

VITRM



SMARTLAYER

Privacy. At the flick of a switch

Glass.



***SmartLayer* and *glass* go hand in hand.**

Our PDLC smart film turns any glass into a *switchable surface*, offering instant control over privacy. With the flick of a switch, you can adjust the opacity of your glass, making it clear for visibility or frosted for privacy.

From expansive glass facades to sleek partitions, curved windows, glass doors, and even skylights, no glass surface is too large, too small, or too intricate for SmartLayer.

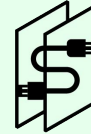
***Privacy?* Not a problem.**

Unique

SmartLayer stands
out from the crowd.



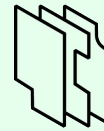
Easy Application



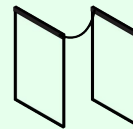
Plug & Play



Retrofittable



Made to Measure



Scalable System



Hygienic



*Compliant **

* UL, FCC, ASTM E84 Certified

The Film.



Refined, Innovative
Design. Retrofittable to
any glass pane.

Material

Anti Scratch finish.

Power

Plug and play system.

Install

Self adhesive with
pre-installed power bar.

Colour

Power Rail colour options to
suit any space.



The System.



Hinged Doors

SmartLayer seamlessly integrates with hinged door systems.

Connector Cables

Seamlessly integrated into the ceiling or trunking for a clean finish, with push-fit design for easy installation.

Control Module

Compact size suitable for placement behind panels or *above ceilings*.

Sliding Doors

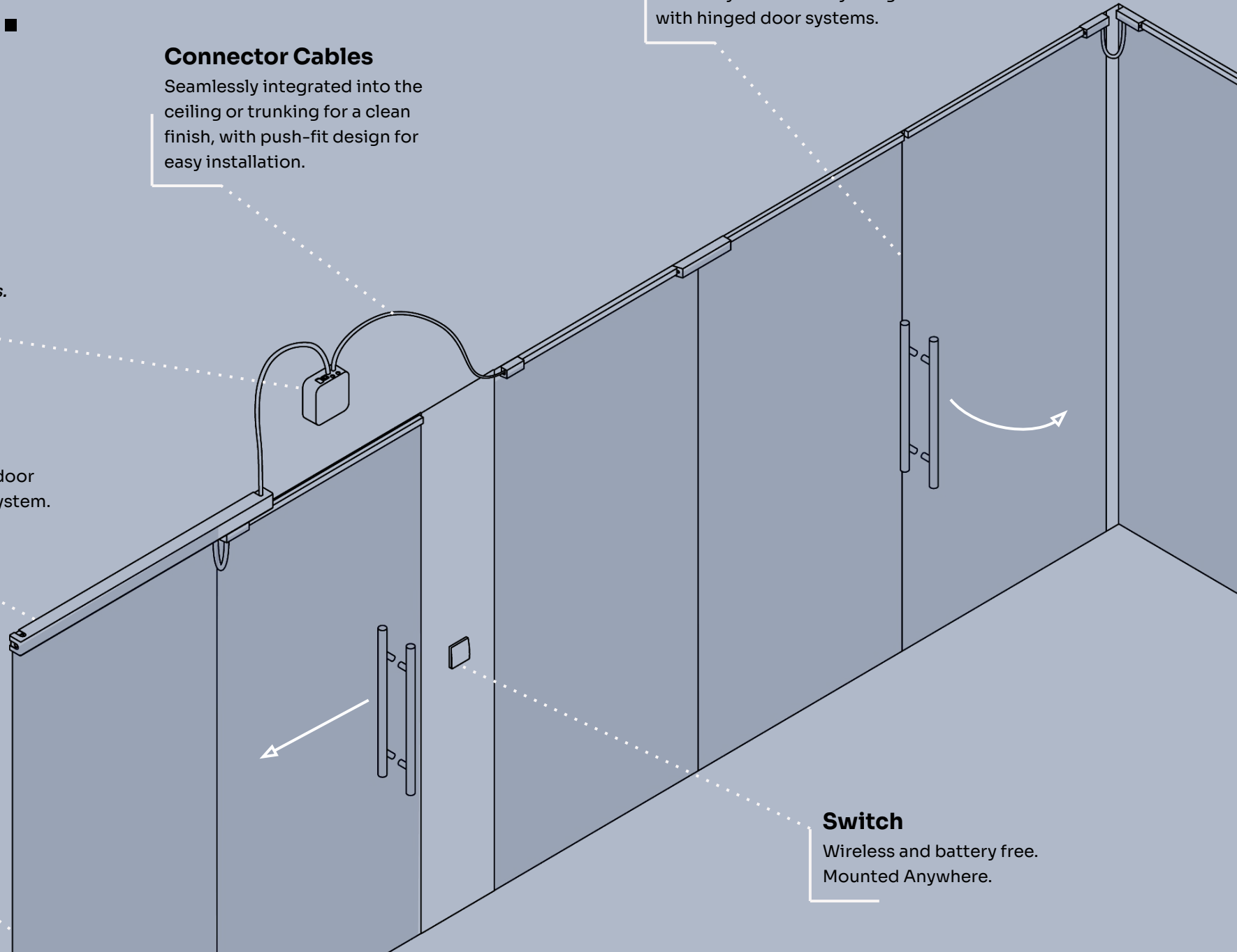
SmartLayer integrates seamlessly with sliding door systems, using our rail system.

