



SOLAR ENERGY **PHOTOVOLTAIC ROOFING**

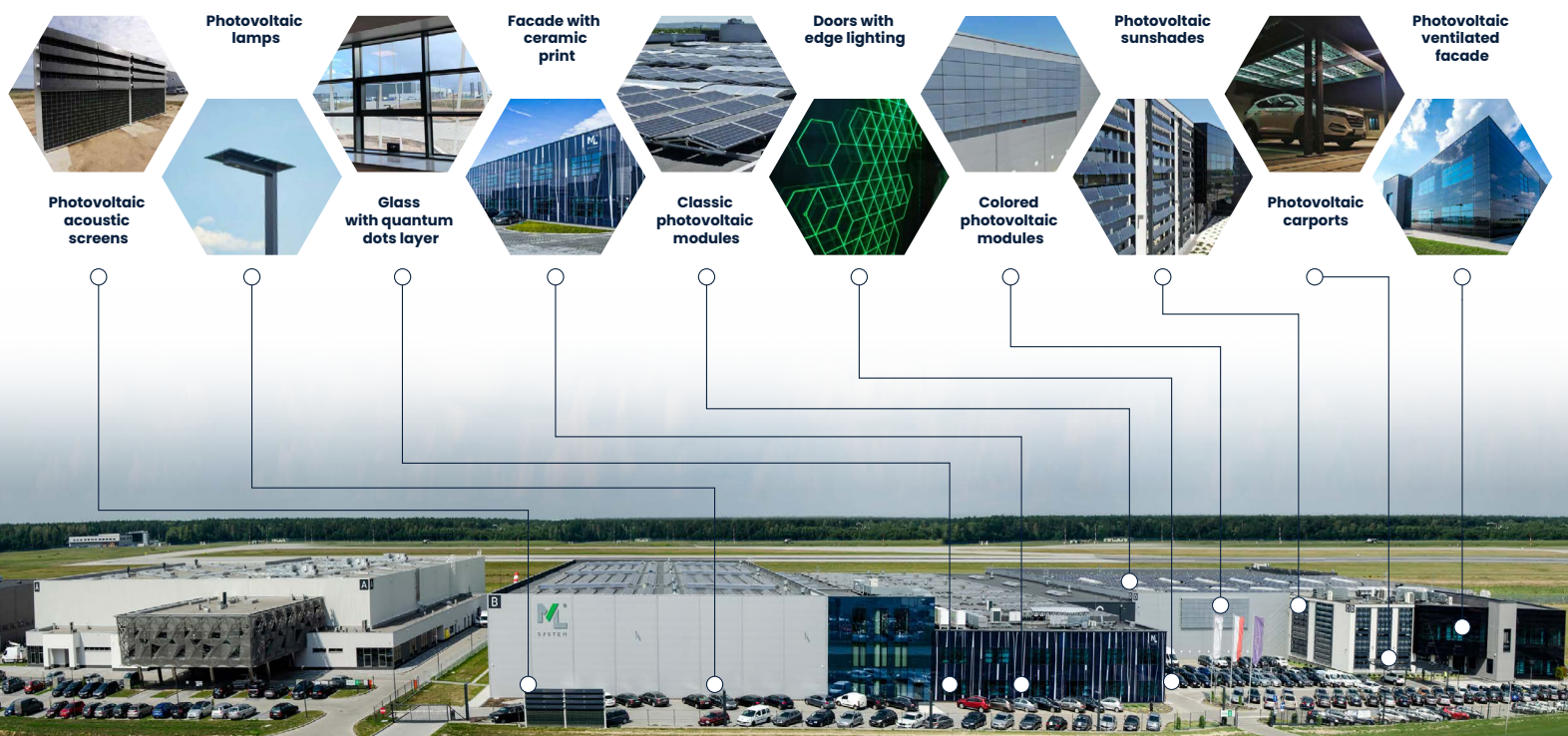


The ML System company is a Polish manufacturer that has been developing groundbreaking technologies in its own specialized research and development center for over 15 years, which are an ideal response to the current needs of the energy transformation process – the transition from conventional to renewable energy sources. The solutions offered by ML System, apart from the function of generating free electricity, are also an aesthetic complement to the architecture, which is the only element of the investment that guarantees the return of the incurred costs. Buildings and vehicles powered by green energy are both measurable financial benefits and a significant step towards environmental protection. ML System products are very popular among customers both on the local and global market – especially in countries where care for the environment and knowledge of the economic benefits of using renewable energy solutions are important.

Protection of the natural environment is for ML System one of the integral values inscribed in the Company's activities in accordance with the motto:

WE ARE CHANGING THE WORLD FOR FUTURE GENERATIONS

The building of the ML System headquarters is equipped with the company's BIPV, PV and Smart City products that generate clean, green energy from the sun



ML System Headquarter

WE ARE CHANGING THE WORLD FOR FUTURE GENERATIONS

ML System is both a manufacturer and distributor of the offered solutions, a leader on the local market and a key global manufacturer of BIPV (photovoltaics integrated with construction). The company also offers classic photovoltaic products, smart city solutions, specialized glass Smart Glass and products of the New Quantum Era – transparent windows that generate electricity.



The ML System company has been operating on the market for over 15 years, has highly developed distribution channels and strategic cooperation with key business partners. It constantly expands the range of export activities. The company's experience allows for the design and implementation of individual and highly innovative solutions tailored to the needs of a wide range of recipients. ML System also offers full comprehensiveness of the provided services – from initial consultation and advice, through production, assembly, to implementation and after-sales service.

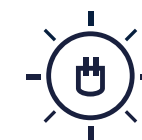
They trusted us, among others.



BENEFITS OF ML SYSTEM SOLUTIONS



RETURN ON INVESTMENT



ENERGETIC SAFETY



SAVINGS



PERSONALIZATION



ENVIRONMENTAL PROTECTION

WE ARE CHANGING THE WORLD FOR FUTURE GENERATIONS



Multi-station carport in a cascade system



: In order to meet the electromobility trend, ML System offers carports adapted to the needs of electric and plug-in hybrid cars. The green energy produced also allows you to power other electric vehicles, such as scooters, bicycles. CARPORT, i.e. photovoltaic roofing for parking spaces, is a functional and aesthetic solution designed for city car parks and bicycle shelters. The use of solar energy to power the car or other electrical devices in the building allows you to save on electricity costs, while protecting the environment.



