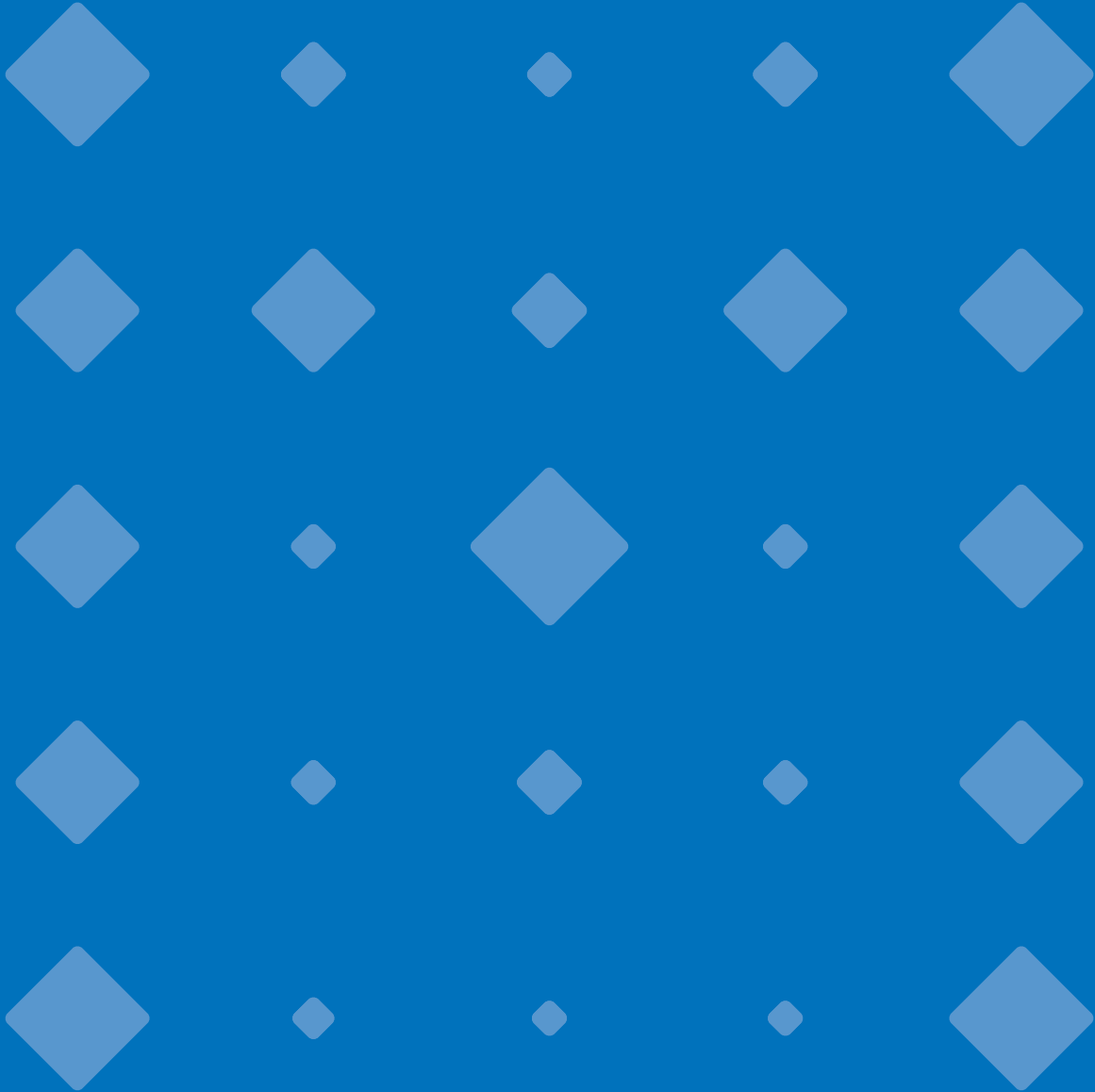


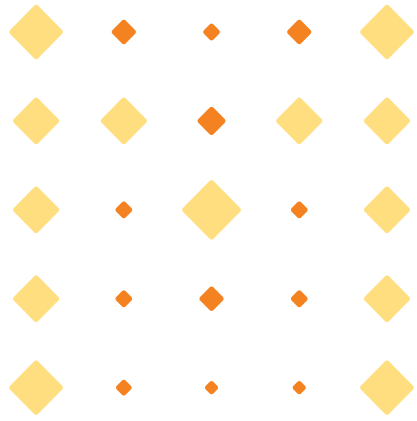


MANA ENERGY



**SUSTAINABLE
& CLEAN ENERGY**

2024





MANA ENERGY

SOLAR ENERGY

The surging global energy demand poses a paramount modern challenge. Remarkably, just one hour of sunlight harbors the potential to fulfill the world's energy demand for an entire year. Solar energy emerges as a pivotal solution, being transformative, efficient, and endlessly renewable. Solar energy poised to combat energy crises precipitated by volatile oil prices, climate change, environmental degradation, and assorted energy-related dilemmas.

The relentless advancement in photovoltaic science, coupled with production efficiency increase and cost-effectiveness enhancement, has amplified the photovoltaic panels footprint worldwide. Consequently, there's a growing global emphasis on photovoltaic electricity generation, marked by substantial investments in the establishment of large-scale photovoltaic power plants.

ADVANTAGES OF SOLAR ELECTRICITY

Saving water, low maintenance costs, diversity and adaptability, guaranteed longevity, improved electricity network security, and energy production during peak consumption hours are among the numerous benefits of using solar electricity.

LOCALIZATION OF THE PHOTOVOLTAIC TECHNOLOGY IN THE COUNTRY

Given the country's geographical location and the ideal solar-irradiation in many regions, Iran benefits from a high potential of solar energy. Domesticating the photovoltaic industry value chain in the country contributes to energy security, reducing dependence on imports, preventing currency outflow, and generating employment.

MANA ENERGY INTRODUCTION

CLEAN AND SUSTAINABLE ENERGY

VISION

Renewable energy expansion
to support clean future

MISSION

A reliable supplier with emphasis on quality,
performance and customer satisfaction

MANA ENERGY INTRODUCTION

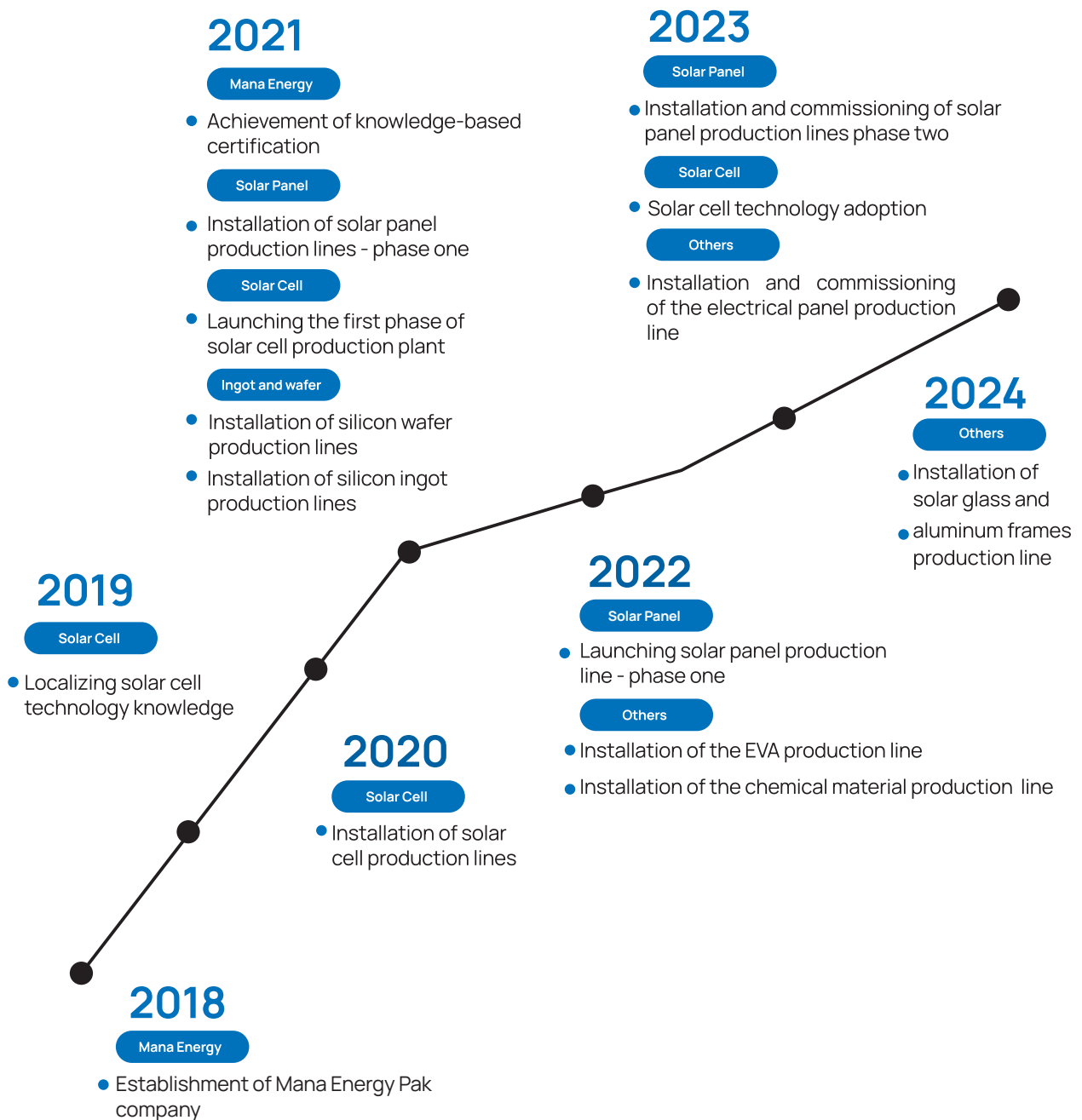
Mana Energy founded as a knowledge-based enterprise in the renewable energy sector and aimed to become the solar panel industry chain manufacturer encompassing polysilicon, silicon wafer, PV cell, and PV module. Our commitment is firmly anchored in propelling Iran towards a carbon-neutral future, aligning with our 2030 vision for the advancement of clean and sustainable energy. We are committed to adaptation and localization of the knowledge underpinning this industry in IRAN.

