



ASTRONERGY
A CHNT COMPANY

ASTRO 6 Semi

Create Sustainable and Efficient Green Energy

CHSM66M-HC
Monofacial Series (210)

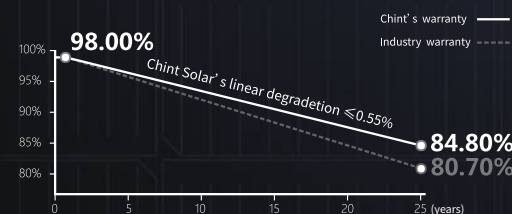
650~665W

PERC+ / Multi-busbar / Half-cut

Non-destructive cutting

PID resistance

Lower BOS cost & LCOE



12-year Product Warranty
25-year Linear Power Warranty



Tier 1
BloombergNEF



ISO 9001:2015:ISO Quality Management System
ISO 14001:2015:ISO Environment Management System
ISO 45001:Occupational Health and Safety
The first solar company which passed the Nord IEC/TS 62941 certification audit.

650~665W

POWER RANGE

0~+5W

POWER
TOLERANCE

21.4%

MAX MODULE
EFFICIENCY

≤ 2.0%

FIRST YEAR
POWER DEGRADATION

≤ 0.55%

YEAR 2-25
POWER DEGRADATION

Electrical Specifications

STC: Irradiance 1000W/m², Cell Temperature 25° C, AM=1.5

Rated output (Pmpp / Wp)	650	655	660	665
Rated voltage (Vmpp / V)	37.45	37.65	37.85	38.05
Rated current (Impp / A)	17.36	17.41	17.45	17.50
Open circuit voltage (Voc / V)	45.28	45.48	45.68	45.88
Short circuit current (Isc / A)	18.43	18.48	18.53	18.58
Module efficiency	20.9%	21.1%	21.2%	21.4%

NMOT: Irradiance 800W/m², Ambient Temperature 20° C, AM=1.5, Wind Speed 1m/s

Rated output (Pmpp / Wp)	489.5	493.2	497.0	500.7
Rated voltage (Vmpp / V)	35.09	35.28	35.46	35.63
Rated current (Impp / A)	13.96	13.99	14.03	14.06
Open circuit voltage (Voc / V)	42.55	42.75	42.95	43.15
Short circuit current (Isc / A)	14.82	14.87	14.92	14.97

Temperature Ratings (STC)

Temperature coefficient (Pmpp)	-0.34%/°C	No. of diodes	3
Temperature coefficient (Isc)	+0.04%/°C	Junction box IP rating	IP 68
Temperature coefficient (Voc)	-0.25%/°C	Max. series fuse rating	30 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V _{DC}

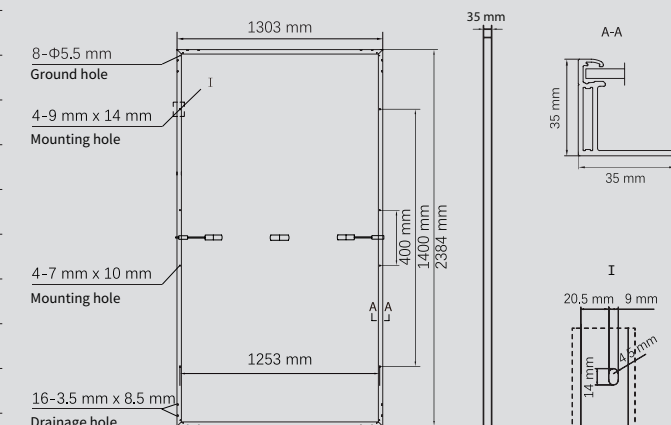
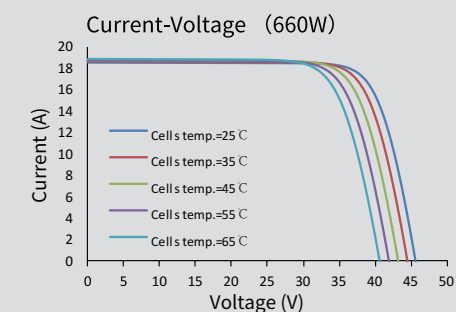
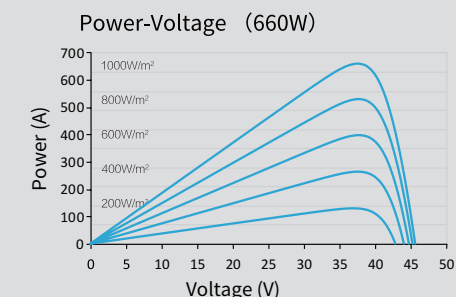
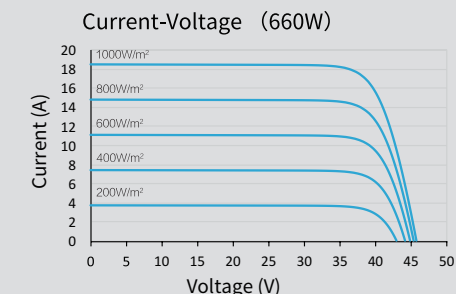
Operating Parameters

Mechanical Specifications

Outer dimensions (L x W x H)	2384 x 1303 x 35 mm
Cell Type	P type Mono-crystalline
No. of cells	132 (6*22)
Frame technology	Aluminum, silver anodized
Front glass thickness	3.2 mm
Cable length (IEC/UL)	Portrait: 350 mm; Landscape: 1400 mm
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	HCB40 / MC4-EVO2 (optional)
Module weight	34.8 kg (Tolerance +/- 1.0kg)
Packing unit	31 pcs / box (Subject to sales contract)
Weight of packing unit (for 40'HQ container)	1125 kg
Modules per 40' HQ container	527 pcs

① Refer to Astronergy crystalline installation manual or contact technical department.
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

Curve





ASTRONERGY
A CHNT COMPANY

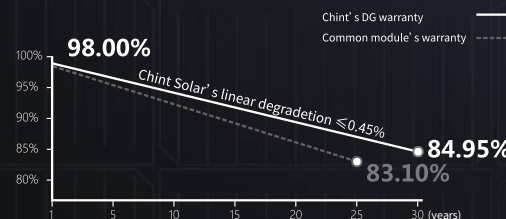
ASTRO 6 Twins

Create Sustainable and Efficient Green Energy

CHSM66M(DG)/F-BH
Bifacial Series (210)