2 parking spaces carport Prestige



Carport Prestige with illuminated engraving



Multi-station roofing in a cascade arrangement



2 parking spaces carport SunEnergy



The structure of the roof is made in a sealed option, protecting cars against sunlight and precipitation. The combination of modules with the No-Frost function eliminates the need to remove snow from the roofing, protects against the possibility of icicles being a threat to people and the risk of damaging the vehicle, as well as enables the production of electricity in the winter months (in periods when standard photovoltaic solutions lose their efficiency due to snow).



PROTECTION AGAINST
HARMFUL ATMOSPHERIC
AGENTS



SELF SNOW
CLEARING



DURABILITY
AND STABILITY



GREEN
ENERGY



AESTHETICS
AND DESIGN



LEAK
TIGHTNESS

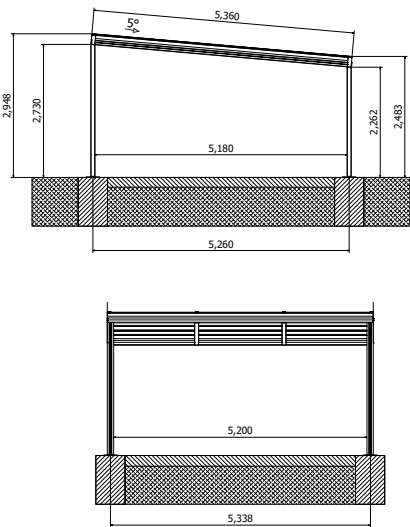


Single car space carport with car charger

CARPORT PRESTIGE

RATED POWER UP TO: **4,45 kWp**
AMOUNT OF ENERGY PRODUCED: **~4,00 MWh/year***

The standard includes: aluminum construction, transparent glass/glass photovoltaic modules, inverter, electrical protection, mounting elements to the ground, sealing elements, assembly instructions, profile masking.



*for the Rzeszów location – Prestige 15 version

CARPORT PRESTIGE is a photovoltaic parking roof that combines aesthetics with functionality. The modern design will beautify the surroundings, and the precision of workmanship will guarantee safety for users. CARPORT PRESTIGE not only provides protection against external factors but, above all, generates environmentally friendly green energy.

- Optional Features:
- **Charger** – for electric vehicles
 - **Smart Light** – modules with integrated LED lighting operating in ON/OFF mode or with variable intensity in DIMM mode
 - **NoFrost** – Heated modules prevent the accumulation of snow and ice
 - **Engraving** – Additional visual and lighting effect

Construction parameters:	Prestige 15	Prestige 10
Width	5460 [mm]	3666 [mm]
Length	5360 [mm]	5360 [mm]
Height	2730 / 2262 [mm]	2790/2316 [mm]
Number of PV modules	15 pcs.	10 pcs.
PV module dimensions	1030 x 1768 [mm]	
Axial spacing of foundations	5338 x 5260 [mm]	3537 x 5260 [mm]
Material	aluminum	
Color	RAL 7016 (basic)	
Electrical parameters	Prestige 15	Prestige 10
Rated Power	4455 [Wp]	2970 [Wp]
Max. Allowed voltage	1000[V]	
Energy production forecast on an annual basis	4,00 [MWh]	2,67 [MWh]
AC voltage	400/230 [V]	
Strength according to Eurocode standards		
Snow	1,5 [kN/m²]	
Wind (wind pressure-suction)	wind zone	
It is possible to use reinforcements for higher loads.		



PV modules glass – glass on the carport



2 parking spaces carport Prestige

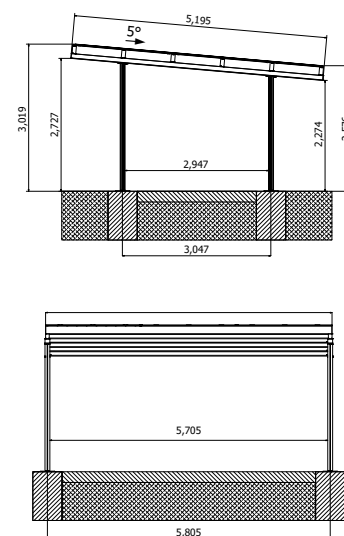


2 parking spaces carport SunEnergy

CARPORT SUNENERGY

RATED POWER UP TO: **4,45 kWp**
AMOUNT OF ENERGY PRODUCED: **~3,60 MWh/year***

The standard includes: aluminum construction, transparent glass/glass photovoltaic modules, inverter, electrical protection, mounting elements to the ground, sealing elements, mounting instructions, profile masking.



*for the Rzeszów location – SunEnergy 15 version

The ergonomic aluminum construction of CARPORT SUN ENERGY together with glass/glass photovoltaic modules ensures transparency, and the precision of workmanship guarantees the safety of users. CARPORT SUN ENERGY provides protection against external factors, but above all, it produces green energy that is environmentally friendly.

Optional Features:

- **Charger** – for electric vehicles
- **Smart Light** – modules with integrated LED lighting operating in ON/OFF mode or with variable intensity in DIMM mode
- **NoFrost** – Heated modules prevent the accumulation of snow and ice
- **Engraving** – Additional visual and lighting effect

Construction parameters:	SunEnergy 15	SunEnergy 10
Width	5880 [mm]	3916 [mm]
Length	5195 [mm]	5195 [mm]
Height	2727/2274 [mm]	2727/2274 [mm]
Number of PV modules	15 pcs	10 pcs
PV module dimensions	986 x 1940 [mm]	
Axial spacing of foundations	5805 x 3038 [mm]	3835 x 3047[mm]
Material	aluminium	
Color	RAL 7016 (basic)	

Electrical parameters:	SunEnergy 15	SunEnergy 150
Rated Power	4080 [Wp]	2720 [Wp]
Max. Allowed voltage	1000[V]	
Energy production forecast on an annual basis	3,60 [MWh]	2,45 [MWh]
AC voltage	400/230 [V]	

