



Zurn Smart Occupancy Light Installation, Operation, Maintenance and Parts Manual

Patented and Patents Pending
For Commercial and Institutional Use Only



Z-LIGHT-W1

- ⚠ **WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov
- ⚠ **ADVERTENCIA:** Cáncer y daño reproductivo - www.P65Warnings.ca.gov
- ⚠ **AVERTISSEMENT:** Cancer et effets néfastes sur la reproduction - www.P65Warnings.ca.gov

LIMITED WARRANTY

All goods sold hereunder are warranted to be free from defects in material and factory workmanship for a period of three years from the date of purchase. Decorative finishes warranted for one year. We will replace at no costs goods that prove defective provided we are notified in writing of such defect and the goods are returned to us prepaid at Sanford, NC, with evidence that they have been properly maintained and used in accordance with instructions. We shall not be responsible for any labor charges or any loss, injury or damages whatsoever, including incidental or consequential damages. The sole and exclusive remedy shall be limited to the replacement of the defective goods. Before installation and use, the purchaser shall determine the suitability of the product for his intended use and the purchaser assumes all risk and liability whatever in connection therewith. Where permitted by law, the implied warranty of merchantability is expressly excluded. If the products sold hereunder are "consumer products," the implied warranty of merchantability is limited to a period of three years and shall be limited solely to the replacement of the defective goods. All weights stated in our catalogs and lists are approximate and are not guaranteed.

NOTICE: READ ENTIRE MANUAL PRIOR TO INSTALLING PRODUCT.

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FCC REQUIREMENTS FOR OPERATION IN THE UNITED STATES

FCC Information for the User

This product does not contain any user serviceable components and is to be used with approved, internal antennas only. Any product changes or modifications will invalidate all applicable regulatory certifications and approvals.

FCC Guidelines for Human Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Federal Communication Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Radio Frequency Interference Warning and Instructions

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following methods:

- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Zurn is not responsible for any radio or television interference caused by using other than specified or recommended cables and connectors or by unauthorized changes or modifications to this equipment.

Responsible party: ZURN INDUSTRIES, LLC 511 W. Freshwater Way, Milwaukee, WI U.S.A.
53204 · Ph. 1-855-ONE-ZURN, Fax 919-775-3541



INDUSTRY CANADA

This device complies with RSS-247 of the Industry Canada Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ce dispositif est conforme à la norme RSS-247 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Radiation Exposure Statement

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment must be installed and used with a minimum distance of 10 mm between the radiator and your body.

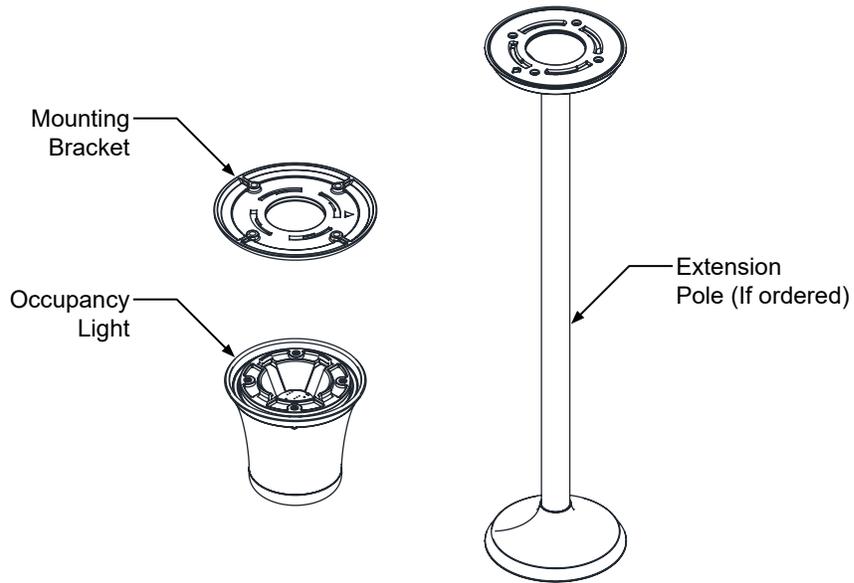
NOTE IMPORTANTE: Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec une distance minimale de 10 mm entre le radiateur et votre corps.

