

No single factor has more environmental impact on a building than solar heat gain.

C/S Solarmotion:

The two best ways to reduce solar heat gain



C/S Solarmotion Architectural Blinds

C/S Solarmotion The Low-Profile Solution

Solarmotion Architectural Blinds can create a dramatic effect on a building's facade or virtually disappear. C/S Solarmotion Architectural Blinds can be used outside, inside or between two panes of glass, and they are a simple, cost effective way of allowing the occupants to control the amount of natural daylight entering their offices. With energy reductions of up to 35% annually, Solarmotion Architectural Blinds are perfect for new construction or renovation.

Pages 4 - 25



C/S Solarmotion Dynamic Solar Facades

The Monumental Solution

Being the leader in fixed and operating Sun Controls for over 50 years, C/S now offers architects and owners a revolutionary new system. C/S Solarmotion Dynamic Solar Facades combine our extensive selection of operating blades and sunshades with our intelligent control system to track the sun throughout the day, maximizing energy efficiency. Whether your design calls for a horizontal or vertical orientation, dramatic C/S Solarmotion Dynamic Solar Facades offer infinite aesthetic freedom.

Pages 26 - 31

Nothing is more effective at reducing solar heat gain than new C/S Solarmotion® Architectural Blinds.

Today's world demands that architects and owners build buildings that are energy efficient, lower their carbon footprint and are comfortable for their occupants. There are many options to optimize a facade's energy performance, but none come close to new C/S Solarmotion Architectural Blinds. Not only are they the most energy efficient option for buildings (based on studies by Berkeley Laboratories and the European Solar Shading Organization), they provide occupants glare-free views of the outside throughout the day. And they make a stunning impression that says "environmentally responsible." The chart below compares C/S Solarmotion to other systems.

Shading Options Comparison

	High Performance Glazing	Roller Shades	Fixed Sunshades	C/S Solarmotion Architectural Blinds
Occupant View	Unobstructed	Totally Opaque	Unobstructed (Cantilevered Only)	Glare-free open views at various angles
Glare Control	Negligible	Good when totally closed	Moderate based on elevation	Excellent, while still providing occupant views of the outside
Solar Heat Gain Coefficient	.45	.25	.32	.04
Annual Energy Reduction	6 %	20%	15%	35%
Annual Energy Savings	\$	\$\$	\$\$	\$\$\$\$\$
Occupant Comfort	•	••	•••	••••
Note: Data collected from Berkeley Laboratory, ES-SO and UCSD studies on sunshade devices.				

Daylight Sensing Controls are the key to Solarmotion's effectiveness.



This high-tech system of intelligent Architectural Blinds uses an intuitive control system that reacts, moves and adapts to the angle of the sun as well as weather conditions. This system has been widely used in Europe for decades and is available in North America through an exclusive agreement with Warema, Europe's leading manufacturer.

USGBC LEED® Credits

C/S Solarmotion Architectural
Blinds can help architects gain
a significant amount of points
(up to 35) toward LEED®
Certification in the Energy
and Atmosphere section
by improving building
performance



beyond baseline in ASHRAE/IESNA Standard 90.1.



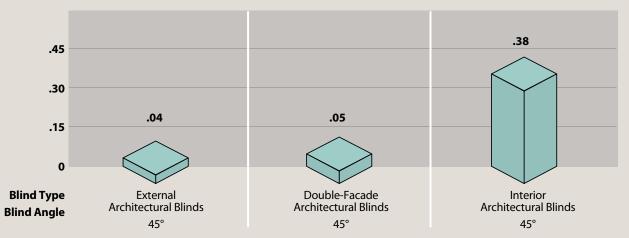
C/S Solarmotion® Architectural Blinds can be used in three different ways.

While any configuration of C/S Solarmotion Architectural Blinds performs better than competitor's systems, how they are applied to a building does affect their ability to reduce solar heat gain. The exterior and double-facade systems are more effective because they stop the heat before it warms the in-board lite of glass, thus reducing convection of the interior air.



Solar Heat Gain Coefficient Comparison

While double glazing provides a solar heat gain coefficient of .65, using Solarmotion Architectural Blinds (at a 45° angle) reduces the SHGC to .04, or a reduction of 94%.



C/S Solarmotion® Architectural Blinds

C/S Solarmotion makes occupants happier, healthier and more productive.



Daylight has beneficial effects on patients.

Studies on daylight's effect on patients prove that hospitals with daylight management systems improve the recovery process of patients, reduces depression, stress, and reduces the amount of pain medication needed by patients. It also helps minimize fatigue and mistakes made by healthcare workers.