Within the Mana Energy, a consortium of companies is actively engaged across all stages of the photovoltaic industry chain. Our overarching objective is to fortify the framework for clean energy development in Iran. This endeavor not only accelerate job creation through the establishment of large-scale factories but also fosters the expansion of solar power infrastructure across the nation.

Moreover, Mana Energy has instituted a lucrative environment to nurture a sizable cohort of young professionals, providing them with invaluable opportunities to gain hands-on expertise within this burgeoning field.



DEVELOPMENT OF THE PHOTOVOLTAIC VALUE CHAIN IN MANA ENERGY



PROVIDING ONE-STOP SOLUTION

2021

Establishment
Tamin Energy
Mana

2022

Initiating to build the largest
private sector power plant
with 140 MW capacity
(Mahalat)

2023

Investment in the 1500
MW solar power plant

Investment in the 24
MW solar power plant
(Abarkooh)

2024

Start to export the
engineering services in
the field of renewables

Completion of the 10MW
EPC project (Mahabad
petrochemical)

Mahalat solar power
plant commissioning

MANA ENERGY'S OBJECTIVES

Production Quality:

Continuous improvement in production quality, supporting innovative ideas to enhance diversity of portfolio.

Production integrity:

Upholding sustainability and coherence in all processes of product manufacturing and service delivery.

Responsibility:

Advancing overarching goals and undertaking responsible actions towards society and the environment and upward performance.

Customer-Centric Approach:

Launching advanced customer care services.

MANA ENERGY'S CONTRIBUTIONS

Taking steps towards
a clean future for IRAN



Enhancing localized solar infrastructure



Optimizing energy structure



Establishing vertically integrated
photovoltaic industry in IRAN



Improving local research and development
knowledge



Creating a national sales network in Iran to
facilitate sales and after-sales services



Establishing a domestic testing laboratory
to support the industry.



MANA ENERGY'S CAPABILITIES



2300 MW

Solar Panel Production Capacity

1500 MW

Solar Cell Production Capacity

1500 MW

Silicon Wafer & Ingot Production Capacity

Customer Care Service as Mana Energy's competitive advantage

Here at Mana Energy, what differentiates us from our competitors is our exceptional quality of customer service. We pride ourselves in our integrity as a company, doing for our customers exactly what we say we are going to do:

- 1 Active agents throughout the country to support customers
- 2 Provide satisfactory after sales services
- 3 Minimize response time for customer support

Mana Energy's Agents



Please scan this QR code
for more information



MANA ENERGY'S RESEARCH AND DEVELOPMENT UNIT

The Mana Energy research and development team, relying on the technical expertise of experienced engineers, has taken significant steps in localizing the photovoltaic technology. It has successfully launched and operated the country's first solar cell production line. Leveraging up-to-date knowledge, this team has positioned the company among the first solar producers in Iran, enabling it to offer high-quality products and solutions with the world's best technologies.

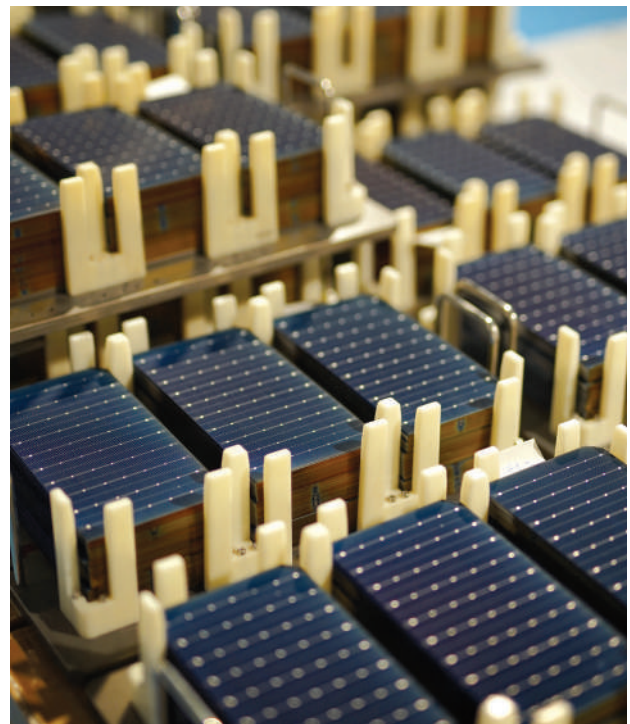
Innovative advancements in photovoltaic panels and their production processes have led to the widespread and global acceptance of solar energy technologies. This shift represents a departure from traditional methods of electricity generation towards the adoption of photovoltaic systems as a renewable energy system.

TECHNOLOGIES

One of the leading objectives of photovoltaic companies is to reduce the LCOE (Levelized cost of energy), which drive them to maximize efficiencies while producing any equipment.

At Mana Energy, we are at the forefront of innovative solar technologies, driving the industry forward with our commitment to excellence and sustainability. Our relentless pursuit of technological advancement has positioned us as a leading producer of solar panels in Iran.

Advanced Photovoltaic Modules: Our solar panels incorporate cutting-edge photovoltaic cell technology, harnessing the power of sunlight with maximum efficiency. By utilizing the latest advancements in photovoltaic cell design, we ensure optimal energy production and durability, making our panels ideal for both residential and commercial applications. To this end, Mana Energy has the capability to produce solar panels with both PERC or TOPCon technology.



QUALITY CONTROL / ASSURANCE

In the photovoltaic industry, ensuring the quality of manufacturing processes is paramount to achieving high performance and cost-effectiveness. At Mana Energy, we are deeply committed to delivering superior products that empower customers to generate clean energy reliably for years to come. This unwavering dedication to quality permeates every aspect of our production process, from thorough quality control measures for solar cells and modules, spanning from raw materials to packaging and pre-shipping inspections. Through continuous updates in automation and inspection procedures across our production lines, our rigorous quality control protocols guarantee that Mana Energy PV Modules are carefully designed and constructed to deliver safe, dependable, and enduring results.



Product Quality

With our state-of-the-art in-house testing laboratory, Mana Energy goes over and beyond to deliver products with highest quality level

Quality Test

Before reaching customers, all cells and modules pass quality tests in accordance with IEC standards to guarantee that the product's electrical, physical, and mechanical characteristics meet the highest standards.

Digitalization of Quality control


All quality control related data are collected and stored Mana Energy database to enable analysis and traceability.

Quality control

Each step of the production is closely monitored and quality of our product is ensured by standard quality control procedure

Intelligent Monitoring

All equipment and processes are carefully inspected by computer-based monitoring system for any deviations from the set parameters



WE PROVIDE SOLUTIONS FOR POWER PLANTS, RESIDENTIAL AND INDUSTRIAL CUSTOMERS

Industrial Solutions

MEP555-P144-GG

MonoPERC - 144cell-M10 Dual Glass
530-555W

MEP555-P-144GB

MonoPERC - 144cell-M10 Monofacial
530-555W

MEP585-T144-GG

N-Type TOPCon - 144cell-M10 Dual Glas
560-585W

Power Plant Solutions

MEP665-P132-GG

MonoPERC - 132cell-G12 Dual Glass
640-665W

MEP665-P132-GB

MonoPERC - 132cell-G12 Monofacial
640-665W

MEP700-T132-GG

N-Type TOPCon - 132cell-G12 Dual Glass
675-700W

MEP600-T144-GG

N-Type TOPCon - 144cell-M10 Dual Glass
575-600W

Residential Solutions

MEP390-P72-GB

MonoPERC - 72cell-M2 Monofacial
360-390W

POWERED
BY THE SUN



PRODUCTS

MEP700-T132-GG

N-Type TOPCon-132cell-G12 Dual Glass

0~+5W

Positive Power Tolerance

22.5%

Maximum Efficiency

675-700W

10-30% Additional Power Generation

30 years lifespan brings 10-30% additional power generation

Zero LID

N-type solar cell has no LID naturally which can increase power generation

Lower LCOE

Up to 25% more power generation in bifacial type (depending on Albedo)

Better Weak Light Performance

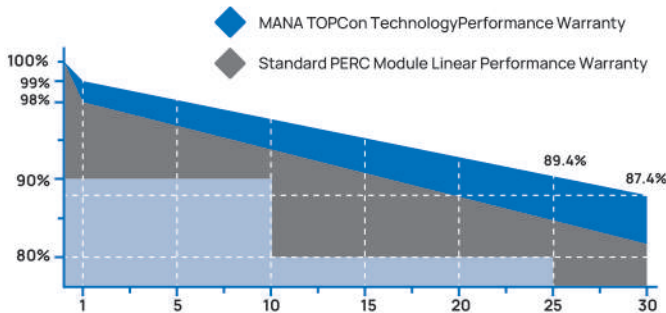
Higher power output even under low-light environment like on cloudy or foggy days

Lower Temperature Coefficient

Better performance of the solar panel in higher temperature environment or hot days

More Weather Resistance

Resistant to harsh environment such as salt, ammonia, sand, high temperature and high humidity area

