

Innovation in Daylighting™



SOLATUBE®



Residential & Commercial **Idea Book**

Today, daylight is inspiring a whole new approach to sustainable architecture and design.

Let's face it: change isn't something that happens spontaneously. After all, we didn't just wake up one day and decide to revolutionize the daylighting industry. Truth be told, changing the way people use daylighting has simply been the result of our passion to challenge conventional thinking and find a better way to bring natural sunlight to virtually every space.

When we started Solatube® International, Inc., we challenged ourselves to find an affordable way to bring daylight into dark spaces where natural light had rarely been an option. Our original designs were revolutionary and earned the praise of the media and the loyalty of product owners all over the world.

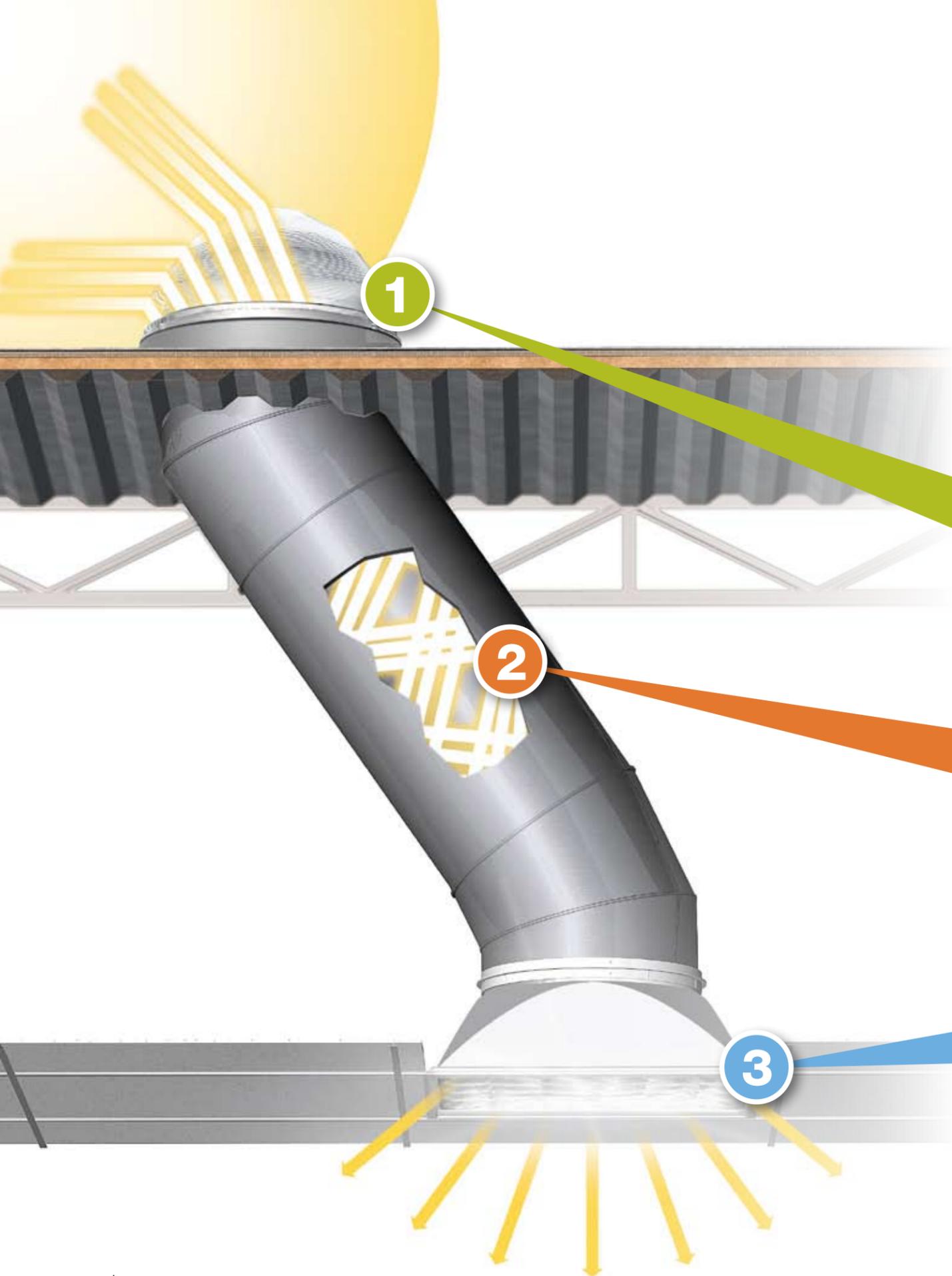
One thing is clear. Our products are not skylights. They are high-performance daylighting systems that use advanced optics to significantly improve the way daylight is harnessed. In a quest to tell others about this fantastic new invention, the market needed a name. Thus, the term "Tubular Daylighting Device" was born.

