

High-power modules allow integrators and EPCs to **streamline** product procurement, **reduce** installation labor and **trim** project BOS materials cost.

# HIGH-POWER C-SI PV MODULE SPECIFICATIONS

Specification aggregation by Joe Schwartz



**M**odule manufacturers are continuously refining their cell materials, designs and manufacturing processes; optimizing cell and cell-string electrical interconnectivity; and developing specialized glass, encapsulants and structural elements to create large-format, high-power products. These approaches have resulted in the rapid expansion of a high-power module product class that solar professionals commonly delineate as products with outputs of 300 W STC and greater.

Updated for 2017, the following c-Si module specifications table includes detailed electrical and mechanical specifications for 232 models with rated outputs of 300 W STC and greater from 29 manufacturers. The included models are listed and available for deployment in US-based projects. This c-Si specifications table is not intended to be exhaustive or all-inclusive; rather, our goal is to present comparative information on a wide cross-section of high-power PV solutions for utility, commercial and select residential projects. ⊕



Courtesy Borrego Solar

## » CONTACT

Joe Schwartz / *SolarPro* / Ashland, OR /  
[joe.schwartz@solarprofessional.com](mailto:joe.schwartz@solarprofessional.com) / [solarprofessional.com](http://solarprofessional.com)

### PV Manufacturer Contact

Astronergy / 415.802.7399 / [astronergy.com](http://astronergy.com)

Auxin Solar / 408.868.4380 / [auxinsolar.com](http://auxinsolar.com)

AXITEC / 856.254.9057 / [axitecsolar.com/us](http://axitecsolar.com/us)

Boviet Solar / 877.253.2858 / [boviet.com](http://boviet.com)

Canadian Solar / 888.998.7739 / [canadiansolar.com](http://canadiansolar.com)

Centrosolar America / 877.348.2555 / [centrosolaramerica.com](http://centrosolaramerica.com)

ET Solar / 925.460.9898 / [etsolar.com](http://etsolar.com)

Hanwha Q Cells / 949.748.5996 / [q-cells.com](http://q-cells.com)

Itek Energy / 360.647.9531 / [itekenergy.com](http://itekenergy.com)

Jinko Solar / 415.402.0502 / [jinkosolar.com](http://jinkosolar.com)

Kyocera Solar / 800.223.9580 / [kyocerasolar.com](http://kyocerasolar.com)

LG / 888.865.3026 / [lgsolarusa.com](http://lgsolarusa.com)

Mission Solar Energy / 210.531.8600 / [missionsolar.com](http://missionsolar.com)

Panasonic / [business.panasonic.com/solarpanels](http://business.panasonic.com/solarpanels)

Phono Solar / 855.408.9528 / [phonosolar.com](http://phonosolar.com)

REC Group / 877.890.8930 / [recgroup.com](http://recgroup.com)

Silfab Solar / 905.255.2501 / [silfab.ca](http://silfab.ca)

Solaria / 510.270.2500 / [solaria.com](http://solaria.com)

SolarTech Universal / 561.440.8000 / [solartechuniversal.com](http://solartechuniversal.com)

SolarWorld / 503.844.3400 / [solarworld-usa.com](http://solarworld-usa.com)

Sonali Solar / 888.587.6527 / [sonalisolar.com](http://sonalisolar.com)

Suniva / 404.477.2700 / [suniva.com](http://suniva.com)

SunPower / 408.240.5500 / [us.sunpower.com](http://us.sunpower.com)

Ten K Solar / 877.432.1010 / [tenksolar.com](http://tenksolar.com)

Trina Solar / 800.696.7114 / [trinasolar.com/us](http://trinasolar.com/us)

Upsolar / 415.263.9920 / [upsolar.com/usa](http://upsolar.com/usa)

Vikram Solar / [vikramsolar.com](http://vikramsolar.com)

WINAICO / 844.946.2426 / [winaico.com](http://winaico.com)

Yingli Solar / [yinglisolar.com/us](http://yinglisolar.com/us)

## 2017 High-Power c-Si PV Module Specifications

Manufacturer	Model	No. of cells	Cell type	Rated power at STC (Wp)	Rated power tolerance (W or %)	Rated power per sq. ft. (W)	Module efficiency (%)	Max. system voltage (Vdc)	Max. power voltage (Vmp)	Max. power current (Imp)	Open-circuit voltage (Voc)	Short-circuit current (Isc)
Astronergy	CHSM6612P/HV-305	72	poly	305	0/+5 W	14.65	15.8	1,500	35.77	8.53	45.29	8.95
Astronergy	CHSM6612P/HV-310	72	poly	310	0/+5 W	14.89	16	1,500	35.8	8.68	45.42	8.99
Astronergy	CHSM6612P/HV-315	72	poly	315	0/+5 W	15.13	16.3	1,500	35.83	8.8	45.55	9.02
Astronergy	CHSM6612P/HV-320	72	poly	320	0/+5 W	15.37	16.5	1,500	35.86	8.92	45.68	9.06
Astronergy	CHSM6612P/HV-325	72	poly	325	0/+5 W	15.61	16.8	1,500	36.13	8.95	45.82	9.1
Auxin Solar	AXN6M610T-300	60	mono	300	0/+3%	17.13	18.4	1,000	32.48	9.24	40.45	9.91
Auxin Solar	AXN6M610T-305	60	mono	305	0/+3%	17.41	18.7	1,000	32.73	9.32	40.79	10.06
Auxin Solar	AXN6M612T-330	72	mono	330	0/+3%	14.36	17	1,000	37.71	8.75	46.76	9.57
Auxin Solar	AXN6M612T-335	72	mono	335	0/+3%	16.04	17.3	1,000	37.98	8.82	47.04	9.61
Auxin Solar	AXN6M612T-340	72	mono	340	0/+3%	16.28	17.5	1,000	38.32	8.96	47.18	9.64
Auxin Solar	AXN6M612T-345	72	mono	345	0/+3%	16.52	17.8	1,000	38.4	8.98	47.28	9.72
Auxin Solar	AXN6M612T-350	72	mono	350	0/+3%	16.76	18	1,000	38.48	9.1	47.37	9.81
Auxin Solar	AXN6M612T-355	72	mono	355	0/+3%	16.99	18.3	1,000	38.55	9.21	47.47	9.9
Auxin Solar	AXN6M612T-360	72	mono	360	0/+3%	17.23	18.6	1,000	38.63	9.32	47.56	9.99
Auxin Solar	AXN6M612T-365	72	mono	365	0/+3%	17.47	18.8	1,000	38.71	9.43	47.66	10.08
Auxin Solar	AXN6P612T-300	72	poly	300	0/+3%	14.36	15.5	1,000	37.66	8.05	44.86	8.54
Auxin Solar	AXN6P612T-305	72	poly	305	0/+3%	14.60	15.7	1,000	37.87	8.08	45	8.56
Auxin Solar	AXN6P612T-310	72	poly	310	0/+3%	14.84	16	1,000	38.02	8.16	45.22	8.62
Auxin Solar	AXN6P612T-315	72	poly	315	0/+3%	15.08	16.2	1,000	36.29	8.68	45.23	9.31
Auxin Solar	AXN6P612T-320	72	poly	320	0/+3%	15.32	16.5	1,000	36.59	8.75	45.51	9.38
Auxin Solar	AXN6P612T-325	72	poly	325	0/+3%	15.56	16.7	1,000	36.88	8.81	45.79	9.44
Auxin Solar	AXN6P612T-330	72	poly	330	0/+3%	15.80	17	1,000	37.22	8.87	46.08	9.5
Auxin Solar	AXN6P612T-335	72	poly	335	0/+3%	16.04	17.3	1,000	37.55	8.94	46.37	9.56
AXITEC	AC-320P/156-72S	72	poly	320	0/+5	15.32	16.49	1,000	37.39	8.58	45.59	9.18
AXITEC	AC-325P/156-72S	72	poly	325	0/+5	15.56	16.75	1,000	37.49	8.67	45.7	9.22
AXITEC	AC-330P/156-72S	72	poly	330	0/+5	15.80	17.01	1,000	37.7	8.76	45.83	9.27
AXITEC	AC-330M/156-72S	72	mono	330	0/+5	15.80	17.01	1,000	37.7	8.77	46.2	9.28
AXITEC	AC-335M/156-72S	72	mono	335	0/+5	16.04	17.26	1,000	37.9	8.85	46.4	9.29
AXITEC	AC-340M/156-72S	72	mono	340	0/+5	16.28	17.52	1,000	38	8.95	46.5	9.4
AXITEC	AC-345M/156-72S	72	mono	345	0/+5	16.52	17.7	1,000	38.1	9.06	46.6	9.48
AXITEC	AC-350M/156-72S	72	mono	350	0/+5	16.76	17.9	1,000	38.2	9.16	46.7	9.56
Boviet Solar	BVM6612P-300	72	poly	300	0/+5	14.36	15.5	1,000	37	8.12	45.3	8.79
Boviet Solar	BVM6612P-305	72	poly	305	0/+5	14.60	15.7	1,000	37.4	8.16	45.6	9.05
Boviet Solar	BVM6612P-310	72	poly	310	0/+5	14.84	16	1,000	37.7	8.22	45.8	9.08
Boviet Solar	BVM6612P-315	72	poly	315	0/+5	15.08	16.23	1,000	37.9	8.31	45.9	9.17
Boviet Solar	BVM6612P-320	72	poly	320	0/+5	15.32	16.49	1,000	38.4	8.33	46.2	9.2
Boviet Solar	BVM6612M-300	72	mono	300	0/+5	14.36	15.5	1,000	36.7	8.17	45.5	8.83
Boviet Solar	BVM6612M-305	72	mono	305	0/+5	14.60	15.7	1,000	36.7	8.31	45.5	8.98
Boviet Solar	BVM6612M-310	72	mono	310	0/+5	14.84	16	1,000	37.2	8.33	46.1	9

