CW U.S.A Energy®

Wherever the sun shines

CW Energy USA

Contents

CWE-GK-003

Factory Area
75.000m²

CWE-GK-003

ABOUT US

CW Energy USA is a pioneering brand shaping the future of the renewable energy sector in America with its innovative approach and expertise in solar energy.

As part of a globally active solar energy company, CW Energy USA leverages advanced photovoltaic (PV) technology and extensive experience to contribute to sustainable energy solutions in one of the world's largest renewable energy markets.

Founded on the strong legacy of its parent company, established in 2010, CW ENERJİ MÜH. TİC. VE SAN. A.Ş.boasts an impressive annual production capacity of 1.8 GW. We provide reliable, innovative, and efficient solar energy solutions tailored for both residential and commercial applications.

Our mission is to create a more sustainable and livable world by delivering clean energy solutions and fostering an environmentally conscious future.

With strategically located warehouses in New Jersey, Georgia, Texas, and our newly added warehouse in California and Florida, we ensure fast delivery and exceptional customer support.

CW Energy USA offers cutting-edge solar solutions, including High Efficiency, PERC Mono, and flexible solar panels, designed to meet the evolving needs of the renewable energy sector.

Committed to environmental sustainability and continuous technological advancement, CW Energy USA strives to be a trusted partner for all stakeholders in the industry.

With a strong emphasis on transparency, quality, and excellence, we are dedicated to harnessing the power of the sun to build a sustainable and brighter future for generations to come.

Knowledge Hub
We make knowledge more accessible with our education portal.

Expert Support
Our pre-sales and after-sales support teams are by your side at every step, providing the best solutions.

Global Reach
We export to more than 60 countries.

Project Design
We offer free project design support, with our professional project design team.

Reliable Stock & Fast Delivery
With our ready stock, we respond to your demands quickly.

You Stay in Control!

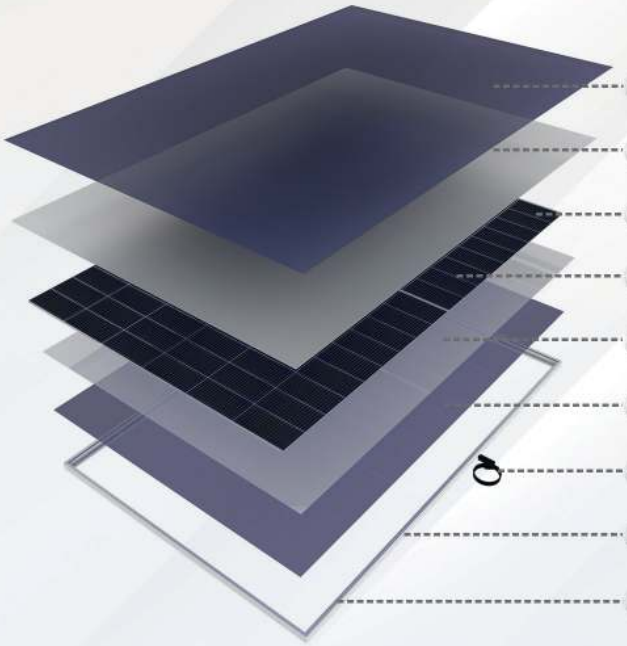
Sustainability and Environmental Responsibility
Through our investments in renewable energy sources, we reduce our carbon footprint and strive to leave a cleaner world for future generations.

Quality Control from the Very First Step
Starting with raw material production, our quality control ensures unmatched excellence in every detail.

Technology
Equipped with state-of-the-art technology, our production facilities utilize the most advanced manufacturing techniques to ensure industrial excellence.

Customer-Centric Approach
We always prioritize the needs of our customers and aim to provide them with the best service.

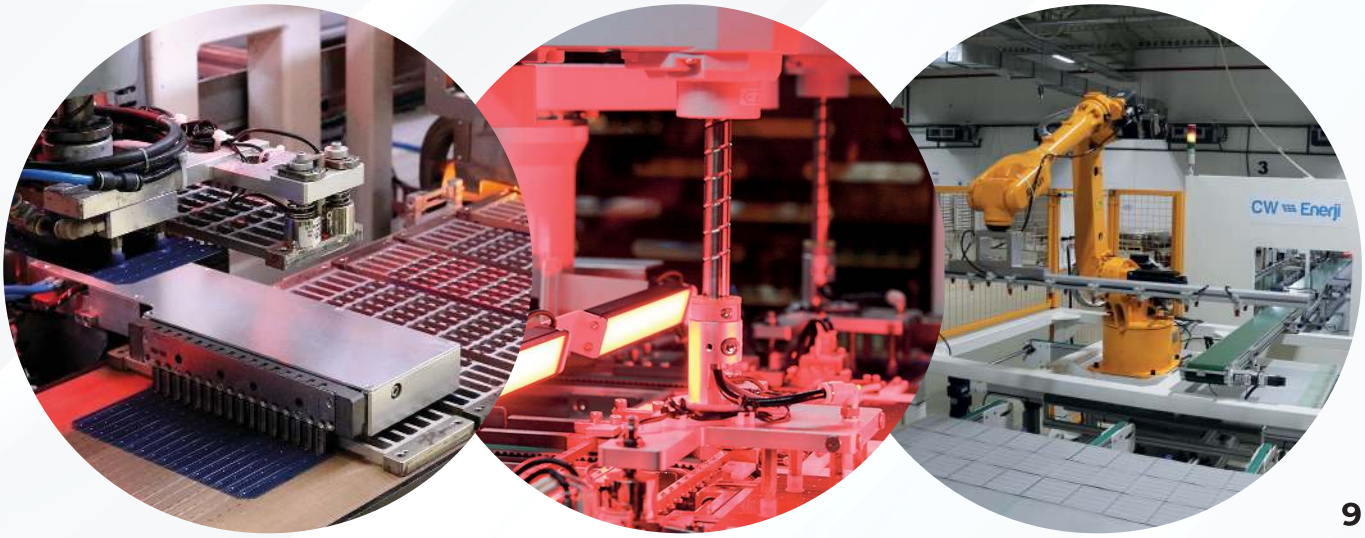
CW U.S.A Energy®



- SOLAR GLASS
- (ANTI-PID) LOW ACID EPE FILM (EVA-POE-EVA)
- HIGH EFFICIENCY SOLAR CELL
- RIBBON
- (ANTI-PID) LOW ACID EPE FILM (EVA-POE-EVA)
- BACKSHEET / GLASS
- JUNCTION BOX
- ALUMINIUM FRAME
- SILICONE SEALANT

SOLAR PANEL QUALITY CONTROL POINTS

RAW MATERIAL INPUT QUALITY CONTROL
PRODUCTION LINE RAW MATERIAL CONFORMITY CONTROL
CELL EFFICIENCY MEASUREMENT CONTROL
LASER CUTTING CELL QUALITY CONTROL
GLASS LOADING MACHINE QUALITY CONTROL
STRINGER CAMERA CELL SIZE CONTROL
STRINGER ARRAY EL TESTER CONTROL
STRINGER RIBBON PULL CONTROL
CELL STRING DISTANCE CONTROL
LAY UP STRING LAYOUT CONTROL
BUS WELDING SOLDERING WITH CAMERA CONTROL
TAPING PRESSURE SENSOR CONTROL
EL TESTER 1 (ELECTROLUMINESCENCE) CONTROL BEFORE LAMINATOR
EL TESTER 1 REAL IMAGE CONTROL
LAMINATOR GEL CONTENT CONTROL
LAMINATOR HOMOGENEITY CONTROL
LAMINATOR EVA & BACKSHEET ADHESION CONTROL
CUTTING EDGE SENSOR CUT CONTROL
VISUAL QUALITY CONTROL
FRAME SIZE CONTROL WITH SENSORS
JUNCTION BOX SOLDER COMPATIBILITY CONTROL WITH CAMERA
POTTING DOSING & CURING TIME CONTROL
SOLAR SIMULATOR POWER OUTPUT & CURRENT SEPARATION CONTROL
PANEL ISOLATION CONTROLS
EL TESTER 2 (ELECTROLUMINESCENCE) CONTROL AFTER LAMINATOR
EL TESTER 2 REAL IMAGE CONTROL
END-OF-LINE FINISHED PRODUCT CONTROL & REGISTRATION
FINAL QUALITY CONTROL EL-2 RESULTS & POWER RATINGS CONFIRMATION
LABEL & CONFORMITY CONTROL BEFORE PACKAGING
DELIVERY & SHIPMENT

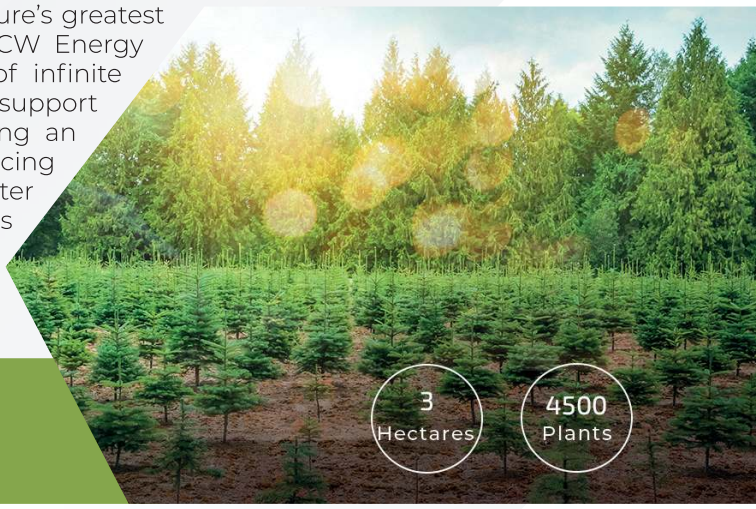


CW Energy

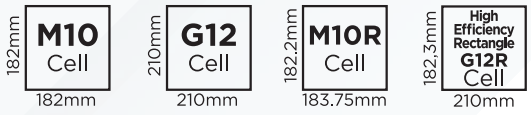
Mission & Vision

As CW Energy continues to invest in solar energy—nature's greatest gift—we contribute to a greener world through the CW Energy Memorial Forest. Our vision is to expand the use of infinite solar energy and other clean energy sources to support both Türkiye's and the global economy while fostering an ecological, sustainable, and greener planet. By embracing new technologies, we are committed to shaping a better future for humanity.To achieve this, CW Energy is dedicated to leaving a more livable environment for future generations. Our core mission is to sustain our presence as an honest, reliable, principled, and forward-thinking organization for years to come.