Over the years, we continued to innovate, adding optical technology throughout the system to capture more sunlight on the roof, transfer more sunlight through the tubing and effectively diffuse the light in the building interior. Once you see Solatube Daylighting Systems, you'll understand. They are remarkable.

Today, architects and designers are adopting our Daylighting Systems to solve some of their toughest sustainable design challenges. While we always knew that nothing could be more sustainable than integrating natural daylight into a space, we are continually inspired when we see new and exciting designs using our Daylighting Systems. Read on and discover the many opportunities for natural lighting.

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Breakthrough Technology For Higher Performance

Solatube Daylighting Systems are designed to provide superior performance for virtually every daylighting application. Imagine being able to take daylight where you never thought possible. How do we achieve this? It's all in the details. At the heart and soul of every Solatube product, you'll discover an array of innovative technologies that deliver amazing results.

Over the next few pages, we'll introduce you to the unsurpassed capture, transfer and delivery technologies that make Solatube Daylighting Systems the ultimate daylighting experience.

Capture Zone

The story all begins with capturing sunlight. We challenged our engineers to develop a dome that automatically adjusts daylight harvesting throughout the day while achieving demanding thermal performance requirements. The solution? The industry's most advanced dome technology with the ability to virtually bend daylight.

Transfer Zone

How much does a bounce matter? You'd be surprised. Every time a ray of light is reflected, a small amount of that light is lost. And even a few percentage points in reflectivity make a huge difference in overall performance. It's that attention to detail that led us to develop the highest performing tubing available.

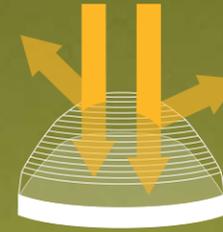
Delivery Zone

What makes Solatube Daylighting Systems unique? The ability to offer amazing control over daylighting a space. From light control to diffusion we've thought of virtually everything you need to bathe any space in pure, natural light.

1 Capture Zone

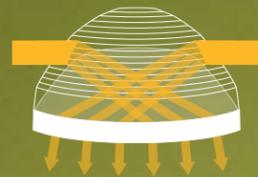
Redefine Harvesting

Traditional daylight harvesting has its issues – too much light and heat sometimes and not enough light other times. Problem solved. Solatube Daylighting Systems that feature Raybender® 3000 Technology use a series of fresnel lenses to harvest appropriate amounts of sunlight based upon the incidence angles of daylight. Raybender 3000 Technology delivers an Effective Daylight Capture Surface (EDCS) that is nearly double that of a clear dome of the same diameter.



Reject High Intensity Sunlight

There is such a thing as too much of a good thing, and summer mid-day sun is a great example. When the sun is high in the sky vault, there is simply too much sunlight and heat. This lens screens the over-powering and punishing mid-day sun and only allows comfortable daylight into the optical tube. The result is a staggering reduction in solar heat gain and a favorable reduction in bothersome light intensity for improved output consistency throughout the day and over the course of the year.



