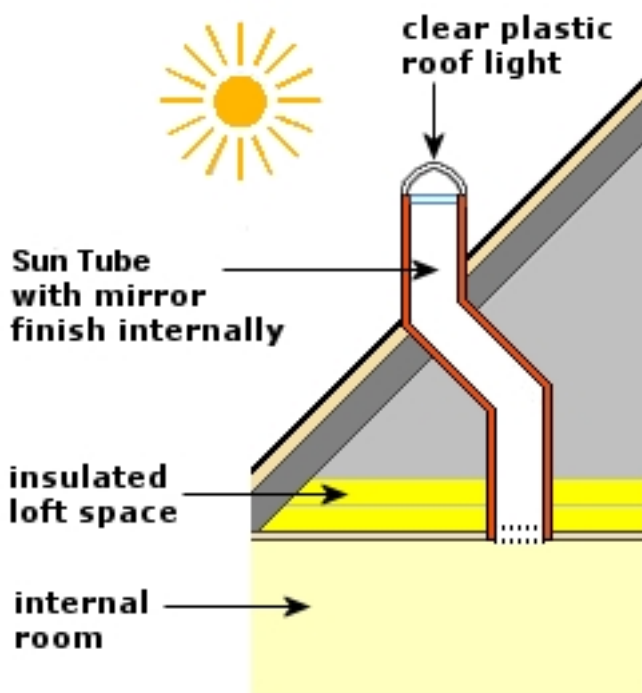


Sun tube lights are a simple way of transferring natural daylight deep into a building. Natural daylight enters the building through a clear plastic dome and is reflected down a mirrored pipe to illuminate the internal space

### Effective Lighting from Sun Tube Lights



#### SUN TUBE LIGHT

Sun tube lights are highly effective at transferring daylight into parts of buildings that have little or no natural lighting. They can be used to replace artificial lighting and will therefore substantially reduce the annual energy consumption of a home. In many cases, sun tube lights will be used to provide all the light for an internal space but they can also be used to compliment an artificial lighting scheme.

### Light Quality from Sun Tube Lights

Natural daylight is known to give much better quality light than that provided by electric light fittings and is more beneficial to recipients. Even on an overcast day, the quality of light transferred into a house will be considerable when compared with artificial light.

### Sun Tube Lights

Where possible, the clear plastic dome should be situated on a south facing roof to gain the maximum amount of daylight. Sun tube lights are highly effective at delivering light into internal and badly lit spaces making it particularly useful for bathrooms, stairs, corridors and any dark areas.

### Clear Plastic Domes on Sun Tube Lights

Clear plastic domes are available in unbreakable polycarbonate or impact resistant modified acrylic. They are available in several different sizes depending on the amount of light required and can be located on flat or pitched roofs.



### Fitting a Sun Tube Lights

In normal circumstances, sun tube lights require no structural alterations as the tube system fits comfortably between rafters and ceiling joists. The joints of the tube are sealed using aluminium tape and only a minimum of fixings are required; often just a single fixing at the bottom of the tube. A system can usually be installed within two to three hours. See [Sun Tube Light Video](#) for a demonstration

### Sun Tube Light Assembly

For maximum effectiveness, the sun tube assembly should be as straight as possible. As it is not always possible to mount the clear plastic dome in line with the ceiling diffuser, bends are available to offset the solar tube near the top and bottom. The tube can be swiveled easily, to target natural light exactly where it is required. The offsets bends are adjustable up to 30 degrees from vertical.

### Insulating Sun Tube Lights

The outside of the sun tube must be insulated to prevent condensation occurring where it passes through an unheated space, like a loft. It is important that the sun tube's joints and offset bends are also insulated. The insulation must be continuous or heat can be lost and damaging condensation can form.

### Various Sizes of sun Tube Lights for Various Locations



Tubes of approximate diameter:

230mm (10 inches) are suitable for small spaces like shower rooms and toilets

300mm (12 inches) are suitable for spaces such as kitchens, bathrooms, landings and circulation areas

450mm (18 inches) and 530mm (21 inches) are suitable for big spaces in larger houses, schools and commercial premises

### Diffusers for Sun Tube Lights

The sun tube light system uses a mirrored tube that intensifies and reflects natural daylight transferring it to a room or dark area inside. When the light reaches the end of the tube, it can be evenly diffused by a translucent ceiling fixture.

A variety of diffuser designs and sizes are available depending on the light spread required. The sun tube base can also be fitted with a damper so that light can be blocked altogether, when not required.

### **Sun Tube Lights - Horizontal Applications**

Although mainly used in roof applications, clear plastic dome lights can be used for horizontal applications and fixed to an external wall. This configuration is particularly useful for providing daylight into basements. The light can be transferred horizontally at the top of an external wall of a basement. Alternatively, a 90 degree offset can be used to discharge the light through the basement ceiling.



### **Maintenance of Sun Tube Lights**

Because of its shape, the clear plastic dome is self cleaning and it eliminates damaging condensation. The sun tube assembly is sealed and therefore requires no maintenance. Sun tube lights generally have a life expectancy of 35 years.

### **Planning Permission for Sun Tube Lights**

For small installations, planning permission is unlikely to be required. However, in the case of larger installations or if the property is situated in a Conservation Area then it will usually be necessary to seek permission.

### **Building Regulations**

Sun tube lights must comply with building regulation standards for thermal insulation to achieve an overall U-value of  $2.2\text{W/m}^2\text{K}$

**Sun tube lights can be used to replace artificial lighting and will, therefore, considerably reduce the annual energy consumption of a house. After the initial purchase cost of the system and its installation, the light delivered is free of charge**

<http://www.lowenergyhouse.com/sun-tube-lights.html>