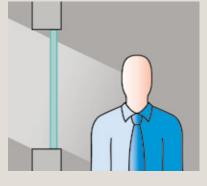
C/S Solarmotion Architectural Blinds offer owners more than just energy savings. Numerous studies* show that buildings with daylight management systems that allow the harvesting of natural daylight increase worker productivity, lower absenteeism and improve health and educational performance. Solarmotion Architectural Blinds connected to our intelligent sun tracking technology always provide the perfect amount of daylight into the building's interior while reducing heat and glare to make a comfortable environment for the occupants throughout the day. They also provide the occupants with views of the outside. To read more about how daylight affects workers, students and patients, go to www.c-sgroup.com/solarmotion and click on studies.



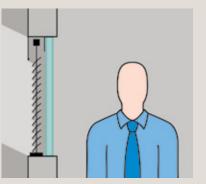
The Perfect

Solution to Glare

Heat and glare from unprotected windows can make building occupants uncomfortable and inefficient.



Solarmotion
Architectural Blinds
reduce heat and glare
and create a comfortable
work environment.
Comfortable occupants
are more productive.



Studies prove students learn more in a comfortable classroom.

Well planned daylight concepts in schools provide enhanced student performance and mood. An effective sunshading system that provides the classroom with natural daylight not only reduces energy and lighting costs, but they have a proven positive effect on the students' ability to learn.





*Berkeley Laboratories, ES-SO, UCSD and Canon Design

Visit — www.c-sgroup.com/solarmotion for comprehensive information about this product.

Cutting-edge technology drives our system.

900

C/S Solarmotion Architectural Blinds function normally under typical weather conditions. Our wind stable system is designed for buildings experiencing high winds (see at right or page 15).

Heavy-Duty Construction

All C/S Solarmotion Architectural Blind systems feature rugged, high quality aluminum components with environmentally friendly powder coat finishes. Rigorously tested, C/S Solarmotion Architectural Blinds offer years of trouble-free operation and performance in the harshest of climates.

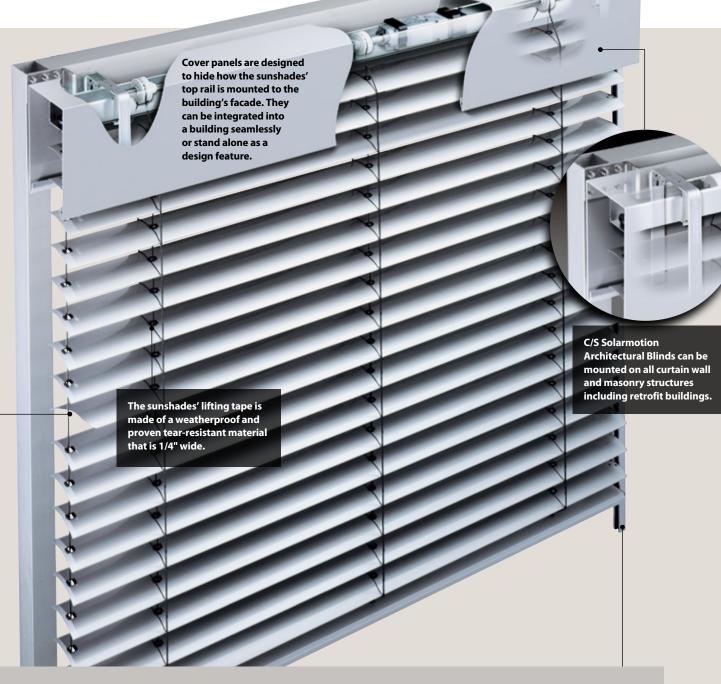
High-Wind Resistant Option

Whether you are designing a high rise building or your project is subjected to high winds, C/S offers a blind system capable of withstanding winds up to 55 mph. When wind speeds approach 55 mph, these blinds simply retract into their protective cover panel.

Automatic Controls

C/S Solarmotion Architectural Blinds use intelligent control systems that work flawlessly to reduce a building's heat and glare as well as heating/air conditioning loads and light usage. Building occupants are provided with the perfect amount of natural daylight at all times of the day.

C/S Solarmotion offers the industry's widest selection of slat types for every building condition, including; rolled, flat, perforated, blackout, and our new Genius daylight guiding slat. See page 20 for additional details.



Guidance Option 1

To integrate the shading system inconspicuously into the facade, a filigree cable with a 1/8" thickness runs from the head of the shade through each blade to a tension bracket that is attached to the building facade.



Guidance Option 2

Guide rails ensure that the blind will lift or lower smoothly in all exterior conditions and allow them to span up to 16' wide.