Superior Visual Comfort

Not only does this lens help redirect low-angled light, it also works to temper glints by mixing light in the optical tubing. This provides that lively sunlight you've come to expect from a Solatube Daylighting System with even more visual comfort.



Harvest Low-Angled Daylight

This lens captures low-angled morning and afternoon sunlight and redirects it into the tube to greatly extend your day. In the winter, Raybender 3000 Technology captures not only low-angled sunlight on the horizon, but also redirects diffused light from the sky vault delivering vastly higher light levels.





Extended Tube Lengths

With a phenomenal specular reflectivity of over 99.7%, Solatube Spectralight® Infinity Tubing can run amazing lengths – in excess of 50 feet (15.2 m) – without jeopardizing effectiveness. Think of the possibilities...



0-90° Flexibility

If you need to go the distance, you may need to make a turn. Never fear. Solatube Daylighting Systems can be designed with angles from 0 to 90 degrees to overcome construction limitations. It's made possible with Spectralight® Infinity Tubing.

② Transfer Zone

Redefine Possibilities

Imagine having daylight in interior offices, or lower floors of a building, or in hallways and corridors. Solatube Spectralight Infinity Tubing is redefining where daylighting can and should be used. With the most reflective surface used in Tubular Daylighting Devices, Spectralight Infinity Tubing transfers daylight with minimal absorption losses, even when going to hard-to-reach places.



Light Control
 With the ability to place daylight everywhere, it became more important than ever to offer powerful control options. The Solatube Daylight Dimmer™ allows you to completely adjust daylight levels in a room with the touch of a switch.



Design With Daylight
 Diffuser options for both open and closed ceiling applications provide designers with choices in diffusing light evenly into every space. Our engineered diffusion options provide precise and even daylighting throughout the space.



Superior Color Rendition
 The unique spectral reflectance characteristics of Spectralight® Infinity Tubing reflect the visible spectrum without color shift to deliver the purest color rendition possible. It's performance like this that ensures that the color you use in a space will be vivid and accurate.

③ Delivery Zone

Redefine Illumination

Effective daylighting is a cornerstone of modern architectural design. Now for the first time architects and designers don't have to sacrifice natural daylight. Solatube Daylighting Systems provide a level of management and dependability that allow you to virtually turn the lights off. Imagine being able to daylight your most challenging projects –from schools to offices – and ensure that daylight levels are optimized for all your occupants.

Education

Daylit schools lead the class in student performance.



Tucker Sadler Noble Castro Architects



PE+B Architects, Inc.

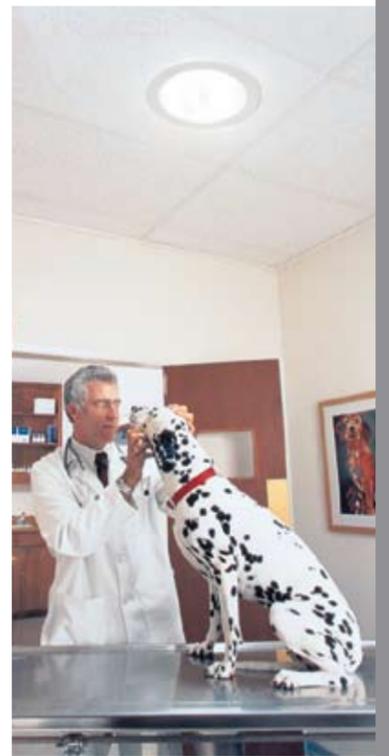


Tucker Sadler Noble Castro Architects



Office

With non-conventional thinking, everyone can have a window office.



Retail

A bright idea for ringing in more sales.



Recreation & Sports

Now every sport can take on the great outdoors.



Warehouse & Industrial

Turn off the lights and rack up the savings.



Residential

Natural daylight brings every room to life.



SolaMaster® Series

Daylight the most expansive spaces.

