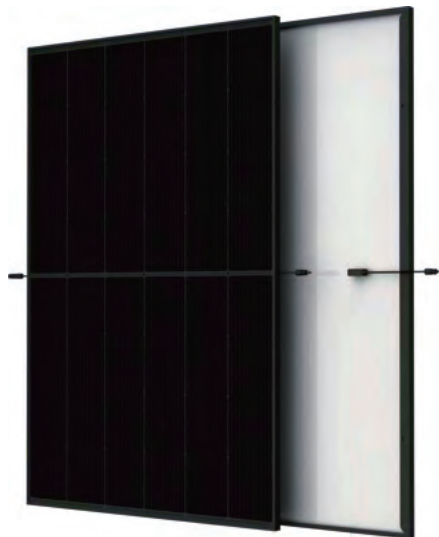
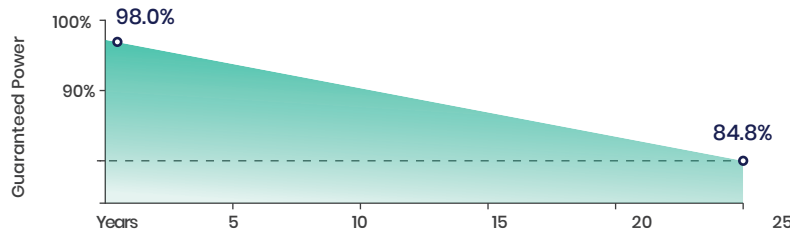




PRODUCT: **KAPLAN-KP SERIES O2**
PRODUCT RANGE: 405-425W

Solar's Backsheet Performance Warranty



425W

MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

21%

MAXIMUM EFFICIENCY



Outstanding Visual Appearance

- Designed with aesthetics in mind
- Excellent cell color control by dedicated cell blackening treatment and machine selection
- Thinner wires that appear all black at a distance



Small in size, big on power

- Small form factor, Generate a huge amount of energy even in limited space
- Up to 425W, 21.0% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection
- Reduce installation cost with higher power bin and efficiency
- Boost performance in warm weather lower temperature coefficient(-0.34%) and operating temperature



Universal solution for residential and C&I rooftops

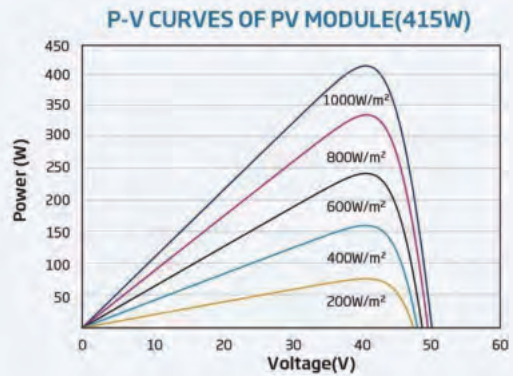
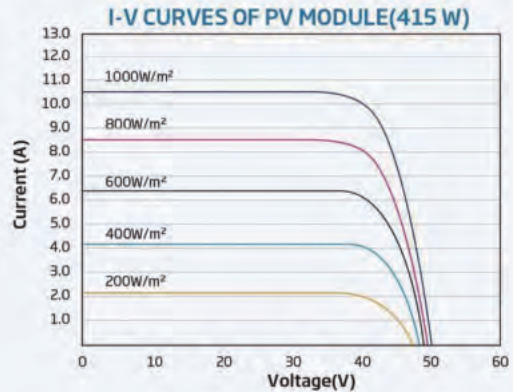
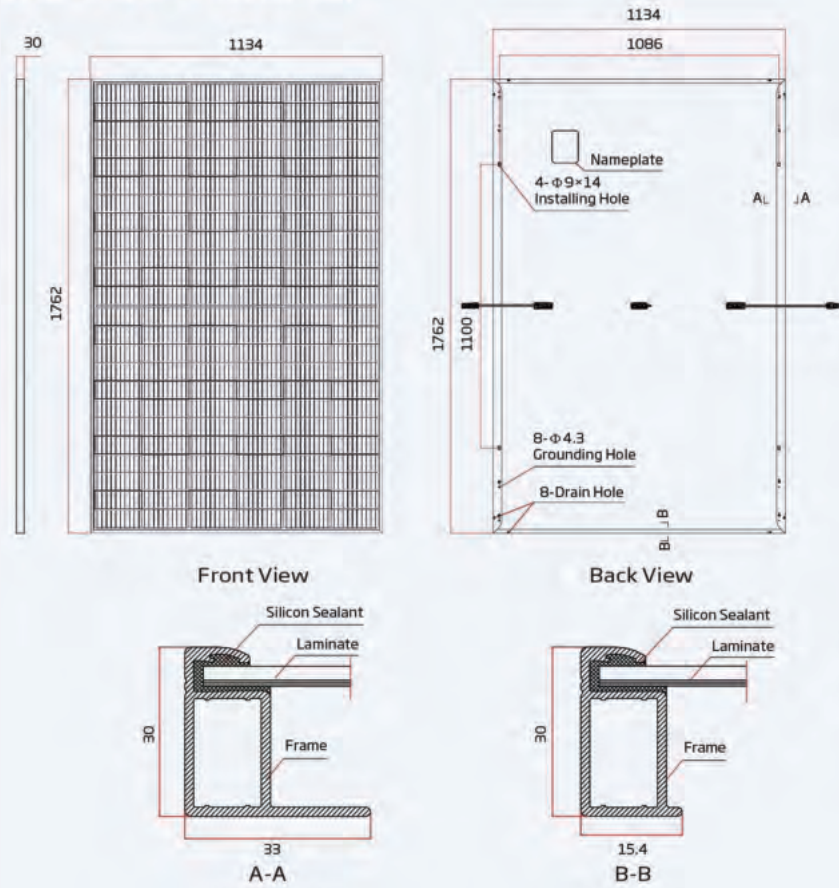
- Designed for compatibility with existing mainstream optimizers, inverters and mounting systems
- Perfect size and low weight, Easy for handling, Economy for transporting
- Diverse installation solutions, Flexible for system deployment



High Reliability

- 15 Year product warranty
- 25 Year performance warranty with lowest degradation
- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Mechanical performance up to 6000 Pa positive load and 4000 Pa negative load

DIMENSIONS OF PV MODULE(mm)



ELECTRICAL DATA (STC)

Peak Power Watts-PMAX (Wp)*	405	410	415	420	425
Power Tolerance-PMAX (W)			0 ~ +5		
Maximum Power Voltage-VMP (V)	41.3	41.5	41.7	42.0	42.2
Maximum Power Current-IMP (A)	9.82	9.87	9.94	10.01	10.08
Open Circuit Voltage-Voc (V)	49.7	49.8	50.0	50.1	50.2
Short Circuit Current-Isc (A)	10.50	10.53	10.55	10.58	10.61
Module Efficiency ηm (%)	21	21	21	21	21

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass A.M.1.5. *Measuring tolerance: ±3%.