Intelligent controls track the sun and adjust Solarmotion Architectural Blinds automatically.



Control Technology
Key to maximizing C/S
Solarmotion Architectural

Blinds' effectiveness at reducing heat gain, glare and energy costs is its intelligent control system that tracks the

sun and operates the blinds in all weather conditions. This advanced technology was pioneered by Warema. They are the leading manufacturer in Europe and have a track record of success for over 50 years. With their expertise in high-tech controls and our knowledge of the North American market, we can deliver maximum value to our customers.

Time Tested Motors

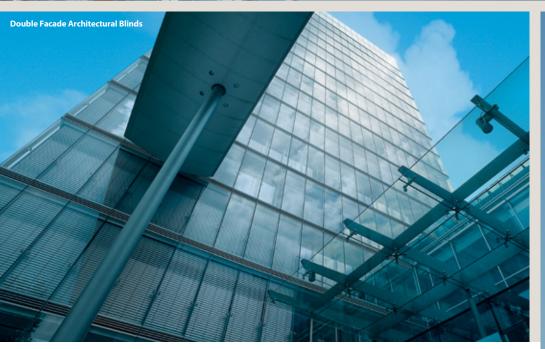
All C/S Solarmotion Architectural Blinds are operated by Warema's maintenance-free, durable 120V motors. These motors provide exact blade positioning and have proven themselves to be consistently reliable in thousands of buildings throughout the world.

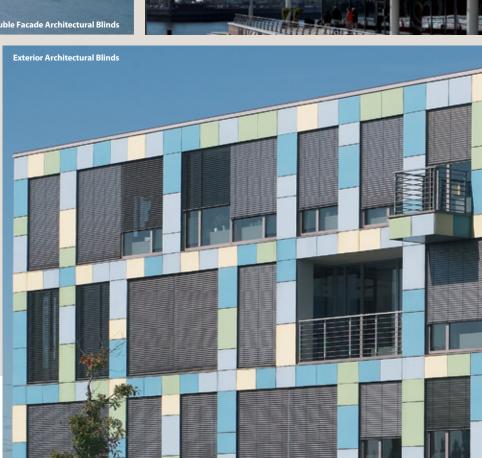
C/S Solarmotion^o On The Job

C/S Solarmotion Architectural Blinds can create a dramatic facade or virtually disappear.











C/S Solarmotion° Wind Stable Blind System

The gold standard for reducing solar heat gain

- Significantly reduces a building's overall energy costs up to 39%
- Install on all types of buildings for improved worker comfort and productivity with glarefree views of the outside
- Connect Solarmotion's intelligent control systems to track the sun and weather throughout the year



Sizes Available (single unit dimension):

Width: Min. 2.0" (600mm) Max. 16.4" (5000mm) **Height:** Max. 13.1" (4000mm)

Slat Widths: 2 3/8" or 3 1/8" (60mm or 80mm)





C/S Solarmotion Architectural Blinds reduce heat and glare, yet allow occupants situated near windows the benefit of glare-free outside views and natural daylight.

Natural daylight enhances the workplace.

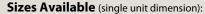
Studies prove that people that work in a naturally lit, glare-free environment are happier, healthier and more productive.
Several studies show a direct correlation between daylight and increased bottom line profitability.



The perfect choice for areas subject to high winds

- Solarmotion intelligent control system automatically retracts blades at 55 mph
- Excellent choice for high rise buildings
- Unit features wide durable slat, additional cable tensioning and a heavy-duty end rail
- Completely tested to withstand high winds.
 See video at www.c-sgroup.com/wind

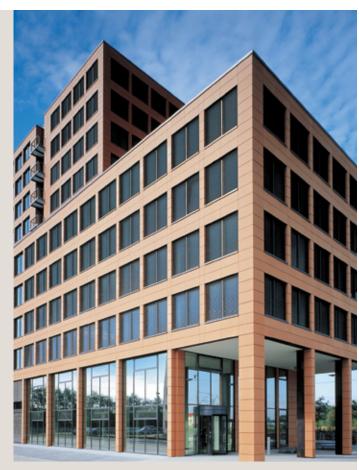




Width:

Min. 2.0" (600mm) Max. 9.8" (3000mm) **Height:** Max. 9.8" (3000mm)

Slat Widths: 3 11/16" (93mm)





Wind Stable Blinds are designed to retract when exposed to 55 mph sustained winds. Our Standard Exterior Blind Systems are suitable for winds up to 35 mph.

