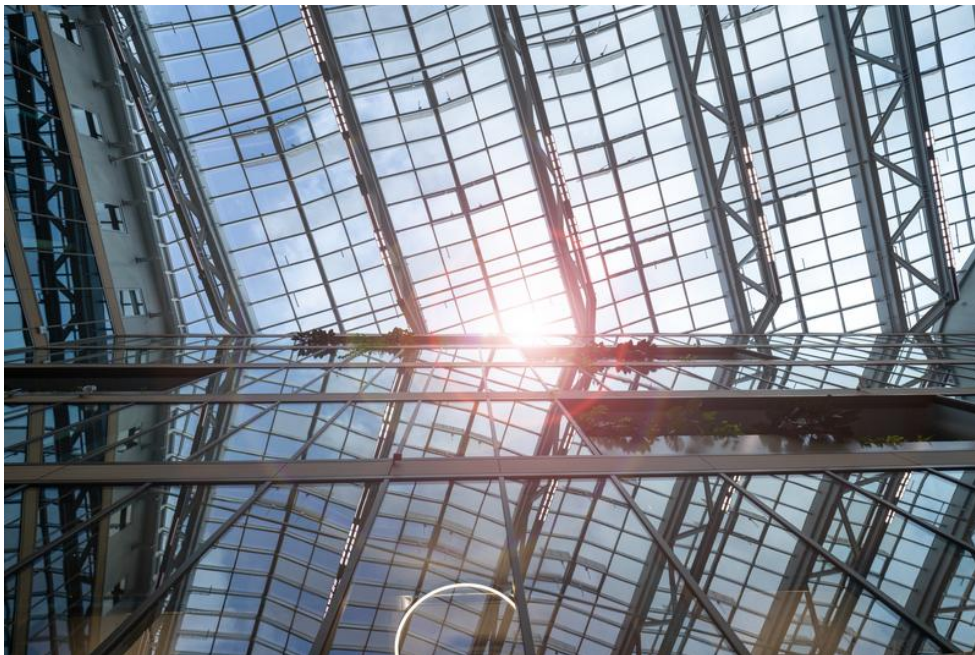


Heatwaves put buildings under pressure – LAMILUX provides the answer

Why thermal protection starts on the roof

Rising temperatures and increasingly frequent heatwaves are making summertime thermal protection a key consideration in building design. As interior spaces in offices, schools, industrial facilities, and public buildings become more prone to overheating, the demand for bright, daylight-filled environments continues to grow. LAMILUX demonstrates how these two requirements can be successfully combined through holistically designed daylight systems.



Targeted ceramic fritting integrated into the LAMILUX Glass Roof PR60 minimises solar heat gain at the EUREF Campus Düsseldorf

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Hot summers are no longer the exception. Buildings with large, glazed areas in particular face the challenge of bringing sufficient daylight into interior spaces while preventing overheating. When indoor temperatures rise too high, not only is occupant comfort reduced, but the demand for energy-intensive cooling often increases as well.

“Effective summertime thermal protection is not achieved through a single component,” explains Rebecca Freimann, Product Manager at LAMILUX. “The key lies in the interaction between glazing, solar shading, ventilation, and intelligent control systems. Only when these elements are carefully coordinated can comfortable indoor temperatures and a high quality of daylight be maintained over the long term.

Harnessing daylight, limiting heat gain

Daylight provided through the roof offers significant potential for creating bright and attractive interior spaces. At the same time, glass roofs, rooflights and flat roof windows are exposed to high solar loads, particularly during the summer months.

To ensure that daylight does not become a source of excessive heat gain, glazing, construction, and solar shading must be carefully coordinated from an early stage.

For this reason, LAMILUX relies on integrated glazing concepts for its skylight systems that reduce solar heat gain while still enabling elevated levels of daylight transmission. Combined with thermally optimised upstands and the minimisation of thermal bridges at the roof interface, this creates a system that supports both energy efficiency and occupant comfort.

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Solar shading can be integrated into the glazing

Effective summertime thermal protection begins wherever solar energy meets the building envelope. In addition to external shading systems, which reduce solar radiation before it reaches the glass, modern skylights offer further opportunities to minimise heat gain.

LAMILUX demonstrates how this can be achieved: ceramic fritting integrated into the glazing, for example, can reduce direct solar radiation while ensuring an even distribution of daylight within the interior. Integrated photovoltaic modules can also perform a dual function by shading the areas below while simultaneously generating renewable electricity. In addition, light-guiding systems incorporated into the glazing can direct daylight deeper into the building, helping to reduce glare. Depending on the building type, its use and orientation, these solutions can be combined to meet individual project requirements.



Integrated photovoltaic glazing in the LAMILUX Glass Roof PR60 provides renewable energy generation, natural daylight, and pleasant shading in a single solution.

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When skylight systems actively contribute to cooling

Even the most effective solar shading cannot prevent every source of heat gain. People, machinery, lighting, and technical equipment continuously release heat into interior spaces. To maintain a comfortable indoor climate, this heat must be removed in a controlled manner.

This is where openable skylights demonstrate a second key advantage. Glass roofs, rooflights and flat roof windows can be used not only to provide daylight, but also to support natural ventilation. As warm air rises, it can be discharged through openings in the roof, while cooler outside air is drawn into the building. This principle is particularly effective when used for night-time cooling. During the cooler night hours, heat that has accumulated in the building throughout the day can be released, helping to lower indoor temperatures. Sensors and intelligent control systems ensure automated and demand-driven operation, optimising the process according to the building's requirements.



Ventilation sashes can be individually configured and installed directly next to one another within the LAMILUX Modular Glass Skylight MS78.

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Taking a comprehensive approach to building performance

Sustainable and energy-efficient indoor climate control cannot be achieved by considering individual measures in isolation. Daylight, solar shading, ventilation, and thermal protection all influence one another and therefore need to be planned as part of an integrated system.

LAMILUX develops skylights in which glazing, solar shading, opening elements, drives and control systems are carefully coordinated. Whether for an atrium, office building, school or industrial facility, the aim is to create bright and comfortable interior spaces, reduce cooling demands and maintain a pleasant indoor climate, even during the hottest summer months.

“Demand for solutions that support summertime thermal protection is growing noticeably,” says Rebecca Freimann. “As periods of extreme heat become more frequent, the question of how buildings can remain comfortable without requiring important levels of energy consumption is becoming increasingly important. This is precisely where LAMILUX skylights come into their own, helping to create comfortable indoor environments while supporting efficient building operation.”

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LAMILUX Heinrich Strunz Group, Rehau

Rooflights, glass roofs and dome rooflights: the LAMILUX Heinrich Strunz Group is one of Europe's leading manufacturers of skylight systems. Its daylight solutions enable the efficient use of natural daylight in a wide range of building types. Special smoke and heat exhaust ventilation systems also provide safety in the event of fire and therefore form an essential part of modern fire protection concepts. LAMILUX is equally renowned for its smoke extraction solutions for buildings.

Founded in 1909, the family-owned medium-sized company is also one of the world's largest manufacturers of carbon fibre-reinforced and glass fibre-reinforced composites. These materials provide strength, lightweight construction, and impact resistance in applications such as roof, wall, and floor cladding for commercial vehicles.

LAMILUX strives to be both an innovation leader and a performance leader in all areas relevant to its customers. Headquartered in Rehau, Germany, the company is led by Dr Alexander Strunz, Johanna Strunz and Dr Sophia Strunz, representing the fourth generation of the family. In the 2025 budget year, LAMILUX employed around 1,300 people and generated revenue of approximately €344 million.

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