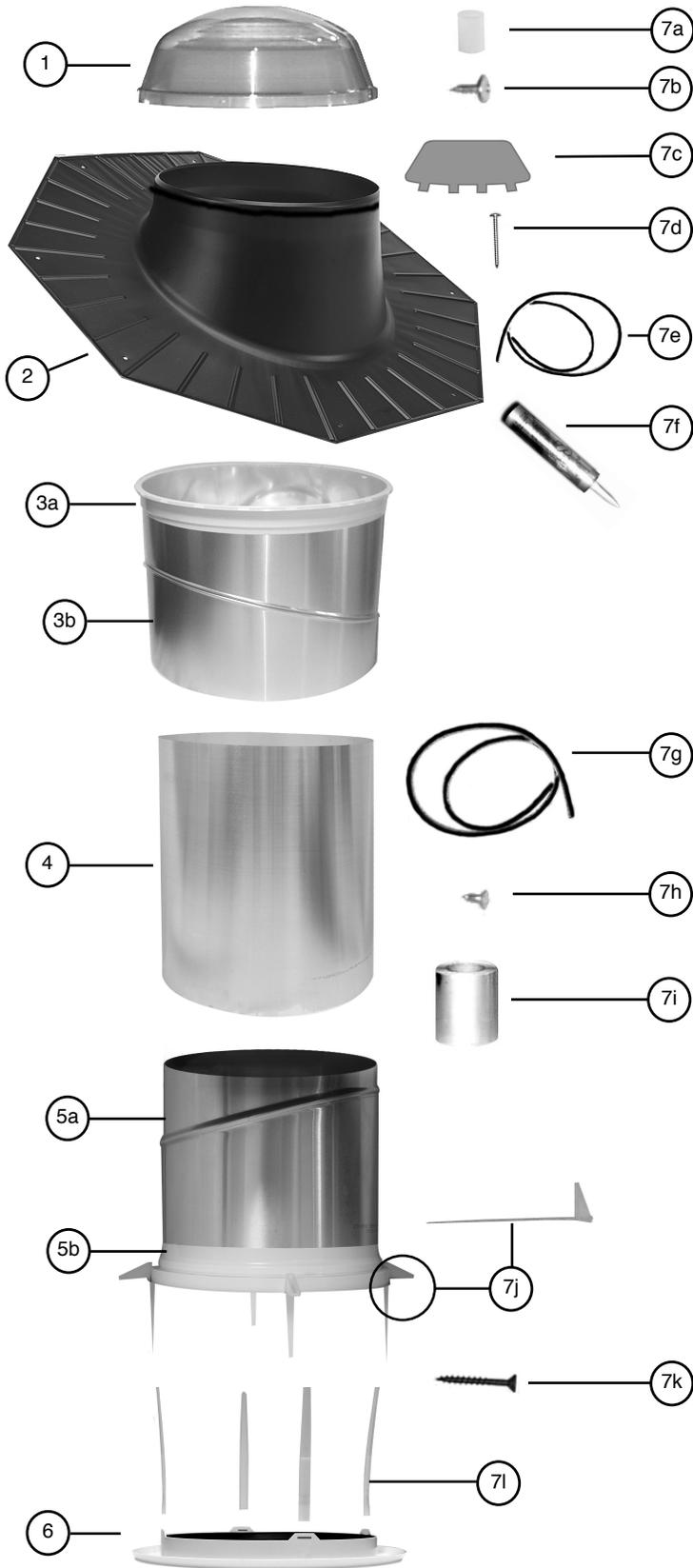


Solatube® Brighten Up® Series Installation Instructions 10" and 14" Solatubes

(250mm) (350mm)

Please read all warnings and instructions before beginning the installation.



PARTS LIST

	Quantity
1. Duradome® with Raybender® Technology*	(1)
2. Roof Flashing (Pitched or no pitch)	(1)
3. Top Tube Assembly including	(1)
a. Dome Ring	
b. Spectralight® Infinity Top Tube with Angle Adapter	
4. Spectralight® Infinity 16" (406mm) Extension Tube (not included in some kits, see label on box)	(2)
5. Bottom Tube assembly	(1)
a. Spectralight® Infinity Bottom Tube with Angle Adapter	
b. Ceiling Ring	
6. Diffuser assembly including	(1)
a. Diffuser	
b. Diffuser seal	
7. Seal and Fastener kit including	
a. Dome Spacers *	(5)
b. Dome Screws - #8 X 3/4" (19mm)	(5)
c. LITD® (Light Intercepting Transfer Device)	(1)
d. Flashing Screws - #10 X 2" (51mm)*	(8)
e. Dome Seal	(1)
f. Roof Sealant	(1)
g. Expansion Joint Seal	(1)
h. Tube Screws - #8 X 3/8" (10mm)	(10)
i. 2" (51mm) Foil Tape - 18' (5.5m) roll	(1)
j. Zip Ties	(4)
k. Ceiling Screws - 1 1/2" (38mm)	(4)
l. Diffuser Clips	(4)

Required Tools:

1. Electric Drill
2. Keyhole Saw
3. Saber or Reciprocating Saw
4. Hammer
5. #2 Phillips Head Screw Driver/Screw Gun
6. Tape Measure
7. Flat Bar
8. Wire for probing
9. Caulking Gun
10. Plumb Bob
11. Utility Knife
12. Magnetic Compass
13. Required Safety Equipment

*High velocity wind zones: polycarbonate domes, rubber dome screw spacers and increase flashing screw quantity to 16.

