

Solatube Natural Lighting

**Introducing the
Solatube Daylighting
System in South Asia.**



By Silvermere International Group.



What is Solatube?

- Solatube is the market leader in natural lighting (daylighting) systems.
- Solatube “Tubular Skylights” provide natural lighting by reflecting sunlight from a rooftop, through a highly mirrored tube and into interior space through stylish diffusers to provide free light from the sun during all daylight hours.
- Using daylighting reduces electrical demand, energy costs and dependence on the grid, while improving the quality of light and pleasantness of interior space.



The Making of Solatube




- Solatube International Inc. is the manufacturer of Solatube products, located near San Diego, California.



Less than 20 years since its 1992 inception, Solatube has built a growing network of successful exclusive dealerships in North America, South America, Australia & Europe, and now moving into Asia, as a global shift toward more energy efficient lighting is accelerating.

Solatube Product Line

3 sizes to choose from:

<p>10" Diameter (160DS) (Residential Applications)</p>	<p>For lighting of small spaces such as closets, bathrooms, laundry rooms, etc..</p>	
<p>14" Diameter (290DS) (Residential Applications)</p>	<p>For lighting of medium sized rooms, living rooms, kitchens, etc..</p>	
<p>21" Diameter (330DS, 750DS) (Commercial Applications)</p>	<p>For lighting of commercial/industrial spaces</p>	

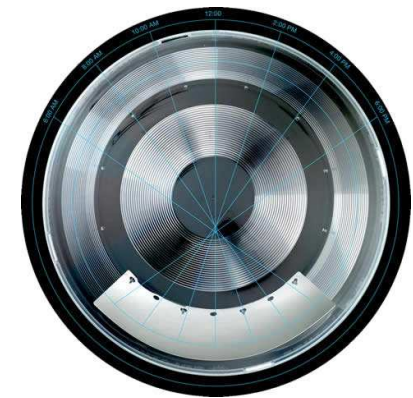
High Performance Daylighting

Solatube is not just tubes & mirrors, it is a high-performance sunlight harvesting and delivery system, and the only specification grade daylighting system available.

Domes are made from UV absorbing, impact resistant acrylic. Available clear or with Raybender technology to redirect morning & evening low level sunlight into the tube.

A curved reflector called “LightTracker” reflects sunlight from all angles down into the tube.

The dome also features a moisture control system, allowing any trapped moisture to escape.



Efficient Light Delivery

- Solatube rigid aluminum tubing uses a “Spectra Light” interior surface, 420 micro fine layers of acrylic for a 99.7% reflective surface. With only 0.3% light loss per reflection, an average of 2-3% per 10ft of tubing, Solatube can deliver high light levels despite long tube runs or angles for maximum controllability. No other natural light delivery system in the world can compare.



Style and Class

In addition to superior performance, Solatube offers stylish interior diffusers to enhance the aesthetics of lighting.



Standard T-bar ceiling fixtures bring sunlight into offices.

Designer touches such as the frosted shade, or stainless-tone trim ring offer additional customized style.

Solatube can be installed into a variety of roof systems.



Human Benefits of Daylight



- Humans have biologically evolved according to daylight cycles, with human body functions affected by patterns of light & dark, and specifically by blue light waves found only in daylight. Studies show that productivity is enhanced in natural light, and student performance improved. Studies have shown up to 20% higher math scores and 26% higher reading scores when studying in natural light.
- Daylight connects people with the natural environment outside, and studies consistently show that workers feel happier and less fatigued in natural daylight.

Problems with traditional skylights

Traditional skylights are decorative, but not effective day lighting systems for several reasons:

- **Controllability:** Light comes in from various angles and intensity according to the sun's position, resulting in major light contrast ratios, not uniformity.
- **Heat & UV:** Direct sunlight contains heat & UV not blocked by traditional skylights, causing heat gain and color fading.
- **Aperture:** Traditional skylights utilize large gaps in the building structure.



Benefits of Solatube Daylighting

- **Controllability:** Solatube brings daylight to exactly where you need it, and diffuses the light for uniformity.
- **Heat & UV:** Solatube is UV resistant, bringing only visible spectrum light, and absorbs heat which is radiated out instead of in, minimizing heat gain.
- **Aperture:** Solatube can provide robust daylighting of a facility with 1% aperture of the roof. Traditional skylights require at least 10% aperture to provide similar amount, but lower quality of light.



Commercial/Industrial Applications



Prismatic
Diffuser

Frosted
Diffuser

Optiview®
Diffuser

Open Ceiling
Diffuser



- Commercial/Industrial facilities often consume more electricity for lighting than any other purpose, & can benefit most from long-term energy savings and energy independence by switching to daylighting.
- For warehouse applications, daylighting can completely replace electrical lighting during daylight hours, and can reduce total energy requirement over 50%.

Open Ceiling Roofs



- The most cost effective installation is the 21” diameter, SolaMaster Warehouse Unit, for open ceiling roof systems. This unit is simply installed through a flat or pitched roof, and reflects up to 21,000 lumens of natural light per unit into a facility.