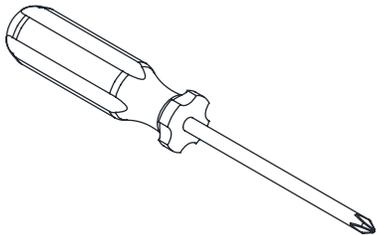
FCC ID: 2AY4MZURNOL

IC ID: 27057-ZURNOL

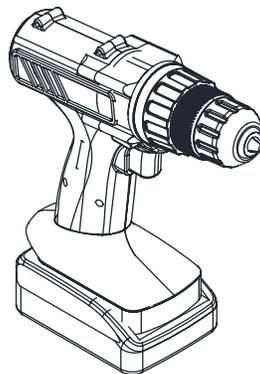
Zurn Smart Occupancy Light Part List



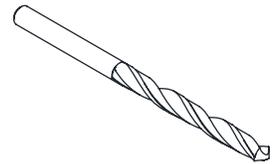
Recommended Tools



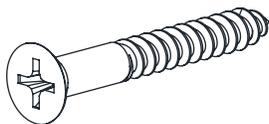
Screwdriver



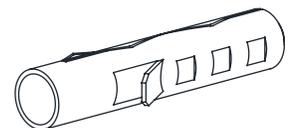
Hand Drill



1/2", 7/64"
Drill Bits



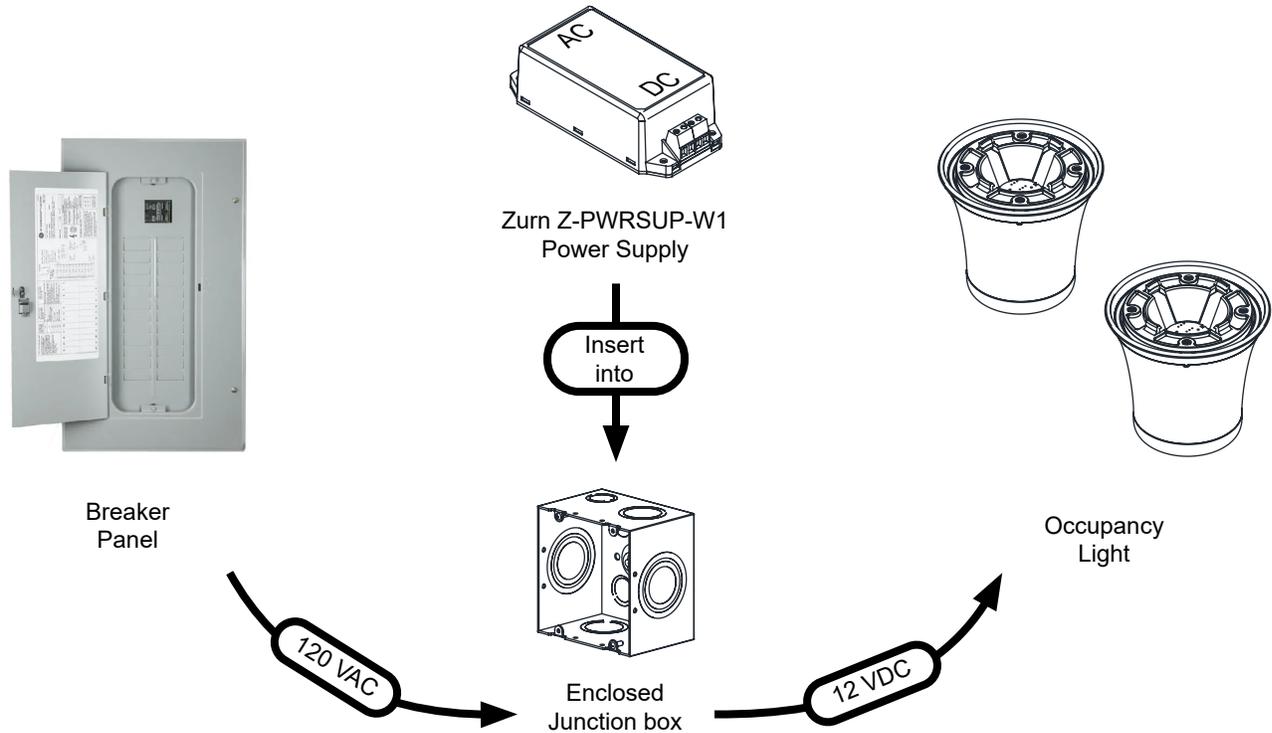
Applicable Screw
For installing surface
#8 or M4



Anchor
(Optional)