For the most current Installation Instructions, please visit www.solatube.com/instructions



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 will result in an invalid warranty)

Solatube (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, 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’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.
- Sheet metal edges may be sharp. Use protective gloves to avoid lacerations.
- Skylight 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; dry wall 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.
- The tubular skylight is not designed to withstand the weight of a person, tools or other objects. Walking or placing objects on the skylight could cause personal injury and property damage. If the dome of the skylight is broken or cracked, or if the skylight is otherwise damaged, the structural capacity may be weakened, and the skylight should be repaired immediately. For safe installation and use, do not deviate from these installation instructions.

Installation Tips

These instructions are a step by step guide for the installation of a Solatube in the following conditions. For other roof types, please ask your Solatube dealer for additional information.

- Flat Roof
- Asphalt Shingle
- Steep Slope Roof
- Fire Rated (Classified) Roof
- Cement Tile
- Wood Shingle and Shake
- Low Pitched Roof
- Clay Tile

- Allow at least 3 hours for the installation, particularly if this is your first installation.
- All adhesives, seals and tapes must be applied to a dry surface at a minimum of 70°F to be effective.
- 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. To light a specific area, place the Solatube 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.
- Avoid roof locations shaded by trees, ridges and chimneys, or near water channels or valleys.
- Avoid roof areas with obstructions such as gas, water or drain pipes, air ducts, flues or furnaces, or HVAC equipment.
- Make sure the roof is adequate to endure a Solatube installation without damaging its water proofing properties or weakening the building structure.

MARKING THE CEILING LOCATION

Step 1: Select the desired location on the ceiling. Use a hammer or stud finder to locate a space between the joists in the ceiling. Tap lightly to identify ceiling joists. Hammer a small nail through the ceiling to mark the approximate location.

Bend a piece of wire so one length of it is 5 1/4" (131.25mm) for 10" Solatube (250mm), 7 1/8" (180mm) for 14" Solatube (350mm). You need a minimum of 5 1/4" (131.25mm) for 10" Solatube (250mm), 7 1/8" (180mm) for 14" Solatube (350mm) of clearance between your nail and any joists or obstructions. Insert the leg of the bent wire through the nail hole into the attic area or joist bay (Diagram A). Twist the wire leg 360° to ensure that there are no hidden obstacles in the path of the tube above the ceiling level. While turning the wire, push it up through the ceiling hole to ensure that no other obstacles, pipes, wires or vent ducts are in the tube path up to the roof sheathing. If obstacles exist, move to an appropriate location and check again for clearance. For short installs without attic access, use a long drill bit to drill from the nail hole up through the roof.

ROOF LOCATION

Step 2: In the attic, locate the nail/wire. Adjust the location to avoid joists or obstacles in the tube's path to the roof and to ensure clearance (Diagram B). Use a plumb bob or level to find the roof location directly over the center of ceiling hole. Transfer this location onto the roof surface by driving a nail/screw through the roof sheathing. While in the attic, get bearings of the roof nail/screw location to make it easier to find the location of the nail on the roof.

Note: Attic Obstructions: If the roof opening cannot be made directly above the ceiling opening due to attic obstructions, the roof opening may be relocated or a 0-90 degree extension tube may be appropriate. If relocated, the top and bottom tube angle adapters may both need to be adjusted to the correct angle (the maximum angle achieved by each of the angle adapters is 30°). Avoid inclining the tube to the north as this reduces light output (Diagram C).

CUTTING THE CEILING HOLE:

Note: Do not cut ceiling hole until you are sure that the flashing fits in the desired location.

Step 3: Mark a 10 1/2" (262.5mm) circle for the 10" (250mm) Solatube, 14 1/4" (362mm) circle for the 14" (350mm) Solatube centered on the final ceiling location. Cut along the ceiling as marked (Diagram D).

Step 4: Insert the bottom tube assembly into the ceiling and if the installation is not vertical, rotate angle adapter to align bottom tube with roof flashing location. Use two 1 1/2" (38mm) ceiling screws to temporarily attach bottom tube assembly to ceiling (Diagram E). Do not remove protective liner from insided of tube until instructed.

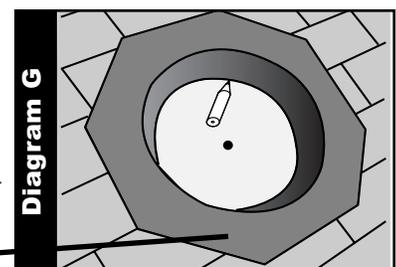
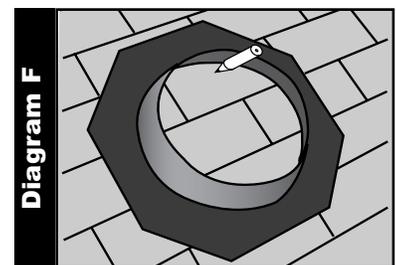
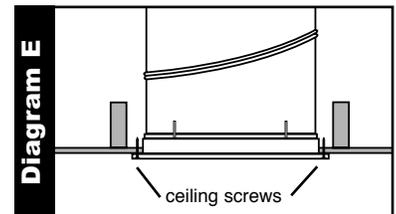
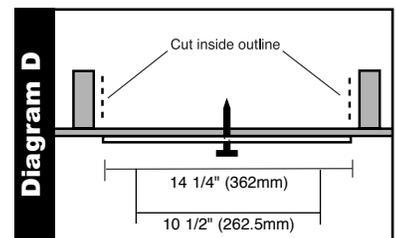
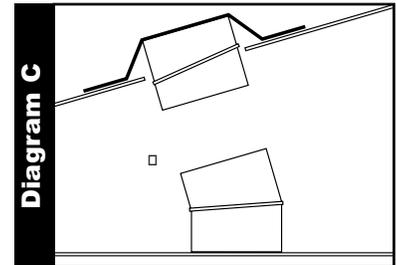
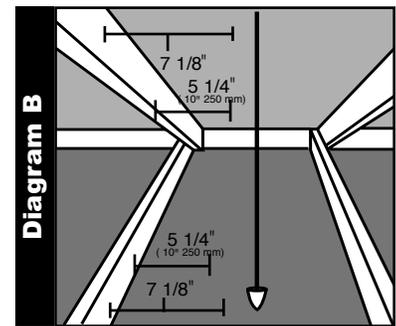
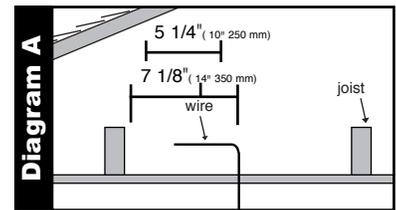
See Optional Installation Section