Strength according to Eurocode standards:		
Snow:	1,2 [kN/m²]	
Wind (wind pressure-suction)	1 wind zone	

It is possible to use reinforcements for higher loads



Carport SunEnergy



Carport SunEnergy with illuminated engraving



Carport with white structure

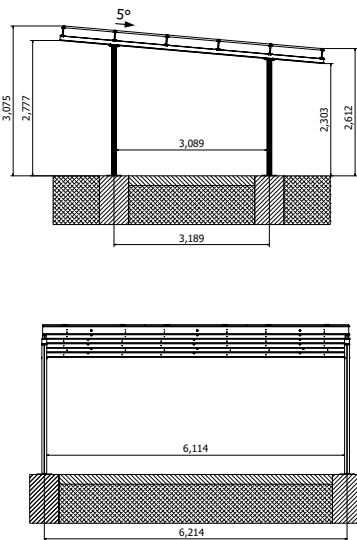


Carport with black construction

CARPORT FRAME

RATED POWER UP TO: **6,67kWp**
AMOUNT OF ENERGY PRODUCED: ~ **6,00 MWh/year***

The standard includes: aluminum construction, frame photovoltaic modules, inverter, electrical protection, mounting elements to the ground, mounting instructions.



*for the Rzeszów location – Frame 15 version

The functional roofing of the CARPORT FRAME will work wherever power and price are in the first place. The solid and construction is part of modern minimalism, and the photovoltaic modules used are an alternative or supplement to standard roof or ground structures.

- Optional Features:
- **Double USB socket** – for charging mobile devices
 - **Power socket** – the possibility of building in a sealed 230VAC power socket in the construction
 - **Heating** – heat radiation up to 70°C ensures comfort even on cold days
 - **Filling the space** between the modules

Construction parameters:	Frame 15	Frame 10
Width	6285 [mm]	4220 [mm]
Length	5440 [mm]	5440 [mm]
Height	2777/2303 mm	2777/2303 mm
Number of PV modules:	15 pcs	10 pcs
PV module dimensions	1038 x 2094 [mm]	
Axial spacing of foundations	6214 x 3189 [mm]	4120 x 3189 [mm]
Material	aluminium	
Color	RAL 7016 (basic)	
Electrical parameters:	Frame 15	Frame 10
Rated Power	6675 [Wp]	4450 [Wp]
Max. Allowed voltage	1000[V]	
Energy production forecast on an annual basis	6,00 [MWh]	4,00 [MWh]
AC voltage	400 [V]	
Strength according to Eurocode standards:		
Snow:	1,2 [kN/m²]	
Wind (wind pressure-suction)	1 wind zone	
It is possible to use reinforcements for higher loads		



Carport with anthracite structure / single-family house



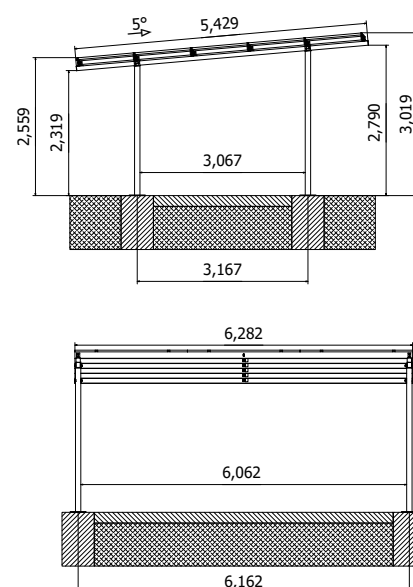
A two parking spaces carport with a steel structure

CARPORT BASIC

RATED POWER UP TO: **6,67kWp**
AMOUNT OF ENERGY PRODUCED: **~ 6,00 MWh/year***

The standard includes: steel structure, frame photovoltaic modules, inverter, electrical protection, mounting elements to the ground, assembly instructions

*for the Rzeszów location – Basic 15 version



The functional and economical CARPORT BASIC roofing is a product dedicated to people looking for a compromise between a ground installation and a carport. In order to meet customer expectations, the ML System company introduced Carport Basic to the market, which protects the car against harmful weather conditions and at the same time serves as a photovoltaic carport. Carport Basic is a durable, functional and aesthetic solution where the main construction elements are made of stainless steel. This ensures high quality and trouble-free use for many years.

Funkcjonalności opcjonalne:

- **Double USB socket** – for charging mobile devices
- **Power socket** – the possibility of building in a sealed 230VAC power socket in the construction
- **Heating** – heat radiation up to 70oC ensures comfort even on cold days
- **Filling the space** between the modules

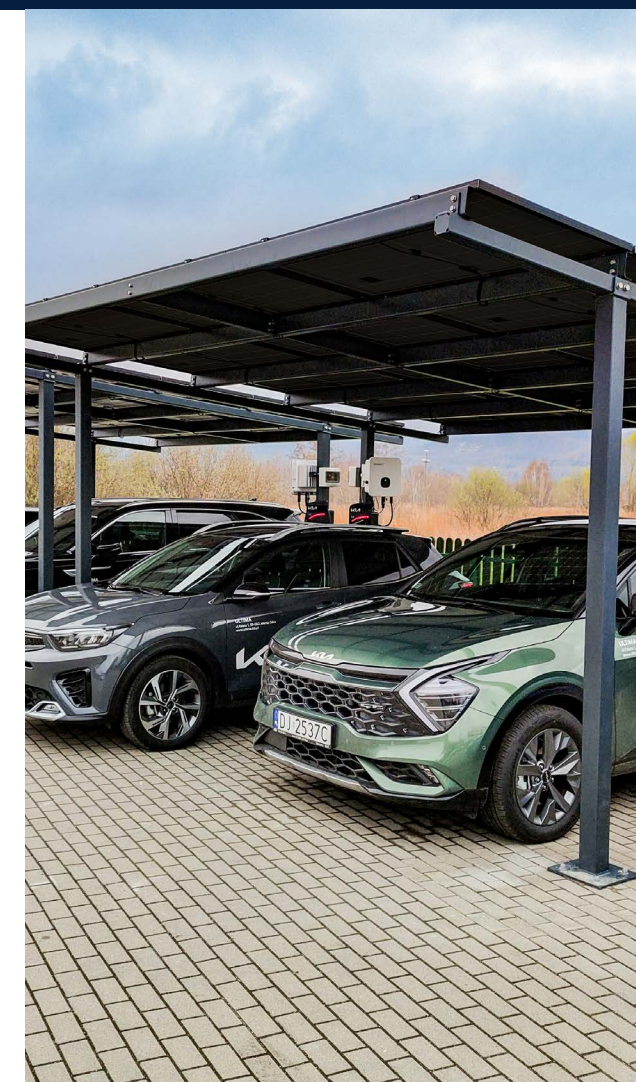
Construction parameters:	Basic 15	Basic 10
Width	6282 [mm]	4188 [mm]
Length	5360 [mm]	5360 [mm]
Height	2790/2316 [mm]	2790/2316 [mm]
Number of PV modules:	15 pcs	10 pcs
PV module dimensions	1038 x 2094 [mm]	
Axial spacing of foundations	6162 x 3167 [mm]	4068 x 3167 [mm]
Material	steel	
Color	RAL 7016 (basic)	

