

Pioneer 2.0

580-600W

144-TOPCon BIFACIAL MODULE
WITH DUAL GLASS



12 Years Product
Warranty



30 Years Linear
Power Warranty



SMBB Technology

Better light trapping and current collection, less optical and resistance losses, effectively improving module power output and reliability.



>85% Bifaciality

Greater backside generation gain with significantly LCOE reduced.



PID Resistance

Excellent Anti-PID performance guarantee via optimized mass-production process.



Low Temperature Coefficients

Excellent temperature coefficients, and more stable power generation performance.



LID Resistance

N-type modules have higher reliability and lower LID/LETID.



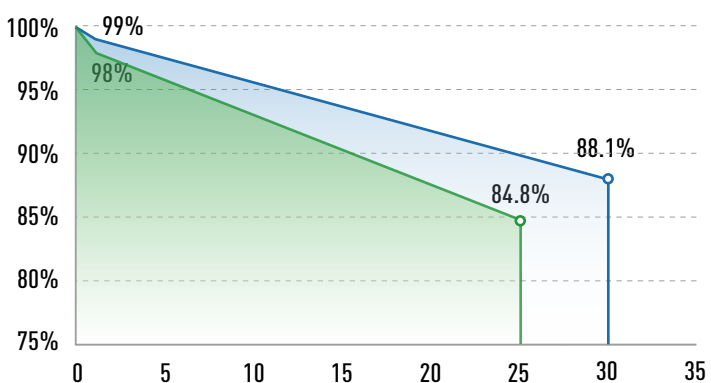
IEC61215:2021 / IEC61730:2023

IEC60068 / IEC61701 / IEC62716 / IEC62804

ISO9001:2015: ISO Quality Management System

ISO14001:2015: ISO Environment Management System

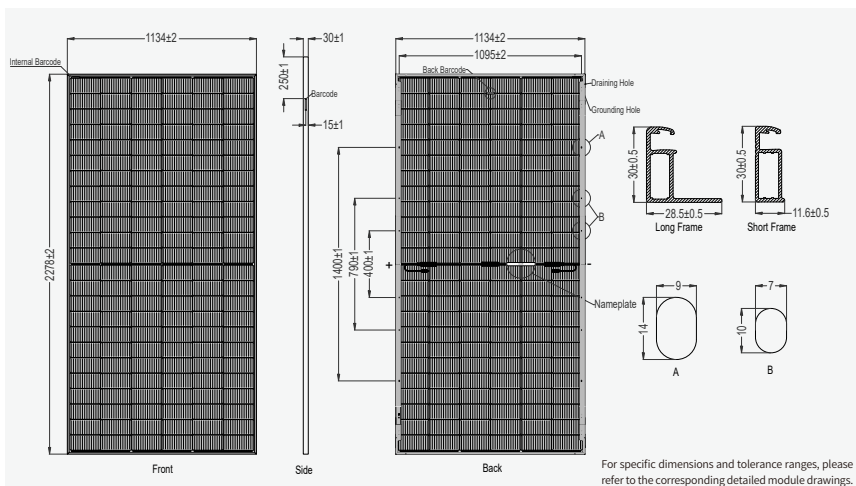
ISO45001:2018: Occupational Health and Safety Management Systems



Less than **1%** degradation in the 1st year

30 years power warranty

0.375% linear degradation


Mechanical Characteristics

Cell Type	TOPCon Mono-crystalline
No. of Cells	144 (6×24)
Dimensions	2278×1134×30mm
Weight	31.0kg
Front Glass	2.0mm Anti-reflection Coating
Back Glass	2.0mm Heat Strengthened Glass
Frame	Anodized Aluminum Alloy
Junction Box	IP68 Rated
Output Cables	4mm ² (+)350mm,(-)250mm; or Customized Length
Connectors Type	MC4/MC4 Compatible
Front Load	5400 Pa
Back Load	2400 Pa

Electrical Characteristics (STC)

Module Types	SETS182X-144D-580CS	SETS182X-144D-585CS	SETS182X-144D-590CS	SETS182X-144D-595CS	SETS182X-144D-600CS
Max. Power(Pmax)[W]	580	585	590	595	600
Open Circuit Voltage(Voc)[V]	52.93	53.02	53.11	53.20	53.29
Short Circuit Current(Isc)[A]	13.59	13.65	13.71	13.76	13.82
Max. Power Voltage(Vmp)[V]	44.86	45.01	45.16	45.31	45.46
Max. Power Current(Imp)[A]	12.98	13.04	13.10	13.15	13.21
Module Efficiency(%)	22.45	22.65	22.84	23.03	23.23
Power Tolerance	0 ~ +5W				
Bifaciality Coefficients	$\phi P_{max}=85\% \pm 10\%$ $\phi V_{oc}=99\% \pm 10\%$ $\phi I_{sc}=85\% \pm 10\%$				
STC (Standard Test Conditions): Irradiance 1000W/m ² , Cell temperature 25°C, AM 1.5, Tolerance of Pmax is within +/-3%					