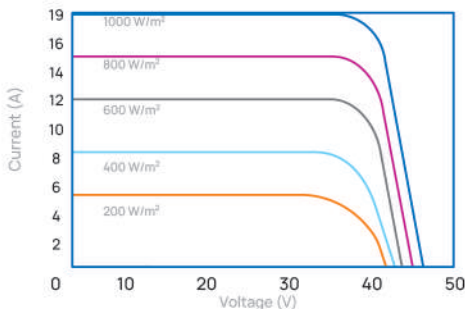


Mana Energy's Certificates

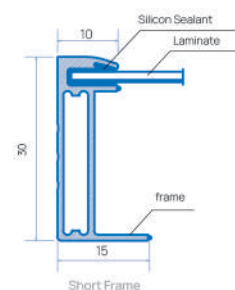
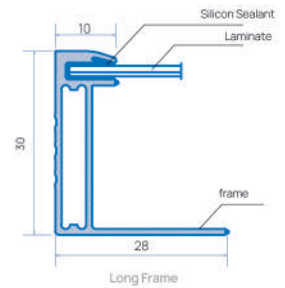
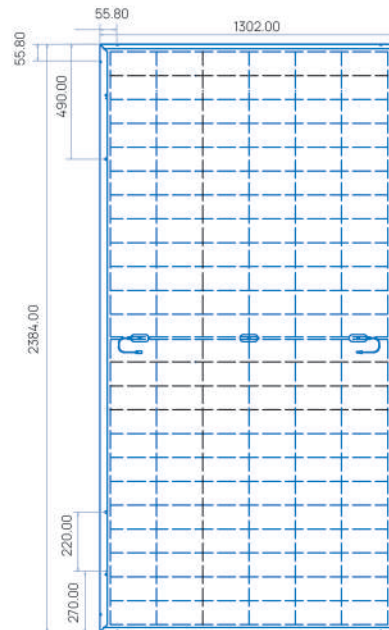
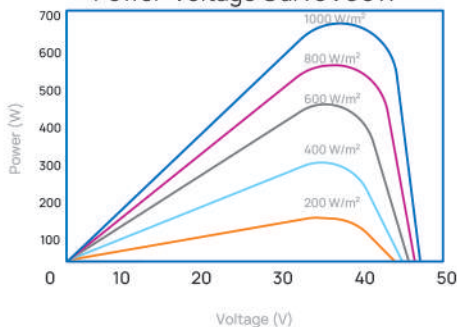
TUV Certificate IEC 61215: 2021
 TUV Certificate IEC 61730: 2016
 TUV Certificate IEC 61730: 2023
 CE Certification (EN 61730:2018)
 UKCA Certification (EN 61730:2018)
 CEBC Certification (IEC 61215: 2021 / IEC 61730: 2023)
 ISO 9001:2015: Quality management system
 ISO 14001:2015: Environmental management system
 ISO 45001:2018: Occupational health and safety management system



Current-Voltage Curve 700W



Power-Voltage Curve 700W



Caution

To operate, install and manage Mana Energy Modules, read the installation manual and use carefully.

Observation

This datasheet is subject to change without notice due to continuous improvement of our products. You can find all records of the updates on our website www.manaenergypak.com or by contacting one of our sales staff. Allrights reserved @Mana Energy.



MEP700-T132-GG

Electrical Specificatuin (STC) - Front Side			STC: AM1.5 1000W/m ² 25°C [Test Uncertainty: ±3%]					
Model			MEP 700-T132-GG 675	MEP 700-T132-GG 680	MEP 700-T132-GG 685	MEP 700-T132-GG 690	MEP 700-T132-GG 695	MEP 700-T132-GG 700
Max Power	Pmp	[W]	675	680	685	690	695	700
Max Power Voltage	Vmp	[V]	38.60	38.78	38.96	39.14	39.32	39.50
Max Power Current	Imp	[A]	17.50	17.54	17.59	17.63	17.68	17.73
Open Circuit Voltage	Voc	[V]	46.20	46.38	46.56	46.74	46.92	47.10
Short Circuit Current	Isc	[A]	18.57	18.62	18.67	18.72	18.79	18.82
Efficiency		[%]	21.7	21.9	22.1	22.2	22.4	22.5

Electrical Specificatuin (NMOT) - Front Side			NMOT: 800W/m ² 20°C 1m/s [Test Uncertainty: ±3%]					
Max Power	Pmp	[W]	511	514	518	521	525	528
Max Power Voltage	Vmp	[V]	36.20	36.36	36.52	36.68	36.84	37.00
Max Power Current	Imp	[A]	14.11	14.14	14.18	14.21	14.24	14.28
Open Circuit Voltage	Voc	[V]	44.20	44.36	44.52	44.68	44.84	45.00
Short Circuit Current	Isc	[A]	15.01	15.05	15.09	15.13	15.15	15.17

Bifaciality Power Generation Gain (Regarding 700W as an example)								
Power Gain		[%]	0	5	10	15	20	25
Max Power	Pmp	[W]	700	735	770	805	840	875
Max Power Voltage	Vmp	[V]	39.50	39.54	39.58	39.62	39.66	39.70
Max Power Current	Imp	[A]	17.73	18.59	19.45	20.32	21.18	22.04
Open Circuit Voltage	Voc	[V]	47.10	47.14	47.18	47.22	47.26	47.30
Short Circuit Current	Isc	[A]	18.82	19.68	20.54	21.41	22.27	23.13

Mechanical Data	
Solar Cell	N-Type 210mm × 105mm - [12 × 11]
Module Dimension	2384×1302×30 mm
Weight	38.2kg
Front Cover	Glass - 2mm Semi Tempered AR coated
Back Cover	Glass - 2mm Semi Tempered
Frame	Silver - Anodized Aluminium Alloy
Junction Box	IP68 Rated - 3 Bypass Diodes
Cable	4mm ² - 300mm

Temperature Ratings				
Temperature Coefficient	Isc	α	[%/°C]	+0.046
Temperature Coefficient	Voc	β	[%/°C]	-0.25
Temperature Coefficient	Pmax	γ	[%/°C]	-0.30
Nominal Module Operating Temperature	NMOT		[°C]	43±2

Operating Properties	
Max System Voltage	1500V
Max System Fuse Rating	30 A
Operational Temperature	-40 to +85 °C
BifacialityTolerance	±5%
Bifaciality=Pmaxrear/Pmaxfront (STC)	80%

Packaging Information	
# Module Per Pallet	35
# Pallet per 45'HC Container	20
# Pallet per 40'HC Container	10
# PCs per Container 40'HC	350
Pallet Weight (kg)	1335

MEP665-P132-GG

MonoPERC-132cell-G12 Dual Glass

0~+5W

Positive Power Tolerance

21.4%

Maximum Efficiency

640-665W

High Conversion Efficiency

High solar panel efficiency to guarantee high power output

Better Weak Light Performance

Higher power output even under low-light environment like on cloudy or foggy days

More Weather Resistance

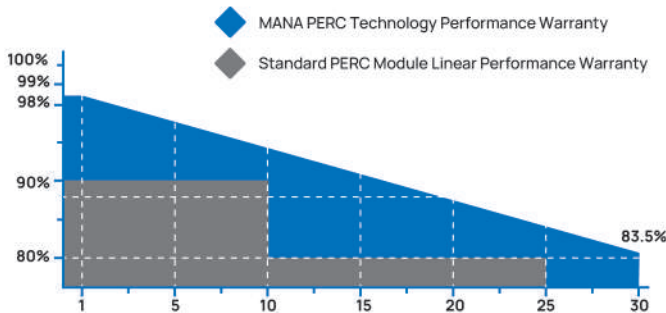
Resistant to harsh environment such as salt, ammonia, sand, high temperature and high humidity area

Lower LCOE

Up to 25% more power generation in bifacial type (depending on Albedo)

Lower Temperature Coefficient

Better performance of the solar panel in higher temperature environment or hot days



Mana Energy's Certificates

TUV Certificate IEC 61215: 2021
TUV Certificate IEC 61730: 2016
TUV Certificate IEC 61730: 2023
CE Certification (EN 61730:2018)
UKCA Certification (EN 61730:2018)
CEBEC Certification (IEC 61215: 2021 / IEC 61730: 2023)
ISO 9001:2015: Quality management system
ISO 14001:2015: Environmental management system
ISO 45001:2018: Occupational health and safety management system

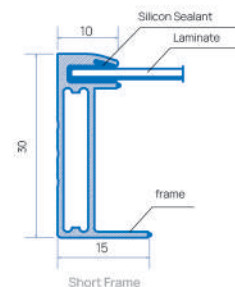
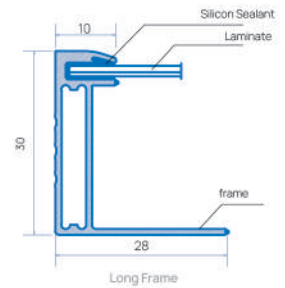
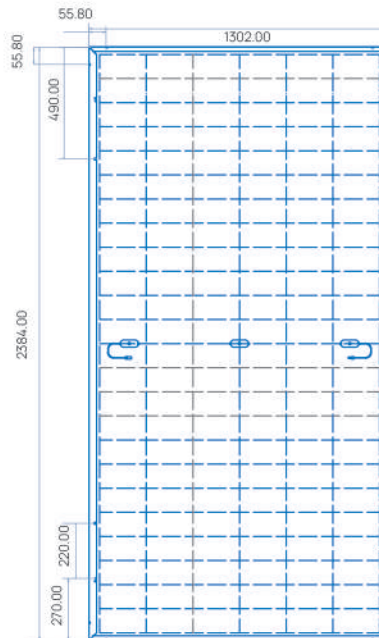
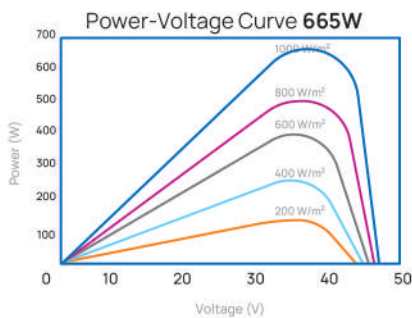
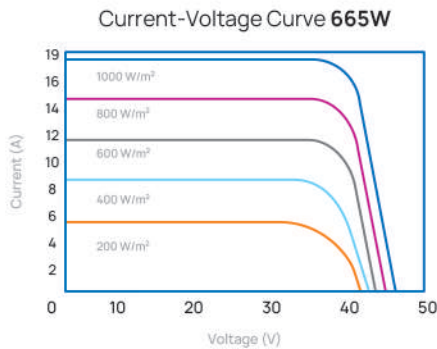


30 YEARS

Performance Warranty

12 YEARS

Product Warranty



Caution

To operate, install and manage Mana Energy Modules, read the installation manual and use carefully.

