

# Solatube® Brighten Up® Series

Solatube 160 DS (250mm diameter) & Solatube 290 DS (350mm diameter)

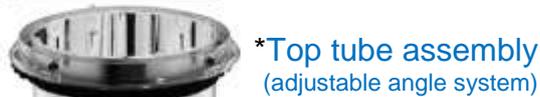
## Product Installation Guide



\*Polycarbonate roof dome with Raybender® 3000 Technology



\*Roof flashing (as specified, supplied with flashing insulator)



\*Top tube assembly (adjustable angle system)



Extension tubes 610mm long (quantity as specified)



### Solatube Base Kit

Items marked \* comprise the Solatube base kit which is suitable for installations with a roof to ceiling distance of up to 400mm. For distances greater than this, extension tubes will be required – see chart right.

### \*Seal & fastener kit (not shown)

- Flashing sealant (if specified)
- Aluminium tape roll
- Flashing screws (53mm)
- Dome ring screws (25mm)
- Tube screws (15mm)
- Ceiling flange screws (40mm)
- Expansion joint seal
- LightTracker™ dome reflector (for use only on steep, north facing roofs or wall mounted installations)



\*Bottom tube assembly (adjustable angle system)



\*Decorative fixture/ Diffuser and natural effect lens

Please read this guide fully before beginning installation

### Suggested tools required for Solatube installation:

- drill and drill bits
- screwdrivers
- hammer
- wire for probing
- sealant gun
- magnetic compass
- angle grinder/roof tile cutter/slate claw – subject to roof type
- sabre/reciprocating saw
- keyhole saw
- tape measure
- plumb line
- scissors or blade knife
- torch
- retaining wire (less than 3mm thick)

### Additional extension tubes?

You will receive a top tube and bottom tube assembly in your Solatube kit. Together these assemblies give an install distance (roof to ceiling) of up to 400mm (16"). This is generally sufficient for flat roofs, vaulted ceilings, or very shallow pitch roofs. For greater install distances please check you have purchased sufficient extension tubes to meet your required install distance:

Install distance up to mm (inches)	Extension tubes req	Add rolls of tape	
		160 DS	290 DS
400 (16")	0	0	0
960 (38")	1	0	0
1520 (60")	2	0	1
2080 (82")	3	1	1
2640 (104")	4	1	2
3200 (126")	5	2	2
3760 (148")	6	3	3
4320 (170")	7	3	3

Please ensure that all components have arrived in perfect condition before starting the installation.

Please note that top & bottom tube assemblies are delivered with one placed inside the other.

See [www.solatube.co.uk](http://www.solatube.co.uk) for full Terms & Conditions

# Warning

Do not proceed with the installation until you have read and understood the entire installation guidelines, including the points below. If you have any questions or require clarification of any installation procedures, please contact your Solatube supplier.

Solatube (or 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, 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. The supplier accepts no responsibility for incorrectly installed or non-appropriate applications. 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. In addition, please check the Health & Safety Executive website for advice on safe working at height <http://www.hse.gov.uk>. Installation is at your own risk.

Solatube product installations may be dangerous owing to the locations of the work to be undertaken. The hazardous conditions include, but are not limited to, the following:

- During installation, the Solatube reflective tubes may focus sunlight potentially causing concentrated light and heat. Keep the protective film on the reflective tubing prior to installation and the tubing away from potentially flammable material.
- Sheet metal edges may be sharp. Use protective gloves to avoid lacerations.
- Installation may require climbing and working at dangerous heights, including on ladders, scaffolding, roofs and in attic spaces. Use extreme caution to minimize risk of accidental injury and property damage including, but not limited to, the points below:
  - Do not work alone – we recommend a team of at least two people
  - Clear the area below your workspace of all people, animals and other items.
  - Avoid working on surfaces that are slippery or wet and use footwear with excellent traction.
  - Use only strong, well-supported and appropriate 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.
  - Reduce the risk of fire, electric shock, and personal injury by following basic safety precautions when using electric tools; always wear safety goggles or other suitable eye protection and ensure 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.
  - Only suitably qualified persons should undertake any electrical wiring.