Electrical Characteristics (BNPI)

Max. Power(Pmax)[W]	645	650	655	660	665
Open Circuit Voltage(Voc)[V]	52.93	53.02	53.11	53.20	53.29
Short Circuit Current(Isc)[A]	15.14	15.21	15.28	15.33	15.40
Max. Power Voltage(Vmp)[V]	44.86	45.01	45.16	45.31	45.46
Max. Power Current(Imp)[A]	14.47	14.54	14.60	14.66	14.73
BNPI (Bifacial Nameplate Irradiance): Irradiance: front 1000W/m ² , rear 135W/m ² , Cell temperature 25°C, AM1.5, Tolerance of Pmax is within +/-3%					

Packaging Configuration

	Flat car	Flat car	Container
Size	13m	17.5m	40HC
Pallets Per	20	24	20
Modules Per Pallet (pcs)	36	36	36
Total Modules (pcs)	720	936	720

Temperature Coefficients

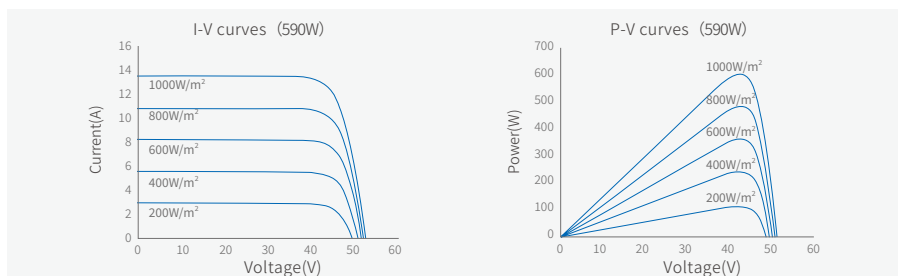
Nominal Operating Cell Temp. (NOCT)	45±2°C
Temperature Coefficient of Pmax δ (%/°C)	-0.28
Temperature Coefficient of Voc β (%/°C)	-0.25
Temperature Coefficient of Isc α (%/°C)	0.046

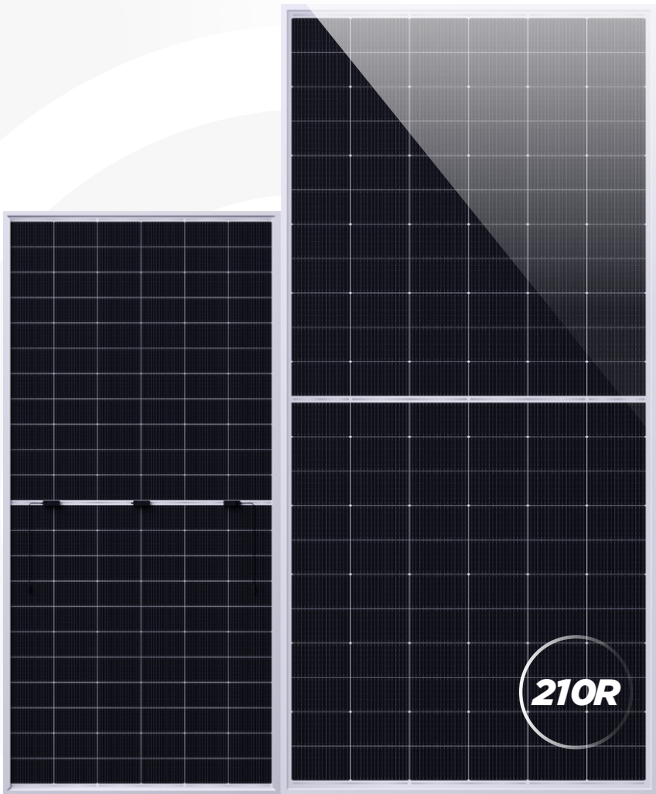
Application Conditions

Operating Temperature	-40°C~85°C
Maximum System Voltage	1500V
Maximum Series Fuse Rating	30A

Safety & Warranty

Safety Class	Class II
Product Warranty	12 yrs Workmanship
Power Warranty	30 yrs Linear Warranty





Pioneer 2.0

620-640W

132-TOPCon BIFACIAL MODULE
WITH DUAL GLASS



12 Years Product
Warranty



30 Years Linear
Power Warranty



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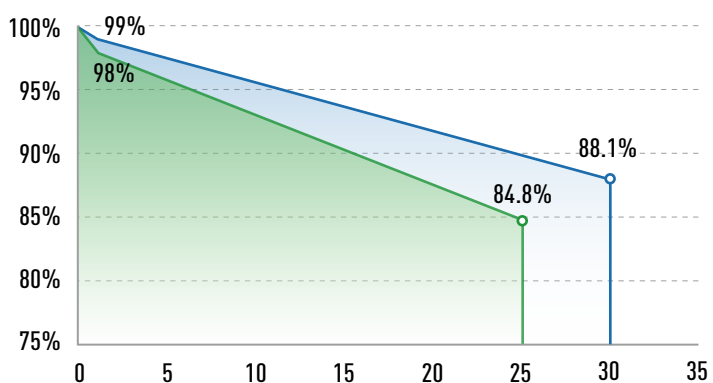
IEC61215:2021 / IEC61730:2023

