

Helios Solar Control Exterior Window Films
Retrofit glazing optimisation





Comfort, savings & protection from your existing windows

Modern glazing systems are key to the performance of buildings. Completely replacing the glazing is an option, but this can be costly and disruptive. The LLumar® window film portfolio can help enhance the performance of almost any glazing system, save energy, improve comfort, add safety and update aesthetics, making it an ideal solution for retrofit and new construction projects. Professionally installed with minimal disruption, it is an affordable alternative to replacement glazing and can offer significant savings and payback in as little as 3-5 years*.

Architects and building managers trust LLumar solar control film to help upgrade landmark buildings as well as embassies and other official government facilities throughout the world. LLumar solar control film can offer around the clock protection for nearly every type of business or location:

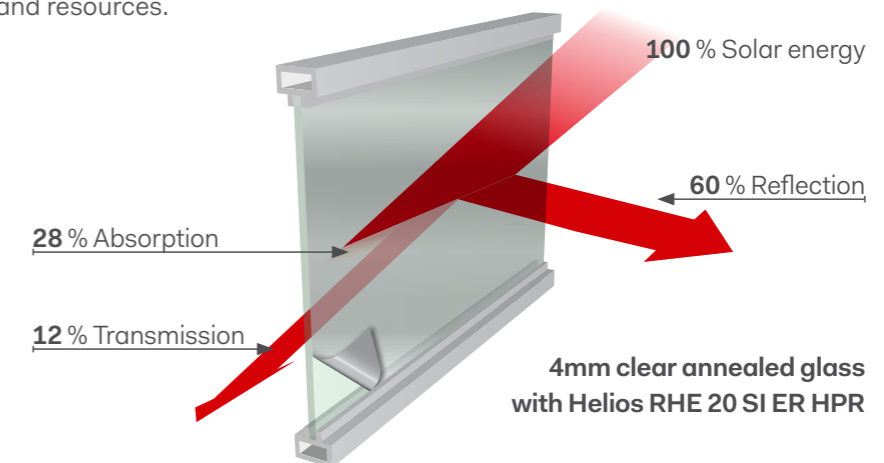
- Retail Stores
- Schools and Universities
- Office Buildings
- Airports
- Hospitals and Medical Centres
- Restaurants
- Hotels
- Museums
- Mass Transit Systems
- Government Facilities
- Homes

About LLumar Helios Solar Control Exterior Films

LLumar Helios films are designed for commercial and residential applications where comfortable room temperatures and energy cost reductions are needed. Through their external application, Helios solar control films help block the sun's energy before it enters the building.

However, exterior window film is also exposed to the weather constantly; that's why the Helios exterior coating technology is designed to help protect the integrity of the film against weathering. Helios technology includes hydrophobic (water repellent) and oleophobic (oil resistance) properties, which results in a durable and easy-to-clean product, backed by a Manufacturer's Limited Warranty**.

Frequently, window films need to be applied in sections on wide windows resulting in unattractive seams and joins. Our 72" (183cm) Helios films provide obvious advantages: easy application to most pane sizes, no unnecessary seams, shortened installation time and reduction of waste, saving both money and resources.



Change your view on solar protection.

RHE
Reflective
Film

VHE
Dual-Reflective
Film

NHE
Neutral
Film

THE
Light Solar
Control Film

XHE
Spectrally
Selective Film

What LLumar Helios Exterior Solar Control Window Films can do for you

This complete range of exterior solar control window films offers options that meet a variety of project requirements.

Help keep buildings cooler

By reducing solar heat, windows applied with LLumar Helios solar control window film can help “even out” the hot and cold spots throughout your building. The result is more satisfied tenants and greater employee comfort. When comparing costs, it's important to remember that the latest solar control window film technology is a fraction of what you would spend for replacement windows and works effectively to help reduce the HVAC load.

Help increase comfort & productivity

Applying window film to windows provides a cost-effective option that helps increase both employee and tenant comfort. In addition to reducing heat in your building, windows treated with LLumar Helios window film allow natural light in without glare and without obstructing the views to the outside. Leaving blinds and shades open reduces the need for lamps and overhead lighting – reducing costs further – while providing occupants with improved working conditions and increased productivity with less fatigue.

Help protect tenants and furnishings from harmful UV rays

Ultraviolet (UV) rays can cause damage to employees' or tenants' skin. In addition, they are also the leading cause of fading*** to interiors such as furniture, floorings, wall coverings, artwork and photographs.

While ordinary glass offers little to no protection from UV rays, window films do, and at a fraction of the cost of other UV-blocking alternatives. LLumar Helios solar control window film provide ultraviolet rejection by blocking more than 99 percent of harmful UV rays****.

Selecting the right Helios Solar Control Exterior Window Film for your needs

LLumar Helios solar control exterior window films are designed for demanding applications. Below you will find an overview of the benefits of the various products from the Helios range.

