
ENERJI
Holax
POWERED BY HOLAX METAL

CONTENTS

About Us

Holax Enerji is specializing in EPC (Engineering, Procurement, and Construction) projects of solar power and automation as well as supplying their equipment from reputable global brands.

With a commitment to innovation and excellence, we deliver comprehensive services tailored to meet the unique needs of our clients. Join us on our journey to harness the power of the sun and revolutionize the way industries operate through automation.

Our Goal

At Holax Enerji, our ambition is to be the leading provider of EPC solutions in solar power and automation, empowering industries to thrive in a sustainable future. We strive to offer tailored services and high-quality equipment from reputable global brands, enabling our clients to meet their sustainability and efficiency goals.

Committed to innovation and excellence, we seek to revolutionize the way industries operate by harnessing the potential of solar energy and advancing automation technologies, paving the way for transformative change across the business landscape.

Powering a Greener Future with Energy, Sustainability, and Automation

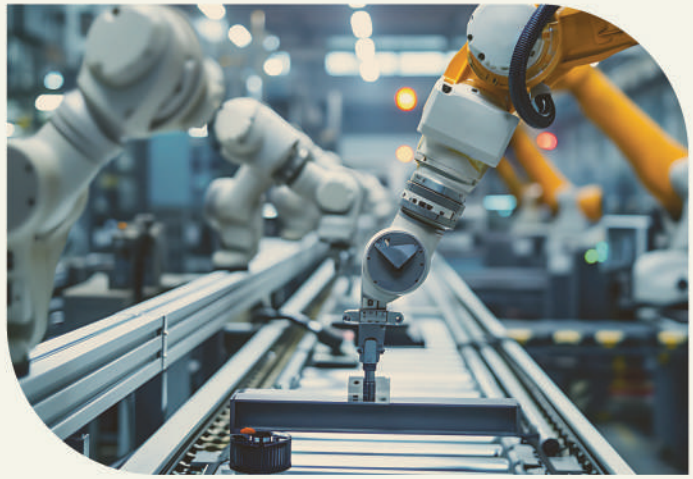
Sustainability involves safeguarding the beauty and resources of our planet for future generations. Our dependence on fossil fuels drives significant challenges, including ozone depletion, climate change, and global warming. Fortunately, renewable energy sources present a more promising alternative, especially as fossil fuels continue to deplete rapidly. Embracing sustainable and renewable energy is crucial for securing our planet's future.

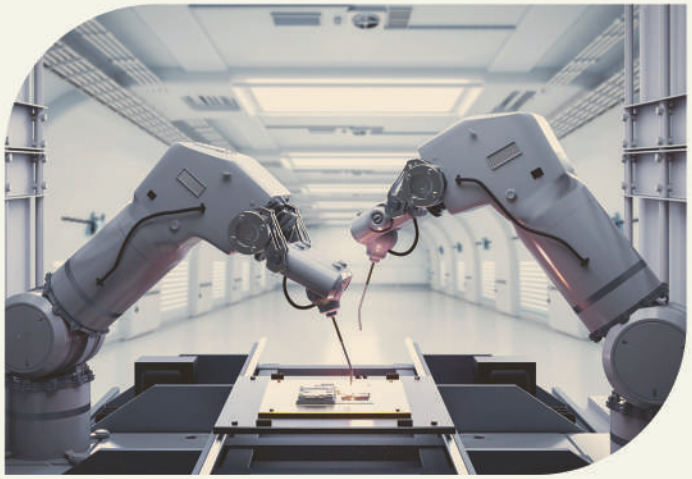
At Holax Enerji, we are committed to leading the charge toward a greener future by using energy responsibly. We prioritize sustainability in every project, implementing technologies and practices that minimize our environmental footprint. Our innovative designs emphasize efficient production while honoring the needs of our planet.

Automation plays a pivotal role in our mission to enhance sustainability. By integrating advanced automation technologies into our processes, we can optimize resource management, increase energy efficiency, and reduce waste. Automated systems allow for precise control and monitoring, enabling real-time adjustments that streamline operations and bolster sustainability efforts.

At Holax Enerji, we harness the power of automation to not only improve productivity but also to create sustainable solutions that align with our commitment to a greener future. By merging innovation with sustainability, we aim to transform industries and contribute to a healthier planet.

We regard sustainability as a fundamental responsibility that informs our actions, ensuring a better world for future generations and aligning with the United Nations' Sustainable Development Goals. Together, through energy, sustainability, and automation, we can pave the way for a more sustainable future.





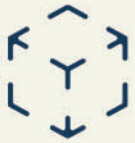
Solar Power Plants are a profitable way of energy in terms of construction-operation costs and efficiency. It is one of the energy production systems of the future in terms of minimum damage to nature.

Solar power plants built on land are established to meet energy needs and for investment purposes. Rooftop solar power plant applications offer advantageous usage areas to companies, residences, farms and agricultural irrigation areas by utilizing unused areas.

Service Scope:

Project design

Design and Quotation



On-site Construction

Operation and Maintenance

Trinasolar

TOMMATECH GmbH
GERMAN-based company

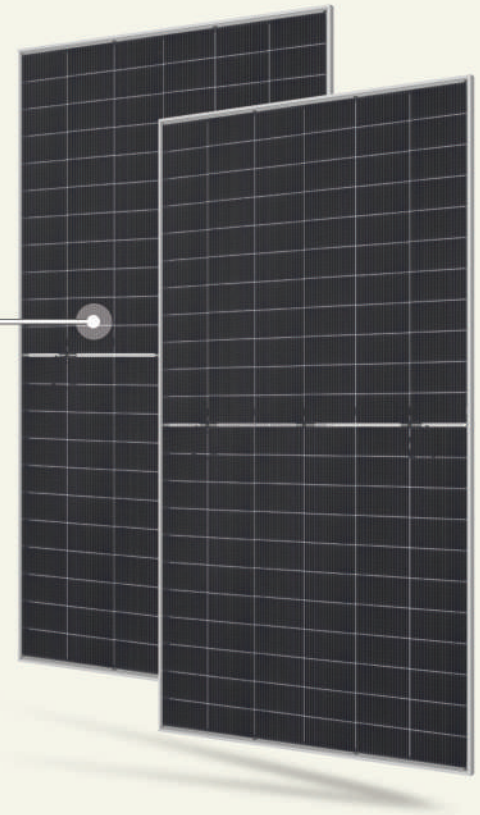
CW Enerji

Smart GÜNEŞ TEKNOLOJİLERİ

PRODUCTS

132TNB12 730-695WpTopcon N-Type G2G

- 0~+5W Positive Power Tolerance
- **Outstanding Low Irradiation Glass**
- Easy Installation
- Twice EVA Laminated Double Glass
- High Conversion Efficiency



ELECTRICAL CHARACTERISTICS

Model Type	CWT695 132TNB12	CWT700 132TNB12	CWT705 132TNB12	CWT710 132TNB12	CWT715 132TNB12	CWT720 132TNB12	CWT725 132TNB12	CWT730 132TNB12
Peak Power (Pmax)	695 Wp	700 Wp	705 Wp	710 Wp	715 Wp	720 Wp	725 Wp	730 Wp
Module Efficiency	22.37	22.53	22.70	22.86	23.02	23.18	23.34	23.50
Maximum Power Voltage (V_{mp})	40.10	40.30	40.50	40.70	40.90	41.10	41.30	41.50
Maximum Power Current (I_{mp})	17.33	17.37	17.41	17.45	17.49	17.52	17.56	17.60
Open Circuit Voltage (V_{oc})	46.70	46.90	47.10	47.30	47.50	47.70	47.90	48.10
Short Circuit Current (I_{sc})	18.42	18.47	18.52	18.57	18.62	18.67	18.72	18.76
Power Tolerance	0~+5W							
Maximum System Voltage	1500V DC							
Operating Temperature	-40 ~ +85°C							
Protection Class	Class II							
Maximum Series Fuse Rating	25A							

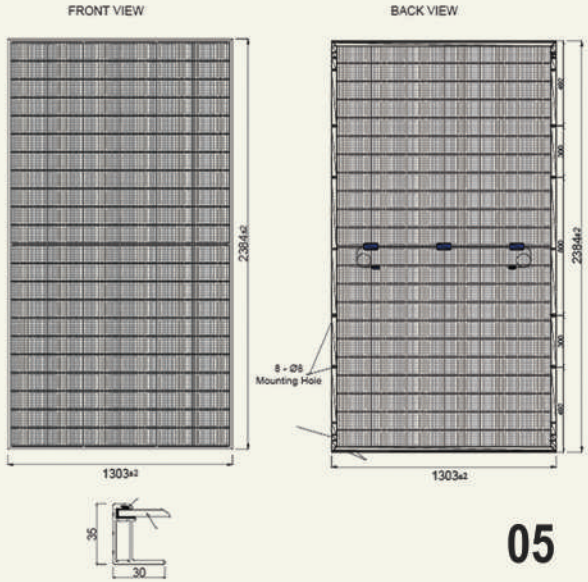
TEMPERATURE CHARACTERISTISC

Temp. Coeff. of (I_{sc})	0.040%/°C
Temp. Coeff. of (V_{oc})	-0.260%/°C
Temp. Coeff. of (P_{max})	-0.320%/°C