Switchable Panels

Film installed on glass panels.

Switch

Wireless and battery free.
Mounted Anywhere.



The Power Rail Finishes.

White

Black

Silver

Grey



Built for ease.

Installing SmartLayer is simple. With our *Plug & Play system*, there's no need for a certified electrician.

Retrofitting to your existing glass? Simple and hassle-free.



Easy Application



Retrofittable



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Scalable system





SmartLayer is *certified.*

With SmartLayer, safety and quality are our top priorities, which is why our entire product system is fully UL certified, setting us apart in the marketplace. SmartLayer meets the highest standards of safety and performance, with certifications such as UL 962 (Household and Commercial Furnishings) and UL E538104 (Electrified Glazing), providing confidence for both residential and commercial applications. In addition it is Class A fire rated (ASTM E84) and FCC tested.



Explore **SmartLayer** **use cases.**



Architectural Walls

Shown on Steelcase Everwall system

SmartLayer effortlessly integrates into any office environment, offering the flexibility to provide privacy when desired and openness when needed, thanks to our innovative PDLC film technology.



SmartLayer range includes fully integrated systems for sliding and hinged doors.

Architectural Walls

SmartLayer can be paired with custom graphics applied to the reverse side of the glass, creating a captivating and dynamic switching effect.

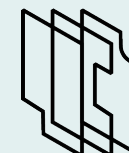




Adapting to complex glass architectural systems is integral to what makes SmartLayer unique.