Built to withstand Mother Nature

Solarmotion's high strength aluminum slats and components will stand up to whatever heavy weather hits your building. Our Wind Stable System, which incorporates a weather sensor with real-time meteorological data, retracts and protect the blinds when wind speeds hit 55 mph or if ice begins to form.



C/S Solarmotion[®] Exterior Daylight Guidance

(including Double Motor Blinds)

Reduces interior glare at work level, while directing light deep into the interior at the ceiling

- Unit features a blind with slats positioned at two different angles to allow light in yet prevents glare on work surfaces
- Top portion of blind reflects natural daylight onto ceiling and deep into the interior, reducing the need for artificial light



Sizes Available (single unit dimension):

Min. 3.0" (900mm) Max. 9.8" (3000mm) Height: Max. 9.8" (3000mm)

Slat Widths: 2 3/8" or 3 1/8" (60mm or 80mm)





The upper portion of this sunshade directs daylight onto the ceiling of the building's interior, while the lower portion reduces heat gain and glare.

Double Motor Blinds provide total control of light entry.

C/S Solarmotion Daylight Guiding Blinds that include our double motor system allow occupants to manage the specific amount of light entering their workplace. The double motor system positions the slats independently in the top and bottom sections of the unit.



C/S Solarmotion Interior Daylight Management Blinds

(including Light Control and Genius Slats)

Maximize daylight while reducing glare where external blinds cannot be used.

- Reduces heat and glare better than fabric shades and internal roller blinds
- Provides glare-free lighting of workplaces
- Highly reflective inverted blades direct daylight deep into the building's interior
- Perforated slats optimize views of outside



Sizes Available (single unit dimension):

Min. 2.0" (600mm) Max. 9.8" (3000mm) Height: Max. 9.8" (3000mm)

Slat Widths: 2 3/8" or 3 1/8" (60mm or 80mm)





Used inside a building or mid-pane, highly reflective blades directed at the ceiling drive daylight deep into the interior, yet reduce heat and glare.

New Genius Blinds' wide slat design enhances daylight harvesting.

The Genius slat was designed to maximize both sun control and daylight utilization. The wide slat design with a highly reflective coating bounces diffused daylight onto the ceiling and deep into the interior while creating glarefree, energy efficient interiors.



C/S Solarmotion® Blackout Blinds

For applications requiring complete room darkening

- Special blade profile with sealing strip that maximizes blade closure for room darkening
- · Achieves complete blackout for almost any installation situation
- Reduces heating and cooling costs
- Offers views of outside in open position



Sizes Available (single unit dimension):

Min. 2.0" (600mm) Max. 14.8" (4500mm) Height: Max. 14.1" (4300mm)

Slat Widths: 2 7/8" or 3 11/16" (73mm or 93mm)





Workspaces that require total darkness at various times, but also prefer to have a daylit interior at other times, can have both with Solarmotion Blackout Blinds.

Blackout Blinds keep the light out when it is unwanted.

Blackout slats are beaded on both sides to achieve perfect slat closure. Improved room darkening can be achieved by finishing the slats in one of our dark finishes. Our new Metal System also features room darkening capabilities. Call 1-888-895-8955 for details.

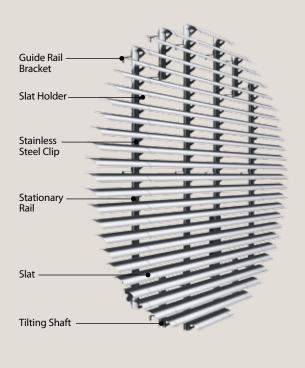


C/S Solarmotion° **Fit System**

(Non-Retractable)

A non-retractable blind system designed to provide shading for any window shape

- Triangular, round and trapezoid shaped windows can now incorporate Architectural Blinds
- · Uses same intelligent control system as all other Solarmotion products to automatically adjust blade angle
- · Non-retractable blinds can be cut to accommodate any shape or window condition
- Provides same performance as other Solarmotion **Architectural Blinds**

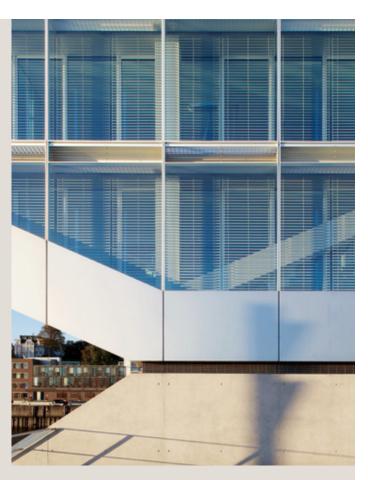


Sizes Available (single unit dimension):

Width: Min. 2.0" (600mm) Max. 16' - 4 7/8" ft (5000mm)

Height: Max. 16' – 4 7/8" ft (5000mm)

> **Slat Widths:** 2 3/8" or 3 1/8" (60mm or 80mm)





Whatever the shape of your window, C/S can supply a Solarmotion Architectural Blind that will fit perfectly. The Fit System functions similarly to all other Solarmotion Architectural Blinds, but they do not retract.