645~660W

PERC+ / Multi-busbar / Half-cut
Non-destructive cutting
PID resistance
Bifacial gain
Lower BOS cost & LCOE



12-year Product Warranty

30-year Linear Power Warranty



ISO 9001:2015:ISO Quality Management System
ISO 14001:2015:ISO Environment Management System
ISO 45001:Occupational Health and Safety
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Tier 1
BloombergNEF



645~660W

POWER RANGE

0~+5W

POWER TOLERANCE

21.2%

MAX MODULE EFFICIENCY

≤ 2.0%

FIRST YEAR POWER DEGRADATION

≤ 0.45%

YEAR 2-30 POWER DEGRADATION

Electrical Specifications

STC: Irradiance 1000W/m², Cell Temperature 25° C, AM=1.5

Rated output (Pmpp / Wp)	645	650	655	660
Rated voltage (Vmpp / V)	37.48	37.68	37.88	38.08
Rated current (Impp / A)	17.21	17.26	17.30	17.34
Open circuit voltage (Voc / V)	45.29	45.49	45.69	45.89
Short circuit current (Isc / A)	18.27	18.32	18.37	18.42
Module efficiency	20.8%	20.9%	21.1%	21.2%

NMOT: Irradiance 800W/m², Ambient Temperature 20° C, AM=1.5, Wind Speed 1m/s

Rated output (Pmpp / Wp)	485.8	489.5	493.3	497.1
Rated voltage (Vmpp / V)	35.03	35.19	35.34	35.47
Rated current (Impp / A)	13.87	13.92	13.97	14.02
Open circuit voltage (Voc / V)	42.43	42.63	42.83	43.03
Short circuit current (Isc / A)	14.72	14.77	14.82	14.87

Electrical Specifications (Integrated power)

Pmpp gain	Pmpp / Wp	Vmpp / V	Impp / A	Voc / V	Isc / A
5%	687	37.88	18.17	45.69	19.29
10%	720	37.88	19.03	45.69	20.21
15%	753	37.89	19.90	45.70	21.13
20%	786	37.89	20.76	45.70	22.04
25%	818	37.89	21.63	45.70	22.96

Electrical characteristics with different rear power gain (reference to 655W)

Temperature Ratings (STC)

Temperature coefficient (Pmpp)	-0.34%/°C	No. of diodes	3
Temperature coefficient (Isc)	+0.04%/°C	Junction box IP rating	IP 68
Temperature coefficient (Voc)	-0.25%/°C	Max. series fuse rating	35 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V _{DC}

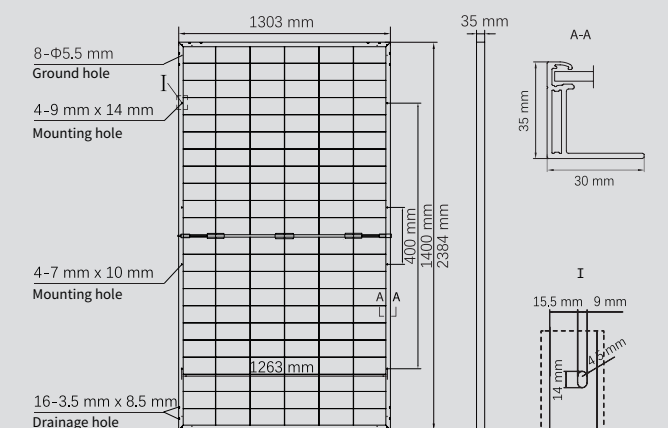
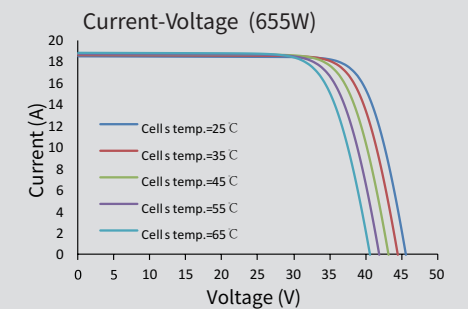
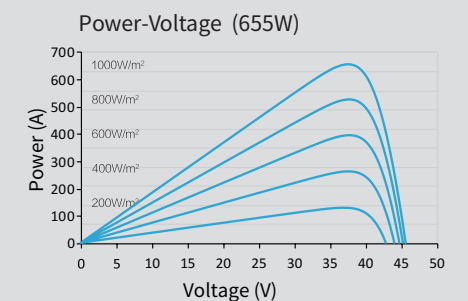
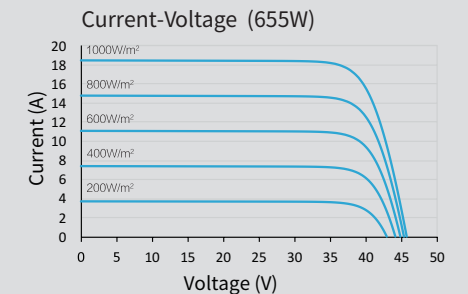
Operating Parameters

Mechanical Specifications

Outer dimensions (L x W x H)	2384 x 1303 x 35 mm
Cell Type	P type Mono-crystalline
No. of cells	132 (6*22)
Frame technology	Aluminum, silver anodized
Front glass thickness	2.0 mm
Cable length (IEC/UL)	Portrait: 350 mm; Landscape: 1400 mm
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
^① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	HCB40 / MC4-EVO2 (optional)
Module weight	38.2 kg (Tolerance +/- 1.0kg)
Packing unit	31 pcs / box (Subject to sales contract)
Weight of packing unit (for 40'HQ container)	1230 kg
Modules per 40' HQ container	527 pcs

^① Refer to Astronergy crystalline installation manual or contact technical department.
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

Curve



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ASTRONERGY
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ASTRO 5

Semi

Create Sustainable and Efficient Green Energy

CHSM72M-HC
Monofacial Series (182)