ELECTRICAL DATA (NOCT)

Maximum Power-PMAX (Wp)	306	309	312	317	321
Maximum Power Voltage-VMP (V)	38.3	38.5	38.7	39.2	39.5
Maximum Power Current-IMP (A)	7.99	8.03	8.07	8.10	8.13
Open Circuit Voltage-Voc (V)	46.8	46.9	47.1	47.1	47.2
Short Circuit Current-Isc (A)	8.46	8.49	8.50	8.53	8.55

NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	144 cells
Module Dimensions	1722×1134×30 mm (69.37×44.65×1.18 inches)
Weight	21.8 kg (48.1 lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	EVA/POE
Backsheet	Black-White
Frame	30mm(1.18 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² (0.006 inches²). Portrait: 350/280 mm(13.78/11.02 inches) Length can be customized
Connector	MC4 EVO2 / TS4*

*Please refer to regional datasheet for specified connector.

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of PMAX	-0.34%/°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	0.04%/°C

MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC)
Max Series Fuse Rating	20A

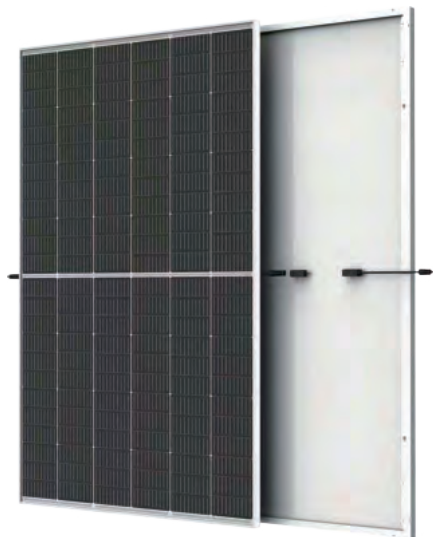
WARRANTY

15 year Product Workmanship Warranty
25 year Power Warranty
2% first year degradation
0.55% Annual Power Attenuation

(Please refer to product warranty for details)

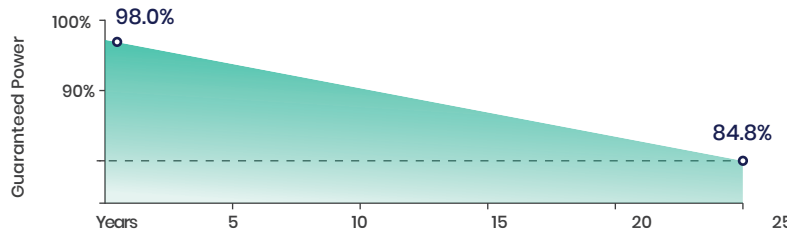
PACKAGING CONFIGURATION

Modules per box: 36 pieces
Modules per 40' container: 936 pieces



PRODUCT: **KAPLAN-KP SERIES O1**
PRODUCT RANGE: 415-435W

Solar's Backsheet Performance Warranty



435W

MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

21%

MAXIMUM EFFICIENCY



Small in size, big on power

- Small form factor, Generate a huge amount of energy even in limited space
- Up to 435W, 21.0% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection
- Reduce installation cost with higher power bin and efficiency
- Boost performance in warm weather lower temperature coefficient(-0.34%) and operating temperature



Universal solution for residential and C&I rooftops

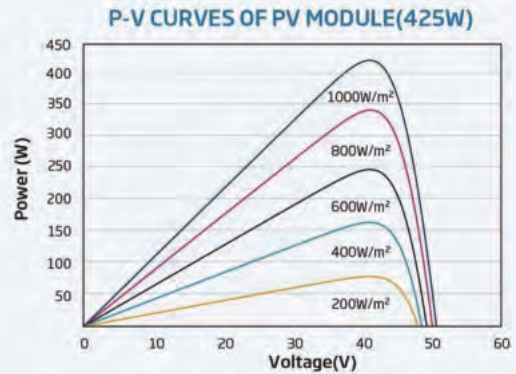
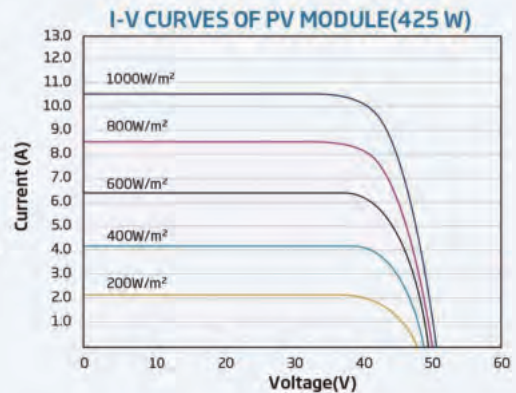
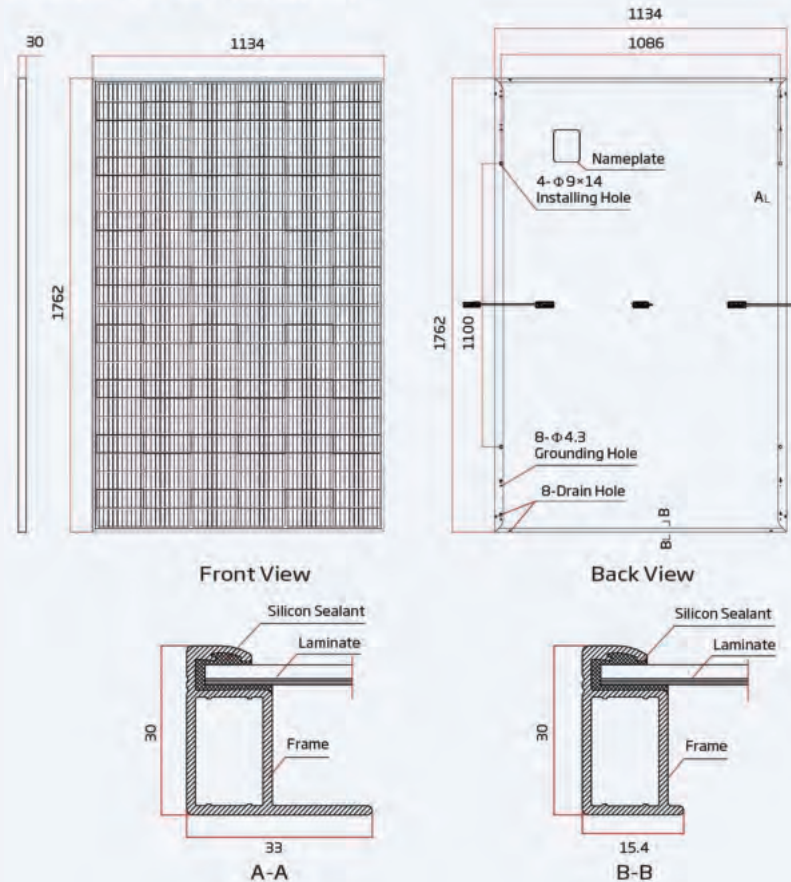
- Designed for compatibility with existing mainstream optimizers, inverters and mounting systems
- Perfect size and low weight, Easy for handling, Economy for transporting
- Diverse installation solutions, Flexible for system deployment



