

# AVRii



## EXCLUSIVE LINE of PV Solutions





At Avrii, we take pride in both producing and distributing renewable energy devices and systems. Our roots come from the esteemed BRUK-BET Group, a European Company with a 40-year legacy in the construction industry, our expertise runs deep.

Since 2011, when our dedicated production line was established in Tarnów, we've been actively engaged in the production of photovoltaic modules. Our commitment to innovation and quality has led us to specialize in cutting-edge half-cut technology, elevating the efficiency and performance of our high-quality photovoltaic modules.

Rigorous durability and quality tests are an inherent part of our production process. Each Avrii product undergoes stringent evaluations to ensure not only their resilience but also their unwavering performance over the years. This dedication is our promise to deliver maximum satisfaction through enduring efficiency.





# European Photovoltaic Modules MANUFACTURER



SINCE  
1984

Capital Group's operations on the Polish market

Expansion of activities into new areas - the renewable energy market

2011



2019



2021



Rebranding Bruk-Bet Solar



2022



2023

Rebranding Bruk-Bet PV



40  
years

experience  
in the building industry

12  
years

production of photovoltaic  
modules

100%

European Product

# The Reality we TREASURE, The Future we CREATE



**At Avrii, our daily life is shaped by the values we believe in. Firstly, it's our commitment and partnership that guide us in building relationships among employees and business partners. Secondly, we emphasise innovation and proactive future design, ensuring that our products meet the highest standards today and in the years to come.**

Edyta Witkowska-Grzeńkiewicz  
CEO of Avrii



Having ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 certifications is important because they confirm that the company complies with international standards for quality management, environmental responsibility, and occupational health and safety.

These certifications demonstrate the company's commitment to delivering high-quality products and services, minimising its environmental impact, and ensuring safe working conditions for employees



# Assured Protection for Your Investment

Our photovoltaic modules stand as the optimal choice for a wide spectrum of investments, ranging from small residential setups to expansive solar farms. With the assurance of a European manufacturer, we not only deliver the highest quality, but also guarantee sustained performance for years to come. Through innovative technology and manufacturer reliability, we are poised to meet the expectations of every investor.

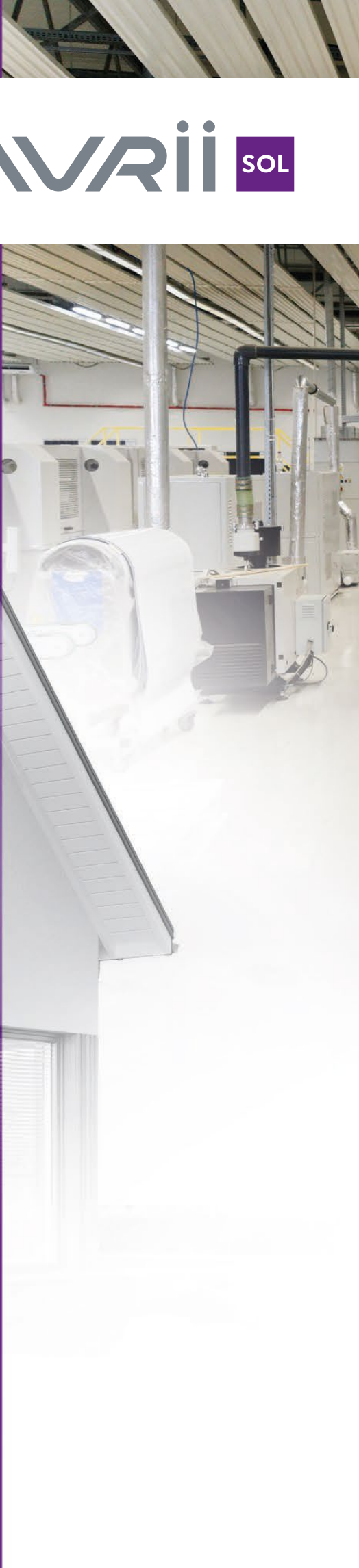


# Avrii SOL Modules

From homes to solar farms  
– optimal choice for a wide  
spectrum of investments



AVRii SOL



More than  
*energy*



# Modern machine park



Employing advanced technologies, our photovoltaic modules are produced using top-tier equipment such as Swiss machinery from industry leader Meyer Burger.

