DAH Solar 440W Solar Module (B0CPM25LMM)

DAH Solar 440W Solar Module User Manual

Model: 440W Solar Module (B0CPM25LMM)

1. Introduction

This manual provides essential information for the safe and efficient use of your DAH Solar 440W Solar Module. This high-efficiency solar module utilizes advanced N-Type TOPCon cell technology and patented Full Screen design to maximize power generation and minimize maintenance.

Please read this manual thoroughly before installation and operation, and keep it for future reference. For optimal performance and safety, installation should only be carried out by qualified personnel.

2. Safety Information

WARNING: Improper installation or handling can lead to serious injury or damage to the product.

- Installation must be performed by qualified and certified professionals in accordance with all local and national electrical codes.
- Do not attempt to disassemble, repair, or modify the solar module. This will void the warranty and may cause electric shock or fire.
- Avoid touching the electrical terminals or wiring when the module is exposed to light, as it will generate electricity.
- Wear appropriate personal protective equipment (PPE), including insulated gloves, safety glasses, and non-slip footwear, during installation and maintenance.
- Do not step on or drop the solar module. Handle with care to prevent damage to the glass or frame.
- Ensure proper grounding of the module and mounting system as per local regulations.
- Keep children and unauthorized personnel away from the installation area.
- This solar module is not suitable for use with power stations. It is designed for connection to micro, hybrid, or standard inverters.

3. Product Overview

The DAH Solar 440W Solar Module is engineered for high performance and durability. Key features include:

- **N-Type TOPCon Cell Technology:** Ensures higher efficiency, especially in low-light conditions and at elevated

temperatures.

- **Patented Full Screen Technology:** Features a flat surface where the frame and solar cells form a single plane, preventing accumulation of dust, dirt, and snow, thus increasing power yield and reducing cleaning needs.
- **Monocrystalline Half-Cells:** 108 monocrystalline solar half-cells reduce electrical losses and enhance overall module performance and lifespan.
- **High Efficiency:** Achieves an impressive 22.02% conversion efficiency.
- **IP68 Waterproof Rating:** Provides excellent protection against water and dust ingress.
- **Robust Aluminum Frame:** Ensures structural integrity and long-term durability.
- **White Edition:** Features a white frame and visible grid structure, ideal for various aesthetic applications, including balcony solar systems.

3.1 Components

The DAH Solar 440W Solar Module consists of the following main components:

- Solar Cells (108 monocrystalline half-cells)
- Tempered Glass (Front surface)
- EVA Encapsulant Layers
- Backsheet
- Aluminum Frame
- Junction Box with MC4-compatible connectors
- Bypass Diodes (3 units)

