

PHOTON Lab's outdoor module tests: Results of 2013 yield measurements

2013 rank	Manufacturer	Model	Performance ratio (%) January - December 2013	Yield (kWh/kW) January - December 2013	Deviation from test winner (%)	Cell type	Origin	Production dates ²¹	Installed in	STC power (W)	2012 rank
1	Sopray Energy	SR-190	94.0	1094.3	—	Mono	—	—	1/2013	190.8	—
2	Risen Energy	SYP190S-M	93.8	1092.5	0.16 %	Mono	CN	—	10/2012	188.9	—
3	ET Solar Industry	ET-M66250VWV	93.4	1088.0	0.58 %	Mono	CN	—	12/2012	248.9	—
4	Hanwha Q-Cells	Q.PRO-G2 235	93.3	1086.9	0.68 %	Multi	PL	—	11/2012	236.9	—
5	Sonalis	SL190TU-36M	93.3	1086.5	0.71 %	Mono	CN	—	8/2012	196.6	—
6	Risen Energy	SYP250M	93.1	1084.3	0.91 %	Mono	CN	—	7/2012	243.7	—
7	CSG PVTech	CSG240M2	93.1	1084.0	0.94 %	Multi	—	—	1/2013	242.8	—
8	Renesola	JC245M-24/Bbv	93.1	1083.6	0.98 %	Quasi-mono	—	—	10/2012	246.6	—
9	Sopray Energy	SR-156P-235	93.0	1083.3	1.01 %	Multi	—	—	1/2013	235.6	—
10	CSG PVTech	CSG250S2	93.0	1083.2	1.01 %	Mono	—	—	1/2013	250.1	—
11	RealForce Power	RF-240P60	92.8	1081.1	1.21 %	Multi	CN	—	1/2013	241.9	—
12	Seraphim Solar System	SRP-220-6PB	92.6	1078.4	1.45 %	Multi	CN	—	10/2011	226.1	4
13	Jinko Solar	JKM190M-72	92.6	1078.3	1.46 %	Mono	—	2010	7/2011	191.1	9
14	Jinko Solar	JKM275P	92.6	1078.3	1.46 %	Multi	—	—	4/2012	275.5	—
15	Siliken	SLK60P6L 230Wp	92.4	1075.5	1.72 %	Multi	ES	—	2009	229.7	8
16	ET Solar Industry	ET-P660240	92.2	1073.5	1.90 %	Multi	CN	—	7/2011	236.1	6
17	JA Solar Technology	JAM6-60-250/SI	92.1	1072.6	1.98 %	Mono	—	—	1/2013	253.1	—
18	REC	Premium 210	92.1	1072.4	2.00 %	Multi	SE	Through 2008	2/2011	212.2	26
19	CSG PV Tech	CSG180S1-35/36	92.1	1072.0	2.04 %	Mono	CN	2008	6/2010	184.1	13
20	Hareon Solar Technology	HR-230P-18/Bb	92.1	1072.0	2.04 %	Multi	—	—	7/2011	230.6	31
21	Solon	SOLON Blue 230/07(225)	92.0	1071.6	2.07 %	Multi	DE	2008	2/2011	226.9	36
22	Sunlink PV	SL220-20M230	92.0	1071.4	2.09 %	Mono	CN	—	2/2011	237.9	44
23	Linsun Renewable Energy	SK60P6	92.0	1071.1	2.12 %	Multi	—	—	7/2011	228.3	15
24	Phono Solar	PS190M-24/F	92.0	1071.0	2.13 %	Mono	CN	—	5/2012	192.0	—
25	Linuo PV High-Tech	LN240(30)P-3-240	91.9	1070.5	2.17 %	Multi	—	—	1/2013	239.5	—
26	CNPV Solar Power	CNPV-220P	91.8	1069.0	2.31 %	Multi	CN	2006	7/2011	224.2	43
27	Upsolar	UP-M220P	91.8	1068.9	2.32 %	Multi	CN	2010-2011	2/2011	219.2	21
28	Kinmac Solar	KSS-6P6A-230	91.7	1068.2	2.39 %	Multi	TW	2010	2/2011	234.1	33
29	Sunerg Solar	XP 60/156-230	91.7	1067.8	2.42 %	Multi	IT	—	2/2011	226.0	7
30	Renesola	JC245M-24/Bb	91.7	1067.4	2.46 %	Multi	—	—	10/2012	247.7	—
31	REC	REC230AE	91.6	1066.2	2.57 %	Multi	SE	2007/2010	2/2010	228.6	27
32	CSG PV Tech	CSG230M2-30	91.5	1066.0	2.59 %	Multi	CN	2008	6/2010	228.3	67
33	Runda PV	RS230P-60	91.5	1065.0	2.68 %	Multi	CN	—	1/2012	237.8	91
34	Solar Modules Nederland	TC245-MO	91.4	1064.1	2.76 %	Mono	NL	2010-2011	2/2011	246.7	32
35	V-Energy	VE260PV	91.4	1064.1	2.76 %	Multi	IT	—	1/2012	234.6	30
36	Win Win Precision Technology	Winaico WSP-230P6	91.4	1064.0	2.77 %	Multi	TW	2009	2009	234.4	121
37	SolarWorld	Sunmodule Plus SW 225 mono	91.3	1063.3	2.83 %	Mono	US	2009	3/2010	233.4	20
38	Aleo Solar	Aleo S_18 225	91.3	1062.6	2.90 %	Multi	DE, ES	2005	4/2010	230.5	22
39	Nesl Solartech	DJ-235P	91.2	1062.0	2.95 %	Multi	CN	—	5/2012	237.7	—