While CW Enerji continues to invest in the energy of the sun which is nature's greatest blessing, we contribute to a greener world by with the CW Enerji Memorial Forest.



We Continue to Produce the Best.



Quality & Certification

CW Enerji is a solar panel manufacturing company that offers new technologies by acting sensitively in order to make the lives of people and other beings more sustainable, whose priority in all products and services is customer orientation and high quality, and which is taking firm steps towards becoming the world leader in the sector. Solar panels manufactured in the factory with ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, ISO/IEC 27001:2017, ISO 50001:2018, ISO 10002:2018, UL, IEC certificates and standards which tested by independent test organizations to ensure certification compliance and regulatory standards. The solar panels manufactured by CW Enerji with these values are secured by the world's leading reinsurance companies with a "30-year linear performance warranty".

FORTUNE TÜRKİYE 500

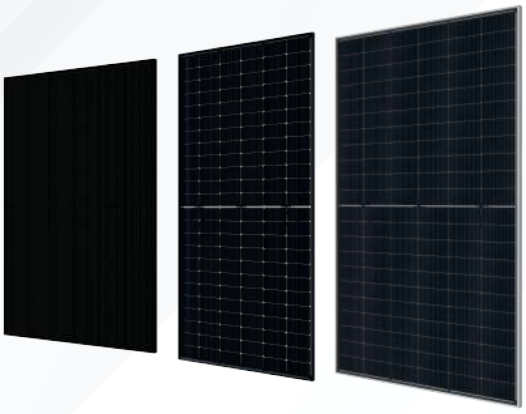
TÜRKİYE'S TOP 500 INDUSTRIAL ENTERPRISES 2024

Intertek · TÜV SÜD · TÜV NORD · VDE · TSE · SOMPO · SGS · CSA GROUP

100% PID FREE · CE · ISO · PV CYCLE · c UL us LISTED PHOTOVOLTAIC MODULE OVER 600 VOLTS E498166

IEC 61215, IEC 61730, IEC 62804 (PID-Free)
IEC 61716 (Ammonia Corrosion),IEC 61701 (Salt Mist Corrosion)
IEC 60068-28-68 (Dust and Sand Test)
TS EN 13501-5 (Flammability Test)
ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

CW Enerji 30 YEARS PERFORMANCE WARRANTY



108TNB10 450-445Wp

144TNB10 605-585Wp

132TNB12R 655-620Wp

CW Energy U.S.A ®

USA Technical Datasheet CW Enerji

30 YEARS PERFORMANCE WARRANTY

BIFACIAL HIGH-EFFICIENCY SOLAR PANELS 108TNB10

Half Cut

Reliability Tested & Verified
Performance Durability

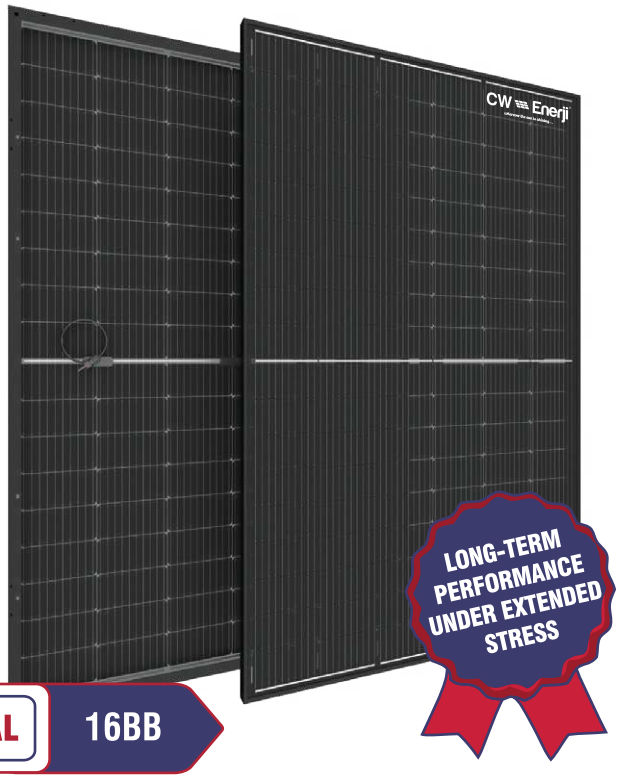
High Conversion Efficiency
High panel efficiency to guarantee high power output

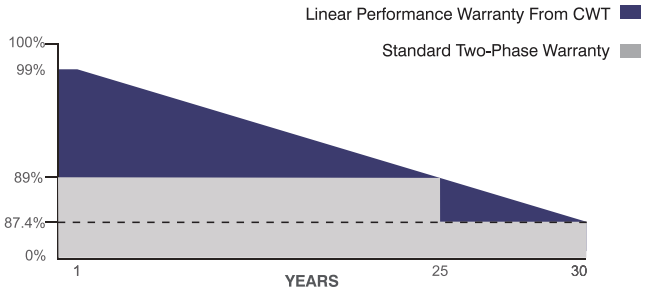
Self-Cleaning And Anti-Reflection Glass
Coating glass for self-cleaning reduces surface dust

Outstanding Low Irradiation Glass
Outstanding panel performance even in weak light conditions

0～+5W Positive Power Tolerance

Easy Installation





30 Years Performance Warranty

25 Years Product Warranty

CWT450-108TNB10	450	Wp
CWT445-108TNB10	445	Wp

IEC 61215, IEC 61730-1, IEC 61730-2, IEC 63209-1
ISO 9001:2015, ISO 14001:2015, ISO 45001:2018
UL 61730-1, UL61730-2

BIFACIAL HIGH-EFFICIENCY SOLAR PANELS 108TNB10 Half Cut

ELECTRICAL CHARACTERISTICS

Model Type	CWT445 108TNB10	CWT450 108TNB10
Peak Power (P_{max})	445 Wp	450 Wp
Module Efficiency (%)	22,79	23,04
Maximum Power Voltage (V_{mp})	32,94	33,14
Maximum Power Current (I_{mp})	13,51	13,58
Open Circuit Voltage (V_{oc})	39,11	39,31
Short Circuit Current (I_{sc})	14,31	14,38
Power Tolerance	0~+5W	
Maximum System Voltage	1500V DC	
Operating Temperature	-40 ~ +85°C	
Protection Class	Class II	
Fire Class	UL type 29 / IEC Class C	
Maximum Series Fuse Rating	25A	
Bifaciality Rate	%80±5	

MECHANICAL SPECIFICATIONS

Cell Dimensions(mm/inch)	182,2x91,8 / 7,17x3,61
Cells per Module(pcs)	108 (6x18)
Weight(kg/lbs)	21.45 / 47.29
Panel Dimensions(mm/inch)	1722x1134x30 / 67.80x44.64x1.18
Max. Wind/Snow Load(Pa)/(lb/ft²)	(2400 / 5400) / (50 / 212)
Junction Box	IP68
Junction Box Cable Length(mm/inch)	350-1600 / 13.78-63.00
Frame Color	Silver / Black
Rear Side Material	Transparent Backsheet

REARSIDE POWER GAIN

(450W Front Power Referenced)

Rear Side Power Gain	5%	10%	15%	20%	25%
Peak Power (Pmax)	472.50	495.00	517.50	540.00	562.50
Short Circuit Current (Isc)	15.10	15.82	16.54	17.26	17.98
Open Circuit Voltage (Voc)	41.07	43.02	44.98	46.93	48.89
Maximum Power Current (Imp)	14.26	14.94	15.62	16.30	16.98
Maximum Power Voltage (Vmp)	34.80	36.45	38.11	39.77	41.43

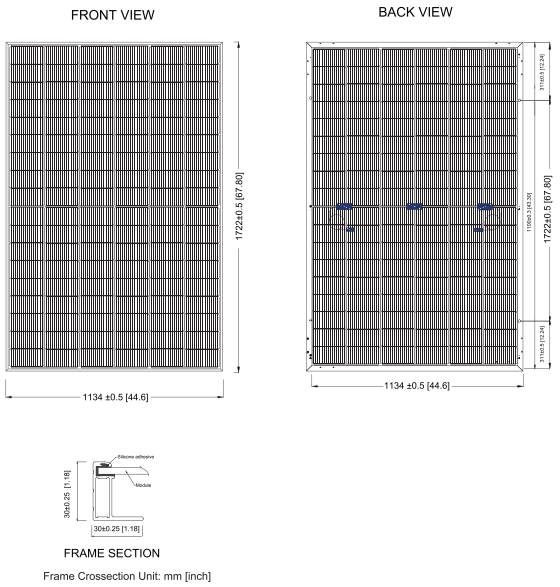
TEMPERATURE CHARACTERISTICS

Temp. Coeff. of (I_{sc})	0.040%/°C
Temp. Coeff. of (V_{oc})	-0.260%/°C
Temp. Coeff. of (P_{max})	-0.30%/°C

PACKING CONFIGURATION

Container	40' GP
Pieces per Pallet	35
Pieces Per Container	910
Pallet Per Container	26

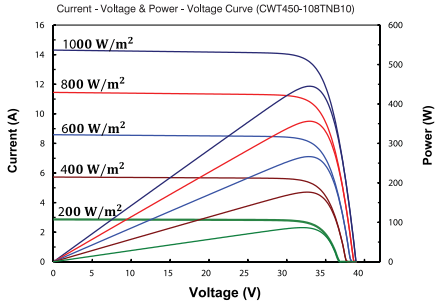
PHYSICAL CHARACTERISTICS



FRAME SECTION

Frame Crossection Unit: mm [inch]

ELECTRICAL CHARACTERISTICS



* The specifications are obtained under the standard test conditions: 1000W/m2 solar irradiance, 1.5 Air Mass and cell temperature of 25°C. Measurement uncertainty for all panels is 3%. The actual transactions will be subject to the contracts. These parameters are for reference only and it is not a part of the contracts. The technical specifications in this document may vary. For more information, refer to the "Installation Manual".
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CW U.S.A Energy®

