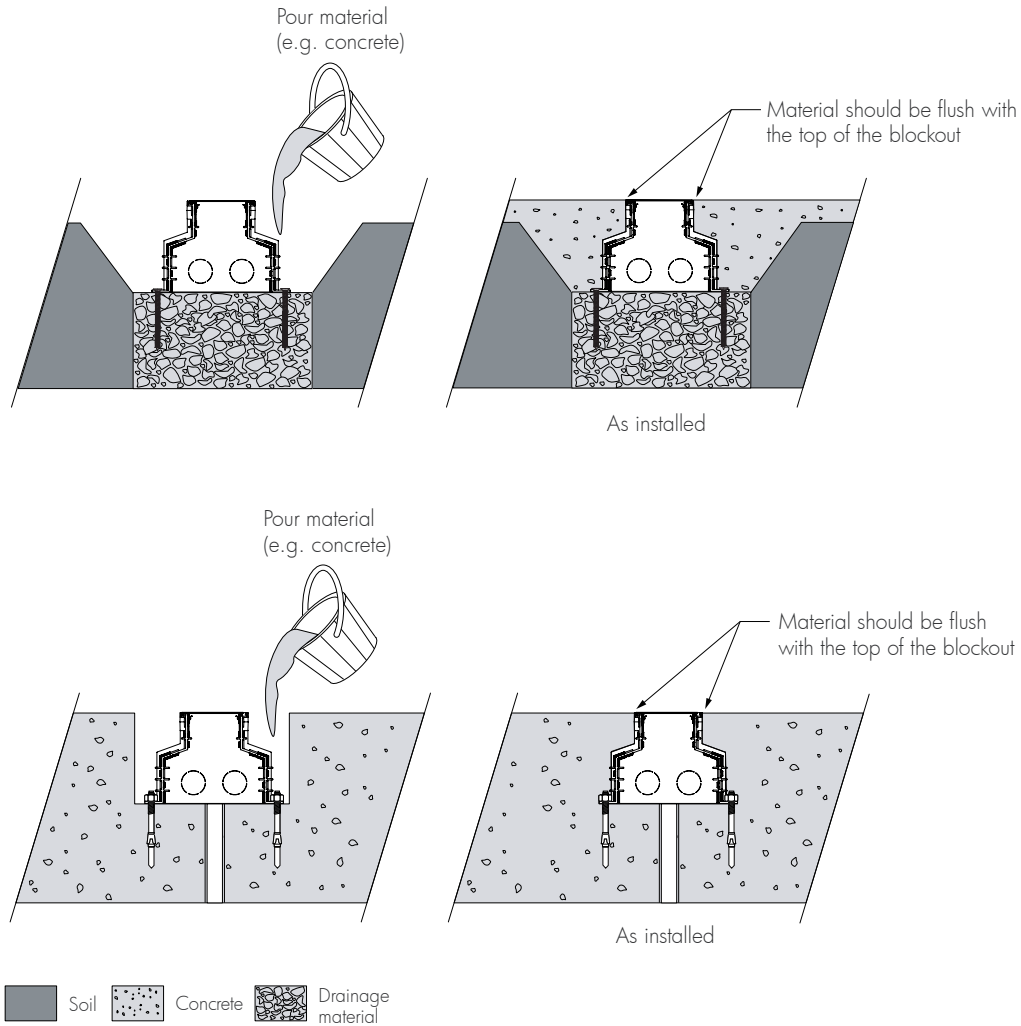
STEP 4 : Finish Installation

4. Fill Ground Hole



Fill hole with material

- Pour the material around the blockout.
- Clean the top of the blockout to remove any excess of material that may prevent cover removal.

Did you know?

The blockout is walk-over compliant up to 1000kg, concrete-supported. A minimum of 10" [0.25m] of concrete is required around the entire length and height of the blockout.