40	CH Solar	CH Solar 180 mono	91.2	1061.5	3.00 %	Mono	CN	Through 2010	4/2010	184.4	45
41	Phono Solar	PS230P-20/U	91.1	1061.1	3.03 %	Multi	CN	—	5/2012	235.8	—
42	Lightway Green New Energy	LW235(29)P1650*990	91.1	1060.7	3.07 %	Multi	CN	—	4/2012	235.7	—
43	Ningbo Solar Electric Power	Sun Earth TDB125x125-72-P 180W	91.1	1060.5	3.09 %	Mono	CN	Through 2010	2/2011	179.2	70
44	Topray Solar	TPS105T-180W	91.0	1060.0	3.13 %	Mono	CN	—	5/2011	184.8	82
45	Eoply New Energy Technology	EPS125M/72-190W	91.0	1059.9	3.14 %	Mono	CN	—	1/2013	187.3	—
46	Sungen	SGM-235P	90.9	1059.0	3.23 %	Multi	CN	—	5/2012	235.4	—
47	Huanghe Photovoltaic Technology	HH190(36)M	90.9	1058.1	3.31 %	Mono	CN	—	1/2012	190.9	16
48	Linuo Group	LN240(30)P-225	90.9	1058.0	3.32 %	Multi	—	2003	7/2011	236.5	76
49	Solar-Fabrik	Premium L poly (225)	90.9	1058.0	3.32 %	Multi	DE	—	2/2011	223.6	123
50	S-Energy	SM-220PA8	90.9	1057.9	3.33 %	Multi	KR	—	2009	224.4	77
51	BP Solar International	BP 3220 T	90.8	1057.8	3.34 %	Multi	CN	Through 2011	7/2011	232.5	35
52	Zentralsolar Deutschland	Genius SDM 185-10004-185	90.8	1057.7	3.34 %	Mono	—	—	7/2011	190.6	80
53	REC	REC230PE	90.8	1057.1	3.40 %	Multi	SG	2010	2/2011	237.6	41
54	JCS Solar	JCSM290M-72	90.8	1057.0	3.41 %	Mono	—	—	1/2012	296.9	60
55	Chaoi Solar Energy	CRM240S156P-60	90.7	1056.6	3.45 %	Multi	—	—	5/2012	241.0	—
56	Qixin Solar Electrical Appliance	SL250CE-48M	90.7	1056.6	3.45 %	Mono	—	—	4/2012	255.9	—
57	NexPower Technology	NT-125AX	90.7	1056.4	3.46 %	µc-Si / a-Si	TW	2009-2010	11/2010	125.4	14
58	Mage Solar	Mage Powertec Plus 230/6PH-US	90.7	1056.2	3.48 %	Multi	US	—	7/2011	231.8	72
59	Axitec	AC 236P/156-60S	90.7	1055.7	3.53 %	Multi	DE	Through 2011	2/2011	232.9	64
60	Chaoi Solar Energy	CRM245S156M-60	90.7	1055.7	3.53 %	Mono	—	—	5/2012	246.3	—

Performance ratio (%) 2012	Performance ratio (%) January 2013	Yield (kWh/kW) January 2013	Performance ratio (%) February 2013	Yield (kWh/kW) February 2013	Performance ratio (%) March 2013	Yield (kWh/kW) March 2013	Performance ratio (%) April 2013	Yield (kWh/kW) April 2013	Performance ratio (%) May 2013	Yield (kWh/kW) May 2013	Performance ratio (%) June 2013	Yield (kWh/kW) June 2013	Performance ratio (%) July 2013	Yield (kWh/kW) July 2013	Performance ratio (%) August 2013	Yield (kWh/kW) August 2013	Performance ratio (%) September 2013	Yield (kWh/kW) September 2013	Performance ratio (%) October 2013	Yield (kWh/kW) October 2013	Performance ratio (%) November 2013	Yield (kWh/kW) November 2013	Performance ratio (%) December 2013	Yield (kWh/kW) December 2013
-	95.5	19.9	100.1	44.0	99.2	92.9	95.9	121.4	94.5	127.9	92.1	135.3	87.7	163.7	89.1	138.5	93.7	105.4	99.8	76.0	106.2	27.2	103.0	42.0
-	93.8	19.6	98.4	43.2	99.6	93.3	95.9	121.3	94.4	127.9	92.4	135.7	87.4	163.2	88.7	137.8	93.4	105.0	100.0	76.1	107.2	27.5	102.7	41.9
-	96.2	20.1	99.7	43.8	99.1	92.9	95.4	120.7	92.6	125.3	92.3	135.5	87.5	163.3	88.6	137.7	93.0	104.5	99.0	75.4	105.9	27.2	102.0	41.6
-	97.5	20.3	99.5	43.7	99.6	93.3	95.5	120.8	93.6	126.8	91.5	134.4	86.4	161.2	87.8	136.5	92.8	104.4	99.4	75.7	107.6	27.6	103.5	42.2
-	92.0	19.2	97.0	42.6	98.1	91.9	94.8	119.9	93.5	126.6	91.5	134.3	87.4	163.1	89.0	138.4	93.8	105.5	100.0	76.2	105.1	26.9	102.6	41.8