Retrofittable

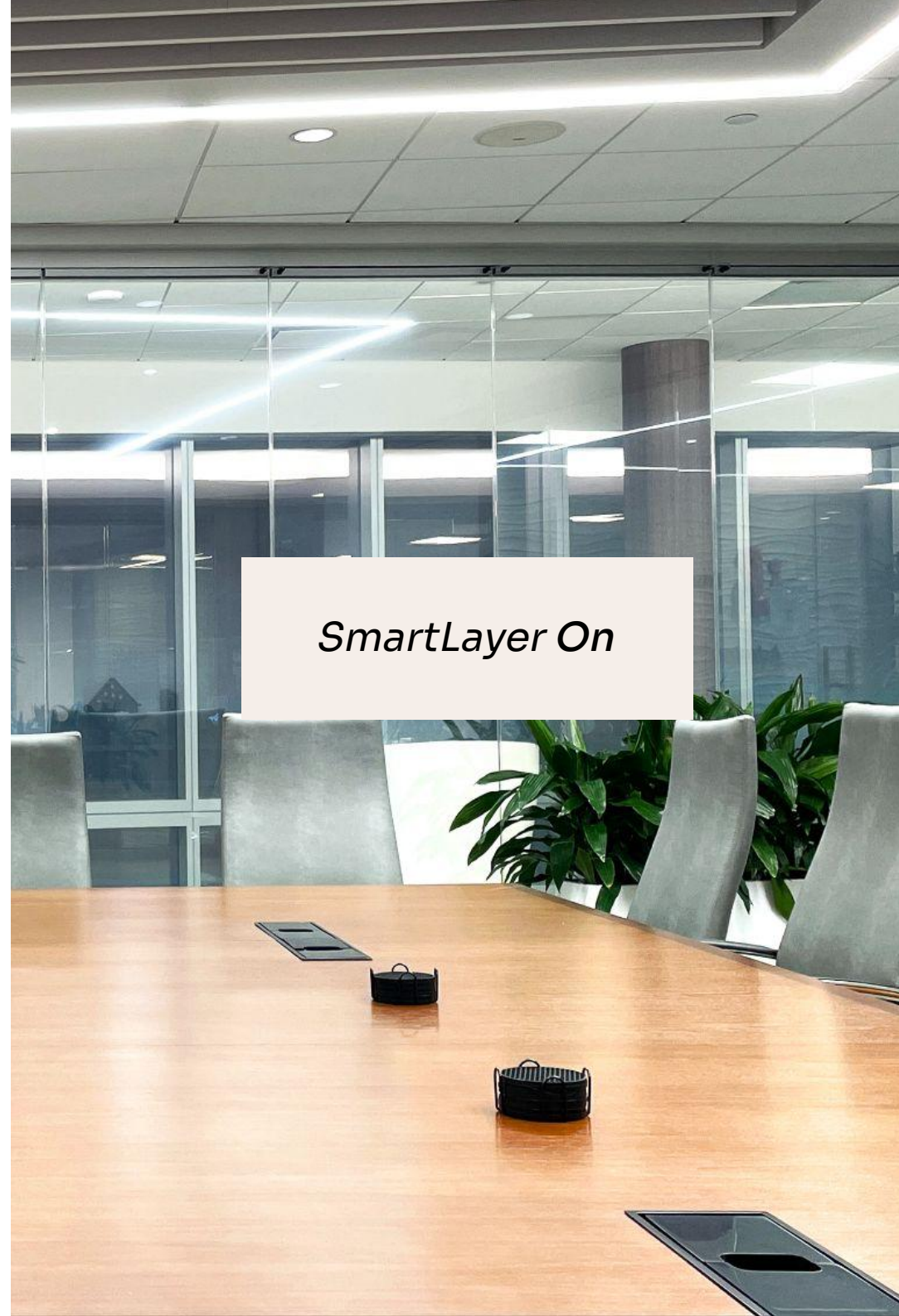


Made to Measure

Architectural Walls

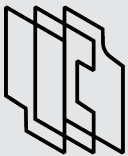
SmartLayer enhances boardrooms with privacy, design, and flexibility. Applied to glass walls, partitions, and doors, it transitions from transparent to opaque at the push of a button, ensuring privacy while preserving natural light and openness.





Architectural Walls

Any retrofit is possible with SmartLayer. In this private office, the film was expertly custom-cut to accommodate the unique features of the glass doors, including handles and hinges. This ensures that privacy is tailored to the exact specifications of the space, going beyond simple squares and rectangles for a perfect, made-to-measure fit.



Made to Measure





Architectural Walls

Shown on Steelcase VIA wall system

SmartLayer seamlessly integrates into private offices, offering custom solutions that go beyond film installation. We design components that cover and conceal cables, ensuring an elegant, streamlined finish tailored to your space.







Telemedicine

Shown on Steelcase Ocular View

SmartLayer paired with Steelcase Ocular View provides physicians and patients with enhanced visual privacy during telemedicine consultations.



Retrofittable



Meeting Pods

Shown on Orangebox Air3

SmartLayer seamlessly retrofits to commercial pods, transforming the privacy experience and elevating user interaction with a modern, design-driven approach.



Nursing Station

Shown on Steelcase Montage

SmartLayer can be effortlessly installed at nursing stations, offering immediate privacy when needed or signaling station availability. Designed to maintain a clutter-free environment, we've integrated concealed cable connectors to streamline cable management and enhance the station's aesthetic.