## Installation tips & safety advice

This guide offers a step-by-step guide for the installation of a Solatube 160DS and 290DS.

In general, a Solatube 160DS can provide enough daylight to illuminate a dark area of up to 10 sqm. A Solatube 290DS can provide enough daylight to illuminate a dark area of up to 18 sq m. Both examples are based on a 2.44 m ceiling height with a 1.83 m tube length. For larger areas, you may need to install more than one Solatube. This information is for guidance purposes only.

Allow at least 4 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 (if any). You should then be able to determine the best position for the Solatube diffuser.

Avoid roof dome locations shaded by trees, ridges and chimneys, or near water channels or valleys.

Avoid attic areas with obstructions such as gas, water or drain pipes, air ducts, flues or furnaces, fixed storage tanks.

Measure the distance between the roof and the ceiling to ensure you have ordered sufficient reflective tubing to cover the distance.

All reflective extension tube joints should overlap a minimum of 50mm and be fixed together using the aluminium tape (and self-tapping screws if required).

All adhesives, seals and tapes should be applied to a dry and dust-free surface. The ideal working temperature is approximately 22°C. **Ensure all joints (including seams) are taped sufficiently and all edges well rubbed in (tip: use the tape backing paper) to prevent the adhesive drying out and to prevent insect and dust ingress.**

Ensure your roof is in an appropriate condition to support the work necessary for a Solatube installation without damaging its waterproofing properties.

Solatube will generally perform best if the roof dome is located on the south, east or west elevation. If the roof dome is to be positioned on a north facing elevation, positioning the roof dome as high as possible on the roof will enhance performance.

You may choose to support any extension tubes with a wire or similar retainer fixed to the rafters if the extension tubes are at a significant angle away from the vertical.

When the Solatube is initially installed, it is not uncommon for it to condensate lightly on the inside of the dome for the first few weeks until humid air inside the tube dissipates; the dome is designed to collect any internal condensation and direct it to the outside of the flashing. The flashing insulator provided is essential to reduce the possibility of condensation, but in particularly cold climates, it is also advisable to tape a jacket of insulating material (optional extra) around the outside of the extension tubes and up into the void between the top tube assembly and roof flashing; this is to prevent the possibility of condensation build-up on the exterior of the components within the roof void.

## Step 1 Selecting the location for the ceiling diffuser ...

Decide on the preferred location for your ceiling diffuser. Locate this point in the roof void – it may help if you measure the distance from your loft hatch to the desired location first or use other clues such as spot lights, light fittings or flues to confirm the location.

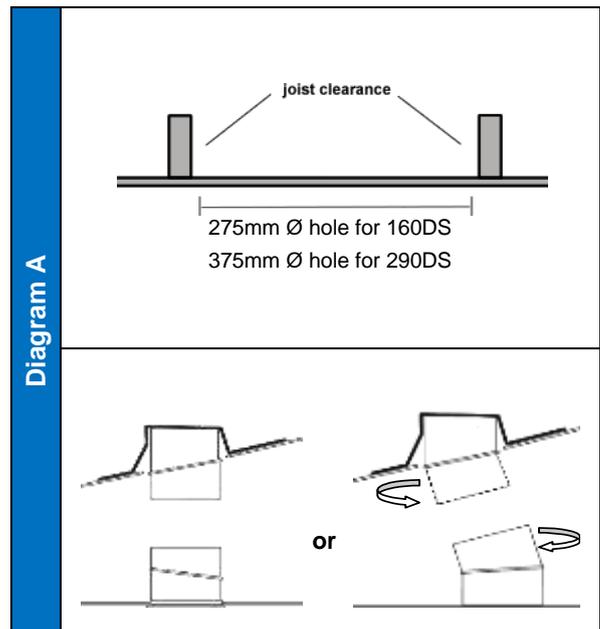
Find a clear space between joists as close to the desired location as possible and unobstructed by pipes, cables or other obstacles. Draw a 275mm circle for the 160DS or a 375mm circle for the 290DS on the upper side of the plasterboard ceiling. Do not cut the ceiling hole until you are sure that the roof flashing will also fit in the desired location and that the top and bottom tube assemblies will align.