-	97.8	20.4	100.5	44.2	99.1	92.8	95.2	120.5	93.5	126.7	91.2	133.9	86.4	161.3	87.6	136.1	92.6	104.1	98.8	75.3	106.5	27.3	102.3	41.7
-	95.8	20.0	99.8	43.9	99.3	93.0	96.0	121.4	93.9	127.2	91.7	134.6	86.9	162.1	87.4	135.9	92.1	103.5	97.6	74.3	104.7	26.9	101.1	41.2
-	97.4	20.3	100.3	44.1	99.5	93.2	95.1	120.3	93.2	126.1	91.0	133.6	86.5	161.4	87.2	135.6	92.6	104.1	99.4	75.7	105.8	27.1	103.0	42.0
-	95.3	19.9	98.6	43.3	99.4	93.2	95.4	120.8	93.8	127.0	91.6	134.5	86.8	162.1	87.5	135.9	92.2	103.6	98.2	74.8	105.1	26.9	101.4	41.3
-	95.3	19.9	100.1	44.0	99.3	93.1	95.5	120.8	93.8	127.0	91.4	134.3	86.3	161.1	87.2	135.6	92.3	103.8	99.4	75.7	104.5	26.8	100.9	41.1
-	97.9	20.4	99.8	43.9	99.6	93.4	95.7	121.1	93.5	126.6	91.4	134.2	86.7	161.8	85.8	133.4	91.8	103.2	98.6	75.1	105.1	27.0	100.7	41.0
93.6	93.5	19.5	101.6	44.6	99.1	92.8	94.6	119.7	92.4	125.2	91.5	134.4	86.2	160.9	86.7	134.8	92.4	103.9	98.5	75.0	104.8	26.9	99.8	40.7
92.5	99.0	20.7	100.1	44.0	98.6	92.4	94.6	119.7	93.0	125.9	90.8	133.4	86.5	161.5	87.1	135.3	91.8	103.2	97.7	74.4	104.5	26.8	100.4	40.9
-	97.8	20.4	101.6	44.7	99.8	93.5	95.3	120.5	93.0	126.0	90.6	133.1	85.3	159.3	86.0	133.7	91.5	102.9	98.3	74.9	106.0	27.2	103.7	42.3
92.7	94.2	19.7	97.2	42.7	97.5	91.4	95.1	120.4	93.3	126.4	91.2	134.0	86.4	161.3	86.5	134.5	92.4	103.9	97.3	74.1	103.0	26.4	99.9	40.7
92.8	98.8	20.6	101.8	44.7	97.7	91.5	95.2	120.5	90.7	122.8	89.2	131.0	85.7	159.9	86.6	134.6	92.1	103.5	98.8	75.3	106.7	27.4	102.4	41.8
-	94.0	19.6	97.8	43.0	98.3	92.1	94.4	119.4	92.9	125.8	90.6	133.0	86.0	160.4	87.0	135.3	91.7	103.1	97.5	74.2	103.3	26.5	98.6	40.2
91.4	93.9	19.6	98.3	43.2	98.4	92.2	94.5	119.6	92.9	125.8	90.3	132.6	85.8	160.2	86.8	134.9	91.5	102.9	97.7	74.4	102.5	26.3	99.9	40.7
92.0	91.9	19.2	98.2	43.2	98.5	92.3	94.5	119.5	93.0	125.9	90.8	133.4	86.4	161.3	86.7	134.8	91.3	102.6	96.7	73.6	102.4	26.3	98.1	40.0
91.3	96.0	20.0	98.4	43.2	98.4	92.2	94.7	119.8	92.1	124.7	90.0	132.1	85.7	160.0	85.4	132.8	92.1	103.5	98.3	74.9	105.4	27.0	102.4	41.7
91.1	95.8	20.0	99.5	43.7	98.7	92.5	94.3	119.3	92.5	125.3	90.2	132.4	85.6	159.8	85.9	133.4	91.4	102.8	97.6	74.3	104.4	26.8	101.2	41.2
90.7	95.1	19.8	100.1	44.0	98.7	92.5	94.2	119.2	92.5	125.2	90.2	132.5	85.4	159.4	85.8	133.4	91.4	102.7	97.5	74.3	104.8	26.9	101.7	41.5
92.0	93.3	19.5	97.4	42.8	98.0	91.8	94.3	119.3	92.6	125.4	90.4	132.8	86.3	161.0	86.9	135.0	91.3	102.7	97.2	74.0	103.3	26.5	98.8	40.3
-	93.9	19.6	97.3	42.8	97.1	91.0	93.7	118.5	92.4	125.1	90.6	133.0	86.3	161.1	87.3	135.6	91.6	103.0	97.3	74.1	104.1	26.7	99.0	40.4
-	94.7	19.8	97.8	43.0	98.0	91.8	94.1	119.1	92.5	125.2	90.4	132.8	85.8	160.2	86.6	134.6	91.3	102.7	97.0	73.9	104.0	26.7	99.9	40.7
90.8	98.0	20.4	100.9	44.3	98.6	92.4	94.0	118.9	92.0	124.6	89.9	132.1	85.3	159.2	85.7	133.2	90.5	101.8	96.7	73.6	105.3	27.0	101.4	41.3
91.5	98.9	20.6	102.2	44.9	97.7	91.5	93.5	118.3	91.6	124.0	90.0	132.2	85.2	159.0	85.1	132.3	91.5	102.9	97.9	74.5	105.4	27.0	102.1	41.6
91.3	96.3	20.1	98.9	43.4	98.7	92.5	93.7	118.6	91.8	124.3	89.6	131.6	85.3	159.1	85.7	133.1	91.1	102.4	97.6	74.3	104.8	26.9	102.3	41.7
92.8	92.4	19.3	99.4	43.7	99.0	92.8	94.2	119.2	91.4	123.8	89.1	130.9	86.1	160.7	85.2	132.4	91.2	102.5	98.4	75.0	103.6	26.6	100.6	41.0