USA Technical Datasheet CW Enerji

30 YEARS PERFORMANCE WARRANTY

HIGH-EFFICIENCY SOLAR PANELS 108TNB10

Half Cut

Multi-BB

BLACK ON BLACK

Reliability Tested & Verified
Performance Durability

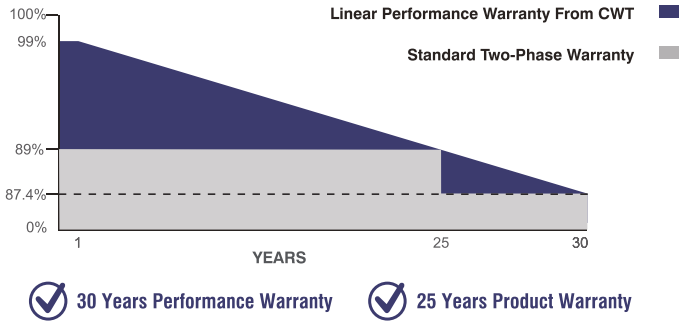
High Conversion Efficiency
High panel efficiency to guarantee high power output

Self-Cleaning And Anti-Reflection Glass
Coating glass for self-cleaning reduces surface dust

Outstanding Low Irradiation Glass
Outstanding panel performance even in weak light conditions

0~+5W Positive Power Tolerance

Easy Installation



30 Years Performance Warranty

25 Years Product Warranty

CWT450-108TNB10 450 Wp

CWT445-108TNB10 445 Wp

IEC 61215, IEC 61730-1, IEC 61730-2, IEC 63209-1
ISO 9001:2015, ISO 14001:2015, ISO 45001:2018
UL 61730-1, UL61730-2

HIGH-EFFICIENCY SOLAR PANELS 108TNB10 Half Cut

ELECTRICAL CHARACTERISTICS

Model Type	CWT445 108TNB10	CWT450 108TNB10
Peak Power (P_{max})	445 Wp	450 Wp
Module Efficiency (%)	22,79	23,04
Maximum Power Voltage (V_{mp})	32,94	33,14
Maximum Power Current (I_{mp})	13,51	13,58
Open Circuit Voltage (V_{oc})	39,11	39,31
Short Circuit Current (I_{sc})	14,31	14,38
Power Tolerance	0~+5W	
Maximum System Voltage	1500V DC	
Operating Temperature	-40 ~ +85°C	
Protection Class	Class II	
Fire Class	UL type 29 / IEC Class C	
Maximum Series Fuse Rating	25A	

MECHANICAL SPECIFICATIONS

Cell Dimensions(mm/inch)	182 x 91 / 7.16x 3.58
Cells per Module(pcs)	108 (6x18)
Weight(kg/lbs)	21.45 / 47.29
Panel Dimensions(mm/inch)	1722x1134x30 / 67.80x44.64x1.18
Max. Wind/Snow Load(Pa)/(lb/ft²)	(2400 / 5400) / (50 / 112.8)
Junction Box	IP68
Junction Box Cable Length(mm/inch)	350-1600 / 13.78-63.00
Frame Color	Black

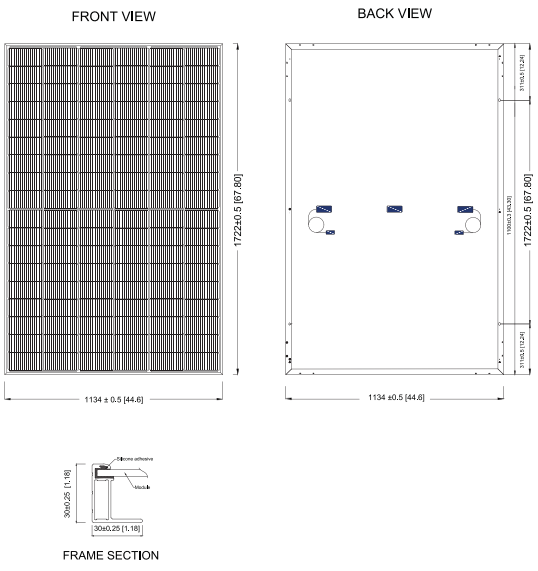
TEMPERATURE CHARACTERISTICS

Temp. Coeff. of (I_{sc})	0.040%/°C
Temp. Coeff. of (V_{oc})	-0.260%/°C
Temp. Coeff. of (P_{max})	-0.30%/°C

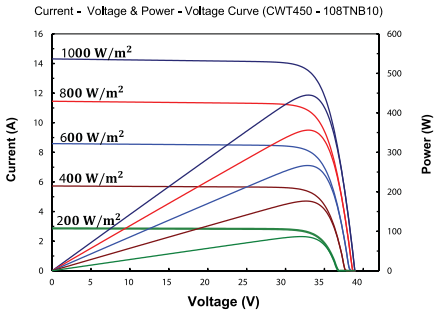
PACKING CONFIGURATION

Container	40' GP
Pieces per Pallet	35
Pieces Per Container	910
Pallet Per Container	26

PHYSICAL CHARACTERISTICS



ELECTRICAL CHARACTERISTICS



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CW Energy U.S.A

USA Technical Datasheet CW Enerji

30 YEARS PERFORMANCE WARRANTY

BIFACIAL HIGH-EFFICIENCY SOLAR PANELS 144TNB10

Half Cut

Reliability Tested & Verified
High Performance Durability Under Extended Stress

High Conversion Efficiency
High panel efficiency to guarantee high power output

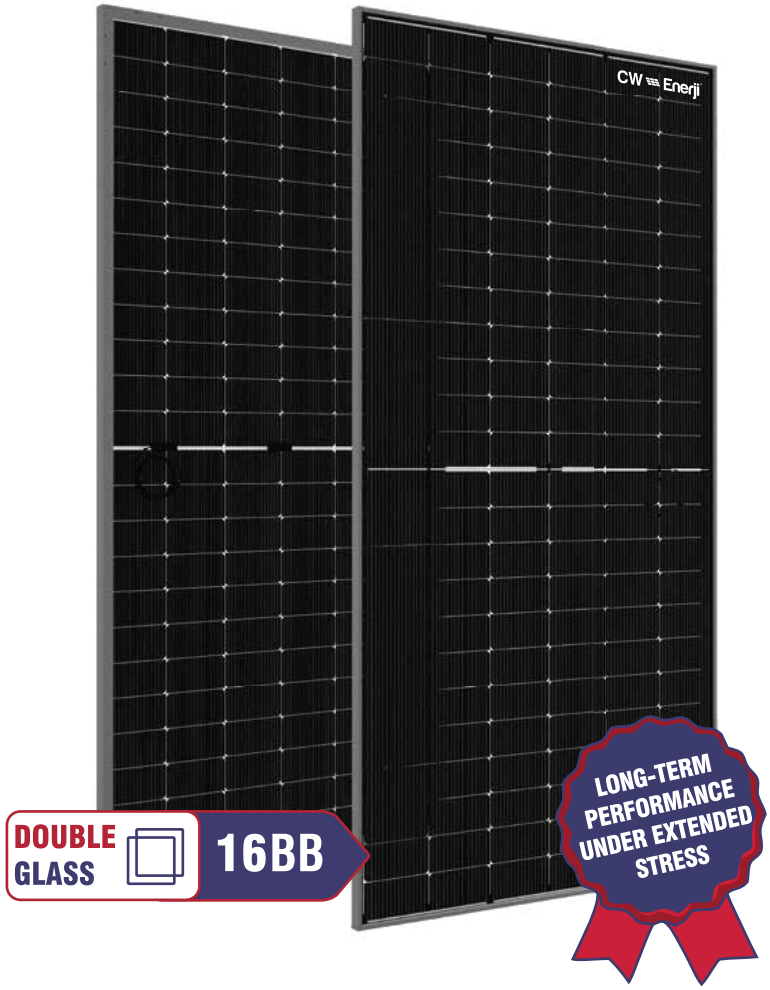
Self-Cleaning And Anti-Reflection Glass
Coating glass for self-cleaning reduces surface dust

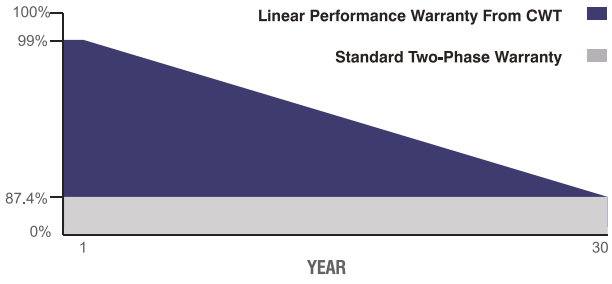
Outstanding Low Irradiation Glass
Outstanding panel performance even in weak light conditions

0~+5W Positive Power Tolerance

Easy Installation

Twice EVA Laminated Double Glass





30 Years Performance Warranty
30 Years Product Warranty

CWT600-144TNB10 600 Wp
CWT595-144TNB10 595 Wp
CWT590-144TNB10 590 Wp
CWT585-144TNB10 585 Wp

IEC 61215, IEC 61730-1, IEC 61730-2 IEC 63209-1
ISO 9001:2015, ISO 14001:2015, ISO 45001:2018
UL 61730-1, UL 61730-2

BIFACIAL HIGH-EFFICIENCY SOLAR PANELS ● 144TNB10 Half Cut

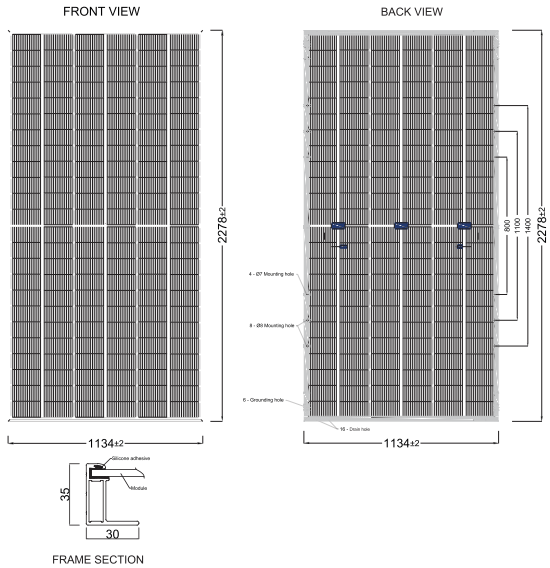
ELECTRICAL CHARACTERISTICS

Model Type	CWT585 144TNB10	CWT590 144TNB10	CWT595 144TNB10	CWT600 144TNB10
Peak Power (P_{max})	585 Wp	590 Wp	595 Wp	600 Wp
Module Efficiency (%)	22.65	22.84	23.03	23.23
Maximum Power Voltage (V_{mp})	43.15	43.35	43.55	43.75
Maximum Power Current (I_{mp})	13.56	13.62	13.67	13.72
Open Circuit Voltage (V_{oc})	51.78	51.98	52.18	52.38
Short Circuit Current (I_{sc})	14.24	14.30	14.36	14.42
Power Tolerance	0~+5W			
Maximum System Voltage	1500V DC			
Operating Temperature	-40 ~ +85°C			
Protection Class	Class II			
Fire Class	UL type 29 / IEC Class C			
Maximum Series Fuse Rating	25A			
Bifaciality Rate	%80±5			