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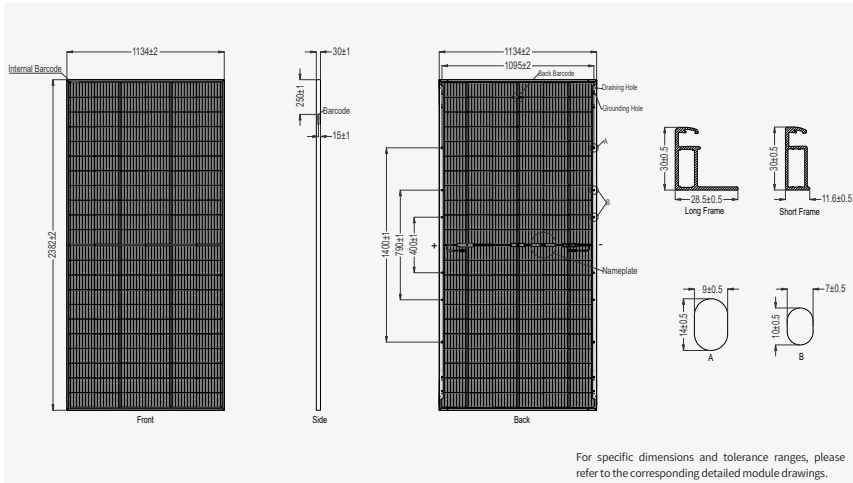
ISO45001:2018: Occupational Health and Safety Management Systems



Less than **1%** degradation in the 1st year

30 years power warranty

0.375% linear degradation



Mechanical Characteristics	
Cell Type	TOPCon Mono-crystalline
No. of Cells	132 (6×22)
Dimensions	2382×1134×30mm
Weight	31.8kg
Front Glass	2.0mm Anti-reflection Coating
Back Glass	2.0mm Heat Strengthened Glass
Frame	Anodized Aluminum Alloy
Junction Box	IP68 Rated
Output Cables	4mm ² (+)350mm, (-)250mm; or Customized Length
Connectors Type	MC4/MC4 Compatible
Front Load	5400 Pa
Back Load	2400 Pa

Electrical Characteristics (STC)					
Module Types	SETS210R-132D-620CS	SETS210R-132D-625CS	SETS210R-132D-630CS	SETS210R-132D-635CS	SETS210R-132D-640CS
Max. Power(Pmax)[W]	620	625	630	635	640
Open Circuit Voltage(Voc)[V]	48.95	49.10	49.25	49.40	49.55
Short Circuit Current(Isc)[A]	15.71	15.77	15.83	15.89	15.95
Max. Power Voltage(Vmp)[V]	41.60	41.75	41.90	42.05	42.19
Max. Power Current(Imp)[A]	14.96	15.02	15.08	15.14	15.19
Module Efficiency(%)	22.95	23.14	23.32	23.51	23.69
Power Tolerance	0 ~ +5W				
Bifaciality Coefficients	$\phi P_{max}=85\% \pm 10\%$ $\phi Voc=99\% \pm 10\%$ $\phi Isc=85\% \pm 10\%$				
STC (Standard Test Conditions): Irradiance 1000W/m ² , Cell temperature 25°C, AM 1.5, Tolerance of Pmax is within +/-3%					

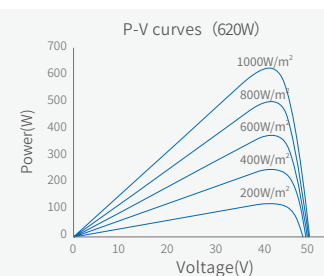
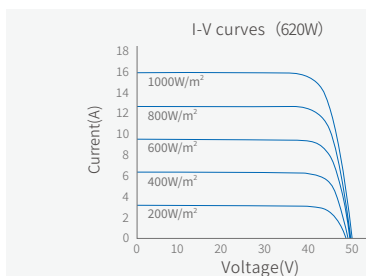
Electrical Characteristics (BNPI)					
Max. Power(Pmax)[W]	690	695	700	705	710
Open Circuit Voltage(Voc)[V]	48.95	49.10	49.25	49.40	49.55
Short Circuit Current(Isc)[A]	17.51	17.58	17.65	17.71	17.78
Max. Power Voltage(Vmp)[V]	41.60	41.75	41.90	42.05	42.19
Max. Power Current(Imp)[A]	16.68	16.75	16.82	16.88	16.94
BNPI (Bifacial Nameplate Irradiance): Irradiance: front 1000W/m ² , rear 135W/m ² , Cell temperature 25°C, AM1.5, Tolerance of Pmax is within +/-3%					