### ... and the roof flashing

The roof flashing can be positioned either vertically above the diffuser location or up to an angle of 30° from vertical in any direction from the diffuser position by rotating the two angle adaptors supplied (**diagram A**). The diagram shows two possible positions for the roof flashing relative to the position of the top and bottom tube assemblies.

Note: 0-90° angle adaptors are available if a greater degree of variation is required.

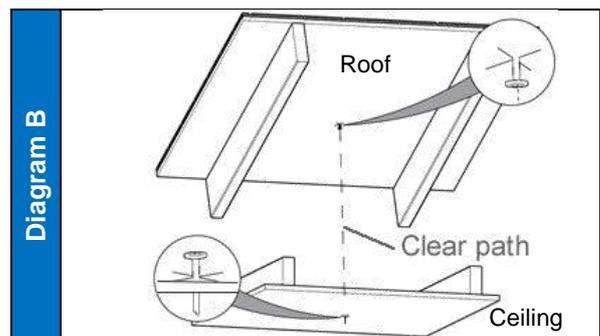
**Ensure that the route between the roof flashing and the ceiling diffuser is clear and unobstructed.**



## Step 2 Mark the roof flashing and diffuser position

Cut a small hole in the roof felt and identify the roof position (tile) from inside using a long nail or wire probe so you can locate it again later from the roof side

Once you are sure that the circle you drew earlier on the upper side of the plasterboard ceiling is in the correct location, screw a marker screw through the ceiling from above, leaving approximately an inch showing in the roof void – you can use this later as a 'handle' when cutting the hole (**diagram B**).

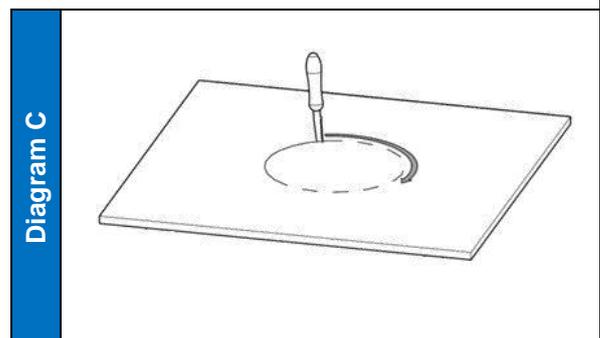


## Step 3 Confirm and cut the diffuser location

Check the marker screw from the room below to confirm the centre of the diffuser location is correct.

In the roof void, cut around the marked circle, taking care to hold onto the screw 'handle' to prevent the cut-out falling (**diagram C**).

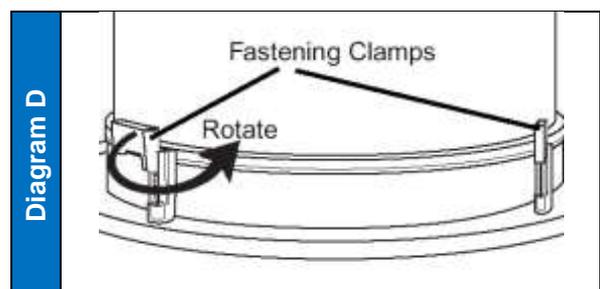
**Tip:** To contain dust and debris when cutting the ceiling hole, one person could hold an empty box under the ceiling while the other cuts the hole from above. Alternatively, lay a dust sheet below.



## Step 4 Installing the bottom tube assembly

Insert the bottom tube assembly up into the ceiling and, if the installation is not vertical, rotate the angle adaptor to point towards the roof flashing location. Using a crosshead screwdriver, rotate and tighten two of the twist-lock fastening clamps to temporarily attach the bottom tube assembly to the ceiling (**diagram D**). Do not remove the protective liner from the inside of the bottom tube at this point.

**Tip:** Affix a plastic bag over the end of the bottom tube assembly to capture any dust and debris that may be created when carrying out the roof works.



### Step 5 Installing the roof flashing

The roof flashing is supplied according to the roof type/flashing you specified on your order.