Electrical parameters:	Basic 15	Basic 10
Rated Power	6675 [Wp]	4450 [Wp]
Max. Allowed voltage	1000[V]	
Energy production forecast on an annual basis	6,00 [MWh]	4,00 [MWh]
AC voltage	400 [V]	

Strength according to Eurocode standards:

Snow:	0,9 [kN/m²]
Wind (wind pressure-suction)	1 wind zone

It is possible to use reinforcements for higher loads



Two parking spaces Basic carport



Carport Basic / private property



Photovoltaic Pergola - individual project



A smart home equipped with modern management systems deserves an intelligent, ecological source of electricity. The PERGOLA photovoltaic terrace roofing is a perfect combination of aesthetics and functionality. In addition to protection against weather conditions, such as solar radiation, rain or snow, the roof integrated with solar modules generates environmentally friendly green energy and allows you to reduce household electricity bills. Such terrace construction is an alternative for people who, for aesthetic reasons or due to the limited space, or do not want to install a ground-based photovoltaic installation. In addition, the modern design is an attractive complement to the terrace decor.



Pergola Prestige next to a detached house



PV modules glass - glass on the roof



SunEnergy pergola on private property



Winter garden with a photovoltaic roof



The modules are resistant to snow loads and can be additionally equipped with a self-snow clearing function. The ability to adjust the degree of translucency of the modules and optional LED lighting will allow for full personalization of the roof. The photovoltaic pergola can be implemented in two options. One of them is the combination of an aluminum structure with a roof consisting of classic frame or glass photovoltaic modules and an open space around it. The second proposal for the pergola is a roof in the form of a winter garden, where the roof is made of transparent glass modules, and the outer parts of the pergola are made of sliding glass walls that can be left open or closed, depending on your preferences and weather conditions.



PROTECTION AGAINST HARMFUL
ATMOSPHERIC AGENTS



SELF SNOW
CLEARING



POSSIBILITY OF
IMPLEMENTATION INTO
A WINTER GARDEN



GREEN
ENERGY



AESTHETICS
AND DESIGN



LEAK
TIGHTNESS

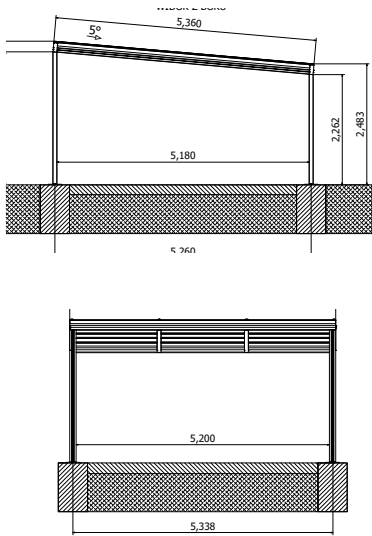


Prestige heated terrace roofing

PERGOLA **PRESTIGE**

RATED POWER UP TO: **4,45 kWp**
AMOUNT OF ENERGY PRODUCED: **~4,00 MWh/year***

The standard includes: aluminum construction, transparent glass/glass photovoltaic modules, inverter, electrical protection, mounting elements to the ground, sealing elements, mounting instructions, profile masking.



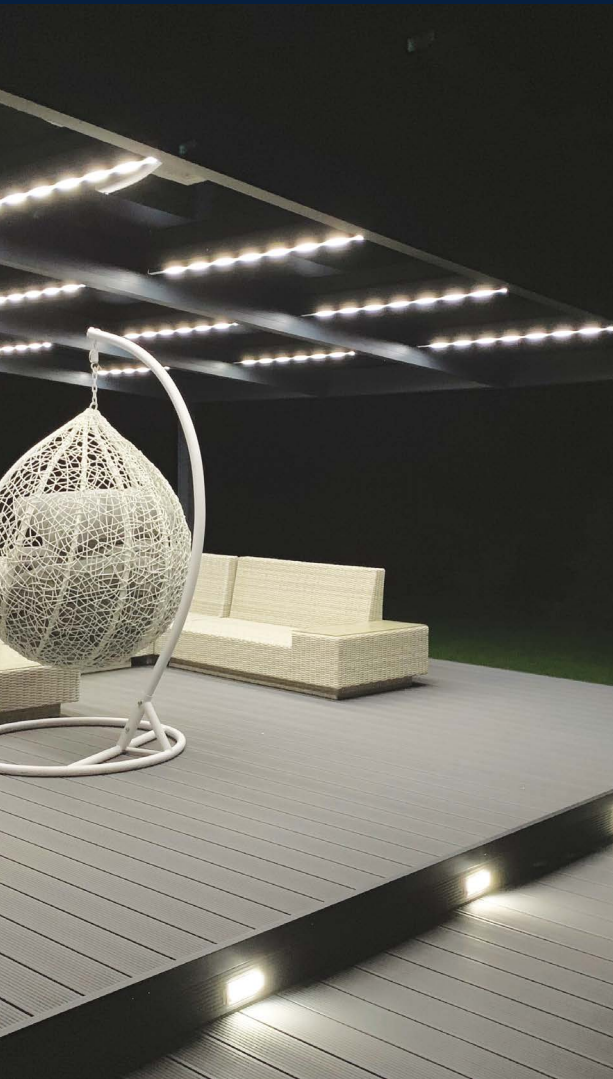
*for the Rzeszów location – Prestige 15 version

PERGOLA PRESTIGE is a photovoltaic terrace roofing that combines aesthetics with functionality. The modern design gives the terrace a unique appearance, and the precision of workmanship guarantees safety. PERGOLA PRESTIGE not only produces environmentally friendly green energy, but also provides protection against external factors.