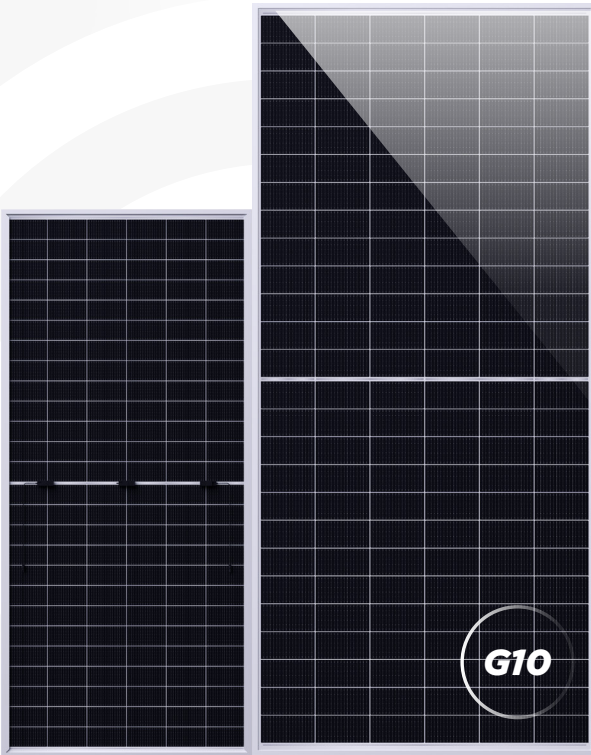
Packaging Configuration			
	Flat car	Flat car	Container
Size	13m	17.5m	40HC
Pallets Per	20	24	20
Modules Per Pallet (pcs)	36	36	36
Total Modules (pcs)	720	864	720

Application Conditions	
Operating Temperature	-40°C ~ 85°C
Maximum System Voltage	1500V
Maximum Series Fuse Rating	30A

Safety & Warranty	
Safety Class	Class II
Product Warranty	12 yrs Workmanship
Power Warranty	30 yrs Linear Warranty

Temperature Coefficients	
Nominal Operating Cell Temp. (NOCT)	45±2°C
Temperature Coefficient of Pmax δ (%/°C)	-0.28
Temperature Coefficient of Voc β (%/°C)	-0.25
Temperature Coefficient of Isc α (%/°C)	0.046





Pioneer 2.0

625-645W

156-TOPCon BIFACIAL MODULE
WITH DUAL GLASS



12 Years Product
Warranty



30 Years Linear
Power Warranty



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中国质量认证中心
CHINA QUALITY CERTIFICATION CENTER



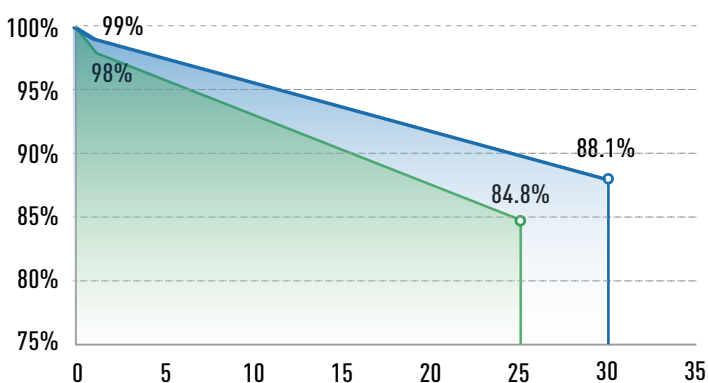
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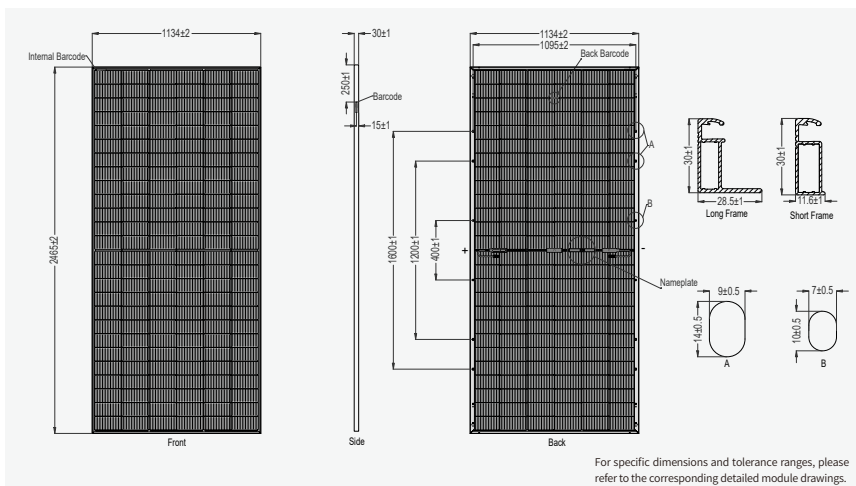
ISO45001:2018: Occupational Health and Safety Management Systems