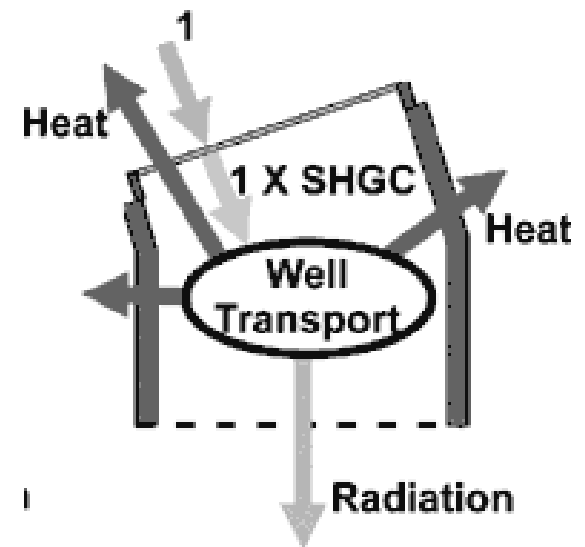
Light Levels

The number of units to install is determined by the lux (lumens/sq. meter) capacity desired. For large industrial spaces, a common configuration is one unit per 40 square meters, delivering up to 21,000 lumens each for a light capacity of about 500 Lux. For retail or library spaces, 800 – 1000 Lux might be desired. Additional units bring additional light.



Solar Heat Gain

- Solatube has a low solar heat gain coefficient of 0.33-0.35 as certified by the NFRC (National Fenestration Rating Council). Among other features, the tube acts as a heat well; the aluminum walls absorbing heat and radiating it up & outward through convection. Only light radiates into the facility.
- Facilities switching from electrical lighting to daylighting experience up to 12% reduction in energy requirements for Air Conditioning, due to reduced heat gain.



UV Resistance

Solatube is UV resistant. The dome & diffusers do not allow light wavelengths below 380 nanometers to pass through, so the light that gets diffused into a facility is above the light wavelength that causes damage to skin, colors, fabrics or food.

Daylight from Solatube is filtered and safe.

Natural diffused light actually allows for true color rendition. Colors are more true and vibrant in natural light than artificial light.



Retail Applications

- Major retailers including Target, Macy's, Stater Brothers and others use Solatube not only to reduce energy, but to provide a better quality of light and improve the color and appearance of their products. This translates to better worker productivity and **BETTER SALES**.
- Daylight provides **TRUE COLOR RENDITION**, allowing the vividness of colors to be seen. Macy's had reported that up to 15% of product returns had been due to improper color perception of clothing in artificial light.



Leadership in Energy and Environmental Design (LEED) program

- LEED is a program of eco-friendly design features, awarding up to 69 points for following its guidelines. The program was created by the US Green Building Council (www.usgbc.org) but is being adopted worldwide.
- Up to 17 points can be gained just by using Solatube, which can be designed into new buildings or retrofitted into existing buildings.
- Daylighting is the most noticeable “green” feature of any LEED building.

Solatube is Certified by *Energy Star*

- A *U.S. Environmental Protection Agency* Program.



Reasons to Daylight

- Lower lighting energy
- Lower cooling energy
- Reduced dependence on electrical grid
- Enhanced human performance & productivity
- More pleasant environment & connection to outside world
- True color perception of merchandise and interior color design. Maximum benefit of vivid colors
- Reduced carbon footprint
- Sustainable design regulations or incentives (LEED)

Payback

- Solatube daylighting is installed for a one time fixed cost that pays for itself within a couple of years, then continues to provide free natural light without electricity for the lifetime of the facility, lowering energy demand, improving quality of light and adding value to the facility.
- If a 5,000 square foot facility uses 10,000 watts of installed lighting for 16 hours per day, at a cost of \$.15/kWh, that's an annual cost of \$6,570 for lighting energy. Installing 15 Solatube open ceiling units, a capacity of about 600 Lux, at a 1-time cost of \$7,500 (\$500/unit) can completely replace electrical lighting for an average of 12 hours per day, thus reducing peak-hour energy demand and annual lighting energy cost by 75%, or \$4,930. **Payback on lighting energy savings alone is 1.5 years.** Each year thereafter, \$4,930 can be budgeted elsewhere.
- Consider added savings from reduced heat & AC energy requirement, and improved worker productivity, and payback is even sooner.

Solatube System Specs

- 15+ years manufacturing and design evolution
- UV inhibiting dome, tubing and diffuser
- Impact resistant dome
- Moisture control system to mitigate interior condensation
- 99.7% reflective tubing for extremely low light loss
- Specular reflectance of only visible light spectrum (380-760 nm)
- 0.33-.35 Solar Heat Gain Coefficient for extremely low heat gain
- Fixtures available to fit standard 2x2 T-bar ceiling
- Energy Star Certified
- Controllable light levels (using daylight dimmers)
- Low rooftop aperture requirement (1–1.5%)
- Security bar available to prevent access through 21” aperture
- Made in USA, installed around the world

21” SolaMaster Unit Installed in Bangalore, India

Corrugated aluminum sheet roof

- Custom Flashing for sheet metal roof
- Open Ceiling Warehouse Interior



Silvermere Group has partnered with premier organizations in Sri Lanka and India to establish exclusive import dealerships bringing Solatube to commercial markets.

- Sri Lanka

- Island Green Energy Solutions
- (Member of Access Group)
- Mr. Ashan Malalasekera
- #70 2/1, 2nd floor, Lucky Plaza
St. Anthony's Mawatha
Colombo 3, 00300
Phone +94 112 370 729
Fax + 94 112 370 728
Email: ashan@spiceisland.org

- India

- Sri Krishna Insulations
- Mr. Jaga Nathan
- #2571, First Floor
- 7A-Main, BSK 2nd Stage
- Bangalore, Karnataka, 560-070
- Ph: +91 98 451 57392
- Email: srikrishnainsulations@yahoo.com

Silvermere International Group of Companies identify and introduce innovative and energy saving products and technologies to South Asian markets.

Please contact us to discuss how we can help your business or facility to reduce energy dependency and improve lighting quality.

www.silvermereinternational.com

Raise your standard of lighting!