DNR = did not report

Nominal operating cell temp. (°C)	Pmp temp. coeff. (%/°C)	Voc temp. coeff. (%/°C)	Isc temp. coeff. (%/°C)	Series fuse rating (A)	Fire Type	Frame color	Backsheet color	Length (in.)	Width (in.)	Depth (in.)	Weight (lbs.)	Materials warranty (yrs.)	Power warranty (type, % at year)
46±2	-0.41	-0.31	0.05	15	1	silver	white	76.93	38.98	1.57	56.9	12	linear, 83 @ 30
46±2	-0.41	-0.31	0.05	15	1	silver	white	76.93	38.98	1.57	56.9	12	linear, 83 @ 30
46±2	-0.41	-0.31	0.05	15	1	silver	white	76.93	38.98	1.57	56.9	12	linear, 83 @ 30
46±2	-0.41	-0.31	0.05	15	1	silver	white	76.93	38.98	1.57	56.9	12	linear, 83 @ 30
46±2	-0.41	-0.31	0.05	15	1	silver	white	76.93	38.98	1.57	56.9	12	linear, 83 @ 30
46.7	-0.38	-0.28	0.04	15	2	slv/blk	wht/blk	64.57	39.06	1.57	41.9	10	linear, 80 @ 25
46.7	-0.38	-0.28	0.04	15	2	slv/blk	wht/blk	64.57	39.06	1.57	41.9	10	linear, 80 @ 25
46.7	-0.38	-0.28	0.04	15	2	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80 @ 25
46.7	-0.38	-0.28	0.04	15	2	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80 @ 25
46.7	-0.38	-0.28	0.04	15	2	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80 @ 25
46.7	-0.38	-0.28	0.04	15	2	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80 @ 25
46.7	-0.38	-0.28	0.04	15	2	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80 @ 25
46.7	-0.38	-0.28	0.04	15	2	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80 @ 25
46.7	-0.38	-0.28	0.04	15	2	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80 @ 25
46.7	-0.38	-0.28	0.04	15	2	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80 @ 25
46.7	-0.38	-0.28	0.04	15	2	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80 @ 25
47	-0.42	-0.32	0.05	15	1	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80.7 @ 25
47	-0.42	-0.32	0.05	15	1	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80.7 @ 25
47	-0.42	-0.32	0.05	15	1	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80.7 @ 25
47	-0.42	-0.32	0.05	15	1	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80.7 @ 25
47	-0.42	-0.32	0.05	15	1	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80.7 @ 25
47	-0.42	-0.32	0.05	15	1	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80.7 @ 25
47	-0.42	-0.32	0.05	15	1	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80.7 @ 25
47	-0.42	-0.32	0.05	15	1	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80.7 @ 25
47	-0.42	-0.32	0.05	15	1	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80.7 @ 25
47	-0.42	-0.32	0.05	15	1	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80.7 @ 25
47	-0.42	-0.32	0.05	15	1	slv/blk	wht/blk	77.01	39.06	1.57	47.2	10	linear, 80.7 @ 25
45±2	-0.42	-0.30	0.04	15	1	silver	white	77.01	39.06	1.57	50.7	12	linear, 85 @ 25
45±2	-0.42	-0.30	0.04	15	1	silver	white	77.01	39.06	1.57	50.7	12	linear, 85 @ 25
45±2	-0.42	-0.30	0.04	15	1	silver	white	77.01	39.06	1.57	50.7	12	linear, 85 @ 25
45±2	-0.40	-0.30	0.04	15	1	silver	white	77.01	39.06	1.57	50.7	12	linear, 85 @ 25
45±2	-0.40	-0.30	0.04	15	1	silver	white	77.01	39.06	1.57	50.7	12	linear, 85 @ 25
45±2	-0.40	-0.30	0.04	15	1	silver	white	77.01	39.06	1.57	50.7	12	linear, 85 @ 25
45±2	-0.40	-0.30	0.04	15	1	silver	white	77.01	39.06	1.57	50.7	12	linear, 85 @ 25
45±2	-0.40	-0.30	0.04	15	1	silver	white	77.01	39.06	1.57	50.7	12	linear, 85 @ 25
45±2	-0.43	-0.33	0.05	15	1	silver	white	77.01	39.06	1.57	58.42	12	linear, 80 @ 25
45±2	-0.43	-0.33	0.05	15	1	silver	white	77.01	39.06	1.57	58.42	12	linear, 80 @ 25
45±2	-0.43	-0.33	0.05	15	1	silver	white	77.01	39.06	1.57	58.42	12	linear, 80 @ 25
45±2	-0.43	-0.33	0.05	15	1	silver	white	77.01	39.06	1.57	58.42	12	linear, 80 @ 25
45±2	-0.43	-0.33	0.05	15	1	silver	white	77.01	39.06	1.57	58.42	12	linear, 80 @ 25
45±2	-0.44	-0.35	0.04	15	1	silver	white	77.01	39.06	1.57	58.42	12	linear, 80 @ 25
45±2	-0.44	-0.35	0.04	15	1	silver	white	77.01	39.06	1.57	58.42	12	linear, 80 @ 25
45±2	-0.44	-0.35	0.04	15	1	silver	white	77.01	39.06	1.57	58.42	12	linear, 80 @ 25

## 2017 High-Power c-Si PV Module Specifications

Manufacturer	Model	No. of cells	Cell type	Rated power at STC (Wp)	Rated power tolerance (W or %)	Rated power per sq. ft. (W)	Module efficiency (%)	Max. system voltage (Vdc)	Max. power voltage (Vmp)	Max. power current (Imp)	Open-circuit voltage (Voc)	Short-circuit current (Isc)
Boviet Solar	BVM6612M-315	72	mono	315	0/+5	15.08	16.23	1,000	37.6	8.38	46.1	9.05
Boviet Solar	BVM6612M-320	72	mono	320	0/+5	15.32	16.49	1,000	37.8	8.46	46.3	9.08
Canadian Solar	CS6K-300MS	60	mono	300	0/+5	17.00	18.33	1,000	32.5	9.24	39.7	9.83
Canadian Solar	CS6U-315P	72	poly	315	0/+5	15.03	16.2	1,500	36.6	8.61	45.1	9.18
Canadian Solar	CS6U-320P	72	poly	320	0/+5	15.27	16.46	1,500	36.8	8.69	45.3	9.26
Canadian Solar	CS6U-325P	72	poly	325	0/+5	15.50	16.72	1,500	37	8.78	45.5	9.34
Canadian Solar	CS6U-330P	72	poly	330	0/+5	15.74	16.97	1,500	37.2	8.88	45.6	9.45
Canadian Solar	CS6U-330M	72	mono	330	0/+5	15.74	16.97	1,500	37.5	8.8	45.9	9.31
Canadian Solar	CS6U-335M	72	mono	335	0/+5	15.98	17.23	1,500	37.8	8.87	46.1	9.41
Canadian Solar	CS6U-340M	72	mono	340	0/+5	16.22	17.49	1,500	37.9	8.97	46.2	9.48
Canadian Solar	CS6U-345M	72	mono	345	0/+5	16.46	17.74	1,500	38.1	9.06	46.4	9.56
Centrosolar America	CP72 315SW	72	poly	315	0/+5	15.08	16.2	1,000	37.18	8.49	45.91	9.01
Centrosolar America	CP72 320SW	72	poly	320	0/+5	15.32	16.5	1,000	37.36	8.58	46.15	9.1
Centrosolar America	CM72 325SW	72	mono	325	0/+5	15.56	16.7	1,000	37.22	8.74	45.65	9.24
Centrosolar America	CM72 330SW	72	mono	330	0/+5	15.80	17	1,000	37.38	8.85	45.92	9.32
Centrosolar America	CM72 335SW	72	mono	335	0/+5	16.04	17.3	1,000	37.47	8.96	46.04	9.41
Centrosolar America	EP72 315BW	72	poly	315	0/+5	15.08	16.23	1,000	36.81	8.56	45.75	9.12
Centrosolar America	EP72 320BW	72	poly	320	0/+5	15.32	16.49	1,000	37.13	8.62	45.94	9.24
Centrosolar America	EP72 325BW	72	poly	325	0/+5	15.56	16.75	1,000	37.28	8.72	46.31	9.28
Centrosolar America	EM72 330BW	72	mono	330	0/+5	15.80	17.01	1,000	37.55	8.79	46.64	9.29
Centrosolar America	EM72 335BW	72	mono	335	0/+5	16.04	17.26	1,000	37.94	8.83	46.75	9.33
Centrosolar America	EM72 340BW	72	mono	340	0/+5	16.28	17.52	1,000	38.17	8.91	46.91	9.41
ET Solar	ET-P672310BB-310W	72	poly	310	0/+5	14.84	15.98	1,000	36.54	8.49	45.65	9.08
ET Solar	ET-P672315BB-315W	72	poly	315	0/+5	15.08	16.23	1,000	36.81	8.56	45.75	9.12
ET Solar	ET-P672320BB-320W	72	poly	320	0/+5	15.32	16.49	1,000	37.13	8.62	45.94	9.24
ET Solar	ET-P672315WW/WB-315W	72	poly	315	0/+5	15.08	16.23	1,000	36.81	8.56	45.75	9.12
ET Solar	ET-P672320WW/WB-320W	72	poly	320	0/+5	15.32	16.49	1,000	37.13	8.62	45.94	9.24
ET Solar	ET-P672325WW/WB-325W	72	poly	325	0/+5	15.56	16.75	1,000	37.28	8.72	46.13	9.28
ET Solar	ET-M672325BB-325W	72	mono	325	0/+5	15.56	16.75	1,000	37.11	8.76	46.54	9.11
ET Solar	ET-M672330BB-330W	72	mono	330	0/+5	15.80	17.01	1,000	37.55	8.79	46.64	9.29
ET Solar	ET-M672335BB-335W	72	mono	335	0/+5	16.04	17.26	1,000	37.94	8.83	46.75	9.33
ET Solar	ET-M672340BB-340W	72	mono	340	0/+5	16.28	17.52	1,000	38.17	8.91	46.91	9.41
ET Solar	ET-M672345BB-345W	72	mono	345	0/+5	16.52	17.78	1,000	38.38	8.99	47.13	9.48
ET Solar	ET-M672335WW/WB-335	72	mono	335	0/+5	16.04	17.26	1,000	37.9	8.83	46.75	9.33
ET Solar	ET-M672340WW/WB-340	72	mono	340	0/+5	16.28	17.52	1,000	38.17	8.91	46.91	9.41
ET Solar	ET-M672345WW/WB-345	72	mono	345	0/+5	16.52	17.78	1,000	38.38	8.99	47.13	9.48
ET Solar	ET-M672350WW/WB-350	72	mono	350	0/+5	16.76	18.04	1,000	38.51	9.09	47.64	9.59
ET Solar	ET-M672355WW/WB-355	72	mono	355	0/+5	16.99	18.3	1,000	38.98	9.12	47.74	9.65
Hanwha Q Cells	Q.Peak BLK-G4.1-300	60	mono	300	0/+5	16.69	18	1,000	32.41	9.26	39.76	9.77