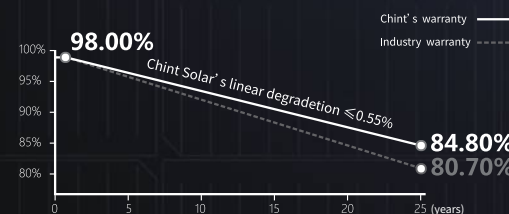
535~550W

PERC+ / Multi-busbar / Half-cut

Non-destructive cutting

PID resistance

Lower BOS cost & LCOE



12-year Product Warranty

25-year Linear Power Warranty



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Tier 1
BloombergNEF



535~550W

POWER RANGE

0~+5W

POWER
TOLERANCE

21.3%

MAX MODULE
EFFICIENCY

$\leq 2.0\%$

FIRST YEAR
POWER DEGRADATION

$\leq 0.55\%$

YEAR 2-25
POWER DEGRADATION

Electrical Specifications

STC: Irradiance 1000W/m², Cell Temperature 25° C, AM=1.5

	535	540	545	550
Rated output (Pmpp / Wp)	535	540	545	550
Rated voltage (Vmpp / V)	41.60	41.76	41.93	42.10
Rated current (Impp / A)	12.86	12.93	13.00	13.06
Open circuit voltage (Voc / V)	49.50	49.70	49.90	50.10
Short circuit current (Isc / A)	13.61	13.72	13.81	13.90
Module efficiency	20.7%	20.9%	21.1%	21.3%

NMOT: Irradiance 800W/m², Ambient Temperature 20° C, AM=1.5, Wind Speed 1m/s

	399.8	403.5	407.3	411.0
Rated output (Pmpp / Wp)	399.8	403.5	407.3	411.0
Rated voltage (Vmpp / V)	38.77	38.92	39.08	39.24
Rated current (Impp / A)	10.31	10.37	10.42	10.48
Open circuit voltage (Voc / V)	46.78	46.97	47.16	47.34
Short circuit current (Isc / A)	11.04	11.13	11.20	11.27

Temperature Ratings (STC)

Temperature coefficient (Pmpp)	-0.35%/°C	No. of diodes	3
Temperature coefficient (Isc)	+0.045%/°C	Junction box IP rating	IP 68
Temperature coefficient (Voc)	-0.27%/°C	Max. series fuse rating	25 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V _{DC}

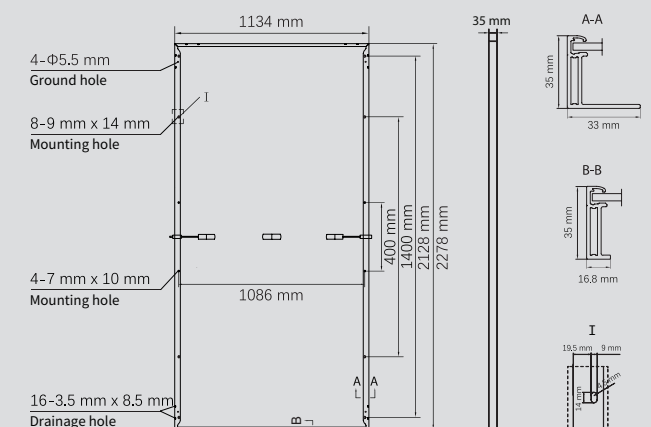
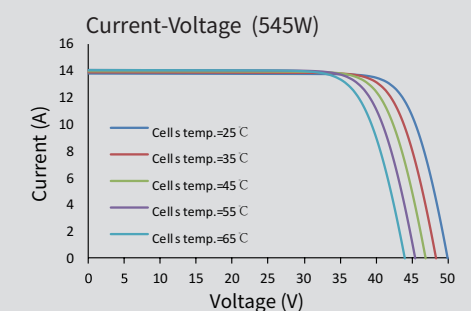
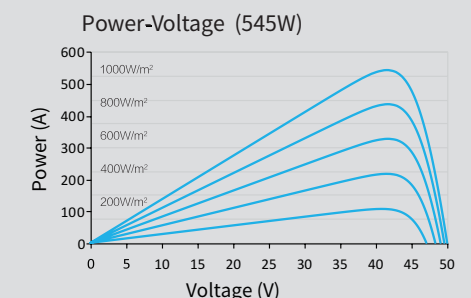
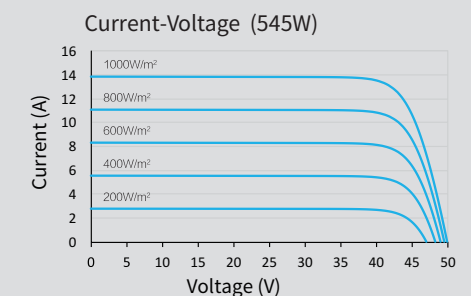
Operating Parameters

Mechanical Specifications

Outer dimensions (L x W x H)	2278 x 1134 x 35 mm
Cell Type	P type Mono-crystalline
No. of cells	144 (6*24)
Frame technology	Aluminum, silver anodized
Front glass thickness	3.2 mm
Cable length (IEC/UL)	Portrait: 300 mm; Landscape: 1400 mm
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	HCB40 / MC4-EVO2 (optional)
Module weight	26.9 kg (Tolerance +/- 1.0kg)
Packing unit	31 pcs / box (Subject to sales contract)
Weight of packing unit (for 40'HQ container)	893 kg
Modules per 40' HQ container	620 pcs

① Refer to Astronergy crystalline installation manual or contact technical department.
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

Curve



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ASTRO 5

Twins

Create Sustainable and Efficient Green Energy

CHSM72M(DG)/F-BH
Bifacial Series (182)

530~545W

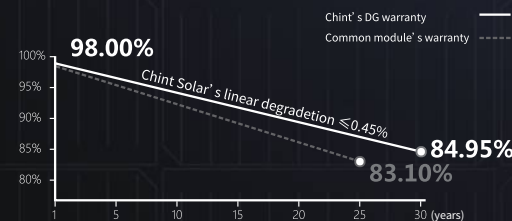
PERC+ / Multi-busbar / Half-cut

Non-destructive cutting

PID resistance

Bifacial gain

Lower BOS cost & LCOE



12-year Product Warranty

30-year Linear Power Warranty



ISO 9001:2015:ISO Quality Management System
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Tier 1
BloombergNEF



