

# In-Shower Fog-Free Mirror

## Installation Instructions

UL & Canadian Recognized

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### IMPORTANT INSTRUCTIONS

When using electrical appliances, basic precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons, including the following:

Read all instructions before installing or using this heater

Extreme Caution is necessary when any heater is left operation and unattended

Do not operate any heater after it malfunctions. Disconnect power at service panel and have heater inspected by a reputable electrician before reusing.

Do not use outdoors.

Do not cut mirror defogger nor submerge in water.

Transformer must be grounded.

120 or 240 volt power supply should not be brought within the shower area.

Transformer must not be placed in shower. Avoid locations such as a cabinet under a basin where the transformer may become wet due to failure of water lines or valves.

All installations must comply with local and national electrical codes.

No replacement transformers should be used. This defogger is designed with a special transformer which provides protection if the transformer fails.

To reduce the risk of fire, do not store or use gasoline or other flammable vapors and liquids in the vicinity of the heater

Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.

Failure to follow these instructions may result in deadly electrical shock.

### SAVE THESE INSTRUCTIONS

# In-Shower Fog-Free Mirror

## Installation Instructions

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READ EVERY PAGE OF THESE INSTRUCTIONS BEFORE INSTALLING

**US and Canadian Versions:** 110-120 volts, 50/60 Hz

MODEL: INS-11.75x11.75-120V-M      POWER: 15 watts      SIZE: 11-3/4" x 11-3/4"  
MODEL: INS-11.75x23.75-120V-M      POWER: 25 watts      SIZE: 11-3/4" x 23-3/4"

**International Versions:** 220-240 volts, 50/60 Hz, same sizes, wattages and installation.

MODEL: INS-11.75x11.75-240V-M      POWER: 15 watts      SIZE: 11-3/4" x 11-3/4"  
MODEL: INS-11.75x23.75-240V-M      POWER: 25 watts      SIZE: 11-3/4" x 23-3/4"

### Package Contents

1. A UL Listed Class 2 transformer with a 120 V 50/60 Hz primary and a 12 VAC secondary. The transformer is used to safely power the defogger at 12 volts.
2. A UL Listed Class 2, 16, gauge cable conductor, twenty-five feet in length which is used to connect the mirror defogger to the transformer.
3. An in-shower mirror with defogger.

Any installation may be used that satisfies the National Electrical Code and meets the following criteria:

1. The transformer is placed in a dry location outside the shower. Avoid locations such as a cabinet under a basin where the transformer may become wet due to failure of water lines or valves.
2. The 120 VAC or 240 VAC power source that supplies the transformer is controlled by a switch.
3. Class 2 wire is run from the transformer to the defogger location in the shower.

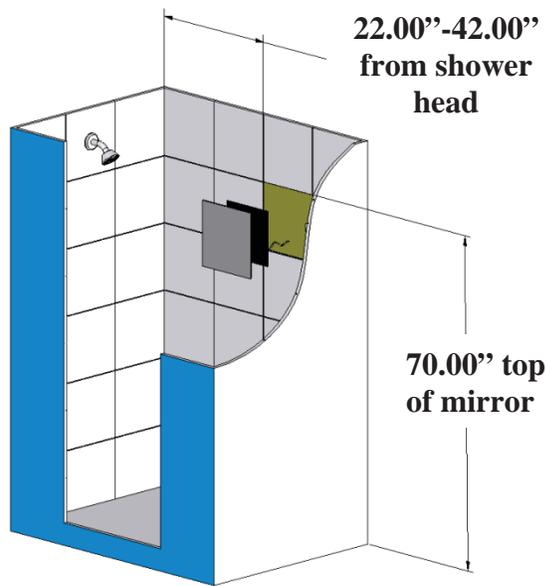
### EASY STEPS FOR INSTALLATION

1. Specify mirror location.
2. Determine power switch control.
3. Determine transformer location.
4. Route Class 2 wire.
5. Install transformer
6. Connect Class 2 wire.
7. Adhere mirror to wall.

### TOOLS AND PARTS NEEDED

Light switch	Wire nuts	Appropriate wire	2 <sup>1/8</sup> x4" metal box (step#5)
Wire stripper	Drywall saw	1/2" conduit lock-nut	2 <sup>1/8</sup> x4x1 <sup>7/8</sup> " extension (step #5)

Diagram A



## 1 Specify Mirror Location

Choose a location in the shower which is clear of water spray and splashing but close enough to allow the user to stand in the water stream (approximately 22 to 42 inches (56 to 107 cm) from the shower head). Do not place the mirror below the shower head as the spraying water interferes with visibility. The mirror should be located to accommodate the height of an average person. A common location is to place the top of the mirror 5' 10" above the floor of the shower. It may be installed in a steam shower, but it will fog up under intense steam.