DNR = did not report

Nominal operating cell temp. (°C)	Pmp temp. coeff. (%/°C)	Voc temp. coeff. (%/°C)	Isc temp. coeff. (%/°C)	Series fuse rating (A)	Fire Type	Frame color	Backsheet color	Length (in.)	Width (in.)	Depth (in.)	Weight (lbs.)	Materials warranty (yrs.)	Power warranty (type, % at year)
45±2	-0.44	-0.35	0.04	15	1	silver	white	77.01	39.06	1.57	58.42	12	linear, 80 @ 25
45±2	-0.44	-0.35	0.04	15	1	silver	white	77.01	39.06	1.57	58.42	12	linear, 80 @ 25
45±2	-0.39	-0.30	0.05	15	1	silver	white	65	39.1	1.57	40.1	10	linear, 80.7 @ 25
45±2	-0.41	-0.31	0.05	15	1	silver	white	77.2	39.1	1.57	49.4	10	linear, 80.7 @ 25
45±2	-0.41	-0.31	0.05	15	1	silver	white	77.2	39.1	1.57	49.4	10	linear, 80.7 @ 25
45±2	-0.41	-0.31	0.05	15	1	silver	white	77.2	39.1	1.57	49.4	10	linear, 80.7 @ 25
45±2	-0.41	-0.31	0.05	15	1	silver	white	77.2	39.1	1.57	49.4	10	linear, 80.7 @ 25
45±2	-0.41	-0.31	0.05	15	1	silver	white	77.2	39.1	1.57	49.4	10	linear, 80.7 @ 25
45±2	-0.41	-0.31	0.05	15	1	silver	white	77.2	39.1	1.57	49.4	10	linear, 80.7 @ 25
45±2	-0.41	-0.31	0.05	15	1	silver	white	77.2	39.1	1.57	49.4	10	linear, 80.7 @ 25
45±2	-0.41	-0.31	0.05	15	1	silver	white	77.2	39.1	1.57	49.4	10	linear, 80.7 @ 25
45±2	-0.41	-0.31	0.05	15	1	silver	white	77.2	39.1	1.57	49.4	10	linear, 80.7 @ 25
44±2	-0.42	-0.31	0.05	15	1	silver	white	76.99	39.07	1.57	56.2	10	linear, 80.2 @ 25
44±2	-0.42	-0.31	0.05	15	1	silver	white	76.99	39.07	1.57	56.2	10	linear, 80.2 @ 25
44±2	-0.43	-0.32	0.04	15	1	silver	white	76.99	39.07	1.57	56.2	10	linear, 80.2 @ 25
44±2	-0.43	-0.32	0.04	15	1	silver	white	76.99	39.07	1.57	56.2	10	linear, 80.2 @ 25
44±2	-0.43	-0.32	0.04	15	1	silver	white	76.99	39.07	1.57	56.2	10	linear, 80.2 @ 25
45±2	-0.41	-0.34	0.04	15	1	black	white	77.01	39.06	1.58	56.66	10	linear, 80.2 @ 25
45±2	-0.41	-0.34	0.04	15	1	black	white	77.01	39.06	1.58	56.66	10	linear, 80.2 @ 25
45±2	-0.41	-0.34	0.04	15	1	black	white	77.01	39.06	1.58	56.66	10	linear, 80.2 @ 25
44.4±2	-0.43	-0.30	0.06	15	1	black	white	77.01	39.06	1.58	56.66	10	linear, 80.2 @ 25
44.4±2	-0.43	-0.30	0.06	15	1	black	white	77.01	39.06	1.58	56.66	10	linear, 80.2 @ 25
44.4±2	-0.43	-0.30	0.06	15	1	black	white	77.01	39.06	1.58	56.66	10	linear, 80.2 @ 25
45±2	-0.41	-0.34	0.04	15	1	black	black	77.01	39.06	1.58	49.6	10	linear, 81.9 @ 25
45±2	-0.41	-0.34	0.04	15	1	black	black	77.01	39.06	1.58	49.6	10	linear, 81.9 @ 25
45±2	-0.41	-0.34	0.04	15	1	black	black	77.01	39.06	1.58	49.6	10	linear, 81.9 @ 25
45±2	-0.41	-0.34	0.04	15	1	slv/blk	white	77.01	39.06	1.58	49.6	10	linear, 81.9 @ 25
45±2	-0.41	-0.34	0.04	15	1	slv/blk	white	77.01	39.06	1.58	49.6	10	linear, 81.9 @ 25
45±2	-0.41	-0.34	0.04	15	1	slv/blk	white	77.01	39.06	1.58	49.6	10	linear, 81.9 @ 25
45±2	-0.41	-0.34	0.04	15	1	slv/blk	white	77.01	39.06	1.58	49.6	10	linear, 81.9 @ 25
45±2	-0.43	-0.30	0.06	15	1	black	black	77.01	39.06	1.58	49.6	10	linear, 81.4 @ 25
45±2	-0.43	-0.30	0.06	15	1	black	black	77.01	39.06	1.58	49.6	10	linear, 81.4 @ 25
45±2	-0.43	-0.30	0.06	15	1	black	black	77.01	39.06	1.58	49.6	10	linear, 81.4 @ 25
45±2	-0.43	-0.30	0.06	15	1	black	black	77.01	39.06	1.58	49.6	10	linear, 81.4 @ 25
45±2	-0.42	-0.30	0.05	15	1	slv/blk	white	77.01	39.06	1.58	49.6	10	linear, 81.4 @ 25
45±2	-0.42	-0.30	0.05	15	1	slv/blk	white	77.01	39.06	1.58	49.6	10	linear, 81.4 @ 25
45±2	-0.42	-0.30	0.05	15	1	slv/blk	white	77.01	39.06	1.58	49.6	10	linear, 81.4 @ 25
45±2	-0.42	-0.30	0.05	15	1	slv/blk	white	77.01	39.06	1.58	49.6	10	linear, 81.4 @ 25
45±2	-0.42	-0.30	0.05	15	1	slv/blk	white	77.01	39.06	1.58	49.6	10	linear, 81.4 @ 25
45±2	-0.42	-0.30	0.05	15	1	slv/blk	white	77.01	39.06	1.58	49.6	10	linear, 81.4 @ 25
45±3	-0.39	-0.28	0.04	20	1	black	black	65.7	39.4	1.26	41.45	12	linear, 83.6 @ 25

