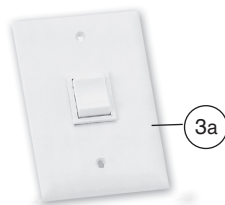
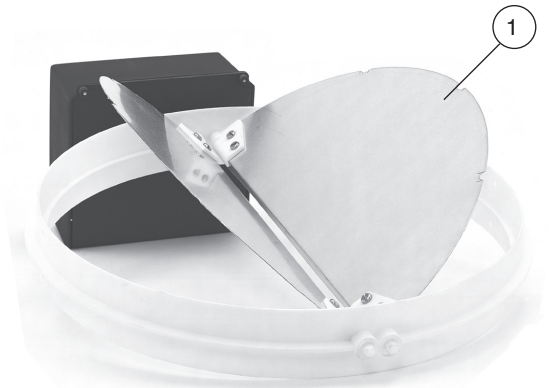


# Solatube® Daylight Dimmer Installation Instructions

Please read all warnings and instructions before beginning installation.



## ADDENDUM TO PARTS LIST

	<b>Quantity</b>
1. Daylight Dimmer	(1)
2. Seal and Fastener Kit	(1)
a. Foil Tape - 2" (50 mm) wide x 72 (1.8 mm)	(1)
b. Screws (Phillips) #8 x 3/8" (9 mm)	(2)
c. Romex connector	(2)
d. Strain Relief 1/2" (13 mm)	(1)
e. Screws (Phillips) #8 x 5/8" (16 mm) Drill Tip	(2)
3. Daylight Dimmer Switch (sold separately).	
a. Switch: DPDT Momentary, Rocker, Snap-In (5V, 100mA with Cover Plate)	
b. Cable:	
i. Switch Circuit: (4) Conductor, Stranded Copper, 22ga, (Green, White, Red and Black) 30 ft.	
c. Screws: (2) #6 Recessed Oval Slotted	
4. Two (2) Conductor Cable for Multiple Units (sold separately, not pictured)	
a. (2) Conductor, Stranded Copper, 22ga, (Red and Black) 500 ft.	

# **WARNING**

 **Do not proceed with the installation until you have read the entire instructions, including these warnings. (Use of materials or methods not authorized by Solatube International will result in an invalid warranty.)**

Solatube International, Inc. (seller) assumes no responsibility or obligation whatsoever for the failure of an architect, contractor, installer, or building owner to comply with all applicable laws, ordinances, building codes, electrical codes, energy codes, fire and safety codes and requirements, roof warranties and adequate safety precautions. Installation of this product should be attempted only by individuals skilled in the use of the tools and equipment necessary for installation. Protect yourself and all persons and property during installation. If you have any doubt concerning your competence or expertise, consult a qualified expert before proceeding.

## **Install at your own risk!**

Solatube product installations may be dangerous and include the potential for death, personal injury and property damage. The hazardous conditions include but are not limited to the following:

- **During installation, the Solatube Daylighting System's reflective tubes may focus sunlight, causing intense heat or fire. Remove protective film only after the parts have been installed. Prior to and during installation, do not leave tubes in contact with combustible materials or unattended, especially near direct sunlight. Avoid skin burns.**
- Solatube Daylighting System and Solar Star products may have sharp edges. Always wear leather or canvas gloves while handling and installing products.
- Solatube product installations require climbing and working at dangerous heights, including on ladders, scaffolding, roofs and in attic spaces. Risk of death, personal injury and property damage may result from a fall, or from falling objects. Use extreme caution to minimize risk of accidental injury, including, but not limited to the following procedures:
  - Clear area below your work space of all people, animals and other items.
  - Avoid working on surfaces that are slippery or wet.
  - Use foot-wear with excellent traction.
  - Use only strong, well supported ladders.
  - Work only in calm dry weather.
  - When in the attic, ensure that your weight is supported at all times with structurally sound framing; drywall material is not designed to carry a person's weight.
- To reduce the risk of fire, electric shock, and personal injury, basic safety precautions should always be followed when using electric tools, including always wearing safety goggles or other suitable eye protection, and ensuring work area is clear of all electrical wires, gas pipes, water pipes, and other obstacles.
- When working in the attic or other dusty areas, use of a mask or respirator is recommended to avoid lung irritation. Attic spaces may be dark, confined, and subject to extreme temperatures. Beware of sharp protruding objects. Do not attempt installation without having someone within range of your voice or close enough to come to your aid if necessary.
- Solatube products are not designed to withstand the weight of a person, tools or other objects. Walking or placing objects on the system could cause personal injury and property damage. If the product is damaged, the structural capacity may be weakened; therefore the system should be repaired immediately. For safe installation and use, do not deviate from these installation instructions.