## 2 Determine switch control

Power to the transformer must be controlled by an on/off switch. Since the unit is designed to prevent condensation from forming, it should be activated prior to the shower being turned on. In most circumstances it is best to have the defogger activated by the switch that controls the overhead shower light. This helps ensure the defogger is on prior to entering the shower and is a simple way to have the defogger activated by any person not familiar with the product. If the mirror is on a separate switch it is preferable to us a lighted switch to indicate when it is in operation.

## 3 Determine transformer location

Place the transformer in a dry location outside the shower that is easily accessible. Avoid locations such as a cabinet under a basin where the transformer may become wet due to failure of water lines or valves. Installation in clothes closets should be restricted to the surface of the wall above the door, or on the ceiling, with a minimum clearance of 6 inches being maintained between the transformer and the nearest point of storage. Run power from the control switch to the transformer. The control switch activates the transformer which reduces the voltage to 12 volts. The Class 2 wire connects the transformer to the defogger. An electrical box ( $2\frac{1}{8}'' \times 4''$ ) with an extension ( $2\frac{1}{8}'' \times 4\frac{7}{8}''$ ) will accommodate a surface mounted transformer (see Diagram B).

## 4 Route Class 2 wire

Route Class 2 wire behind the wall from the mirror to the transformer. Ensure that the wire extends 12 inches through the wall, on the mirror end, so that it may be accessed for mirror installation. Leave 12 inches of wire to run through the wall next to the transformer connection box.

## 5 Install transformer

Place the 2<sup>1/8</sup>" x4" metal box on the stud in such a manner that it will extend through the wall covering. Run the power leads from the switch into the box. After the wall is in place add a 2<sup>1/8</sup> x4x1<sup>7/8</sup> extension on to the box in the wall. Remove the knockout from the bottom of the extension. Place an extra nut on the transformer nipple so as to gain space for the box cover. Slip the transformer nipple into the knockout hole and mark the two bottom transformer mounting holes on the wall. Anchor the transformer to the wall with appropriate screws or wall anchors. Tighten the transformer nipple in the extension box with the nut provided.

Connect the incoming green ground wire to the box with a clip or grounding screw. For 120V, connect the black incoming lead to the black transformer lead. Connect the white incoming lead to the white transformer lead. FOR 240V, CONNECT THE BLACK INCOMING LEAD TO THE BLACK TRANSFORMER LEAD. CONNECT THE RED INCOMING LEAD TO THE YELLOW TRANSFORMER LEAD. Place a cover on the extension box.

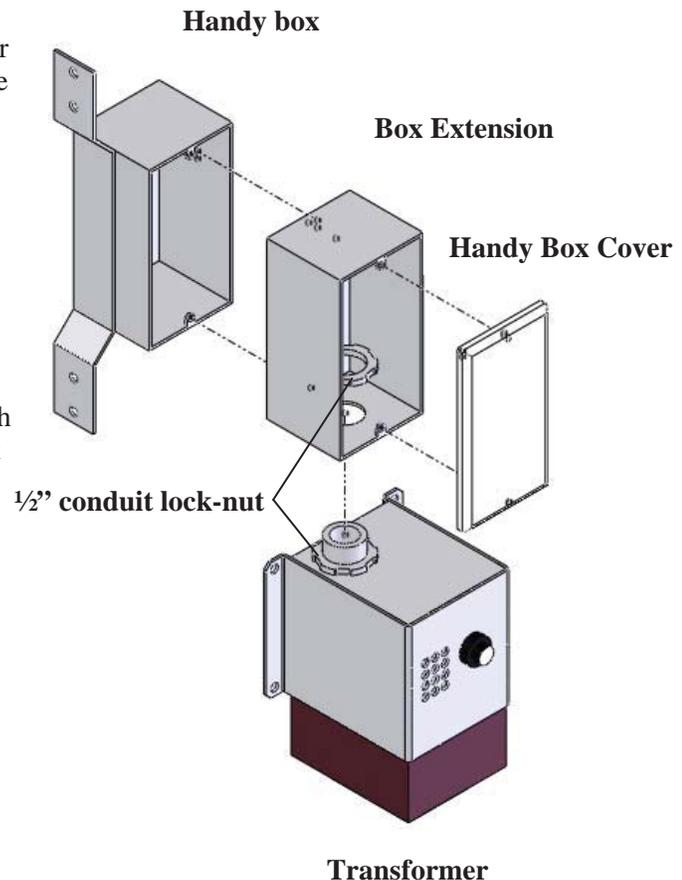
## 6 Connect Class 2 wire

Using wire nuts, connect one of the Class 2 leads to the blue transformer wire (this is on the secondary voltage side). Connect the other Class 2 lead to the red transformer wire (this is also on the secondary voltage side). These Class 2 connections may remain exposed. Attach the Class 2 leads to the electrical clips on the mirror.