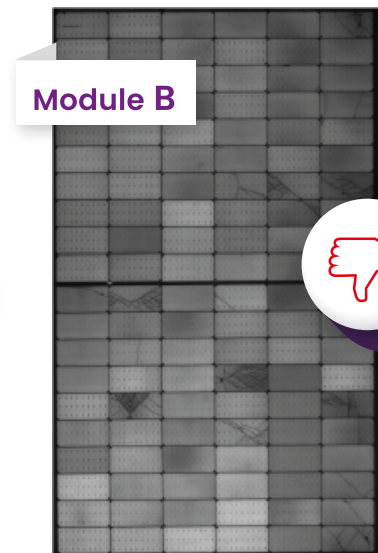
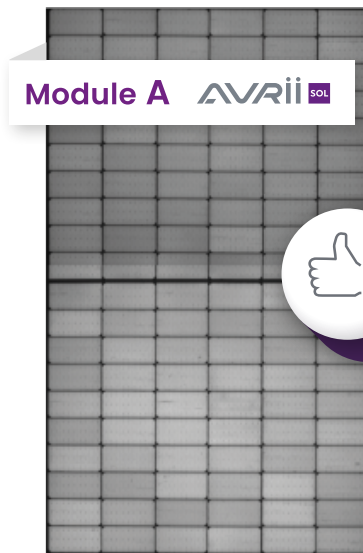
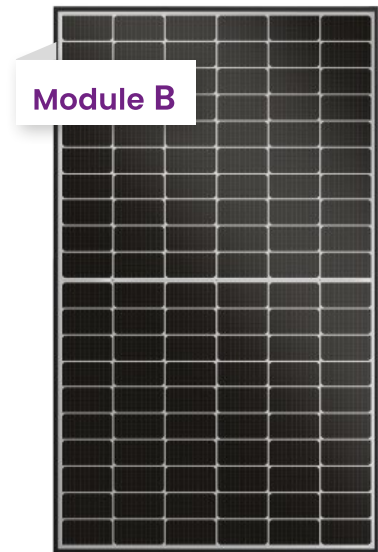
The integration of stringers, automated precision soldering machines, seamlessly binds solar cells together with copper wiring. We uphold a continuous assessment of adhesion, gauging the extent to which ribbons adhere to busbars through the esteemed PEEL TEST.

This meticulous approach ensures that each product reaching the end consumer undergoes a comprehensive examination of durability and efficiency.

# Three-stage quality control at every production stage

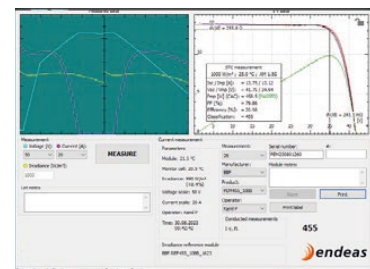
We place immense emphasis on the quality of our products. We monitor their quality through methods like the Electroluminescence (EL) Test, which reveals imperceptible damage to cell structures. Even though photovoltaic modules might appear visually identical, the real distinction becomes apparent only after undergoing the Electroluminescence Test. Our modules undergo such tests at various production stages, ensuring that our customers receive the highest-quality product. Renowned companies also approach our factory with inquiries about testing modules from other manufacturers, attesting to the high reputation of these types of tests.

As demonstrated by the example of Modules A and B, they appear visually similar, but it's only the EL Test that uncovers numerous micro-cracks and cell structure damage.



## Solar simulator

In the final production stage, we examine the electrical parameters of the module using a AAA-class solar simulator. This ensures that the modules from our factory are free from hidden defects, and their nominal power truly corresponds to the specifications in the technical data sheets.





# Endless Possibilities – Choose from Our Wide Array of Models

We manufacture photovoltaic modules using three types of electro-insulating foil: black, white, and transparent. Each of these foils is designed to withstand varying weather conditions and boasts high fire resistance.