## **For all electrical components**

- Before installing, servicing, or cleaning unit, switch power off at service panel and lock service panel to prevent power from becoming switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device such as a tag to the service panel.

## **Re-Roofing**

- Solatube products require special care if removed for re-roofing. In order to ensure proper removal and re-installation, please contact your Solatube International representative.

Please refer to the installation tips for the appropriate product below.

## **Daylighting Systems Installation Tips**

**These instructions are a step-by-step guide for the installation of a Solatube Daylighting System in the following conditions. For other roof types, please contact your Solatube International representative for additional information.**

**Built Up Flat Roof - Single Ply/Membrane - Asphalt Shingle - Low/No Pitched - Pitched - Prefabricated Curbs - Metal Roof Panels**



## Daylighting Systems Installation Tips (Continued)

- Allow at least 2-3 hours for the installation, particularly if this is your first installation.
- During the day, turn off all the lights in the room to see how much natural light comes in through the windows, and determine the best position for the Solatube Daylighting System. To light a specific area, place the system over the area, not in the center of the room. This will prevent the desired area from being shaded by tall objects in the room.
- Measure the distance between the roof and the ceiling. If you don't have enough tubing, contact your Solatube International representative for additional tubing.
- Avoid roof locations shaded by trees, ridges and chimneys, or near water channels or valleys. Also avoid roof areas with obstructions such as fire sprinklers, HVAC equipment, gas, water or drain pipes, air ducts or flues and make sure that the roof is adequate to endure an installation without damaging its waterproofing properties or weakening the building structure.
- All adhesives, seals and tapes are recommended to be applied to a clean and dry surface at a minimum of 70°F (21°C) for maximum performance.
- Foil tape contains a pressure sensitive adhesive and pressure must be applied at all seams for proper bonding. Foil tape is not intended for use as structural support of the extension tubes. For structural integrity use manufacturer supplied fasteners on all overlapping extension tube joints.



## Daylight Dimmer Installation Tips

- Install Solatube Daylight Dimmer only on a properly aligned Solatube Daylighting System.
- Use only UL recognized components approved for this listing.



## Light Add-On Kit Installation Tips

- To be installed by qualified electricians only. Disconnect power before installation.
- For supply connections, use wire rated at least 60° C.
- Access above ceiling to junction box is required.
- Blinking light may indicate improper lamp wattage or type, or insulation is too close to fixture, or other condition causing overheating.
- Intended for installation with 1/2 in (13 mm) minimum spacing from the fixture to cavity surfaces (side wall and overhead building member) and 1 in (25 mm) minimum spacing to adjacent fixtures.
- Thermally Protected Type IC (insulation may contact housing).
- Suitable for wet and damp locations such as laundry, bathroom and shower stall. Must use GFCI circuit if located within a bath/shower stall.
- Use only as a component of Solatube Daylighting System products.

### Caution

- Risk of fire and electrical shock. Most dwellings built before 1985 have supply wire rated 60° C. This product is to be installed by qualified electricians only.
- To reduce the risk of fire, use only:
  - Fluorescent Lamps, Medium Base - 23 Watt Maximum, Total Maximum Length 4 3/4 in (120 mm)
  - Compact Fluorescent (4 Pin Quad Tube) 26 Watt only



## Ventilation Add-On Kit Installation Tips

See Ventilation Add-On Kit installation instructions for tips.



## Solar Star Attic Ventilation Installation Tips

- Keep Solar Star solar panels covered until product is mounted and sealed to roof. Cover solar panel whenever motor, fan, or unit is to be serviced. Fan blade is controlled by the solar panel and may become operational when panel is exposed to sunlight.
- Solar Star products are designed for general ventilation purposes only. Do not exhaust any hazardous materials or gases such as flammable, explosive or incendiary materials.
- Solar Star products have an unguarded fan blade. Do not use Solar Star products in areas that are easily accessible.

### Caution

- Carbon monoxide may be drawn into a house or attic space with the operation of Solar Star products if fuel-burning equipment is not serviced or monitored regularly. Carbon monoxide (CO) is a colorless, odorless gas that can be hazardous to your health and may cause death. Fuel-burning equipment must have proper ventilation, Solar Star products are not designed to provide ventilation for fuel-burning products.