3.2 Product Images

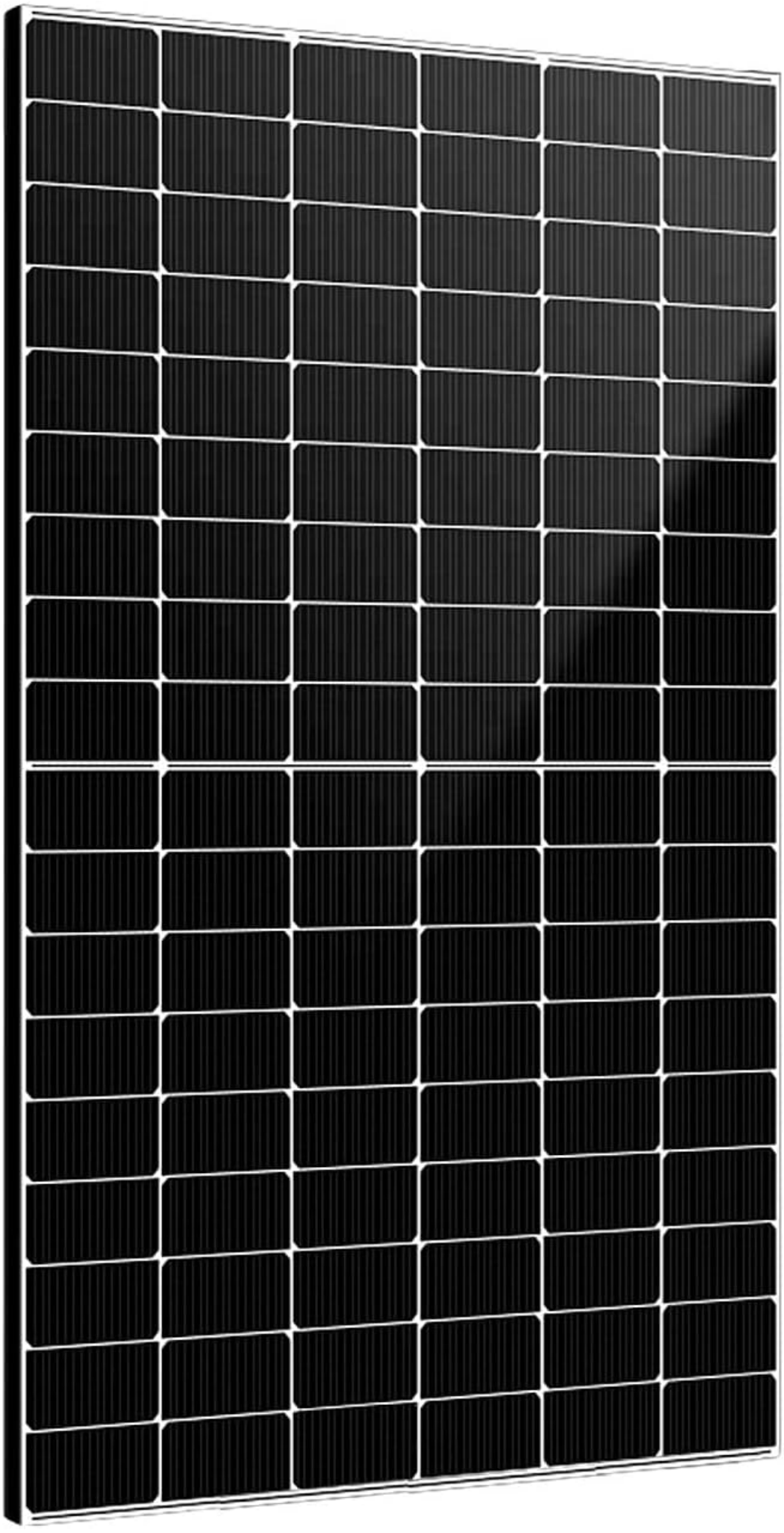


Figure 1: Front view of the DAH Solar 440W Solar Module, showcasing its full-screen design and black monocrystalline cells.

Figure 2: The DAH Solar Module integrated into a balcony railing, demonstrating its suitability for urban solar installations.