C/S Solarmotion is a leader and pioneer in the field of sunshading. In addition to Solarmotion Architectural Blinds we also offer a complete line of interior roller blinds to optimize daylight management. Call 1-888-895-8955 for details.



Slats are key to the functioning of a specific Solarmotion Architectural Blind product. Available in a variety of sizes, call for details.



Rolled Slat for Cable Guidance

 Beading increases slat stability Low wearing protective eyelets



Blackout/Wind Stable Slat

 High slat stability • Sealing strip in the front bead offers blackout ability



Rolled Slat for Guide Rail

 High slat stability through beading and guide rail



Flat Slat for Cable Guidance

 Low stack height • I ow wear and lower noise



Protective eyelets optional

Low stack height



 Perforation possible on all slats Outside views with closed slats

Perforated Slat



Genius Slat with Optimized Slat Geometry

• For optimum room lighting Genius blinds open wide



Highly Reflective Mirror Slats Mirror finish offers high light

guidance and reflection

Cover Panels work with any window architecture and are designed to protect the retracted the slat stack against wind and weather.



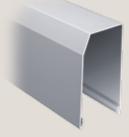
Cover Panel BL 06

• U-shaped cover panel, folded



Cover Panel BL 09

Round-shaped cover panel



Cover Panel BL 07

• U-shaped sloped cover panel



Angular cover panel, folded

Cover Panel BL 01

Guide Rails are mounted to the sides of Solarmotion. They keep the slats secure, and aligned for smooth operation.



Type 1, Rectangular Wall mount

(standard)



Type 2,

brackets



Rectangular Mounts to



Type 3, Rectangular Use between

two blinds



Type 7, • For self-supporting

units



Type 10, Rectangular Use between two blinds



Wind Stable Rectangular

Keeps slats secure

C/S Solarmotion Intelligent Control Options

Whether you select a control style that's part of a building management system or one that tracks both the weather and the sun, or an individual control system, your building and occupants will benefit from enhanced interior conditions.



Building Management Control System

Programmed by a PC, this system receives climatic and meteorlogical data from a weather station to provide user comfort and energy savings.



Solar Tracking Controller

This control system tracks the sun and positions the sunshade to block direct glare while allowing natural daylight into the interior.



Climatronic Control System

This system sets new standards in energy conservation. It works with any of our sunshades, will lower your energy consumption and will always assure that the interior of the building's light distribution and temperature will always be perfect.



Occupant Operated Universal Remote

Using radio technology, one remote control can control Solarmotion shades individually or collectively.

Finishes

All Solarmotion Architectural Blinds are finished in long-lasting quality architectural finishes. Additional colors and custom colors available.

9010 Clear White	9016 Traffic White	9002 Grey White	1013 Oyster White
1015 Light Ivory	4800 Light Beige	7035 Light Grey	7038 Agate Grey
7037 Dusty Grey	9006 White Aluminum	9007 Grey Aluminum	703 Anthracite Metallic
8780 Light Bronze	7329 Bronze	8014 Sepia Brown	5018 Turquoise Blue
5009 Azure Blue	6005 Moss Green	1006 Maize Yellow	7016 Anthracite Grey
3004 Purple Red	5014 Pigeon Blue	5002 Ultra Marine	8120 Terracotta

Due to limitations of the printing process, colors above may vary. When specifying, obtain color samples by calling factory.

C/S Solarmotion[®] for Renovation

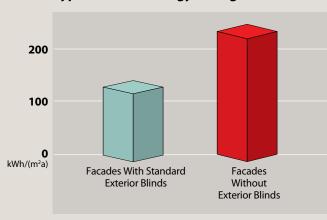
Adding Solarmotion to your existing building is the easiest, most effective way to reduce energy costs.



Having analyzed the energy savings in dozens of buildings employing C/S Solarmotion Architectural Blinds, we have found that in most instances the ROI of a blind system is approximately five years.