Expansive spaces require extraordinary amounts of natural light. With that in mind, we designed the Solatube SolaMaster® Series, which feature the highest Effective Daylight Capture Surface (EDCS) available, our largest aperture tubing, and highly effective, patented dome technology. The Solatube 750 DS Daylighting System is an engineering revolution that balances illumination intensity, consistency, and thermal performance. Alternatively, the Solatube 330 DS Daylighting System is designed to provide exceptional light levels during peak daylight hours.

All of this combined with our Spectralight Infinity Tubing make it possible to bring daylight deep into buildings where natural light has rarely been an option.

	Solatube® 750 DS Daylighting System	Solatube® 330 DS Daylighting System
Specifications		
Tube Size (Diameter)	21 in (530 mm)	21 in (530 mm)
EDCS* Effective Daylight Capture Surface	750 in ²	330 in ²
Technology Features		
Raybender® 3000 Technology	■	
LightTracker™ Reflector		■
Spectralight® Infinity Tubing	■	■
Energy Performance		
ENERGY STAR®	■**	
Design Criteria		
Effective Tube Length	> 50 feet (15.2 m)	> 50 feet (15.2 m)



* EDCS represents the surface area of the dome that collects and redirects sunlight.
** ENERGY STAR® Application Pending for closed ceiling configurations.

Diffusers

Meticulously designed and artfully crafted, Solatube SolaMaster Series diffusers are engineered to give you optimal control over vast amounts of daylight generated from our proprietary Spectralight Infinity reflective tubing. Whether your goal is to blend in beautifully or stand artfully apart, these diffusers offer an exciting array of possibilities.

Closed Ceiling Diffusers

Designed to integrate into standard commercial suspended ceilings using a Solatube Transition Box.

OptiView® Diffuser

A matrix of individual fresnel lenses offers a unique view of the sky above and also provides unrivaled and highly engineered diffusion.

Prismatic Diffuser

Ideal for replicating the look of traditional troffers.

Open Ceiling Diffusers

The Open Ceiling diffuser creates the perfect finishing touch to open ceiling applications by easily snapping on to the bottom tube.

OptiView® Diffuser

The innovative design of our Open Ceiling OptiView® Diffuser delivers the cleanest, purest natural daylight imaginable.

Prismatic Diffuser

Designed to blend into any design by replicating the look and style of traditional lighting fixtures.



A full selection of durable flashings ensures leak-proof, hassle-free installations on virtually any roof type and pitch. The Solatube self mounted flashings can be integrated into the roofing system for a worry-free installation.

Self Mounted



Built-up

Membrane*

- Flashing options available for pitched and flat roofs in the following heights: 4 in/100 mm, 8 in/200 mm and 11 in/280 mm.
- The 4 in/100 mm high flashing is recommended for most residential applications because of its low profile.
- The 8 in/200 mm and 11 in/280 mm high flashings are recommended for use on flat commercial roof applications to meet commercial curb height requirements.

Curb Mounted



Membrane

Built-up

Metal

Tile

- Use on pitched or flat roof with any roof materials and with pre-built wood or manufactured metal curb,

Turret Extensions

- Use to raise the height of the Solatube dome on a roof to avoid snow, water or shading from roof obstructions.
- Order appropriate amount of extension tubing to accommodate turret height.
- Available in 12 in/300 mm, 24 in/600 mm, 36 in/900 mm and 48 in/1200 mm sizes



Daylight Dimmer

Use the Daylight Dimmer* to control light output to any desired light level. Accepts power supplies ranging from 90 to 277 volts AC. It is ideal for conference rooms, classrooms and offices.



Daylight Dimmer Switch Kit (sold separately) includes DPDT switch, wall plate and 15 ft/4.5 m of cable. Multiple Daylight Dimmers can be controlled by one switch. 0-10 Volt model is also available.



*Patent 7,082,726

Flashing Insulator

The Flashing Insulator material helps to reduce flashing condensation in cold climates when the flashing is exposed to a humid interior space. The insulator is affixed to the flashing base and the top tube slips through the opening which provides a seal between the room interior and metal flashing.



Security Options



The Security Bar inserts into the flashing turret across the diameter of the opening. The bar is fastened using rivets and prohibits entry through the dome.