**BB BLACK – BLACK**  
black foil, black frame

**WB WHITE – BLACK**  
white foil, black frame

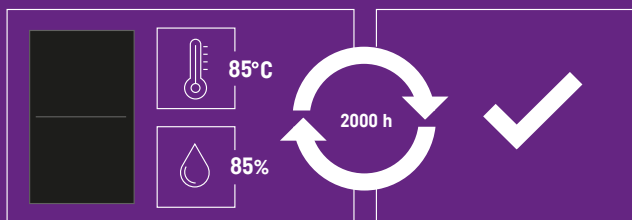
**WS WHITE – SILVER**  
white foil, silver frame

**TS TRANSPARENT – SILVER**  
transparent foil, silver frame

**TB TRANSPARENT – BLACK**  
transparent foil, black frame



## 2000 h DAMP HEAT



Avrii SOL PRO series modules have successfully passed an extreme durability test for adverse weather conditions. The damp heat test, lasting twice as long as the standard at an impressive 2,000 hours, yielded positive results. This test evaluates the photovoltaic module's resistance to moisture ingress at a high temperature of 85 degrees Celsius and relative humidity of 85%. The favorable outcome affirms the exceptional quality of components employed and the impeccable module lamination process.

# A review of the photovoltaic module offerings in the Avrii SOL line

	Avrii SOL Opti-Power		Avrii SOL Opti-Power PRO	
Product warranty	15 years		20 years	
Linear power warranty	25 years		25 years	
Manufacture	European		European	
Power range	400 W	450-465 W	400-410 W	450-465 W
Dimensions	1735x1138 mm	1920x1138 mm	1735x1138 mm	1920x1138 mm
Weight	21 kg	24 kg	21 kg	24 kg
Frame thickness	35 mm		40 mm	
Structure	glass-foil		glass-foil	
Cable length	2x1100 mm, $\phi=4\text{mm}^2$		2x1100 mm, $\phi=4\text{mm}^2$	
Glass thickness	3.2 mm, tempered, ARC		3.2 mm, tempered, ARC	
Cell type	monocrystalline, multi-busbar, PERC		monocrystalline, multi-busbar, PERC	
Cell class	A+		A+	
Cells quantity	108   120		108   120	
Encapsulant	EVA film		EVA film	
Efficiency	up to 21,28%		up to 21,28%	
Number of bypass diodes	3		3	
IP	IP68		IP68	
Fire resistance	Class C		Class C	
EL Test*	Three-stage quality control process		Three-stage quality control process	
Flash list*	YES		YES	
PID resistance	YES		YES	
LID resistance	YES		YES	
Resistance to hailstones**	up to 25 mm, V=82,8 km/h		up to 55 mm, V=122 km/h**	
Snow load**	up to 5400 Pa		up to 7000 Pa**	
Wind load**	up to 2400 Pa		up to 4000 Pa**	
Salt mist resistance	YES		YES	
Ammonia resistance	YES		YES	
Damp heat	2000 h		2000 h	

\*Documentation from module testing, including a flash list and EL Tester images, can be provided upon specific request.

\*\*Results obtained from internal tests.



## PV CELL TECHNOLOGY VS. PERFORMANCE OF PHOTOVOLTAIC MODULES

### Avrii SOL N-Power GG

Product warranty	20 years
Linear power warranty	25 years
Manufacture	European
Power range	415–440 W
Dimensions	1722x1134 mm
Weight	24 kg
Frame thickness	30 mm
Structure	glass-glass
Cable length	2x1100 mm***, $\phi=4\text{mm}^2$
Glass thickness	2x2 mm, tempered, ARC
Cell type	monocrystalline, multi-busbar, N-TYPE
Cell class	A+
Cells quantity	108
Encapsulant	EVA/POE film
Efficiency	up to 23%
Number of bypass diodes	3
IP	IP68
Fire resistance	Class A
EL Test*	Three-stage quality control process
Flash list*	YES
PID resistance	YES
LID resistance	YES
Resistance to hailstones**	up to 35 mm, $V=82,8\text{ km/h}^{**}$
Snow load**	up to 7000 Pa**
Wind load**	up to 4000 Pa**
Salt mist resistance	YES
Ammonia resistance	YES
Damp heat	2000 h

\*\*\*Wire length is customisable based on order specifications.

**PERC** and **N-TYPE** photovoltaic cells differ chiefly in their design and manufacturing technology, which affects their performance and properties.



**N-TYPE** – These cells use N-type silica as the base material. “N” stands here for excess electrons. The process of manufacturing an N-TYPE cell is more complicated and requires different materials than that of a PERC cell, and at the same time it is more costly. N-TYPE cells can achieve very high efficiency and their performance is stable under a variety of sunlight conditions.