1. Universal Tile (page 7)
2. Turret Extension (page 8)
3. 0-90 Degree Extension Tube (page 8)
3. Dome Edge Protection Band (page 8)
4. Flat Roof (page 9)
5. 10" Cement Tile (page 10)

ROOF FLASHING INSTALLATION

Caution: Wear gloves while working with metal Solatube components.

Step 5: Take the roof flashing, LITD®, top tube assembly, dome seal, dome, dome spacers, flashing screws, dome screws, metal tape, sealant and appropriate tools onto the roof. Center the roof flashing over the nail/screw and mark the inside circumference onto the shingles with a lumber crayon (Diagram F). Using a saber or reciprocating saw, cut through the roof 1/2" (12.5mm) outside the marked line.



Note: If rafter spacing does not permit cutting 1/2" (12.5mm) larger than the marked circle, cut the shingles and felt underlayment 1/2" (12.5mm) outside the marked line to expose the roof deck (Diagram F). Turn flashing upside-down and center over the nail/screw. Trace the inner circumference of the flashing turret onto the bare roof (Diagram G). Using a reciprocating or jig saw, cut outside this line, being careful not to cut any framing members, concealed pipes or electrical wires.

Step 6: Using a flat bar, break the asphalt sealing tabs of the shingles and carefully pull out the staples or nails above the midpoint to upper edge of the hole. Remove enough shingles to expose the felt underlayment, at the middle and surrounding the top of the roof hole (Diagram H).

Step 7: With a caulking gun, apply a 3/8" (10mm) bead of roof sealant around the underside of the flashing base along the line of screw holes. Use only Solatube recommended sealant for the installation (Diagram I). The top half of flashing seals to the roof underlayment. The bottom half of flashing seals to the shingles.

Step 8: Turn the flashing upright and center over the roof hole, fasten flashing to the roof and underlayment with 2" (51mm) flashing screws applied at each pre-punched hole*. Tighten the screws until the sealant is a minimum of 1/8" (3mm) and a maximum of 1/4" (6mm) thick between the flashing and the roofing material (Do not overtighten). Coat the screw heads with sealant. Replace the shingles and refasten them into place. Fill all the old fastening holes, and resecure the shingle tabs every 4" (102mm) with spots of roofing sealant under each tab (Diagram J).

Note: For high velocity wind zones apply (8) additional screws evenly spaced between each pre-punched hole.

Step 9: Remove backing from the dome seal (short black pile weather strip) and firmly adhere it to the top edge of the roof flashing turret, cut the seal to create a tight joint. NOTE: If a turret extension is used, adhere the dome seal to the top edge of the turret extension (Diagram J).

TOP TUBE INSTALLATION:

Step 10: Insert top tube assembly into roof flashing and rotate the angle adapter so that top tube aligns with bottom tube. "A" and "B" lengths should be equal (Diagram K). Bottom angle adapter can be adjusted to achieve this measurement. Record this length for later use in determining extension tube length requirements.

Step 11: Remove top tube assembly and tape the angle adapter joint and tube seams (Diagram L). Remove protective liner and replace the assembly into the flashing, aligning it again with the bottom tube.