Prepare for Installation

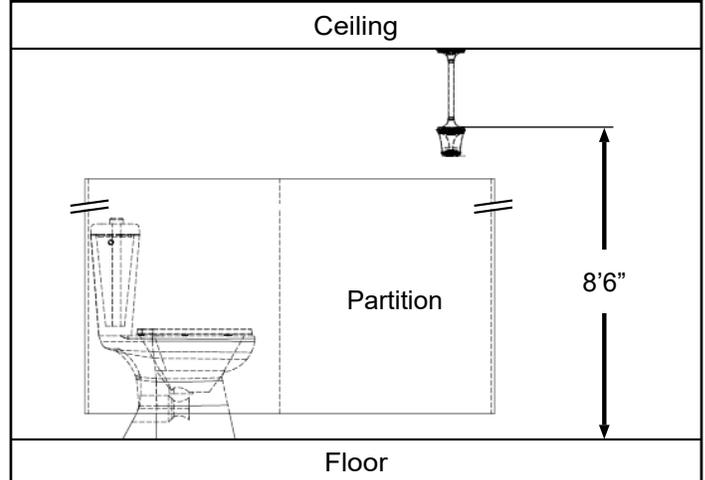
Wiring Diagram



Verify Installation Height and Placement

Each light unit should be installed at a maximum height of 8'6", as measured from the floor to the mount or base of the light, to provide best detection accuracy. A Zurn Smart Occupancy Light Mount - Extension Pole should be utilized for ceiling heights over 8'6".

The recommended installation for each light unit is 6" inside the stall door without any visual obstructions within the light unit's 60 degree field of view. Any deviation from recommended installation placement and height may impact product accuracy.



* Zurn Smart Occupancy Light should be mounted at a max 8'6" feet above the floor, either directly to the ceiling or using a Zurn Smart Occupancy Light Mount - Extension Pole.

Install and Setup Your Power Supply and Gateway

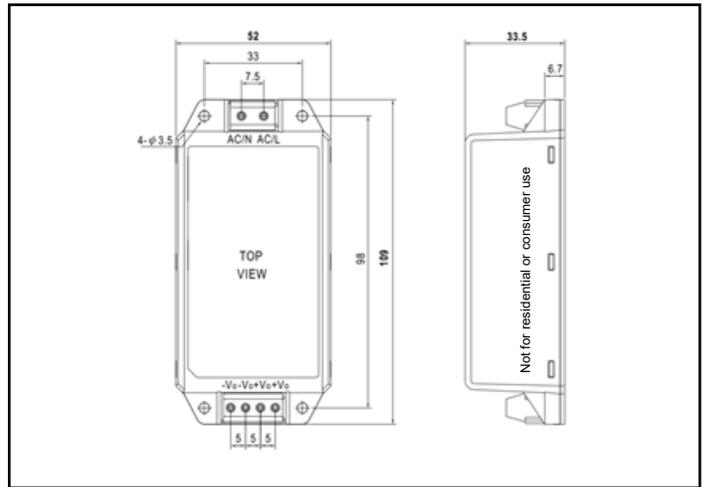
Power Supply

The Zurn Z-PWRSUP-W1 provides screw terminals for the purpose of connecting to both the upstream 120VAC branch circuit and the downstream low-voltage DC (Class II) circuit. To protect these live contacts, the power supply should be installed in an appropriate enclosure including all recommended cable clamps, conduit connectors, etc. in accordance with applicable local electric code.

The supply will fit diagonally into a standard 4-11/16" square metal junction box. A 6" square metal junction box is sufficient to house two supplies side-by-side if necessary. Ensure the supply is securely mounted within its enclosure so that shifting cannot occur.

Dimensions: 2 1/8" W x 4 3/8" L x 1 5/16" H

Important: The Z-PWRSUP-W1 power supply is not for residential or consumer use. Please install junction box and power supply in dry locations only.



Wiring

Each Zurn Smart Occupancy Light consumes a maximum of 150mA; a run of 40 lights, for example, would consume a maximum of 6A. Zurn recommends wiring the downstream low-voltage DC circuit (from power supply to light) using plenum-rated 2-conductor cable sized according to the overall distance and maximum current load in accordance with applicable local electric code. Voltage drop in the overall run must not exceed 1V at max load. Do not exceed 6A (40 lights) of total load per supply. If using stranded wire, Zurn recommends using appropriately sized crimp-on ferrules at all terminations to ensure connection integrity and to prevent accidental short-circuit conditions.

Gateway - LTE or Ethernet

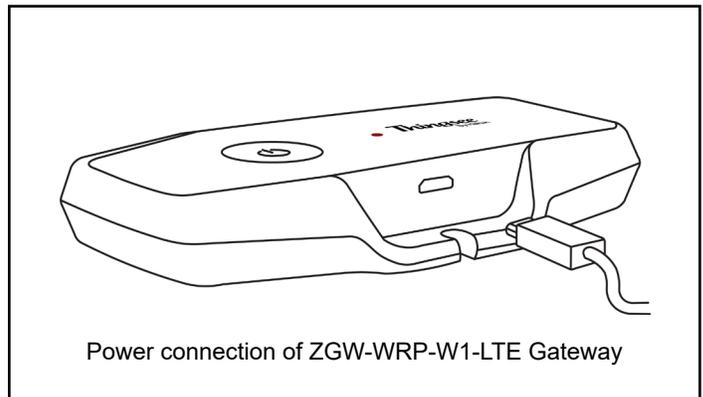
Power

Connect the ZGW-WRP-W1-LTE or ZGW-WRP-W1-ETH gateway to a standard wall socket using the included power supply as shown on the right.