**N-TYPE** cells are believed to be superior to PERC cells due to their higher solar energy conversion rate and stability of operation under conditions of variable light intensity. They are used especially in advanced photovoltaic plants, where high performance and stability are of vital importance.

# Avrii SOL Integra

Innovative Photovoltaic  
ARCHITECTURAL SOLUTIONS

AVRII SOL



**THE HIGHEST QUALITY**  
AND COMPLIANCE WITH INTERNATIONAL  
STANDARDS EN 1090 AND EN ISO 3834

EN 1090 is a standard that specifies particular requirements for the execution of load-bearing structures. It defines the quality and technical standards to be met in the production and assembly of these structures, ensuring their safety and durability.

On the other hand, EN ISO 3834 defines the criteria that should be met in welding processes. It focuses on quality management in welding processes, covering aspects such as personnel competence, welding procedures, and weld quality control, which are crucial for ensuring the high quality and reliability of welded joints across various industrial sectors.



More than  
*photovoltaic*



# Premium Parking Space for Your Car

**Carport Avrii SOL Integra** enhances the attractiveness of the building it is placed next to, whether it's a real estate development, an office building, or a shopping centre. In addition to the obvious use of solar energy to reduce costs, a carport also builds a positive image and promotes investments as eco-friendly projects.



Our Avrii SOL Integra product line seamlessly merges modern architectural concepts with photovoltaics, offering innovative and stylish solutions. Avrii SOL Integra introduces a realm of versatility, encompassing applications ranging from flexible carport solar structures to garden fencing panels and PV benches.

If you're looking for an exceptional blend of technology and eco-friendly spaces, our Avrii SOL Integra products are the perfect choice for you



# Carport Avrii SOL Integra

Flexible selection of modules and the width of the parking area



Durable structure with galvanized coating



Versatile uses of carports – hotels, cardetailing, shopping centres



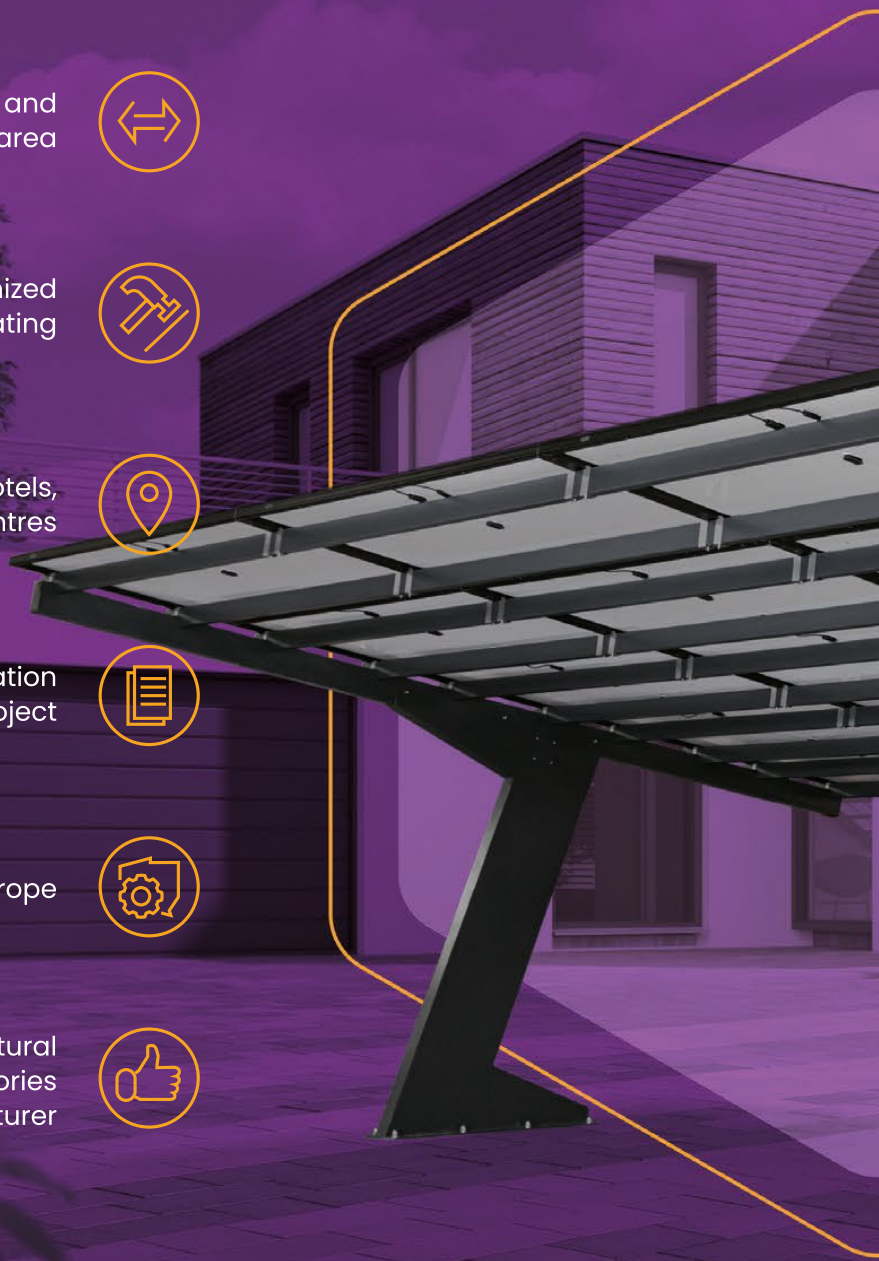
Technical documentation prepared for a given project