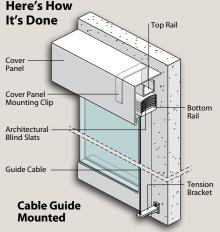
easily on any building new or retrofit including curtain wall construction. C/S Solarmotion Architectural Blinds can be installed either recessed within the window framing, surface mounted or between double window glazing systems. Shown below right are a few of the dozens of installation conditions that can be easily adapted to include C/S Solarmotion Architectural Blinds on your next project. For additional details go to www.c-sgroup.com/solarmotion

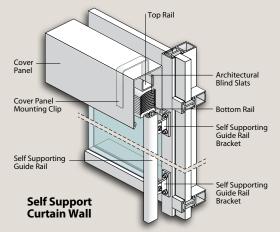
Typical Annual Energy Savings

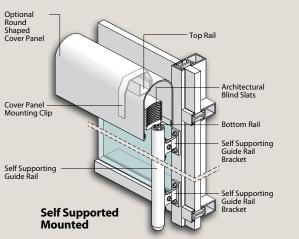


C/S hired an engineering firm to model the energy and capital cost savings that a building owner would achieve by using C/S Solarmotion Sun Shading Systems. The firm analyzed the energy usage of a 10-story building (in five different cities) and included standard double glazed low-E glass on all elevations. The results showed savings with Solarmotion ranging from \$80,000 to \$173,000 per year.



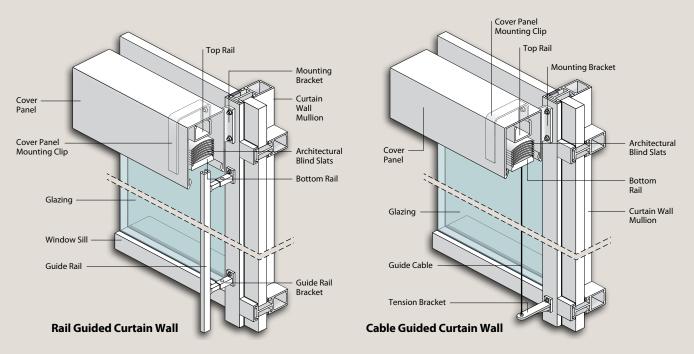


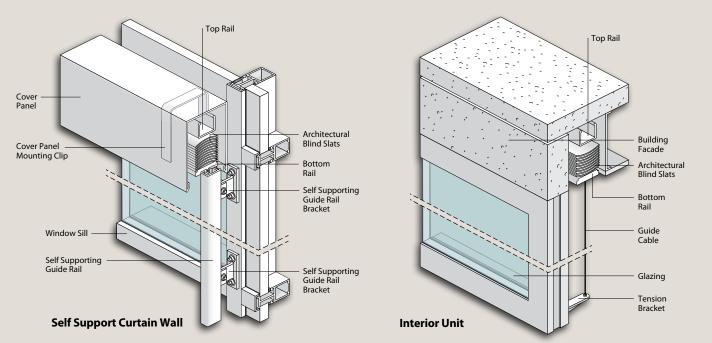


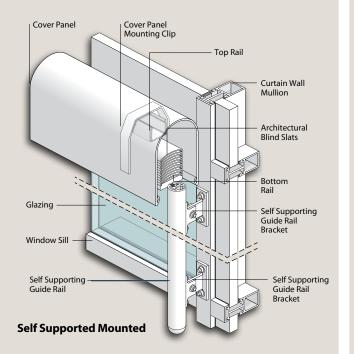


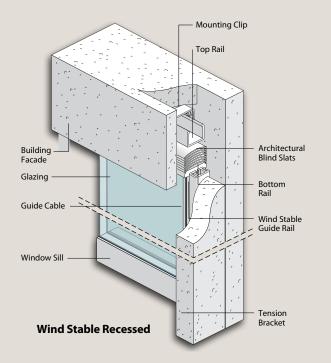
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C/S Solarmotion Architectural Blinds can be mounted on all building types. Whether your building facade is masonry, curtain wall or features metal panels, C/S can provide you with the perfect installation detail to meet your specific design/glazing requirements. Shown below are several installation options that can be used to incorporate Solarmotion Architectural Blinds on your next project. For additional details, go to www.c-sgroup.com/solarmotion or call 1-888-895-8955.





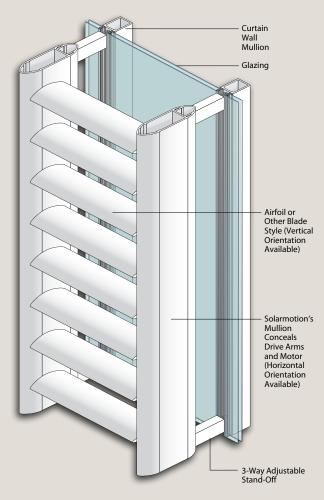




C/S Solarmotion Dynamic Solar Facades

The following six pages feature our monumental operating sunshade system. C/S Solarmotion Dynamic Solar Facades become an integral design feature of any building, while offering owners substantial reductions in energy costs and SHGC values. Shown below is a typical installation detail of the horizontally mounted C/S Solarmotion Dynamic Solar Facade system. The system can also be mounted in a vertical orientation. For complete details call 1-888-895-8955 or go to www.c-sgroup.com/solarmotion.