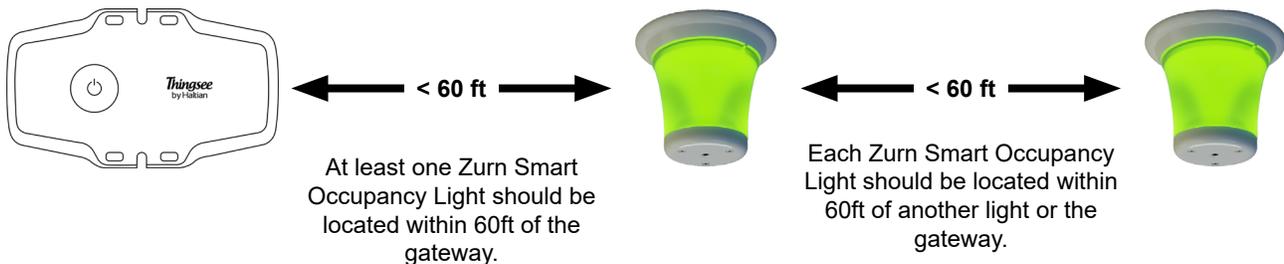
Placement

LTE Gateway: The ZGW-WRP-W1-LTE wireless gateway uses a cellular wide-area-network connection. To improve quality, place the gateway away from large metallic structures or sources of significant electrical interference like large transformers, motors, or florescent lighting ballasts.

Ethernet Gateway: The ZGW-WRP-W1-ETH gateway requires connection to an Ethernet cable. Ethernet port is adjacent to the power connection on the gateway.



Zurn Smart Occupancy Lights: The Zurn Smart Occupancy Light system uses wireless mesh communication. Zurn Smart Occupancy Lights will communicate wirelessly with the gateway; if necessary, they will use another Zurn Smart Occupancy Light as a relay. The gateway should be located no more than 60ft away from the nearest Zurn Smart Occupancy Light, and no Zurn Smart Occupancy Light should be located more than 60ft away from either a gateway or another Zurn Smart Occupancy Light relayed to the gateway via wireless mesh network.



Setup

On connection to power, the gateway will attempt to connect first to the cellular or Ethernet network, then to the cloud.

Blinking Red – Attempting to connect to Cellular or Ethernet network

Blinking Red/Green Simultaneously – Cellular or Ethernet connected, attempting to connect to cloud

Blinking Green – Connected and operating correctly (Cellular LTE only)

Solid Green – Connected and operating correctly (Ethernet only)

Connecting to the plumbSMART™ Portal

Important: The below registration instructions are provided for use of the Zurn plumbSMART™ portal. If you are connecting lights into a 3rd party portal, please consult your sales representative for registration instructions and skip to the Install Your Zurn Smart Occupancy Lights section.

Note: You may install and register your Zurn Smart Occupancy Lights prior to receiving a gateway. However, you will not be connected to the plumbSMART™ portal until you install your gateway. Please follow the instructions below to contact Zurn prior to registering your devices.

1. Visit www.zurn.com/plumbSMART-connect to save time and money on your installation. You can also call us at 844-987-6737.
2. Provide the serial number and contact name, email address, and basic information about the installation site.
3. We will activate your plumbSMART™ account, set up your enterprise, and give you guidance on how to register each connected product as you install it.
4. We will send a confirmation email with a link, or you can go to plumbsmart.zurn.com to log into your plumbSMART™ account for the first time.
5. Add other users and installers to your plumbSMART™ account.
6. Make sure you and/or your installers have the plumbSMART™ mobile app, which you can download from the iPhone App Store or Google Play.
7. Using the mobile app, scan or enter the serial number to register and locate each connected plumbing product as you install it.
8. Watch the how-to videos in the plumbSMART™ portal's support section if you get stuck, or call us at 844-987-6737 for support.