PACKING CONFIGURATION

Container	40' GP
Pieces per Pallet	31
Pieces Per Container	527
Pallet Per Container	17

PHYSICAL CHARACTERISTICS



MECHANICAL SPECIFICATIONS

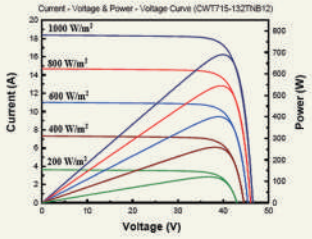
Cell Dimensions(mm)	210x105
Cells per Module(pcs)	132 (6x22)
Weight(kg)	39.5
Panel Dimensions(mm)	2384x1303x35
Max. Wind/Snow Load(Pa)	2400/5400
Junction Box	IP68
Junction Box Cable Length(mm)	300-1600
Glass Thickness (mm)	2.0 / 2.0

TEMPERATURE CHARACTERISTICS

(715W Front Power Referenced)

Rear Side Power Gain	5%	10%	15%	20%	25%
Peak Power (Pmax)	750.75	786.50	822.25	858.00	893.75
Short Circuit Current (I_{sc})	19.50	20.40	21.29	22.19	23.06
Open Circuit Voltage (V_{oc})	47.58	47.66	47.73	47.80	47.87
Maximum Power Current (I_{mp})	18.34	19.20	20.05	20.90	21.75
Maximum Power Voltage (V_{mp})	40.94	40.99	41.03	41.06	41.09

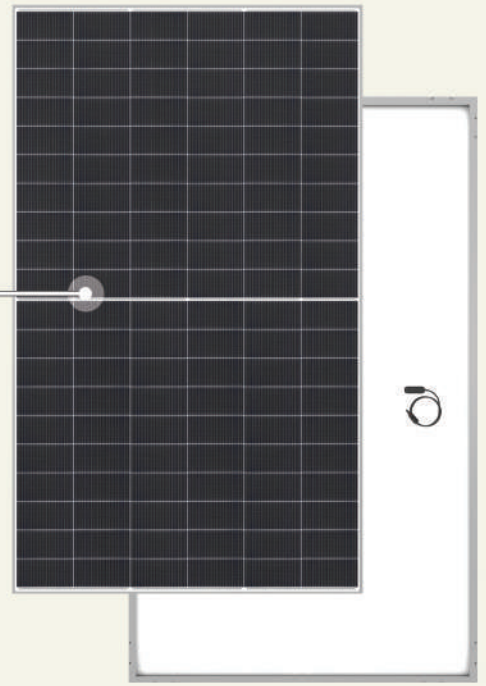
ELECTRICAL CHARACTERISTICS



PRODUCTS

645-615Wp M12 120TN TOPCon

- 0~+5Wp Positive Power Tolerance
- **Outstanding Low Irradiation Glass**
- Easy Installation
- Excellent Durability
- High Conversion Efficiency



ELECTRICAL CHARACTERISTICS

Model Type	CWT615 120TN12	CWT620 120TN12	CWT625 120TN12	CWT630 120TN12	CWT635 120TN12	CWT640 120TN12	CWT645 120TN12
Peak Power (Pmax)	615 Wp	620 Wp	625 Wp	630 Wp	635 Wp	640 Wp	645 Wp
Module Efficiency	21.73	21.95	22.08	22.26	22.44	22.65	22.79
Maximum Power Voltage (V_{mp})	35.56	35.76	35.96	36.16	36.36	36.56	36.76
Maximum Power Current (I_{mp})	17.30	17.34	17.39	17.43	17.45	17.51	17.55
Open Circuit Voltage (V_{oc})	42.78	42.98	43.18	43.38	43.58	43.78	43.98
Short Circuit Current (I_{sc})	18.24	18.30	18.35	18.40	18.46	18.52	18.57
Power Tolerance	0~+5W						
Maximum System Voltage	1500V DC						
Operating Temperature	-40 ~ +85°C						
Protection Class	Class II						
Maximum Series Fuse Rating	30A						

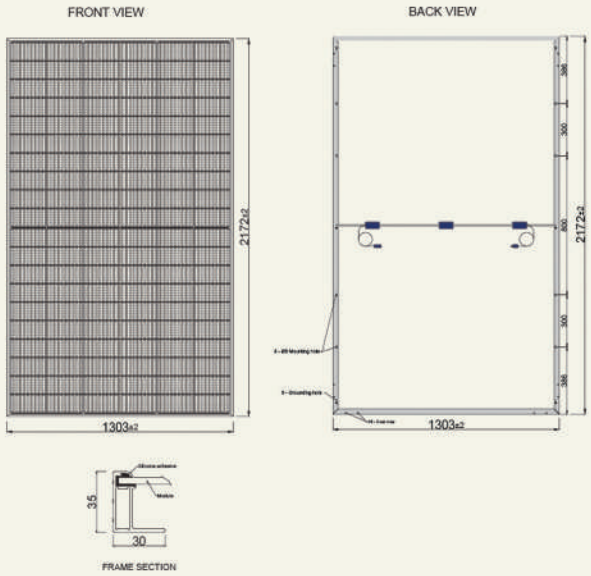
TEMPERATURE CHARACTERISTISC

Temp. Coeff. of (I_{sc})	0.040%/°C
Temp. Coeff. of (V_{oc})	-0.260%/°C
Temp. Coeff. of (P_{max})	-0.320%/°C

PACKING CONFIGURATION

Container	40' GP
Pieces per Pallet	31
Pieces Per Container	527
Pallet Per Container	17

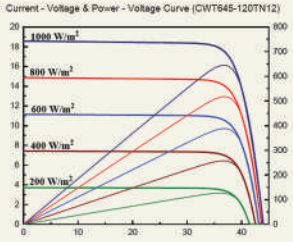
PHYSICAL CHARACTERISTICS



MECHANICAL SPECIFICATIONS

Cell Dimensions(mm)	210x105
Cells per Module(pcs)	120 (6x20)
Weight(kg)	31.0
Panel Dimensions(mm)	2172x1303x35
Max. Wind/Snow Load(Pa)	2400/5400
Junction Box	IP68
Junction Box Cable Length(mm)	350-1600

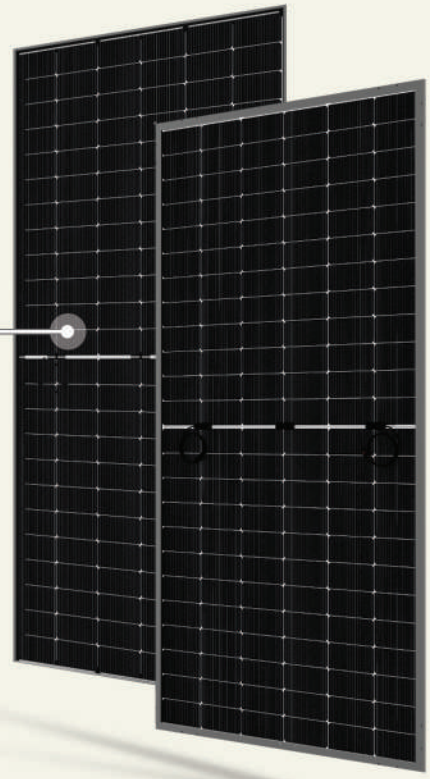
ELECTRICAL CHARACTERISTICS



PRODUCTS

605-570Wp M10 144TNB TOPCon

- 0~+5Wp Positive Power Tolerance
- **Outstanding Low Irradiation Glass**
- Easy Installation
- Excellent Durability
- High Conversion Efficiency



ELECTRICAL CHARACTERISTICS

Model Type	CWT570 144TNB10	CWT575 144TNB10	CWT580 144TNB10	CWT585 144TNB10	CWT590 144TNB10	CWT595 144TNB10	CWT600 144TNB10	CWT605 144TNB10
Peak Power (Pmax)	570 Wp	575 Wp	580 Wp	585 Wp	590 Wp	595 Wp	600 Wp	605 Wp
Module Efficiency	22.07	22.26	22.45	22.65	22.84	23.03	23.22	23.41
Maximum Power Voltage (V_{mp})	42.55	42.75	42.95	43.15	43.35	43.55	43.75	43.95
Maximum Power Current (I_{mp})	13.40	13.46	13.51	13.56	13.62	13.67	13.72	13.77
Open Circuit Voltage (V_{oc})	50.58	50.78	50.98	51.18	51.38	51.58	51.78	51.98
Short Circuit Current (I_{sc})	14.17	14.23	14.31	14.38	14.45	14.53	14.60	14.67
Power Tolerance	0~+5W							
Maximum System Voltage	1500V DC							
Operating Temperature	-40 ~ +85°C							
Protection Class	Sınıf II							
Maximum Series Fuse Rating	25A							