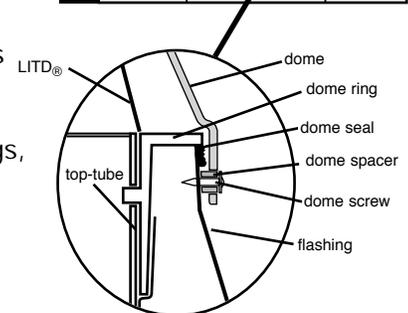
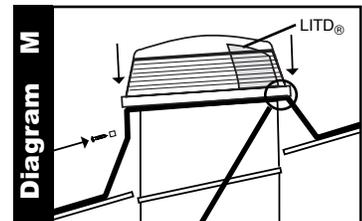
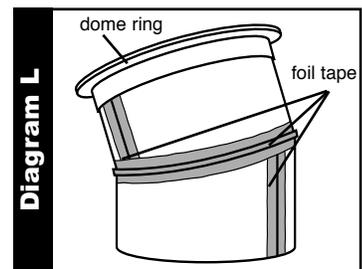
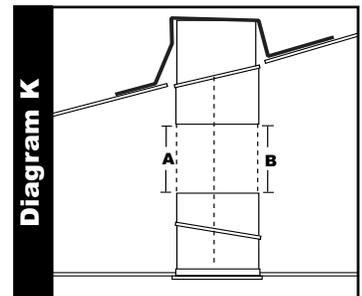
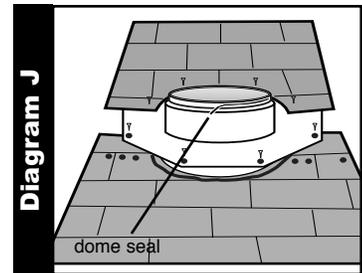
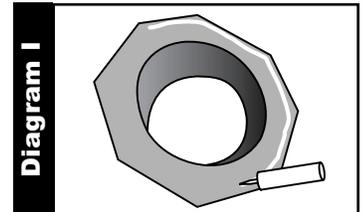
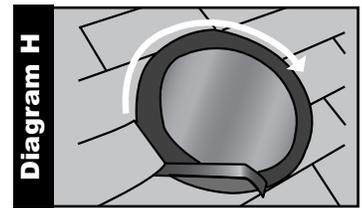
Step 12: Peel protective liner from the LITD®. Using a magnetic compass, position the LITD® with the inside (reflective side) facing due south. Insert the bottom four mounting tabs of the LITD® between the top tube angle adapter and the dome ring (Diagram M).

DOMES INSTALLATION:

Step 13: Place the dome over the flashing and press firmly until dome stops, align the 4 dome holes with the pre-punched flashing holes. Add dome spacers to 9/16" (14mm) dome screws and fasten through provided holes of dome. Be careful not to deform spacers or dome while fastening (Diagram M)*.

Note: Do not use dome spacers with polypropylene (plastic) flashings. Dome spacers are only required on installations using metal flashing. These spacers allow the acrylic dome and metal flashing to expand and contract at different rates, therefore eliminating stress on the dome. If the spacers are used on the polypropylene flashings, the dome screws will not fasten into flashing correctly.

Note: For high velocity wind zones replace dome spacers with rubber grommets.



EXTENSION TUBE ASSEMBLY IF REQUIRED:

Step 14: Add 4" (102mm) to length from step 10. This accounts for the overlap of the extension tubes into bottom and top tubes. With this measurement, determine the amount of extension tubing needed.

Extension tubes have both deep and shallow notches at each end so that they may be formed into tapered tubes (Diagram N). Weave opposite side of tube through one deep notch, center notch and one shallow notch, then tape tube seam. Smaller end of tube is always oriented down.

Bottom tube fits into top tube on short installations. Tubes slide into each other for shorter lengths, but may be cut to length if necessary. If cut, always use the factory cut end for top tube joint. Remove protective liner from extension tube before assembly.

Step 15: Telescope the extension tubes together with a minimum 1 1/2" (38mm) overlap at each joint. Firmly apply foil tape around each tube joint. Unscrew bottom tube assembly from ceiling and remove plastic liner from tube interior. Insert small end of the extension tube assembly into the bottom tube with a minimum 1 1/2" (38mm) overlap. Align the tubes so they enter straight into the bottom tube. Firmly apply foil tape to bottom/extension tube joint (Diagram O). All overlapping tube joints need to be fastened with two tube screws. Tube screws are not required on vertical seam of extension tube.

Note: If cleaning the tube is required, use only a soft, lint free cloth and mild soap. Rinse with moist cloth and dry. Cleaners with amonia will damage reflective tubing.

BOTTOM ASSEMBLY/EXTENSION TUBE INSTALLATION

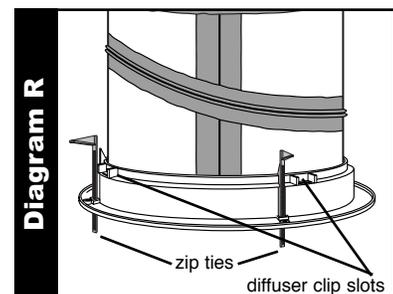
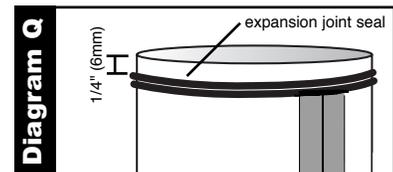
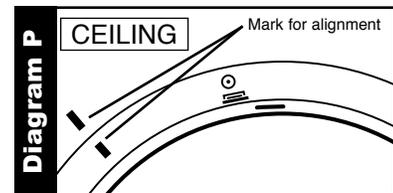
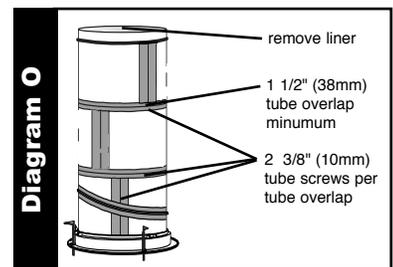
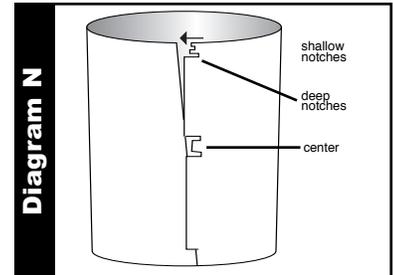
Step 16: To check fit, insert bottom/extension tube assembly up into the ceiling hole. If necessary, rotate bottom tube angle adapter to make top of assembly fit into top tube and ceiling ring to fit flush to the ceiling. Mark ceiling ring and ceiling for future alignment reference (Diagram P).