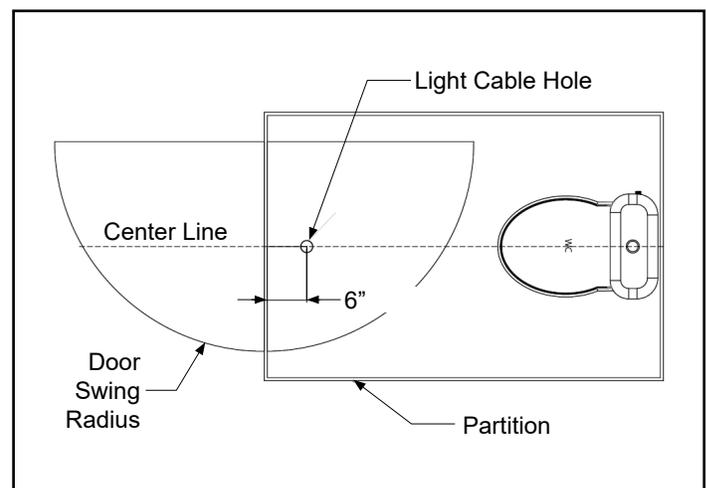


Install Your Zurn Smart Occupancy Lights

Step 1

First, find the center of the doorway in the relation to the ceiling that you intend on mounting the light to. Once you have located the center of the doorway you will need to measure out from the center line by approximately 6 inches to the inside of the stall, from the center point of the doorway. See image on the right.

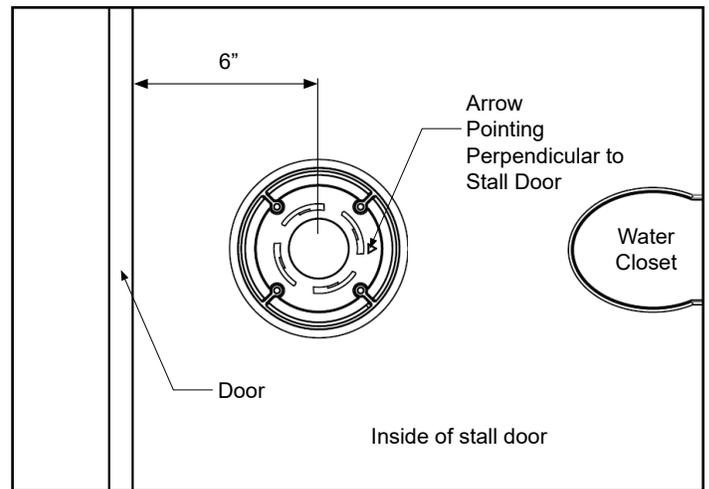
Drill a 1/2" hole in the ceiling surface to allow for the power cables to run through.



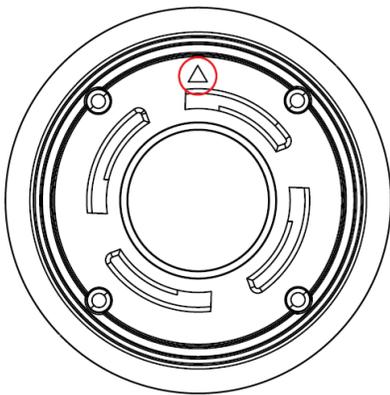
Step 2

When installing the ceiling mount bracket, it is very important to ensure that the arrow is pointing toward the inside of the stall, perpendicular to the stall door. In most cases, the arrow should be pointing directly towards the water closet. In some different stall configurations, such as handicapped/ADA stalls, the arrow may not point directly towards the water closet.

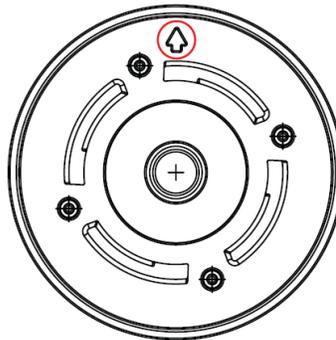
Once you have the arrow pointing towards the inside of the stall, secure the ceiling mount bracket in-place with 4 x #8 screws or 4 x M4 screws. Be careful not to over-tighten the screws to mitigate any ceiling or mount damage.



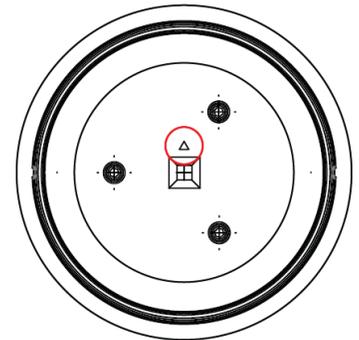
Each component that makes up an occupancy light has a small triangle. This triangle is an arrow that marks the direction of the sensor beam. The arrow should always point towards the inside of the stall that the light is being installed for.