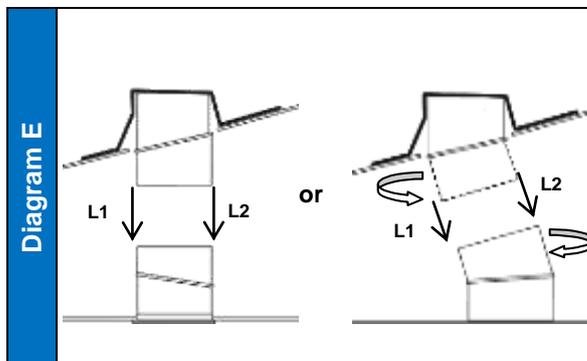
To complete this step, please refer to the separate roof flashing installation guide supplied with the flashing

### Step 6 Aligning the top tube assembly

Insert the top tube assembly into the roof flashing from the outside.

If necessary, rotate the angle adaptor so that the top tube assembly points towards the bottom tube assembly in the ceiling. The lengths "L1" and "L2" (**diagram E**) should be equal to ensure alignment.

Note: For flat roof/vaulted ceiling applications where no extension tubes are required, the bottom tube assembly will be fitted up inside the top tube assembly.

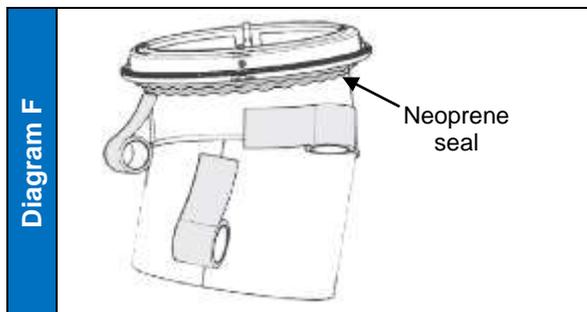


### Step 7 Installing the top tube assembly

Remove the top tube assembly from the roof flashing. Tape the angle adaptor joint and tube seams of the top tube assembly with the foil tape provided (**diagram F**).

Remove the protective lining film from the inside of the tube and insert the top tube assembly into the roof flashing, aligning it again in the direction of the bottom tube assembly. Securely fasten the dome ring of the top tube assembly to the flashing using the dome screws provided.

Ensure that the neoprene seal is secured between the dome ring and the top of the flashing upstand.

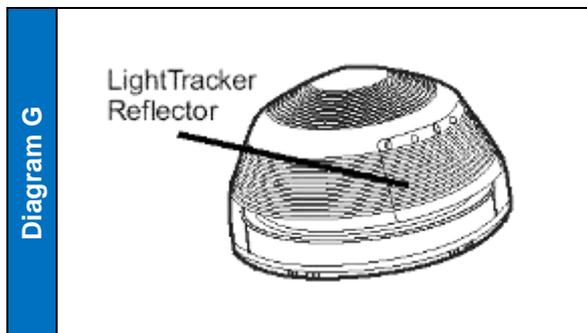


### Step 8 LightTracker™ reflector (if used)

*The LightTracker reflector should be used only for steep, north-facing roofs or wall mounted applications; it is not required for flat roofs or south, east or west roof aspects.*

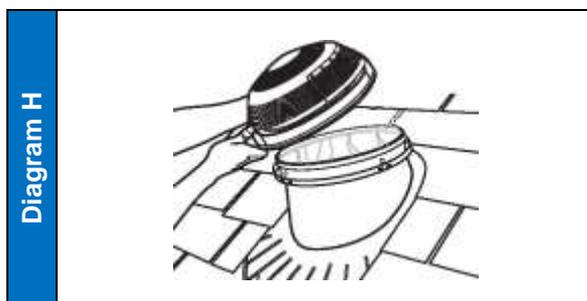
For steep, north-facing roofs, position the LightTracker dome reflector in the north side of the dome, with the reflective side facing due south. For wall-mounted applications the LightTracker should be placed at the bottom of the dome facing skywards.

To fix the LightTracker in place, align the holes in the reflector with the tabs inside the dome and snap into place. Peel the protective film from the reflector (**diagram G**).



### Step 9 Installing the roof dome

Align the four tabs on the dome base with the snaps on the dome ring and press down firmly to click into place. Check to make sure the snaps are fully engaged (**diagram H**).