530~545W

POWER RANGE

0~+5W

POWER TOLERANCE

21.1%

MAX MODULE EFFICIENCY

≤ 2.0%

FIRST YEAR POWER DEGRADATION

≤ 0.45%

YEAR 2-30 POWER DEGRADATION

Electrical Specifications

STC: Irradiance 1000W/m², Cell Temperature 25° C, AM=1.5

Rated output (Pmpp / Wp)	530	535	540	545
Rated voltage (Vmpp / V)	41.60	41.76	41.93	42.10
Rated current (Impp / A)	12.74	12.81	12.88	12.95
Open circuit voltage (Voc / V)	49.50	49.70	49.90	50.10
Short circuit current (Isc / A)	13.48	13.57	13.66	13.75
Module efficiency	20.5%	20.7%	20.9%	21.1%

NMOT: Irradiance 800W/m², Ambient Temperature 20° C, AM=1.5, Wind Speed 1m/s

Rated output (Pmpp / Wp)	396.1	399.8	403.5	407.3
Rated voltage (Vmpp / V)	38.77	38.92	39.08	39.24
Rated current (Impp / A)	10.22	10.27	10.33	10.38
Open circuit voltage (Voc / V)	46.78	46.97	47.16	47.34
Short circuit current (Isc / A)	10.94	11.01	11.08	11.16

Electrical Specifications (Integrated power)

Pmpp gain	Pmpp / Wp	Vmpp / V	Impp / A	Voc / V	Isc / A
5%	567	41.93	13.52	49.90	14.35
10%	594	41.93	14.17	49.90	15.03
15%	621	41.94	14.81	49.91	15.71
20%	648	41.94	15.45	49.91	16.39
25%	675	41.95	16.09	49.92	17.07

Electrical characteristics with different rear power gain (reference to 540W)

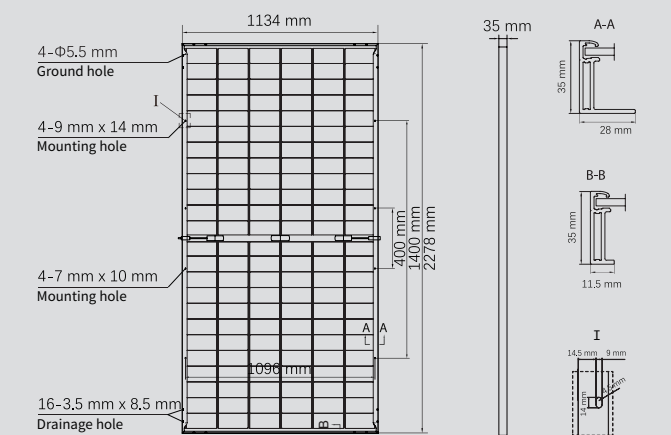
Temperature Ratings (STC)

Temperature coefficient (Pmpp)	-0.35%/°C	No. of diodes	3
Temperature coefficient (Isc)	+0.045%/°C	Junction box IP rating	IP 68
Temperature coefficient (Voc)	-0.27%/°C	Max. series fuse rating	30 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V _{DC}

Operating Parameters

Mechanical Specifications

Outer dimensions (L x W x H)	2278 x 1134 x 35 mm
Cell Type	P type Mono-crystalline
No. of cells	144 (6*24)
Frame technology	Aluminum, silver anodized
Front glass thickness	2.0 mm
Cable length (IEC/UL)	Portrait: 300 mm; Landscape: 1400 mm
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	HCB40 / MC4-EVO2 (optional)
Module weight	32.6 kg (Tolerance +/- 1.0kg)
Packing unit	31 pcs / box (Subject to sales contract)
Weight of packing unit (for 40'HQ container)	1070 kg
Modules per 40' HQ container	620 pcs



① Refer to Astronergy crystalline installation manual or contact technical department.
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

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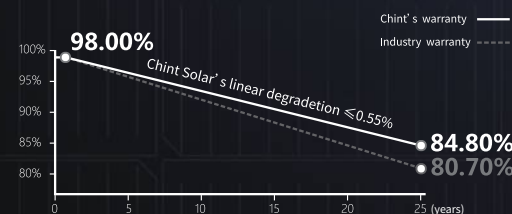
ASTRO 5s

Create Sustainable and Efficient Green Energy

CHSM54M-HC
Monofacial Series (182)

400~415W

PERC+ / Multi-busbar / Half-cut
Non-destructive cutting
PID resistance



12-year Product Warranty (Standard)
15-year Product Warranty (Optional, special for rooftop market)
25-year Linear Power Warranty



ISO 9001:2015:ISO Quality Management System
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ISO 45001:Occupational Health and Safety
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Tier 1
BloombergNEF



400~415W

POWER RANGE

0~+5W

POWER TOLERANCE

21.3%

MAX MODULE EFFICIENCY

≤ 2.0%

FIRST YEAR POWER DEGRADATION

≤ 0.55%

YEAR 2-25 POWER DEGRADATION

Electrical Specifications

STC: Irradiance 1000W/m², Cell Temperature 25° C, AM=1.5

Rated output (Pmpp / Wp)	400	405	410	415
Rated voltage (Vmpp / V)	31.09	31.26	31.43	31.60
Rated current (Impp / A)	12.86	12.96	13.05	13.13
Open circuit voltage (Voc / V)	37.00	37.20	37.40	37.60
Short circuit current (Isc / A)	13.65	13.76	13.88	13.99
Module efficiency	20.5%	20.7%	21.0%	21.3%

NMOT: Irradiance 800W/m², Ambient Temperature 20° C, AM=1.5, Wind Speed 1m/s

Rated output (Pmpp / Wp)	298.9	302.7	306.4	310.1
Rated voltage (Vmpp / V)	28.98	29.13	29.29	29.45
Rated current (Impp / A)	10.32	10.39	10.46	10.53
Open circuit voltage (Voc / V)	34.97	35.15	35.34	35.53
Short circuit current (Isc / A)	11.07	11.17	11.26	11.35