Observation

This datasheet is subject to change without notice due to continuous improvement of our products. You can find all records of the updates on our website www.manaenergypak.com or by contacting one of our sales staff. Allrights reserved @Mana Energy.



MEP665-P132-GG

Electrical Specificatuin (STC) - Front Side			STC: AM1.5 1000W/m ² 25°C [Test Uncertainty: ±3%]					
Model			MEP665-P132-GG 640	MEP665-P132-GG 645	MEP665-P132-GG 650	MEP665-P132-GG 655	MEP665-P132-GG 660	MEP665-P132-GG 665
Max Power	Pmp	[W]	640	645	650	655	660	665
Max Power Voltage	Vmp	[V]	37.57	37.83	38.09	38.16	38.35	38.55
Max Power Current	Imp	[A]	17.05	17.06	17.07	17.17	17.21	17.25
Open Circuit Voltage	Voc	[V]	44.49	44.69	44.89	45.09	45.29	45.49
Short Circuit Current	Isc	[A]	18.20	18.23	18.27	18.31	18.36	18.41
Efficiency		[%]	20.6	20.8	20.9	21.1	21.2	21.4

Electrical Specificatuin (NMOT) - Front Side			NMOT: 800W/m ² 20°C 1m/s [Test Uncertainty: ±3%]					
Max Power	Pmp	[W]	480	483	487	491	496	499
Max Power Voltage	Vmp	[V]	35.20	35.31	35.55	35.72	35.97	36.11
Max Power Current	Imp	[A]	13.64	13.69	13.71	13.75	13.79	13.82
Open Circuit Voltage	Voc	[V]	42.19	42.28	42.45	42.71	42.93	43.09
Short Circuit Current	Isc	[A]	14.70	14.74	14.78	14.83	14.87	14.91

Bifaciality Power Generation Gain (Regarding 650W as an example)								
Power Gain		[%]	0	5	10	15	20	25
Max Power	Pmp	[W]	650	683	715	748	780	813
Max Power Voltage	Vmp	[V]	38.09	38.12	38.15	38.18	38.21	38.24
Max Power Current	Imp	[A]	17.07	17.90	18.74	19.58	20.41	21.25
Open Circuit Voltage	Voc	[V]	44.89	44.93	44.97	45.01	45.05	45.09
Short Circuit Current	Isc	[A]	18.27	19.12	20.05	20.98	21.80	22.74

Mechanical Data	
Solar Cell	P-Type 210mm x 105mm - [12 x 11]
Module Dimension	2384x1302x30 mm
Weight	38.2 kg
Front Cover	Glass - 2mm Semi Tempered AR coated
Back Cover	Glass - 2mm Semi Tempered
Frame	Silver - Anodized Aluminium Alloy
Junction Box	IP68 Rated - 3 Bypass Diodes
Cable	4mm ² - 300mm

Temperature Ratings				
Temperature Coefficient	Isc	α	[%/°C]	+0.05
Temperature Coefficient	Voc	β	[%/°C]	-0.27
Temperature Coefficient	Pmax	γ	[%/°C]	-0.35
Nominal Module Operating Temperature	NMOT		[°C]	44±2

Operating Properties	
Max System Voltage	1500V
Max System Fuse Rating	30 A
Operational Temperature	-40 to +85 °C
Bifaciality Tolerance	±5%
Bifaciality = Pmaxrear/Pmaxfront (STC)	70%

Packaging Information	
# Module Per Pallet	35
# Pallet per 45' HC Container	12
# Pallet per 40' HC Container	10
# PCs per Container 40' HC	350
Pallet Weight (kg)	1335

MEP665-P132-GB

MonoPERC-132cell-G12 Monofacial

0~+5W

Positive Power Tolerance

21.4%

Maximum Efficiency

640-665W

High Conversion Efficiency

High solar panel efficiency to guarantee high power output

Better Weak Light Performance

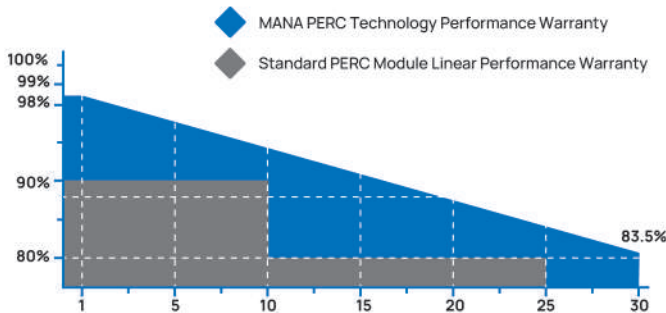
Higher power output even under low-light environment like on cloudy or foggy days

Lower Temperature Coefficient

Better performance of the solar panel in higher temperature environment or hot days

More Weather Resistance

Resistant to harsh environment such as salt, ammonia, sand, high temperature and high humidity area

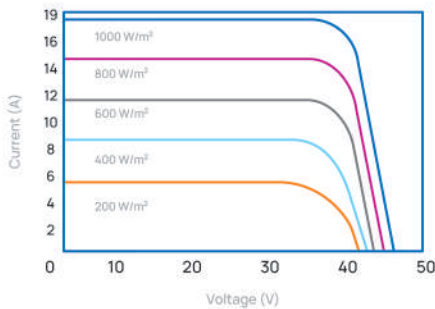


Mana Energy's Certificates

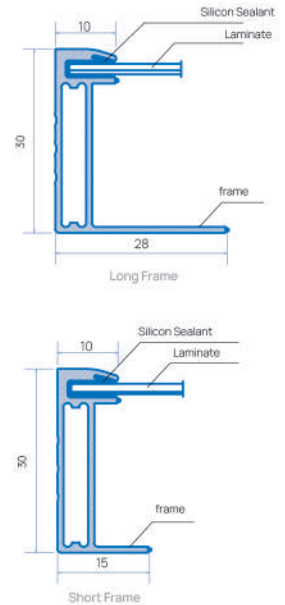
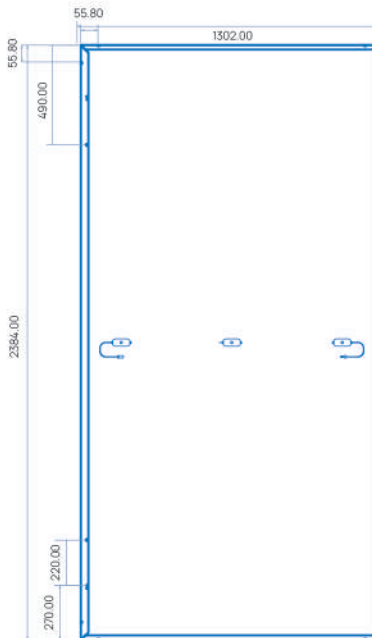
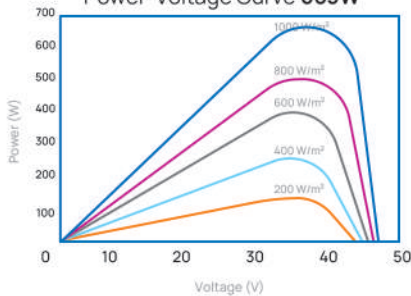
TUV Certificate IEC 61215: 2021
 TUV Certificate IEC 61730: 2016
 TUV Certificate IEC 61730: 2023
 CE Certification (EN 61730:2018)
 UKCA Certification (EN 61730:2018)
 CEBC Certification (IEC 61215: 2021 / IEC 61730: 2023)
 ISO 9001:2015: Quality management system
 ISO 14001:2015: Environmental management system
 ISO 45001:2018: Occupational health and safety management system



Current-Voltage Curve 665W



Power-Voltage Curve 665W



Caution

To operate, install and manage Mana Energy Modules, read the installation manual and use carefully.

Observation

This datasheet is subject to change without notice due to continuous improvement of our products. You can find all records of the updates on our website www.manaenergypak.com or by contacting one of our sales staff. Allrights reserved @Mana Energy.



MEP665-P132-GB

Electrical Specificatuin (STC) - Front Side			STC: AM1.5 1000W/m ² 25°C [Test Uncertainty: ±3%]					
Model			MEP665-P132-GB 640	MEP665-P132-GB 645	MEP665-P132-GB 650	MEP665-P132-GB 655	MEP665-P132-GB 660	MEP665-P132-GB 665
Max Power	Pmp	[W]	640	645	650	655	660	665
Max Power Voltage	Vmp	[V]	37.57	37.83	38.09	38.16	38.35	38.55
Max Power Current	Imp	[A]	17.05	17.06	17.07	17.17	17.21	17.25
Open Circuit Voltage	Voc	[V]	44.49	44.69	44.89	45.09	45.29	45.49
Short Circuit Current	Isc	[A]	18.20	18.23	18.27	18.31	18.36	18.41
Efficiency		[%]	20.6	20.8	20.9	21.1	21.2	21.4

Electrical Specificatuin (NMOT) - Front Side			NMOT: 800W/m ² 20°C 1m/s [Test Uncertainty: ±3%]					
Max Power	Pmp	[W]	480	483	487	491	496	499
Max Power Voltage	Vmp	[V]	35.20	35.31	35.55	35.72	35.97	36.11
Max Power Current	Imp	[A]	13.64	13.69	13.71	13.75	13.79	13.82
Open Circuit Voltage	Voc	[V]	42.19	42.28	42.45	42.71	42.93	43.09
Short Circuit Current	Isc	[A]	14.70	14.74	14.78	14.83	14.87	14.91

Mechanical Data	
Solar Cell	P-Type 210mm × 105mm - [12 × 11]
Module Dimension	2384×1302×30 mm
Weight	31.7kg
Front Cover	Glass - 3.2mm Tempered AR coated
Back Cover	White Backsheet
Frame	Silver - Anodized Aluminium Alloy
Junction Box	IP68 Rated - 3 Bypass Diodes
Cable	4mm ² - 300mm