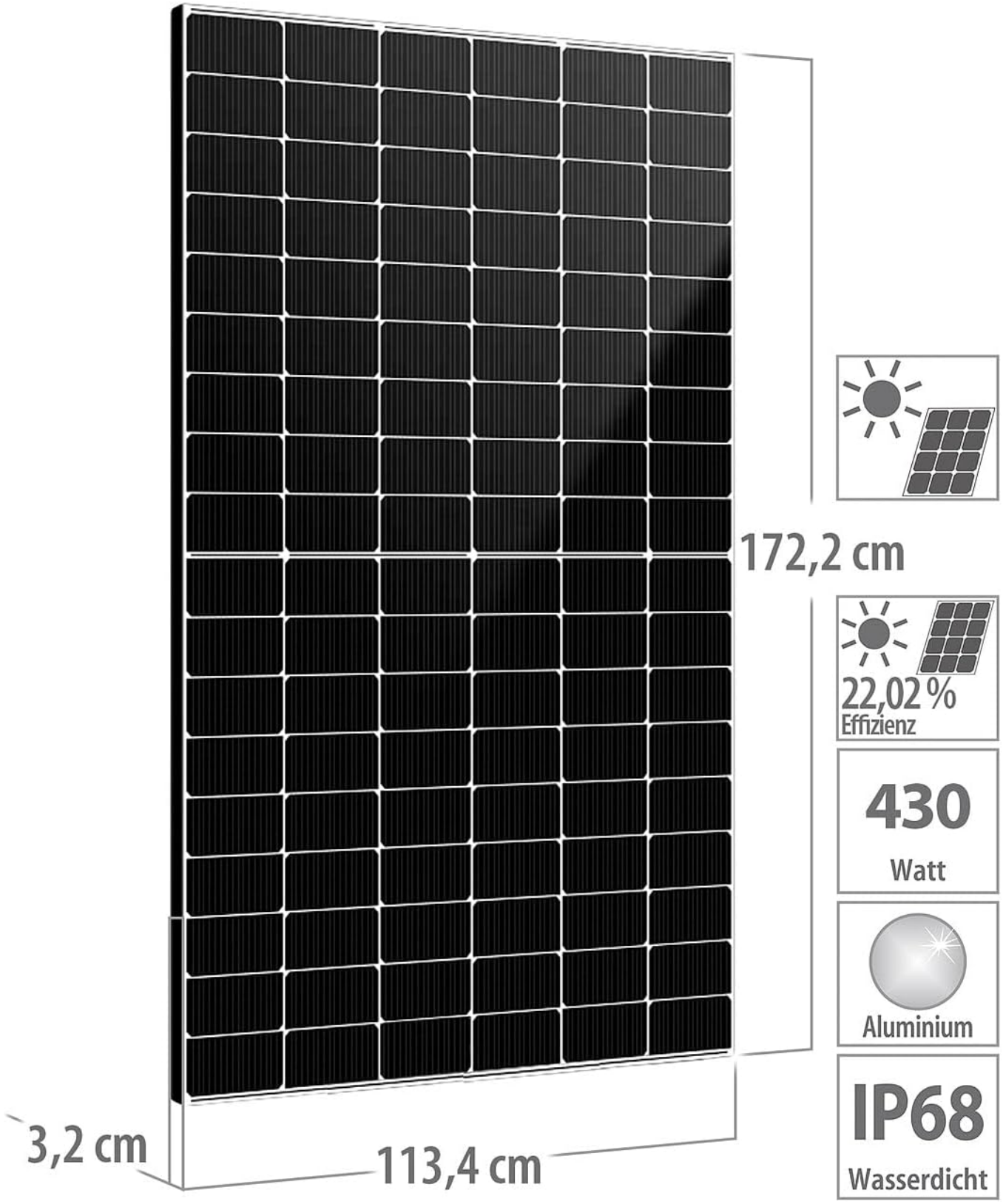


Figure 3: Visual representation of the solar module's dimensions (172.2 cm x 113.4 cm x 3.2 cm) and key features like 22.02% efficiency, 430W power (note: product is 440W, image might be for a similar model), aluminum frame, and IP68 rating.