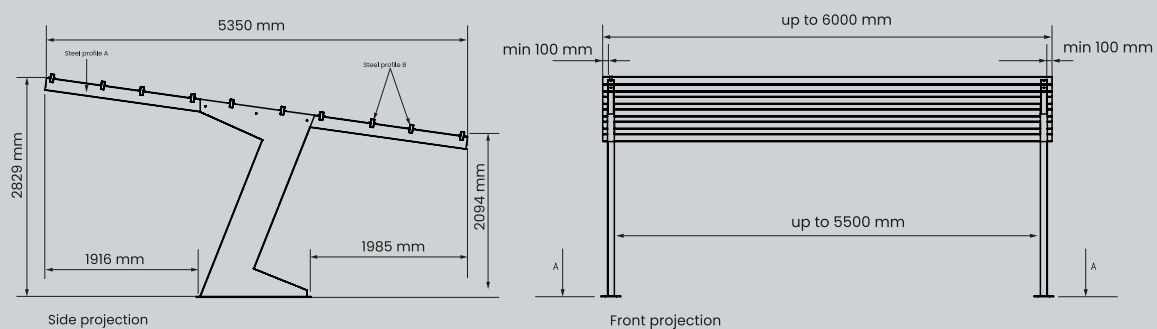
100% production in Europe



Full availability of structural elements and spare accessories directly from the manufacturer



## EXAMPLE DIMENSIONS







Possibility of extension with additional parking spaces



Carport pillar designed for internal wiring, e.g., for EV charging



Additional Energy for powering the building



All mounting components are made of stainless steel

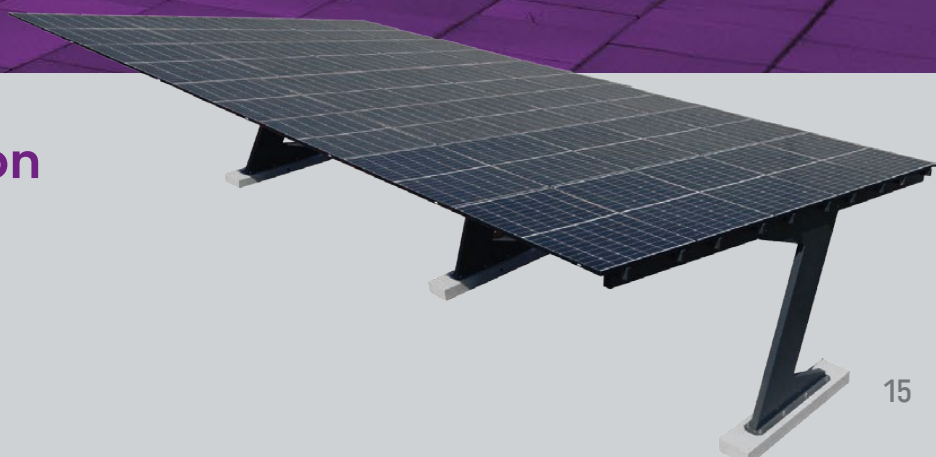


Wind and snow resistance tests



Highly leakproof roofing of the structure

**Possibility of extension with any number of additional parking spaces**



# Avrii SOL Integra Photovoltaic Fence

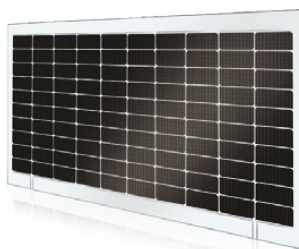


- High durability and weather resistance
- Aesthetic appeal combined with energy production
- Ease of installation/assembly
- Two colour options - transparent and tinted glass