### Step 10 Connecting the top tube assembly to the bottom tube assembly

For short installations with no extension tubes proceed to **Step 12**.

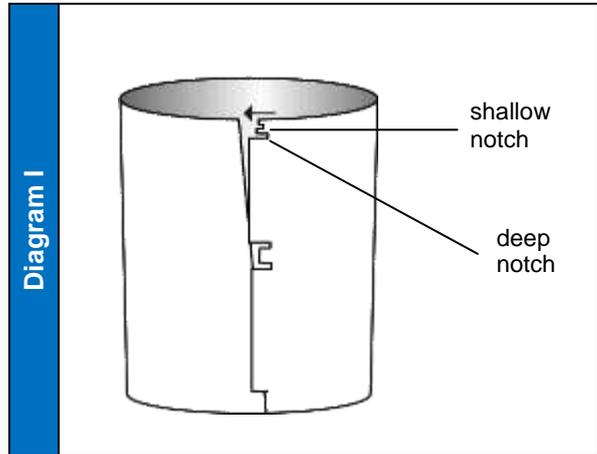
For longer installations with extension tubes continue with **Step 11**.

### Step 11 Assembling extension tubes

Remove the protective liner from the extension tube(s) before assembly. Extension tubes have deep and shallow notches at each end so that they may be formed into slightly tapered tubes. Weave one end of the tube through a deep notch, the other end through a shallow notch, ensuring the tube is also held in the centre notch (**diagram I**).

Tape the tube seam with a short piece of foil tape at either end to hold the joints temporarily in position. The smaller diameter tube end should always point towards the bottom tube assembly. Assemble all the required extension tubes, telescoping them together to provide the total length of tube required and remembering to allow at least 50mm overlap at each joint. At this stage, use small pieces of foil tape to hold the tubes together.

Check that the assembled tube length is correct by holding the extension tube(s) alongside the top and bottom tube assemblies. Adjust the tube length as necessary. For very long or angled tube lengths, self-tapping screws are provided to fasten the extension tubes together. Tape all joints securely, smoothing the tape to create a good, firm seal.

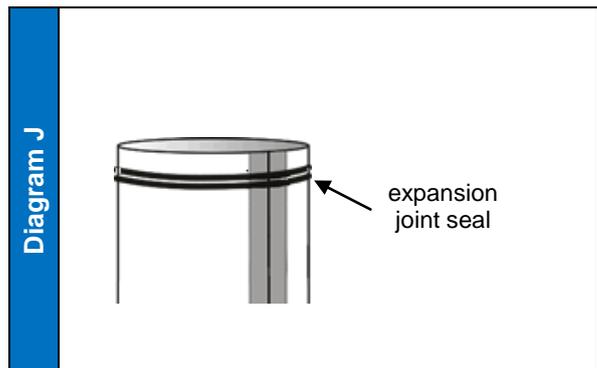


### Step 12 Applying the expansion joint seal

For short installations with no extension tubes the expansion joint seal is applied 25mm from the top edge of the bottom tube assembly.

For installations using extension tubes, the expansion joint seal is applied 25mm from the top edge of the uppermost extension tube.

The expansion joint seal should be applied to the outside diameter of the tube: remove the backing strip from the expansion joint seal and adhere it 25mm from the top edge of the tube. The seal should wrap twice around the tube, not overlapping but butting up closely (**diagram J**).



### Step 13 Installing the bottom tube assembly

If any angle adjustment is required to the bottom tube assembly to align it with the top tube assembly this should be done now; use a crosshead screwdriver to loosen the twist-lock fastening clamps. Remove the assembly from the ceiling, and rotate the angle adaptor if necessary to ensure alignment with the top tube assembly and reposition it back into the ceiling.