## 2017 High-Power c-Si PV Module Specifications

Manufacturer	Model	No. of cells	Cell type	Rated power at STC (Wp)	Rated power tolerance (W or %)	Rated power per sq. ft. (W)	Module efficiency (%)	Max. system voltage (Vdc)	Max. power voltage (Vmp)	Max. power current (Imp)	Open-circuit voltage (Voc)	Short-circuit current (Isc)
Hanwha Q Cells	Q.Peak BLK-G4.1-305	60	mono	305	0/+5	16.97	18.3	1,000	32.62	9.35	40.05	9.84
Hanwha Q Cells	Q.Plus L-G4.2-340	72	mono	340	0/+5	15.83	17.1	1,500	37.63	9.03	47.07	9.59
Hanwha Q Cells	Q.Plus L-G4.2-345	72	mono	345	0/+5	16.06	17.3	1,500	37.93	9.09	47.32	9.64
Hanwha Q Cells	Q.Peak L-G4.2-365	72	mono	365	0/+5	16.99	18.3	1,500	39.1	9.33	48	9.83
Hanwha Q Cells	Q.Peak L-G4.2-370	72	mono	370	0/+5	17.23	18.6	1,500	39.32	9.41	48.28	9.89
Itek Energy	IT 300 HE	60	mono	300	DNR	17.05	18.23	1,000	32.9	9	39.8	9.7
Itek Energy	IT 305 HE	60	mono	305	DNR	17.33	18.63	1,000	33.1	9.1	40	9.8
Itek Energy	IT 310 HE	60	mono	310	DNR	17.62	18.94	1,000	33.2	9.2	40.1	9.9
JinkoSolar	JKM300M	60	mono	300	0/+3%	17.02	18.33	1,000	32.6	9.21	40.1	9.72
JinkoSolar	JKM315PP-72-V	72	poly	315	0/+3%	15.08	16.23	1,500	37.2	8.48	46.2	9.01
JinkoSolar	JKM320PP-72-V	72	poly	320	0/+3%	15.32	16.49	1,500	37.4	8.56	46.4	9.05
JinkoSolar	JKM325PP-72-V	72	poly	325	0/+3%	15.56	16.75	1,500	37.6	8.66	46.7	9.1
JinkoSolar	JKM330PP-72-V	72	poly	330	0/+3%	15.80	17.01	1,500	37.8	8.74	46.9	9.14
JinkoSolar	JKM335PP-72-V	72	poly	335	0/+3%	16.04	17.26	1,500	38	8.82	47.2	9.18
Kyocera Solar	KU315-7ZPA	72	poly	315	0/+5	15.08	16.23	1,000	36.5	8.64	45.4	9.15
Kyocera Solar	KU320-7ZPA	72	poly	320	0/+5	15.32	16.43	1,000	36.8	8.7	45.5	9.22
LG	LG300N1K-G4	60	mono	300	0/+3%	16.95	18.3	1,000	32.5	9.26	39.7	9.7
LG	LG305N1K-G4	60	mono	305	0/+3%	17.23	18.6	1,000	32.9	9.28	40.1	9.74
LG	LG305N1C-G4	60	mono	305	0/+3%	17.23	18.6	1,000	32.5	9.39	40.1	9.93
LG	LG310N1C-G4	60	mono	310	0/+3%	17.51	18.9	1,000	32.8	9.45	40.4	9.96
LG	LG315N1C-G4	60	mono	315	0/+3%	17.79	19.2	1,000	33.2	9.5	40.6	10.02
LG	LG320N1C-G4	60	mono	320	0/+3%	18.08	19.5	1,000	33.6	9.53	40.9	10.05
LG	LG335S2W-G4	72	mono	335	0/+3%	15.88	17.1	1,000	37.5	8.94	46.2	9.48
LG	LG340S2W-G4	72	mono	340	0/+3%	16.11	17.4	1,000	37.7	9.02	46.4	9.54
LG	LG365N2W-G4	72	mono	365	0/+3%	17.30	18.6	1,000	38.9	9.39	47.7	9.92
LG	LG370N2W-G4	72	mono	370	0/+3%	17.54	18.9	1,000	39.2	9.44	48	18.9
LG	LG375N2W-G4	72	mono	375	0/+3%	17.77	19.1	1,000	39.6	9.5	48.3	10.04
Mission Solar Energy	MSE300SQ5K	60	mono	300	0/+3%	16.77	18.06	1,000	32.38	9.27	39.72	9.77
Mission Solar Energy	MSE305SQ5K	60	mono	305	0/+3%	17.05	18.36	1,000	32.61	9.36	39.95	9.81
Mission Solar Energy	MSE300SQ5T	60	mono	300	0/+3%	16.77	18.05	1,000	32.8	9.17	40.18	9.61
Mission Solar Energy	MSE325SQ4J	72	mono	325	0/+3%	15.21	16.38	1,500	37.72	8.62	45.79	9.08
Mission Solar Energy	MSE330SQ4J	72	mono	330	0/+3%	15.44	16.63	1,500	37.85	8.72	46.12	9.23
Mission Solar Energy	MSE335SQ4J	72	mono	335	0/+3%	15.68	16.93	1,500	37.89	8.87	46.14	9.38
Mission Solar Energy	MSE355SQ4S	72	mono	355	0/+3%	16.61	18.05	1,500	38.98	9.19	47.68	9.76
Mission Solar Energy	MSE360SQ4S	72	mono	360	0/+3%	16.85	18.36	1,500	39.28	9.28	48.08	9.79
Mission Solar Energy	MSE365SQ4S	72	mono	365	0/+3%	17.08	18.46	1,500	39.32	9.32	48.12	9.81
Panasonic	VBHN310KA01	96	HIT	310	0/+10%	17.18	18.5	600	58.1	5.34	69.9	5.78
Panasonic	VBHN315KA01	96	HIT	315	0/+10%	17.46	18.8	600	58.4	5.4	70.2	5.83
Panasonic	VBHN320KA01	96	HIT	320	0/+10%	17.74	19.1	600	58.7	5.46	70.5	5.89

DNR = did not report

Nominal operating cell temp. (°C)	Pmp temp. coeff. (%/°C)	Voc temp. coeff. (%/°C)	Isc temp. coeff. (%/°C)	Series fuse rating (A)	Fire Type	Frame color	Backsheet color	Length (in.)	Width (in.)	Depth (in.)	Weight (lbs.)	Materials warranty (yrs.)	Power warranty (type, % at year)
45±3	-0.39	-0.28	0.04	20	1	black	black	65.7	39.4	1.26	41.45	12	linear, 83.6 @ 25
45±3	-0.40	-0.29	0.04	15	1	silver	white	78.5	39.4	1.38	52.9	12	linear, 83 @ 25
45±3	-0.40	-0.29	0.04	15	1	silver	white	78.5	39.4	1.38	52.9	12	linear, 83 @ 25
45±3	-0.39	-0.28	0.04	15	1	silver	white	78.5	39.4	1.38	52.9	12	linear, 83.6 @ 25
45±3	-0.39	-0.28	0.04	15	1	silver	white	78.5	39.4	1.38	52.9	12	linear, 83.6 @ 25
48.2	-0.47	-0.32	0.04	15	2	silver	white	64.8	39.1	2	43	10	linear, 80 @25
48.2	-0.47	-0.32	0.04	15	2	silver	white	64.8	39.1	2	43	10	linear, 80 @25
48.2	-0.47	-0.32	0.04	15	2	silver	white	64.8	39.1	2	43	10	linear, 80 @25
45±2	-0.39	-0.29	0.05	15	1	silver	white	64.97	39.06	1.57	41.9	10	linear, 80.2 @ 25
45±2	-0.40	-0.30	0.06	15	1	silver	white	77.01	39.06	1.57	58.4	10	linear, 80.2 @ 25
45±2	-0.40	-0.30	0.06	15	1	silver	white	77.01	39.06	1.57	58.4	10	linear, 80.2 @ 25
45±2	-0.40	-0.30	0.06	15	1	silver	white	77.01	39.06	1.57	58.4	10	linear, 80.2 @ 25
45±2	-0.40	-0.30	0.06	15	1	silver	white	77.01	39.06	1.57	58.4	10	linear, 80.2 @ 25
45±2	-0.40	-0.30	0.06	15	1	silver	white	77.01	39.06	1.57	58.4	10	linear, 80.2 @ 25
45	-0.46	-0.49	0.02	15	2	black	white	77.01	39.06	1.57	60.6	10	linear, 80 @25
45	-0.46	-0.49	0.02	15	2	black	white	77.01	39.06	1.57	60.6	10	linear, 80 @25
45±3	-0.38	-0.28	0.03	20	2	black	black	64.75	39.37	1.57	37.48	12	linear, 83.6 @ 25
45±3	-0.38	-0.28	0.03	20	2	black	black	64.75	39.37	1.57	37.48	12	linear, 83.6 @ 25
46±3	-0.38	-0.28	0.03	20	2	black	white	64.75	39.37	1.57	37.48	12	linear, 83.6 @ 25
46±3	-0.38	-0.28	0.03	20	2	black	white	64.75	39.37	1.57	37.48	12	linear, 83.6 @ 25
46±3	-0.38	-0.28	0.03	20	2	black	white	64.75	39.37	1.57	37.48	12	linear, 83.6 @ 25
46±3	-0.38	-0.28	0.03	20	2	black	white	64.75	39.37	1.57	37.48	12	linear, 83.6 @ 25
46±3	-0.42	-0.30	0.03	20	2	silver	white	77.17	39.37	1.81	44.75	12	linear, 83.6 @ 25
46±3	-0.42	-0.30	0.03	20	2	silver	white	77.17	39.37	1.81	44.75	12	linear, 83.6 @ 25
45±3	-0.38	-0.28	0.03	20	2	silver	white	77.17	39.37	1.81	44.75	12	linear, 83.6 @ 25
45±3	-0.38	-0.28	0.03	20	2	silver	white	77.17	39.37	1.81	44.75	12	linear, 83.6 @ 25
45±3	-0.38	-0.28	0.03	20	2	silver	white	77.17	39.37	1.81	44.75	12	linear, 83.6 @ 25
44±2	-0.43	-0.32	0.04	15	1	black	white	65.51	39.33	1.57	40.1	DNR	linear, 80.2 @ 25
44±2	-0.43	-0.32	0.04	15	1	black	white	65.51	39.33	1.57	40.1	DNR	linear, 80.2 @ 25
44±2	-0.43	-0.32	0.04	15	1	black	black	65.51	39.33	1.57	40.1	DNR	linear, 80.2 @ 25
44±2	-0.42	-0.32	0.05	15	1	silver	white	78.23	39.33	1.57	47.6	DNR	linear, 80.2 @ 25
44±2	-0.42	-0.32	0.05	15	1	silver	white	78.23	39.33	1.57	47.6	DNR	linear, 80.2 @ 25
44±2	-0.42	-0.32	0.05	15	1	silver	white	78.23	39.33	1.57	47.6	DNR	linear, 80.2 @ 25
44±2	-0.38	-0.28	0.05	15	1	silver	white	78.23	39.33	1.57	47.6	DNR	linear, 80.2 @ 25
44±2	-0.38	-0.28	0.05	15	1	silver	white	78.23	39.33	1.57	47.6	DNR	linear, 80.2 @ 25
44±2	-0.38	-0.28	0.05	15	1	silver	white	78.23	39.33	1.57	47.6	DNR	linear, 80.2 @ 25
44	-0.29	-0.17	1.79 mA	15	2	black	black	62.6	41.5	1.4	40.81	15	linear, 80.6 @ 25
44	-0.29	-0.17	1.79 mA	15	2	black	black	62.6	41.5	1.4	40.81	15	linear, 80.6 @ 25
44	-0.29	-0.17	1.79 mA	15	2	black	black	62.6	41.5	1.4	40.81	15	linear, 80.6 @ 25