-	96.5	20.1	99.1	43.5	98.1	91.9	94.0	118.9	91.9	124.5	89.7	131.7	84.9	158.5	85.7	133.1	91.0	102.3	97.8	74.5	104.3	26.8	101.9	41.5
91.4	92.5	19.3	97.6	42.9	99.2	93.0	94.8	119.9	92.9	125.8	90.3	132.7	84.6	157.9	85.0	132.2	90.8	102.1	97.0	73.8	103.4	26.5	98.4	40.1
90.1	95.5	19.9	99.5	43.7	97.7	91.6	93.9	118.9	92.3	124.9	90.3	132.6	85.2	159.0	85.6	133.1	90.6	101.9	96.7	73.6	103.8	26.6	98.4	40.1
89.3	94.4	19.7	97.7	42.9	98.1	91.9	94.3	119.3	91.4	123.8	90.2	132.5	84.6	158.0	84.6	131.4	91.1	102.4	97.7	74.4	105.8	27.1	101.9	41.5
91.3	95.6	19.9	99.8	43.9	98.4	92.2	93.8	118.6	91.8	124.3	88.8	130.5	84.3	157.4	85.4	132.7	90.8	102.0	97.2	74.0	104.8	26.9	102.0	41.6
91.3	94.7	19.8	99.3	41.0	98.0	91.9	93.8	118.7	91.9	124.5	89.5	131.5	84.6	157.8	86.0	133.7	91.0	102.3	97.7	74.4	105.2	27.0	102.2	41.7
88.0	95.4	19.9	97.5	42.8	97.4	91.3	93.5	118.3	92.0	124.6	90.1	132.4	85.7	159.9	85.6	133.0	90.5	101.7	96.4	73.4	104.5	26.8	97.8	39.9
91.6	95.7	20.0	99.3	43.6	97.8	91.6	93.4	118.2	91.6	124.1	89.4	131.3	84.5	157.6	85.4	132.7	90.5	101.8	97.6	74.3	104.9	26.9	101.1	41.2
91.5	93.2	19.5	97.5	42.8	97.2	91.1	93.4	118.1	92.0	124.5	89.7	131.7	85.3	159.2	86.1	133.7	90.5	101.7	96.2	73.3	102.9	26.4	99.2	40.4
-	94.6	19.7	97.1	42.7	97.3	91.2	93.4	118.1	91.8	124.3	89.6	131.7	84.9	158.5	85.6	133.1	90.5	101.7	96.5	73.5	103.9	26.7	100.0	40.8
90.7	92.0	19.2	97.4	42.8	96.8	90.7	93.0	117.7	91.4	123.8	89.4	131.3	85.3	159.2	86.0	133.6	90.9	102.2	97.0	73.9	103.0	26.4	99.9	40.7
-	93.8	19.6	97.7	42.9	97.6	91.5	93.6	118.4	91.8	124.3	89.7	131.7	85.2	159.1	85.5	132.9	90.0	101.2	96.0	73.1	102.5	26.3	98.5	40.1
-	93.6	19.5	95.7	42.0	97.1	91.0	93.1	117.8	91.6	124.0	89.8	131.9	85.2	159.0	85.8	133.3	90.4	101.6	96.4	73.4	103.4	26.5	99.5	40.6
90.1	93.0	19.4	97.4	42.8	97.7	91.6	93.3	118.0	91.5	123.8	89.3	131.1	84.8	158.2	85.4	132.8	90.5	101.8	96.7	73.6	102.8	26.4	100.5	41.0
89.5	90.9	19.0	93.4	41.0	96.6	90.6	93.0	117.7	91.9	124.5	89.8	131.9	85.9	160.4	86.3	134.1	90.6	101.8	96.0	73.2	101.4	26.0	97.8	39.9
-	92.6	19.3	97.1	42.7	96.9	90.8	92.8	117.4	91.5	124.0	89.5	131.5	85.6	159.7	85.9	133.5	90.5	101.7	96.0	73.1	101.7	26.1	98.2	40.0
-	94.4	19.7	97.7	43.0	97.4	91.3	93.4	118.2	91.6	124.1	89.1	130.9	84.5	157.8	84.9	131.9	90.3	101.6	96.6	73.6	102.3	26.2	100.0	40.7
91.9	92.4	19.3	97.6	42.9	96.9	90.8	93.0	117.7	91.5	123.8	89.3	131.2	84.7	158.1	85.7	133.2	90.3	101.5	95.7	72.9	102.5	26.3	99.1	40.4
89.8	94.3	19.7	97.3	42.8	97.3	91.2	93.1	117.7	91.4	123.8	89.2	131.0	84.5	157.7	85.2	132.5	90.1	101.3	95.9	73.1	102.9	26.4	100.0	40.8
87.7	92.3	19.3	94.9	41.7	96.9	90.8	93.1	117.8	91.6	124.0	89.4	131.3	85.0	158.7	85.6	133.1	90.2	101.4	96.2	73.2	102.1	26.2	99.3	40.5
89.6	95.9	20.0	97.9	43.0	96.8	90.7	92.9	117.6	91.5	123.8	89.2	131.0	84.7	158.1	85.1	132.3	90.1	101.3	96.2	73.3	102.1	26.2	99.6	40.6
91.1	94.6	19.7	89.5	39.3	98.9	92.7	94.8	119.9	90.9															

PHOTON Lab's outdoor module tests: Results of 2013 yield measurements

2013 rank	Manufacturer	Model	Performance ratio (%) January - December 2013	Yield (kWh/kW) January - December 2013	Deviation from test winner (%)	Cell type	Origin	Production dates ²¹	Installed in	STC power (W)	2012 rank	
61	China Sunergy	CSUN260-60M	90.7	1055.6	3.54 %	Mono	CN		–	1/2012	254.0	46
62	SWAT-International	SWAT-240-PS	90.6	1055.4	3.55 %	Multi	–		–	5/2011	245.1	54