Ceiling Bracket Mount



Extension Tube (If used)



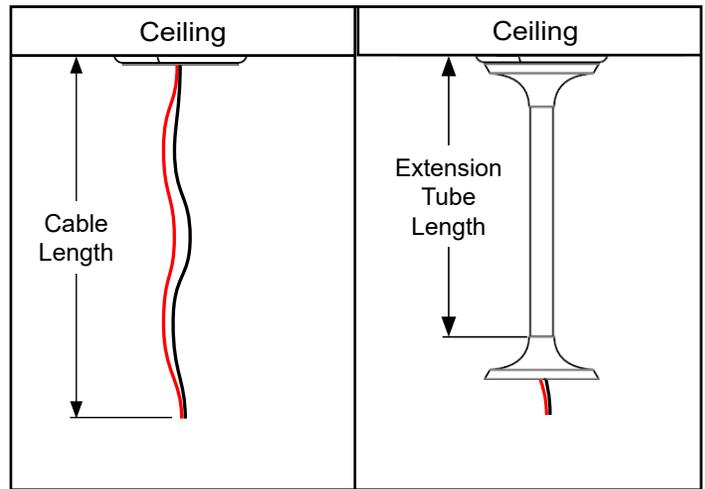
Bottom Endcap

The ceiling mount will come with a 'WC' sticker indicating the direction of the arrow, allowing the angle of orientation to be checked when the extension tube is in place.



Step 3

It is crucial that the cables you install are longer than the extension tube that is being used. Ideally the length of the wires should be 4 inches longer than the extension tube to make the installation easier when connecting to the power block.



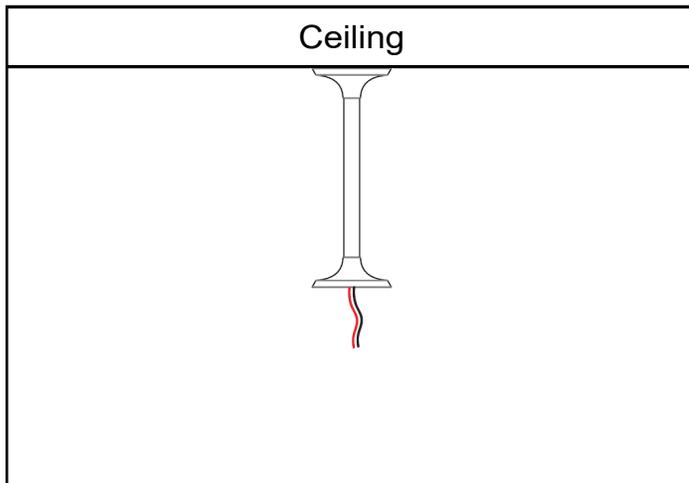
Step 4 - If Using Zurn Smart Occupancy Light Mount / Extension Pole

The ceiling mount bracket is now installed and it's time to assemble the unit.

If using a Zurn Smart Occupancy Light Mount - Extension Pole, feed the power cables through the extension tube until you see them visibly protruding out of the bottom extension cone.

Orient the extension pole mount (arrow located in the bottom of the extension cone) to an 11 o'clock position with the ceiling mount bracket arrow already installed at a 12 o'clock position on the ceiling. Twist the extension tube onto the ceiling mount until the arrow points towards the inside of the stall.

The arrow on the exposed end of the extension pole can be lined up with the WC sticker by rotating the tube when attached.



Installed
Light Mount /
Extension Pole

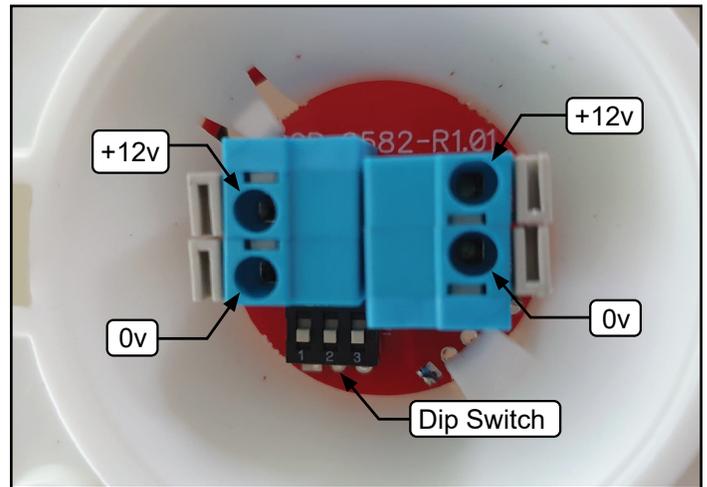
Step 5

Connect the power block to the cables.