## 2017 High-Power c-Si PV Module Specifications

Manufacturer	Model	No. of cells	Cell type	Rated power at STC (Wp)	Rated power tolerance (W or %)	Rated power per sq. ft. (W)	Module efficiency (%)	Max. system voltage (Vdc)	Max. power voltage (Vmp)	Max. power current (Imp)	Open-circuit voltage (Voc)	Short-circuit current (Isc)
Panasonic	VBHN325SA16	96	HIT	325	0/+10%	18.01	19.4	600	57.6	5.65	69.6	6.03
Panasonic	VBHN330SA16	96	HIT	330	0/+10%	18.29	19.7	600	58	5.7	69.7	6.07
Phono Solar	PS305P-24/T	72	poly	305	±3%	14.59	15.72	1,000	36.5	8.36	45.8	8.73
Phono Solar	PS310P-24/T	72	poly	310	±3%	14.83	15.98	1,000	36.7	8.45	46	8.8
Phono Solar	PS315P-24/T	72	poly	315	±3%	15.07	16.23	1,000	36.9	8.55	46.2	8.88
Phono Solar	PS320P-24/T	72	poly	320	±3%	15.31	16.49	1,000	37	8.65	46.4	8.95
Phono Solar	PS310M-24/T	72	mono	310	±3%	14.83	15.98	1,000	37.1	8.36	46.3	8.75
Phono Solar	PS315M-24/T	72	mono	315	±3%	15.07	16.23	1,000	37.2	8.46	46.5	8.82
Phono Solar	PS320M-24/T	72	mono	320	±3%	15.31	16.49	1,000	37.4	8.55	46.7	8.9
Phono Solar	PS325M-24/T	72	mono	325	±3%	15.54	16.75	1,000	37.7	8.62	46.9	8.95
Phono Solar	PS330M-24/T	72	mono	330	±3%	15.78	17	1,000	38	8.68	47.1	8.99
Phono Solar	PS335M-24/T	72	mono	335	±3%	16.02	17.26	1,000	38.4	8.72	47.2	9.04
REC Group	REC300PE72	72	poly	300	0/+5 W	14.29	15.4	1,000	36.5	8.22	44.9	8.76
REC Group	REC305PE72	72	poly	305	0/+5 W	14.53	15.6	1,000	36.9	8.27	45.2	8.82
REC Group	REC310PE72	72	poly	310	0/+5 W	14.77	15.9	1,000	37.2	8.34	45.5	8.88
REC Group	REC315PE72	72	poly	315	0/+5 W	15.01	16.2	1,000	37.5	8.4	45.8	8.93
REC Group	REC320PE72	72	poly	320	0/+5 W	15.25	16.4	1,000	37.9	8.45	46.1	8.99
REC Group	REC325PE72	72	poly	325	0/+5 W	15.25	16.7	1,000	38.5	8.46	46.4	9.05
REC Group	REC330TP72	144	poly	330	0/+5 W	15.29	16.4	1,500	38.1	8.67	46	9.22
REC Group	REC335TP72	144	poly	335	0/+5 W	15.52	16.7	1,500	38.3	8.75	46.2	9.27
REC Group	REC340TP72	144	poly	340	0/+5 W	15.75	16.9	1,500	38.5	8.84	46.3	9.32
Silfab Solar	SLA300M	60	mono	300	0/+5 W	17.04	18.8	1,000	32.9	9.26	40.53	9.76
Silfab Solar	SLA X White 300	60	mono	300	0/+5 W	17.04	18.4	1,000	32.4	9.26	39.7	9.89
Silfab Solar	SLG X Clear 335	72	mono	335	0/+5 W	15.94	17.2	1,000	37.72	8.88	47.26	9.38
Silfab Solar	SLG X Clear 340	72	mono	340	0/+5 W	16.18	17.4	1,000	38	8.95	47.36	9.45
Silfab Solar	SLG X Clear 345	72	mono	345	0/+5 W	16.42	17.7	1,000	38.32	9.01	47.46	9.55
Silfab Solar	SLG X White 340	72	mono	340	0/+5 W	16.18	17.4	1,000	37.72	9.02	47.26	9.52
Silfab Solar	SLG X White 345	72	mono	345	0/+5 W	16.42	17.7	1,000	38	9.08	47.36	9.6
Silfab Solar	SLG X White 350	72	mono	350	0/+5 W	16.65	18	1,000	38.32	9.14	47.46	9.7
Solaria	320R-BX	DNR	mono	320	0/+3%	17.36	18.7	1,000	36.5	8.77	44.3	9.36
Solaria	325R-BX	DNR	mono	325	0/+3%	17.63	19	1,000	36.7	8.86	44.5	9.4
Solaria	325R-PX	DNR	mono	325	0/+3%	17.63	19	1,000	36.4	8.93	44.3	9.46
Solaria	330R-PX	DNR	mono	330	0/+3%	17.90	19.3	1,000	36.6	9.02	44.5	9.49
Solaria	PowerXT-BX-395	DNR	mono	395	0/+3%	17.44	18.7	1,000	36.6	9.02	44.5	9.49
Solaria	PowerXT-BX-400	DNR	mono	400	0/+3%	17.66	19	1,000	36.6	9.02	44.5	9.49
Solaria	PowerXT-WX-400	DNR	mono	400	0/+3%	17.66	19	1,000	36.6	9.02	44.5	9.49
Solaria	PowerXT-WX-405	DNR	mono	405	0/+3%	17.88	19.3	1,000	36.6	9.02	44.5	9.49
SolarTech Universal	STU 300-HJT	60	mono	300	0/+5 W	16.83	18.4	1,000	35.7	8.4	44.4	9.8
SolarTech Universal	STU-PERC-300	60	mono	300	0/+5 W	16.83	18.4	1,000	33.4	9.3	41.1	9.8