Optional Features:

- **Double USB socket** – for charging mobile devices
- **Phase power supply** – the possibility of building a sealed 230VAC mains socket into the structure
- **Smart Light** – modules with integrated LED lighting operating in ON/OFF mode or with variable intensity in DIMM mode
- **NoFrost** – Heated modules prevent the accumulation of snow and ice
- **Heating** – Heat radiation at 70oC will ensure comfort even on cold days
- **Engraving** – Additional visual and lighting effect
- **Glass construction** – Additional external protection against weather conditions

Construction parameters:	Prestige 15	Prestige 10
Width	5460 [mm]	3666 [mm]
Length	5360 [mm]	5360 [mm]
Height	2730 / 2262 [mm]	2790/2316 [mm]
Number of PV modules:	15 pcs	10 pcs
PV module dimensions	1030 x 1768 [mm]	
Axial spacing of foundations	5338 x 5260 [mm]	3537 x 5260[mm]
Material	aluminium	
Color	RAL 7016 (basic)	
Electrical parameters:	Prestige 15	Prestige 10
Rated Power	4455 [Wp]	2970 [Wp]
Max. Allowed voltage	1000[V]	
Energy production forecast on an annual basis	4,00 [MWh]	2,67 [MWh]
AC voltage	400/230 [V]	
Strength according to Eurocode standards:		
Snow:	1,5 [kN/m²]	
Wind (wind pressure-suction)	30 [m/s]	
It is possible to use reinforcements for higher loads		



Photovoltaic pergola with backlight



Photovoltaic pergola

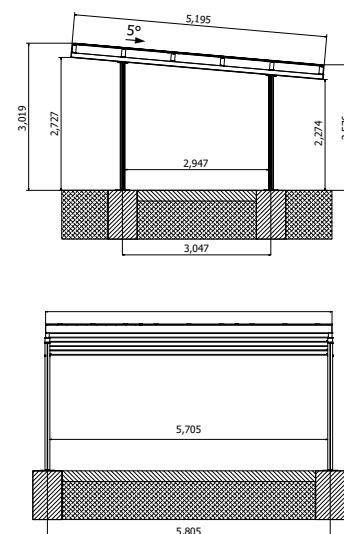


Pergola Sunenergy

PERGOLA SUNENERGY

RATED POWER UP TO: **4,45 kWp**
AMOUNT OF ENERGY PRODUCED: **~3,60 MWh/year***

The standard includes: aluminum construction, transparent glass/glass photovoltaic modules, inverter, electrical protection, mounting elements to the ground, sealing elements, mounting instructions, profile masking.



*for the Rzeszów location – SunEnergy 15 version

The ergonomic aluminum construction of PERGOLA SUN ENERGY together with photovoltaic modules of the glass/glass type ensures transparency, and the precision of workmanship guarantees safety. PERGOLA SUN ENERGY provides protection against external factors, but above all, it produces green energy that is environmentally friendly.

Optional Features:

- **Double USB socket** – for charging mobile devices
- **Phase power supply** – the possibility of building a sealed 230VAC mains socket into the structure
- **Smart Light** – modules with integrated LED lighting operating in ON/OFF mode or with variable intensity in DIMM mode
- **NoFrost** – Heated modules prevent the accumulation of snow and icicles
- **Heating** – Heat radiation at 70oC will ensure comfort even on cold days
- **Engraving** – Additional visual and lighting effect

Construction parameters:	SunEnergy 15	SunEnergy 10
Width	5880 [mm]	3916[mm]
Length	5195 [mm]	5195[mm]
Height	2727/2274 [mm]	2727/2274 [mm]
Number of PV modules:	15 pcs	10 pcs
PV module dimensions	986 x 1940 [mm]	
Axial spacing of foundations	5805 x 3038 [mm]	3835 x 3047 [mm]
Material	aluminium	
Color	RAL 7016 (basic)	
Electrical parameters:	SunEnergy 15	SunEnergy 10
Rated Power	4080 [Wp]	2720 [Wp]
Max. Allowed voltage	1000[V]	
Energy production forecast on an annual basis	3,60 [MWh]	2,45 [MWh]
AC voltage	400/230 [V]	
Strength according to Eurocode standards:		
Snow:	1,2 [kN/m²]	
Wind (wind pressure-suction)	30 [m/s]	
It is possible to use reinforcements for higher loads		



PV modules glass – glass on Pergola



Pergola Sunenergy



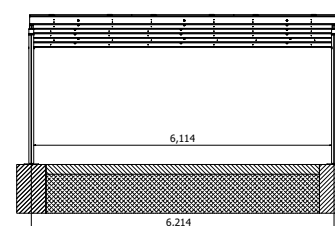
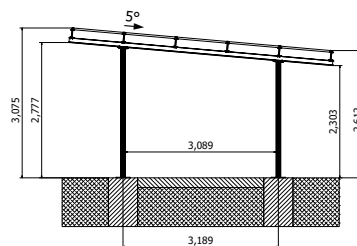
Photovoltaic garden roofing

PERGOLA FRAME

RATED POWER UP TO: **6,67kWp**
AMOUNT OF ENERGY PRODUCED: ~ **6,00 MWh/year***

The standard includes: aluminum construction, frame photovoltaic modules, inverter, electrical protection, mounting elements to the ground, mounting instructions.