63	Sunflower	SF125x125-72-M(180)	90.6	1055.3	3.56 %	Mono	CN		–	2/2011	176.6	51
64	REC	REC245PE	90.6	1055.0	3.59 %	Multi	SG		–	1/2013	243.1	–
65	Solarwatt	M220-60 GET AK (230)	90.6	1054.8	3.61 %	Mono	DE		2005	2/2011	231.5	86
66	Sunage	SAM 96/5	90.5	1054.3	3.66 %	Mono	CH		–	7/2011	256.6	106
67	Bosch Solar Energy	Bosch c-Si M 60 230	90.5	1053.5	3.73 %	Mono	DE	2009–2010	2/2011	233.2	78	
68	China Sunergy	CSUN250-60M	90.5	1053.5	3.73 %	Mono	CN		–	1/2012	248.4	58
69	Luxor Solar Technologies	LX-250M/156-60+	90.5	1053.4	3.74 %	Mono	–		–	1/2013	247.5	–
70	Jinko Solar	JKM235P-60	90.5	1053.3	3.75 %	Multi	–		–	1/2012	231.4	11
71	Eoply New Energy Technology	EPS156P/60-235W	90.4	1052.7	3.80 %	Multi	CN		–	1/2013	237.8	–
72	Chint Solar / Astronergy	CHSM 6610P (230)	90.4	1052.4	3.83 %	Multi	–		–	1/2012	234.2	108
73	Jetion Solar	JT230(30)P1655x992	90.4	1052.2	3.85 %	Mono	CN	2005	2/2011	232.4	112	
74	Win Win Precision Technology	Winaico WSP-235P6	90.4	1052.1	3.86 %	Multi	TW		–	5/2010	240.1	40
75	SolarWorld	Sunmodule Plus SW 225 poly	90.3	1051.4	3.92 %	Multi	DE	2004–2011	2/2011	228.6	65	
76	BP Solar International	BP 3280 T	90.3	1051.2	3.94 %	Multi	–	Through 2011	5/2011	287.4	83	
77	Galaxy Energy	GS260m-96	90.3	1051.2	3.94 %	Mono	DE		–	2/2011	252.9	61
78	CNPV Solar Power	CNPV-185M	90.3	1051.1	3.95 %	Mono	CN	2006	3/2010	193.8	48	
79	Trina Solar	TSM-180DC01	90.3	1051.0	3.96 %	Mono	CN	2007	2009	176.2	68	
80	SolarWorld	SW 245 poly	90.2	1050.9	3.97 %	Multi	DE		–	1/2012	245.3	38
81	Amerisolar, Worldwide Energy & Manufacturing	AS-6P30-230W	90.2	1050.2	4.03 %	Multi	–		–	1/2012	236.8	47
82	BYD	BYD 240P6-30	90.1	1049.6	4.08 %	Multi	CN		–	9/2012	243.6	–
83	CEEG Solar Science & Technology	SST 240-60M	90.1	1049.0	4.14 %	Mono	CN	2005	2/2011	239.0	57	
84	Kioto Photovoltaics	KPV 210 PE	90.1	1048.9	4.15 %	Multi	AT	2008–2010	2009	206.6	34	
85	Schott Solar	SCHOTT PERFORM Poly 235	90.1	1048.8	4.16 %	Multi	CZ	Since 2011	1/2012	239.0	18	
86	Sonalis	SL-180CE-36M	90.1	1048.8	4.16 %	Mono	CN		–	3/2010	185.1	103
87	Conergy	Conergy PowerPlus 220P	90.0	1048.5	4.19 %	Multi	DE	2009	3/2010	224.2	56	
88	Bisol	BMU-215-2/233	90.0	1048.0	4.23 %	Multi	SI	2009	2/2011	234.2	55	
89	CEEG Solar Science & Technology	SST 265-72P	90.0	1047.9	4.24 %	Multi	CN	2005	2/2011	281.0	63	
90	Upsolar	UP-M180M	90.0	1047.8	4.25 %	Mono	CN	2010–2011	3/2010	181.5	49	
91	Trina Solar	TSM-225PC05	89.9	1046.8	4.34 %	Multi	CN		–	2/2010	233.0	69
92	Amerisolar, Worldwide Energy & Manufacturing	AS-5M-190W	89.9	1046.7	4.35 %	Mono	–		–	1/2012	195.0	39
93	Trina Solar	TSM-250PC05	89.9	1046.7	4.35 %	Multi	–		–	6/2012	249.3	–
94	Mage Solar	Mage Powertec Plus 230/6PO	89.9	1046.3	4.39 %	Multi	CN		–	2/2011	229.9	–
95	CNPV Solar Power	CNPV-190M	89.8	1045.7	4.44 %	Mono	CN	2006	7/2011	197.4	114	
96	IBC Solar	IBC MonoSol 240 TT	89.8	1045.5	4.46 %	Mono	DE	Through 2011	2/2011	246.0	134	
97	Solaria Energía y Medio Ambiente	S6P2G225	89.7	1044.6	4.54 %	Multi	ES	2010	5/2011	232.7	66	
98	Eurener	PEPV230	89.6	1043.8	4.61 %	Multi	ES		–	1/2012	235.3	42
99	Kenmec Mechanical Engineering	TKSA-23001	89.6	1043.4	4.65 %	Multi	TW		–	7/2011	235.0	89
100	Solargate Technology	SG-2350	89.6	1043.2	4.67 %	Multi	TW		–	1/2012	246.3	99