DNR = did not report

Nominal operating cell temp. (°C)	Pmp temp. coeff. (%/°C)	Voc temp. coeff. (%/°C)	Isc temp. coeff. (%/°C)	Series fuse rating (A)	Fire Type	Frame color	Backsheet color	Length (in.)	Width (in.)	Depth (in.)	Weight (lbs.)	Materials warranty (yrs.)	Power warranty (type, % at year)
44	-0.29	-0.17	1.81 mA	15	2	black	white	62.6	41.5	1.4	40.81	15	linear, 80.6 @ 25
44	-0.29	-0.17	1.82 mA	15	2	black	white	62.6	41.5	1.4	40.81	15	linear, 80.6 @ 25
45±2	-0.40	-0.31	0.06	15	1	slv/blk	wht/blk	77	39.1	1.8	52.9	10	step, 80 @ 25
45±2	-0.40	-0.31	0.06	15	1	slv/blk	wht/blk	77	39.1	1.8	52.9	10	step, 80 @ 25
45±2	-0.40	-0.31	0.06	15	1	slv/blk	wht/blk	77	39.1	1.8	52.9	10	step, 80 @ 25
45±2	-0.40	-0.31	0.06	15	1	slv/blk	wht/blk	77	39.1	1.8	52.9	10	step, 80 @ 25
45±2	-0.45	-0.35	0.07	15	1	slv/blk	wht/blk	77	39.1	1.8	52.9	10	step, 80 @ 25
45±2	-0.45	-0.35	0.07	15	1	slv/blk	wht/blk	77	39.1	1.8	52.9	10	step, 80 @ 25
45±2	-0.45	-0.35	0.07	15	1	slv/blk	wht/blk	77	39.1	1.8	52.9	10	step, 80 @ 25
45±2	-0.45	-0.35	0.07	15	1	slv/blk	wht/blk	77	39.1	1.8	52.9	10	step, 80 @ 25
45±2	-0.45	-0.35	0.07	15	1	slv/blk	wht/blk	77	39.1	1.8	52.9	10	step, 80 @ 25
45±2	-0.45	-0.35	0.07	15	1	slv/blk	wht/blk	77	39.1	1.8	52.9	10	step, 80 @ 25
46.6±2	-0.40	-0.27	0.01	20	DNR	silver	white	77.5	39	1.8	59.5	10	linear, 80.2 @ 25
46.6±2	-0.40	-0.27	0.01	20	DNR	silver	white	77.5	39	1.8	59.5	10	linear, 80.2 @ 25
46.6±2	-0.40	-0.27	0.01	20	DNR	silver	white	77.5	39	1.8	59.5	10	linear, 80.2 @ 25
46.6±2	-0.40	-0.27	0.01	20	DNR	silver	white	77.5	39	1.8	59.5	10	linear, 80.2 @ 25
46.6±2	-0.40	-0.27	0.01	20	DNR	silver	white	77.5	39	1.8	59.5	10	linear, 80.2 @ 25
46.6±2	-0.40	-0.27	0.01	20	DNR	silver	white	77.5	39	1.8	59.5	10	linear, 80.2 @ 25
44.6±2	-0.36	-0.30	0.07	20	DNR	silver	white	78.9	39.4	1.8	61.7	10	linear, 80.2 @ 25
44.6±2	-0.36	-0.30	0.07	20	DNR	silver	white	78.9	39.4	1.8	61.7	10	linear, 80.2 @ 25
44.6±2	-0.36	-0.30	0.07	20	DNR	silver	white	78.9	39.4	1.8	61.7	10	linear, 80.2 @ 25
45±2	-0.38	-0.30	0.03	15	1 or 2	slv/blk	wht/blk	65	39	1.5	41.9	12	linear, 82 @ 25
47±2	-0.42	-0.30	0.04	15	1 or 2	black	white	65	39	1.5	41.9	12	linear, 86.2 @ 30
47±2	-0.42	-0.30	0.04	15	1 or 2	black	clear	77.6	39	1.5	50.7	12	linear, 86.2 @ 30
47±2	-0.42	-0.30	0.04	15	1 or 2	black	clear	77.6	39	1.5	50.7	12	linear, 86.2 @ 30
47±2	-0.42	-0.30	0.04	15	1 or 2	black	clear	77.6	39	1.5	50.7	12	linear, 86.2 @ 30
47±2	-0.42	-0.30	0.04	15	1 or 2	black	white	77.6	39	1.5	50.7	12	linear, 86.2 @ 30
47±2	-0.42	-0.30	0.04	15	1 or 2	black	white	77.6	39	1.5	50.7	12	linear, 86.2 @ 30
47±2	-0.42	-0.30	0.04	15	1 or 2	black	white	77.6	39	1.5	50.7	12	linear, 86.2 @ 30
45±2	-0.40	-0.32	0.05	15	1	black	black	63.8	41.6	1.57	44	25	linear, 80.68 @ 25
45±2	-0.40	-0.32	0.05	15	1	black	black	63.8	41.6	1.57	44	25	linear, 80.68 @ 25
45±2	-0.40	-0.32	0.05	15	1	black	black	63.8	41.6	1.57	44	25	linear, 80.68 @ 25
45±2	-0.40	-0.32	0.05	15	1	black	black	63.8	41.6	1.57	44	25	linear, 80.68 @ 25
45±2	-0.40	-0.32	0.05	20	7	silver	black	83.2	39.2	1.57	64	25	linear, 80.68 @ 25
45±2	-0.40	-0.32	0.05	20	7	silver	black	83.2	39.2	1.57	64	25	linear, 80.68 @ 25
45±2	-0.40	-0.32	0.05	20	7	silver	white	83.2	39.2	1.57	64	25	linear, 80.68 @ 25
45±2	-0.40	-0.32	0.05	20	7	silver	white	83.2	39.2	1.57	64	25	linear, 80.68 @ 25
DNR	-0.34	-0.26	0.05	20	DNR	slv/blk	white	65.4	39.25	1.65	40	12	linear, 80 @ 30
45.7	-0.41	-0.29	0.04	20	DNR	slv/blk	white	65.4	39.25	1.65	40	12	linear, 80 @ 30

## 2017 High-Power c-Si PV Module Specifications

Manufacturer	Model	No. of cells	Cell type	Rated power at STC (Wp)	Rated power tolerance (W or %)	Rated power per sq. ft. (W)	Module efficiency (%)	Max. system voltage (Vdc)	Max. power voltage (Vmp)	Max. power current (Imp)	Open-circuit voltage (Voc)	Short-circuit current (Isc)
SolarTech Universal	STU-PERC-305	60	mono	305	0/+5 W	17.11	18.7	1,000	33.9	9.4	41.8	10
SolarWorld	SW 300 MONO	60	mono	300	0/+5 W	16.63	17.89	1,000	32.6	9.31	40	9.83
SolarWorld	SW 340 XL MONO	72	mono	340	0/+5 W	15.84	17.04	1,500	38	9.01	47.6	9.69
SolarWorld	SW 345 XL MONO	72	mono	345	0/+5 W	16.07	17.29	1,500	38.2	9.1	47.8	9.75
SolarWorld	SW 350 XL MONO	72	mono	350	0/+5 W	16.30	17.54	1,500	38.4	9.17	48	9.82
Sonali Solar	SS 300	72	poly	300	DNR	14.54	DNR	600	36.95	8.12	45.11	8.59
Sonali Solar	SS 305	72	poly	305	DNR	14.78	DNR	600	36.95	8.25	45.14	8.71
Sonali Solar	SS 310	72	poly	310	DNR	15.03	DNR	600	37.17	8.34	45.33	8.75
Sonali Solar	SS 315	72	poly	315	DNR	15.27	DNR	600	37.17	8.47	45.39	8.75
Sonali Solar	SS 320	72	poly	320	DNR	15.51	DNR	600	37.33	8.58	45.76	9.1
Suniva	MXV 310-72-5-800	72	poly	310	0/+5 W	14.85	16	1,000	36.5	8.5	44.9	8.96
Suniva	MXV 315-72-5-800	72	poly	315	0/+5 W	15.09	16.2	1,000	36.8	8.56	45.1	9.02
Suniva	MXV 320-72-5-800	72	poly	320	0/+5 W	15.33	16.5	1,000	37.1	8.63	45.6	9.14
Suniva	OPT325-72-4-100	72	mono	325	0/+10 W	15.46	16.66	1,000	37.5	8.67	45.8	9.42
Suniva	OPT330-72-4-100	72	mono	330	0/+10 W	15.70	16.92	1,000	37.6	8.78	45.9	9.54
Suniva	OPT335-72-4-100	72	mono	335	0/+10 W	15.94	17.18	1,000	37.7	8.89	45.9	9.66
Suniva	OPT340-72-4-100	72	mono	340	0/+10 W	16.18	17.43	1,000	37.8	8.99	46	9.78
SunPower	SPR-E19-320	96	mono	320	0/+5%	18.25	19.9	600	54.7	5.86	64.8	6.24
SunPower	SPR-E20-327	96	mono	327	0/+5%	18.64	20.4	600	54.7	5.98	64.9	6.46
SunPower	SPR-X21-335-BLK	96	mono	335	0/+5%	19.10	21	600	57.3	5.85	67.9	6.23
SunPower	SPR-X21-345	96	mono	345	0/+5%	19.67	21.5	600	57.3	6.02	68.2	6.39
SunPower	SPR-P17-335-COM	DNR	poly	335	0/+5%	15.08	16.2	1,500	42.2	7.94	51.1	8.51
SunPower	SPR-P17-340-COM	DNR	poly	340	0/+5%	15.30	16.5	1,500	42.5	8	51.3	8.52
SunPower	SPR-P17-345-COM	DNR	poly	345	0/+5%	15.53	16.7	1,500	42.8	8.06	51.5	8.57
SunPower	SPR-P17-350-COM	DNR	poly	350	0/+5%	15.75	17	1,500	43.1	8.12	51.7	8.65
SunPower	SPR-P17-355-COM	DNR	poly	355	0/+5%	15.98	17.2	1,500	43.4	8.18	51.9	8.68
Ten K Solar	XT-A-440	200	poly	440	±3%	15.61	16.8	DNR	35-59	9.1	0	0
Ten K Solar	XT-M-500	200	mono	500	±3%	17.73	19.1	DNR	35-59	7.5	0	0
Trina Solar	TSM-DD05A.08-300	60	mono	300	0/+5 W	17.00	18.3	1,000	32.6	9.19	39.9	9.64
Trina Solar	TSM-DD05A.08-305	60	mono	305	0/+5 W	17.28	18.6	1,000	32.9	9.28	40.2	9.72
Trina Solar	TSM-PE14A-320	72	poly	320	0/+5 W	15.31	16.5	1,500	37.1	8.63	45.8	9.1
Trina Solar	TSM-PE14A-325	72	poly	325	0/+5 W	15.54	16.8	1,500	37.2	8.76	45.9	9.25
Trina Solar	TSM-PE14A-330	72	poly	330	0/+5 W	15.78	17	1,500	37.3	8.87	46.1	9.38
Trina Solar	TSM-PE14A-335	72	poly	335	0/+5 W	16.02	17.3	1,500	37.6	8.91	46.3	9.39
Trina Solar	TSM-DE14A-335	72	mono	335	0/+5 W	16.02	17.3	1,500	37.9	8.84	46.3	9.36
Trina Solar	TSM-DE14A-340	72	mono	340	0/+5 W	16.26	17.5	1,500	38.2	8.9	46.5	9.45
Trina Solar	TSM-DE14A-345	72	mono	345	0/+5 W	16.50	17.8	1,500	38.4	9	46.7	9.5
Trina Solar	TSM-DE14A-350	72	mono	350	0/+5 W	16.74	18	1,500	38.5	9.09	46.9	9.6
Trina Solar	TSM-DE14A-355	72	mono	355	0/+5 W	16.98	18.3	1,500	38.7	9.17	47	9.69