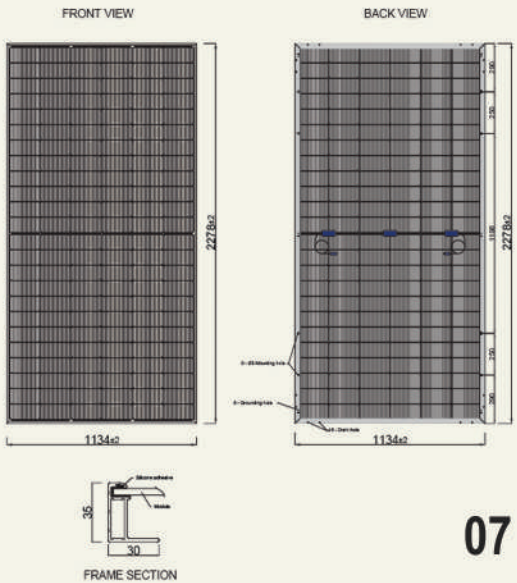
TEMPERATURE CHARACTERISTISC

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

PHYSICAL CHARACTERISTICS



MECHANICAL SPECIFICATIONS

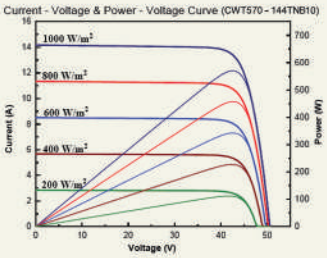
Cell Dimensions(mm)	182 x 91
Cells per Module(pcs)	144 (6x24)
Weight(kg)	29.0
Panel Dimensions(mm)	2278x1134x35
Max. Wind/Snow Load(Pa)	2400/5400
Junction Box	IP68
Junction Box Cable Length(mm)	300-1600

PHYSICAL CHARACTERISTICS

(570W Front Power Referenced a)

Rear Power Gain	5%	10%	15%	20%	25%
Maximum Power (Pmax)	598.50	627.00	655.50	684.00	712.50
Short Circuit Current (Isc)	14.86	15.55	16.24	16.92	17.61
Open Circuit Voltage (Voc)	50.68	50.77	50.86	50.94	51.02
Maximum Power Current (Imp)	14.06	14.72	15.37	16.03	16.68
Maximum Power Voltage (Vmp)	42.57	42.60	42.65	42.68	42.71

ELECTRICAL CHARACTERISTICS



PRODUCTS

595-570Wp M10 144TN TOPCon

- 0~+5Wp Positive Power Tolerance
- **Outstanding Low Irradiation Glass**
- Easy Installation
- Excellent Durability
- High Conversion Efficiency

ELECTRICAL CHARACTERISTICS

Model Type	CWT570 144TN10	CWT575 144TN10	CWT580 144TN10	CWT585 144TN10	CWT590 144TN10	CWT595 144TN10
Peak Power (Pmax)	570 Wp	575 Wp	580 Wp	585 Wp	590 Wp	595 Wp
Module Efficiency	22.07	22.26	22.45	22.65	22.84	23.03
Maximum Power Voltage (V_{mp})	42.55	42.75	42.95	43.15	43.35	43.55
Maximum Power Current (I_{mp})	13.40	13.46	13.51	13.56	13.62	13.67
Open Circuit Voltage (V_{oc})	50.58	50.78	50.98	51.18	51.38	51.58
Short Circuit Current (I_{sc})	14.17	14.23	14.31	14.38	14.45	14.53
Power Tolerance	0~+5W					
Maximum System Voltage	1500V DC					
Operating Temperature	-40 ~ +85°C					
Protection Class	Class II					
Maximum Series Fuse Rating	25A					

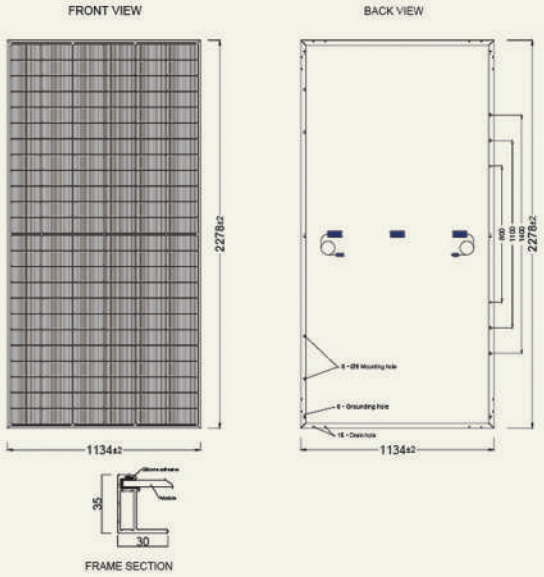
TEMPERATURE CHARACTERISTISC

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	30
Pieces Per Container	600
Pallet Per Container	20

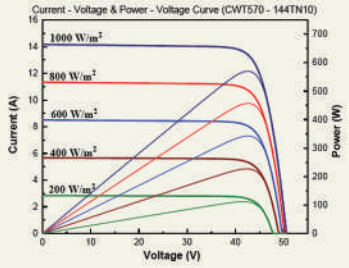
PHYSICAL CHARACTERISTICS



MECHANICAL SPECIFICATIONS

Cell Dimensions(mm)	182 x 91
Cells per Module(pcs)	144 (6x24)
Weight(kg)	29.0
Panel Dimensions(mm)	2278x1134x35
Max. Wind/Snow Load(Pa)	2400/5400
Junction Box	IP68
Junction Box Cable Length(mm)	350-1600

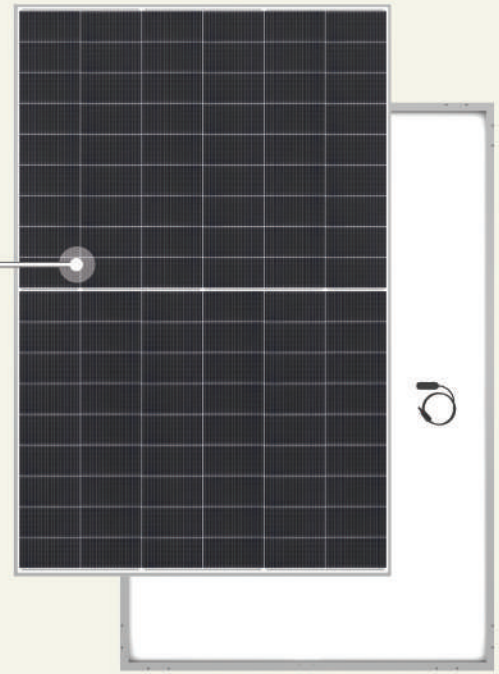
ELECTRICAL CHARACTERISTICS



PRODUCTS

575-555Wp M12 108TN TOPCon

- 0~+5Wp Positive Power Tolerance
- **Outstanding Low Irradiation Glass**
- Easy Installation
- Excellent Durability
- High Conversion Efficiency



ELECTRICAL CHARACTERISTICS

Model Type	CWT460 120TN10	CWT465 120TN10	CWT470 120TN10	CWT475 120TN10	CWT480 120TN10
Peak Power (Pmax)	460 Wp	465 Wp	470 Wp	475 Wp	480 Wp
Module Efficiency	21.25	21.45	21.71	21.94	22.17
Maximum Power Voltage (V_{mp})	35.26	35.46	35.66	35.86	36.06
Maximum Power Current (I_{mp})	13.05	13.12	13.19	13.25	13.32
Open Circuit Voltage (V_{oc})	41.90	42.10	42.30	42.50	42.70
Short Circuit Current (I_{sc})	13.86	13.93	14.00	14.08	14.14
Power Tolerance	0~+5W				
Maximum System Voltage	1500V DC				
Operating Temperature	-40 ~ +85°C				
Protection Class	Class II				
Maximum Series Fuse Rating	25A				

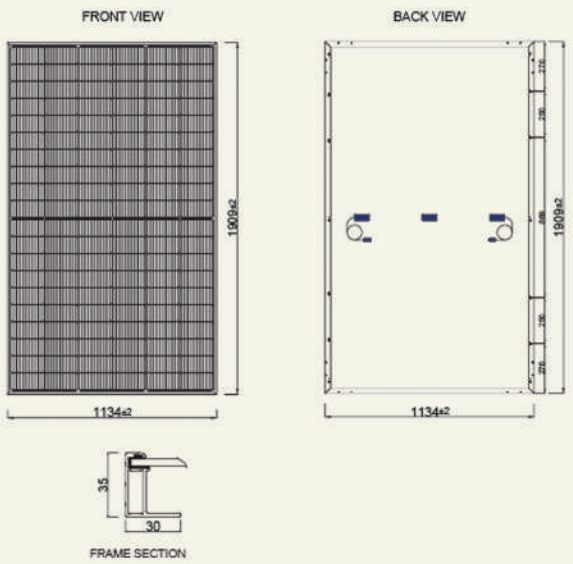
TEMPERATURE CHARACTERISTISC

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	744
Pallet Per Container	24

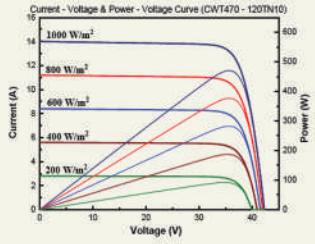
PHYSICAL CHARACTERISTICS



MECHANICAL SPECIFICATIONS

Cell Dimensions(mm)	182x91
Cells per Module(pcs)	120 (6x20)
Weight(kg)	24.6
Panel Dimensions(mm)	1909x1134x35
Max. Wind/Snow Load(Pa)	2400/5400
Junction Box	IP68
Junction Box Cable Length(mm)	350-1600