High Reliability

- 12 Year product warranty
- 25 Year performance warranty with lowest degradation
- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Mechanical performance up to 6000 Pa positive load and 4000 Pa negative load

DIMENSIONS OF PV MODULE(mm)



ELECTRICAL DATA (STC)

Peak Power Watts-P _{MAX} (Wp)*	415	420	425	430	435
Power Tolerance-P _{MAX} (W)			0 ~ +5		
Maximum Power Voltage-V _{MPP} (V)	41.7	42.0	42.2	42.3	42.5
Maximum Power Current-I _{MPP} (A)	9.94	10.01	10.08	10.17	10.24
Open Circuit Voltage-V _{OC} (V)	50.0	50.1	50.2	50.3	50.4
Short Circuit Current-I _{SC} (A)	10.55	10.58	10.61	10.64	10.67
Module Efficiency η _m (%)	21	21	21	21	21

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. *Measuring tolerance: ±3%.

ELECTRICAL DATA (NOCT)

Maximum Power-P _{MAX} (Wp)	312	317	321	325	329
Maximum Power Voltage-V _{MPP} (V)	38.7	39.2	39.5	39.7	40.0
Maximum Power Current-I _{MPP} (A)	8.07	8.10	8.13	8.17	8.23
Open Circuit Voltage-V _{OC} (V)	47.1	47.1	47.2	47.4	47.5
Short Circuit Current-I _{SC} (A)	8.50	8.53	8.55	8.60	8.65

NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	144 cells
Module Dimensions	1722×1134×30 mm (69.37×44.65×1.18 inches)
Weight	21.8 kg (48.1 lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	EVA/POE
Backsheet	White
Frame	30mm(1.18 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² (0.006 inches²), Portrait: 350/280 mm(13.78/11.02 inches) Length can be customized
Connector	MC4 EVO2 / TS4*

*Please refer to regional datasheet for specified connector.

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of P _{MAX}	-0.34%/°C
Temperature Coefficient of V _{OC}	-0.25%/°C
Temperature Coefficient of I _{SC}	0.04%/°C

MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC)
Max Series Fuse Rating	20A

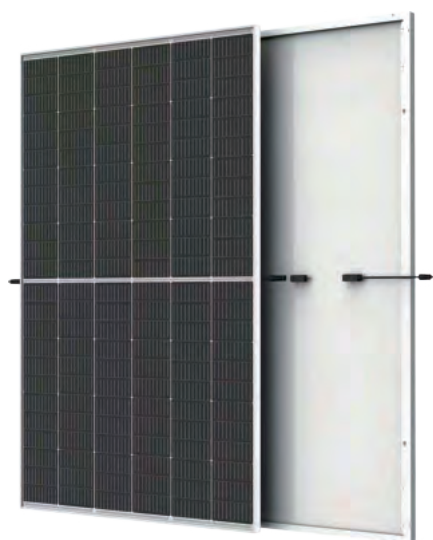
WARRANTY

12 year Product Workmanship Warranty
25 year Power Warranty
2% first year degradation
0.55% Annual Power Attenuation

(Please refer to product warranty for details)

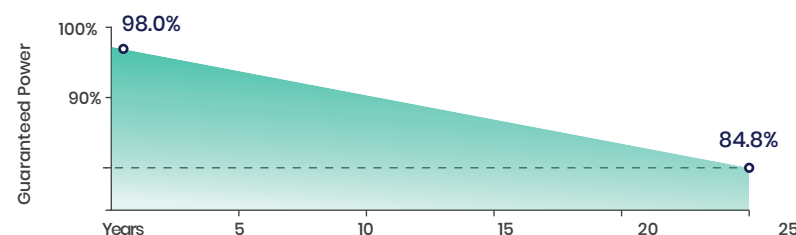
PACKAGING CONFIGURATION

Modules per box: 36 pieces
Modules per 40' container: 936 pieces



PRODUCT: **KAPLAN-KP SERIES O4**
PRODUCT RANGE: 425-445W

Solar's Backsheet Performance Warranty



445W

MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

21%

MAXIMUM EFFICIENCY



Outstanding Visual Appearance

- Generates up to 445 W, 21.0% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping, lower series resistance, improved current collection and enhanced reliability
- Reduces installation cost with higher power bin and efficiency



Small in size, big on power

- Up to 25 years product warranty and 30 years power warranty
- 1% first-year degradation and 0.4 % annual degradation enabled by N-type technology



Universal solution for residential and C&I rooftops

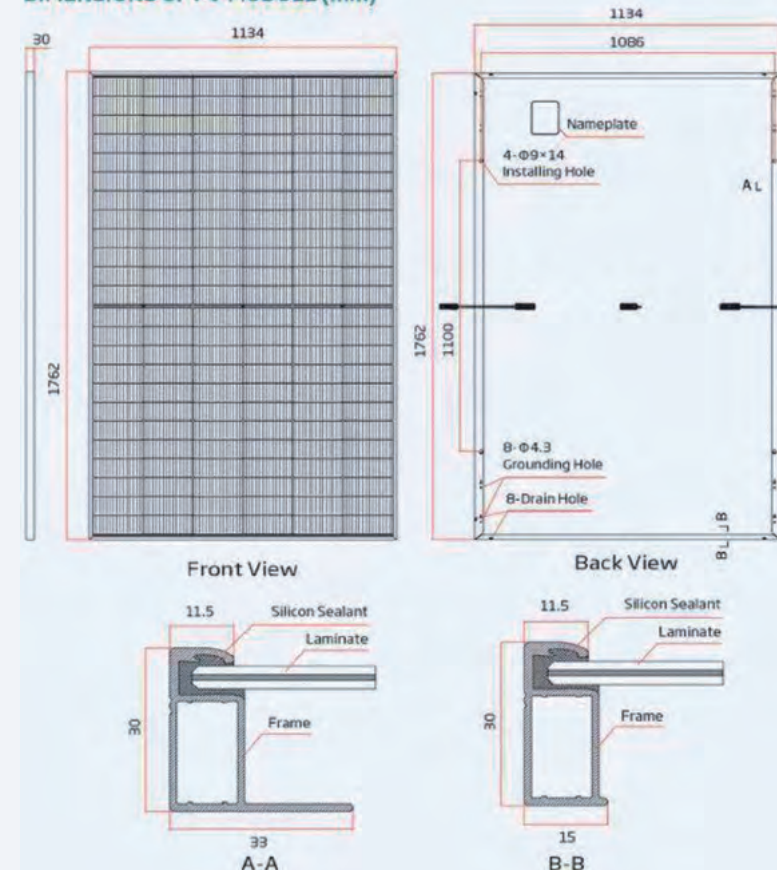
- Designed for compatibility with existing mainstream optimizers, inverters and mounting systems
- Perfect size and low weight for easy handling, Optimized transportation cost
- Flexible installation solutions for system deployment