*for the Rzeszów location – Frame 15 version



The functional roofing of the PERGOLA FRAME will work wherever power and price are in the first place. The solid construction is part of modern minimalism, and the photovoltaic modules used are an alternative or supplement to traditional roof and ground structures.

Optional Features:

- **Double USB socket** – for charging mobile devices
- **Power socket** – the possibility of building in a sealed 230VAC power socket in the construction
- **Heating** – heat radiation up to 70°C will ensure comfort even on cold days
- **Filling the space** between the modules

Construction parameters:	Frame 15	Frame 10
Width	6285 [mm]	4220 [mm]
Length	5440 [mm]	5440 [mm]
Height	2777/2303 mm	2777/2303 mm
Number of PV modules:	15 pcs	10 pcs
PV module dimensions	1038 x 2094 [mm]	
Axial spacing of foundations	6214 x 3189 [mm]	4120 x 3189 [mm]
Material	aluminium	
Color	RAL 7016 (basic)	

Electrical parameters:	Frame 15	Frame 10
Rated Power	6675 [Wp]	4450 [Wp]
Max. Allowed voltage	1000[V]	
Energy production forecast on an annual basis	6,00 [MWh]	4,00 [MWh]
AC voltage	400 [V]	

Strength according to Eurocode standards:		
Snow:	1,2 [kN/m²]	
Wind (wind pressure-suction)	1 wind zone	

It is possible to use reinforcements for higher loads



PV Module on pergola



Photovoltaic garden roofing



SOLAR ENERGY



Visualization with Smart City solutions by ML System

SMART CITY

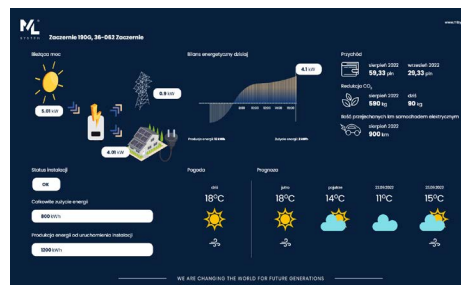
Climate change is a global phenomenon that largely affects the lives of residents in urban agglomerations. Extreme weather events such as floods, droughts and storms, rising global temperatures all have a costly impact on basic city services, infrastructure, housing, livelihoods and human health. At the same time, cities have a key impact on climate change, as urban activities are the main source of greenhouse gas emissions.

Smart cities focus on new technologies, optimal infrastructure management, but also focus on more ecological solutions, thus limiting the negative impact on the natural environment. To achieve this effect, energy-saving, independent sources using renewable green energy, mainly photovoltaics, are necessary.

ML System is a manufacturer of such solutions. Smart bus shelters, benches, pylons and lamps powered by solar energy are measurable benefits for the city's budget, its residents and the environment. ML System also offers an automated energy management program - ML SCADA, which is the perfect complement to the Smart City installation, thanks to which you can monitor technical efficiency and ensure energy efficiency for all products and installations integrated with the system.



ML SCADA - Building management system



SMART BUS SHELTER

The light and durable construction of the intelligent bus shelter made of aluminum perfectly fits into the modern architecture of cities, and the high-quality glass used in the shelter guarantees safety and enables the implementation of many technological solutions. Options that can be implemented in a bus stop can be flexibly adapted to the needs and capabilities of a given place. Shelter equipment may include: photovoltaic roofing, variable message displays, inductive charger, heating, lighting, motion detection, monitoring, wi-fi, bench and rear wall heating, engraving with or without backlight, ceramic print, full remote control via the ML SCADA system, AED defibrillator. The use of an intelligent bus shelter in urban space gives a number of benefits, such as: savings due to the production of energy from the sun, the ability to remotely control the functionalities implemented in the stop, automation of settings depending on weather conditions, configurability and aesthetic appearance.

SMART BENCH

The photovoltaic bench is an innovative and ecological solution in the spirit of the SMART idea, which is a response to the growing need to charge mobile devices in public urban space. The PV bench is a combination of a number of amenities that significantly increase the comfort of its users. The intelligent bench is equipped with the function of charging mobile devices (both via USB, but also the possibility of inductive charging), a heated seat, LED lighting and a self snow-clearing function, all powered by free energy thanks to the built-in photovoltaic modules. In addition, the possibility of making a ceramic print on the glass, in any graphics and colors, allows for a wide range of personalization of the product to best integrate it into the environment. The timeless design and aesthetics of the photovoltaic bench will improve the image of any urban space, while taking care of the natural environment.

SMART LIGHT

PV lamps are an attractive and practical solution that eliminates the often occurring problem with standard lighting of housing estates, where the supply of electricity is difficult or simply unprofitable. All this thanks to a well-thought-out system and high-quality workmanship. Equipped with LEDs and a set of automation for battery operation, they can be placed in parking lots, pedestrian crossings, intersections, playgrounds or promenades. Thanks to the implemented photovoltaic modules, the lamps are an excellent solution for reducing the costs related to energy consumption in public, commercial and industrial facilities and cities that are changing according to the Smart City idea. The lamp works autonomously, and when the battery runs out, it can switch to external power. The product is distinguished by a stable construction, resistant to weather conditions, and a modern design. In addition, its maintenance is facilitated by the self snow-clearing function. Photovoltaic lamellas can be mounted in a mobile version, which allows you to adjust the angle of the glass element. BIPV b solve the problem of overheating of buildings, providing sun protection, while generating electricity from solar radiation. ML Slat is always adapted to the dimensions of the project.



ML System bus shelters



ML System photovoltaic bench



ML System photovoltaic lamp



Norwegian Petroleum Directorate, Stavanger, Norway

PHOTOVOLTAIC FACADE

Photovoltaic facades are a product from the BIPV line, i.e. photovoltaics integrated with buildings. It is an ideal solution for placing a photovoltaic structure in a building. In this way, we are able to replace the traditional building material with an active material that obtains energy from solar radiation, while improving the visual qualities of the building. BIPV facades, in addition to a combination of unique design and aesthetics, have numerous features that directly positively affect the building, as well as the natural environment.