## OVERVIEW

These instructions are for installing and wiring the Solatube Daylight Dimmer. Units are designed to operate in a temperature range of -20° F (-29° C) to 130° F (54° C). If ambient temperatures are outside of these values or the environment is very humid, wrap the junction box with an insulation blanket with a vapor barrier. Junction box should be oriented towards the closest source of power with UL label arrow pointing up.

**Step 1.** For Solatube 160 DS (10 in/250 mm Daylighting System) or Solatube 290 DS (14 in/350 mm Daylighting System) - Place Daylight Dimmer atop the outside of the bottom tube. Secure the Solatube Daylight Dimmer ring using (2) 3/8" (9 mm) screws in the pre-drilled holes. Apply foil tape around perimeter of the Daylight Dimmer (**Diagram A**).

For the Solatube 21-C (21 in/530 mm Daylighting System), orient the Daylight Dimmer around the outside of the transition box so that the locator tabs drop into the slots on the transition box. Secure the Daylight Dimmer using (2) 5/8" (15.5 mm) drill tip screws in the pre-drilled holes. Apply foil tape around perimeter of the Daylight Dimmer (**Diagram B**).

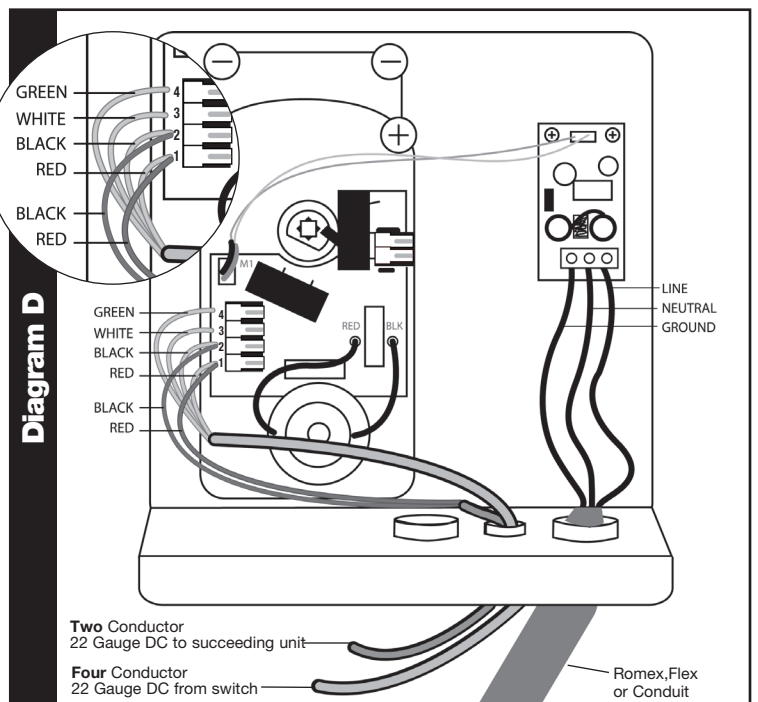
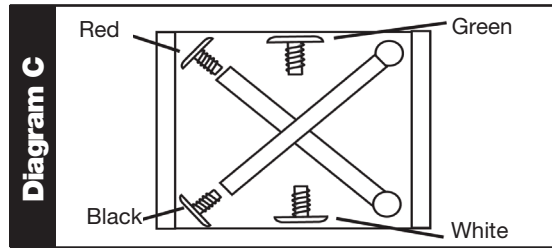
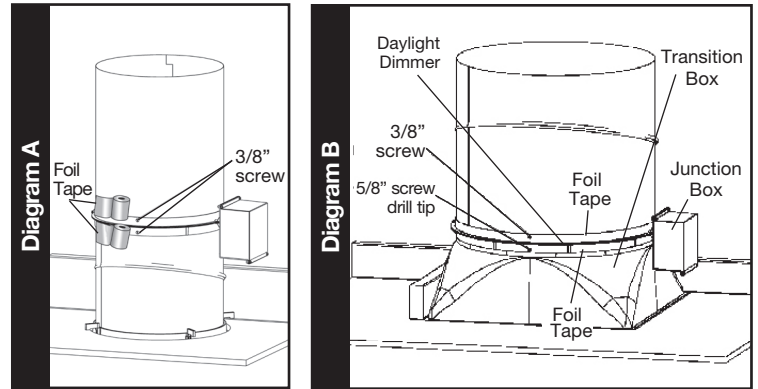
**Step 2.** For Solatube 160 DS (10 in/250 mm Daylighting System) or Solatube 290 DS (14 in/350 mm Daylighting System) - Adjust extension tube to the small notch/larger diameter to fit into the Daylight Dimmer. Insert extension tubing atop the inside of the Solatube Daylight Dimmer with (2) 3/8" (9 mm) screws in the pre-drilled holes. Apply foil tape around perimeter of the Daylight Dimmer (**Diagram A**).