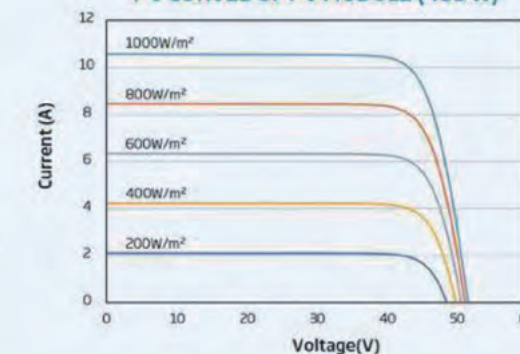
High Reliability

- Excellent fire rating and resistance to harsh environmental conditions
- 5,400 Pa snow load and 4,000 Pa wind load (test loads)

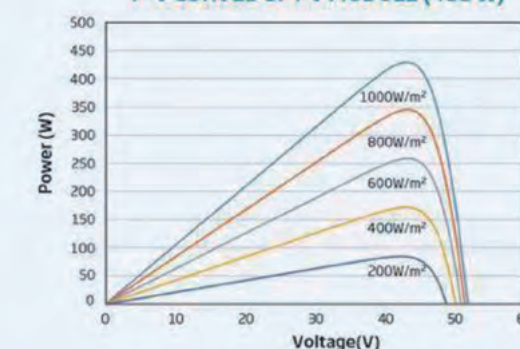
DIMENSIONS OF PV MODULE (mm)



I-V CURVES OF PV MODULE (435 W)



P-V CURVES OF PV MODULE (435 W)



ELECTRICAL DATA (STC)

	425	430	435	440	445
Peak Power Watts- P_{max} (W)*					
Power Tolerance- P_{max} (W)			0/+5		
Maximum Power Voltage- V_{MPP} (V)	42.9	43.2	43.6	44.0	44.3
Maximum Power Current- I_{MPP} (A)	9.92	9.96	9.99	10.01	10.05
Open Circuit Voltage- V_{oc} (V)	50.9	51.4	51.8	52.2	52.6
Short Circuit Current- I_{sc} (A)	10.56	10.59	10.64	10.67	10.71
Module Efficiency η_m (%)	21	21	21	21	21

STC: Irradiance 1000 W/m², Cell Temperature 25 °C, Air Mass AM 1.5. *Measuring tolerance: ±3 %.

ELECTRICAL DATA (NOCT)

	TSM-425 NEG0R.2B	TSM-430 NEG0R.2B	TSM-435 NEG0R.2B	TSM-440 NEG0R.2B	TSM-445 NEG0R.2B
Maximum Power- P_{max} (Wp)	324	328	332	335	339
Maximum Power Voltage- V_{MPP} (V)	40.0	40.4	40.7	41.0	41.3
Maximum Power Current- I_{MPP} (A)	8.09	8.11	8.15	8.17	8.20
Open Circuit Voltage- V_{oc} (V)	48.2	48.7	49.1	49.4	49.8
Short Circuit Current- I_{sc} (A)	8.51	8.53	8.57	8.60	8.63

NOCT: Irradiance at 800 W/m², Ambient Temperature 20 °C, Wind Speed 1 m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	144 cells
Module Dimensions	1722×1134×30 mm
Weight	21.1 kg
Front Glass	1.6 mm, High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	EVA/POE
Back Glass	1.6 mm, Heat Strengthened Glass
Frame	30 mm Anodized Aluminium Alloy, Black
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0 mm ² Landscape: 1100/1100 mm Portrait: 290/350 mm*
Connector	TS4 / MC4 EVO2*

*Special order only

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43 °C (±2 K)
Temperature Coefficient of P_{max}	-0.30 %/K
Temperature Coefficient of V_{oc}	-0.24 %/K
Temperature Coefficient of I_{sc}	0.04 %/K

MAXIMUM RATINGS

Operational Temperature	-40 to +85 °C
Maximum System Voltage	1500 V DC (IEC)
Max Series Fuse Rating	20 A

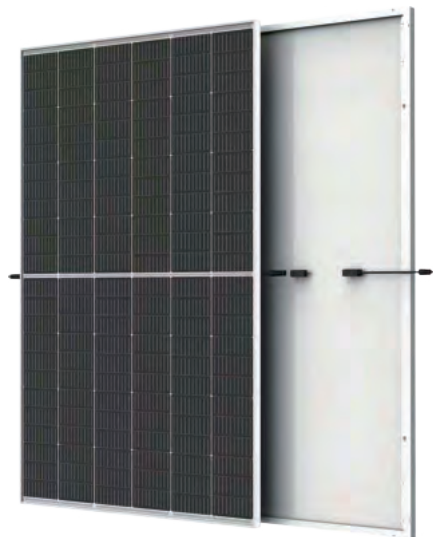
WARRANTY

25 year Product Workmanship Warranty
30 year Power Warranty
1 % first year degradation
0.4 % Annual Power Attenuation

(Please refer to product warranty for details)

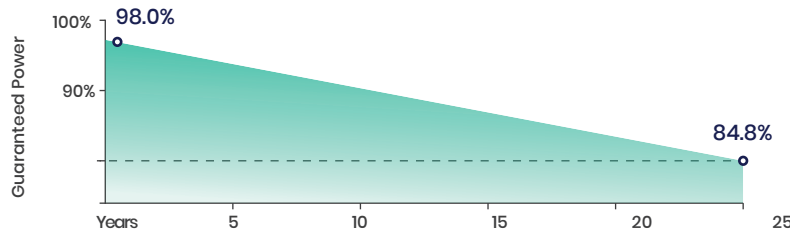
PACKAGING CONFIGURATION

Modules per box:	36 pieces
Modules per 40' container:	936 pieces



PRODUCT: **KAPLAN-KP SERIES 14R.3**
PRODUCT RANGE: 435-455W

Solar's Backsheet Performance Warranty



435W

MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

21%

MAXIMUM EFFICIENCY



High power

- Up to 455W front power and 21.0% module efficiency with half-cut and MBB (Multi Busbar) technology bringing more BOS savings
- Lower resistance of half-cut and good reflection effect of MBB ensure high power



High energy generation

- Excellent IAM and low light performance validated by 3rd party with cell process and module material optimization
- Better anti-shading performance and lower operating temperature