MECHANICAL SPECIFICATIONS

Cell Dimensions(mm/inch)	182,2x91,8 / 7,17x3,61
Cells per Module(pcs)	144 (6x24)
Weight(kg/lbs)	(*30 mm*) 32.0 / 70.54 (*35 mm*) 33.0 / 72.75
Panel Dimensions(mm/inch)	2278x1134x30 / 89.68x44.64x1.17 2278x1134x35 / 89.68x44.64x1.37
Max. Wind/Snow Load(Pa)/(lb/ft²)	(2400 / 5400) / (50 / 212)
Junction Box	IP68
Junction Box Cable Length(mm/inch)	300-1600
Glass Thickness(mm/inch)	(2.0 / 2.0) / (0.08 / 0.08)
Frame Color	Silver / Black

PHYSICAL CHARACTERISTICS



REARSIDE POWER GAIN

(600W Front Power Referenced)

Rear Side Power Gain	10%	20%	30%
Peak Power (Pmax)	660.00	720.00	780.00

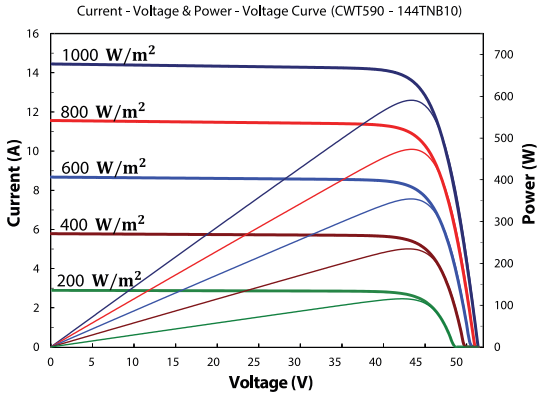
TEMPERATURE CHARACTERISTICS

Temp. Coeff. of (I_{sc})	0.040%/°C
Temp. Coeff. of (V_{oc})	-0.260%/°C
Temp. Coeff. of (P_{max})	-0.30%/°C

PACKING CONFIGURATION

Container	40' GP
Pieces per Pallet	31
Pieces Per Container	620
Pallet Per Container	20

ELECTRICAL CHARACTERISTICS



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CW Energy U.S.A

USA Technical Datasheet CW Enerji

30 YEARS PERFORMANCE WARRANTY

BIFACIAL HIGH-EFFICIENCY SOLAR PANELS 132TNB12R

Half Cut

Reliability Tested & Verified
High Performance Durability Under Extended Stress

High Conversion Efficiency
High panel efficiency to guarantee high power output

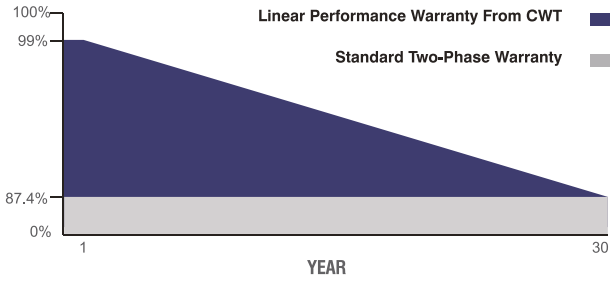
Self-Cleaning And Anti-Reflection Glass
Coating glass for self-cleaning reduces surface dust

Outstanding Low Irradiation Glass
Outstanding panel performance even in weak light conditions

0~+5W Positive Power Tolerance

Easy Installation

Twice EVA Laminated Double Glass



30 Years Performance Warranty 30 Years Product Warranty

CWT655-132TNB12R 655 Wp
CWT650-132TNB12R 650 Wp
CWT645-132TNB12R 645 Wp
CWT640-132TNB12R 640 Wp
CWT635-132TNB12R 635 Wp
CWT630-132TNB12R 630Wp
CWT625-132TNB12R 625Wp
CWT620-132TNB12R 620Wp

IEC 61215, IEC 61730-1, IEC 61730-2, IEC 63209-1
ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

BIFACIAL HIGH-EFFICIENCY SOLAR PANELS ● 132TNB12R Half Cut

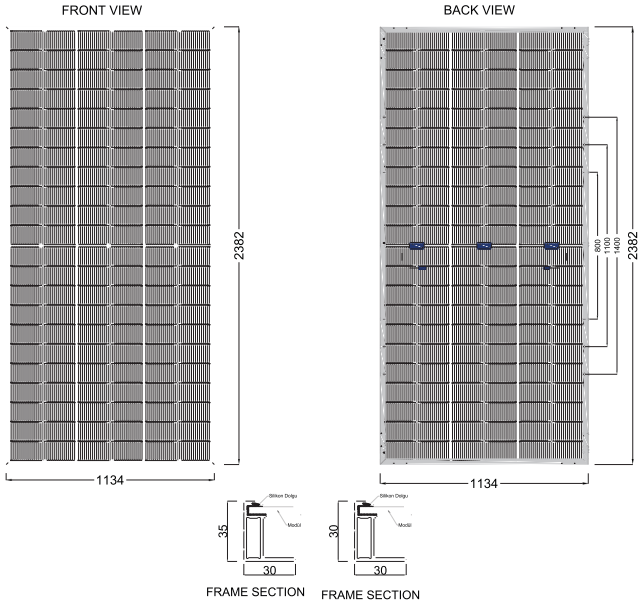
ELECTRICAL CHARACTERISTICS

Model Type	CWT620 132TNB12R	CWT625 132TNB12R	CWT630 132TNB12R	CWT635 132TNB12R	CWT640 132TNB12R	CWT645 132TNB12R	CWT650 132TNB12R	CWT655 132TNB12R
Peak Power (P_{max})	620 Wp	625 Wp	630 Wp	635 Wp	640 Wp	645 Wp	650 Wp	655 Wp
Module Efficiency (%)	22.93	23.12	23.30	23.49	23.67	23.86	24.04	24.23
Maximum Power Voltage (V_{mp})	41.02	41.22	41.42	41.62	41.82	42.02	42.22	42.42
Maximum Power Current (I_{mp})	15.12	15.17	15.22	15.26	15.31	15.35	15.40	15.45
Open Circuit Voltage (V_{oc})	48.99	49.19	49.39	49.59	49.79	49.99	50.19	50.39
Short Circuit Current (I_{sc})	16.02	16.08	16.14	16.20	16.26	16.32	16.38	16.44
Power Tolerance	0~+5W							
Maximum System Voltage	1500V DC							
Operating Temperature	-40 ~ +85°C							
Protection Class	Class II							
Fire Class	UL type 29 / IEC Class C							
Maximum Series Fuse Rating	25A							
Bifaciality Rate	%80±5							

MECHANICAL SPECIFICATIONS

Cell Dimensions(mm/inch)	182,3x105 / 7,17x4,14
Cells per Module(pcs)	132 (6x22)
Weight(kg/lbs)	*(30 mm)* 34,95 / 77,05 *(35 mm)* 35,95 / 79,25
Panel Dimensions(mm/inch)	2382x1134x30 / 93.85 x 44.65x1.20 2382x1134x35 / 93.85 x 44.65 x 1.40
Max. Wind/Snow Load(Pa)/(lb/ft^2)	(2400 / 5400) / (50 / 112.8)
Junction Box	IP68
Junction Box Cable Length(mm/inch)	350-1600 / 13.78-63.00
Glass Thickness(mm/inch)	(2.0 / 2.0) / (0.08 / 0.08)
Frame Color	Silver / Black

PHYSICAL CHARACTERISTICS



REARSIDE POWER GAIN

(630W Front Power Referenced)

Rear Side Power Gain	10%	20%	30%
Peak Power (Pmax)	693.00	732.00	819.00

TEMPERATURE CHARACTERISTICS

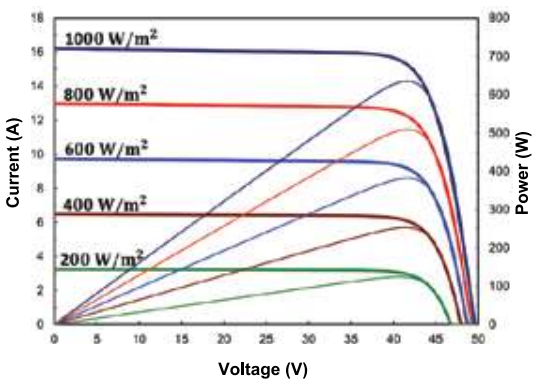
Temp. Coeff. of (I_{sc})	0.040%/°C
Temp. Coeff. of (V_{oc})	-0.260%/°C
Temp. Coeff. of (P_{max})	-0.30%/°C

PACKING CONFIGURATION

Container	40' GP	40' GP
Frame Thickness (mm)	35	30
Pieces per Pallet	31	36
Pieces Per Container	558	648
Pallet Per Container	18	18

ELECTRICAL CHARACTERISTICS

Current - Voltage & Power - Voltage Curve (CWT630 - 132TNB12R)



* The specifications are obtained under the standard test conditions: 1000W/m2 solar irradiance, 1.5 Air Mass and cell temperature of 25°C. Measurement uncertainty for all panels is 3%. The actual transactions will be subject to the contracts. These parameters are for reference only and it is not a part of the contracts. The technical specifications in this document may vary. For more information, refer to the "Installation Manual".
* For roof, facades and installations on similar surfaces, solar panels should be mounted over a fire-resistant covering suitable for this application, with adequate ventilation between the back of the solar panels and the mounting surface. Improper installations are hazardous and may spark a fire. Solar panels must not be mounted on structures and roofs which are made of not fire-resistant materials such as plastic layer, transparent plastic, PVC or similar materials without any fire-protection layer. Usage and installation not in accordance with the guidelines as outlined in the installation manual will terminate the warranty. Please refer to the installation manual and the warranty documents for further details.
* CW Enerji reserves the right to change the specification of products without prior notice.

