

# PHOTOVOLTAIC SUNSHADES

## ML LAMELA FIXED/MOBILE

Sunshades are important architectural details that have the incredible potential to create the outer appearance of buildings as well as the interior design aesthetics. They are also key to climate comfort and the energy efficiency of buildings.

Before the ML LAMELA system, the functionality of traditional sunshades was limited to the reduction of undesirable heat gains and protection from excessive exposure to sunlight indoors. The innovative ML LAMELA 380F and 429F fixed and mobile sunshades, which replace the traditional aluminium slats for photovoltaic modules, are sources of clean renewable energy and form a completely novel architectural function: to absorb solar energy and convert it into electric power.

The ML LAMELA system of photovoltaic lamellas are installed on the system framework, made from an aluminium profile grating. All aluminium profiles are rectangular with bevelled edges. The load-bearing members are aluminium posts anchored via brackets directly to the building wall or the post and beam façade framework. The horizontal aluminium profiles that span the posts serve as the mounting point for the photovoltaic lamellas. The photovoltaic lamellas are installed on the horizontal profiles using die-stamped aluminium brackets. The ML LAMELA fixed sunshade systems allow position adjustment of the lamellas

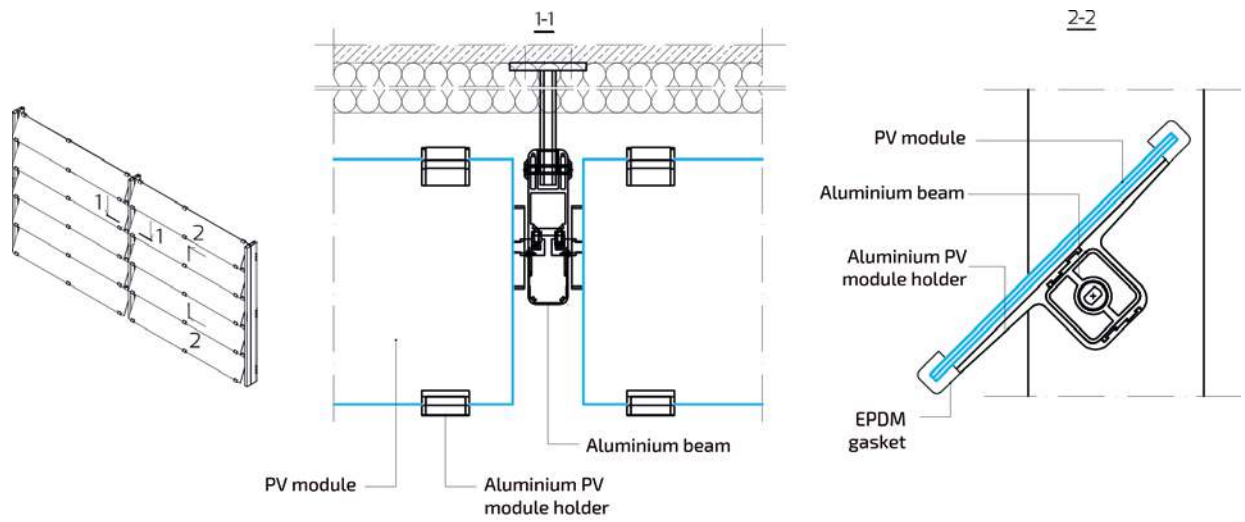
at a pitch of 10 degrees. The mobile sunshade systems for lamella tilt control feature actuators and drive transmission units integrated within the support structure posts. An optional package of sensors (temperature, illumination, GPS and wind speed), forming a weather station and complemented by a pre-programmed PLC (programmable logical controller), can automatically tilt the sunshade PV lamellas. The photovoltaic cells available and applied in the sunshade lamella system are 1st generation cells (poly- and mono-crystalline, including back-contact cells) and 2nd generation cells (thin layer) of various level of transparency and available in a wide colour range for even the most sophisticated of architectonic concepts.

The ML LAMELA sunshade systems make brick wall façades appear optically lighter, and usually create the primary architectural value of the structure. When installed on glass façades, the systems provide a cohesive and harmonious appearance that further highlights the uniqueness of the design. Whatever the installation background, ML LAMELA sunshade systems are clean sources of renewable energy that improve building energy efficiency over that obtainable from traditional sunshades. This adds value by ensuring higher building ratings under BREEAM® and LEED® compliance certification. The performance and architectural values already qualify the ML LAMELA sunshade systems a necessity in modern building architecture.

## System technical specifications

Unit power	max. 170 Wp/m
PV cell efficiency	max. 22.5%
Module types	Monocrystalline incl. back-contact
	Polycrystalline
	Thin layer
Optional	Bifacial
	Transparent
	NoFrost
	Printed

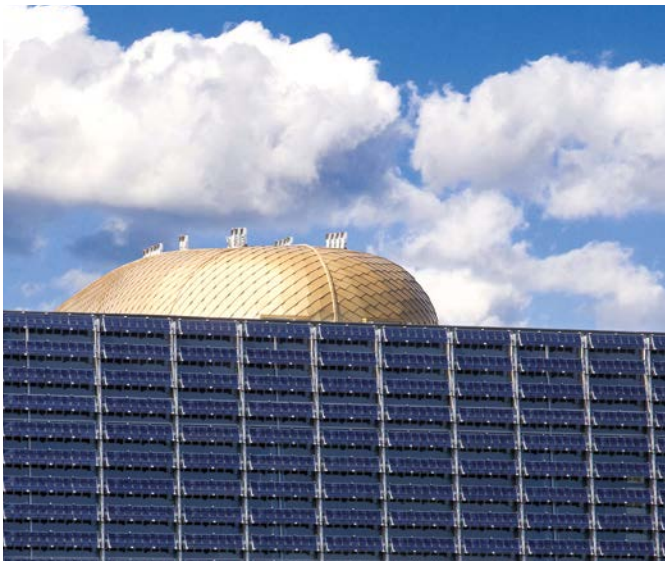
Substructure material	Aluminium AW 6063 /AW 6060 alloy
Support post width	50 mm
Max. support post spacing	4000 mm
Structure colour	See RAL palette
Lamella width	380/429 mm
Lamella thickness	3 to 20 mm
Lamella tilt adjustment	10 deg. pitch - Manual/smooth power actuators



Gliwice / City Road Authority



Budomierz / Roadway State Border Checkpoint



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Krakow / Jagiellonian University