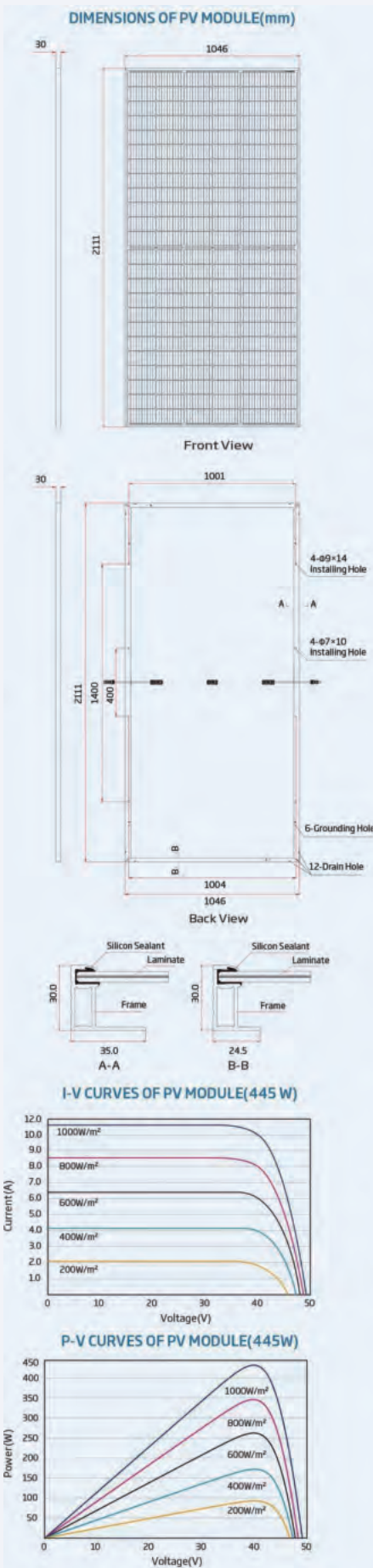
Universal solution for residential and C&I rooftops

- Designed for compatibility with existing mainstream optimizers, inverters and mounting systems
- Perfect size and low weight for easy handling, Optimized transportation cost
- Flexible installation solutions for system deployment



High Reliability

- Ensured PID resistance through cell process and module material control
- Resistant to salt, acid and ammonia
- Proven to be reliable in high temperature and humidity areas
- Minimizes micro-crack and snail trails
- Mechanical performance: Up to 5400 Pa positive load and 2400 Pa negative load



ELECTRICAL DATA (STC)

Peak Power Watts- P_{MAX} (Wp)*	435	440	445	450	455
Power Tolerance- P_{MAX} (W)	0 ~ +5				
Maximum Power Voltage- V_{MPP} (V)	40.5	40.7	40.8	41.0	41.4
Maximum Power Current- I_{MPP} (A)	10.74	10.82	10.90	10.98	11.00
Open Circuit Voltage- V_{OC} (V)	49.0	49.2	49.4	49.6	49.6
Short Circuit Current- I_{SC} (A)	11.31	11.39	11.46	11.53	11.54
Module Efficiency η_m (%)	21	21	21	21	21

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5.
*Measuring tolerance: $\pm 3\%$.

ELECTRICAL DATA (NOCT)

Maximum Power- P_{MAX} (Wp)	328	332	335	339	343
Maximum Power Voltage- V_{MPP} (V)	38.1	38.3	38.5	38.7	38.7
Maximum Power Current- I_{MPP} (A)	8.60	8.66	8.71	8.77	8.85
Open Circuit Voltage- V_{OC} (V)	46.1	46.3	46.5	46.7	46.7
Short Circuit Current- I_{SC} (A)	9.11	9.18	9.24	9.29	9.30

NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline
Cell Orientation	144 cells (6 × 24)
Module Dimensions	2094 × 1038 × 35mm
Weight	28.6 kg (63.1 lb)
Front Glass	2.0 mm (0.08 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	EVA
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass
Frame	30 mm (1.18 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² (0.006 inches²), Portrait: 280/280 mm (11.02/11.02 inches) Landscape: 1400/1400 mm (55.12/55.12 inches)
Connector	MC4 EVO2 / TS4*

*Please refer to regional datasheet for specified connector.

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C ($\pm 2^\circ\text{C}$)
Temperature Coefficient of P_{MAX}	-0.34%/°C
Temperature Coefficient of V_{OC}	-0.25%/°C
Temperature Coefficient of I_{SC}	0.04%/°C

(Do not connect Fuse in Combiner Box with two or more strings in parallel connection)

MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC)
Max Series Fuse Rating	20A

WARRANTY

- 12 year Product Workmanship Warranty
- 30 year Power Warranty
- 2% first year degradation
- 0.45% Annual Power Attenuation

(Please refer to product warranty for details)

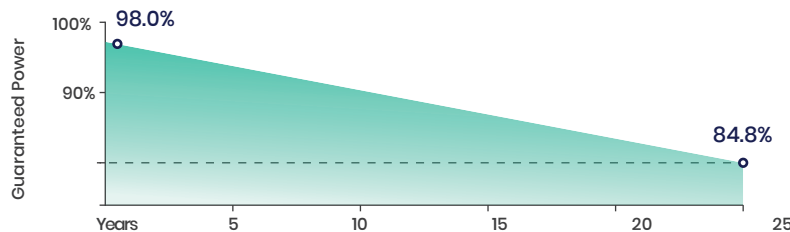
PACKAGING CONFIGURATION

- Modules per box: 36 pieces
- Modules per 40' container: 792 pieces



PRODUCT: **KAPLAN-KPSERIES0897B**
PRODUCT RANGE: 480-505W

Solar's Backsheet Performance Warranty



505W

MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

21%

MAXIMUM EFFICIENCY



High customer value

- Lower LCOE (Levelized Cost Of Energy), reduced BOS (Balance of System) cost, shorter payback time
- Lowest guaranteed first year and annual degradation; extended 30-year warranty
- Designed for compatibility with existing mainstream system components
- Higher return on investment



High power up to 505W

- Large area cells based on 210mm silicon wafers and 1/3-cut cell technology
- Up to 21.0% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection