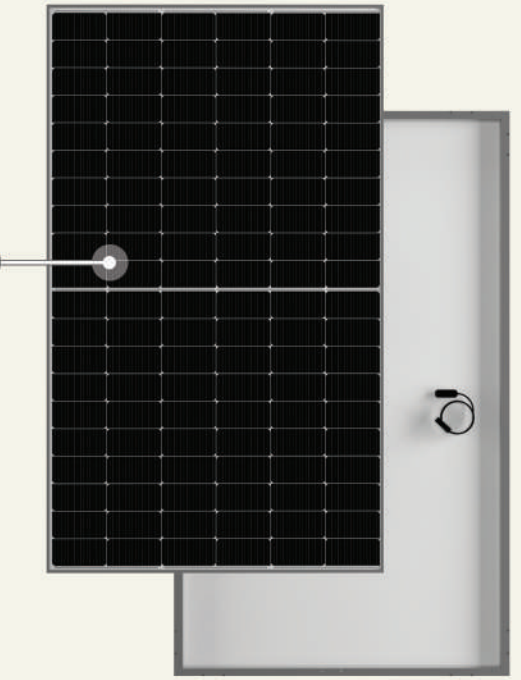
ELECTRICAL CHARACTERISTICS



PRODUCTS

480-460Wp M10 120TN TOPCon

- 0~+5Wp Positive Power Tolerance
- **Outstanding Low Irradiation Glass**
- Easy Installation
- Excellent Durability
- High Conversion Efficiency



ELECTRICAL CHARACTERISTICS

Model Type	CWT460 120TN10	CWT465 120TN10	CWT470 120TN10	CWT475 120TN10	CWT480 120TN10
Peak Power (Pmax)	460 Wp	465 Wp	470 Wp	475 Wp	480 Wp
Module Efficiency	21.25	21.45	21.71	21.94	22.17
Maximum Power Voltage (V_{mp})	35.26	35.46	35.66	35.86	36.06
Maximum Power Current (I_{mp})	13.05	13.12	13.19	13.25	13.32
Open Circuit Voltage (V_{oc})	41.90	42.10	42.30	42.50	42.70
Short Circuit Current (I_{sc})	13.86	13.93	14.00	14.08	14.14
Power Tolerance	0~+5W				
Maximum System Voltage	1500V DC				
Operating Temperature	-40 ~ +85°C				
Protection Class	Class II				
Maximum Series Fuse Rating	25A				

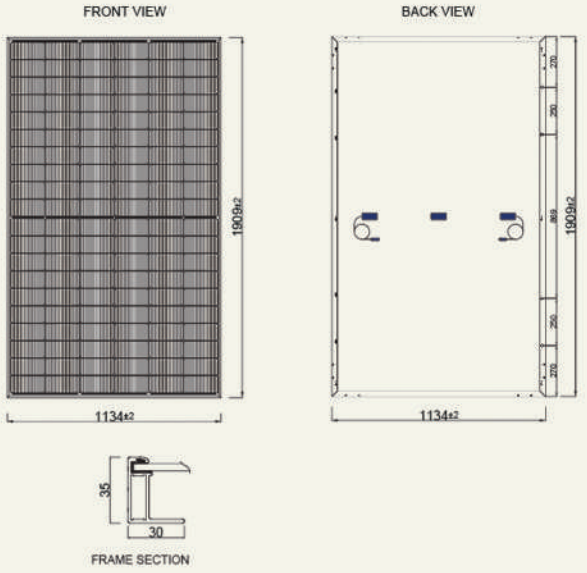
TEMPERATURE CHARACTERISTISC

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	744
Pallet Per Container	24

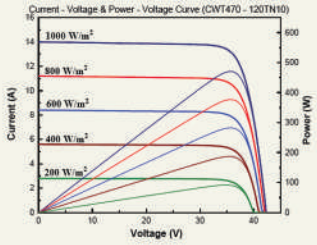
PHYSICAL CHARACTERISTICS



MECHANICAL SPECIFICATIONS

Cell Dimensions(mm)	182x91
Cells per Module(pcs)	120 (6x20)
Weight(kg)	24.6
Panel Dimensions(mm)	1909x1134x35
Max. Wind/Snow Load(Pa)	2400/5400
Junction Box	IP68
Junction Box Cable Length(mm)	350-1600

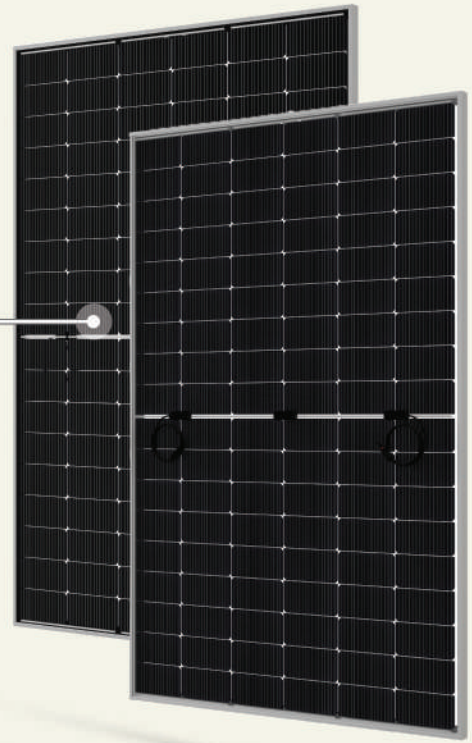
ELECTRICAL CHARACTERISTICS



PRODUCTS

450-435Wp M10 108TNB TOPCon

- 0~+5Wp Positive Power Tolerance
- **Outstanding Low Irradiation Glass**
- Easy Installation
- Twice EVA Laminated Double Glass
- High Conversion Efficiency



ELECTRICAL CHARACTERISTICS

Model Type	CWT435 108TNB10	CWT440 108TNB10	CWT445 108TNB10	CWT450 108TNB10
Peak Power (Pmax)	435 Wp	440 Wp	445 Wp	450 Wp
Module Efficiency	22.28	22.53	22.79	23.04
Maximum Power Voltage (V_{mp})	32.54	32.74	32.94	33.14
Maximum Power Current (I_{mp})	13.37	13.44	13.51	13.58
Open Circuit Voltage (V_{oc})	38.51	38.71	38.91	39.11
Short Circuit Current (I_{sc})	14.17	14.24	14.31	14.38
Power Tolerance	0~+5W			
Maximum System Voltage	1500V DC			
Operating Temperature	-40 ~ +85°C			
Protection Class	Class II			
Maximum Series Fuse Rating	25A			

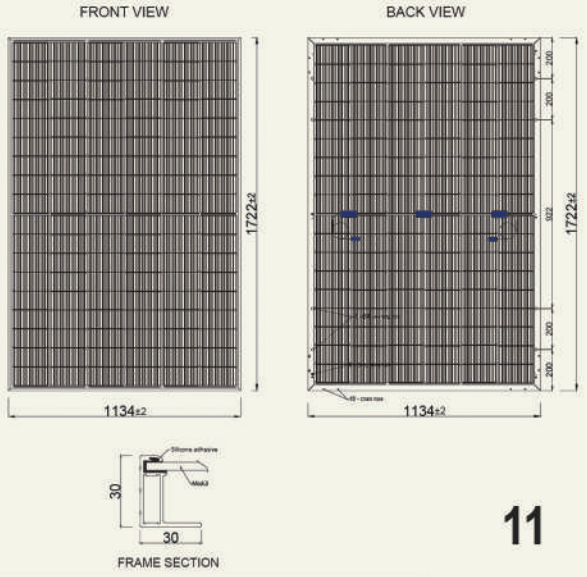
TEMPERATURE CHARACTERISTISC

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' HC
Pieces per Pallet	35
Pieces Per Container	910
Pallet Per Container	26

PHYSICAL CHARACTERISTICS



MECHANICAL SPECIFICATIONS

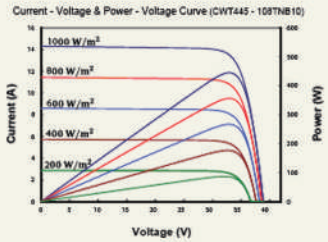
Cell Dimensions(mm)	182x91
Cells per Module(pcs)	108 (6x18)
Weight(kg)	24.0
Panel Dimensions(mm)	1722x1134x30
Max. Wind/Snow Load(Pa)	2400/5400
Junction Box	IP68
Junction Box Cable Length(mm)	350-1600
Glass Thickness (mm)	2.0 / 2.0

TEMPERATURE CHARACTERISTICS

(445W Front Power Referenced)

Rear Side Power Gain	5%	10%	15%	20%	25%
Peak Power (Pmax)	467.25	489.50	511.75	534.00	556.25
Short Circuit Current (I_{sc})	15.03	15.75	16.46	17.18	17.89
Open Circuit Voltage (V_{oc})	38.71	38.91	38.91	38.91	38.91
Maximum Power Current (I_{mp})	14.19	14.86	15.54	16.21	16.89
Maximum Power Voltage (V_{mp})	32.94	32.94	32.94	32.94	32.94