Temperature Ratings				
Temperature Coefficient	Isc	α	[%/oC]	+0.05
Temperature Coefficient	Voc	β	[%/oC]	-0.27
Temperature Coefficient	Pmax	γ	[%/oC]	-0.35
Nominal Module Operating Temperature	NMOT		[oC]	44±2

Operating Properties	
Max System Voltage	1500V
Max System Fuse Rating	30 A
Operational Temperature	-40 to + 85 °C
Power Tolerance	+5W

Packaging Information	
# Module Per Pallet	35
# Pallet per 45'HC Container	12
# Pallet per 40'HC Container	10
# PCs per Container 40'HC	350
Pallet Weight (kg)	1160

MEP600-T144-GG

N-Type TOPCon-144cell-M10 Dual Glass

0~+5W

Positive Power Tolerance

23.2%

Maximum Efficiency

⚡ 575-600W

10-30% Additional Power Generation

30 years lifespan brings 10-30% additional power generation

Zero LID

N-type solar cell has no LID naturally which can increase power generation

Lower LCOE

Up to 25% more power generation in bifacial type (depending on Albedo)

Better Weak Light Performance

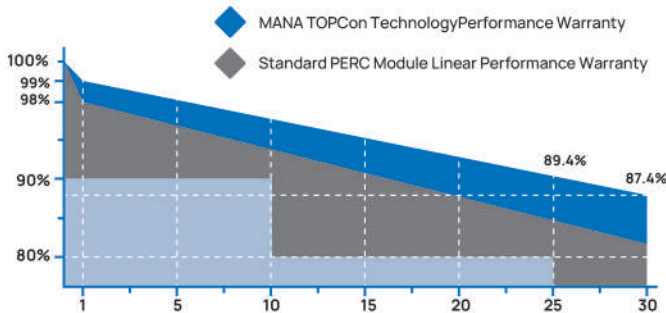
Higher power output even under low-light environment like on cloudy or foggy days

Lower Temperature Coefficient

Better performance of the solar panel in higher temperature environment or hot days

More Weather Resistance

Resistant to harsh environment such as salt, ammonia, sand, high temperature and high humidity area



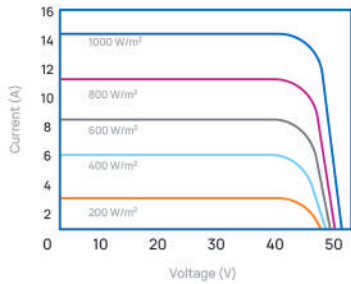
Mana Energy's Certificates

TUV Certificate IEC 61215: 2021
 TUV Certificate IEC 61730: 2016
 TUV Certificate IEC 61730: 2023
 CE Certification (EN 61730:2018)
 UKCA Certification (EN 61730:2018)
 CEBEC Certification (IEC 61215: 2021 / IEC 61730: 2023)
 ISO 9001:2015: Quality management system
 ISO 14001:2015: Environmental management system
 ISO 45001:2018: Occupational health and safety management system

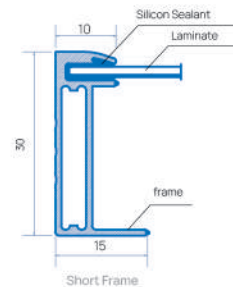
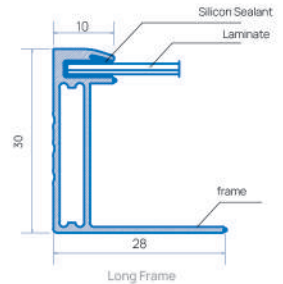
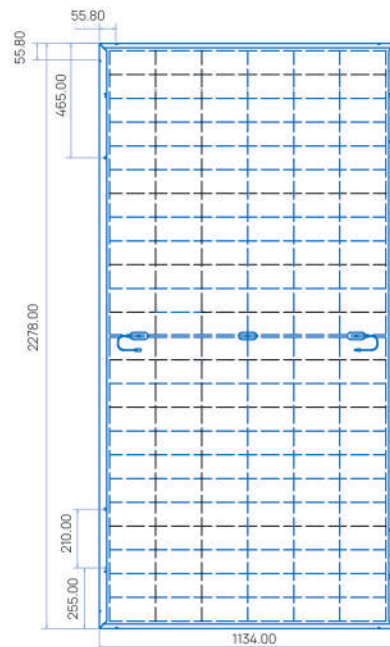
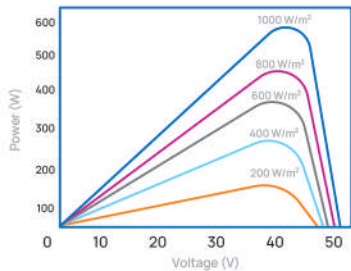


30 YEARS	Performance Warranty	12 YEARS	Product Warranty
--------------------	-------------------------	--------------------	---------------------

Current-Voltage Curve 600W



Power-Voltage Curve 600W



Caution

To operate, install and manage Mana Energy Modules, read the installation manual and use carefully.

Observation

This datasheet is subject to change without notice due to continuous improvement of our products. You can find all records of the updates on our website www.manaenergypak.com or by contacting one of our sales staff. Allrights reserved @Mana Energy.



MEP600-T144-GG

Electrical Specificatuin (STC) - Front Side			STC: AM1.5 1000W/m ² 25°C [Test Uncertainty: ±3%]					
Model			MEP 600-T144-GG 575	MEP 600-T144-GG 580	MEP 600-T144-GG 585	MEP 600-T144-GG 590	MEP 600-T144-GG 595	MEP 600-T144-GG 600
Max Power	Pmp	[W]	575	580	585	590	595	600
Max Power Voltage	Vmp	[V]	43.45	43.59	43.73	43.87	44.01	44.16
Max Power Current	Imp	[A]	13.24	13.31	13.38	13.45	13.52	13.60
Open Circuit Voltage	Voc	[V]	51.27	51.47	51.67	51.87	52.07	52.27
Short Circuit Current	Isc	[A]	14.31	14.37	14.43	14.49	14.55	14.61
Efficiency		[%]	22.26	22.45	22.65	22.84	23.03	23.23

Electrical Specificatuin (NMOT) - Front Side			NMOT: 800W/m ² 20°C 1m/s [Test Uncertainty: ±3%]					
Max Power	Pmp	[W]	435	439	443	446	450	454
Max Power Voltage	Vmp	[V]	40.61	40.74	40.87	41.00	41.13	41.26
Max Power Current	Imp	[A]	10.71	10.77	10.83	10.89	10.95	11.01
Open Circuit Voltage	Voc	[V]	48.70	48.89	49.08	49.27	49.46	49.65
Short Circuit Current	Isc	[A]	11.55	11.61	11.67	11.73	11.79	11.85

Bifaciality Power Generation Gain (Regarding 575W as an example)								
Power Gain		[%]	0	5	10	15	20	25
Max Power	Pmp	[W]	575	604	633	661	690	719
Max Power Voltage	Vmp	[V]	43.45	43.51	43.57	43.63	43.69	43.75
Max Power Current	Imp	[A]	13.24	13.88	14.52	15.16	15.79	16.43
Open Circuit Voltage	Voc	[V]	51.27	51.31	51.35	51.39	51.43	51.47
Short Circuit Current	Isc	[A]	14.31	14.96	15.61	16.26	16.91	17.56

Mechanical Data	
Solar Cell	N-Type 182mm × 91mm - [12 × 12]
Module Dimension	2278×1134×30 mm
Weight	32kg
Front Cover	Glass - 2mm Semi Tempered AR coated
Back Cover	Glass - 2mm Semi Tempered
Frame	Silver - Anodized Aluminium Alloy
Junction Box	IP68 Rated - 3 Bypass Diodes
Cable	4mm ² - 300mm

Temperature Ratings				
Temperature Coefficient	Isc	α	[%/°C]	+0.046
Temperature Coefficient	Voc	β	[%/°C]	-0.25
Temperature Coefficient	Pmax	γ	[%/°C]	-0.30
Nominal Module Operating Temperature	NMOT		[°C]	43±2

Operating Properties	
Max System Voltage	1500V
Max System Fuse Rating	30 A
Operational Temperature	-40 to +85 °C
BifacialityTolerance	±5%
Bifaciality = Pmaxrear/Pmaxfront (STC)	80%

Packaging Information	
# Module Per Pallet	35
# Pallet per 45'HC Container	22
# Pallet per 40'HC Container	20
# PCs per Container 40'HC	700
Pallet Weight (kg)	1145

MEP585-T144-GG

N-Type TOPCon-144cell-M10 Dual Glass

0~+5W

Positive Power Tolerance

22.6%

Maximum Efficiency

560-585W

10-30% Additional Power Generation

30 years lifespan brings 10-30% additional power generation

Zero LID

N-type solar cell has no LID naturally which can increase power generation

Lower LCOE

Up to 25% more power generation in bifacial type (depending on Albedo)

Better Weak Light Performance

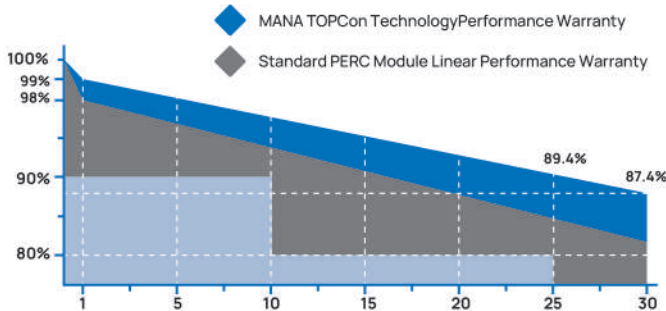
Higher power output even under low-light environment like on cloudy or foggy days

Lower Temperature Coefficient

Better performance of the solar panel in higher temperature environment or hot days

More Weather Resistance

Resistant to harsh environment such as salt, ammonia, sand, high temperature and high humidity area