CW U.S.A Energy®

USA Technical Datasheet

7 YEARS TOTAL WARRANTY
2 YEARS PRODUCT + 5 YEARS PERFORMANCE

FLEXIBLE SOLAR PANELS

- CWT-FLEX-170 170Wp
- CWT-FLEX-170-FB 170Wp
- CWT-FLEX-110 110Wp
- CWT-FLEX-110-FB 110Wp

Cw Enerji New Generation Flexible Panel, which has high light transmittance ETFE polymer, durable fiberglass and high efficiency IBC solar cell in its structure, is produced in international quality standards with 7-layer advanced lamination technology. The combination of ETFE and fiberglass sheet makes the panel much more durable. It flexes up to a maximum of 30 degrees and is lightweight, making it a perfect fit for any surface. Available in 110Wp and 170Wp power options, Cw Enerji Flexible Panel Series has the advantage of being used in many application areas such as boats, caravans, roofs and many similar applications. Available in white and black color options, the series has the option of production in different power and size options according to your needs.

Prism Surface
Maximum light absorption through prism surface

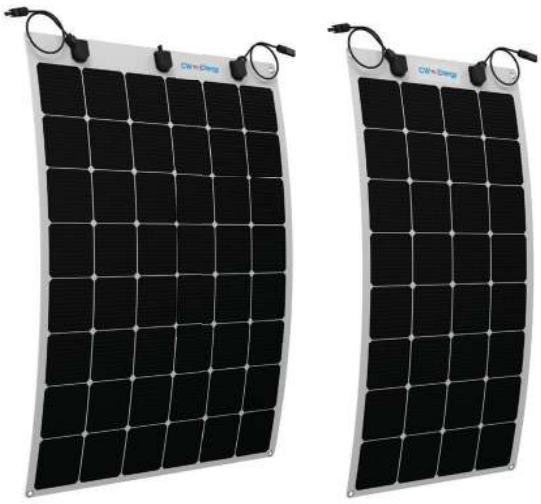
Excellent Light Transmit with ETFE
Higher light transmittance, corrosion resistance, operating temperature range

IBC Cell Technology
Flexible, durable and high efficient cell with back contact connection

Flexible Design
Flexibility up to 30 degrees max

Ultra Lightweight
3mm thick ultrathin and durable design

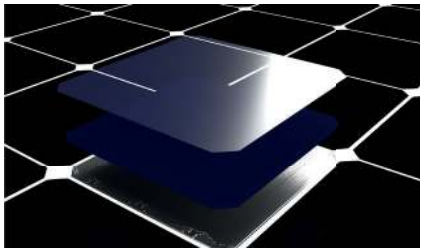
IP68 Protection Class
Provides water resistance with IP68 Junction Box



IP68 Junction Box

Prism Surface Design

Stainless Eyelet



IBC Solar cells, which are preferred in flexible panels, are a cell type built on a copper base. When bent or left in a humid environment, Cw Enerji Flexible Panels are more resistant to power losses due to breakage and corrosion than conventional solar panels. Cw Enerji Flexible Panels are one of the most important energy solutions for users with the Bypass diodes and efficient cell architecture in low radiation and shade conditions.

ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

FLEXIBLE SOLAR PANELS

ELECTRICAL CHARACTERISTICS

Model Type	CWT-FLEX-110 110Wp	CWT-FLEX-170 170Wp
Peak Power(P_{max})[Wp]	110	170
Module Efficiency(%)	17.5	18.5
Power Tolerance [W]	0~+5	
Maximum Power Voltage (V_{mp})[V]	18.84	28.82
Maximum Power Current (I_{mp})[A]	5.90	5.90
Open Circuit Voltage (V_{oc})[V]	22.80	34.60
Short Circuit Current(I_{sc})[A]	6.33	6.33
Temp. Coeff. of (P_{max})	-0.29%/°C	
Temp. Coeff. of (V_{oc})	-55.68mV/°C	-83.70mV/°C
Temp. Coeff. of (I_{sc})	2.9mA/°C	
Dimensions(mm/inch)	1134x555x3	1134x811x3
Weight(kg/lbs)	2.3	3.2
Maximum System Voltage[VDC]	600	
Maximum Series Fuse Rating[A]	15	
Protection Class	IP68	
Number of ByPass Diodes	2	3

CWT-FLEX-110	CWT-FLEX-170
	
CWT-FLEX-110-FB	**TT-FLEX-170-FB**
	

* The specifications are obtained under the standard test conditions: 1000W/m2 solar irradiance, 1.5 Air Mass and cell temperature of 25°C. Measurement uncertainty for all panels is 3%. The actual transactions will be subject to the contracts. These parameters are for reference only and it is not a part of the contracts. The technical specifications in this document may vary. For more information, refer to the "Installation Manual".
* Cw Enerji reserves the right to change the specification of products without prior notice.

CW U.S.A Energy®

USA Technical Datasheet CW Enerji

2 YEARS PRODUCT WARRANTY

CWT-FLEX-FBAG-110 110Wp

Easy to install, to carry and to use, the CW Enerji foldable solar panel is a powerful companion ready to take you on your next adventure. Designed to withstand harsh operating conditions, the high-performance solar panel offers a practical and reliable solution for emergencies. CW Enerji foldable solar panel, which has high light transmittance ETFE polymer, durable fiberglass sheet and high efficiency IBC solar cell in its structure, is produced in international quality standards with 7-layer high lamination technology. With CW Enerji foldable solar panels, you can charge your phone or tablet directly with USB power output, while at the same time you can get up to 110W instant power output with solar connectors. It is also possible to increase capacity by connecting multiple products together. Models can be customized for your different needs.

Prism Surface
Maximum light absorption through prism surface

Excellent Light Transmit with ETFE
Higher light transmittance, corrosion resistance, operating temperature range

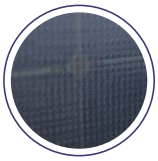
IBC Cell Technology
Flexible, durable and high efficient cell with back contact connection

Ultra Lightweight
Ultra thin and durable design

Easy to use
Easy to use, practical design

Increasable Capacity
Increasable power by connecting two or more products together

Solar Connector



Prism Surface

USB Fast Charging Output

The holders allows you to adjust the panel to the optimum angle for maximum performance.
You can make adjustments as the position of the sun changes.

SOMPO ISO PV CYCLE CE

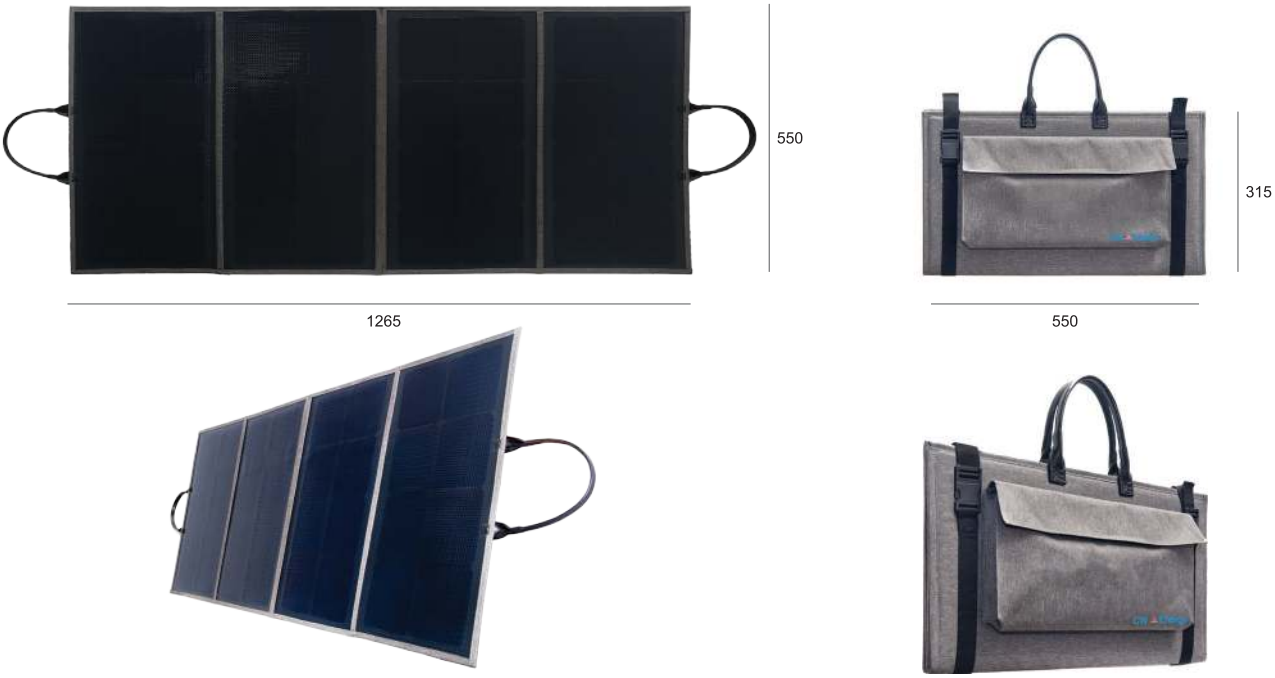
ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

FOLDABLE SOLAR PANELS

ELECTRICAL CHARACTERISTICS

Model Type	CWT-FLEX-FBAG-110 110Wp
Peak Power (Pmax)	110 Wp
Power Tolerance	0~+5W
Maximum Power Voltage (Vmp)	18.84
Maximum Power Current (Imp)	5.84
Open Circuit Voltage (Voc)	22.80
Short Circuit Current (Isc)	6.15
Temp. Coeff. of Pmax	-0.29%/°C
Temp. Coeff. of Voc	-55.68mV/°C
Temp. Coeff. of Isc	2.9mA/°C
Dimensions (Opened/Closed)(mm)	1265x550x6 / 550x315x24
Weight	4
Maximum System Voltage	1000V DC
Maximum Series Fuse Rating	15A
Protection Class	IP68
Junction Box Cable Length (mm)	600
Connector	MC4
USB Output	QC 3.0 Quick Charge 5V-9V-12V
Exterior of the Product	Fabric

Unit: mm



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*CW Enerji reserves the right to change the specification of products without prior notice

CW Energy USA

USA Technical Datasheet CW Enerji

Easy Life

CW Energy USA 25Wp FOLDABLE SOLAR CHARGING PANEL

2 YEARS PRODUCT WARRANTY

CW Energy USA Easy Life Series Foldable Solar Charging Panel provide power to portable chargers such as powerbanks, smart phones, tablets or other USB devices directly from the sun, offering a wide range of applications.