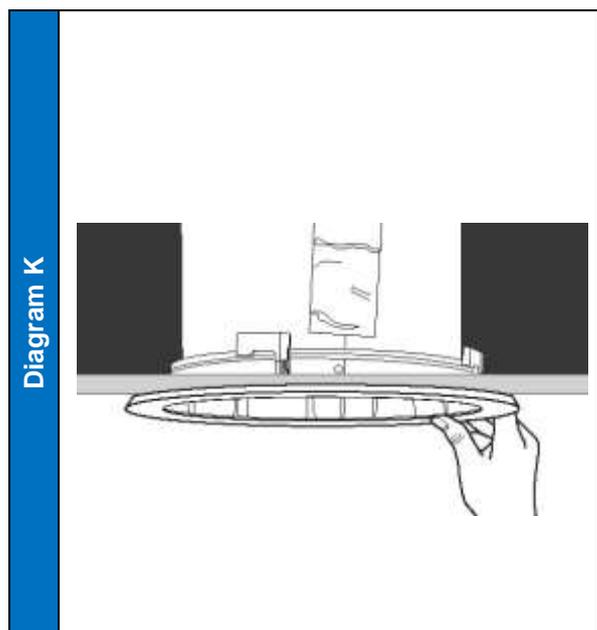
**If extension tubes are being used please go to Step 14.**

**If no extension tubes are being used**, tape the seams and re-insert the bottom tube assembly, sliding it up into the top tube assembly and then lock all four twist-lock fastening clamps into the ceiling (**diagram K**).

Note: If the ceiling clamps cannot be engaged owing to the thickness of the ceiling or because of proximity to joists, the bottom tube assembly can be secured with the screws provided into the ceiling/joists through screw position indicators in the ceiling flange.

Do not over tighten the bottom tube assembly to the ceiling as this may prevent fitting of the diffuser.

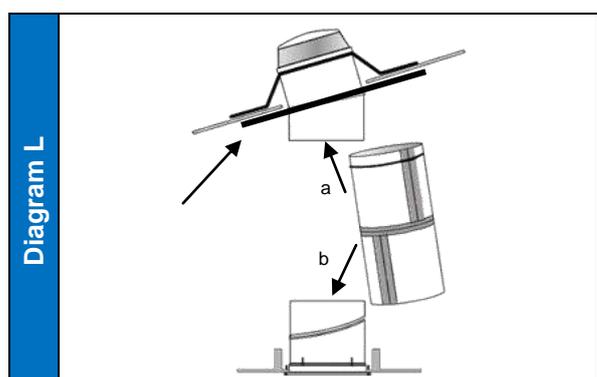
Remove the protective film from the inside of the bottom tube assembly.



### Step 14 Installing extension tubes

**For installations with extension tubes**, remove the protective film from the inside of the bottom tube assembly and all other tubing if not already done so. Tape the seams and re-insert the bottom tube assembly and then lock all twist-lock fastening clamps into the ceiling.

Insert the extension tube with the expansion joint seal (**a**) up into the top tube assembly. Then insert the other end (**b**) into the bottom tube assembly (**diagram L**). Ensure there is a minimum 50mm overlap at either end. Tape all joints together and use self tapping screws for additional rigidity if necessary.

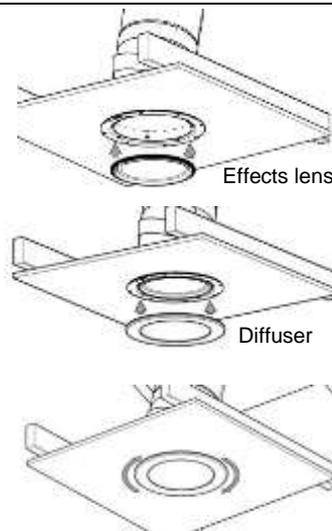


### Step 15 – Installing the effects lens and diffuser

Insert the effects lens straight up into the bottom tube assembly until it sits into the recess at the base of the bottom tube assembly, with the clear plastic tab pointing downwards. Then place the diffuser up into the edge of the bottom tube assembly, aligning the male and female lugs, and rotate to secure in place (**diagram m**).

In order to clean the diffuser, or to replace the lamp in the optional Solatube® integral electric light kit, you may remove the diffuser by twisting the diffuser anti-clockwise to release it and then remove the lens by pulling gently down on the clear plastic lens tab.

Diagram M



If you have any questions regarding the installation of your Solatube® Daylighting System please contact us – we shall be delighted to help.