Mana Energy's Certificates

TUV Certificate IEC 61215: 2021
 TUV Certificate IEC 61730: 2016
 TUV Certificate IEC 61730: 2023
 CE Certification (EN 61730-2018)
 UKCA Certification (EN 61730-2018)
 UKCA Certification (EN 61730-2023)
 CEBC Certification (IEC 61215: 2021 / IEC 61730: 2023)
 ISO 9001:2015: Quality management system
 ISO 14001:2015: Environmental management system
 ISO 45001:2018: Occupational health and safety management system



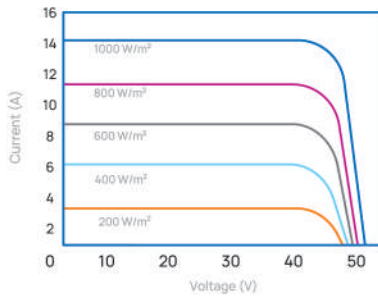
30
YEARS

Performance
Warranty

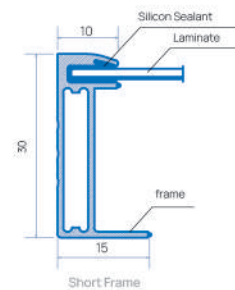
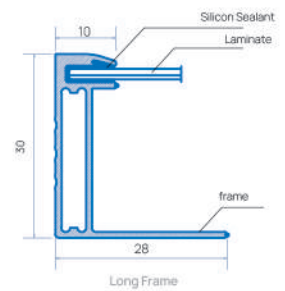
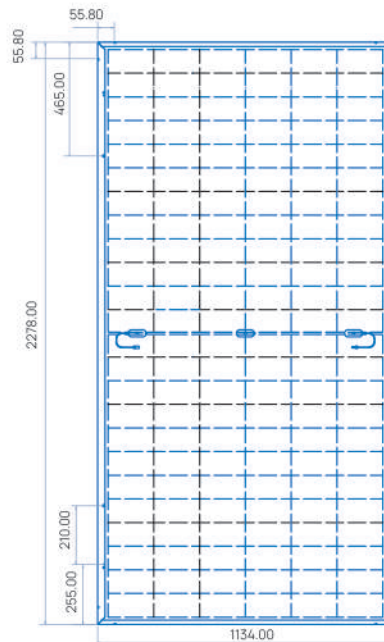
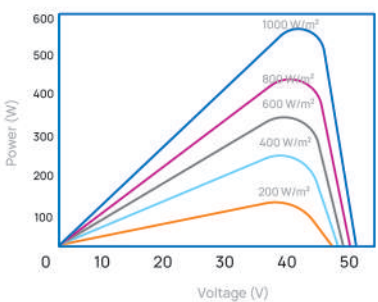
12
YEARS

Product
Warranty

Current-Voltage Curve 585W



Power-Voltage Curve 585W



Caution

To operate, install and manage Mana Energy Modules, read the installation manual and use carefully.

Observation

This datasheet is subject to change without notice due to continuous improvement of our products. You can find all records of the updates on our website www.manaenergypak.com or by contacting one of our sales staff. Allrights reserved @Mana Energy.



MEP585-T144-GG

Electrical Specificatuin (STC) - Front Side			STC: AM1.5 1000W/m ² 25°C [Test Uncertainty: ±3%]					
Model			MEP 585-T144-GG 560	MEP 585-T144-GG 565	MEP 585-T144-GG 570	MEP 585-T144-GG 575	MEP 585-T144-GG 580	MEP 585-T144-GG 585
Max Power	Pmp	[W]	560	565	570	575	580	585
Max Power Voltage	Vmp	[V]	43.03	43.17	43.31	43.45	43.59	43.73
Max Power Current	Imp	[A]	13.03	13.10	13.17	13.24	13.31	13.38
Open Circuit Voltage	Voc	[V]	50.67	50.87	51.07	51.27	51.47	51.67
Short Circuit Current	Isc	[A]	14.13	14.19	14.25	14.31	14.37	14.43
Efficiency		[%]	21.68	21.87	22.07	22.26	22.45	22.65

Electrical Specificatuin (NMOT) - Front Side			NMOT: 800W/m ² 20°C 1m/s [Test Uncertainty: ±3%]					
Max Power	Pmp	[W]	424	427	431	435	439	443
Max Power Voltage	Vmp	[V]	40.22	40.35	40.48	40.61	40.74	40.87
Max Power Current	Imp	[A]	10.53	10.59	10.65	10.71	10.77	10.83
Open Circuit Voltage	Voc	[V]	48.13	48.32	48.51	48.70	48.89	49.08
Short Circuit Current	Isc	[A]	11.41	11.46	11.50	11.55	11.60	11.66

Bifaciality Power Generation Gain (Regarding 575W as an example)								
Power Gain		[%]	0	5	10	15	20	25
Max Power	Pmp	[W]	575	604	633	661	690	719
Max Power Voltage	Vmp	[V]	43.45	43.51	43.57	43.63	43.69	43.75
Max Power Current	Imp	[A]	13.24	13.88	14.52	15.16	15.79	16.43
Open Circuit Voltage	Voc	[V]	51.27	51.31	51.35	51.39	51.43	51.47
Short Circuit Current	Isc	[A]	14.31	14.96	15.61	16.26	16.91	17.56

Mechanical Data	
Solar Cell	N-Type 182mm × 91mm - [12 × 12]
Module Dimension	2278×1134×30 mm
Weight	32kg
Front Cover	Glass - 2mm Semi Tempered AR coated
Back Cover	Glass - 2mm Semi Tempered
Frame	Silver - Anodized Aluminium Alloy
Junction Box	IP68 Rated - 3 Bypass Diodes
Cable	4mm ² -300mm

Temperature Ratings				
Temperature Coefficient	Isc	α	[%/°C]	+0.046
Temperature Coefficient	Voc	β	[%/°C]	-0.25
Temperature Coefficient	Pmax	γ	[%/°C]	-0.30
Nominal Module Operating Temperature	NMOT		[°C]	43±2

Operating Properties	
Max System Voltage	1500V
Max System Fuse Rating	30 A
Operational Temperature	-40 to +85 °C
BifacialityTolerance	±5%
Bifaciality=Pmaxrear/Pmaxfront (STC)	80%

Packaging Information	
# Module Per Pallet	35
# Pallet per 45'HC Container	22
# Pallet per 40'HC Container	20
# PCs per Container 40'HC	700
Pallet Weight (kg)	1145

MEP555-P144-GG

MonoPERC-144cell-M10 Dual Glass

0~+5W

Positive Power Tolerance

21.5%

Maximum Efficiency

530-555W

High Conversion Efficiency

High solar panel efficiency to guarantee high power output

Better Weak Light Performance

Higher power output even under low-light environment like on cloudy or foggy days

More Weather Resistance

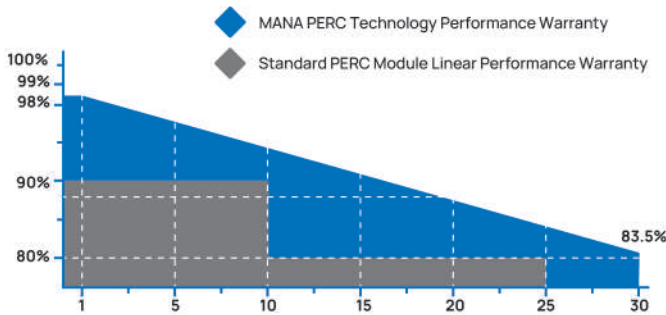
Resistant to harsh environment such as salt, ammonia, sand, high temperature and high humidity area

Lower LCOE

Up to 25% more power generation in bifacial type (depending on Albedo)

Lower Temperature Coefficient

Better performance of the solar panel in higher temperature environment or hot days



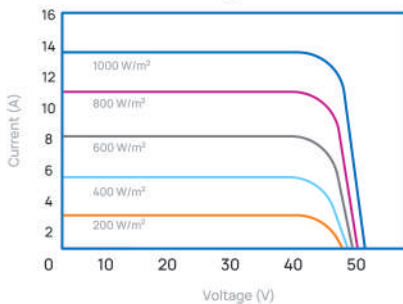
Mana Energy's Certificates

TUV Certificate IEC 61215: 2021
 TUV Certificate IEC 61730: 2016
 TUV Certificate IEC 61730: 2023
 CE Certification (EN 61730:2018)
 UKCA Certification (EN 61730:2018)
 CEBEC Certification (IEC 61215: 2021 / IEC 61730: 2023)
 ISO 9001:2015: Quality management system
 ISO 14001:2015: Environmental management system
 ISO 45001:2018: Occupational health and safety management system

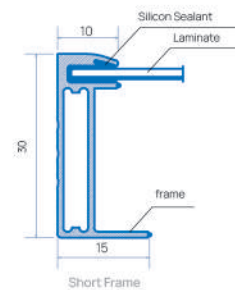
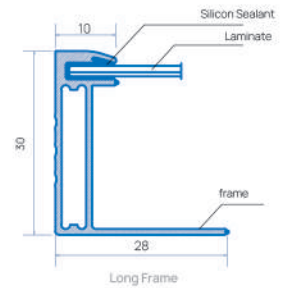
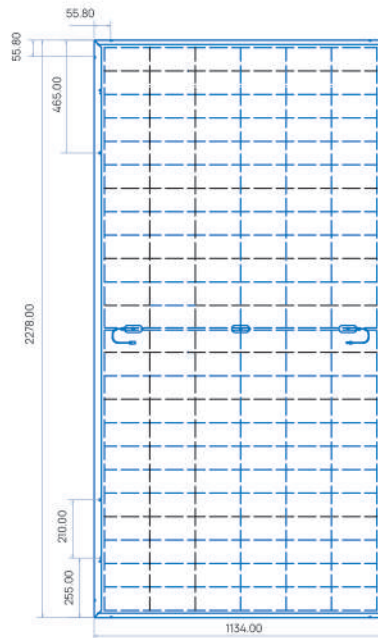
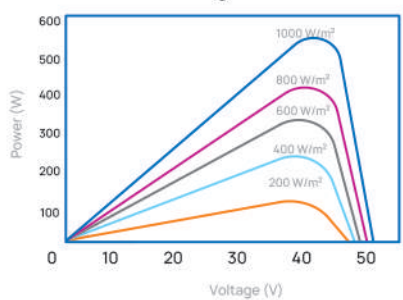


30 YEARS	Performance Warranty	12 YEARS	Product Warranty
--------------------	-------------------------	--------------------	---------------------

Current-Voltage Curve 555W



Power-Voltage Curve 555W



Caution

To operate, install and manage Mana Energy Modules, read the installation manual and use carefully.