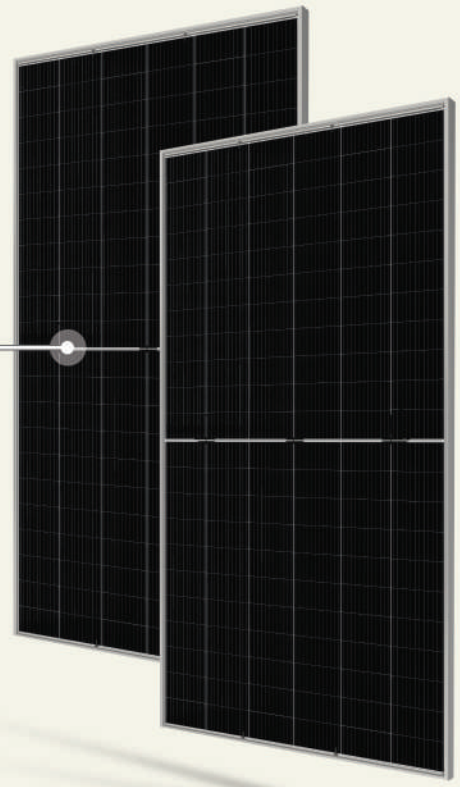
ELECTRICAL CHARACTERISTICS



PRODUCTS

675-650 Wp M12 132PMBS HC-MB

- 0~+5Wp Positive Power Tolerance
- **Outstanding Low Irradiation Glass**
- Easy Installation
- Excellent Durability
- High Conversion Efficiency



ELECTRICAL CHARACTERISTICS

Model Type	CWT650 132PMB12	CWT655 132PMB12	CWT660 132PMB12	CWT665 132PMB12	CWT670 132PMB12	CWT675 132PMB12
Peak Power (Pmax)	650 Wp	655Wp	660Wp	665Wp	670Wp	675Wp
Module Efficiency	20.92	21.09	21.25	21.41	21.57	21.73
Maximum Power Voltage (V_{mp})	37.50	37.70	37.90	38.10	38.30	38.50
Maximum Power Current (I_{mp})	17.34	17.38	17.42	17.46	17.50	17.54
Open Circuit Voltage (V_{oc})	45.20	45.40	45.60	45.80	46.00	46.20
Short Circuit Current (I_{sc})	18.35	18.39	18.44	18.48	18.51	18.56
Power Tolerance	0~+5W					
Maximum System Voltage	1500V DC					
Operating Temperature	-40 ~ +85°C					
Protection Class	Class II					
Maximum Series Fuse Rating	30A					

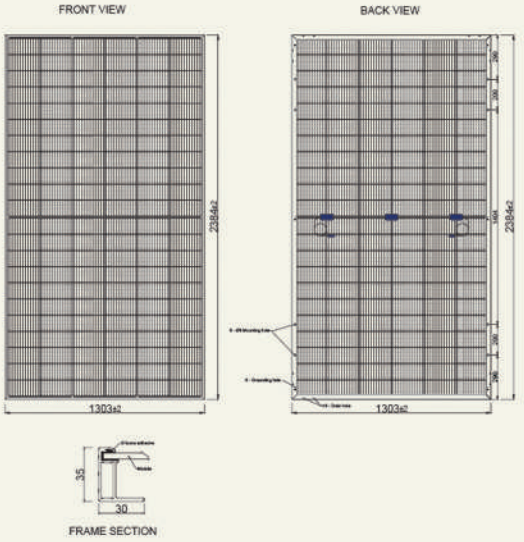
TEMPERATURE CHARACTERISTISC

Temp. Coeff. of (I_{sc})	0.040%/°C
Temp. Coeff. of (V_{oc})	-0.260%/°C
Temp. Coeff. of (P_{max})	-0.340%/°C

PACKING CONFIGURATION

Container	40' GP
Pieces per Pallet	31
Pieces Per Container	527
Pallet Per Container	17

PHYSICAL CHARACTERISTICS



MECHANICAL SPECIFICATIONS

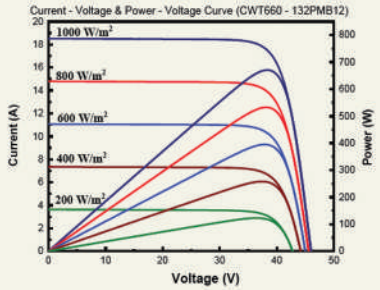
Cell Dimensions(mm)	210x105
Cells per Module(pcs)	132 (6x22)
Weight(kg)	34.5
Panel Dimensions(mm)	2384x1303x35
Max. Wind/Snow Load(Pa)	2400/5400
Junction Box	IP68
Junction Box Cable Length(mm)	350-1600

ELECTRICAL CHARACTERISTICS

(660W Front Power Referenced)

Rear Side Power Gain	5%	10%	15%	20%	25%
Peak Power (Pmax)	693	726	759	792	825
Short Circuit Current (I_{sc})	19.28	20.24	21.05	21.96	22.82
Open Circuit Voltage (V_{oc})	45.60	45.60	45.80	45.80	45.80
Maximum Power Current (I_{mp})	18.19	19.06	19.82	20.68	21.54
Maximum Power Voltage (V_{mp})	38.10	38.10	38.30	38.30	38.30

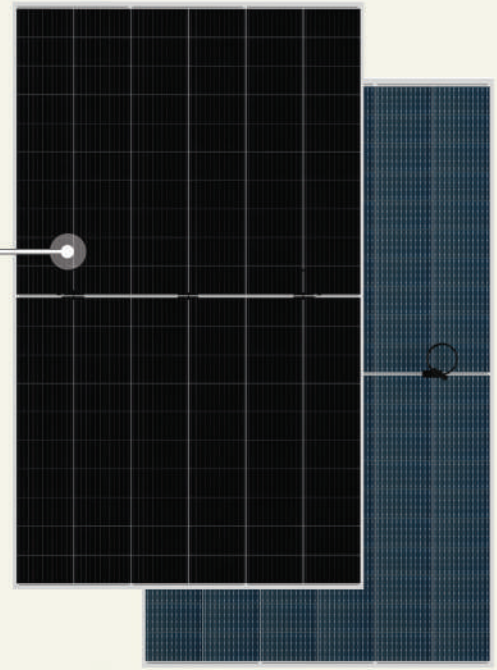
ELECTRICAL CHARACTERISTICS



PRODUCTS

610-590Wp M12 120PMB G2G HC-MB

- 0~+5Wp Positive Power Tolerance
- **Outstanding Low Irradiation Glass**
- Easy Installation
- Twice EVA Laminated Double Glass
- High Conversion Efficiency



ELECTRICAL CHARACTERISTICS

Model Type	CWT590 120PMB12	CWT595 120PMB12	CWT600 120PMB12	CWT605 120PMB12	CWT610 120PMB12
Peak Power (Pmax)	590Wp	595Wp	600Wp	605Wp	610 Wp
Module Efficiency	20.85	21.02	21.20	21.38	21.55
Maximum Power Voltage (Vmp)	34.10	34.20	34.30	34.50	34.70
Maximum Power Current (Imp)	17.30	17.40	17.50	17.54	17.58
Open Circuit Voltage (Voc)	41.10	41.30	41.50	41.70	41.90
Short Circuit Current (Isc)	18.33	18.43	18.53	18.58	18.62
Power Tolerance	0~+5W				
Maximum System Voltage	1500V DC				
Operating Temperature	-40 ~ +85°C				
Protection Class	Class II				
Maximum Series Fuse Rating	35A				

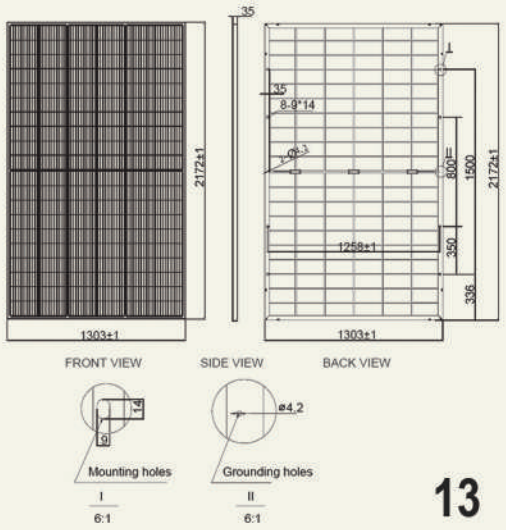
TEMPERATURE CHARACTERISTISC

Temp. Coeff. of (Isc)	0.040%/°C
Temp. Coeff. of (Voc)	-0.260%/°C
Temp. Coeff. of (Pmax)	-0.340%/°C

PACKING CONFIGURATION

Container	40' GP
Pieces per Pallet	31
Pieces Per Container	527
Pallet Per Container	17