Easy Application







Emergency Department

SmartLayer is a fully adaptable solution, tailored for any environment. In Emergency departments it integrates seamlessly with the breakout and sliding door systems, ensuring privacy in every scenario. With its hygienic, easy-to-clean surface and full compliance with hospital regulations, SmartLayer is the ideal choice for clinical settings.



Compliant



Hygienic





1

Making Immersive Happen
The following are the top 10 ways to make
immersive happen in your organization.

Rank	Way
1	Use a variety of media to tell your story.
2	Use a variety of media to tell your story.
3	Use a variety of media to tell your story.
4	Use a variety of media to tell your story.
5	Use a variety of media to tell your story.
6	Use a variety of media to tell your story.
7	Use a variety of media to tell your story.
8	Use a variety of media to tell your story.
9	Use a variety of media to tell your story.
10	Use a variety of media to tell your story.



Emergency Department

Integrating SmartLayer into emergency departments requires careful design consideration to ensure both ease of use and efficient installation. In addition, the plug-and-play functionality means a quick and straightforward setup, allowing installation teams to complete the process with minimal disruption to departmental operations.



Easy Application



Plug & Play

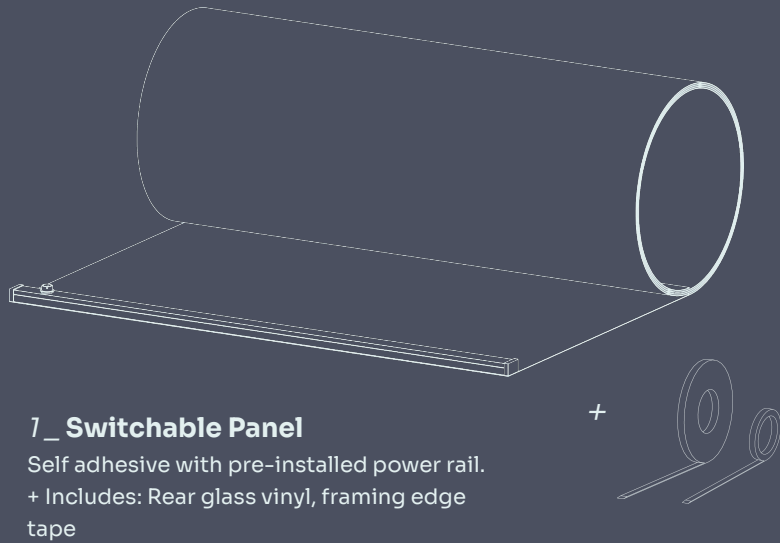
Observation Windows

Integrating SmartLayer into MRI observation windows provides unparalleled privacy benefits, ensuring patients' confidentiality during procedures while maintaining a comfortable and discreet environment.



System Components.

Building a SmartLayer system to your specific needs is made simple.



2_Connector Cable

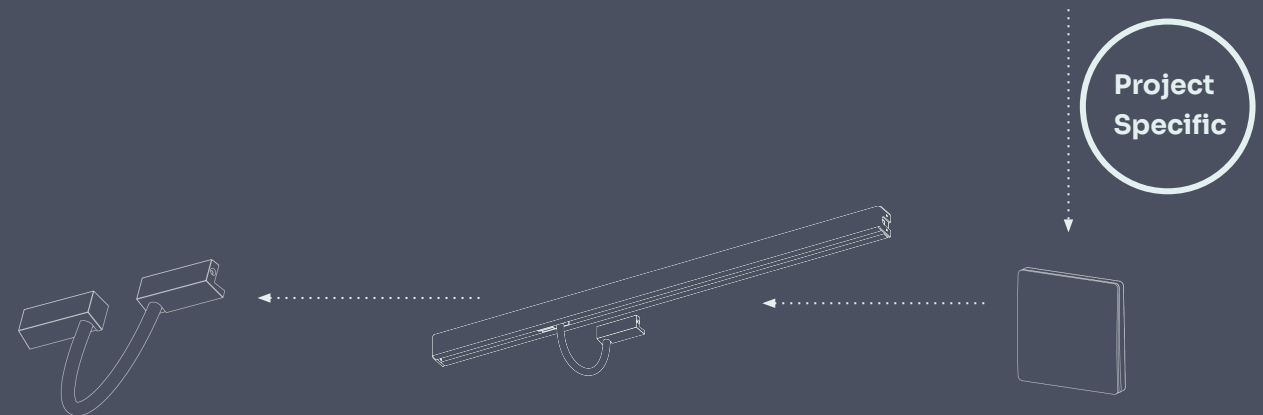
Plug & play cable available
in various sizes to suit
needs