101	Mage Solar	Mage Powertec Plus 225/6PJ	89.6	1042.8	4.71 %	Multi	CN	Through 2011	2009	232.0	62	
102	Solarbest Energy-Tech	ZSB M190	89.5	1042.7	4.72 %	Mono	CN		–	12/2011	186.1	87
103	Lilie Energie	Lilie SPL 185	89.5	1042.5	4.73 %	Mono	–		–	2/2011	185.3	96
104	Talesun Solar	TP572M-195	89.5	1042.2	4.76 %	Mono	CN	2011	1/2012	196.1	85	
105	Eging Photovoltaic Technology	EGM-185	89.5	1042.1	4.77 %	Mono	CN	2010	2/2011	188.4	75	
106	Yingli Green Energy Holding	YL210P-29b	89.5	1041.9	4.79 %	Multi	CN	2009	2/2011	214.3	95	
107	Win Win Precision Technology	Winaico WSP-240P6	89.4	1041.5	4.83 %	Multi	–		–	4/2012	245.2	–
108	Bisol	BMU-215-2/221	89.4	1041.4	4.83 %	Multi	SI	2007	2/2010	229.1	84	
109	Sungen	SGM-195D	89.4	1041.4	4.83 %	Mono	CN		–	5/2012	196.5	–
110	Frankfurt Solar	FS215W-POLY	89.4	1041.3	4.84 %	Multi	CN		–	2009	221.3	79
111	Axitec	AC-250M/156-60S	89.3	1039.8	4.98 %	Mono	CN, EU		–	1/2012	248.9	118
112	Ningbo Solar Electric Power	Sun Earth TDB125x125-72-P 160W	89.2	1039.2	5.04 %	Mono	CN		–	2/2011	161.6	107
113	Aide Solar Energy Technology	AD195M5-Aa	89.2	1038.9	5.06 %	Mono	CN		–	9/2011	198.0	115
114	Yingli Green Energy Holding	YL260C-30b (Panda)	89.2	1038.7	5.08 %	Mono	CN		–	1/2012	267.9	–
115	Suntech Power	STP205-18/Ud	89.1	1037.3	5.21 %	Multi	CN		–	2/2011	213.8	92
116	Lilie Energie	Lilie SPL 185-I	89.0	1036.6	5.27 %	Mono	–		–	2/2011	187.1	119
117	Zytech Engineering	ZT 230P	89.0	1036.4	5.29 %	Multi	CN		–	2/2011	230.8	98
118	PV Power Technologies	PVQ3 220	89.0	1036.1	5.32 %	Multi	IN	2008	2009	223.6	53	
119	Sunrise Solartech	SRM 180D72-GE	89.0	1036.0	5.33 %	Mono	CN		–	2009	181.5	94
120	China Sunergy	CSUN240-60P	88.9	1035.6	5.36 %	Multi	CN		–	1/2012	243.7	105

Performance ratio (%) 2012	Performance ratio (%) January 2013	Yield (kWh/kW) January 2013	Performance ratio (%) February 2013	Yield (kWh/kW) February 2013	Performance ratio (%) March 2013	Yield (kWh/kW) March 2013	Performance ratio (%) April 2013	Yield (kWh/kW) April 2013	Performance ratio (%) May 2013	Yield (kWh/kW) May 2013	Performance ratio (%) June 2013	Yield (kWh/kW) June 2013	Performance ratio (%) July 2013	Yield (kWh/kW) July 2013	Performance ratio (%) August 2013	Yield (kWh/kW) August 2013	Performance ratio (%) September 2013	Yield (kWh/kW) September 2013	Performance ratio (%) October 2013	Yield (kWh/kW) October 2013	Performance ratio (%) November 2013	Yield (kWh/kW) November 2013	Performance ratio (%) December 2013	Yield (kWh/kW) December 2013
90.7	90.3	18.8	95.3	41.9	96.3	90.2	92.8	117.4	91.0	123.2	89.3	131.1	85.8	160.0	83.9	130.4	90.3	101.5	96.6	73.6	102.6	26.3	100.6	41.0
90.4	92.5	19.3	98.3	43.2	97.4	91.2	93.2	117.9	91.3	123.6	89.0	130.8	84.7	158.0	84.5	131.3	89.6	100.8	95.5	72.7	101.9	26.1	99.2	40.4
90.5	93.1	19.4	98.4	43.2	96.7	90.6	92.5	117.1	90.8	122.9	88.6	130.1	84.5	157.7	85.4	132.7	90.1	101.3	96.2	73.2	102.7	26.3	99.6	40.6
-	96.3	20.1	100.3	44.1	99.6	93.3	96.3	121.8	93.4	126.5	87.3	128.3	82.4	153.8	83.0	129.0	89.4	100.5	95.4	72.7	99.0	25.4	97.2	39.6
89.4	97.3	20.3	100.0	44.0	98.0	91.8	92.9	117.5	90.9	123.0	88.4	129.8	83.2	155.3	84.0	130.6	89.6	100.7	96.4	73.4	105.1	26.9	101.6	41.4
88.9	91.6	19.1	90.3	39.7	96.6	90.5	92.8	117.4	91.3	123.6	89.4	131.3	85.2	159.1	85.7	133.2	90.2	101.4	95.8	73.0	101.4	26.0	98.3	40.1