Temperature Ratings (STC)

Temperature coefficient (Pmpp)	-0.35%/°C	No. of diodes	3
Temperature coefficient (Isc)	+0.045%/°C	Junction box IP rating	IP 68
Temperature coefficient (Voc)	-0.27%/°C	Max. series fuse rating	25 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V _{DC}

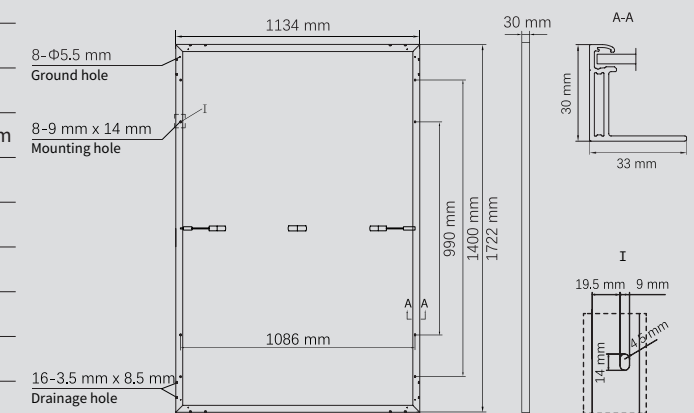
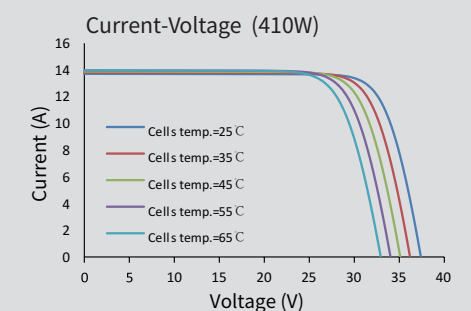
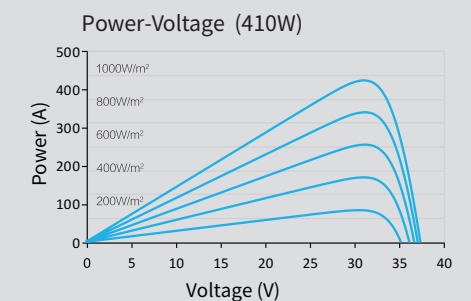
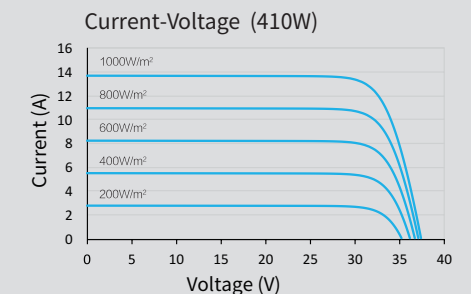
Operating Parameters

Mechanical Specifications

Outer dimensions (L x W x H)	1722 x 1134 x 30 mm
Cell Type	P type Mono-crystalline
No. of cells	108 (6*18)
Frame technology	Aluminum, silver anodized
Front glass thickness	3.2 mm
Cable length (IEC/UL)	Portrait: 300 mm; Landscape: 1200 mm
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
^① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	HCB40 / MC4-EVO2 (optional)
Module weight	21.6 kg (Tolerance +/- 1.0kg)
Packing unit	36 pcs / box (Subject to sales contract)
Weight of packing unit (for 40'HQ container)	821 kg
Modules per 40' HQ container	936 pcs

^① Refer to Astronergy crystalline installation manual or contact technical department.
Maximum Mechanical Test Load=1.5× Maximum Mechanical Design Load.

Curve





ASTRONERGY
A CHNT COMPANY

ASTRO 5_s

Create Sustainable and Efficient Green Energy

CHSM54M(BL)-HC
Monofacial Series (182)

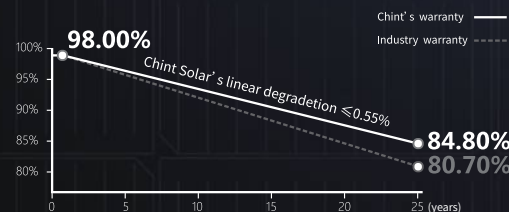
390~405W

PERC+ / Multi-busbar / Half-cut

Non-destructive cutting

PID resistance

All black



12-year Product Warranty (Standard)

15-year Product Warranty (Optional, special for rooftop market)

25-year Linear Power Warranty



ISO 9001:2015:ISO Quality Management System
ISO 14001:2015:ISO Environment Management System
ISO 45001:Occupational Health and Safety
The first solar company which passed the Nord IEC/TS 62941 certification audit.



Tier 1
BloombergNEF



390~405W

POWER RANGE

0~+5W

POWER TOLERANCE

20.7%

MAX MODULE EFFICIENCY

≤ 2.0%

FIRST YEAR POWER DEGRADATION

≤ 0.55%

YEAR 2-25 POWER DEGRADATION

Electrical Specifications

STC: Irradiance 1000W/m², Cell Temperature 25° C, AM=1.5

	390	395	400	405
Rated output (Pmpp / Wp)	390	395	400	405
Rated voltage (Vmpp / V)	30.76	30.92	31.09	31.26
Rated current (Impp / A)	12.68	12.77	12.86	12.96
Open circuit voltage (Voc / V)	36.60	36.80	37.00	37.20
Short circuit current (Isc / A)	13.40	13.52	13.65	13.76
Module efficiency	20.0%	20.2%	20.5%	20.7%

NMOT: Irradiance 800W/m², Ambient Temperature 20° C, AM=1.5, Wind Speed 1m/s

	291.5	295.2	298.9	302.7
Rated output (Pmpp / Wp)	291.5	295.2	298.9	302.7
Rated voltage (Vmpp / V)	28.66	28.82	28.98	29.13
Rated current (Impp / A)	10.17	10.24	10.32	10.39
Open circuit voltage (Voc / V)	34.59	34.78	34.97	35.15
Short circuit current (Isc / A)	10.87	10.97	11.07	11.17

Temperature Ratings (STC)