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INSTALLATION INSTRUCTIONS

drawing number 117632

Installation Guidelines

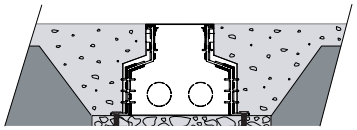
For single units and continuous runs

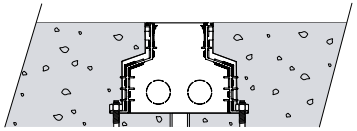
lumenfacade™

Inground

Blockout Installation

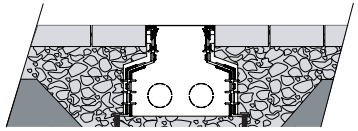
Valid Installations 1000kg walk-over compliant, concrete-supported

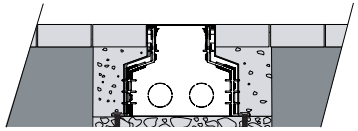


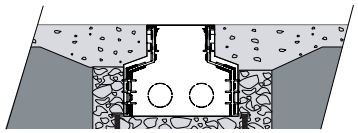


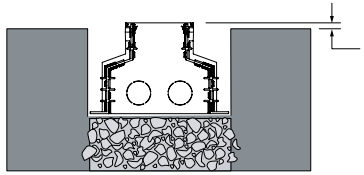
Concrete must support 100% of the blockout's exterior surfaces in order to comply with 1000kg walk-over resistance requirements.

Valid Installations 500kg walk-over compliant, self-supported

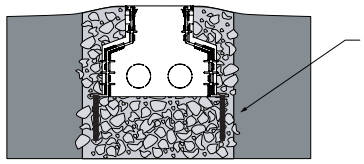




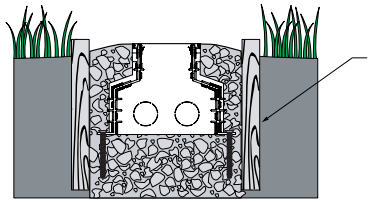




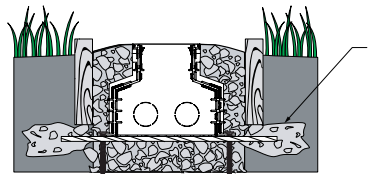
Ensure your fixture is slightly above grade when installing in turf or soil.



Drainage material is required under and around blockout.

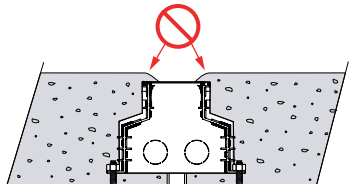


Framing should be installed to prevent vegetation from growing over the lens.

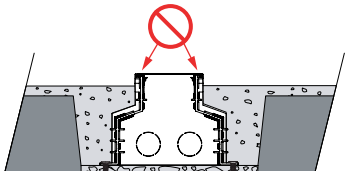


In marshland, reinforcing bars should be installed in concrete under the blockout.

Incorrect Installations



Blockout must never be installed below ground level.



Blockout must never protrude from ground level.

Soil | Concrete | Drainage material

lumenbin™, a proprietary binning method, guarantees color temperature consistency within a 3-step MacAdam ellipse.

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NK - R10

⚠ Warning

This product must be installed in accordance with applicable national and local electrical and construction codes by a person familiar with the construction and operation of the product and the hazards involved.

Failure to comply with the installation instructions may result in death or serious injury and will void warranty.

⚠ Warning

Do not exceed product specified fixture voltage.

⚠ Warning

Unauthorized repairs or modifications will void warranty.

⚠ Warning

Do not install if fixture, parts or connectors are damaged.

⚠ Warning

The blockout is walk-over compliant up to 500kg, self-supported, and up to 1000kg, concrete-supported. To meet 1000kg walk-over resistance requirements, concrete must support 100% of the exterior surfaces of the blockout.

⚠ Warning

Failure to provide adequate draining installation will void warranty.

⚠ Warning

Storage temperature range for blockout parts is -20°C to 50°C (-10°F to 122°F). Avoid UV exposure.

⚠ Warning

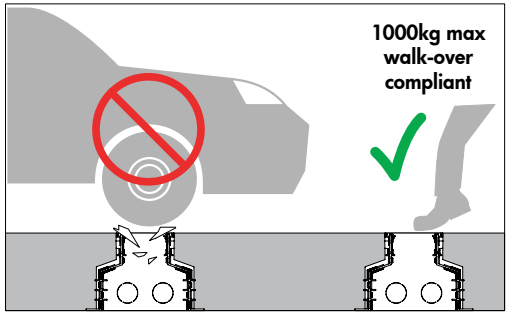
Separation of field installed power limited circuit (dimming/control) wiring from the branch circuit in the outlet box are to be made in accordance with local and/or national electrical installation codes.

⚠ Warning

Lumenfacade inground is not suitable for areas with high concentrations of pesticides. Highly corrosive compounds may also affect the fixture's integrity. Do not install in environments where petroleum-derived products may get in contact with the fixture.

⚠ Warning

Lumenfacade inground is not suitable for marine applications. Do not install within 100ft (30m) of the coast.



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