Less than **1%** degradation in the 1st year

30 years power warranty

0.375% linear degradation


Mechanical Characteristics

Cell Type	TOPCon Mono-crystalline
No. of Cells	156 (6×26)
Dimensions	2465×1134×30mm
Weight	34kg
Front Glass	2.0mm Anti-reflection Coating
Back Glass	2.0mm Heat Strengthened Glass
Frame	Anodized Aluminum Alloy
Junction Box	IP68 Rated
Output Cables	4mm ² (+)350mm, (-)250mm; or Customized Length
Connectors Type	MC4/MC4 Compatible
Front Load	5400 Pa
Back Load	2400 Pa

Electrical Characteristics (STC)

Module Types	SETS182X-156D-625CS	SETS182X-156D-630CS	SETS182X-156D-635CS	SETS182X-156D-640CS	SETS182X-156D-645CS
Max. Power(Pmax)[W]	625	630	635	640	645
Open Circuit Voltage(Voc)[V]	57.24	57.34	57.44	57.54	57.63
Short Circuit Current(Isc)[A]	13.53	13.59	13.65	13.71	13.76
Max. Power Voltage(Vmp)[V]	48.44	48.60	48.76	48.92	49.08
Max. Power Current(Imp)[A]	12.92	12.98	13.04	13.10	13.15
Module Efficiency(%)	22.36	22.54	22.72	22.90	23.07
Power Tolerance	0 ~ +5W				
Bifaciality Coefficients	$\phi P_{max}=85\% \pm 10\%$ $\phi Voc=99\% \pm 10\%$ $\phi Isc=85\% \pm 10\%$				
STC (Standard Test Conditions): Irradiance 1000W/m ² , Cell temperature 25°C, AM 1.5, Tolerance of Pmax is within +/-3%					

Electrical Characteristics (BNPI)

Max. Power(Pmax)[W]/	695	700	705	710	715
Open Circuit Voltage(Voc)[V]	57.24	57.34	57.44	57.54	57.63
Short Circuit Current(Isc)[A]	15.06	15.13	15.19	15.26	15.31
Max. Power Voltage(Vmp)[V]	48.44	48.60	48.76	48.92	49.08
Max. Power Current(Imp)[A]	14.39	14.45	14.52	14.59	14.64
BNPI (Bifacial Nameplate Irradiance): Irradiance: front 1000W/m ² , rear 135W/m ² , Cell temperature 25°C, AM1.5, Tolerance of Pmax is within +/-3%					

Packaging Configuration

	Flat car	Flat car	Container
Size	13m	17.5m	40HC
Pallets Per	20	22	20
Modules Per Pallet (pcs)	36	36	36
Total Modules (pcs)	720	792	720

Temperature Coefficients

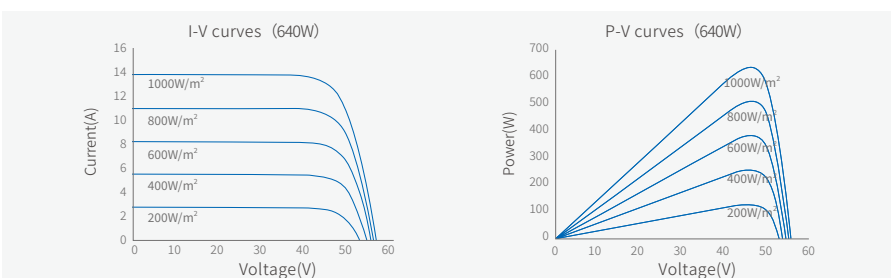
Nominal Operating Cell Temp. (NOCT)	45±2°C
Temperature Coefficient of Pmax δ (%/°C)	-0.28
Temperature Coefficient of Voc β (%/°C)	-0.25
Temperature Coefficient of Isc α (%/°C)	0.046

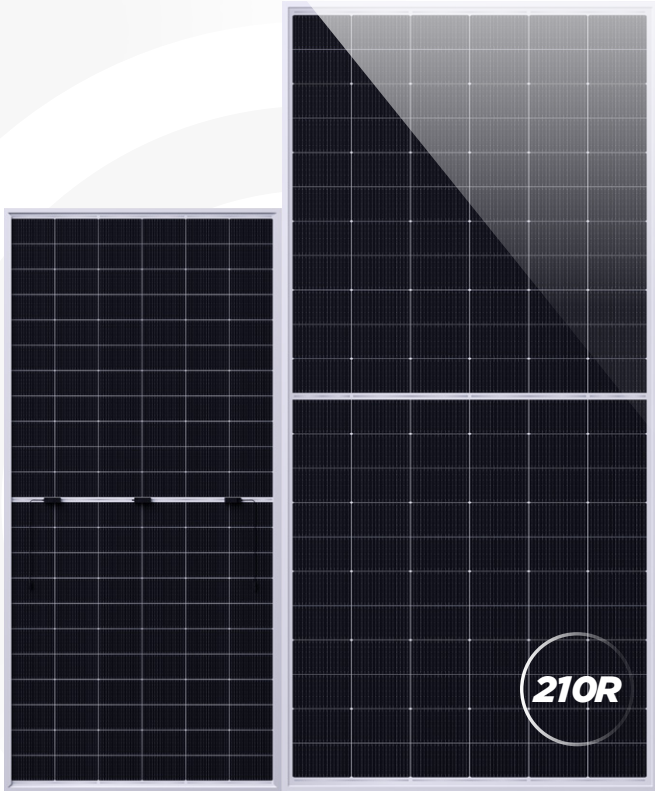
Application Conditions

Operating Temperature	-40°C~85°C
Maximum System Voltage	1500V
Maximum Series Fuse Rating	30A