Temperature coefficient (Pmpp)	-0.35%/°C	No. of diodes	3
Temperature coefficient (Isc)	+0.045%/°C	Junction box IP rating	IP 68
Temperature coefficient (Voc)	-0.27%/°C	Max. series fuse rating	25 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1000V _{DC}

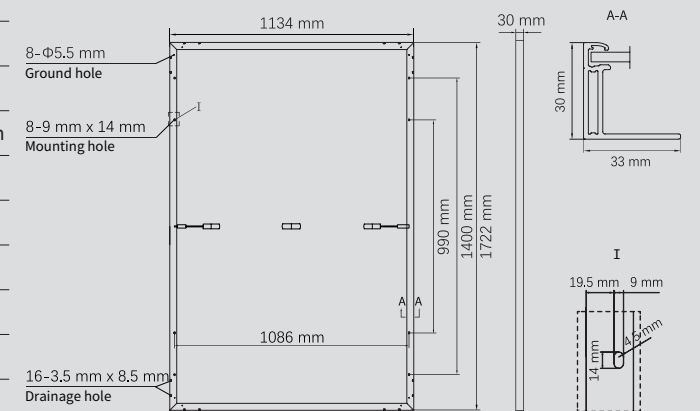
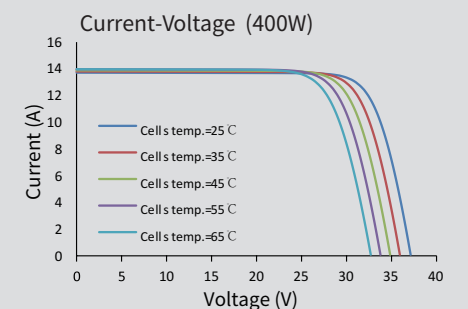
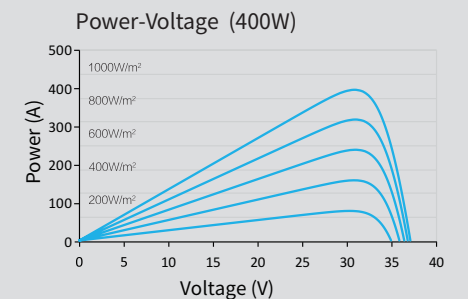
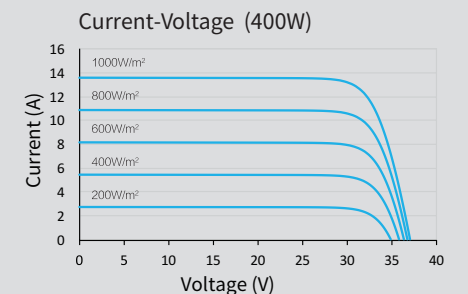
Operating Parameters

Mechanical Specifications

Outer dimensions (L x W x H)	1722 x 1134 x 30 mm
Cell Type	P type Mono-crystalline
No. of cells	108 (6*18)
Frame technology	Aluminum, black anodized
Front glass thickness	3.2 mm
Cable length (IEC/UL)	Portrait: 300 mm; Landscape: 1200 mm
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	HCB40 / MC4 (optional)
Module weight	21.6 kg (Tolerance +/- 1.0kg)
Packing unit	36 pcs / box (Subject to sales contract)
Weight of packing unit (for 40'HQ container)	821 kg
Modules per 40' HQ container	936 pcs

① Refer to Astronergy crystalline installation manual or contact technical department.
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

Curve





ASTRONERGY
A CHNT COMPANY

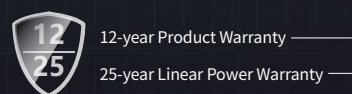
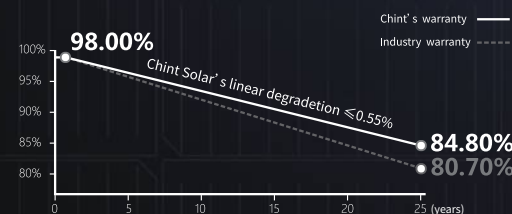
ASTRO 4 Semi

Create Sustainable and Efficient Green Energy

CHSM72M-HC
Monofacial Series (166)

445~460W

PERC+ / Multi-busbar / Half-cut
PID resistance



ISO 9001:2015:ISO Quality Management System
ISO 14001:2015:ISO Environment Management System
ISO 45001:Occupational Health and Safety
The first solar company which passed the Nord IEC/TS 62941 certification audit.



Tier 1
BloombergNEF



445~460W

POWER RANGE

0~+5W

POWER
TOLERANCE

21.2%

MAX MODULE
EFFICIENCY

$\leq 2.0\%$

FIRST YEAR
POWER DEGRADATION

$\leq 0.55\%$

YEAR 2-25
POWER DEGRADATION

Electrical Specifications

STC: Irradiance 1000W/m², Cell Temperature 25° C, AM=1.5

	445	450	455	460
Rated output (Pmpp / Wp)	445	450	455	460
Rated voltage (Vmpp / V)	41.05	41.32	41.51	41.70
Rated current (Impp / A)	10.84	10.89	10.96	11.03
Open circuit voltage (Voc / V)	48.80	49.05	49.35	49.62
Short circuit current (Isc / A)	11.30	11.37	11.44	11.51
Module efficiency	20.5%	20.7%	20.9%	21.2%

NMOT: Irradiance 800W/m², Ambient Temperature 20° C, AM=1.5, Wind Speed 1m/s

	330.8	334.5	338.2	342.0
Rated output (Pmpp / Wp)	330.8	334.5	338.2	342.0
Rated voltage (Vmpp / V)	38.12	38.37	38.55	38.72
Rated current (Impp / A)	8.68	8.72	8.78	8.83
Open circuit voltage (Voc / V)	45.70	45.94	46.22	46.47
Short circuit current (Isc / A)	9.10	9.16	9.22	9.27

Temperature Ratings (STC)

Temperature coefficient (Pmpp)	-0.35%/°C	No. of diodes	3
Temperature coefficient (Isc)	+0.050%/°C	Junction box IP rating	IP 68
Temperature coefficient (Voc)	-0.27%/°C	Max. series fuse rating	20 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V _{DC}