Prism Surface
Maximum light absorption through prism surface

Excellent Light Transmit with ETFE
Higher light transmittance, corrosion resistance, operating temperature range

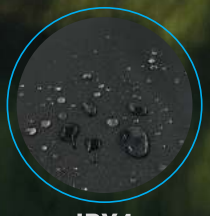
IBC Cell Technology
Flexible, durable and high efficient cell with back contact connection

Ultra Lightweight
Compact design with easy to carry size and weight

Fast Charging Technology
Fast charging up to 3 amps with QC 3.0 technology

USB & Type-C Charger

Zippered Pocket



IPX4 Protection

Hanger and Carabiner

By connecting your phone's charging cable to the USB port on the pocket of the CW Energy USA Foldable Charging Panel, you can charge your phone and powerbank etc. easily and quickly from clean and renewable solar energy.

*Different colour options are available.

CWE-GK-003

FOLDABLE SOLAR CHARGING PANEL

Model Type	CWT-FSC-25
Peak Power (P_{max}) [Wp]	25
Maximum Power Voltage (V_{mp})[V]	9.90
Maximum Power Current (I_{mp})[A]	2.55
Open Circuit Voltage (V_{oc})[V]	11.41
Short Circuit Current (I_{sc})[A]	2.70
Temp. Coeff. of P_{max}	-0.29%/°C
Temp. Coeff. of V_{oc}	-27.84mV/°C
Temp. Coeff. of I_{sc}	2.9mA/°C
Dimensions (Opened/Closed)[mm]	698x268x4 / 175x268x40
Weight [kg]	0.8
Output Ports	USB-A / TYPE-C
USB Output Voltage	QC 3.0 Quick Charge 5V-9V-12V
Maximum Charging Current [A]	3
Exterior of the Product	Fabric

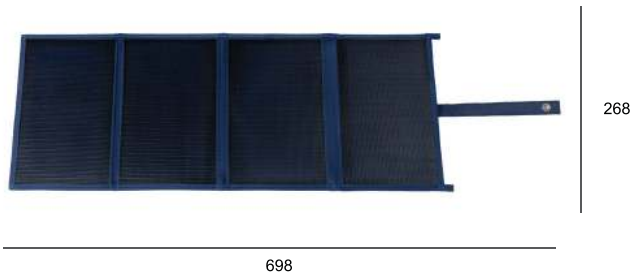
PHYSICAL CHARACTERISTICS

Unit: mm

FRONT VIEW

SIDE VIEW

OPEN VIEW



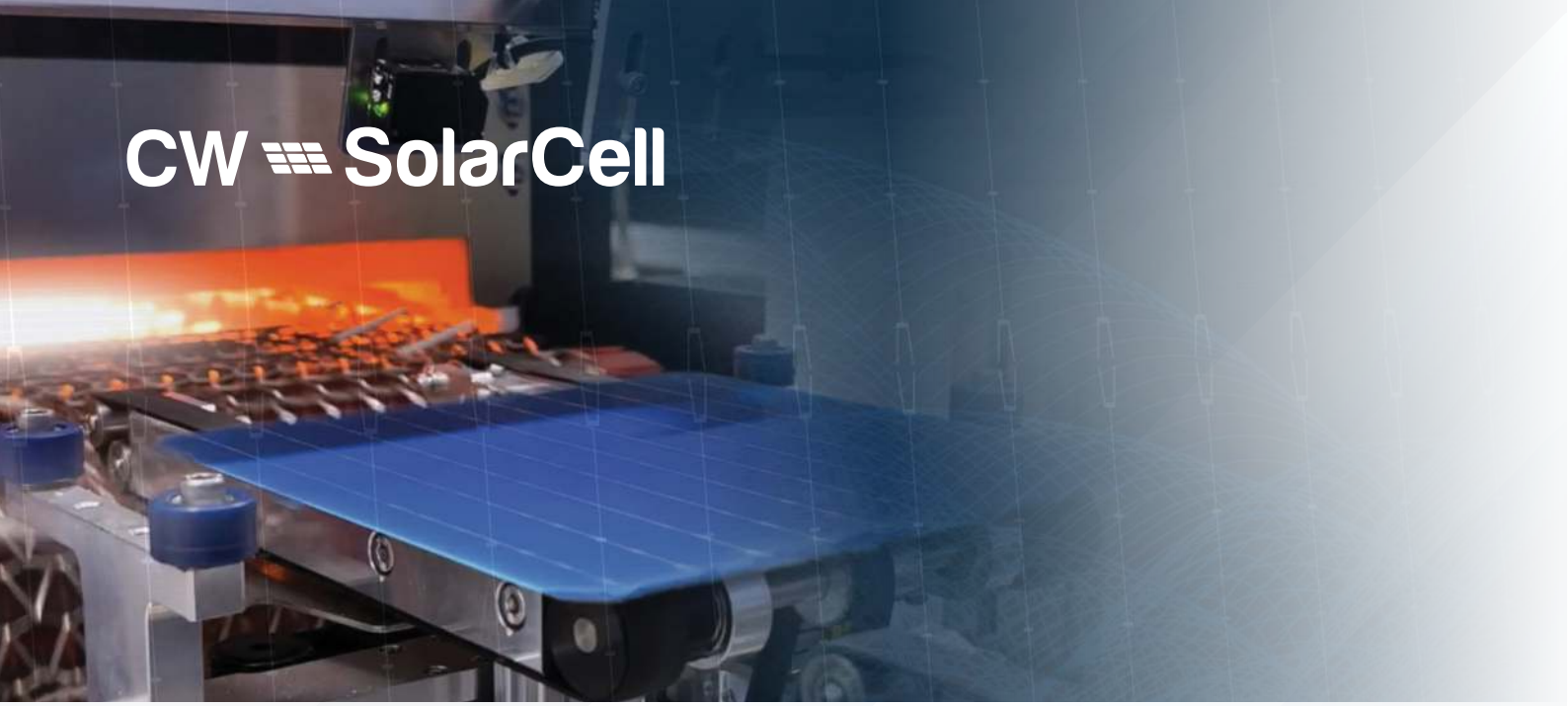
ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

* The specifications are obtained under the standard test conditions: 1000W/m² solar irradiance, 1.5 Air Mass and cell temperature of 25°C. Measurement uncertainty for all panels is 6%. The actual transactions will besubject to the contracts. These parameters are for reference only and it is not a part of the contracts. The technical specifications in this document may vary. For more information, refer to the "Installation Manual".
* CW Energy USA reserves the right to change the specification of products without prior notice

CW U.S.A Energy®

CWE-GK-003

CWE-OK-003



COMPANY PROFILE
About Us

Founded in 2024 as a subsidiary of **CW Enerji Engineering, Trade and Industry Inc.**, CW SolarCell is committed to delivering products and services at **global standards** through high-quality production lines and advanced machinery — without compromising on quality.
With a strong focus on **technology and R&D**, CW SolarCell continuously upgrades its manufacturing systems to ensure rapid development and innovation. The company consistently adapts to **evolving cell technologies**, sizes, and efficiencies with a disciplined approach.
By closely following **market trends** and investing in up-to-date technologies, CWSC offers high-performance, cutting-edge solutions to meet the diverse needs of modern users and the dynamic solar industry.

MANUFACTURING CAPABILITIES
Cell Production Process

CW Enerji is taking confident steps towards vertical integration, minimizing raw material dependency by not only producing solar panels but also manufacturing key components. In this direction, CWSC has initiated cell and ingot production, enhancing both manufacturing flexibility and operational capability.

OUR PRODUCTS
High Efficiency M10R 16BB Solar Cell

Specification	Details
Dimensions	182.2 mm × 183.75 mm (± 0.5 mm)
Thickness	130 ± 13 µm
Front Side (–)	Blue (dark blue) anti-reflective coating (SiNx)
Rear Side (+)	Blue (dark blue) anti-reflective coating (SiNx)

Incoming Quality Control
Customized inspection and approval protocols for suppliers.
Physical & chemical testing via batch sampling.
Elimination of substandard raw materials at entry point.

In-Process Quality Control
Real-time monitoring at critical production points.
Integration of Automated Optical Inspection (AOI) & I-V testing.
Immediate halt mechanism for out-of-spec process anomalies.

Final Quality Control
EL and Flash Tests to verify product performance.
Visual inspection, barcode tracking & full traceability.
Final product approval based on customer specifications.

Outgoing Quality Control
100% tested product verification through digital tracking.
Closed-loop monitoring system for secure shipment.
Random sampling for quality assurance before delivery.