The Dome Security Kit provides three rivets and spacers to reduce the possibility of dome removal.



Open Ceiling Trim Ring



For use with the open ceiling applications, the trim ring provides a finished appearance to the installation.

Inner Dome

The Solatube 750 DS offers two inner domes options for the following applications:



High Velocity Hurricane Zone

Polycarbonate provides impact resistance and thermal performance

ENERGY STAR®

Acrylic for enhanced thermal performance.

Wire Suspension Kit



Use the wire suspension kit when additional bracing to the structure is required.

Spectralight® Infinity Extension Tubes

Extension tubes can be added in increments of 24 in/600 mm for long runs without sacrificing performance. The secret is the unrivaled reflectivity of Spectralight Infinity. This tubing has the highest reflectivity available for the brightest, purest light. Create tube lengths greater than 50 ft/15 m.

Dome Edge Protection Band

This is required for fire rated roofs. (not pictured)



Thermal Performance

The Solatube 750 DS offers unsurpassed thermal performance. Unique features such as Raybender 3000 Technology, Inner Dome for thermal performance and Spectralight Infinity Tubing work in concert to deliver the most energy efficient tubular daylighting device available.



	Solar Heat Gain Coefficient	U-Factor
ENERGY STAR® Requirements*	<0.30	0.55
Solatube 750 DS Daylighting System†	0.21†	0.55

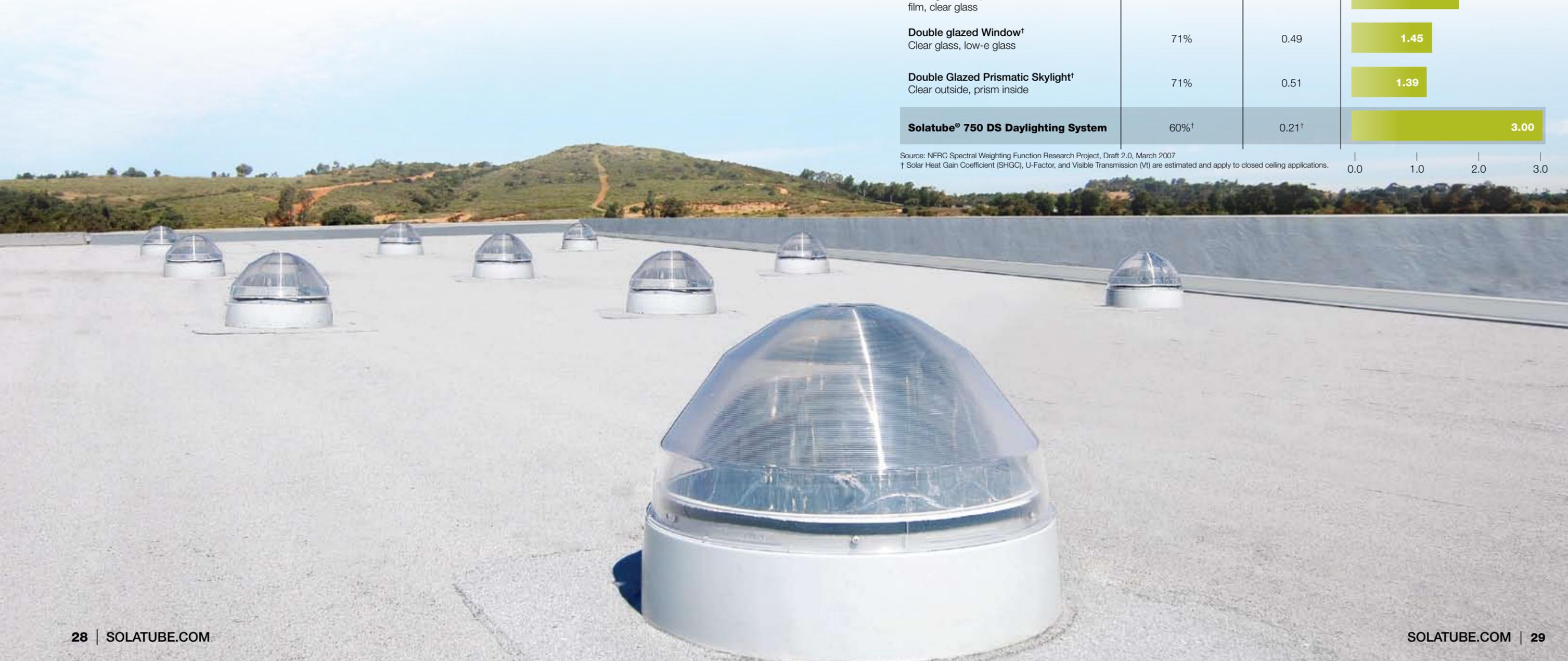
* ENERGY STAR® pending for closed ceiling applications. ENERGY STAR requirements listed effective 1/1/2010.