Pages 26 - 31



Horizontal Mounting (shown)

C/S Solarmotion Dynamic Solar Facades

C/S Solarmotion creates a dynamic facade, reduces energy consumption and maximizes occupant comfort.

Here's how it works

C/S Solarmotion Dynamic Solar Facades track the sun to maximize the control of light and heat entering the building's interior. By effectively controlling the sun on all elevations, at all times of the day throughout the year, Solarmotion significantly reduces a building's energy and capital equipment costs. Solarmotion prevents over or under shading so building occupants can always enjoy natural daylight. Solarmotion also helps architects gain significant LEED® credits.

Total design freedom

With Solarmotion your building can look exactly the way you want your exterior to look. Whether you prefer a horizontal or vertical system, C/S can offer dozens of mullion, blade and finish options, or we can supply you with a complete custom system.

Shading	Options	Comparison
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	High Performance Glazing	Roller Shades	Fixed Sunshades	C/S Solarmotion Dynamic Solar Facade
Occupant View	Unobstructed	Totally Opaque	Unobstructed (Cantilevered Only)	Unobstructed, glare-free views at various angles.
Glare Control	Negligible	Good when totally closed	Moderate based on elevation	Very good based on elevation
Solar Heat Gain Coefficient	.45	.25	.32	.16
Annual Energy Reduction	6%	20%	15%	24%
Annual Energy Savings	\$	\$\$	\$\$	\$\$\$
Occupant Comfor	t • Parkalou Laboratory ES SO a	••	•••	••••



C/S Solarmotion° Dynamic Solar Facades

C/S Solarmotion's aesthetic options can help your building make a dramatic statement.

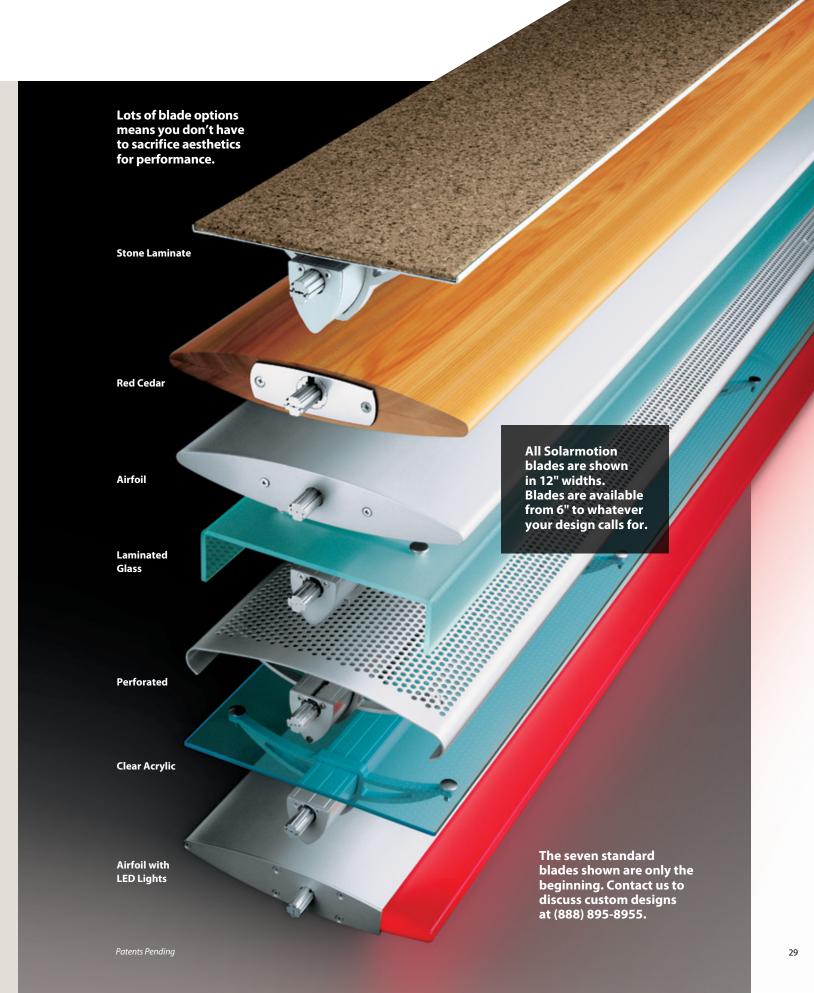
Looks and works great both day and night