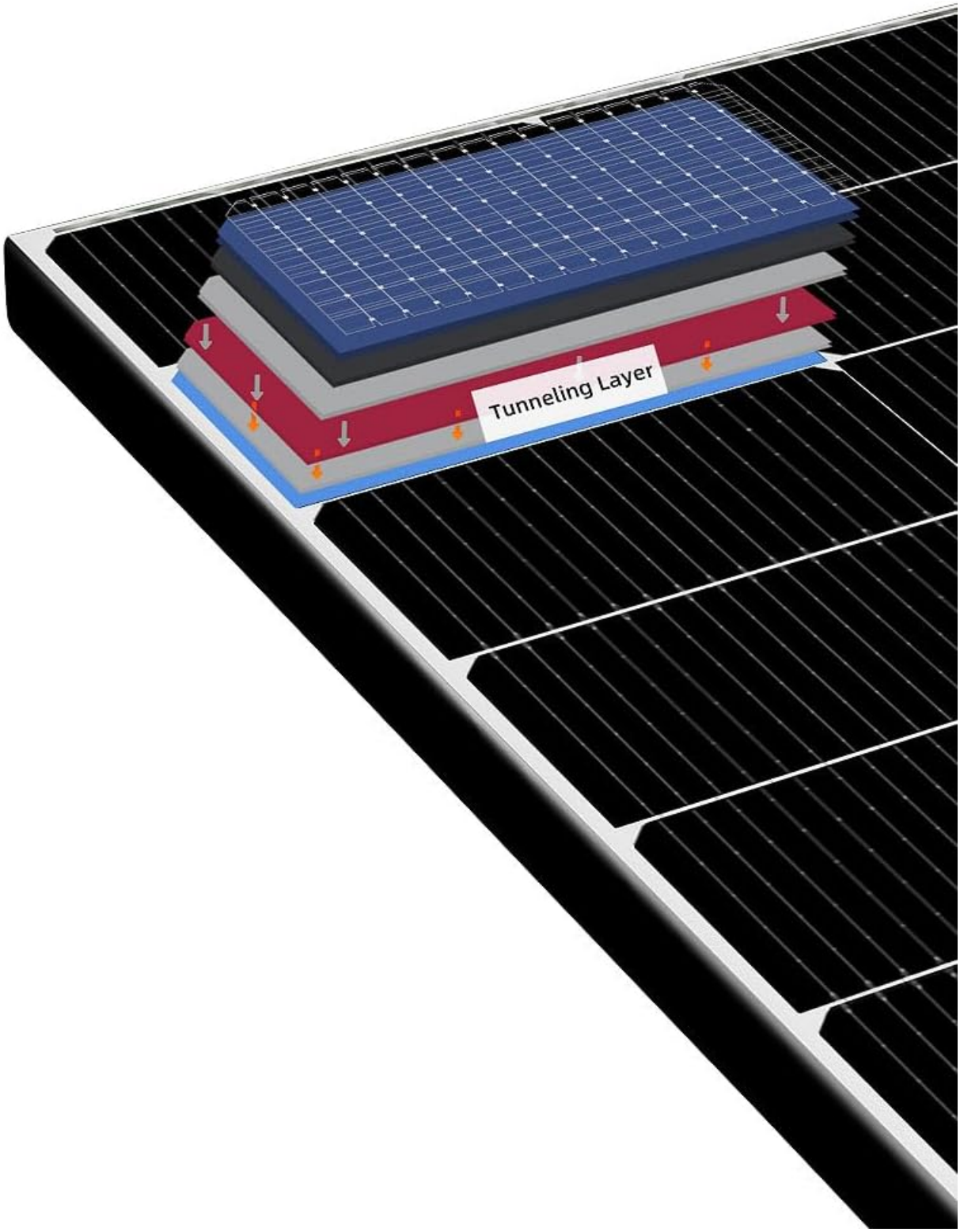


Figure 4: Cross-sectional diagram illustrating the "Tunneling Layer" in TOPCon cell technology, which enhances efficiency by improving electron collection.

4. Setup and Installation

Installation of the DAH Solar Module requires careful planning and adherence to safety guidelines. It is strongly recommended that installation be performed by certified solar professionals.

4.1 Pre-Installation Checklist

- Verify all components are present and undamaged.
- Ensure the mounting structure is robust enough to support the module's weight (22 kg) and withstand local wind

(2,400 PA rear load) and snow loads (5,400 PA front load).

- Confirm compatibility with your chosen micro, hybrid, or standard inverter.
- Have all necessary tools and safety equipment ready.
- Review local building codes and electrical regulations.

4.2 Installation Steps (General Guidelines)

1. **Mounting Structure Preparation:** Install the solar module mounting rails securely on the roof or desired surface according to the manufacturer's instructions and local building codes. Ensure proper spacing and alignment.
2. **Module Placement:** Carefully lift and place the solar modules onto the mounting rails. Secure them using appropriate clamps or fasteners. Ensure even pressure distribution to avoid stressing the module frame.
3. **Electrical Connections:**
    - Connect the MC4-compatible cables from the solar module's junction box to the input of your inverter or charge controller.
    - Ensure correct polarity (+ to + and - to -).
    - For series connections, connect the positive terminal of one module to the negative terminal of the next. Up to 33 modules can be connected in series.
    - For parallel connections, connect positive terminals together and negative terminals together. An unlimited number of modules can be connected in parallel.
    - Ensure all connections are tight and secure to prevent arcing and power loss.
4. **Grounding:** Properly ground the solar module frame and mounting system according to local electrical codes to prevent electrical shock hazards.
5. **Inverter Connection:** Connect the output of the inverter to your electrical system or grid, following the inverter manufacturer's instructions and local regulations.
6. **System Testing:** After all connections are made, perform a thorough system test to ensure proper operation and power output.

5. Operating the Solar Module

The DAH Solar Module operates automatically when exposed to sunlight, converting solar energy into DC electricity. This DC electricity is then converted into usable AC electricity by your connected inverter.

- **Sunlight Exposure:** Ensure the module is exposed to direct sunlight for maximum power generation. Shading from trees, buildings, or other obstructions will reduce output.
- **Monitoring:** Monitor your inverter's display or associated monitoring system to track power generation and system performance.
- **Bypass Diodes:** The integrated 3 bypass diodes help maintain optimal current flow and prevent hot spots in case of partial shading, ensuring continuous power output.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your DAH Solar Module. Thanks to its Full Screen technology, cleaning requirements are significantly reduced.

- **Cleaning:**
    - Periodically inspect the module surface for dirt, dust, leaves, or other debris.
    - The patented Full Screen technology allows rainwater to naturally wash away most impurities.

- If manual cleaning is necessary, use a soft cloth or sponge with clean water. Avoid abrasive materials or harsh chemicals.
- Clean during cooler parts of the day (early morning or late afternoon) to prevent thermal shock to the glass.

- **Visual Inspection:**
  - Regularly check for any visible damage to the glass, frame, cables, or junction box.
  - Look for signs of corrosion, discoloration, or loose connections.
  - Ensure mounting hardware remains secure.
- **Professional Inspection:** It is recommended to have a qualified solar professional inspect your system annually to ensure all components are functioning correctly and safely.

7. Troubleshooting

If you experience issues with your solar module, refer to the table below for common problems and solutions. For complex issues, contact a qualified professional.