Visibly Better Efficiency

With the Solatube 750 DS you never have to sacrifice daylighting performance to achieve remarkable energy efficiency. Unlike the majority of fenestration products, Solatube Daylighting Systems offer maximum light performance with minimal solar heat gain. With an energy performance ratio over double that of most fenestration products, Solatube Daylighting Systems are the highest performing choice for daylighting any space.

Fenestration product	Visible Transmission (Vt)	Solar Heat Gain (SHGC)	Daylighting Energy Performance Ratio (Vt/SHGC)
Triple Glazed Low-e Window† Clear glass, suspended low-e Heat mirror film	22%	0.16	1.38
Triple Glazed Window† Clear glass, suspended low-e Heat mirror film, clear glass	63%	0.36	1.75
Double glazed Window† Clear glass, low-e glass	71%	0.49	1.45
Double Glazed Prismatic Skylight† Clear outside, prism inside	71%	0.51	1.39
Solatube® 750 DS Daylighting System	60%†	0.21†	3.00

Source: NFRC Spectral Weighting Function Research Project, Draft 2.0, March 2007
 † Solar Heat Gain Coefficient (SHGC), U-Factor, and Visible Transmission (Vt) are estimated and apply to closed ceiling applications.



Brighten Up® Series

A bright idea for every room.

The Solatube® 160 DS and 290 DS Daylighting Systems set performance standards never seen before. These models feature our patented Raybender® 3000 Technology and LightTracker™ Reflector to deliver nearly double the Effective Daylight Capture Surface (EDCS) of similar size copycat products. Highly effective and simple to install, the Brighten Up® Series can transform dark interior rooms and light more expansive spaces with multiple units creating a unique architectural effect.

	Solatube® 290 DS Daylighting System	Solatube® 160 DS Daylighting System
Specifications		
Tube Size (Diameter)	14 in (350 mm)	10 in (250 mm)
EDCS* Effective Daylight Capture Surface	290 in ²	160 in ²
Technology Features		
Raybender® 3000 Technology	■	■
LightTracker™ Reflector	■	■
Spectralight® Infinity Tubing	■	■
Energy Performance		
ENERGY STAR®	■	■
Design Criteria		
Effective Tube Length	> 30 feet (9.1 m)	> 20 feet (6.1 m)

* EDCS (Effective Daylight Capture Surface) represents the surface area of the dome that collects and redirects sunlight. For comparison, a clear dome with no lens on a typical 10 inch tube system has an EDCS of 78.5 square inches.



Brighten Up® Series | Designer Touches

Solatube Designer Touches provide sophisticated design options that empower your artistic expression of daylighting. You can create a daylighting experience that's entirely yours in just four easy steps.

1 Choose Your Style
With three different trim styles, it's easier than ever to create a look to fit your décor.



White Trim
The standard dress ring comes in the ever-popular low-profile white color to blend with the ceiling.

Stainless-Tone Trim
The Stainless-Tone Trim is designed to complement metal finishes and is a great choice for modern designs.