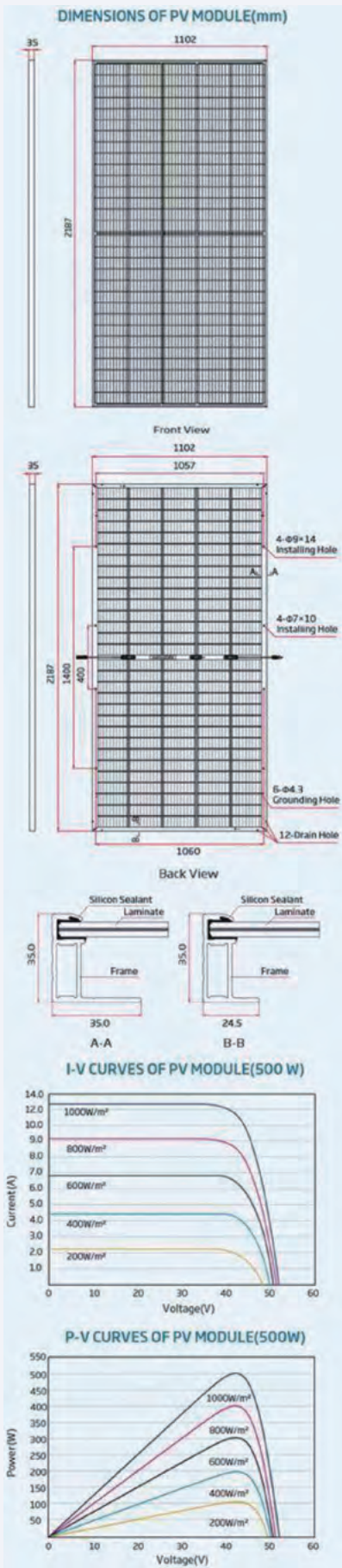
High energy yield

- Excellent IAM (Incident Angle Modifier) and low irradiation performance, validated by 3rd party certifications
- The unique design provides optimized energy production under inter-row shading conditions
- Up to 25% additional power gain from back side depending on albedo



High Reliability

- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity areas
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load



ELECTRICAL DATA (STC)

Peak Power Watts- P_{MAX} (Wp)*	480	485	490	495	500	505
Power Tolerance- P_{MAX} (W)	0 ~ +5					
Maximum Power Voltage- V_{MPP} (V)	42.2	42.5	42.8	43.1	43.4	43.7
Maximum Power Current- I_{MPP} (A)	11.38	11.42	11.45	11.49	11.53	11.56
Open Circuit Voltage- V_{OC} (V)	50.7	50.9	51.1	51.3	51.5	51.7
Short Circuit Current- I_{SC} (A)	11.97	12.01	12.05	12.09	12.13	12.17
Module Efficiency η (%)	21	21	21	21	21	21

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5.
*Measuring tolerance: $\pm 3\%$.

Electrical characteristics with different power bin (reference to 10% Irradiance ratio)

Total Equivalent power - P_{MAX} (Wp)	514	519	524	530	535	540
Maximum Power Voltage- V_{MPP} (V)	42.2	42.5	42.8	43.1	43.4	43.6
Maximum Power Current- I_{MPP} (A)	12.18	12.22	12.24	12.29	12.34	12.39
Open Circuit Voltage- V_{OC} (V)	50.7	50.9	51.1	51.3	51.5	51.7
Short Circuit Current- I_{SC} (A)	12.81	12.85	12.89	12.94	12.98	13.02

Irradiance ratio (rear/front): 10%

Power Bifaciality: $70 \pm 5\%$.

ELECTRICAL DATA (NOCT)

Maximum Power- P_{MAX} (Wp)	362	366	369	373	377	381
Maximum Power Voltage- V_{MPP} (V)	38.7	40.0	40.2	40.5	40.7	41.0
Maximum Power Current- I_{MPP} (A)	9.11	9.15	9.18	9.22	9.26	9.29
Open Circuit Voltage- V_{OC} (V)	47.7	47.9	48.0	48.2	48.4	48.5
Short Circuit Current- I_{SC} (A)	9.65	9.68	9.71	9.74	9.78	9.81

NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	144 Cells
Module Dimensions	2187×1102×35 mm (86.10×43.39×1.38 inches)
Weight	30.1 kg (66.4 lb)
Front Glass	2.0 mm (0.08 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	POE/EVA
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	35mm(1.38 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² (0.006 inches²), Portrait: 280/280 mm (11.02/11.02 inches) Length can be customized

Connector: MC4 EV02 / TS4*

*Please refer to regional datasheet for specified connector.

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C ($\pm 2^\circ\text{C}$)
Temperature Coefficient of P_{MAX}	-0.34%/°C
Temperature Coefficient of V_{OC}	-0.25%/°C
Temperature Coefficient of I_{SC}	0.04%/°C

MAXIMUM RATINGS

Operational Temperature	-40 ~ +85°C
Maximum System Voltage	1500V DC (IEC) 1500V DC (UL)
Max Series Fuse Rating	25A

WARRANTY

12 year Product Workmanship Warranty
30 year Power Warranty
2% first year degradation
0.45% Annual Power Attenuation

(Please refer to product warranty for details)

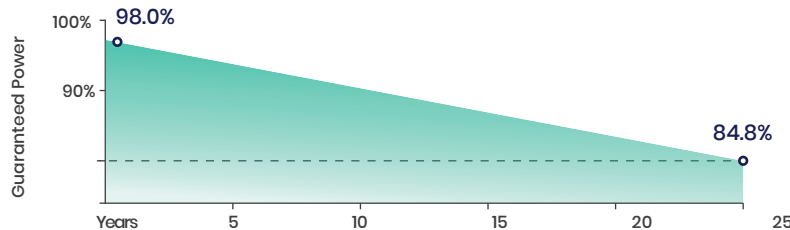
PACKAGING CONFIGURATION

Modules per box: 31 pieces
Modules per 40' container: 620 pieces



PRODUCT: **KAPLAN-KP SERIES 0225**
PRODUCT RANGE: 535-560W

Solar's Backsheet Performance Warranty



560W

MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

21%

MAXIMUM EFFICIENCY



High energy yield

- Excellent IAM (Incident Angle Modifier) and low irradiation performance, validated by 3rd party certifications
- The unique design provides optimized energy production under inter-row shading conditions
- Lower temperature coefficient (-0.34%) and operating temperature