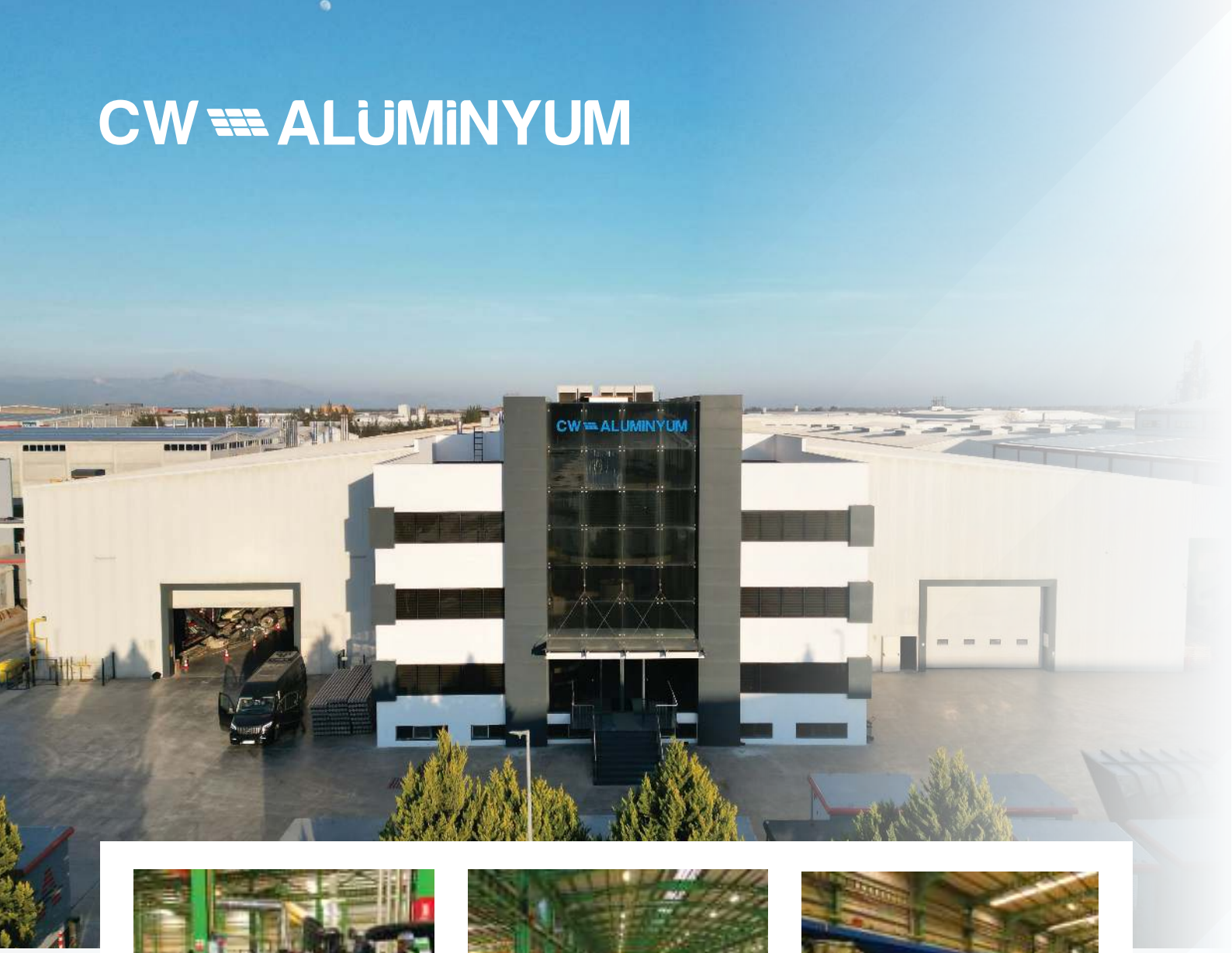
The cell features **SiNx (Silicon Nitride)** coatings on both sides, effectively minimizing reflection and improving light absorption.

The cell features **SiNx (Silicon Nitride)** coatings on both sides, effectively minimizing reflection and improving light absorption.

Engineered with **16 busbars (16BB)**, this high-efficiency cell is optimized for next-generation High Efficiency solar module production.

Engineered with **16 busbars (16BB)**, this high-efficiency cell is optimized for next-generation High Efficiency solar module production.

CW ALÜMİNYUM

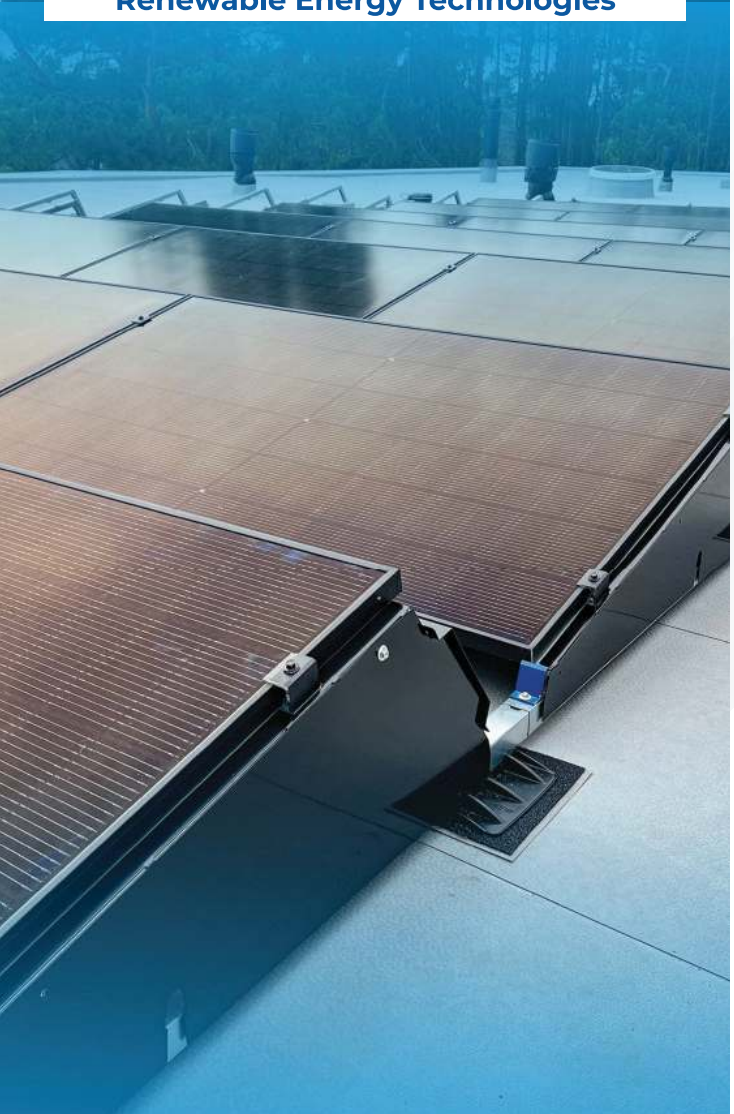


COMPANY PROFILE
About Us

At CW Aluminum, we produce frames, mounting apparatus, and infrastructure materials tailored to renewable energy technologies. Thanks to our advanced technology and engineering-developed mounting systems, we provide reliable and long-lasting solutions to the industry. We prioritize quality and efficiency at the highest level by developing functional and innovative products customized to meet customer needs.

In EPC projects, we integrate our solar panels and construction solutions to enhance customer satisfaction while ensuring more efficient and sustainable outcomes in the sales processes. By increasing our domestic production capacity, we contribute to both economic growth and the development of a sustainable energy infrastructure, thus adding value to the future.

Renewable Energy Technologies



CW USA Energy®

Tilted Roof Mounting Systems

Aluminum Rail Profiles

Holders / Clamps

Flat Roof Mounting Systems

Profiles / Holders / Clamps

Aluminum Mounting Accessories

PRODUCT LIABILITY POLICY CERTIFICATE

This certificate is a brief summary of Sompo Sigorta A.Ş. Excess Product Liability policy for Solar Energy Panels produced by **Cw Enerji Mühendislik Ticaret Ve Sanayi Anonim Şirketi.**

Policy Number : 200200033748770 & 200200033748769

Policy Inception Date : 21/07/2025

Policy End Date: 21/07/2026

Insured Address : TÜRKİYE, Antalya 7190, Döşemealtı, Aosb 1. Kısım MAH. Atatürk Bulvarı Cw Enerjı Aş NO:20

Insured : Cw Enerji Mühendislik Ticaret Ve Sanayi Anonim Şirketi

Coverage : Product Liability

Retroactive Date : 21/07/2017

Field Of Activity : Solar Energy Panel Manufacturing

Coverage Details:

Product Liability:
Within the scope of this coverage, subject to the terms and coverage limits of this policy, caused by the defect of the insured's products defined above (insured product) and resulting from an event occurring within the geographical scope specified above, the insurer is responsible for;
* bodily injuries
* material damages
within the scope of the above-mentioned activity of the insured, against the insured by third parties. will indemnify the insured against any claims for damages that may be asserted.
This coverage is valid in accordance with the attached Product Liability Insurance General Conditions and applicable provisions.
Sompo Sigorta A.Ş. Provided pursuant to Product Liability Insurance Special Conditions.

Territorial Scope : Worldwide (Excluding Cuba, Iran, Syria, North Korea, North Sudan, Venezuela, Myanmar, Crimea and the Donbas Region (including Luhansk, Donetsk, Kherson and Zaporizhzhia), Russia and Belarus)

Policy Limits:
Product Liability USD 50.000.000 (Defense Costs are included in the Coverage Limit)

THIS CERTIFICATE IS ISSUED FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT GIVE ANY ADDITIONAL RIGHTS TO THE CERTIFICATE OWNER. THIS CERTIFICATE DOES NOT ALTER, POSITIVELY OR NEGATIVELY, OR EXTEND THE TERMS PROVIDED BY THE ORIGINAL POLICY.