Telephone 01234 241466

SolaLighting Limited

23 Osier Way, Olney Office Park, Olney MK46 5FP

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## Solatube® options and accessories

Solatube® offers an inspiring range of accessories that install easily into your Solatube® Daylighting System transforming it into a truly multi-functional system. If you have purchased any Solatube accessories, please read the instructions supplied with the accessory before proceeding with the Solatube installation as some accessories cannot be installed as a retrofit.

### Integral electric light kit\*

Available for both Solatube sizes, provides the convenience of a switched light for night time use. Edison screw fitting up to 75 watt.



### Bathroom ventilation kit\*

Available for the Solatube 160DS only, offers discreet style and high performance, ideal for bathrooms and shower rooms (shown with OptiView® diffuser).



### Electric daylight dimmer kit\*

Available for all Solatube sizes, controls the amount of daylight required from the convenience of a wall-mounted switch or optional remote control.



### Additional 0-90° angle

Available for both Solatube sizes, allows easy installation around obstructions or corners.



### Extension tube

Available for both Solatube sizes, may be joined together to meet the required install distance – see front page for details.



Items marked \* require connection to an electrical circuit and we recommend they are installed by a suitably qualified person.

# Solatube® Products Ownership and Care

## Congratulations on the purchase of your Solatube product



### UK PRODUCT REGISTRATION

Please register your Solatube product online at <http://www.solatube.co.uk/warranty-registration> or return the slip below to Solalighting Limited, 23 Osier Way, Olney Office Park, Olney MK46 5FP.

#### What does this warranty cover?

For all products purchased or delivered hereunder, Solatube International Inc warrants they are free from defects of workmanship and/or material for a period of time from the date of purchase.

#### How long does the coverage last?

Solatube Daylighting Systems	Warranty period
Domes, roof flashing bases, diffusers, diffuser ceiling mountings, reflective tubing, plastic, rubber or metal seals and gaskets, tapes and fasteners	10 years
Solatube Electric Light Add-on Kit Solatube Daylight Dimmer	5 years
<b>Solar Star</b>	
Solar panel and motor	5 years
Other Solar Star components, including metal housing, roof flashing bases, fan blade, plastic, rubber or metal seals, gaskets & fasteners	10 years

Non-Solatube branded or bespoke products are subject to the manufacturer's own warranty.

#### What will Solalighting Limited do?

Should any products be determined by Solalighting Limited to be defective, at the option of Solalighting Limited, such products will be repaired or replaced and returned within a reasonable time to the Buyer free from defect. If Solalighting Limited provides a replacement product, the warranty on the replacement will last only for the balance of the original product warranty period. Solalighting Limited shall not be responsible for installation of replacement products.

#### What are the limitations on a buyer's remedies?

IN NO EVENT WILL SOLALIGHTING LIMITED BE LIABLE FOR LOSS OF PROFITS, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL OR OTHER SIMILAR DAMAGES. IF SOLALIGHTING LIMITED DID NOT INSTALL THE PRODUCT(S), IN NO EVENT WILL SOLALIGHTING LIMITED BE LIABLE FOR ANY BREACH OF WARRANTY FOR IMPROPER INSTALLATION. TO THE FULLEST EXTENT ALLOWED BY LAW, SOLALIGHTING LIMITED'S LIABILITY TO ALL BUYERS FOR ALL CLAIMS WITH RESPECT TO THE PRODUCTS WILL BE LIMITED TO THE LESSER OF (A) THE COST OF REPLACING THE PRODUCTS; (B) THE COST OF OBTAINING EQUIVALENT PRODUCTS; OR (C) THE COST OF HAVING PRODUCTS REPAIRED.

#### What is not covered by this warranty?

Solalighting Limited is not responsible for nor does this warranty apply to:

- Labour or installation of the products
- Product or performance defects as a result of installation not in accordance with Solalighting Limited's installation instructions or in non-standard applications
- Defects or damages arising out of shipment by common carriers, private transportation or other means of transportation
- Defects or damages arising out of improper handling or cleaning, accidents, acts of God, intentional acts, misuse or abuse, or any other circumstances beyond the control of Solalighting Limited
- Condensation or any water damage resulting from condensation
- Products subject to stress resulting from (i) localized application of heat, (ii) movement of building and/or building components, or (iii) expansion or contraction of framing members
- Accessories, flashing or other installation materials manufactured or sold by persons other than Solalighting Limited

#### How do I make a warranty claim?

This warranty is subject to You completing and returning our warranty card or website warranty form promptly after purchase. Statutory rights are not affected. Within seven (7) days of discovery of a defect, Buyer should contact (i) Buyer's Solatube Distributor or (ii) Solalighting Limited.