High power Mono Perc up to 560W

- Up to 21.0% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection



High customer value

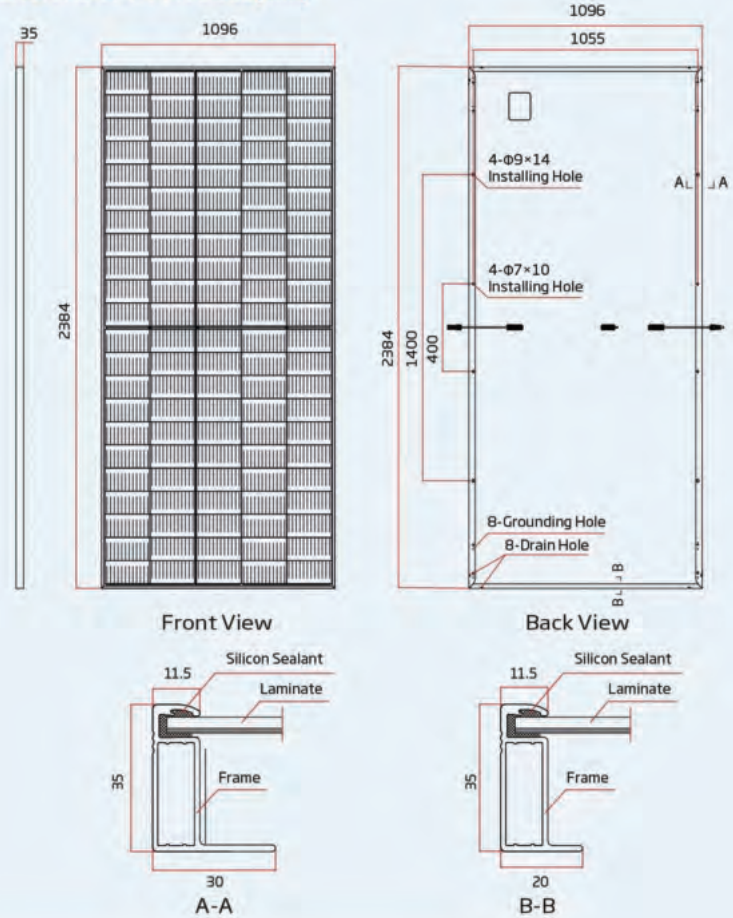
- Lower LCOE (Levelized Cost Of Energy), reduced BOS(Balance ofSystem)cost, shorter payback time
- Lowest guaranteed first year and annual degradation;
- Designed for compatibility with existing mainstream system components
- Higher return on Investment



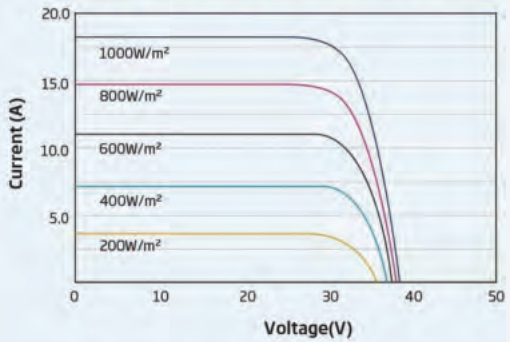
High Reliability

- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load

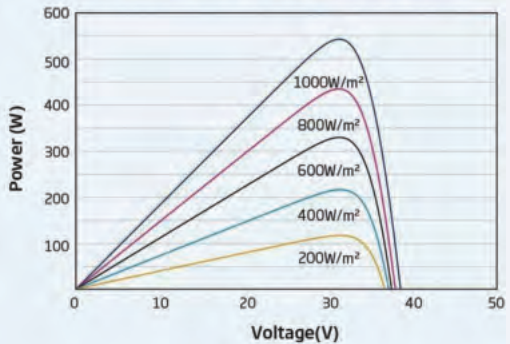
DIMENSIONS OF PV MODULE(mm)



I-V CURVES OF PV MODULE(545 W)



P-V CURVES OF PV MODULE(545W)



ELECTRICAL DATA (STC)

Peak Power Watts-PMAX (Wp)*	535	540	545	550	555	560
Binning Tolerance-PMAX (W)	0 ~ +5					
Maximum Power Voltage-VMP (V)	31.0	31.2	31.4	31.6	31.8	32.0
Maximum Power Current-IMP (A)	17.28	17.33	17.37	17.40	17.45	17.49
Open Circuit Voltage-Voc (V)	37.3	37.5	37.7	37.9	38.1	38.3
Short Circuit Current-Isc (A)	18.36	18.41	18.47	18.52	18.56	18.60
Module Efficiency _{STC} (%)	21	21	21	21	21	21

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. *Measuring tolerance: ±3%.

ELECTRICAL DATA (NOCT)

Maximum Power-PMAX (Wp)	405	409	413	417	420	424
Maximum Power Voltage-VMP (V)	28.8	29.0	29.2	29.3	29.5	29.7
Maximum Power Current-IMP (A)	14.06	14.10	14.15	14.19	14.23	14.26
Open Circuit Voltage-Voc (V)	35.1	35.3	35.5	35.7	35.9	36.1
Short Circuit Current-Isc (A)	14.80	14.84	14.88	14.92	14.96	14.99

NOCT: Irradiance at 900W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	110 cells
Module Dimensions	2384×1096×35 mm (93.86×43.15×1.38 inches)
Weight	28.6 kg (63.1 lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	EVA/POE
Backsheet	White
Frame	35mm(1.38 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² (0.006 inches²), Portrait: 350/280 mm(13.78/11.02 inches) Length can be customized
Connector	MC4 EVO2 / Trina Solar TS4

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of PMAX	-0.34%/°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	0.04%/°C

MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage (IEC)	1500V DC (IEC)
Maximum System Voltage (UL)	1500V DC (UL)
Max Series Fuse Rating	30A

WARRANTY

12 year Product Workmanship Warranty
25 year Power Warranty
2% first year degradation
0.55% Annual Power Attenuation

(Please refer to product warranty for details)

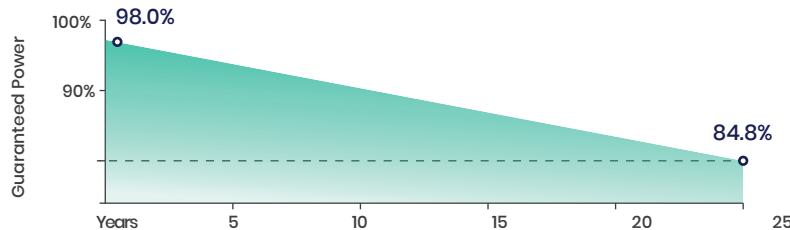
PACKAGING CONFIGURATION

Modules per box: 31 pieces
Modules per 40' container: 620 pieces



PRODUCT: **KAPLAN-KP SERIES 26**
PRODUCT RANGE: 650-670W

Solar's Backsheet Performance Warranty



670W

MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

21%

MAXIMUM EFFICIENCY



High energy yield

- Excellent IAM (Incident Angle Modifier) and low irradiation performance, validated by 3rd party certifications
- The unique design provides optimized energy production under inter-row shading conditions
- Lower temperature coefficient (-0.34%) and operating temperature