3_Control Module

Supports up to 4 Panels
in parallel.
+ Includes 1 x Switch

4_Power Cable

IEC C13 USA
Various sizes available



7_ Hinged Door

A hinged door system is available when needed for functionality.

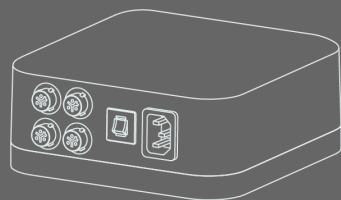
6_Sliding Door

A sliding rail system is available when needed for functionality.

5_Extra Switches

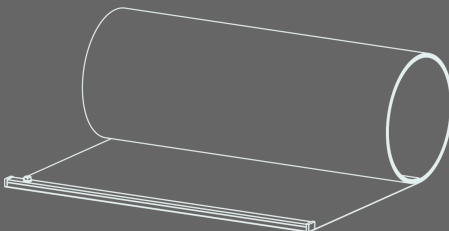
Wireless, battery-free, wall mounted. Extra switches available on request to increase switching capacity.

Technical Specs.



Power Supply Unit

Type:	IEC Class II
Input voltage:	110 VAC
Input current:	6 A
Output voltage:	45 VAC
Max Output current:	1 A
Frequency:	50 – 60 Hz
Output capacity:	50 VA
Controlling frequency:	433 MHz
Enclosure material:	PC UL94 V-0 (fire)
Enclosure Size:	6.3 x 6.3 x 2.8 in
Enclosure Weight:	3.4 lb



Panel

Single power bar

Input voltage:	45 VAC
Output voltage (to film):	45 VAC
Output current (max):	1 A
Output capacity:	50 VA
Size:	0.63 x 1 x (3-118)''
Material:	UPVC

Double power bar

Input voltage:	45 VAC
Output voltage (to film):	45 VAC
Output voltage (to outlet):	45 VAC
Output current (max):	1 A
Output capacity:	50 VA
Size:	0.63 x 1 x (3-118)''
Material:	UPVC



Switch

Switch Type:	Push button switch
Number of keys:	1 key
Power mode:	Kinetic self-power (no battery)
Operational life:	200,000 switch cycles
Operating frequency:	433MHz
IP Rating:	IP67
Control distance:	260' (outdoor), 82' (indoor)
Control Method:	Pairing with controller
Installation:	3M tape (supplied)
Working Temp:	14°F ~ 104°F
Warranty:	3 Years
Switch Size:	3.4 x 3.4 x 0.7 in

Product Compliance

Fire performance:	ASTM E84 Class A
UL:	UL 962 (Household and Commercial Furnishings), UL E538104 (Electrified Glazing)
FCC:	Complies with UL 60601-1 (medical electrical devices) EMC requirements



Technical Specs.

Item		Mode	Specification	Testing Standard
Optical parameters	Visible Light Transmittance	ON	>88%	GB/T 2410-2008 spectrophotometer
		OFF	>60%	
	Parallel Light Transmittance	ON	>66%	GB5317.2-2002
		OFF	<1.5%	
	Haze	ON	<3%	GB/T 2410-2008 spectrophotometer
		OFF	>92%	
	Visual Angle	ON	>160°	Visual
	Blocking of UV light	ON	>99%	N/A
		OFF	>99%	N/A
	Blocking of IR light	ON	>30%	N/A
		OFF	>90%	N/A
Electrical Parameter	Working Voltage	ON	45V AC	Multimeter
	Saturation Voltage	ON	<36V	
	Response Time	OFF-ON	<20ms	Liquid Crystal Multi-parameter Electrical Measuring Instruments
		ON-OFF	<10ms	
	Power Consumption	ON	<0.5W/ft²	Multi-parameter Electrical Measuring Instruments