Step 17: Tape the bottom tube angle adapter and tube rivet seams. Use longer black pile seal for expansion joint seal. Apply expansion joint seal 1/4" (6mm) from upper end of top extension tube. At the intersection pass the free end of the seal to the low side of the starting end, continue around the tube circumference. Make this joint tight, but do not overlap. Expansion joint seal should lap twice around tube to seal out bugs and dust. (Diagram Q).

Step 18: Insert the four zip tie anchors 3/4" (19mm) into the box sockets as shown. Do not push in further, as zip ties cannot be withdrawn (Diagram R).

Note: In cold weather, it is recommended that a latex caulking be used on the backside of the ceiling ring prior to zip tie tightening to stop cold air transfer.

Step 19: Insert tube assembly up into hole and line up corresponding marks on ceiling. To fit zip ties through ceiling hole, twist zip tie heads to the side and insert one by one through hole. Align ceiling ring to ceiling mark and push assembly into top tube until ceiling ring flange is flush to ceiling. Pull zip ties tight then install four 1 1/2" (38mm) ceiling screws through holes in front of zip tie slots on ceiling ring, screws will anchor into foot of zip tie. Cut exposed zip tie shanks flush with ceiling ring (Diagram S).

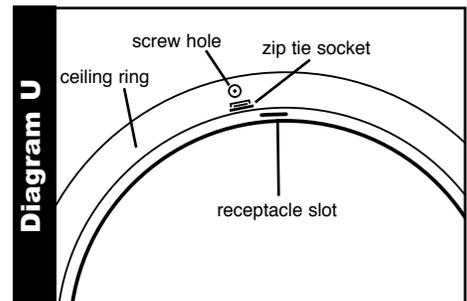
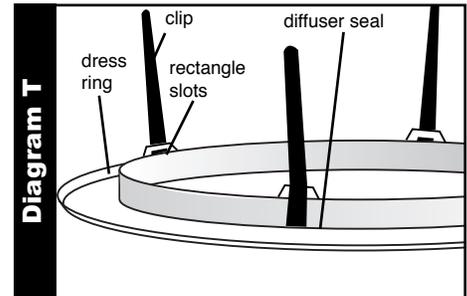
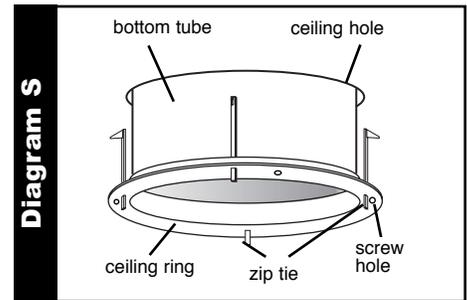


DIFFUSER CLIP INSTALLATION

Step 20: The diffuser has four rectangle shaped receptacle slots for the insertion of diffuser clips. Take a diffuser clip and insert the rectangle shaped tab on the back of the clip into the corresponding shaped receptacle on the diffuser. Push bottom foot of clip with thumb towards center of diffuser while slightly behind top of clip toward diffuser center until foot snaps into place. Repeat with the other three clips (Diagram T).

Step 21: The ceiling ring also has four receptacle slots that the diffuser clips fit into. Align the diffuser clips with opposing receptacles and carefully press on the white area of the diffuser until the clips are forced into the ceiling ring. (Do not press on the clear area of the diffuser). When the diffuser fits evenly with the ceiling surface, the job is complete (Diagram U).

You can now enjoy the benefits of your SOLATUBE and the high performance, natural lighting it provides.



Solatube® Universal Tile Flashing Installation Instructions (with base flashing)

Addendum to parts list

	QTY
1. Tile flashing (Pitched or Non-Pitched version)	1
2. Aluminum "L" bracket	4
3. #8 x 1/4" (6.35mm) screws	8

Additional required materials

1. Base flashing (Pitched or Non-Pitched version)*	1
2. Roofing sealant - Geocel 3300*	1 (10 oz)
3. Flashing screws - #10 x 2" (51 mm) screws*	8

*Provided with Solatube skylight kit

Complete Brighten Up Series standard installation instructions steps 1-4. Do not use Portland-Cement based mastic, grout, or alkaline materials with this product. Caustic alkalis present in fresh, unhardened mortar will attack aluminum.

Step 1: Take tile and base flashings, top tube assembly, tube tape, dome, flashing screws, dome screws, dome spacers, roof sealant and required tools onto roof.

Step 2: Find roof opening location and remove enough tile to place base flashing on roof deck. (Using flashing as a template; mark inside circumference of turret onto roof deck.) (Diagram A).

Step 3: Cut through roof deck approximately 1/2" (12mm) outside the line and clean roof surface using course brush.