Solarmotion Dynamic Solar Facades become an integral part of any building facade and are the single most important exterior design element. That's why C/S offers specifiers a limitless selection of blades, mullions and finish options. The Solarmotion Dynamic Solar Facade system is completely flexible: blades or mullions can be oriented vertically or horizontally; the system can be mounted flush or extended off the fascia; and we can even light the system. And C/S has the proven engineering expertise to provide you with exactly what you want; call (888) 895-8955 and speak to a Solarmotion expert.

Solarmotion blades can be backlit using our exclusive LED lighting system.



Mullion Options Select from a variety of mullion styles shown, or let C/S assist you with designing your own configuration. Bull Nose Flat LED Lights Colored Insert



Mounting a

Plan View

Solarmotion System

Solarmotion is engineered to provide the ultimate in appearance and performance.

C/S Solarmotion mullions are designed for typical spans. These Dynamic Solar Facades are generally attached to the building face with extruded standoffs to provide distance between the sunshade and the building. The mullions feature a clean, streamline design with limited or no exposed fasteners. Solarmotion's 3-way adjustable standoff accommodates construction tolerances in the **building.** See mullion design on right.

C/S offers several types of blade actuating systems for Solarmotion Dynamic Solar Facades. Designers can select from simple blade positioning versus time of day controls to sophisticated control systems that work with the building management system. We can even provide a control system designed for different building zones.

Solarmotion uses cutting-edge technology to turn your building into a dynamic facade able to monitor weather conditions, optimize functionality of HVAC systems, reduce energy consumption and intelligently adjust our sunshades or C/S Solarmotion Architectural Blinds to provide

the most comfortable conditions.

Solarmotion Intelligent Control Options



Building Management Control System

Programmed by a PC, this system receives climatic data from a weather station to provide user comfort and energy savings.



Solar Tracking Controller

This control system tracks the sun and positions the sunshade to block direct glare while allowing natural daylight into the interior.



Using radio technology, one remote control can control Solarmotion shades individually or collectively.



Solarmotion's operating system is so quiet you can't hear it inside the building, even if the windows are open.

Mullion Cover

Aesthetically covers the systems internal working parts. Several styles are available.

High Efficiency Motor

Controls individual or multiple sunshade units

Mullion Cap

Finishes off mullion. Prevents elements from affecting the working parts

Blade Linkage Allows blade to pivot Concrete freely within the 3-Way mullion housing Adjustment Between 1'-3' **Adjustable** Stand-Off Allows windows to

Concealed

Operates blades in unison and is not affected by the elements

Drive Arms

Our patented pinion system assures perfect blade alignment and has been extensively tested to work flawlessly for decades.

be cleaned and can be adjusted to meet

building tolerances

C/S Solarmotion Dynamic Solar Facades

are attached to the building with extruded

stand-offs that have no exposed fasteners.

3-dimensional adjustments to allow for

This unique attachment system incorporates

construction tolerance on the building's face.

C/S Solarmotion Dynamic Solar Facades can attach to all building facades including masonry and all types of curtain wall construction. All attachments are engineered to meet specific wind, snow and building loads.



C/S Solarmotion Dynamic Solar Facades are designed to let building occupants see out, so our attachment system projects off the building to allow window washers easy access to the windows.



Universal Remote

Solarmotion's motor is generally housed inside the mullion. The motor can also be located at the front or rear of the mullion for easy access.

Solarmotion Mullion

Structurally designed

to span floor to floor



3 Werner Way, Lebanon, New Jersey 08833 USA, 908-236-0800, 1-800-972-7214 895 Lakefront Promenade, Mississauga, Ontario L5E 2C2 Canada, 905-274-3611, 1-888-895-8955

• www.c-sgroup.com



For 60 years, Construction Specialties has been a leader in architectural specialty products, including: Acrovyn Wall and Door Protection, Pedisystems Entrance Flooring, Expansion Joint Covers, Cubicle Track and Curtains, Smoke and Explosion Venting Systems, Architectural Grilles, Architectural Louvers and Sun Controls.

We have operations throughout the world and can provide C/S Products virtually anywhere. For a complete list of our international locations, visit www.c-sgroup.com.



For the nearest C/S representative, or literature and samples, call toll free 800-972-7214 in U.S.A. and 888-895-8955 in Canada, or visit www.c-sgroup.com