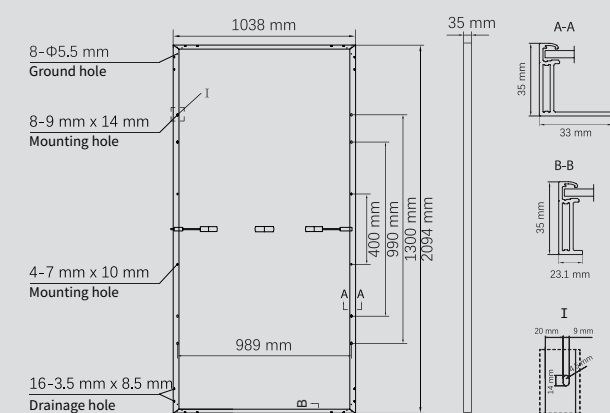
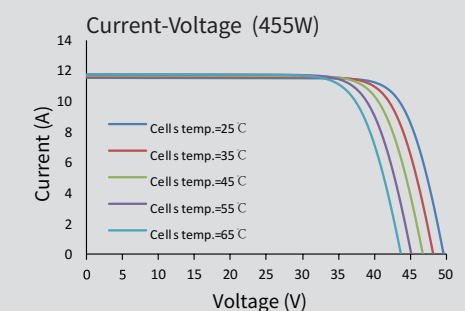
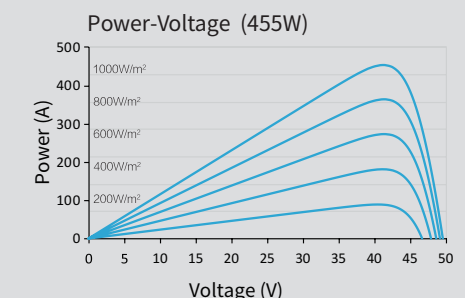
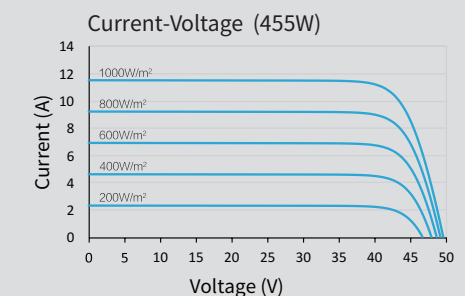
Operating Parameters

Mechanical Specifications

Outer dimensions (L x W x H)	2094 x 1038 x 35 mm
Cell Type	P type Mono-crystalline
No. of cells	144 (6*24)
Frame technology	Aluminum, silver anodized
Front glass thickness	3.2 mm
Cable length (IEC/UL)	Portrait: 300 mm; Landscape: 1300 mm
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	HCB40 / MC4-EVO2 (optional)
Module weight	23 kg (Tolerance +/- 1.0kg)
Packing unit	31 pcs / box (Subject to sales contract)
Weight of packing unit (for 40'HQ container)	749 kg
Modules per 40' HQ container	682 pcs

① Refer to Astronergy crystalline installation manual or contact technical department.
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

Curve





ASTRONERGY
A CHNT COMPANY

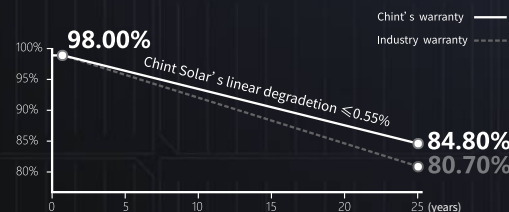
ASTRO 4 Semi

Create Sustainable and Efficient Green Energy

CHSM60M-HC
Monofacial Series (166)

370~385W

PERC+ / Multi-busbar / Half-cut
PID resistance



12-year Product Warranty (Standard)
15-year Product Warranty (Optional, special for rooftop market)
25-year Linear Power Warranty



ISO 9001:2015:ISO Quality Management System
ISO 14001:2015:ISO Environment Management System
ISO 45001:Occupational Health and Safety
The first solar company which passed the Nord IEC/TS 62941 certification audit.



Tier 1
BloombergNEF



370~385W

POWER RANGE

0~+5W

POWER TOLERANCE

21.1%

MAX MODULE EFFICIENCY

$\leq 2.0\%$

FIRST YEAR POWER DEGRADATION

$\leq 0.55\%$

YEAR 2-25 POWER DEGRADATION

Electrical Specifications

STC: Irradiance 1000W/m², Cell Temperature 25° C, AM=1.5

Rated output (Pmpp / Wp)	370	375	380	385
Rated voltage (Vmpp / V)	33.98	34.28	34.51	34.74
Rated current (Impp / A)	10.89	10.94	11.01	11.07
Open circuit voltage (Voc / V)	40.75	41.05	41.34	41.62
Short circuit current (Isc / A)	11.35	11.42	11.49	11.55
Module efficiency	20.3%	20.6%	20.9%	21.1%

NMOT: Irradiance 800W/m², Ambient Temperature 20° C, AM=1.5, Wind Speed 1m/s

Rated output (Pmpp / Wp)	275.9	279.6	283.4	287.1
Rated voltage (Vmpp / V)	31.68	31.96	32.18	32.43
Rated current (Impp / A)	8.71	8.75	8.81	8.85
Open circuit voltage (Voc / V)	38.31	38.59	38.87	39.13
Short circuit current (Isc / A)	9.13	9.19	9.24	9.29

Temperature Ratings (STC)

Temperature coefficient (Pmpp)	-0.35%/°C	No. of diodes	3
Temperature coefficient (Isc)	+0.050%/°C	Junction box IP rating	IP 68
Temperature coefficient (Voc)	-0.27%/°C	Max. series fuse rating	20 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V _{DC}