Observation

This datasheet is subject to change without notice due to continuous improvement of our products. You can find all records of the updates on our website www.manaenergypak.com or by contacting one of our sales staff. Allrights reserved @Mana Energy.



MEP555-P144-GG

Electrical Specificatuin (STC) - Front Side			STC: AM1.5 1000W/m ² 25°C [Test Uncertainty: ±3%]					
Model			MEP555-P144-GG 530	MEP555-P144-GG 535	MEP555-P144-GG 540	MEP555-P144-GG 545	MEP555-P144-GG 550	MEP555-P144-GG 555
Max Power	Pmp	[W]	530	535	540	545	550	555
Max Power Voltage	Vmp	[V]	41.90	42.02	42.14	42.26	42.38	42.50
Max Power Current	Imp	[A]	12.66	12.74	12.82	12.91	12.98	13.07
Open Circuit Voltage	Voc	[V]	50.95	51.06	51.17	51.28	51.39	51.50
Short Circuit Current	Isc	[A]	13.43	13.50	13.58	13.64	13.71	13.80
Efficiency		[%]	20.5	20.7	20.9	21.1	21.3	21.5

Electrical Specificatuin (NMOT) - Front Side			NMOT: 800W/m ² 20°C 1m/s [Test Uncertainty: ±3%]					
Max Power	Pmp	[W]	397	401	404	408	412	416
Max Power Voltage	Vmp	[V]	39.05	39.18	39.30	39.46	39.62	39.81
Max Power Current	Imp	[A]	10.17	10.23	10.30	10.36	10.40	10.46
Open Circuit Voltage	Voc	[V]	48.09	48.17	48.22	48.33	48.47	48.55
Short Circuit Current	Isc	[A]	10.75	10.80	10.87	10.92	10.98	11.05

Bifaciality Power Generation Gain (Regarding 550W as an example)								
Power Gain		[%]	0	5	10	15	20	25
Max Power	Pmp	[W]	550	578	605	633	660	688
Max Power Voltage	Vmp	[V]	42.38	42.41	42.44	42.47	42.50	42.53
Max Power Current	Imp	[A]	12.98	13.62	14.26	14.89	15.53	16.17
Open Circuit Voltage	Voc	[V]	51.39	51.42	51.45	51.48	51.51	51.54
Short Circuit Current	Isc	[A]	13.71	14.51	15.19	15.89	16.66	17.32

Mechanical Data	
Solar Cell	P-Type 182mm × 91mm - [12×12]
Module Dimension	2278×1134×30 mm
Weight	32kg
Front Cover	Glass - 2mm SEMI Tempered AR coated
Back Cover	Glass - 2mm SEMI Tempered
Frame	Silver - Anodized Aluminium Alloy
Junction Box	IP68 Rated - 3 Bypass Diodes
Cable	4mm ² - 300mm

Temperature Ratings				
Temperature Coefficient	Isc	α	[%/°C]	+0.05
Temperature Coefficient	Voc	β	[%/°C]	-0.27
Temperature Coefficient	Pmax	γ	[%/°C]	-0.35
Nominal Module Operating Temperature	NMOT		[°C]	44±2

Operating Properties	
Max System Voltage	1500V
Max System Fuse Rating	30 A
Operational Temperature	-40 to +85 °C
BifacialityTolerance	±5%
Bifaciality = Pmaxrear/Pmaxfront (STC)	70%

Packaging Information	
# Module Per Pallet	35
# Pallet per 45'HC Container	22
# Pallet per 40'HC Container	20
# PCs per Container 40'HC	700
Pallet Weight (kg)	1145

MEP585-T144-GG

N-Type TOPCon-144cell-M10 Dual Glass

0~+5W

Positive Power Tolerance

22.6%

Maximum Efficiency

560-585W

10-30% Additional Power Generation

30 years lifespan brings 10-30% additional power generation

Zero LID

N-type solar cell has no LID naturally which can increase power generation

Lower LCOE

Up to 25% more power generation in bifacial type (depending on Albedo)

Better Weak Light Performance

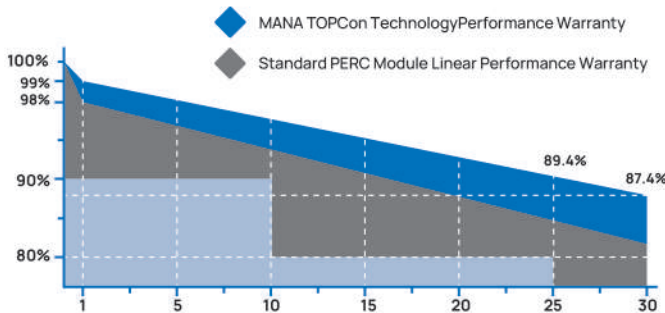
Higher power output even under low-light environment like on cloudy or foggy days

Lower Temperature Coefficient

Better performance of the solar panel in higher temperature environment or hot days

More Weather Resistance

Resistant to harsh environment such as salt, ammonia, sand, high temperature and high humidity area



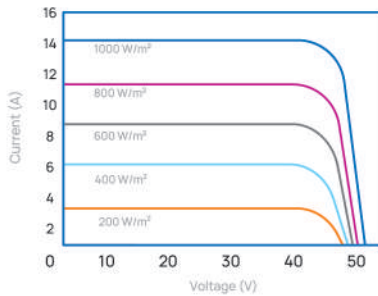
Mana Energy's Certificates

TUV Certificate IEC 61215: 2021
 TUV Certificate IEC 61730: 2016
 TUV Certificate IEC 61730: 2023
 CE Certification (EN 61730:2018)
 UKCA Certification (EN 61730:2018)
 CEBC Certification (IEC 61215: 2021 / IEC 61730: 2023)
 ISO 9001:2015: Quality management system
 ISO 14001:2015: Environmental management system
 ISO 45001:2018: Occupational health and safety management system

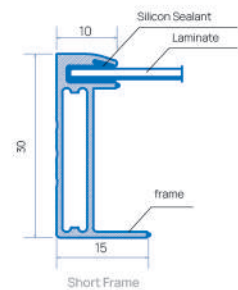
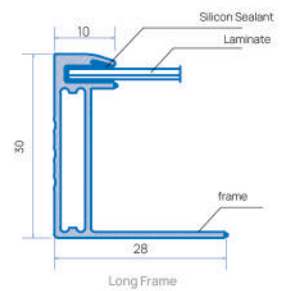
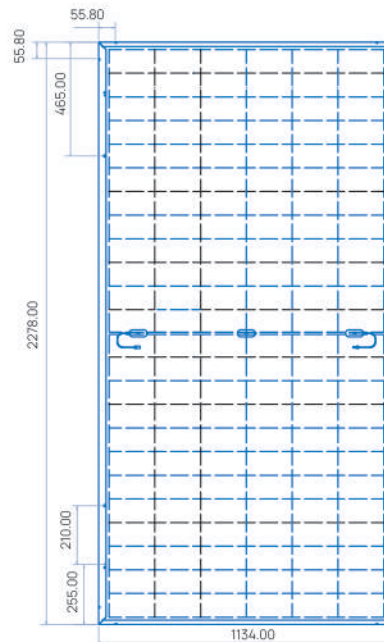
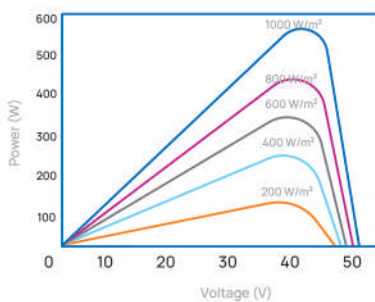


30 YEARS	Performance Warranty	12 YEARS	Product Warranty
--------------------	-------------------------	--------------------	---------------------

Current-Voltage Curve 585W



Power-Voltage Curve 585W



Caution

To operate, install and manage Mana Energy Modules, read the installation manual and use carefully.

Observation

This datasheet is subject to change without notice due to continuous improvement of our products. You can find all records of the updates on our website www.manaenergypak.com or by contacting one of our sales staff. All rights reserved @Mana Energy.