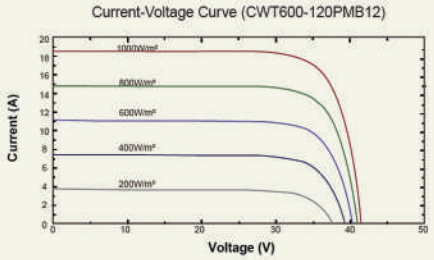
PHYSICAL CHARACTERISTICS



MECHANICAL SPECIFICATIONS

Cell Dimensions(mm)	210x105
Cells per Module(pcs)	120 (6x20)
Weight(kg)	36.0
Panel Dimensions(mm)	2172x1303x35
Max. Wind/Snow Load(Pa)	2400/5400
Junction Box	IP68
Junction Box Cable Length(mm)	350-1600
Glass Thickness(mm)	2.0 / 2.0

ELECTRICAL CHARACTERISTICS



ELECTRICAL CHARACTERISTICS

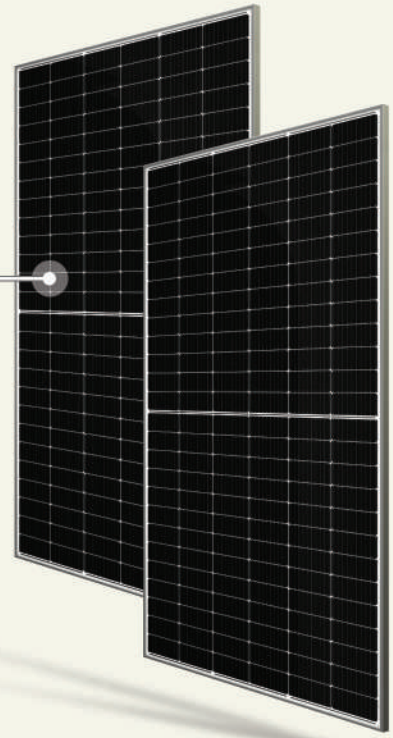
(600W Front Power Referenced)

Rear Side Power Gain	5%	10%	15%	20%	25%
Peak Power (Pmax)	630	660	690	720	750
Short Circuit Current (Isc)	19.28	20.20	21.12	21.91	22.82
Open Circuit Voltage (Voc)	41.70	41.70	41.70	50.00	60.00
Maximum Power Current (Imp)	18.16	19.02	19.88	20.63	21.49
Maximum Power Voltage (Vmp)	34.70	34.70	34.70	34.90	34.90

PRODUCTS

595-575Wp M10 156PM HC-MB Panel

- 0~+5Wp Positive Power Tolerance
- **Outstanding Low Irradiation Glass**
- Easy Installation
- Excellent Durability
- High Conversion Efficiency



ELECTRICAL CHARACTERISTICS

Model Type	CWT575 156PM10	CWT580 156PM10	CWT585 156PM10	CWT590 156PM10	CWT595 156PM10
Peak Power (Pmax)	575 Wp	580 Wp	585 Wp	590 Wp	595 Wp
Module Efficiency	20.78	20.96	21.14	21.32	21.50
Maximum Power Voltage (V_{mp})	45.00	45.20	45.40	45.60	45.80
Maximum Power Current (I_{mp})	12.78	12.84	12.89	12.94	12.99
Open Circuit Voltage (V_{oc})	53.50	53.70	53.90	54.10	54.30
Short Circuit Current (I_{sc})	13.61	13.67	13.73	13.78	13.84
Power Tolerance	0~+5W				
Maximum System Voltage	1500V DC				
Operating Temperature	-40 ~ +85°C				
Protection Class	Class II				
Maximum Series Fuse Rating	25A				

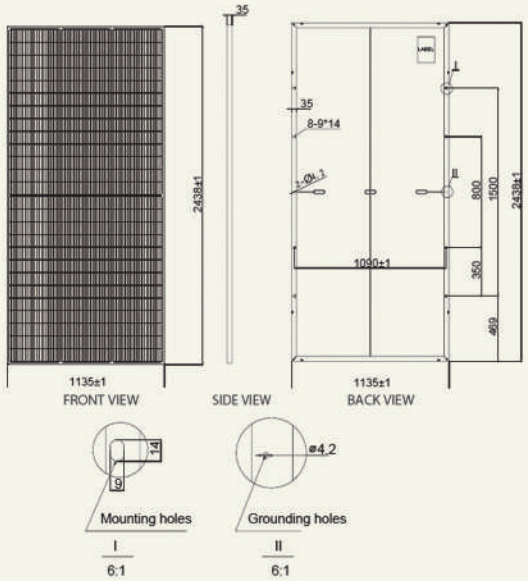
TEMPERATURE CHARACTERISTISC

Temp. Coeff. of (I_{sc})	0.050%/°C
Temp. Coeff. of (V_{oc})	-0.270%/°C
Temp. Coeff. of (P_{max})	-0.350%/°C

PACKING CONFIGURATION

Container	40' GP
Pieces per Pallet	30
Pieces Per Container	540
Pallet Per Container	18

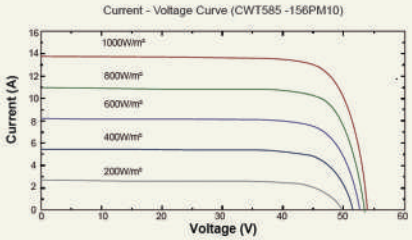
PHYSICAL CHARACTERISTICS



MECHANICAL SPECIFICATIONS

Cell Dimensions(mm)	182x91
Cells per Module(pcs)	156 (26x6)
Weight(kg)	31.0
Panel Dimensions(mm)	2438x1135x35
Max. Wind/Snow Load(Pa)	2400/5400
Junction Box	IP68
Junction Box Cable Length(mm)	300-1200

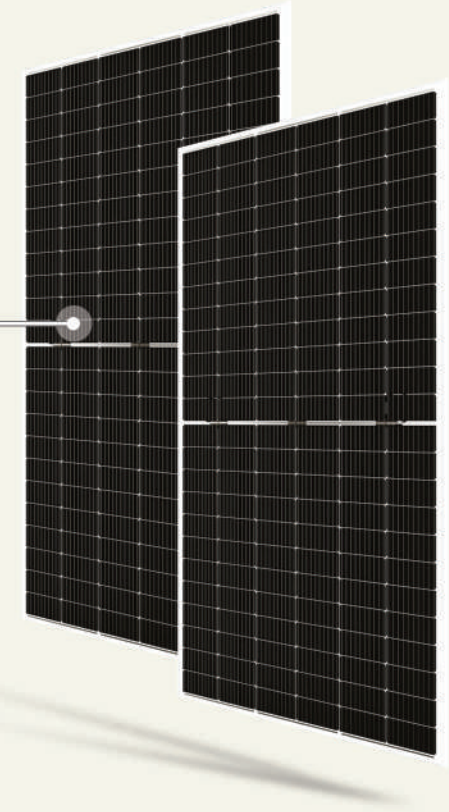
ELECTRICAL CHARACTERISTICS



PRODUCTS

550-530Wp M10 144PMB G2G HC-MB

- 0~+5Wp Positive Power Tolerance
- **Outstanding Low Irradiation Glass**
- Easy Installation
- Twice EVA Laminated Double Glass
- High Conversion Efficiency



ELECTRICAL CHARACTERISTICS

Model Type	CWT530 144PMB10	CWT535 144PMB10	CWT540 144PMB10	CWT545 144PMB10	CWT550 144PMB10
Peak Power (Pmax)	530 Wp	535 Wp	540 Wp	545 Wp	550 Wp
Module Efficiency	20.45	20.67	20.84	21.03	21.23
Maximum Power Voltage (V_{mp})	41.60	41.80	42.00	42.20	42.40
Maximum Power Current (I_{mp})	12.75	12.80	12.86	12.92	12.98
Open Circuit Voltage (V_{oc})	49.40	49.60	49.80	50.00	50.20
Short Circuit Current (I_{sc})	13.58	13.63	13.70	13.76	13.82
Power Tolerance	0~+5W				
Maximum System Voltage	1500V DC				
Operating Temperature	-40 ~ +85°C				
Protection Class	Class II				
Maximum Series Fuse Rating	30A				

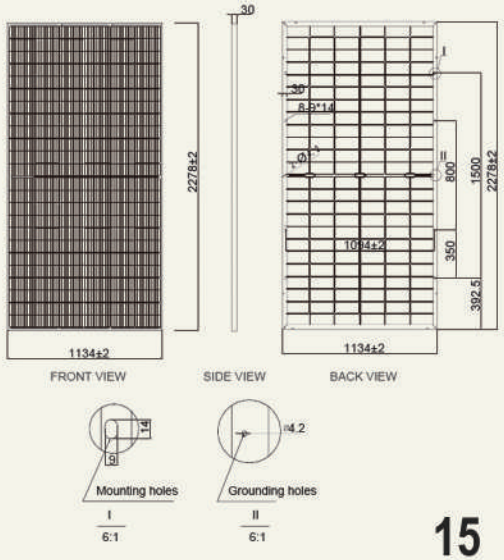
TEMPERATURE CHARACTERISTISC

Temp. Coeff. of (I_{sc})	0.050%/°C
Temp. Coeff. of (V_{oc})	-0.270%/°C
Temp. Coeff. of (P_{max})	-0.350%/°C