DNR = did not report

Nominal operating cell temp. (°C)	Pmp temp. coeff. (%/°C)	Voc temp. coeff. (%/°C)	Isc temp. coeff. (%/°C)	Series fuse rating (A)	Fire Type	Frame color	Backsheet color	Length (in.)	Width (in.)	Depth (in.)	Weight (lbs.)	Materials warranty (yrs.)	Power warranty (type, % at year)
45.7	-0.41	-0.29	0.04	20	DNR	slv/blk	white	65.4	39.25	1.65	40	12	linear, 80 @ 30
46	-0.39	-0.29	0.07	DNR	1	black	white	65.95	39.4	1.3	39.7	20	linear, 80.2 @ 25
46	-0.43	-0.30	0.04	DNR	1	silver	white	78.46	39.4	1.3	47.6	20	linear, 80.2 @ 25
46	-0.43	-0.30	0.04	DNR	1	silver	white	78.46	39.4	1.3	47.6	20	linear, 80.2 @ 25
46	-0.43	-0.30	0.04	DNR	1	silver	white	78.46	39.4	1.3	47.6	20	linear, 80.2 @ 25
45±2	-0.44	-0.33	0.07	DNR	DNR	silver	white	76.93	38.62	1.57	46.3	10	step, 80 @ 25
45±2	-0.44	-0.33	0.07	DNR	DNR	silver	white	76.93	38.62	1.57	46.3	10	step, 80 @ 25
45±2	-0.44	-0.33	0.07	DNR	DNR	silver	white	76.93	38.62	1.57	46.3	10	step, 80 @ 25
45±2	-0.44	-0.33	0.07	DNR	DNR	silver	white	76.93	38.62	1.57	46.3	10	step, 80 @ 25
45±2	-0.44	-0.33	0.07	DNR	DNR	silver	white	76.93	38.62	1.57	46.3	10	step, 80 @ 25
45±2	-0.41	-0.33	0.07	20	DNR	silver	white	77	39.05	1.6	56.9	10	linear, 80 @ 25
45±2	-0.41	-0.33	0.07	20	DNR	silver	white	77	39.05	1.6	56.9	10	linear, 80 @ 25
45±2	-0.41	-0.33	0.07	20	DNR	silver	white	77	39.05	1.6	56.9	10	linear, 80 @ 25
46±2	-0.42	-0.34	0.04	20	2	silver	white	77.6	39	1.5	50.7	10	linear, 80 @ 25
46±2	-0.42	-0.34	0.04	20	2	silver	white	77.6	39	1.5	50.7	10	linear, 80 @ 25
46±2	-0.42	-0.34	0.04	20	2	silver	white	77.6	39	1.5	50.7	10	linear, 80 @ 25
46±2	-0.42	-0.34	0.04	20	2	silver	white	77.6	39	1.5	50.7	10	linear, 80 @ 25
DNR	-0.35	-176.6 mV	2.6 mA	15	2	black	white	61.3	41.2	1.8	41	25	linear, 87 @ 25
DNR	-0.35	-176.6 mV	2.6 mA	15	2	black	white	61.3	41.2	1.8	41	25	linear, 87 @ 25
DNR	-0.29	-167.4 mV	2.9 mA	15	2	black	black	61.3	41.2	1.8	41	25	linear, 87 @ 25
DNR	-0.29	-167.4 mV	2.9 mA	15	2	black	white	61.3	41.2	1.8	41	25	linear, 87 @ 25
DNR	-0.37	-173.7 mV	3.6 mA	15	2	silver	white	81.4	39.3	1.8	51	25	linear, 82.6 @ 25
DNR	-0.37	-174.4 mV	3.6 mA	15	2	silver	white	81.4	39.3	1.8	51	25	linear, 82.6 @ 25
DNR	-0.37	-175.1 mV	3.6 mA	15	2	silver	white	81.4	39.3	1.8	51	25	linear, 82.6 @ 25
DNR	-0.37	-175.8 mV	3.6 mA	15	2	silver	white	81.4	39.3	1.8	51	25	linear, 82.6 @ 25
DNR	-0.37	-176.5 mV	3.6 mA	15	2	silver	white	81.4	39.3	1.8	51	25	linear, 82.6 @ 25
46	-0.42	DNR	DNR	DNR	1	silver	white	79.45	51.1	DNR	67	25	linear, 92.2 @ 25
46	-0.42	DNR	DNR	DNR	1	silver	white	79.45	51.1	DNR	67	25	linear, 92.2 @ 25
44±2	-0.39	-0.29	0.05	15	1 or 2	black	wht/blk	65	39.1	1.38	41	10	linear, 80 @ 25
44±2	-0.39	-0.29	0.05	15	1 or 2	black	wht/blk	65	39.1	1.38	41	10	linear, 80 @ 25
44±2	-0.41	-0.32	0.05	15	1 or 2	silver	white	77	39.1	1.57	49.6	10	linear, 80 @ 25
44±2	-0.41	-0.32	0.05	15	1 or 2	silver	white	77	39.1	1.57	49.6	10	linear, 80 @ 25
44±2	-0.41	-0.32	0.05	15	1 or 2	silver	white	77	39.1	1.57	49.6	10	linear, 80 @ 25
44±2	-0.41	-0.32	0.05	15	1 or 2	silver	white	77	39.1	1.57	49.6	10	linear, 80 @ 25
44±2	-0.39	-0.29	0.05	15	1 or 2	silver	white	77	39.1	1.57	57.3	10	linear, 80 @ 25
44±2	-0.39	-0.29	0.05	15	1 or 2	silver	white	77	39.1	1.57	57.3	10	linear, 80 @ 25
44±2	-0.39	-0.29	0.05	15	1 or 2	silver	white	77	39.1	1.57	57.3	10	linear, 80 @ 25
44±2	-0.39	-0.29	0.05	15	1 or 2	silver	white	77	39.1	1.57	57.3	10	linear, 80 @ 25
44±2	-0.39	-0.29	0.05	15	1 or 2	silver	white	77	39.1	1.57	57.3	10	linear, 80 @ 25
44±2	-0.39	-0.29	0.05	15	1 or 2	silver	white	77	39.1	1.57	57.3	10	linear, 80 @ 25