MEP585-T144-GG

Electrical Specificatuin (STC) - Front Side			STC: AM1.5 1000W/m ² 25°C [Test Uncertainty: ±3%]					
Model			MEP 585-T144-GG 560	MEP 585-T144-GG 565	MEP 585-T144-GG 570	MEP 585-T144-GG 575	MEP 585-T144-GG 580	MEP 585-T144-GG 585
Max Power	Pmp	[W]	560	565	570	575	580	585
Max Power Voltage	Vmp	[V]	43.03	43.17	43.31	43.45	43.59	43.73
Max Power Current	Imp	[A]	13.03	13.10	13.17	13.24	13.31	13.38
Open Circuit Voltage	Voc	[V]	50.67	50.87	51.07	51.27	51.47	51.67
Short Circuit Current	Isc	[A]	14.13	14.19	14.25	14.31	14.37	14.43
Efficiency		[%]	21.68	21.87	22.07	22.26	22.45	22.65

Electrical Specificatuin (NMOT) - Front Side			NMOT: 800W/m ² 20°C 1m/s [Test Uncertainty: ±3%]					
Max Power	Pmp	[W]	424	427	431	435	439	443
Max Power Voltage	Vmp	[V]	40.22	40.35	40.48	40.61	40.74	40.87
Max Power Current	Imp	[A]	10.53	10.59	10.65	10.71	10.77	10.83
Open Circuit Voltage	Voc	[V]	48.13	48.32	48.51	48.70	48.89	49.08
Short Circuit Current	Isc	[A]	11.41	11.46	11.50	11.55	11.60	11.66

Bifaciality Power Generation Gain (Regarding 575W as an example)								
Power Gain		[%]	0	5	10	15	20	25
Max Power	Pmp	[W]	575	604	633	661	690	719
Max Power Voltage	Vmp	[V]	43.45	43.51	43.57	43.63	43.69	43.75
Max Power Current	Imp	[A]	13.24	13.88	14.52	15.16	15.79	16.43
Open Circuit Voltage	Voc	[V]	51.27	51.31	51.35	51.39	51.43	51.47
Short Circuit Current	Isc	[A]	14.31	14.96	15.61	16.26	16.91	17.56

Mechanical Data	
Solar Cell	N-Type 182mm × 91mm - [12 × 12]
Module Dimension	2278×1134×30 mm
Weight	32kg
Front Cover	Glass - 2mm Semi Tempered AR coated
Back Cover	Glass - 2mm Semi Tempered
Frame	Silver - Anodized Aluminium Alloy
Junction Box	IP68 Rated - 3 Bypass Diodes
Cable	4mm ² -300mm

Temperature Ratings				
Temperature Coefficient	Isc	α	[%/°C]	+0.046
Temperature Coefficient	Voc	β	[%/°C]	-0.25
Temperature Coefficient	Pmax	γ	[%/°C]	-0.30
Nominal Module Operating Temperature	NMOT		[°C]	43±2

Operating Properties	
Max System Voltage	1500V
Max System Fuse Rating	30 A
Operational Temperature	-40 to +85 °C
BifacialityTolerance	±5%
Bifaciality=Pmaxrear/Pmaxfront (STC)	80%

Packaging Information	
# Module Per Pallet	35
# Pallet per 45'HC Container	22
# Pallet per 40'HC Container	20
# PCs per Container 40'HC	700
Pallet Weight (kg)	1145

MEP390-P72-GB

MonoPERC-72cell-M2 Monofacial

0~+5W

Positive Power Tolerance

20.1%

Maximum Efficiency

360-390W



Optimum Value

1500V system voltage results in lower BOS cost, good for large scale installations



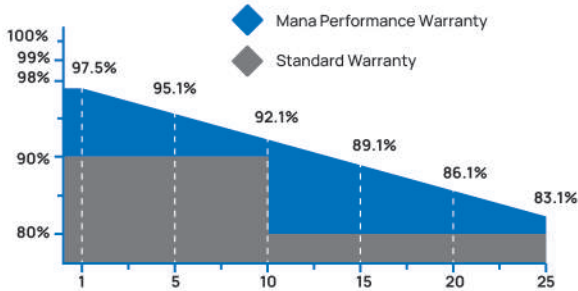
Higher Reliability

In-house testing beyond standard requirements
100% EL double inspection



Robust and Corrosion Free

2400Pa wind load - 5400Pa snow load
25mm Hail stone at 82 km/h



Mana Energy's Certificates

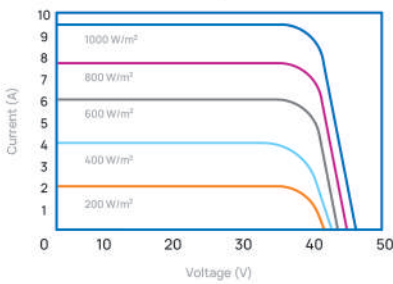
TUV Certificate IEC 61215: 2021
TUV Certificate IEC 61730: 2016
TUV Certificate IEC 61730: 2023
CE Certification (EN 61730:2018)
UKCA Certification (EN 61730:2018)
CEBEC Certification (IEC 61215: 2021 / IEC 61730: 2023)
ISO 9001:2015: Quality management system
ISO 14001:2015: Environmental management system
ISO 45001:2018: Occupational health and safety management system



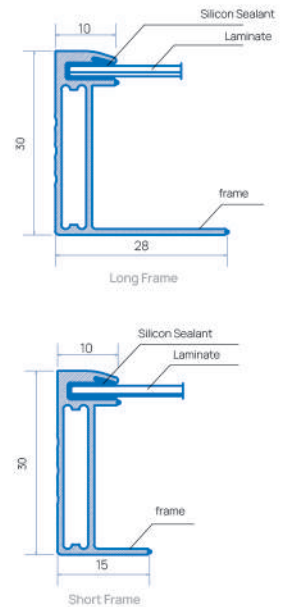
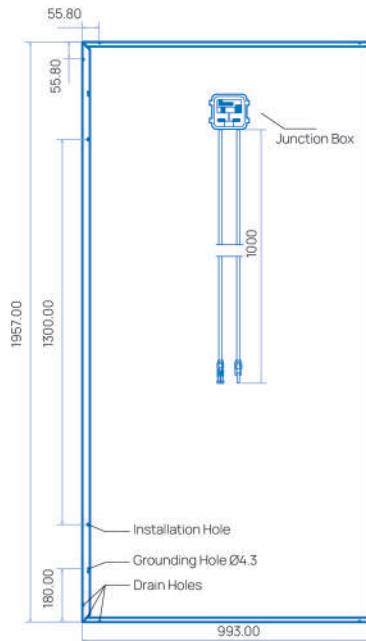
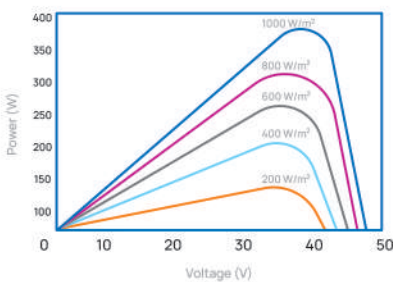
25 YEARS Performance Warranty

10 YEARS Product Warranty

Current-Voltage Curve 390W



Power-Voltage Curve 390W



Caution

To operate, install and manage Mana Energy Modules, read the installation manual and use carefully.

Observation

This datasheet is subject to change without notice due to continuous improvement of our products. You can find all records of the updates on our website www.manaenergypak.com or by contacting one of our sales staff. Allrights reserved @Mana Energy.



MEP390-P72-GB

Electrical Specificatuin (STC) - Front Side			STC: AM1.5 1000W/m ² 25°C [Test Uncertainty: ±3%]						
Model			MEP390-M72-GB 360	MEP390-M72-GB 365	MEP390-M72-GB 370	MEP390-M72-GB 375	MEP390-M72-GB 380	MEP390-M72-GB 385	MEP390-M72-GB 390
Max Power	Pmp	[W]	360	365	370	375	380	385	390
Max Power Voltage	Vmp	[V]	39.23	39.51	39.72	40.01	40.31	40.42	40.60
Max Power Current	Imp	[A]	9.18	9.25	9.32	9.39	9.45	9.54	9.61
Open Circuit Voltage	Voc	[V]	47.21	47.42	47.53	47.78	48.05	48.22	48.41
Short Circuit Current	Isc	[A]	9.67	9.73	9.85	9.92	9.99	10.06	10.13
Efficiency		[%]	18.6	18.8	19.1	19.3	19.6	19.8	20.1

Electrical Specificatuin (NMOT) - Front Side			NMOT: 800W/m ² 20°C 1m/s [Test Uncertainty: ±3%]						
Max Power	Pmp	[W]	268	272	276	279	284	286	290
Max Power Voltage	Vmp	[V]	36.40	36.60	36.80	37.10	37.30	37.50	37.70
Max Power Current	Imp	[A]	7.38	7.43	7.49	7.54	7.60	7.65	7.71
Open Circuit Voltage	Voc	[V]	43.88	44.08	44.20	44.39	44.58	44.75	44.98
Short Circuit Current	Isc	[A]	7.77	7.83	7.88	7.94	8.01	8.06	8.11

Mechanical Data	
Solar Cell	Mono-Crystalline PERC 157mm - [6×12]
Module Dimension	1957×993×30 mm
Weight	23kg
Front Cover	Glass - 3.2mm Tempered AR coated
Back Cover	White Backsheet
Frame	Silver - Anodized Aluminium Alloy
Junction Box	IP68 Rated - 3 Bypass Diodes
Cable	4mm ² - 1000mm

Temperature Ratings				
Temperature Coefficient	Isc	α	[%/°C]	+0.05
Temperature Coefficient	Voc	β	[%/°C]	-0.30
Temperature Coefficient	Pmax	γ	[%/°C]	-0.39
Nominal Module Operating Temperature	NMOT		[°C]	45±2

Operating Properties	
Max System Voltage	1500V
Max System Fuse Rating	15 A
Operational Temperature	-40 to +85 °C
Power Tolerance	+5W

Packaging Information	
# Module Per Pallet	31
# Pallet per 45'HC Container	22
# Pallet per 40'HC Container	20
# PCs per Container 40'HC	620
Pallet Weight (kg)	718



Mana Energy's Certificates



TUV Certificate

- IEC 61215: 2021
- IEC 61730: 2016
- IEC 61730: 2023



CE Certification

- EN 61730:2018



UKCA Certification

- EN 61730:2018



CEBEC Certification

- EN 6215:2021
- EN 61730:2023



ISO 9001: 2015

- Quality management system

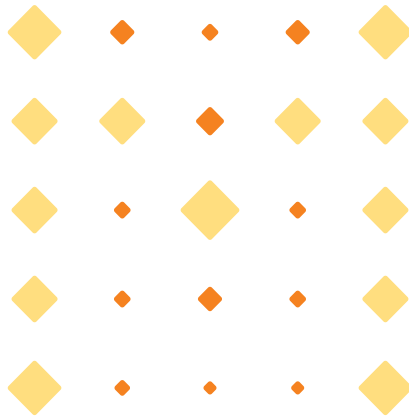
ISO 14001: 2015

- Environmental management system

ISO 45001: 2018

- Occupational health and safety management system







MANA ENERGY



Contacts



www.manaenergypak.com



Address: Unit5, No.4, Jamshidi St. Saadat
Abad Blv, Tehran, Iran



Postal Code: 1998733910



Tel: 02179157000

Fax: 02122137294