Frosted Shade
The Frosted Shade with White Trim provides a clean contemporary look to any Solatube Daylighting System.

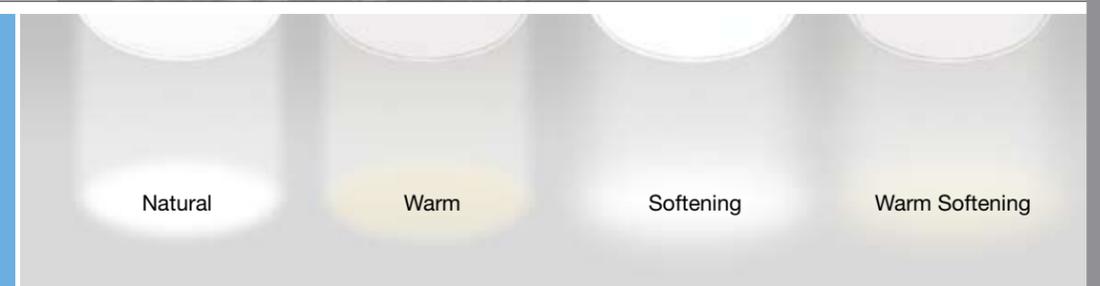
2 Pick Your Diffuser
Choose the Diffuser Lens you want to fill your room with bright sunlight.



Vusion™ Diffuser
The fresh design harmonizes with most décors, and provides the radiance of natural light.

OptiView® Diffuser
Considered the ultimate in diffuser design, the OptiView Diffuser uses a fresnel lens to deliver crystal clear daylight and a unique view of the sky.

3 Select Your Effect
Use an Effect Lens to design your own daylighting experience.



Natural

Warm

Softening

Warm Softening

4 Add More Function
Take daylighting to the next level by upgrading your Solatube Daylighting System to include lighting, dimming, and ventilation.



Light Add-On Kit
Switch on the light when the sun goes down.

Ventilation Add-On Kit
Perfect for restrooms and areas requiring ventilation.

* Patent 7,082,725

Daylight Dimmer™
Completely control the amount of light with the flip of a switch.

For fast and easy installations, Solatube flashings are available for nearly all roof types and pitches. The flashings provide complete protection and create an attractive appearance on the roof. They're fabricated as a single, seamless piece to ensure leak-proof performance. Pitched flashings provide the optimal position for the tube to capture daylight on sloped roofs.

No Pitch	Pitched	Universal Tile	Curb Mounted
 <p>0:12 - 3:12</p>	 <p>4:12 - 12:12</p>		
 <p>Flat</p>	 <p>Shingle</p>	 <p>Tile</p>	 <p>Standard</p>
<ul style="list-style-type: none"> Use on low pitched or flat roofs. Available in 4 in/100 mm or 6 in/150 mm heights. Use 6 in/150 mm for areas prone to heavy snow load and on commercial roofs. 	 <p>Shake/Slate</p>	 <p>Flat Tile</p>	<ul style="list-style-type: none"> Available for Solatube® 290 DS
	 <p>Metal*</p> <p><small>*Order Metal Roof Kit.</small></p>	<ul style="list-style-type: none"> Pitched or no pitch models are available. Use standard pitched or standard no pitch flashings as a base. 	

Turret Extensions



- Use to raise the height of the Solatube dome on a roof to avoid snow, water, or shading from roof obstructions.
- Order additional Spectralight® Infinity tubing to accommodate turret height.
- Available in 2 in/50 mm, 4 in/100 mm, 12 in/300 mm, 24 in/600 mm, 36 in/900 mm and 48 in/1200 mm sizes.



2 in/50 mm Turret Extension installed on tile roof

Spectralight® Infinity Extension Tubes

Extension tubes can be added in increments of 16 in/400 mm or 24 in/600 mm for long runs without sacrificing performance. The secret is the unrivaled reflectivity of Spectralight® Infinity Tubing, making it possible to create up to 90 degree angles and long tube runs up to 30 ft/9 m.