The main benefits of the product are:

- Savings - obtaining free electricity
- Resistance to dirt and degradation
- Stable construction - light material
- Lowering the temperature of the façade
- Reduction of air conditioning operating costs
- Improvement of thermal and insulation parameters of buildings
- Possibility of personalization



HAUT, Amsterdam, The Netherlands



Servitech, Tarnów



Moon Office, Kraków



Metalpol Sp. z o.o.

PHOTOVOLTAIC SUNSHADES

ML LAMELA is a complete product of ML System including aluminum substructure and photovoltaic glass. A fixed or adjustable sun protection system can replace classic aluminum lamellas with safe photovoltaic laminated glass. Photovoltaic modules are placed on an aluminum structure that allows mounting directly to the wall of the building or to the mullion and transom facades. Photovoltaic lamellas can be mounted in a mobile version, which allows you to adjust the angle of the glass element. BIPV sunshades solve the problem of overheating of buildings, providing sun protection, while generating electricity from solar radiation. ML lamela is always adapted to the dimensions of the project.

The main advantages of the product are:

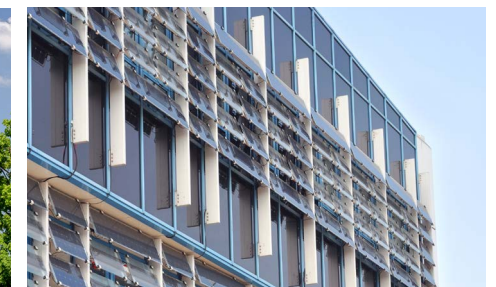
- Reduction of overheating of rooms
- Generating savings thanks to the generation of free electricity
- Possibility to adjust the degree of transparency and color
- Stable construction, modern design
- Free adjustment of the angle of inclination
- No need to clear snow
- Easy maintenance



Jagiellonian University, Krakow



Municipal Roads Authority, Gliwice



Airport, Jasionka



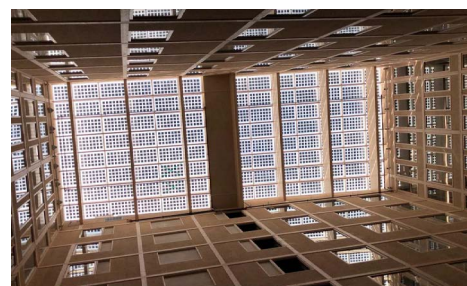
State Archives, Rzeszów

PHOTOVOLTAIC SKYLIGHTS

The basic function of skylights placed in the roof of buildings is to let more sunlight to the interior. Like with insulating glazing modules for facades, glass for skylights can also be integrated with photovoltaic cells, thanks to which free electricity is generated while allowing light into the building. ML System offers solutions for skylights in the form of single or double glazed units, in which the outer pane is laminated safety glass with photovoltaic cells.

The main advantages of the product are:

- Generating savings by obtaining free energy from the sun
- No need to remove snow - protection against adverse weather conditions
- High thermal insulation
- Stable structure, modern design, simple maintenance
- Lightness of the material
- Individual adjustment of the level of module transparency



Nationalarenan 3, Stockholm, Sweden



Regional Fund for Environmental Protection and Water Management, Łódź



Kielce Technological Park, Kielce

WE ARE CHANGING THE WORLD FOR FUTURE GENERATIONS



Visualization of the operation of photovoltaic quantum glass

PHOTOVOLTAIC GLASS

Photovoltaic quantum glass is the world's first solution in which seemingly ordinary glass, in addition to the basic function of insulation from external factors such as temperature or noise, provides lighting inside the building, is an active element that generates free, ecological energy from the sun. The solution is all the more attractive because it does not differ visually from traditional insulating glass units commonly used in construction. In the ML System glass, the invisible coating of metal oxides was replaced with a coating in the form of quantum dots.

The main advantages of the product are:

- Transmittance of light rays in the visible length
- Generating free energy from UV and infrared rays
- Very good parameters of light transmission
- High thermal insulation
- Limiting overheating of rooms
- Reduced urban heat island effect (UHI)



Viewing station, Dalsnibba, Norway



Q Glass visualization on a glass facade



Żabka chain store, Warsaw

WE ARE CHANGING THE WORLD FOR FUTURE GENERATIONS



Heating glass

ML GLASS

The ML Glass product line are intelligent glass solutions that improve the comfort of their users' lives. They can be single-function products or combined into glazing sets, they can become multifunctional, sound-absorbing products with very good thermal insulation for use in every home, office, plant, etc. The ML Glass product line includes:

Heating glass – a modern thermal solution that allows you to completely eliminate the traditional heating system. It ensures the transparency of the glass and the comfort of warmth inside the buildings. The integrated control system allows you to easily control the temperature. Regardless of the climate, it guarantees high heating efficiency.

Glass with variable transparency – a solution enabling individual adaptation of the room to the user's needs and circumstances. By choosing one of the 3 options, we change the space from business to private or semi-private (100%, 50%, 0% transparency).

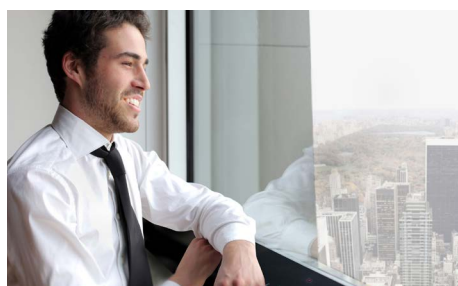
Glass radiator – a combination of modern design and the highest quality. This device ensures optimal thermal conditions. It is intended for people who want to equip their interior with an unconventional device.

Glass window sill – an innovative product with the functions of heating and inductive charging (e.g. telephones, watches, etc.), and at the same time supporting the maintenance of proper air circulation in interiors.

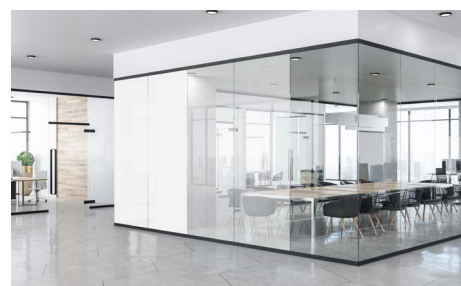
Heating glass with variable transparency – a combination of thermal comfort of the heating glass with intimacy provided by the functionality of the glass with variable transparency – heating glass with variable transparency equipped with a controller allows for easy control of the temperature inside the room.