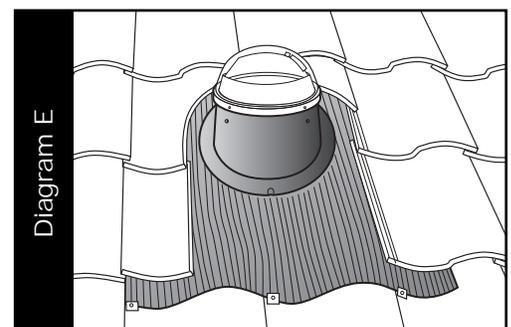
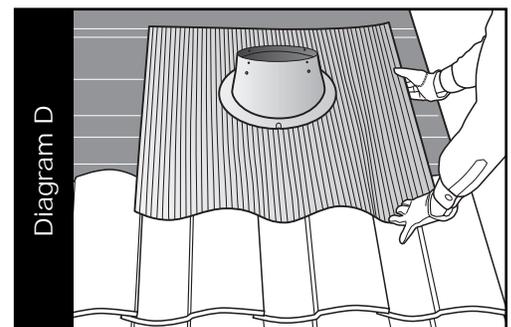
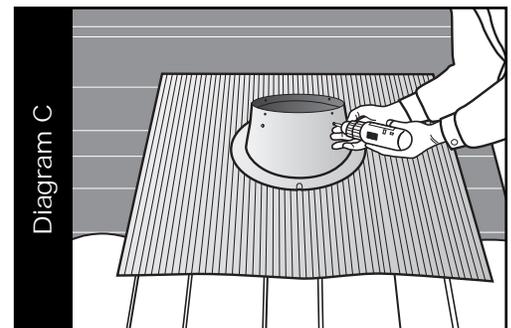
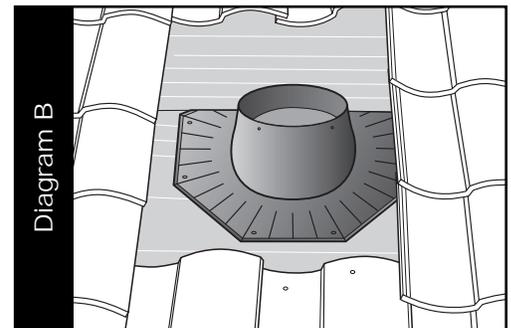
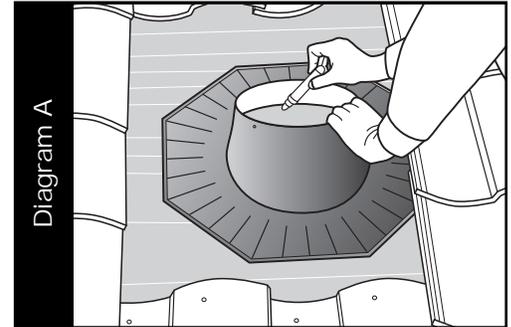
Step 4: Apply roof sealant to the underside perimeter of the base flashing under the roof underlayment, center over hole and fasten to the roof with 8 - #10 x 2" flashing screws (Diagram B).

Step 5: Place tile flashing over the base flashing and align with tiles on roof. Locate the holes on the base flashing turret and drill 4 - 1/8" holes in the tile flashing in the same location. Attach the two flashings with 4 - #8 x 1/4" screws. (Diagram C). Seal screw heads with sealant.

Step 6: Apply hand pressure to form the lower end of the flashing to fit over the shape of profiled tiles. Bend both sides of the flashing up to divert water and prevent birds from nesting under the tiles (Diagram D).

Step 7: Apply aluminum "L" brackets to secure exposed lower end of flashing to tiles. Refer to instructions with brackets. Replace and secure the tiles removed at the side and back of the flashing. Apply sealant to prevent water penetration through flashing. Use only approved adhesive to secure tiles (Diagram E).

Return to Step 9 of the Brighten Up Series standard installation instructions to complete installation.



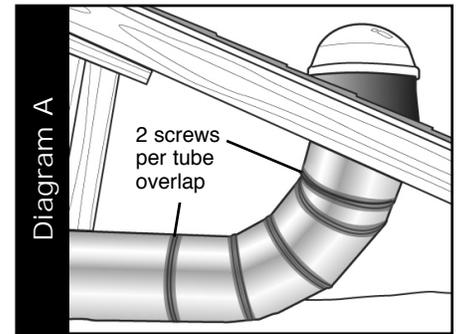
Solatube 0-90 Degree Extension Tube

Addendum to parts list	QTY
1. 10" (25 cm) or 14" (36 cm) 90 degree elbow	1
2. Four 8 x 3/8" (10 mm) screws	4
3. Four 2" (51 mm) foil tape - 6 ft. (1.8 m) roll	4

Note: This procedure is for Solatube installations where the roof to ceiling locations exceed 30° or an obstruction is in the path of a tube. A 0-90 degree extension tube should only be installed between the top tube and extension tubes or two extension tubes.

Step 1: Adjust the 0-90 degree extension tube to correct angle. If installing between the top tube and extension tube, insert one end into the inside of the top tube and the outside of the extension tube. If installing between extension tubes, insert both ends outside of the extension tube. The extension tube should be assembled with the smaller diameter on both ends. Overlap tubes 1 1/2" (38mm) at all intersections.

Step 2: Install 2 3/8" screws at each tube intersection and firmly apply foil tape around each tube joint and tube intersection (Diagram A).



Solatube Turret Extension

Addendum to parts list	QTY
1. 2" (51mm) or 4" (102mm) turret extension	1
2. 1/4" (6mm) screws	4

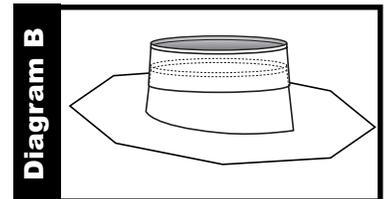
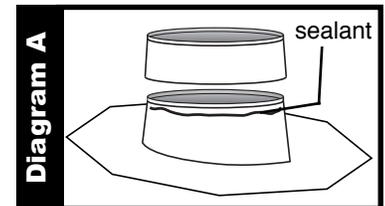
Additional required materials
1. Sealant - Geocel 3300

Note: This procedure is for Solatube installations where additional turret height is needed on roof installation. Complete steps 1-8 of the standard instructions.