Safety & Warranty

Safety Class	Class II
Product Warranty	12 yrs Workmanship
Power Warranty	30 yrs Linear Warranty





Pioneer 2.0

630-650W

132-TOPCon BIFACIAL MODULE
WITH DUAL GLASS



12 Years Product
Warranty



30 Years Linear
Power Warranty



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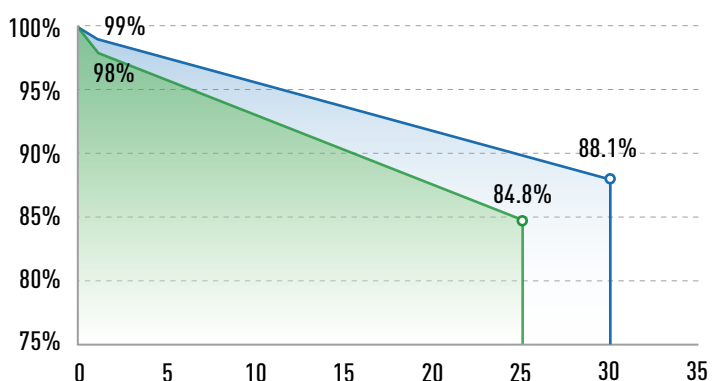
IEC61215:2021 / IEC61730:2023

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ISO9001:2015: ISO Quality Management System

ISO14001:2015: ISO Environment Management System

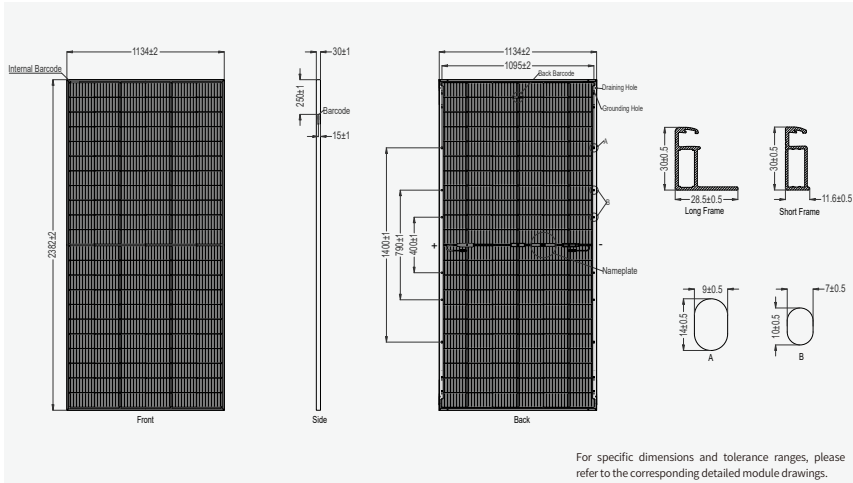
ISO45001:2018: Occupational Health and Safety Management Systems



Less than **1%** degradation in the 1st year

30 years power warranty

0.375% linear degradation



Mechanical Characteristics	
Cell Type	TOPCon Mono-crystalline
No. of Cells	132 (6×22)
Dimensions	2382×1134×30mm
Weight	31.8kg
Front Glass	2.0mm Anti-reflection Coating
Back Glass	2.0mm Heat Strengthened Glass
Frame	Anodized Aluminum Alloy
Junction Box	IP68 Rated
Output Cables	4mm ² (+)350mm,(-)250mm; or Customized Length
Connectors Type	MC4/MC4 Compatible
Front Load	5400 Pa
Back Load	2400 Pa

Electrical Characteristics (STC)					
Module Types	SETS210R-132D-630CS	SETS210R-132D-635CS	SETS210R-132D-640CS	SETS210R-132D-645CS	SETS210R-132D-650CS
Max. Power(Pmax)[W]	630	635	640	645	650
Open Circuit Voltage(Voc)[V]	49.25	49.40	49.55	49.70	49.85
Short Circuit Current(Isc)[A]	15.83	15.89	15.95	16.01	16.07
Max. Power Voltage(Vmp)[V]	41.90	42.05	42.19	42.34	42.48
Max. Power Current(Imp)[A]	15.08	15.14	15.19	15.25	15.30
Module Efficiency(%)	23.32	23.51	23.69	23.88	24.06
Power Tolerance	0 ~ +5W				
Bifaciality Coefficients	$\phi P_{max}=85\% \pm 10\%$ $\phi V_{oc}=99\% \pm 10\%$ $\phi I_{sc}=85\% \pm 10\%$				
STC (Standard Test Conditions): Irradiance 1000W/m ² , Cell temperature 25°C, AM 1.5, Tolerance of Pmax is within +/-3%					