## 2017 High-Power c-Si PV Module Specifications

Manufacturer	Model	No. of cells	Cell type	Rated power at STC (Wp)	Rated power tolerance (W or %)	Rated power per sq. ft. (W)	Module efficiency (%)	Max. system voltage (Vdc)	Max. power voltage (Vmp)	Max. power current (Imp)	Open-circuit voltage (Voc)	Short-circuit current (Isc)
Trina Solar	TSM-DE14A-360	72	mono	360	0/+5 W	17.22	18.5	1,500	38.9	9.26	47.2	9.79
Trina Solar	TSM-DE14A-365	72	mono	365	0/+5 W	17.46	18.8	1,500	39.1	9.35	47.3	9.88
Upsolar	UP-M300M-B	60	mono	300	0/+3%	17.13	18.4	1,000	32.2	9.32	41	9.67
Upsolar	UP-M305M-B	60	mono	305	0/+3%	17.41	18.7	1,000	32.4	9.41	41.3	9.76
Upsolar	UP-M300M	60	mono	300	0/+3%	17.13	18.4	1,000	32	9.38	40.7	9.6
Upsolar	UP-M305M	60	mono	305	0/+3%	17.41	18.7	1,000	32.2	9.47	41	9.7
Upsolar	UP-M310M	60	mono	310	0/+3%	17.70	19.1	1,000	32.4	9.57	41.3	9.8
Upsolar	UP-M315P	72	poly	315	0/+3%	15.08	16.2	1,000	36.5	8.63	46.2	8.9
Upsolar	UP-M320P	72	poly	320	0/+3%	15.32	16.5	1,000	36.7	8.72	46.4	8.98
Upsolar	UP-M325P	72	poly	325	0/+3%	15.56	16.7	1,000	36.9	8.81	46.6	9.06
Upsolar	UP-M330P	72	poly	330	0/+3%	15.80	17	1,000	37.1	8.89	46.8	9.14
Upsolar	UP-M335P	72	poly	335	0/+3%	16.04	17.3	1,000	37.3	8.98	47	9.22
Upsolar	UP-M345M	72	mono	345	0/+3%	16.52	17.8	1,000	37.8	9.13	47.9	9.52
Upsolar	UP-M350M	72	mono	350	0/+3%	16.76	18	1,000	38	9.21	48.2	9.59
Upsolar	UP-M355M	72	mono	355	0/+3%	16.99	18.3	1,000	38.2	9.29	48.5	9.67
Upsolar	UP-M360M	72	mono	360	0/+3%	17.23	18.6	1,000	38.41	9.38	48.8	9.75
Upsolar	UP-M365M	72	mono	365	0/+3%	17.47	18.8	1,000	38.6	9.46	49	9.83
Vikram Solar	VAP.72.330.04	72	poly	330	0/+5%	15.80	17.01	1,000	38.61	8.56	46.4	9.14
Vikram Solar	VAP.72.335.04	72	poly	335	0/+5%	16.04	17.26	1,000	38.71	8.66	46.5	9.22
Vikram Solar	VAP.72.340.04	72	poly	340	0/+5%	16.28	17.52	1,000	38.8	8.77	46.6	9.32
Vikram Solar	VAP.72.345.04	72	poly	345	0/+5%	16.52	17.78	1,000	38.9	8.87	46.7	9.42
WINAICO	WSP-300M6 (full black)	60	mono	300	0/+5%	16.76	18	1,000	32.3	9.31	39.8	9.86
WINAICO	WSP-300M6	60	mono	300	0/+5%	16.76	18	1,000	32.3	9.31	39.6	9.86
WINAICO	WSP-305M6	60	mono	305	0/+5%	17.04	18.3	1,000	32.6	9.36	40.1	9.96
WINAICO	WSP-310M6	60	mono	310	0/+5%	17.32	18.6	1,000	32.9	9.42	40.3	10.1
WINAICO	WSP-315M6	60	mono	315	0/+5%	17.59	18.9	1,000	33.2	9.48	40.4	10.2
Yingli Solar	YL315D-36b	72	mono	315	0/+3%	15.09	16.2	1,000	36.2	8.69	45.5	9.21
Yingli Solar	YL320D-36b	72	mono	320	0/+3%	15.32	16.5	1,000	36.6	8.75	45.9	9.24
Yingli Solar	YL325D-36b	72	mono	325	0/+3%	15.56	16.7	1,000	36.9	8.81	46.2	9.27
Yingli Solar	YL330D-36b	72	mono	330	0/+3%	15.80	17	1,000	37.2	8.86	46.6	9.29
Yingli Solar	YL335D-36b	72	mono	335	0/+3%	16.04	17.3	1,000	37.6	8.91	46.9	9.32
Yingli Solar	YL340D-36b	72	mono	340	0/+3%	16.28	17.5	1,000	37.9	8.97	47.3	9.35
Yingli Solar	YL300P-35b	72	poly	300	0/+3%	14.13	15.2	1,500	35.8	8.37	45.2	8.86
Yingli Solar	YL305P-35b	72	poly	305	0/+3%	14.36	15.5	1,500	36.1	8.45	45.4	8.93
Yingli Solar	YL310P-35b	72	poly	310	0/+3%	14.60	15.7	1,500	36.3	8.53	45.6	8.99
Yingli Solar	YL315P-35b	72	poly	315	0/+3%	14.84	16	1,500	36.8	8.56	45.7	9.12
Yingli Solar	YL320P-35b	72	poly	320	0/+3%	15.07	16.2	1,500	37	8.64	46	9.18

DNR = did not report

Nominal operating cell temp. (°C)	Pmp temp. coeff. (%/°C)	Voc temp. coeff. (%/°C)	Isc temp. coeff. (%/°C)	Series fuse rating (A)	Fire Type	Frame color	Backsheet color	Length (in.)	Width (in.)	Depth (in.)	Weight (lbs.)	Materials warranty (yrs.)	Power warranty (type, % at year)
44±2	-0.39	-0.29	0.05	15	1 or 2	silver	white	77	39.1	1.57	57.3	10	linear, 80 @ 25
44±2	-0.39	-0.29	0.05	15	1 or 2	silver	white	77	39.1	1.57	57.3	10	linear, 80 @ 25
45±2	-0.43	-0.30	0.05	20	DNR	black	black	64.57	39.06	1.38	40.8	12	linear, 80.7 @ 25
45±2	-0.43	-0.30	0.05	20	DNR	black	black	64.57	39.06	1.38	40.8	12	linear, 80.7 @ 25
45±2	-0.43	-0.30	0.05	20	DNR	silver	white	64.57	39.06	1.38	40.8	12	linear, 80.7 @ 25
45±2	-0.43	-0.30	0.05	20	DNR	silver	white	64.57	39.06	1.38	40.8	12	linear, 80.7 @ 25
45±2	-0.43	-0.30	0.05	20	DNR	silver	white	64.57	39.06	1.38	40.8	12	linear, 80.7 @ 25
45±2	-0.43	-0.30	0.05	20	DNR	silver	white	77.01	39.06	1.57	58.4	12	linear, 80.2 @ 25
45±2	-0.43	-0.30	0.05	20	DNR	silver	white	77.01	39.06	1.57	58.4	12	linear, 80.2 @ 25
45±2	-0.43	-0.30	0.05	20	DNR	silver	white	77.01	39.06	1.57	58.4	12	linear, 80.2 @ 25
45±2	-0.43	-0.30	0.05	20	DNR	silver	white	77.01	39.06	1.57	58.4	12	linear, 80.2 @ 25
45±2	-0.43	-0.30	0.05	20	DNR	silver	white	77.01	39.06	1.57	58.4	12	linear, 80.2 @ 25
45±2	-0.43	-0.30	0.05	20	DNR	silver	white	77.01	39.06	1.57	58.4	12	linear, 80.7 @ 25
45±2	-0.43	-0.30	0.05	20	DNR	silver	white	77.01	39.06	1.57	58.4	12	linear, 80.7 @ 25
45±2	-0.43	-0.30	0.05	20	DNR	silver	white	77.01	39.06	1.57	58.4	12	linear, 80.7 @ 25
45±2	-0.43	-0.30	0.05	20	DNR	silver	white	77.01	39.06	1.57	58.4	12	linear, 80.7 @ 25
45±2	-0.43	-0.30	0.05	20	DNR	silver	white	77.01	39.06	1.57	58.4	12	linear, 80.7 @ 25
45±2	-0.43	-0.30	0.05	20	DNR	silver	white	77.01	39.06	1.57	58.4	12	linear, 80.7 @ 25
45±2	-0.49	-0.31	0.05	15	DNR	silver	white	77.01	39.06	1.57	59.5	10	linear, 80.1 @ 27
45±2	-0.49	-0.31	0.05	15	DNR	silver	white	77.01	39.06	1.57	59.5	10	linear, 80.1 @ 27
45±2	-0.49	-0.31	0.05	15	DNR	silver	white	77.01	39.06	1.57	59.5	10	linear, 80.1 @ 27
45±2	-0.49	-0.31	0.05	15	DNR	silver	white	77.01	39.06	1.57	59.5	10	linear, 80.1 @ 27
45±3	-0.43	-0.29	0.06	25	1	black	black	65.55	39.33	1.57	43.2	15	linear, 80.2 @ 25
45±3	-0.43	-0.29	0.06	25	1	black	white	65.55	39.33	1.57	43.2	15	linear, 80.2 @ 25
45±3	-0.43	-0.29	0.06	25	1	black	white	65.55	39.33	1.57	43.2	15	linear, 80.2 @ 25
45±3	-0.43	-0.29	0.06	25	1	black	white	65.55	39.33	1.57	43.2	15	linear, 80.2 @ 25
45±3	-0.43	-0.29	0.06	25	1	black	white	65.55	39.33	1.57	43.2	15	linear, 80.2 @ 25
46±2	-0.42	-0.32	0.05	15	DNR	silver	white	77.16	38.97	1.57	56.2	10	linear, 80 @ 25
46±2	-0.42	-0.32	0.05	15	DNR	silver	white	77.16	38.97	1.57	56.2	10	linear, 80 @ 25
46±2	-0.42	-0.32	0.05	15	DNR	silver	white	77.16	38.97	1.57	56.2	10	linear, 80 @ 25
46±2	-0.42	-0.32	0.05	15	DNR	silver	white	77.16	38.97	1.57	56.2	10	linear, 80 @ 25
46±2	-0.42	-0.32	0.05	15	DNR	silver	white	77.16	38.97	1.57	56.2	10	linear, 80 @ 25
DNR	-0.42	-0.32	0.05	15	DNR	silver	white	77.6	39.4	1.57	57.3	10	linear, 80 @ 25
DNR	-0.42	-0.32	0.05	15	DNR	silver	white	77.6	39.4	1.57	57.3	10	linear, 80 @ 25
DNR	-0.42	-0.32	0.05	15	DNR	silver	white	77.6	39.4	1.57	57.3	10	linear, 80 @ 25
DNR	-0.42	-0.32	0.05	15	DNR	silver	white	77.6	39.4	1.57	57.3	10	linear, 80 @ 25
DNR	-0.42	-0.32	0.05	15	DNR	silver	white	77.6	39.4	1.57	57.3	10	linear, 80 @ 25
DNR	-0.42	-0.32	0.05	15	DNR	silver	white	77.6	39.4	1.57	57.3	10	linear, 80 @ 25