Step 1: Apply a bead of roof sealant around the outside of the flashing turret and the inside of the turret extension. Place the turret extension over the turret and push down until the inside of the turret extension contacts the top of the flashing turret. Ensure that the sealant makes a water tight seal and remove any excess sealant inside and outside the turret (Diagram A).

Step 2: Align the predrilled holes in the turret extension and the flashing. Fasten the turret extension to the flashing turret with four 1/4" (6mm) screws. Seal heads of screws with sealant (Diagram B).

This completes the flashing portion of the installation. Please proceed to step 9 of the standard instructions to complete the installation.

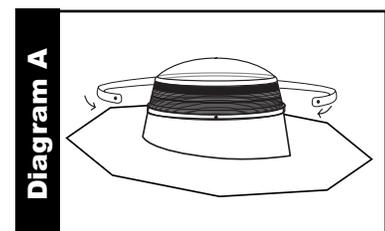


Solatube Dome Edge Protection Band

Addendum to parts list	QTY
1. 10" (250mm) or 14" (350mm) Dome Edge Protection Band required for fire-rated roofs	1

Step 1: Wrap the dome edge protection band around the dome and flashing with pre-punched holes in band overlapping the holes in dome. Install the four 3/4" (19mm) dome screws in band throughout dome spacers and into the flashing. Be careful not to over tighten the screws (Diagram A).

This completes the flashing portion of the installation. Please proceed to step 9 of the standard instructions to complete the installation.



Solatube Flat Roof

FLASHING/NO PITCH FLASHING

Complete Steps 1-4 of Brighten Up Standard Installation Instructions.

Add 7 flashing screws (15 total) for 10" (250mm) Solatube addendum to parts list.

Add 12 flashing screws (20 total) for 14" (350mm) Solatube addendum to parts list.

Note: Flat roof instructions are for built-up, cap sheet or roll roof systems. Installation is not recommended until talking with your roofing contractor on foam or torchdown roofs, due to warranty issues.

PREP FLASHING

Step 1: Drill 3/16" (5mm) holes in the flashing, 4" (102mm) apart 1" (25mm) in from around the edge of the flashing. Remove the backing from the dome seal and firmly adhere it flush with top edge of the flashing (Diagram B).

PREP ROOF SURFACE

Step 2. Find the location of the nail/screw through the roof sheathing. Sweep away loose gravel from roof area where flashing will be located. If the roof is capsheet or roll roofing, simply remove any dirt or any loose granules with a wire brush. If the roof is hot tar and gravel, scrape away the embedded gravel and excess tar with a flat or spud bar. The roof surface under the flashing and 3" (75mm) beyond the edge must be smooth, level and clean.

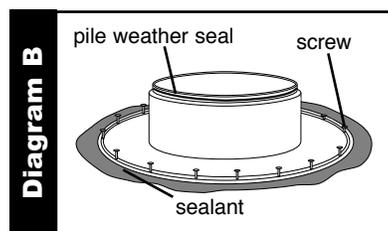
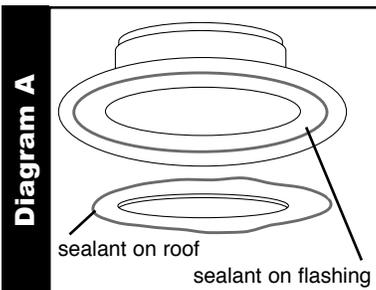
CUTTING THE ROOF HOLE

Step 3: Center the flashing over the locating nail/screw and trace the inside circumference onto the roof surface with a lumber crayon. Cut the hole through the roof deck 3/4" (19mm) inside the marked line. Clean the sawdust from around the roof hole.

INSTALL FLASHING

Step 4: Center the flashing on the roof hole and trace the outer edge of the flashing onto the roof to mark the proper location of the flashing. Remove the flashing and apply a 3/4" (19mm) bead of sealant to the roof, 1" (25mm) inside the perimeter of the mark. Also apply a 3/4" (19mm) bead of sealant on the underside of the flashing, 1" (25mm) in from the outside edge. NOTE: Apply sealant between old layers of pre-existing roofing exposed by cutting hole through roof (Diagram A). Lower the flashing into its marked position and make sure that it is seated correctly and the sealant has made a proper seal. Fasten the flashing to the roof with 2" (51mm) flashing screws. Screws should be firm, but not too tight (Diagram B). Apply another bead of sealant to the outer edge of the flashing, spreading it evenly to seal the flashing edge and the roof surface, use sealant on all flashing screw heads. If the roof is a gravel roof, sweep gravel back over the base of the flashing.

This completes the roof portion of the installation. Please proceed to step 9-21 of the standard instructions to complete the installation.



Optional 10" Cement Tile Roof

Addendum to parts list	QTY
1. Cement tile retrofit kit	
2. 9/16" (14mm) screws	2
Additional required materials	
1. Masonry saw	

Complete Steps 1-4 of Installation Instructions, 10" (250mm)

ROOF LOCATION

Step 1: Take tile flashing, base flashing, roof sealant, top tube assembly, dome, flashing screws, dome screws, dome spacers, and stainless steel wire ties onto roof.