For the Solatube 21-C (21 in/530 mm Daylighting System), insert the bottom angle adapter into the top of the Daylight Dimmer and secure with (2) 3/8" (9 mm) screws in the pre-drilled holes. Align seam of extension tube with axle on Daylight Dimmer to avoid binding baffle. Apply foil tape around perimeter of the Daylight Dimmer (**Diagram B**).

Return to Solatube standard installation instructions to continue with installation.

## DC Control Switch and Daylight Dimmer

**Step 3.** Position switch on wall; minimum 38" (1.5 m) above floor; within visual sight of the Solatube Daylighting System. Run cable (4 conductor 22 gauge with red, black, white and green colors) from the Daylight Dimmer Switch to the Daylight Dimmer junction box. **Diagram C** illustrates the four terminal locations and their respective conductor. **Diagram D** provides a completed overview of the entire wired assembly for the Solatube Daylight Dimmer junction box. Using pliers, clamp cables in 1/2-inch strain relief and press into junction box hole from the outside.



### DC Control (Multiple Units/Daisy-Chain)

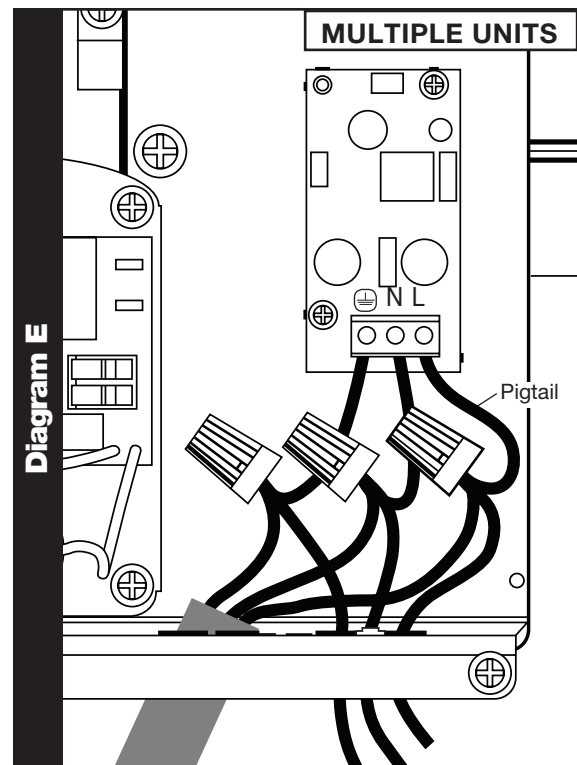
**Step 4.** Controlling multiple (two or more) units from one master switch requires (2) conductor cable, black & red, 22 gauge stranded (not included). **Use only 22 gauge wire to fit properly.** Connect each unit via terminals 1 to 1 (red to red) and 2 to 2 (black to black) (**Diagram D**). This will require (2) conductors per terminal.

#### Notes for Controlling Multiple Units:

- 1.) The maximum number of units that can be controlled from one master switch is ten (10).
- 2.) Maximum distance from the wall switch to the first dimmer in the series cannot exceed 100 feet.
- 3.) Maximum distance between each subsequent dimmer cannot exceed 30 feet.

#### Supply AC to Power Supply for a single unit installation and to each unit in a multiple unit installation.

Electrical disconnect such as fuse or breaker switch must be utilized in supply circuit and disconnected during installation to protect personnel and Daylight Dimmer. Rating: 90 - 277 V, 50/60 Hz, 30 A(Max). Wire Size: 16 to 12 ga. Connect: Conductors to labeled terminal block on Power Supply (**Diagram D**). For multiple installations, utilize pigtails from the terminal block to supply AC to each unit (**Diagram E**).



For North America:

- Black Conductor to Terminal (L) Line
- White Conductor to Terminal (N) Neutral
- Green Conductor to Terminal ⊕ Ground/Earth

For Europe:

- Brown Conductor to Terminal (L) Line
- Light Blue Conductor to Terminal (N) Neutral
- Green/Yellow Conductor to Terminal ⊕ Ground/Earth