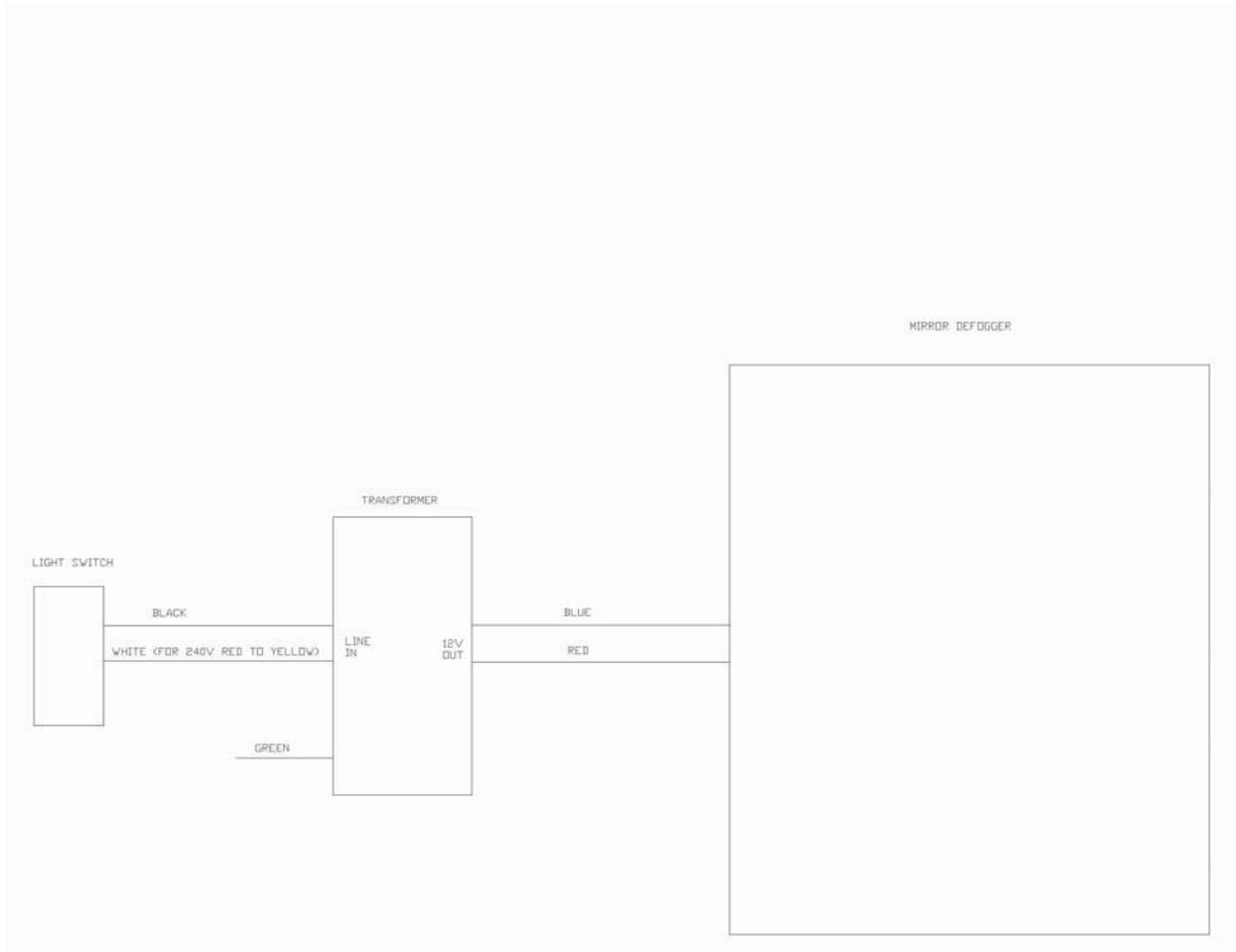
## 7 Adhere mirror to wall

When installing the mirror, place mirror adhesive (such as tile adhesive or mirror mastic) on the perimeter of the mirror back and adhere the mirror in position. Complete the installation by applying a silicon sealant to the joint between the mirror and the tile. The mirror should be flush with the tile or marble surface. Do not install on top of tile surface, but flush with the surface of the tile. Installation is now complete.

Diagram B



# WIRING DIAGRAM



## OPERATING INSTRUCTIONS:

- Heater must be properly installed before use

1) To turn defogger on, position on/off switch to the on position. Depending on temperature of room, the defogger may take a few minutes to achieve operating temperature.

2) To turn defogger off, position on/off switch to the off position.

## MAINTENANCE INSTRUCTIONS:

1) To clean mirror spray glass cleaner onto cloth, wipe down mirror surface.

- Do not use bristle brushes or abrasive sponges. They will scratch some glass surfaces.
- Never use abrasive cleaners.
- Do not let cleaners sit or soak on surfaces

2) No other maintenance required