Step 2: Make sure proposed roof location provides clearance from framing and that it corresponds with center of a tile. Adjust location if necessary. Make sure there is at least 16" (400mm) from flashing perimeter to ridge, (1) tile distance to hip or roof edge, and (2) tiles distance from other flashings or valley.

Step 3: Use distances recorded in attic to verify replacement of tile with flashing allows clearance from attic framing members at adjusted location. If clearance is insufficient, move to nearest tile providing clearance without causing tube to incline north. Seal original hole bored through felt paper.

Step 4: Provide clearance for flashing turret within field of tiles. Determine tile pattern (**Diagram A**). Put flashing in place over located tile. Align front edge of flashing with tiles.

Step 5: Using a crayon, trace inside perimeter of turret onto tiles. With a masonry blade, cut tiles 1" (25mm) outside marked line (Diagram A). Trace and cut profile of roof tile onto front skirt of flashing with tin snips. Ensure a closely fitted front profile. This allows sides of flashing to fit flush with adjoining surface (Diagram B). Depending upon thickness of tile, trim "stand-off" lugs and back feet under flashing for flush installation.

Note: To avoid damming water, place sealant on crests, not in tile troughs.

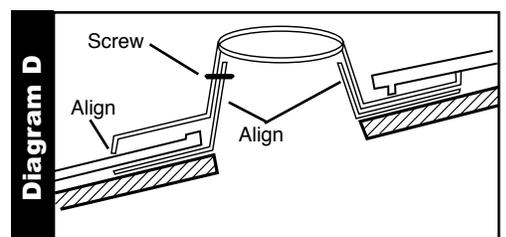
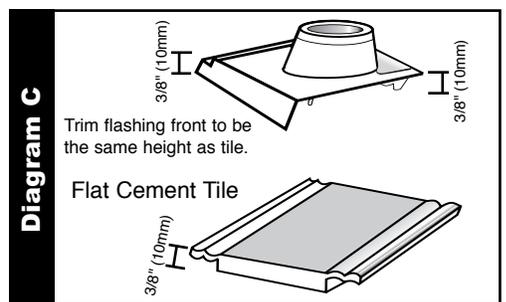
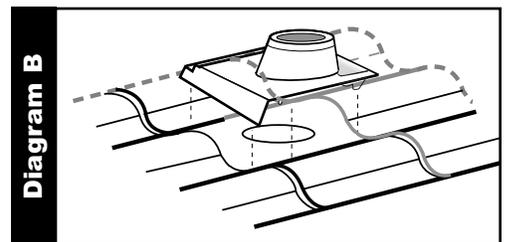
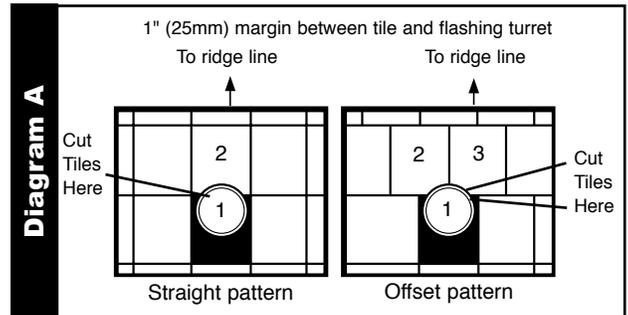
Step 6: Put tile flashing in place of removed roof tile. Using a lumber crayon, trace perimeter of flashing turret onto felt paper. Cut a 12" (308mm) hole, inside the outline of turret, through roof sheathing (**Diagram B**).

Step 7: Set aside tile flashing and (1) tile on each side and (2 or 3) tiles below.

NOTE: If necessary, clean surface of felt paper contacting base flashing. Use a coarse brush and mild solvent, such as alcohol. Do not damage surface.

Step 8: Place base flashing over roof hole. If felt paper overlap intersects flashing hole, slip upper half of base flashing flange under paper so the lower half of flange sits on top of paper. Seal flashing and paper overlaps with 1/4" (6mm) thick bead of roof sealant. [NOTE: If there is no overlap, apply 1/4" (6mm) thick bead of roof sealant to bottom of flashing flange. Place entire flange on top of paper.] Temporarily cover flashing flange with tile and tile flashing. Align weather edges of flashing. Align both turrets for unobstructed insertion of top tube through flashings.

Step 9: Without disturbing base flashing location, remove tiles to expose lower flange of base flashing. Secure dome flashing location by screwing



two flashing screws spaced 4" (100mm) apart and 1" (25mm) from flashing outer edge (Diagram C). Remove surrounding tiles and complete securing flashing in place with flashing screws placed 4" (102mm) apart and 1" (25mm) from outer edge. Be sure to seal all screw heads and old fastening holes with sealant.

FLASHING FASTENING

Step 10: Replace tiles and tile flashing. Lift uphill tiles, slip flashing into place. Align with base flashing and front apron with leading edge of tiles. Fasten the flashing to the base flashing. Drive two 9/16" (14mm) screws through the front of tile flashing turret spaced 5" (125mm) apart threading into the top of base flashing turret, 3/4" (19mm) from its top. Seal heads of screws with sealant (Diagram C).

Note: Secure each course of tile with fastenings driven through a spot of sealant. If tile fastening hole is covered by upper course of tiles, secure tile in place with heavy spot of sealant sandwiched between tile courses or a proper tile clip.

This completes the flashing portion of the installation. Please proceed to step 9 of the standard instructions to complete the installation.



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