89.6	96.0	20.0	99.4	43.7	97.8	91.6	92.7	117.2	90.8	122.9	88.4	129.8	83.2	155.2	84.0	130.5	89.5	100.6	96.4	73.4	105.6	27.1	101.4	41.3
90.3	90.8	19.0	94.4	41.5	96.2	90.1	93.1	117.8	91.5	123.9	89.4	131.3	84.0	156.8	84.8	131.8	89.6	100.7	96.1	73.2	103.5	26.6	100.4	40.9
-	91.8	19.1	95.6	42.0	95.7	89.7	91.6	115.9	90.3	122.2	88.4	129.9	84.5	157.7	85.7	133.3	90.9	102.2	97.3	74.1	104.4	26.8	99.5	40.6
92.5	95.5	19.9	97.0	42.6	98.3	92.1	93.6	118.5	91.3	123.6	88.6	130.1	82.7	154.3	83.7	130.1	89.3	100.4	96.2	73.3	104.5	26.8	102.1	41.6
-	92.7	19.3	94.5	41.5	97.0	90.9	92.9	117.5	91.0	123.3	88.6	130.2	83.9	156.5	84.9	132.0	90.5	101.7	96.2	73.2	101.8	26.1	99.3	40.5
88.8	92.1	19.2	96.6	42.4	96.4	90.3	92.8	117.4	91.1	123.4	89.1	130.9	84.8	158.3	85.2	132.4	89.7	100.9	95.3	72.6	100.5	25.8	95.1	38.8
88.7	92.4	19.3	97.1	42.7	96.3	90.2	92.3	116.8	91.0	123.2	88.9	130.6	84.4	157.5	85.2	132.4	89.7	100.8	95.5	72.7	101.4	26.0	98.4	40.1
90.8	95.2	19.9	98.7	43.4	97.5	91.4	93.0	117.7	91.1	123.3	87.9	129.1	83.0	154.9	84.4	131.2	89.6	100.7	96.0	73.1	104.2	26.7	100.0	40.8
90.2	92.5	19.3	97.9	43.0	96.4	90.3	92.5	117.0	90.3	122.2	88.7	130.3	84.5	157.7	84.9	132.0	89.7	100.8	95.5	72.7	101.4	26.0	98.2	40.0
89.5	93.1	19.4	96.8	42.5	95.8	89.7	91.8	116.2	90.5	122.5	88.2	129.6	85.6	159.7	84.9	132.0	90.0	101.2	95.3	72.6	100.0	25.7	97.9	39.9
90.3	90.1	18.8	94.3	41.5	96.4	90.4	92.5	117.1	90.9	123.2	88.9	130.5	84.5	157.8	85.4	132.7	89.9	101.1	95.5	72.7	99.5	25.5	98.1	40.0
90.6	92.5	19.3	96.3	42.3	96.0	89.9	92.5	117.0	90.8	123.0	88.7	130.3	84.4	157.6	85.2	132.5	89.4	100.5	95.3	72.6	101.7	26.1	98.3	40.1
90.1	89.7	18.7	94.6	41.6	94.6	88.7	92.3	116.7	90.9	123.1	89.2	131.0	85.6	159.7	85.5	132.9	89.9	101.1	95.1	72.4	100.1	25.7	96.8	39.5
90.9	91.4	19.1	98.4	43.2	97.0	90.9	92.5	117.0	90.8	123.0	88.0	129.3	84.0	156.7	84.4	131.1	89.4	100.5	96.1	73.2	102.3	26.2	99.7	40.6
90.6	94.4	19.7	96.5	42.4	96.8	90.7	92.6	117.1	90.6	122.7	88.4	129.9	83.5	155.8	84.2	130.8	89.4	100.5	96.1	73.2	103.5	26.6	100.1	40.8
-	92.6	19.3	96.4	42.3	96.1	90.0	92.6	117.2	89.7	121.4	88.1	129.4	84.3	157.2	84.3	131.0	89.9	101.1	96.2	73.3	103.5	26.5	99.8	40.7
90.3	93.6	19.5	97.7	43.0	97.3	91.2	91.9	116.2	91.1	123.4	88.9	130.5	83.3	155.5	83.6	129.9	89.1	100.1	95.2	72.5	103.2	26.5	99.7	40.6
91.2	96.5	20.1	100.0	43.9	97.2	91.1	91.9	116.2	89.5	121.2	86.8	127.4	82.8	154.5	85.4	132.7	89.9	101.1	96.2	73.2	103.4	26.5	100.3	40.9
91.8	91.9	19.2	94.8	41.7	96.5	90.4	92.8	117.5	91.2	123.4	88.7	130.3	82.4	153.8	84.4	131.2	89.9	101.1	96.0	73.2	102.9	26.4	99.7	40.6
89.0	92.6	19.3	97.5	42.8	96.3	90.2	92.3	116.8	90.6	122.7	88.5	130.0	84.1	156.9	84.7	131.6	89.3	100.4	95.2	72.5	100.7	25.8	97.5	39.8
90.3	94.1	19.6	97.9	43.0	96.6	90.6	92.4	116.9	90.5	122.6	88.1	129.5	83.4	155.6	84.2	130.9	89.1	100.2	95.5	72.8	102.7	26.4	99.4	40.5
90.4	91.9	19.2	92.0	40.4	96.4	90.3	92.4	116.9	91.2	123.5	88.9	130.6	84.1	156.9	84.8	131.7	89.4	100.5	95.1	72.4	101.3	26.0	97.1	39.6
90.2	91.8	19.2	95.6	42.0	96.3	90.3	92.3	116.7	90.6	122.7	88.5	129.9	84.1	156.9	84.5	131.3	89.3	100.4	95.0	72.3	101.0	25.9	98.9	40.3
90.5	92.2	19.2	96.2	42.3	95.9	89.8	92.0	116.4	90.5	122.5	88.6	130.2	84.0	156.7	84.6	131.5	89.3	100.4	95.2	72.5	101.9	26.1	98.4	40.1