Problem	Possible Cause	Solution
Low Power Output	Partial shading on the module. Accumulation of dirt/debris. Faulty inverter. Loose electrical connections.	Remove any shading obstructions. Clean the module surface. Check inverter status and error codes. Inspect and secure all electrical connections.
No Power Output	Inverter off or faulty. Disconnected cables. Grid outage.	Check inverter power and error indicators. Verify all cables are securely connected. Confirm grid status. Contact professional if issue persists.
Visible Damage to Module	Physical impact (e.g., hail, falling debris).	Do not attempt to repair. Isolate the damaged module from the system. Contact a qualified professional for assessment and replacement.
Overheating (Hot Spots)	Sustained partial shading. Defective cell or bypass diode.	Ensure no persistent shading. While bypass diodes mitigate this, persistent issues require professional inspection.

8. Specifications

Parameter	Value
Model	440W Solar Module (B0CPM25LMM)
Brand	DAH Solar
Cell Technology	N-Type TOPCon Monocrystalline Half-Cells
Number of Cells	108
Maximum Power (Pmax)	440 Watt
Efficiency	22.02%
Max. Power Voltage (Vmp)	32.9 V DC
Max. Power Current (Imp)	13.37 A

Parameter	Value
Open-Circuit Voltage (Voc)	38.4 V DC
Short-Circuit Current (Isc)	13.96 A DC
Max. System Voltage	1,500 V DC
Power Tolerance	+/- 5 W
Dimensions (L x W x H)	172.2 cm x 113.4 cm x 3.2 cm
Weight	22 kg
Material	Aluminum Frame
Waterproof Rating	IP68
Front Snow Load	5,400 PA
Rear Wind Load	2,400 PA
Max. Modules in Series	33
Max. Modules in Parallel	Unlimited

9. Warranty and Support

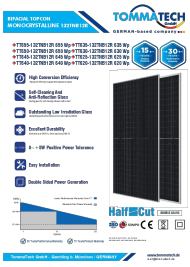
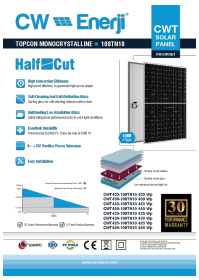
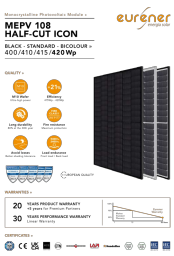
For warranty information, please refer to the documentation provided at the time of purchase or contact DAH Solar directly. Keep your purchase receipt as proof of purchase.

For technical support, installation inquiries, or troubleshooting assistance beyond this manual, please contact DAH Solar customer service or your authorized dealer.

Manufacturer: DAH Solar
First Available on Amazon.de: December 1, 2023

Related Documents - 440W Solar Module (B0CPM25LMM)

	Miele DAH Series Cooker Hood Installation Guide Comprehensive installation instructions for Miele DAH series cooker hoods, covering mounting, assembly, and connection procedures for models DAH 1650 through DAH 4980.
	DAH Solar Full Screen PV Module User Manual and Installation Guide Comprehensive user manual and installation guide for DAH Solar Full Screen PV Modules, covering electrical installation, safety precautions, climatic conditions, and mounting methods.

	[TommaTech Bifacial Topcon Monocrystalline Solar Panels (620-655Wp) - Technical Specifications] Detailed specifications, features, and technical data for TommaTech's TT132TNB12R series bifacial Topcon monocrystalline solar panels, offering high efficiency, durability, and double-sided power generation for renewable energy solutions.
	[CW Enerji 144TNB10 Bifacial Monocrystalline Solar Panel Datasheet & Specifications] Detailed technical specifications, electrical and mechanical features, performance guarantees, and installation guidelines for the CW Enerji CWT 144TNB10 series bifacial monocrystalline solar panels.
	[CW Enerji CWT TOPCON MONOCRYSTALLINE 108TN10 Solar Panels] CW Enerji offers CWT TOPCON MONOCRYSTALLINE 108TN10 solar panels with high conversion efficiency, self-cleaning and anti-reflection glass, outstanding low irradiation performance, and excellent durability. Available in various wattages from 420Wp to 455Wp, these panels come with a 30-year performance warranty and a 12-year product warranty.
	[Eurener MEPV 108 HALF-CUT ICON Monocrystalline Photovoltaic Module] Technical specifications and features of the Eurener MEPV 108 HALF-CUT ICON monocrystalline photovoltaic module, available in Black - Standard - Bicolour, with power outputs from 400Wp to 420Wp. Includes details on quality, warranties, and certifications.