PACKING CONFIGURATION

Container	40' GP
Pieces per Pallet	30
Pieces Per Container	600
Pallet Per Container	20

PHYSICAL CHARACTERISTICS



MECHANICAL SPECIFICATIONS

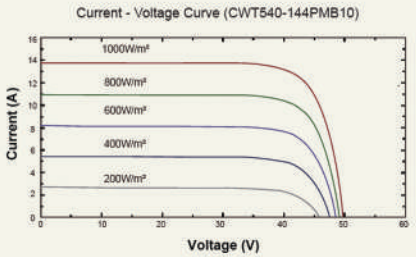
Cell Dimensions(mm)	182x91
Cells per Module(pcs)	144 (24x6)
Weight(kg)	33.0
Panel Dimensions(mm)	2278x1134x35
Max. Wind/Snow Load(Pa)	2400/5400
Junction Box	IP68
Junction Box Cable Length(mm)	350-1600
Glass Thickness (mm)	2.0 / 2.0

ELECTRICAL CHARACTERISTICS

(535W Front Power Referenced)

Rear Side Power Gain	5%	10%	15%	20%	25%
Peak Power (Pmax)	562	589	615	642	670
Short Circuit Current (I_{sc})	14.99	16.48	17.97	19.54	28.53
Open Circuit Voltage (V_{oc})	50	50	50	50	50
Maximum Power Current (I_{mp})	13.4	14.08	14.72	15.36	16
Maximum Power Voltage (V_{mp})	41.9	41.9	41.9	41.9	41.9

ELECTRICAL CHARACTERISTICS



PRODUCTS

Inverters

ABB

ABB PVS 50-60 kW

ABB PVS980-58 5MVA

ABB PVS980-58-2.3 -MVA-2091-kW-L

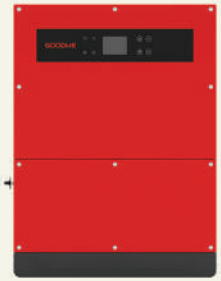
ABB PVS 100-120 kW

GOODWE

Commercial Rooftop Inverters

SMT Series - String Inverter 25 - 60 kW Up to 6 MPPTs Three Phase

HT 1100V Series - String Inverter I 100 – 120 kW I up to 12 MPPTs I Three phase



MT Series - 50-80 kW Three phase 4 MPPTs

Commercial Rooftop Inverters

UT Series - String Inverter 320 - 350 kW 12-15 MPPTs Three Phase

MV Station - 9.15 MVA

HT 1500V Series - String Inverter I 225 – 250 kW I up to 12 MPPTs I Three phase

 *Panel, inverter and structure solutions will be simulated in the most efficient manner to identify the best options for your project.

PRODUCTS

Inverters

HUAWEI

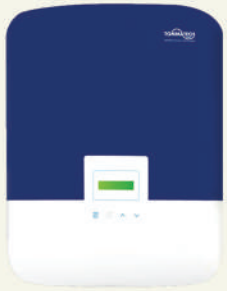
SUN2000-215KTL-H0
Smart String Inverter

SUN2000-330KTL-H1
Smart String Inverter

SUN2000-5060KTL-M0 Smart String Inverter

SUN2000-150K-MG0
Smart String Inverter

TOMMATECH GmbH
GERMAN-based company



Trio Atom K Series Three Phase Array 3.0-15.0kW Inverters

Trio Plus K Series Three Phase Array 8.0-30.0kW Inverters

Trio Plus Series Three Phase Array 8.0-15.0kW Inverters

Trio Atom Series Three Phase Array 4.0-10.0kW Inverters

Uno Home Series Single Phase Array 3.0-6.0kW Inverters

Uno Atom Series Single Phase Array 0.6-3.6kW Inverters

*Panel, inverter and structure solutions will be simulated in the most efficient manner to identify the best options for your project.

PRODUCTS

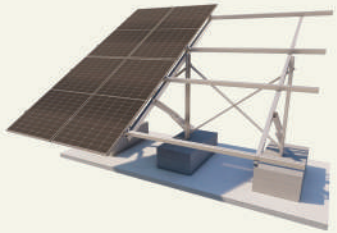
Mounting Structure

ALKOR SOLAR MONTAJ SİSTEMLERİ

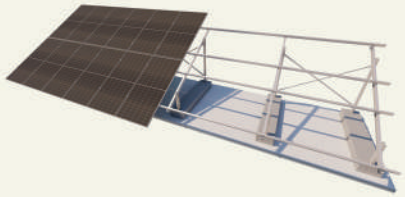
BACİK

isotec SOLAR MOUNTING SYSTEMS

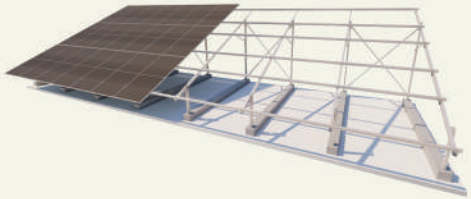
Land type system



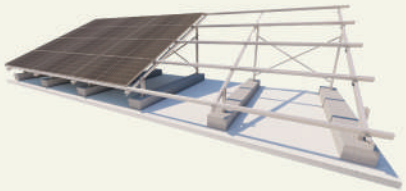
Angle Adjustable Mounting System with 2 Vertical Panel



Mounting System with 2 Vertical Panel

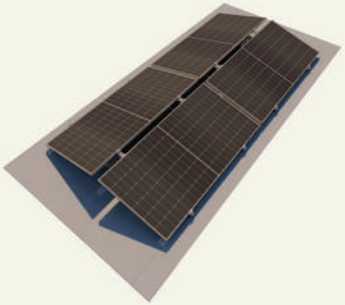


Mounting System with 3 Vertical Panel

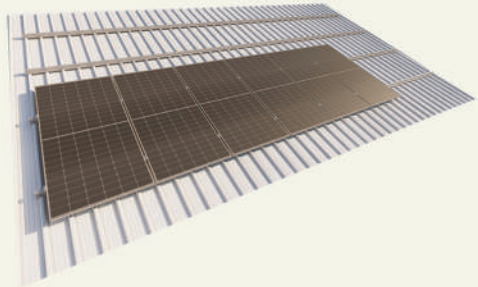


Mounting System with 4 Horizontal Panel

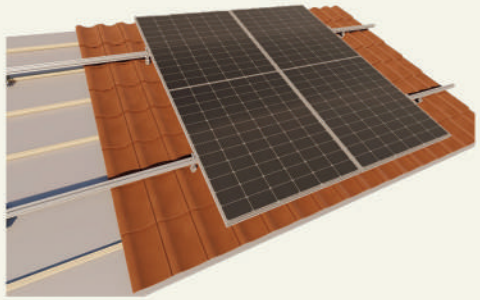
Roof type system



Flat Floor Type Systems



Inclined Roof Type Systems



Tile Roof Type Systems

*Panel, inverter and structure solutions will be simulated in the most efficient manner to identify the best options for your project.

PRODUCTS

Cables

PAMUKKALE KABLO

erse

Prysmian Group

DC Red 1 Meter (4.0mm & 6.0mm - Cross Section) Solar Cable

DC Red 1 Meter (10.0mm - Cross Section) Solar Cable

DC Black 1 Meter (10.0mm - Cross Section) Solar Cable

DC Black 1 Meter (4.0mm & 6.0mm- Cross Section) Solar Cable

*Panel, inverter and structure solutions will be simulated in the most efficient manner to identify the best options for your project.

Automation EPC projects

The Automation Unit utilizes its engineering expertise and experience in industrial settings to offer services encompassing all aspects of monitoring and controlling process systems. The primary goal is to establish the necessary network, communication hardware, and software infrastructure to ensure the sustainability of the system, including the development and implementation of PLC, HMI, and SCADA programs.

A key focus area for the unit is the creation of monitoring and control software for energy storage facilities and EV Charger units, aligning with advancements in the energy sector. The Automation Unit, in harmony with innovative framework, is dedicated to supporting sustainability objectives, particularly within the energy domain.