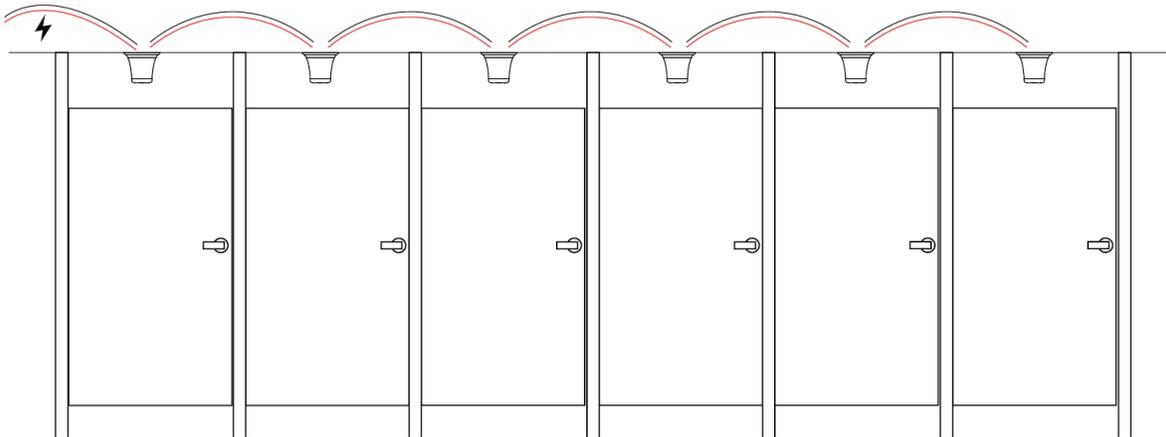
The power block is located inside the top of the Zurn Smart Occupancy Light. Both connections are linked so either side can be used for a single light or both sides when daisy chaining the lights off a single power supply.

Note: When daisy chaining multiple lights off one power supply, each light must be installed to maintain electrical connection for the entire network of lights. If a light needs to be replaced, it is best to remove the old light when a new one is available for replacement. You may alternately install multiple lights using a hub and spoke method.

Note: The dip switch on the bottom in the image is not currently used.



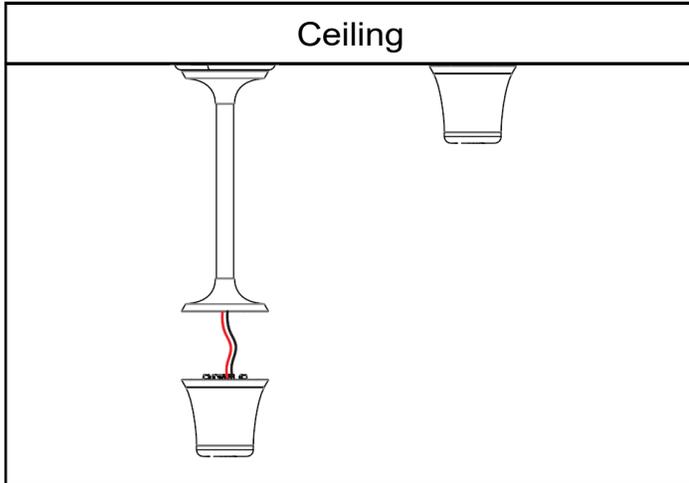
Daisy Chain Installation Option



Step 6

Once the cables are secured into the power block, attach the light unit to the bottom of the light mount / extension pole or ceiling mount bracket. If using a light mount / extension pole, ensure that you are holding the extension tube when twisting on the light unit to prevent any misalignment from assembly.

IMPORTANT: Orient the indented arrow on the bottom of the light at an 11 o'clock position with the ceiling bracket arrow already installed at a 12 o'clock position. Twist the light until it points into the stall. You may not need to fully twist the light into the mount to achieve the correct alignment.



Step 7

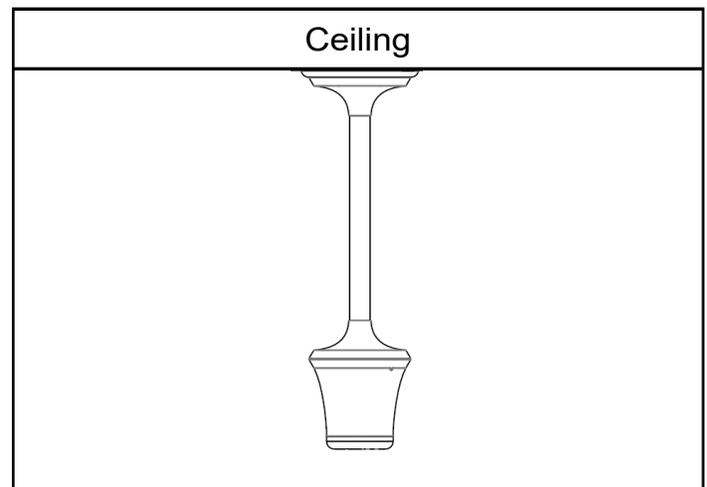
Turn on power to the light. When powered up, the light will cycle from blue to green. Once it has completed this cycle, the light should be operational.

Finish by removing the stickers when the light has been tested and is functioning correctly.

Finished

Your occupancy light is ready to use.