Mechanical Parameter	Thickness	16 mil	N/A
	Adhesion	1135 oz/in²	N/A
Environmental Parameter	Working Temperature	-4°F - 158°F	Constant Temperature and Humidity Testing Machine
	Storage Temperature	-4°F - 176°F	
	Service Life	(ON)>10 years	GB18910.5-2008
	Switch Frequency	>80 million times	



Can SmartLayer be cleaned?

We advise the SmartLayer Film should be cleaned with a soft, non-abrasive cloth to avoid scratching the protective covering. Any general disinfection agent or window cleaner will be suitable for cleaning and will not damage the polyester surface.

Is SmartLayer fire-rated?

Yes, SmartLayer meets the Class A standard as per ASTM E84. Furthermore the whole system is UL Listed. It is the only UL-listed, pluggable switchable opacity film on the market.

Can I have multiple switches for one room?

Yes, we can program multiple switches to operate one space. Each control module comes with one switch. Additional switches can be added at the time of order since they are paired during manufacturing.

What happens in case of a power outage?

The off state of the film is opaque, so in a power outage all windows will be opaque to ensure privacy. Due to the nature of the product, this is not something that can be adjusted.

What happens if the film is damaged, will the entire unit fail?

No, the area surrounding the damage will continue to operate as normal.

Can SmartLayer be applied to exterior facing windows?

Yes, it can be installed on the interior side of an exterior window.

How much power does SmartLayer consume?

SmartLayer operates on a low voltage which consumes $<0.5\text{W}/\text{ft}^2$ of power.

Can SmartLayer be applied over safety films?

Yes, SmartLayer can be installed on top of any smooth surface without interference.

What is PDLC Film?

PDLC film is a smart film that uses polymer dispersed liquid crystals to control light transmission. When an electrical current is applied, the liquid crystals align, making the film transparent; when off, they scatter, making the film opaque.



Can the SmartLayer power module be installed above a suspended ceiling?

Yes, many customers install SmartLayer with the power module hidden above the ceiling and run the connector cables down through the ceiling to the glass.

NFPA 70 National Electrical Code, a set of advisory standards created in consultation with ANSI, cover a number of provisions for installation that should be noted.

110.3 (b) Installation and Use. Equipment that is listed, labeled, or both, or identified for a use shall be installed and used in accordance with any instructions included in the listing, labeling, or identification.

This provision within the general requirements of electrical installations therefore requires SmartLayer to be installed as per the UL listing E538104.

The NEC further discusses the use of flexible cords and cables. Section 400.10 governs the uses permitted and section 400.12 the uses not permitted; Unless specifically permitted in 400.10 flexible cords shall not be used for any of the following. This part of the code indicates that section 400.10 take precedence over section 400.12.

Within section 400.10 there are 4 exemptions that would apply to the use of flexible cord with SmartLayer therefore giving a specifically permitted use with precedence over 400.12.

The permitted uses are as follows:

(3) Connection of portable luminaires, portable and mobile signs, or appliances - SmartLayer is a portable appliance that can easily be removed.

(8) Appliances where the fastening means and mechanical connections are specifically designed to permit ready removal for maintenance and repair, and the appliance is intended or identified for flexible cord connection. - SmartLayer is a system designed for flexible cord connection. The pluggable system is specifically designed to permit ready removal for maintenance and repair.

(9) Connection of moving parts - When installed on a doorway the flexible cord is used to connect moving parts

(10) Where specifically permitted elsewhere in this code - Section 110.3 (b) requires SmartLayer as UL listed system to be installed as per the UL listing which involves the use of plugs and flexible cord.

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Explore SmartLayer
vitrm.com

Available in US & Canada from Steelcase
Steelcase.com

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