Service Scope:

Design and manufacture of automation panels

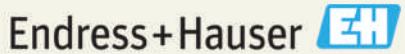
Integration of data processing automation and software

On-site facilities and commissioning

Software hardware communications

Engineering services

Advisable Brands That We Could Supply



Our Projects

Solar Power Plants

Kozluca 4 mW Solar Power Plant > Burdur - Türkiye

Limak 5 mW Solar Power Plant > Isparta - Türkiye

ABB EAE ELEKTRİK Prysmian Group Schneider Electric

Prysmian Group Schneider Electric EAE ELEKTRİK ABB

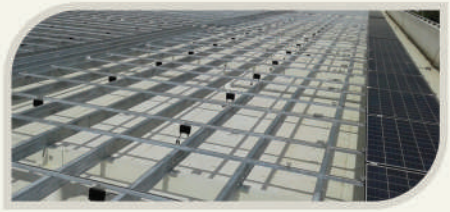
Our Projects

Solar Power Plants

Hadim 1.7 mW Solar Power Plant > Konya - Türkiye

Dere Madencilik 5.7 mW Solar Power Plant > Manisa-Türkiye

Japan Tobacco International (JTI) 500 kW Roof Solar Power Plant > İzmir - Türkiye

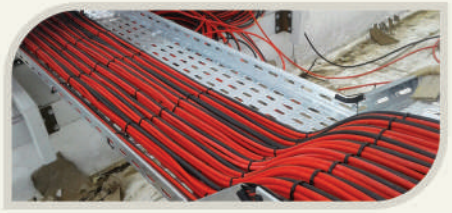


Schneider Electric Prysmian Group EAE ELEKTRİK solaredge

Our Projects

Solar Power Plants

Oto Irmak 2.2 mW Roof Solar Power Plant > İzmir - Türkiye



Tefenni 3mW Solar Power Plant > Burdur - Türkiye

solaredge EAE ELEKTRİK Prysmian Group ORTAC Cable Connection & Protection Systems

Prysmian Group ORTAC Cable Connection & Protection Systems EAE ELEKTRİK ABB

Our Projects

Solar Power Plants

Akfen 5 mW Solar Power Plant > Tokat - Türkiye

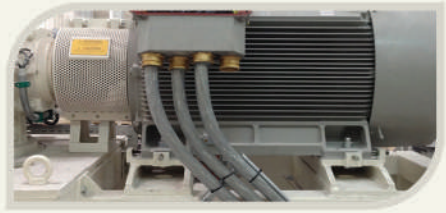
Esan Eczacıbaşı 2.2 mW Solar Power Plant

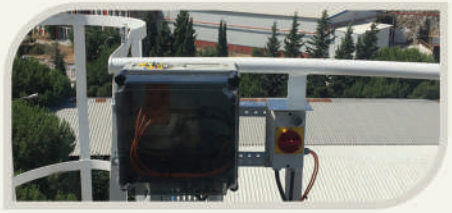
> Eskişehir - Türkiye

Our Projects

Process Automation

Calcium Process Facility Omya Madencilik › İzmir - Türkiye





Calcium Process Facility of Omya › Isfahan - Iran

Şişecam Soda › Lukavac - Bosnia & Herzegovina

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Our Projects

Process Automation

Erikli Water Co. > Bursa - Türkiye

Eti Maden Boron Oxide Plant > .Balıkesir - Türkiye

EAE ELEKTRİK

LAPP

SIEMENS

ORTAC Cable Connection & Protection Systems

Nexans

RENT RISE KİRALAYIN, YÜKSELİN

Schneider Electric

ABB

HES KABLO

Our Projects

Process Automation

Zeus Energy Biomass Energy Plant > Kırklareli - Türkiye

Eczacıbaşı Esan Magnesium Plant > Eskişehir - Türkiye

ABB EAE ELEKTRİK ORTAC Cable Connection & Protection Systems Prysmian Group

ORTAC Cable Connection & Protection Systems Nexans RENT RISE KİRALAYIN, YÜKSELİN

Schneider Electric ABB HES KABLO

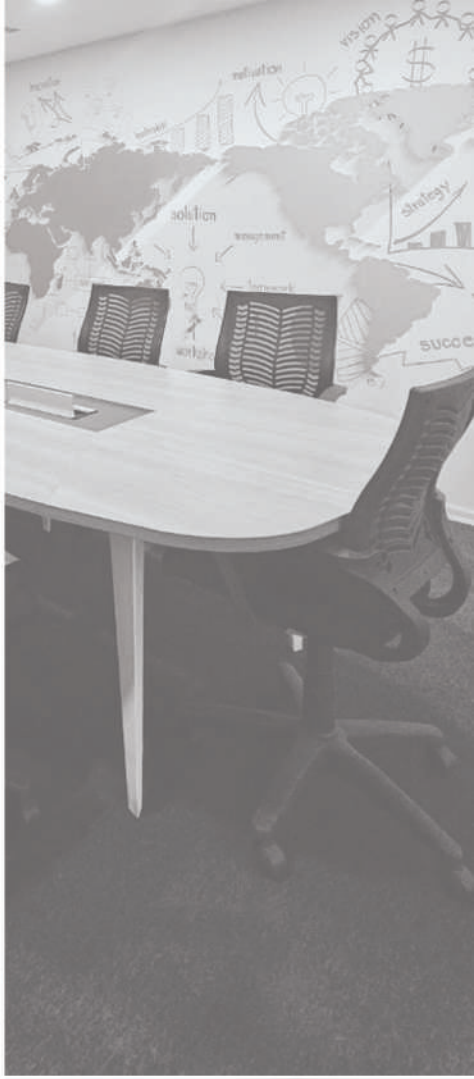
Process Automation Projects, International

1	Sarl Lamoa	Flow Controlled Profile Rolling Annealing Furnace Complete PLC and SCADA Software and Commissioning	Algeria	2023
2	Rok Steel	Pulse Firing / Flow Control Roaster Oven	Bangladesh	2020
3	Erbil Steel Company	Bar Rolling Mill Plant Complete PLC and SCADA Software upgrade. (S7 1500 and TIA Portal V17 Upgraded and re-written software)	Erbil Iraq	2019
4	Azer Pipe	PLC and SCADA Software for Water Plants and Commissioning	Azerbaijan	2019
5	Rok Steel	Pulse Firing / Flow Control Roaster Oven	Nigeria	2019
6	Erbil Steel Company	Bar Rolling Mill Plant Complete PLC and SCADA Software and Commissioning MCC Panels, DCM Panels, PLC Panels and Control Desks Manufacturing	Erbil , Iraq	2018
7	Bonab Steel Industry Complex	Steel Mill Arc Furnace Furnace Movements and Regulation Program and Commissioning	Bonab, Tabriz / Iran	2018
8	Saeb Steel Complex	Complete PLC and SCADA Software and Commissioning of Bar Rolling Mill	Bonab, Tabriz Iran	2017
9	Foulad Kaveh	Complete PLC and SCADA Software and Commissioning of Bar Rolling Annealing Furnace Hoenywell PLC and Siemens Win CC Scada Operation	Hamedan Iran	2017
10	Jindal Steel & Power Ltd	Project Design, MCC Panels, Drive Panels, PLC Panels and Control Desks Fabrications, On-site Assembly and I/O Facilities	India	2015 2016
11	Watani Steel	Bar Rolling Mill Plant Complete PLC and SCADA Software and Commissioning MCC Panels, DC Drive Panels, PLC Panels and Control Desks Manufacturing	Riyadh SAUDI ARABIA	2014 2015
12	Rexam / BALL	Packaging, Complete PLC Panels, Operator Control Panels, PLC and SCADA Software and Commissioning	Turkey Egypt	2013 2015
13	Hirbod Steel Company	Bar Rolling Mill Plant Complete PLC and SCADA Software and Commissioning MCC Panels, DC Drive Panels, PLC Panels and Control Desks Manufacturing	Saveh Iran	2013
14	Zagros Steel	Complete PLC and SCADA Software and Commissioning of Bar Rolling Mill. Manufacturing of MCC Panels, DC Drive Panels, PLC Panels and Control Desks	Sirjan Iran	2012
15	Persian Foolad	Bar Rolling Mill Plant Complete PLC and SCADA Software and Commissioning MCC Panels, DC Drive Panels, PLC Panels and Control Desks Manufacturing	Kazvin Iran	2011

Process Automation Projects, Turkey

No.	Customer	Project	City	Year
1	Zey Demir	"Rail Mill Finish Group, Grating, Packaging Complete PLC Panels, Operator Control Desks, PLC and SCADA Software and Commissioning"	Izmir Turkey	2020
2	Integral Metal	Pulse Firing / Flow Control Roaster Oven	Gebze Turke	2020
3	Haş Çelik Cable Coreal	"Regen / Pulse Firing / Flow Control Aluminum Melting Furnace Regen/Pulse Firing/Flow Control Aluminum Holding Furnace Complete PLC and SCADA Software and Commissioning"	Kayseri Turkey	2018 2019
4	Ereğli Iron Steel Plant	"Automation Modernization of Vacuum Degassing Plant PLC Panels, Operator Control Desks, Floor Standing Server Cabin Manufacturing"	Ereğli, Zonguldak Turkey	2018
5	Ereğli Iron Steel Plant	"Slab Continuous Casting 1-2-3-4 Plant Automation Modernization PLC Panels, Operator Control Desks, Floor Standing Server Cabin Manufacturing"	Ereğli, Zonguldak Turkey	2018
6	Çemtaş Steel Machinary Co.	"Automatic Stacking, Length Shear and Stone Saw Project PLC Panels, Operator Control Desks, Floor Standing Server Cabin Manufacturing"	Bursa Turkey	2018
7	Kardemir Karaük Iron Steel Industry Co.	"Liftable and Fixed Turret Systems Project MCC and PLC Panels Manufacturing"	Karabük Turkey	2017
8	Yolbulan Baştuğ Metalurji San. Co.	"Bar Rolling Mill Plant Complete PLC and SCADA Software and Commissioning MCC Panels, AC Drive Panels with Common DC Busbar, PLC Panels and Control Desks Manufacturing"	Osmaniye Turkey	2014

Our References

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