#### What warranties is Solalighting Limited disclaiming?

TO THE EXTENT PERMITTED BY LAW WE DISCLAIM ALL OTHER WARRANTIES WITH REGARDS TO THE PRODUCTS EITHER EXPRESSED OR IMPLIED INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF SATISFACTORY QUALITY OR FITNESS FOR ANY PARTICULAR PURPOSE. FOR FURTHER INFORMATION REGARDING WARRANTY LIMITATIONS PLEASE SEE ALSO SOLALIGHTING TERMS & CONDITIONS OF SALE AT [WWW.SOLATUBE.CO.UK](http://WWW.SOLATUBE.CO.UK).

#### Purchase details:

#### Product details:

<b>Purchaser Name:</b>		<b>Quantity Solatube 160DS</b>	
<b>Purchaser Address:</b>		<b>Quantity Solatube 290DS</b>	
<b>Purchaser Telephone:</b>		<b>Quantity Solatube 330DS</b>	
<b>How did you discover Solatube?</b>	Internet search/exhibition/magazine/other	<b>Quantity Solatube Bathroom Vent Kit</b>	
<b>Date of purchase:</b>		<b>Quantity Solatube Electric Light Kit</b>	
<b>Name of supplier:</b>		<b>Quantity Solatube Daylight Dimmer</b>	
<b>Name of installer:</b>		<b>Quantity Solar Star (state model)</b>	
		<b>Invoice number(s):</b>	

#### How did we do?

Please rate the following so that we may better serve you and other customers in the future (1 = poor, 10 = excellent)

Quality of product  Price  Ease of installation  Customer service  Would you recommend Solatube products? Y / N

Comments:

## Product Cleaning and Care

### Solatube Daylighting Systems

#### Dome

The dome on the Solatube Daylighting System is designed to be self-cleaning and requires no maintenance.

#### Diffusers or Glass Decorative Fixtures

##### **Brighten Up® Series Diffuser or Decorative Fixtures (Solatube 160 DS and 290 DS)**

Remove the diffuser or glass decorative fixture by carefully twisting counter-clockwise to separate it from the ceiling ring. To clean, wipe the diffuser or glass decorative fixture with a tissue or soft cloth. To reattach, align the tabs on the diffuser or glass decorative fixture to those on the ceiling ring and twist clockwise to secure.

##### **SolaMaster® Series Open Ceiling Diffuser (Solatube 330 DS)**

Please contact your Solatube distributor or dealer for care instructions.

##### **SolaMaster® Series Closed Ceiling Diffuser (Solatube 330 DS)**

Remove the diffuser by releasing the tabs on the diffuser frame from the transition box. To clean, wipe the diffuser with a tissue or soft cloth. To reattach the diffuser, position the diffuser panel into the transition box and secure the tabs into the notches.

#### Accessories

##### **Solatube Bathroom Ventilation Add-on Kit**

Ensure appliance is switched off and clean external surfaces only with a damp cloth; do not wipe motor or electrical parts.

##### **Solatube Electric Light Add-on Kit**

To replace the lamp in a Solatube light fixture, turn off the light at the switch then follow the above instructions to remove the diffuser or glass decorative fixture, then remove the Natural Effect Lens by pulling on the tab. Replace the lamp then re-insert the Natural Effect Lens and reattach the diffuser or glass decorative fixture as described above.

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**Solalighting Limited** | 23 Osier Way, Olney Office Park, Olney MK46 5FP | T 01234 241466 | F 01234 241766 | [www.solatube.co.uk](http://www.solatube.co.uk)

This warranty is applied by Solalighting Limited (Registered in England no 3938764) on behalf of Solatube International Inc.

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