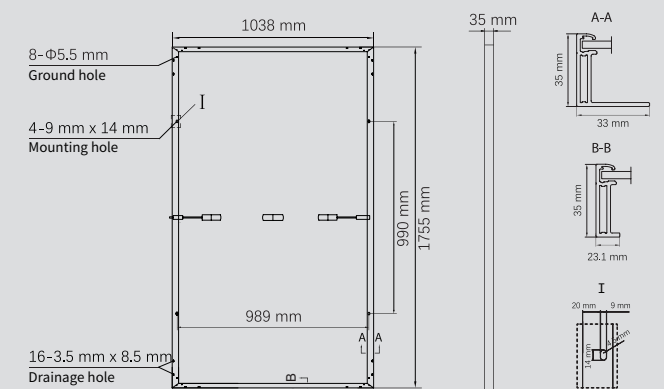
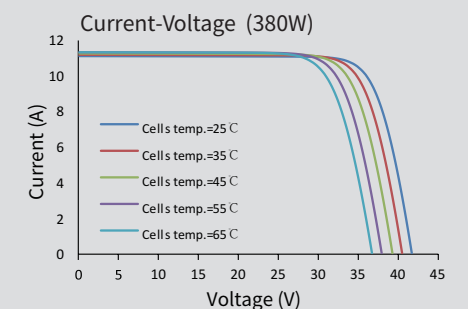
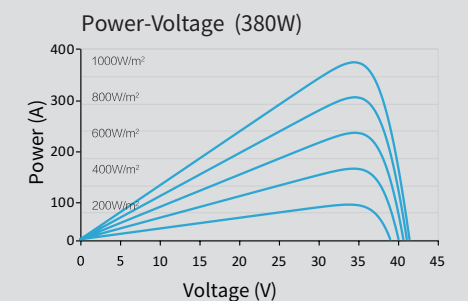
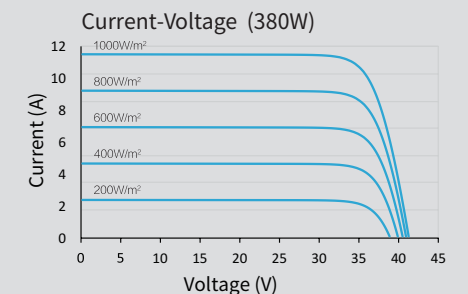
Operating Parameters

Mechanical Specifications

Outer dimensions (L x W x H)	1755 x 1038 x 35 mm
Cell Type	P type Mono-crystalline
No. of cells	120 (6*20)
Frame technology	Aluminum, silver anodized
Front glass thickness	3.2 mm
Cable length (IEC/UL)	Portrait: 300 mm; Landscape: 1200 mm
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	HCB40 / MC4-EVO2 (optional)
Module weight	19.4 kg (Tolerance +/- 1.0kg)
Packing unit	31 pcs / box (Subject to sales contract)
Weight of packing unit (for 40'HQ container)	630 kg
Modules per 40' HQ container	806 pcs

① Refer to Astronergy crystalline installation manual or contact technical department.
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

Curve





ASTRONERGY
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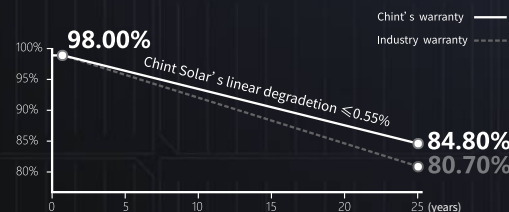
ASTRO 4 Semi

Create Sustainable and Efficient Green Energy

CHSM60M(BL)-HC
Monofacial Series (166)

360~375W

PERC+ / Multi-busbar / Half-cut
PID resistance
All black



12-year Product Warranty (Standard)
15-year Product Warranty (Optional, special for rooftop market)
25-year Linear Power Warranty



ISO 9001:2015:ISO Quality Management System
ISO 14001:2015:ISO Environment Management System
ISO 45001:Occupational Health and Safety
The first solar company which passed the Nord IEC/TS 62941 certification audit.



Tier 1
BloombergNEF



360~375W

POWER RANGE

0~+5W

POWER
TOLERANCE

20.6%

MAX MODULE
EFFICIENCY

≤ 2.0%

FIRST YEAR
POWER DEGRADATION

≤ 0.55%

YEAR 2-25
POWER DEGRADATION

Electrical Specifications

STC: Irradiance 1000W/m², Cell Temperature 25° C, AM=1.5

Rated output (Pmpp / Wp)	360	365	370	375
Rated voltage (Vmpp / V)	33.49	33.73	33.98	34.28
Rated current (Impp / A)	10.75	10.82	10.89	10.94
Open circuit voltage (Voc / V)	40.14	40.41	40.75	41.05
Short circuit current (Isc / A)	11.21	11.29	11.35	11.42
Module efficiency	19.8%	20.0%	20.3%	20.6%

NMOT: Irradiance 800W/m², Ambient Temperature 20° C, AM=1.5, Wind Speed 1m/s

Rated output (Pmpp / Wp)	268.5	272.2	275.9	279.6
Rated voltage (Vmpp / V)	31.22	31.45	31.68	31.96
Rated current (Impp / A)	8.60	8.65	8.71	8.75
Open circuit voltage (Voc / V)	37.74	37.99	38.31	38.59
Short circuit current (Isc / A)	9.02	9.08	9.13	9.19

Temperature Ratings (STC)

Temperature coefficient (Pmpp)	-0.35%/°C	No. of diodes	3
Temperature coefficient (Isc)	+0.050%/°C	Junction box IP rating	IP 68
Temperature coefficient (Voc)	-0.27%/°C	Max. series fuse rating	20 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1000V _{DC}

Operating Parameters

Mechanical Specifications

Outer dimensions (L x W x H)	1755 x 1038 x 35 mm
Cell Type	P type Mono-crystalline
No. of cells	120 (6*20)
Frame technology	Aluminum, black anodized
Front glass thickness	3.2 mm
Cable length (IEC/UL)	Portrait: 300 mm; Landscape: 1200 mm
Cable diameter (IEC/UL)	4 mm ² / 12 AWG
① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	HCB40 / MC4 (optional)
Module weight	19.4 kg (Tolerance +/- 1.0kg)
Packing unit	31 pcs / box (Subject to sales contract)
Weight of packing unit (for 40'HQ container)	630 kg
Modules per 40' HQ container	806 pcs

① Refer to Astronergy crystalline installation manual or contact technical department.
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.

Curve