High power Mono Perc up to 560W

- Up to 21.0% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection



High customer value

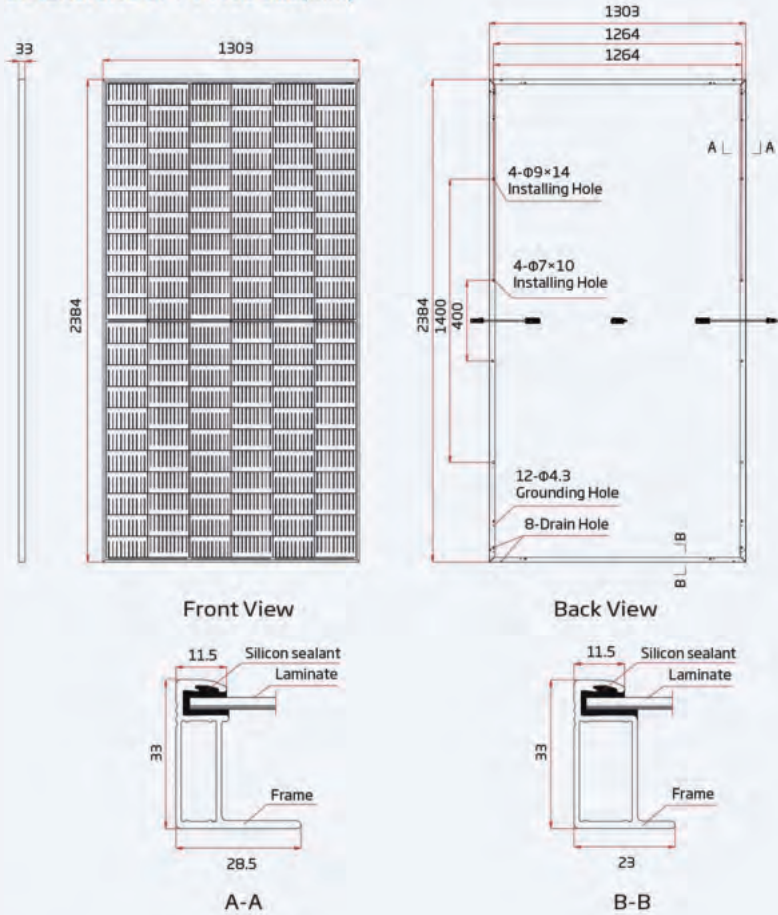
- Lower LCOE (Levelized Cost Of Energy), reduced BOS(Balance of System)cost, shorter payback time
- Lowest guaranteed first year and annual degradation;
- Designed for compatibility with existing mainstream system components



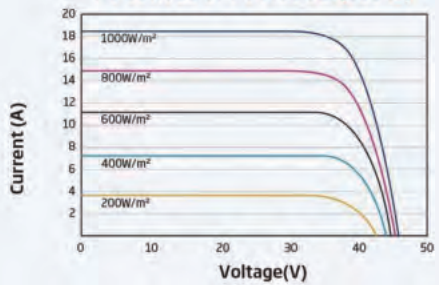
High Reliability

- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load
- Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity areas

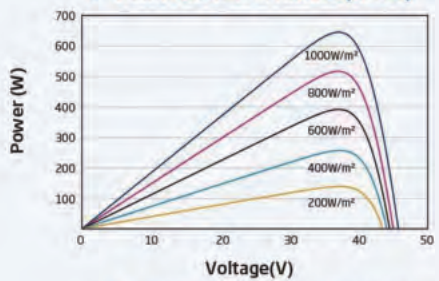
DIMENSIONS OF PV MODULE(mm)



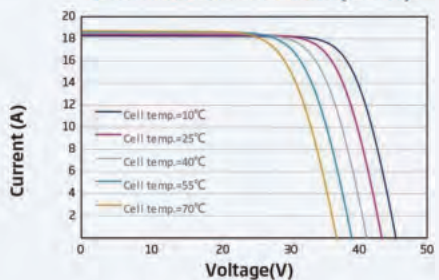
I-V CURVES OF PV MODULE(655W)



P-V CURVES OF PV MODULE(655W)



I-V CURVES OF PV MODULE(655W)



ELECTRICAL DATA (STC)

Peak Power Watts-PMAX (Wp)*	650	655	660	665	670
Power Tolerance-PMAX (W)	0 ~ +5				
Maximum Power Voltage-VMP (V)	37.4	37.6	37.8	38.0	38.2
Maximum Power Current-IMP (A)	17.39	17.43	17.47	17.51	17.55
Open Circuit Voltage-Voc (V)	45.3	45.5	45.7	45.9	46.1
Short Circuit Current-Isc (A)	18.44	18.48	18.53	18.57	18.62
Module Efficiency, ηm (%)	21	21	21	21	21

*STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. *Measuring tolerance: ±3%.

ELECTRICAL DATA (NOCT)

Maximum Power-PMAX (Wp)	492	496	500	504	508
Maximum Power Voltage-VMP (V)	34.9	35.1	35.3	35.4	35.6
Maximum Power Current-IMP (A)	14.09	14.13	14.17	14.22	14.26
Open Circuit Voltage-Voc (V)	42.7	42.9	43.0	43.2	43.4
Short Circuit Current-Isc (A)	14.86	14.89	14.93	14.96	15.01

NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	132 cells
Module Dimensions	2384×1303×33 mm (93.86×51.30×1.30 inches)
Weight	33.3 kg (73.4 lb)
Glass	3.2 mm (0.13 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	EVA
Backsheet	White
Frame	33mm(1.30 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² (0.006 inches²), Portrait: 350/280 mm(13.78/11.02 inches) Length can be customized
Connector	MC4 EV02 / TS4*

*Please refer to regional datasheet for specified connector.

TEMPERATURE RATINGS

NOCT(Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of PMAX	-0.34%/°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	0.04%/°C

MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC)
	1500V DC (UL)
Max Series Fuse Rating	30A

WARRANTY

12 year Product Workmanship Warranty
25 year Power Warranty
2% first year degradation
0.55% Annual Power Attenuation

(Please refer to product warranty for details)

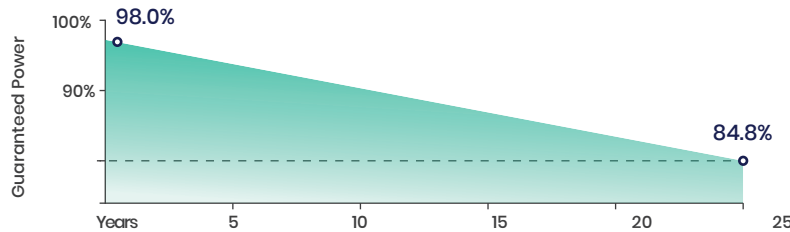
PACKAGING CONFIGURATION

Modules per box: 33 pieces
Modules per 40' container: 594 pieces



PRODUCT: **KAPLAN-KPserie066**
PRODUCT RANGE: 435-460W

Solar's Backsheet Performance Warranty



435-460W

MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

21%

MAXIMUM EFFICIENCY



High power

- Up to 460W front power and 21.0% module efficiency with half-cut and MBB (Multi Busbar) technology bringing more BOS savings
- Lower resistance of half-cut and good reflection effect of MBB ensure high power



High energy generation

- Excellent IAM and low light performance validated by 3rd party with cell process and module material optimization
- Better anti-shading performance and lower operating temperature



High Reliability

- Ensured PID resistance through cell process and module material control
- Resistant to salt, acid and ammonia
- Mechanical performance: Up to 5400 Pa positive load and 2400 Pa negative Load