INSURED
Cw Enerji Mühendislik Ticaret Ve Sanayi Anonim Şirketi

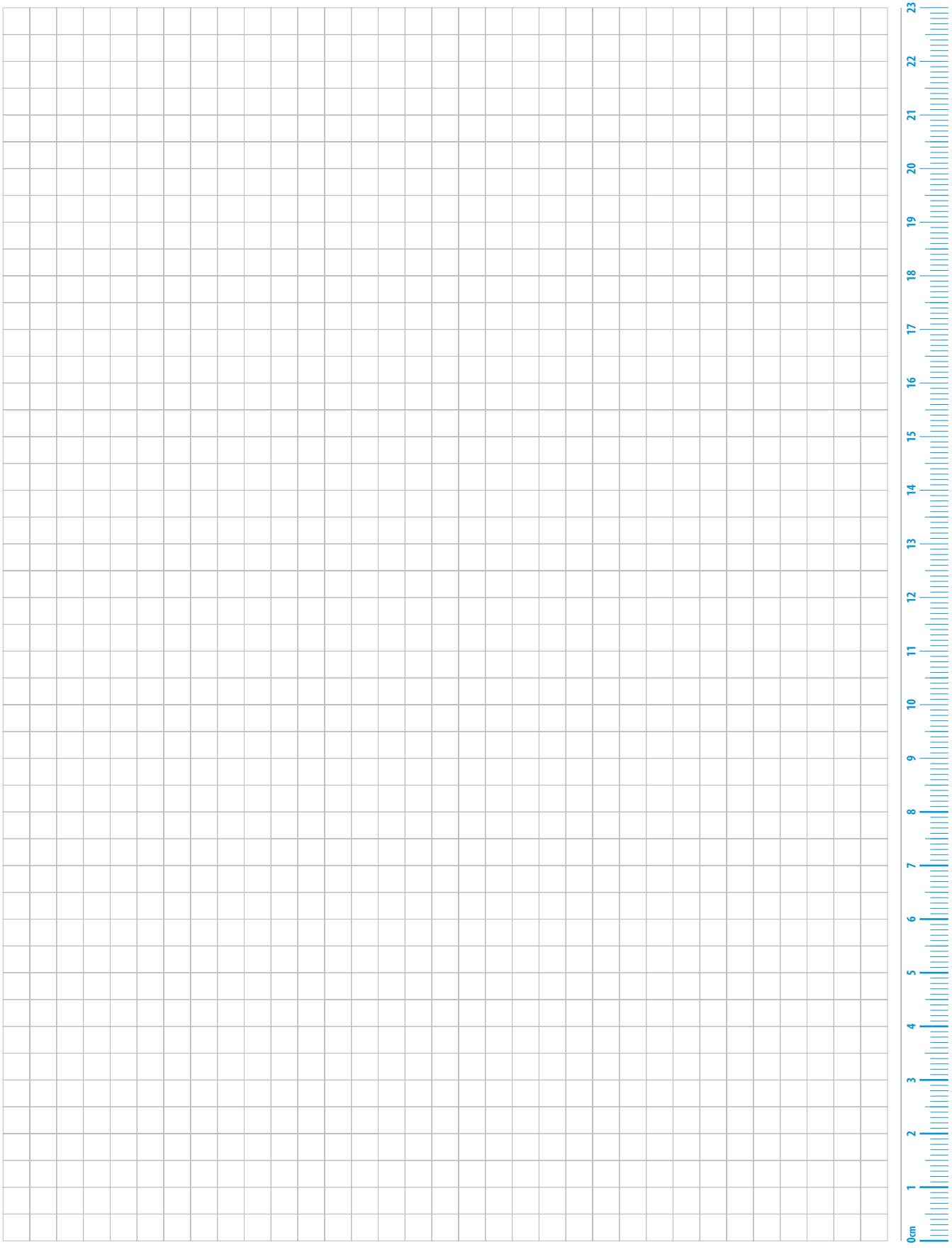
INSURER
Sompo Sigorta A.Ş.

OZGUR LEVENT OVUNC — Digitally signed by OZGUR LEVENT OVUNC Date: 2025.08.21 15:47:51 +03'00'

MUSTAFA ARSLAN — Digitally signed by MUSTAFA ARSLAN Date: 2025.08.22 09:47:30 +03'00'

CW Energy USA®

Date :.....



CW USA Energy®

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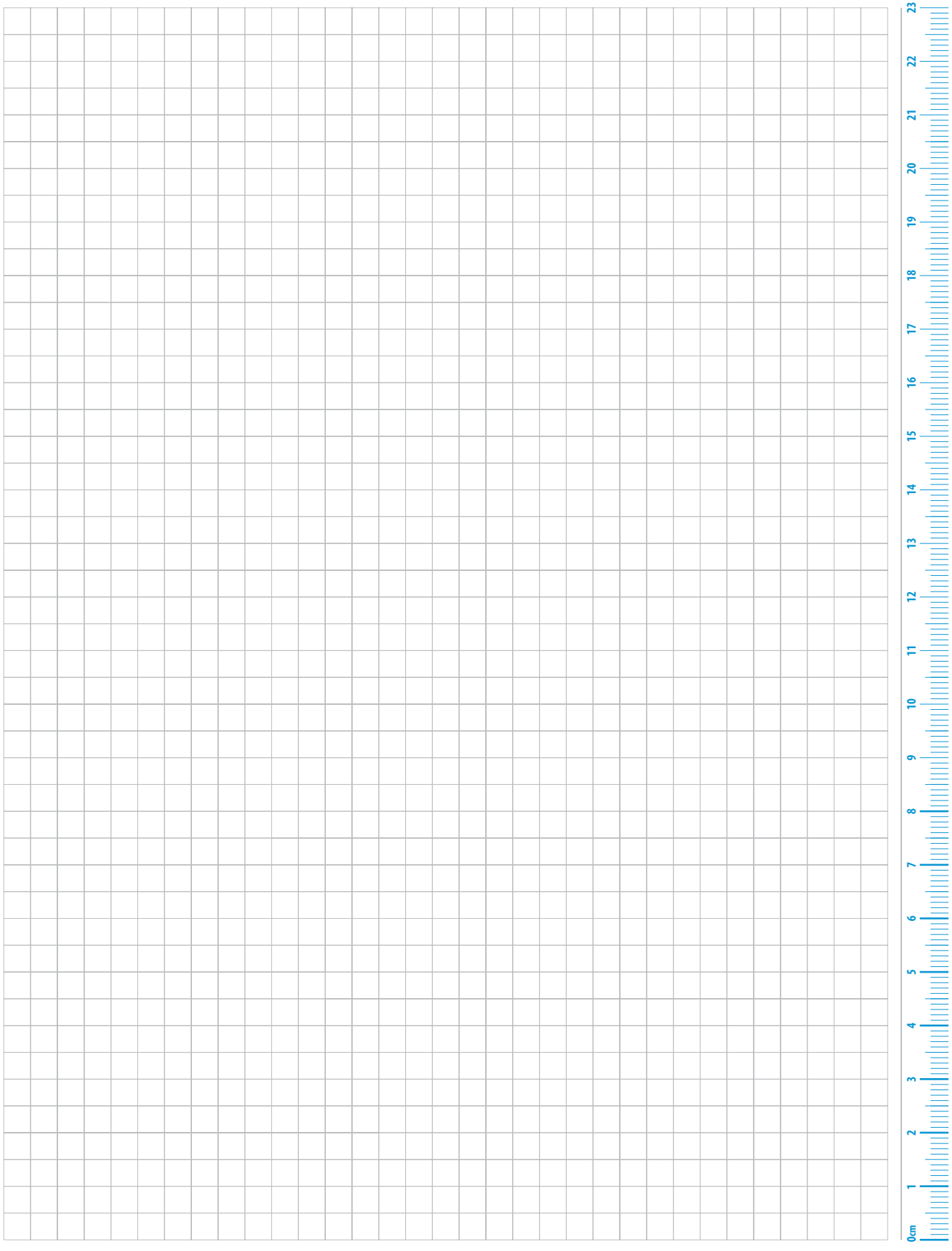

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CW USA Energy®

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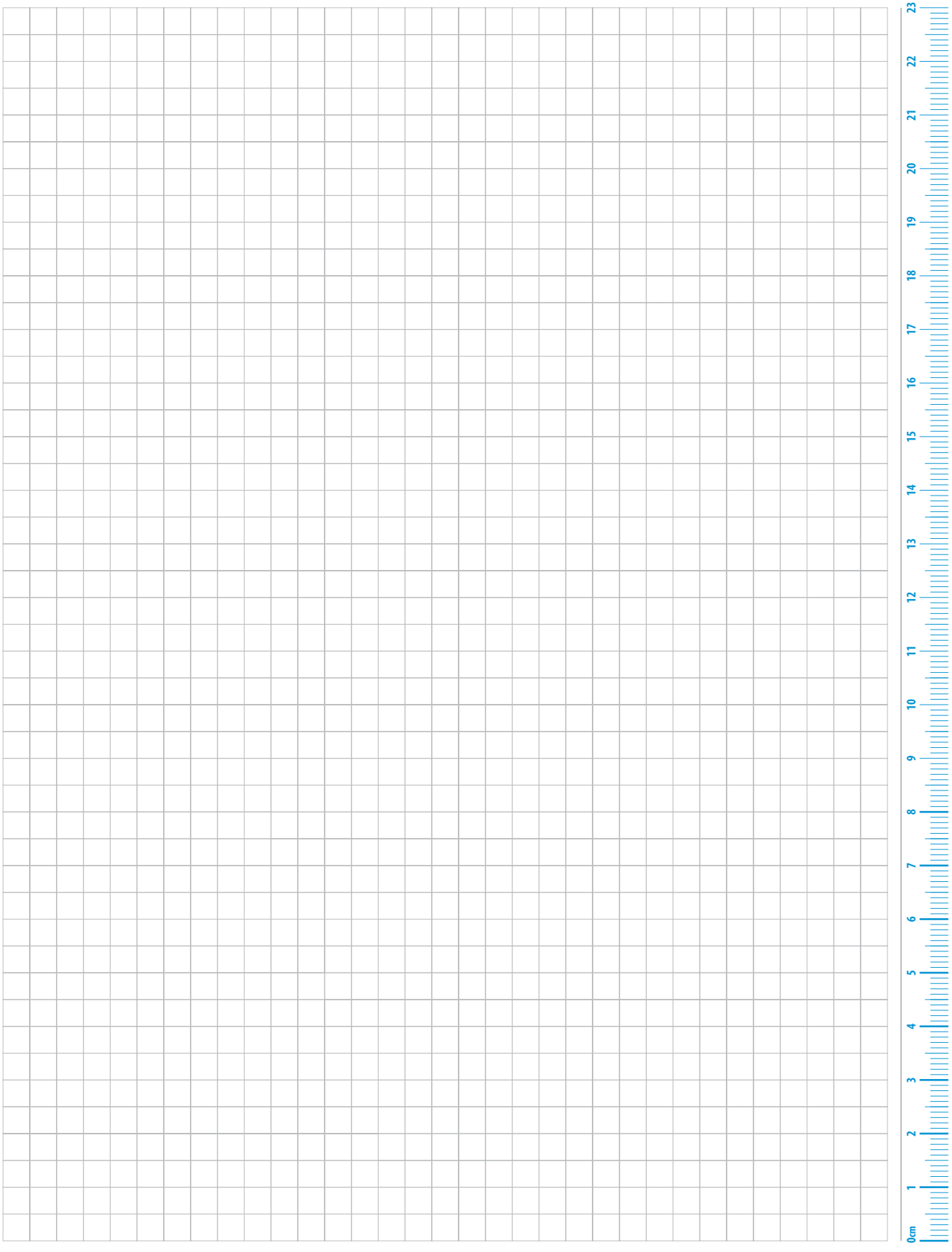

CW U.S.A Energy®

Wherever the sun shines