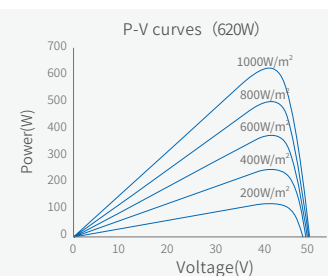
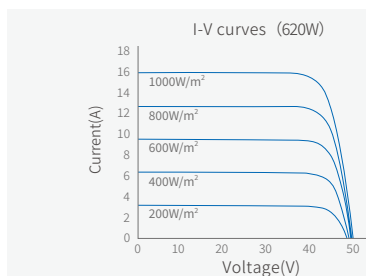
Electrical Characteristics (BNPI)					
Module Types	SETS210R-132D-630CS	SETS210R-132D-635CS	SETS210R-132D-640CS	SETS210R-132D-645CS	SETS210R-132D-650CS
Max. Power(Pmax)[W]	700	705	710	715	720
Open Circuit Voltage(Voc)[V]	49.25	49.40	49.55	49.70	49.85
Short Circuit Current(Isc)[A]	17.65	17.71	17.78	17.85	17.91
Max. Power Voltage(Vmp)[V]	41.90	42.05	42.19	42.34	42.48
Max. Power Current(Imp)[A]	16.82	16.88	16.94	17.01	17.06
BNPI (Bifacial Nameplate Irradiance): Irradiance: front 1000W/m ² , rear 135W/m ² , Cell temperature 25°C, AM1.5, Tolerance of Pmax is within +/-3%					

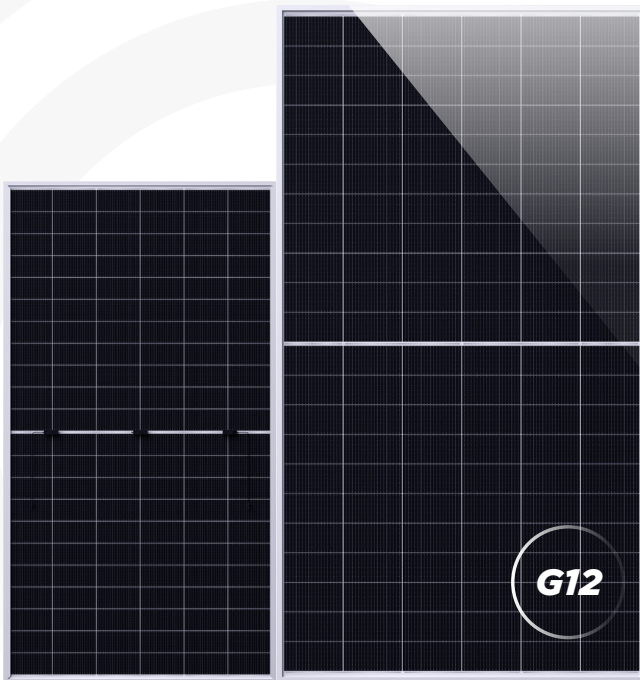
Packaging Configuration			
	Flat car	Flat car	Container
Size	13m	17.5m	40HC
Pallets Per	20	24	20
Modules Per Pallet (pcs)	36	36	36
Total Modules (pcs)	720	864	720

Application Conditions	
Operating Temperature	-40°C ~ 85°C
Maximum System Voltage	1500V
Maximum Series Fuse Rating	30A

Safety & Warranty	
Safety Class	Class II
Product Warranty	12 yrs Workmanship
Power Warranty	30 yrs Linear Warranty

Temperature Coefficients	
Nominal Operating Cell Temp. (NOCT)	45±2°C
Temperature Coefficient of Pmax δ (%/°C)	-0.28
Temperature Coefficient of Voc β (%/°C)	-0.25
Temperature Coefficient of Isc α (%/°C)	0.046