0-90 Degree Extension Tube

Extension Tube

Flashing Insulator

This Flashing Insulator helps to reduce flashing condensation in cold climates when the flashing is exposed to a humid interior space. The insulator is affixed to the flashing base and the tube slips through the opening, which provides a seal between the interior and metal flashing.



Flashing Insulator

Dome Edge Protection Band

This is required for fire rated roofs.



Shock Inner Dome

High Velocity Hurricane Zone areas such as South Florida require the Solatube Shock Inner Dome. This highly impact-resistant inner dome can also be added to any installation for extra protection from extreme forces.



Sustained Innovation

Solatube® Daylighting Systems are recognized for their ability to help design professionals achieve their LEED® and ENERGY STAR® accreditation goals. Adding natural daylight to every project has become critical to the success of many of the world's greatest sustainable design achievements

The LEED rating system, developed by the U.S. Green Building Council (USGBC) in 2000, is an internationally recognized system for certifying design, construction, and operation of green buildings.

Solatube Daylighting Systems offer an innovative way to incorporate green building practices by significantly contributing to a project's ability to achieve LEED certifications. In fact, Solatube products can contribute to the achievement of LEED milestones across all LEED rating systems.



LEED® Contribution Matrix

For a complete Solatube® Daylighting System LEED® Impact Analysis visit www.solatube.com/LEED

	LEED® Rating Systems							
	NC 2009	CS 2009	S 2009	CI 2009	EBOM 2009	Homes	Retail Pilot	Healthcare Pilot
Total LEED® prerequisites and credits Solatube® Products can contribute to	6	6	7	6	5	4	7	6
Total associated range of points available	5 - 27	7 - 29	5 - 26	5 - 10	4 - 24	4 - 38	6 - 19	5 - 18
LEED® Credit								
Sustainable Sites								
SS Credit 8.1 Light Pollution Reduction	1	1	1	1	1		1	1
Energy and Atmosphere								
EA Prerequisite 1 Minimum Energy Performance	Prereq	Prereq	Prereq	Prereq	Prereq	Prereq	Prereq	Prereq
EA Credit 1 Optimize Energy Performance	1 - 19	3 - 21	1 - 19		1 - 18	2 - 34	1 - 10	1 - 10
EA Credit 4 Windows						1 - 3		
Materials and Resources								
MR Credit 5 Regional Content				1			1	
Indoor Environmental Quality								
IEQ Credit 6.1 / 6 Controllability of Systems - Lighting	1	1	1	1			1	1
IEQ Credit 8.1 Daylight & Views: Daylight	1	1	1 - 2	1 - 2	1		1 - 2	1 - 3
Innovation in Design								
ID Credit 1 Innovation in Design/ Exemplary Performance	1 - 5	1 - 5	1 - 4	1 - 5	1 - 4		1 - 4	1 - 3
ID Credit 3 School as a teaching tool			1					
4 levels of LEED® certification: Certified = 40-49 Points, Silver = 50-59 Points, Gold = 60-79 Points, Platinum = 80 Points & Above								

To find a Solatube® Daylighting Expert in your area visit www.solatube.com or call (888) SOLATUBE.

Technical Resources

Visit www.solatube.com/technicalresources and get the tools you need to specify Solatube® Products into your next project:

- Building Information Models (BIM)
- CAD Drawings
- Product Cut Sheets
- Architectural Specifications
- Photometric IES
- Spacing Criteria
- Cut Sheets
- Installation Instructions
- Case Studies
- Daylighting Facts and Figures

Codes and Approvals*

Rest assured that the Solatube Daylighting System can be used in your project without hassles. Solatube Daylighting Systems have been approved by all major building product approval entities:

- A440-05 (AAMA/WDMA/CSA)
- ICC
- Florida Building Code/High Velocity Hurricane Zone
- City of Los Angeles
- Texas Department of Insurance
- ENERGY STAR®/NFRC

* Certification varies by product model and configuration.



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