Note: If setting up an Occupancy Display, go to the Activate Your Occupancy Display section at the end of this manual for further instruction.

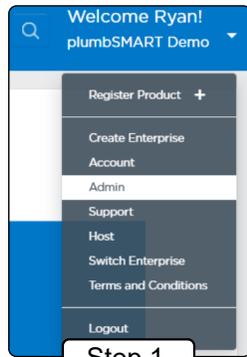


Activate Your Occupancy Display

Activate Display Option in plumbSMART™

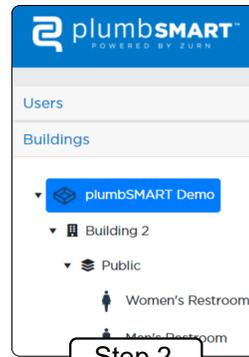
Step 1

After logging into plumbSMART™, select Admin from your account pull-down menu.



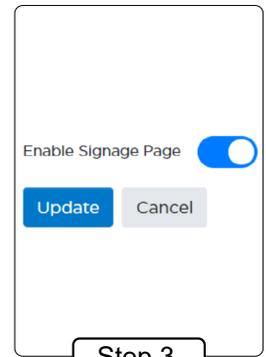
Step 2

Select Buildings on the left menu and navigate to the desired room.



Step 3

Toggle "Enable Signage Page" slider and click "Update" button.



Link Your Display to plumbSMART™

1. Power on your television monitor and complete default setup prompts, as needed.
2. Choose option to setup network settings.
3. Select "Settings", "EzSetting", "Play via URL" (or equivalent).
4. Navigate to <https://plumbsmart.zurn.com/display/activate>.
5. Save URL.
6. Device will ask to reboot to apply settings. Select "Yes".
7. Follow on screen instructions:
 - a. Navigate to <https://plumbsmart.zurn.com/admin/displays> on your computer, phone, or tablet.
 - b. Enter the displays unique activation code.
 - c. If activation takes longer than 2 minutes, reload the web page on your computer and get a new code from the display.
8. Select your restroom from the list on the display or on the computer.
9. Done!

Note: If the television monitor fails to display properly or has been unregistered in plumbSMART™, please restart the display and repeat the instructions, as necessary.

Trouble Shooting

Problem	Possible Cause	Corrective Action
One or more lights in a chain do not turn on when power is applied	Incorrect Wiring Polarity	Devices wired incorrectly will not be damaged, but will not power on. Daisy-chained devices downstream of the polarity inversion may also not function. Verify wiring polarity matches markings on power input terminals.
	Short Circuit	Power supply Z-PWRSUP-W1 is protected against short circuit conditions and will automatically disable power output when such a condition is detected. If this is the case, no devices attached to the short-circuited supply will function. Beginning with the power supply and working down the chain of lights, inspect power terminals for stray wires or other material causing a short circuit. Zurn recommends use of crimp-on ferrules for all connections when using stranded wire.
Light appears unexpectedly dim and/or light appears to turn off when green is expected	Low Voltage	Measure input voltage at fixture and ensure voltage is between 11.4 V and 12.6V. If voltage measured is out of range, measure voltage at power supply and ensure output is within range stated above. If supply voltage is within range, ensure wiring used is sufficient to carry max current (150mA * total # of lights) per local code (excessive voltage drop may be caused by insufficient wire gauge). If voltage at supply is low, disconnect lights from output terminals at power supply and measure open-circuit voltage. If open-circuit voltage is normal, inspect downstream wiring and connections for possible short-circuit conditions. If open-circuit voltage is low, replace power supply.
One light in a chain does not turn on when power is applied	Damaged Device	Measure voltage at device power input terminals. If voltage is nominal and device does not power on, replace device.
Light does not correctly change to indicate occupancy status	Device not oriented correctly	Ensure small arrow on the bottom of the light (near sensor opening) points into stall.
	Device mounted too high	Zurn recommends the mounting surface of the light be at most 8'6" from the floor. Ensure device is installed at correct height.
Device not communicating to cloud	Device too far from gateway or another light	Ensure device is within 60ft of another light or gateway.
	Gateway has no internet connection	Follow troubleshooting steps for gateway below.
	Gateway not installed	Ensure LTE or Ethernet gateway is installed, powered on, and within range (60ft).
Gateway not connecting to internet	LTE Gateway: Insufficient cell service	Move gateway to a more optimal signal location. Ensure it is placed above ground level and away from large metal objects or any electrical equipment that could cause interference.
	Ethernet Gateway: Network configuration	Check with network administrator to ensure device is not being blocked or blacklisted. Gateway uses TCP ports 80, 443, and 8883 and UDP ports 53 and 123.

For further assistance with troubleshooting, visit <http://www.zurn.com/>

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