Helios RHE Reflective Series – living in comfort and privacy.

RHE films are an optimised solution for buildings with high solar heat gain and/or high cooling costs. A ‘one way’ mirror effect can be achieved under the correct lighting conditions.

Helios VHE Dual-Reflective Film – ultimate protection meets privacy.

Due to its dual-reflective properties, VHE film is an optimised solution for buildings with high solar heat gain and cooling costs, but where privacy is a requirement. Its construction is like mirror-glass – lower reflection towards the interior allows improved vision to the outside while preserving privacy.

Helios NHE Neutral Series – keeps you cooler and can help lower energy costs.

NHE films represent an optimised solution if solar control is needed with lower visible light reflectance. The neutral appearance offers a pleasant and discreet look that preserves the overall aesthetics of the building.

Helios THE Light Solar control Film- reduce the heat, not the visibility.

THE light solar control film helps reduce heat gain with high visible light transmission. It is a virtually invisible exterior solar control film – its very light blue tint complements natural blue/green colour of standard glass.

Helios XHE Spectrally Selective Film – transparency combined with high performance.

Our newest innovation is designed for buildings where a combination of low visible reflectance, high light transmission and substantial reduction in solar energy transmission are needed.



Let Helios **change** your view.

Up to
5°C
reduction of internal
temperature*

Cooling
42%
savings*

Simple
3.9 yrs
payback/
ROI*

Proven facts of Helios RHE 20 from University of Padua¹

Eastman Performance Films, LLC, the manufacturer of LLumar window films, commissioned Professor Michele De Carli and his research team at the University of Padua to conduct an independent study of the effects of using LLuma Helios Solar control Exterior Window Film RHE 20 SI ER HPR on a building in Padua, Italy: the MG Tower².

The study was based on a comprehensive three-year assessment of the building, including 450 days of consecutive monitoring of environmental conditions, investigation of the building's energy consumption over the three years, and analysis of the energy savings obtained. A key method used to assess the impact of the installed solar control film was the development of sophisticated computer simulations for energy use and lighting conditions as well as economic benefits, CO2 emissions reduction, thermal comfort and visual comfort.

These were calibrated based on data collected from the monitoring phase and from measured local weather conditions.

Detailed calibration was vital to ensure simulations properly represented the behaviour of the building before and after film was applied. In addition to the quantitative analysis techniques used, occupant surveys were undertaken to identify the perceived impact of the film on the building occupants.

The study shows the significant benefits of LLumar Helios RHE 20 SI ER HPR for saving energy, reducing CO2 emissions, improving thermal comfort, and controlling glare at the MG Building¹.

Energy:

- 3.9-year simple payback / return on investment
- 42 % annual savings on electrical energy used for air conditioning cooling
- Savings of €125.800 on energy costs over operational lifetime of the film
- Reduction of 46 tonnes annual CO2 emissions (according to EN 15603)
- Film was shown to be a better investment option than increasing HVAC capacity

Thermal Comfort:

- Reduction in indoor temperatures of up to 5 °C when HVAC cooling switched off
- Increased occupant satisfaction with the thermal environment
- Productivity savings estimated at €40 per employee per cooling month

Lighting and Glare:

- Significant reduction in glare conditions after film installation – comparable with blinds, but retaining view through the glazing to the outside
- Significant increase in useful daylighting conditions and in occupant satisfaction when glare conditions occur, but no negative impact during lower lighting levels of the year
- No measurable change in energy consumption from lighting use by occupants

¹ Referring to the LLumar study at the University of Padua, Italy. Benefits vary depending on building size, glazing area, geography, etc. For more information please contact your sales representative.

² The MG Tower is a 9 story building with over 1000 m² of modern solar control low-e glazing, which rejects a large part of the solar energy back to the exterior environment. This creates a greater challenge for solar control window film to improve glazing performance, save energy, and improve environmental conditions.

About the manufacturer

Eastman Performance Films, LLC is proud to have two of the largest and most integrated window and performance-coated film manufacturing sites in the world. With more than 60 years of experience in film production and technology, we have a deep and abiding commitment to operational excellence, developing products that respond directly to market demand.

We work directly with a variety of designers, engineers and customers to create products that improve the efficiency and performance of glass. We offer one of the industry's widest arrays of film technologies, produced in a clean-room environment to help ensure high quality products.

Contact us with your building challenges and questions. We are here to help. We can work with your building's glazing needs and your budget goals to help you select the right window film.

EASTMAN



* Energy savings and payback are dependent on several factors and results can vary. Payback depends on many factors and is typically three to five years for most buildings. **Certain restrictions apply; see dealer for warranty details. ***Films do not eliminate fading - they help reduce it. UV rays and heat are contributing factors to fading, but other factors exist. ****300-380 nanometres
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