Pioneer 2.0

700-720W

132-TOPCon BIFACIAL MODULE
WITH DUAL GLASS



12 Years Product
Warranty



30 Years Linear
Power Warranty



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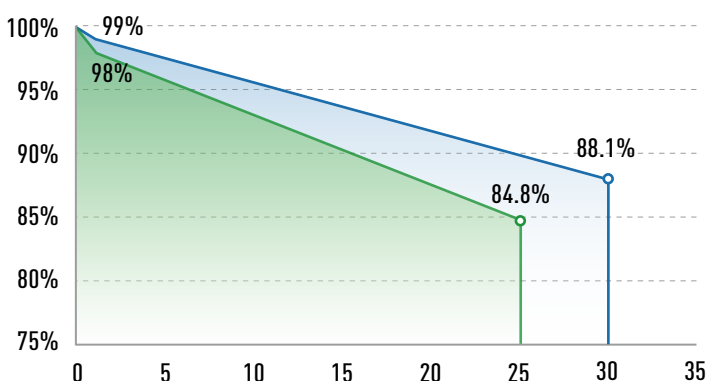
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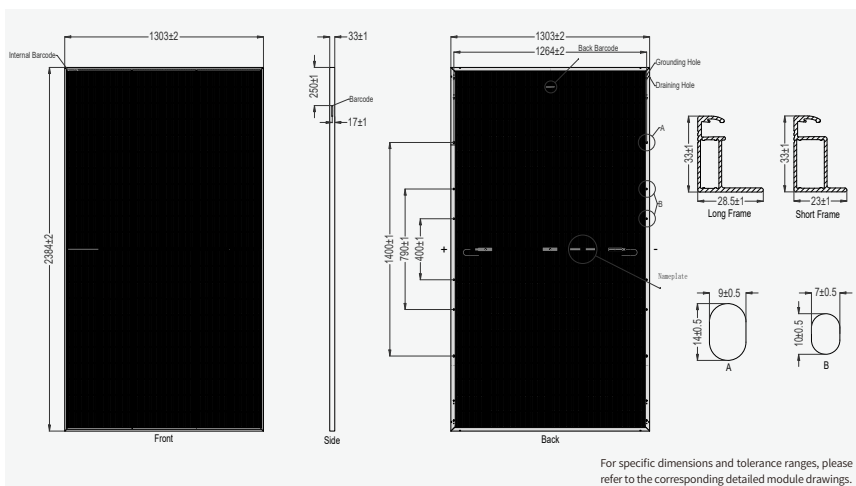
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Less than **1%** degradation in the 1st year

30 years power warranty

0.375% linear degradation


Mechanical Characteristics

Cell Type	TOPCon Mono-crystalline
No. of Cells	132 (6×22)
Dimensions	2384×1303×33mm
Weight	38kg
Front Glass	2.0mm Anti-reflection Coating
Back Glass	2.0mm Heat Strengthened Glass
Frame	Anodized Aluminum Alloy
Junction Box	IP68 Rated
Output Cables	4mm ² (+)350mm, (-)250mm; or Customized Length
Connectors Type	MC4/MC4 Compatible
Front Load	5400 Pa
Back Load	2400 Pa

Electrical Characteristics (STC)

Module Types	SETS210X-132D-700CS	SETS210X-132D-705CS	SETS210X-132D-710CS	SETS210X-132D-715CS	SETS210X-132D-720CS
Max. Power(Pmax)[W]	700	705	710	715	720
Open Circuit Voltage(Voc)[V]	48.37	48.51	48.65	48.79	48.93
Short Circuit Current(Isc)[A]	18.15	18.21	18.27	18.33	18.39
Max. Power Voltage(Vmp)[V]	40.78	40.92	41.06	41.20	41.34
Max. Power Current(Imp)[A]	17.24	17.30	17.36	17.42	17.48
Module Efficiency(%)	22.53	22.70	22.86	23.02	23.18
Power Tolerance	0 ~ +5W				
Bifaciality Coefficients	$\phi P_{max}=85\% \pm 10\%$ $\phi Voc=99\% \pm 10\%$ $\phi Isc=85\% \pm 10\%$				
STC (Standard Test Conditions): Irradiance 1000W/m ² , Cell temperature 25°C, AM 1.5, Tolerance of Pmax is within +/-3%					

Electrical Characteristics (BNPI)

Max. Power(Pmax)[W]	780	785	790	795	800
Open Circuit Voltage(Voc)[V]	48.37	48.51	48.65	48.79	48.93
Short Circuit Current(Isc)[A]	20.23	20.30	20.37	20.43	20.50
Max. Power Voltage(Vmp)[V]	40.78	40.92	41.06	41.19	41.33
Max. Power Current(Imp)[A]	19.22	19.29	19.35	19.37	19.44
BNPI (Bifacial Nameplate Irradiance): Irradiance: front 1000W/m ² , rear 135W/m ² , Cell temperature 25°C, AM1.5, Tolerance of Pmax is within +/-3%					

Packaging Configuration

	Flat car	Flat car	Container
Size	13m	17.5m	40HC
Pallets Per	20	22	18
Modules Per Pallet (pcs)	33	33	33
Total Modules (pcs)	660	726	594

Temperature Coefficients

Nominal Operating Cell Temp. (NOCT)	45±2°C
Temperature Coefficient of Pmax δ (%/°C)	-0.28
Temperature Coefficient of Voc β (%/°C)	-0.25
Temperature Coefficient of Isc α (%/°C)	0.046

Application Conditions

Operating Temperature	-40°C~85°C
Maximum System Voltage	1500V
Maximum Series Fuse Rating	35A

Safety & Warranty

Safety Class	Class II
Product Warranty	12 yrs Workmanship
Power Warranty	30 yrs Linear Warranty