Glass heater/radiator



A glass heating window sill



Glass with variable transparency



MPWiK, Warsaw

CLASSIC PHOTOVOLTAICS

The ML System company, which has been operating on the market for fifteen years, specializes in the production of traditional and innovative photovoltaic solutions, of which it is both a manufacturer and a distributor. The company also offers its own installation services and has an extensive and qualified service department. ML System produces photovoltaic modules for both standard and unusual and demanding applications, AC and DC switchgears, photovoltaic constructions and mounting systems.

The company implements projects in the classic photovoltaic sector, both as part of small installations, large installations for entrepreneurs and developers, as well as contracts for photovoltaic farms.



Photovoltaic roof installation,
ML System headquarters



Colorful PV modules on the ground, Przemyśl



Ground photovoltaic installation, Royal Castle,
Niepołomice



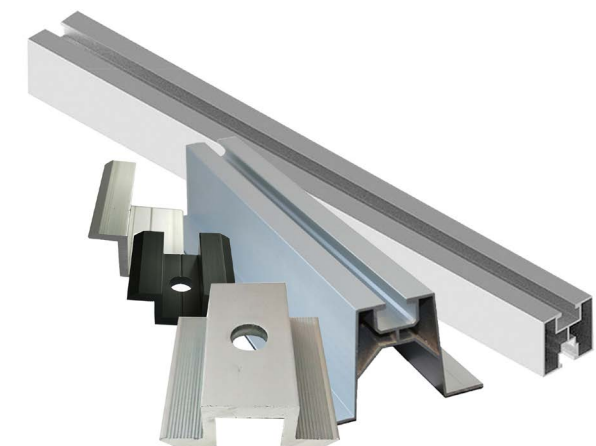
INVERTER

The device is a response to market expectations and complements the offer of currently available solutions. It is equipped with functions that significantly increase the protection and safety of the photovoltaic installation. The key options of the ML System inverter include, first of all, the AFCI function, which detects an electric arc and immediately extinguishes it, which effectively prevents the occurrence of a fire. The function that allows you to protect the photovoltaic modules against loss of their efficiency caused by degradation through voltage is the anti-PID function, which improves the life of the entire installation. In addition, the ability to adjust the reactive power limits the shutdown of the inverter, which allows you to become independent from problems related to, for example, overloading the power grid.



SWITCHGEAR

The ML System assortment includes a wide selection of switchgears that enable safe, optimal and standard-compliant connection of a photovoltaic installation to the power grid. The switchgears are fully wired and equipped with overvoltage protection, as well as protection against short circuits and overloads. The set is perfect for installations both on the roofs of single-family buildings and large industrial installations. Switchgears eliminate the fire risk of PV installations, comply with production standards, have the CE quality mark, and are made of the highest quality components.



CONSTRUCTIONS/ STRUCTURES

ML System constructions are characterized by stability and high durability, which translates directly into the life of the entire installation. Thanks to the use of high-quality materials during production, the whole structure looks very aesthetically pleasing. The most popular system of photovoltaic structures mounted on the roofs of enterprises, warehouses, etc. are flat roof fixings, of which, ML System is the manufacturer. The company's offer also includes structures for pitched roofs and ground structures.

ML System also offers attractive additional services that are a comprehensive supplement to the offered products and solutions:



ML SCADA – proprietary building management system and landscaping elements



Professional visual and thermographic inspections of photovoltaic installations and facilities, using modern multi-rotor drones



Performing professional 3D visualizations using BIM objects of ML System products



Inventory and dimensioning of objects and professional 3D creation of buildings, machines, installations and terrain using a 3D laser scanner



A comprehensive cleaning service for photovoltaic modules and facades



Mounting and service of the installation – full technical support at every stage of cooperation



ML SYSTEM + is a company dealing with the distribution and mounting of PV modules and BIPV systems of the Polish manufacturer – ML System S. A., of which it is an integral part.

ML SYSTEM in points:

Polish manufacturer of complete solutions BIPV, PV, SMART CITY, SMART GLASS

Global scope of operations

The world's first manufacturer of transparent glass with a quantum coating

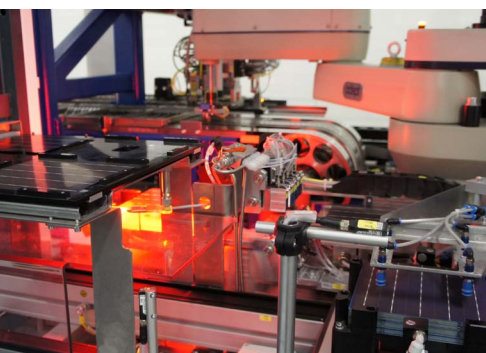
Creator of innovative solutions, 16 granted and 6 pending patents (as of March 2023)

25 thousand m² of production and warehouse space with a highly specialized R&D Center

Another 20,000 m² of production space under construction

Advanced product, industry and geographical diversification

The company has been listed on the Warsaw Stock Exchange since 2018



West Railway Station, Warsaw

Area (m²): **12 tys. m²**

Power (kW): **1097 kW**

Product: **Complex roof installation – modules BIPV, modules with illuminated engraving on the skylight, No Frost modules**

AGH, Auditorium Maximum with the admin building. – dyd. – office, building C7, Krakow

Area (m²): **565 m²**

Moc (kW): **47,1 kW**

Product: **AGH, Auditorium Maximum with the admin building. – dyd. – office, building C7, Krakow**



Voldslokka School, Oslo, Norway

Area (m²): 1000 m²

Moc (kW): 65 kW

Product: **Printed BIPV modules, construction of a ventilated facade**

Route Vösendorf-Schwechat, Austria

Area (m²): **73,5 m²**

Moc (kW): **10,7 kW**

Product: **Road noise barriers made of PV**



KIA dealerships, Poland

Area (m²): **63 KIA car dealerships throughout the country**

Moc (kW): **approx. 50 kW (each place)**

Product: **Roof installation, photovoltaic carports**



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