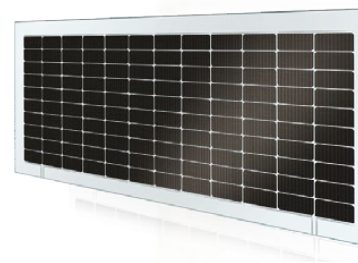
## Avrii SOL Photovoltaic Modules

Cells quantity	100   half-cut	120   half-cut
Nominal power	350 W	410 W
Dimensions	1950x1100x10	2350x1100x10
Compatibility with fencing blocks	Length 0.5 or 1 metre	Length 0.6 or 1.2 metre

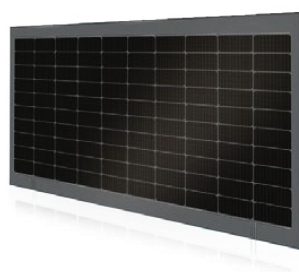
### Transparent Glass TG-350



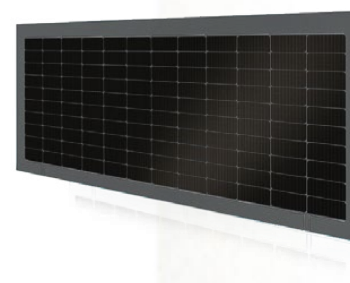
### Transparent Glass TG-410



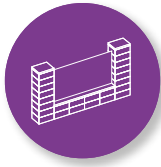
### Tinted Glass BG-350



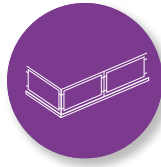
### Tinted Glass BG-410







Garden fence



Balcony railing



Building facade



## Avrii SOL Integra Photovoltaic Bench

- Wireless device charging functionality
- Modern design, convenience, functionality
- Designed with both private and public spaces
- Solution for modern smart city architecture
- Timeless design featuring stainless steel granite



# Inverter Avrii SOL

For homes  
and business use



AVRii SOL

Exceptional power – up to 10% more power than the inverter's nominal power

Technical support and service of a European producer

Communication RS-485, WiFi, (LAN, 4G – optionally)

User-friendly operation – you can choose whether to control the inverter via an application or display

Certified according to European standards: EN 50549, IEC/EN 61000, IEC/EN 62109

10 year warranty

## OUR SERIES:



### Avrii SOL PL1 – 3-12 kW

Avrii SOL PL1 inverters are an excellent choice for photovoltaic installations in households and small businesses. They ensure high efficiency and allow for monitoring and optimising energy production.

More than  
*inverter*



# Choose Avrii SOL inverters adapted to your needs



Certified components from leading manufacturers

Quality control – each inverter is tested upon leaving the factory

Effective and efficient cooling system

Adaptable for high-current and bifacial photovoltaic modules display

Energy-efficient – it doesn't consume Energy when not in operation (it just shuts down)

Modern design – compact dimensions and weight, aesthetic appearance



## Avrii SOL PL2 – 15–24 kW

Avrii SOL PL2 inverters are an excellent choice for projects requiring higher power – industrial installations, commercial buildings, and small solar farms.



## Avrii SOL PL3 – 25–50 kW

Avrii SOL PL3 inverters are an ideal solution for medium-sized solar farms and installations in larger commercial facilities. They provide not only high efficiency but also system design flexibility.



## Avrii SOL PL4 – 100–110 kW

Avrii SOL PL4 inverters are designed for large photovoltaic installations. Thanks to the built-in AFCI (Arc-Fault Circuit Interrupter) function, they provide even greater safety for the installation

# AVRii



Mroźna 8, 33-102 Tarnów, POLAND



[info@avrii.eu](mailto:info@avrii.eu)



+48 14 696 88 89 int. 6

+48 532 773 779



[avrii.eu](http://avrii.eu)