90.1	94.0	19.6	97.2	42.7	96.0	90.0	92.2	116.6	90.5	122.5	88.4	129.8	83.6	156.1	84.5	131.3	89.0	100.1	94.9	72.2	101.6	26.0	97.5	39.8
90.9	90.7	18.9	95.2	41.8	95.6	89.6	91.8	116.2	90.4	122.4	88.4	129.8	84.1	156.9	85.0	132.2	89.2	100.3	95.2	72.5	102.2	26.2	97.8	39.9
-	91.8	19.1	95.3	41.9	96.1	90.0	92.2	116.7	90.4	122.4	88.3	129.7	84.1	156.9	84.8	131.9	89.1	100.2	94.8	72.2	100.7	25.8	98.0	40.0
88.3	93.8	19.6	99.0	43.5	97.3	91.2	92.0	116.4	89.5	121.2	86.3	126.8	83.9	156.6	83.5	129.7	89.9	101.1	95.7	72.9	102.6	26.3	100.5	41.0
88.7	90.4	18.9	95.9	42.1	96.0	89.9	92.2	116.6	90.5	122.5	88.5	130.0	84.1	157.0	84.7	131.6	89.1	100.2	94.6	72.0	99.3	25.5	96.6	39.4
86.3	95.0	19.8	95.6	42.0	97.1	91.0	91.4	115.6	90.2	122.2	87.8	129.0	82.7	154.3	84.1	130.7	89.8	100.9	95.5	72.7	103.5	26.6	100.0	40.8
90.2	94.3	19.7	94.8	41.7	96.2	90.2	91.8	116.1	90.1	122.0	88.2	129.6	83.6	156.0	83.9	130.4	88.9	100.0	95.1	72.4	102.6	26.3	98.9	40.3
90.8	93.4	19.5	95.5	42.0	95.6	89.6	92.4	116.9	90.5	122.6	88.2	129.5	82.3	153.7	83.9	130.5	88.5	99.5	95.4	72.7	103.5	26.6	100.1	40.8
89.4	94.4	19.7	88.6	38.9	95.2	89.2	93.2	117.9	89.6	121.4	86.8	127.5	84.8	158.3	84.0	130.5	89.9	101.1	95.7	72.9	101.9	26.1	97.8	39.9
89.2	92.1	19.2	92.6	40.7	96.0	90.0	91.9	116.2	90.2	122.1	88.0	129.3	83.1	155.1	83.9	130.5	89.0	100.0	95.4	72.7	105.5	27.1	99.2	40.4
90.2	94.5	19.7	97.7	43.0	96.0	89.9	91.6	115.9	89.0	120.5	86.8	127.6	84.4	157.5	84.2	130.9	88.5	99.5	95.3	72.6	101.0	25.9	97.7	39.8
89.4	91.3	19.1	96.1	42.2	95.8	89.8	91.7	116.1	90.2	122.2	88.1	129.4	83.6	156.1	84.2	130.9	88.8	99.8	94.7	72.1	100.6	25.8	96.0	39.2
89.3	92.0	19.2	96.5	42.4	96.1	90.0	91.6	115.9	89.9	121.8	87.7	128.9	83.1	155.1	84.0	130.6	89.0	100.0	95.0	72.4	101.1	25.9	98.8	40.3
89.5	92.0	19.2	95.1	41.8	94.4	88.5	91.0	115.2	89.8	121.6	87.8	129.0	83.4	155.7	84.9	132.0	89.4	100.5	95.2	72.5	101.6	26.1	98.7	40.2
89.9	91.0	19.0	95.8	42.1	95.7	89.7	91.7	116.1	90.2	122.2	88.0	129.2	83.6	155.9	84.1	130.8	88.8	99.8	94.4	71.9	100.4	25.7	97.3	39.7
89.3	90.7	18.9	93.0	40.9	92.6	86.8	91.7	116.0	90.3	122.2	88.1	129.4	84.0	156.8	84.7	131.7	89.4	100.5	95.8	73.0	100.5	25.8	97.7	39.8
-	90.7	18.9	96.1	42.2	94.8	88.9	91.1	115.2	91.1	123.4	88.2	129.5	83.8	156.3	84.1	130.7	89.3	100.4	94.6	72.1	98.5	25.3	94.3	38.5
89.5	90.5	18.9	97.9	43.0	96.3	90.3	92.1	116.5	90.1	122.0	87.8	129.0	82.8	154.5	83.5	129.7	88.4	99.4	94.6	72.1	101.5	26.0	98.2	40.0
-	93.6	19.5	95.8	42.1	95.5	89.5	91.6	115.9	89.9	121.7	87.8	129.0	83.0	155.0	84.1	130.7	88.8	99.9	94.5	72.0	102.7	26.3	97.8	39.9
89.5	94.5	19.7	98.6	43.3	95.6	89.6	91.7	116.0	90.3	122.3	88.1	129.4	82.3	153.6	83.6	129.9	88.8	99.8	94.6	72.1	100.9	25.9	97.5	39.7
88.4	93.4	19.5	93.0	40.9	95.6	89.6	91.6																	

PHOTON Lab's outdoor module tests: Results of 2013 yield measurements

2013 rank	Manufacturer	Model	Performance ratio (%) January - December 2013	Yield (kWh/kW) January - December 2013	Deviation from test winner (%)	Cell type	Origin	Production dates**	Installed in	STC power (W)	2012 rank
121	Shinsung	SS-BM260C	88.9	1035.5	5.37 %	Mono	KR	–	4/2012	258.8	–
122	Perfectenergy	PEM-180/185-72M-SCC	88.5	1030.9	5.79 %	Mono	CN	2008	6/2010	191.3	127
123	CNPV Solar Power	CNPV-240M	88.3	1027.8	6.08 %	Mono	CN	2006	7/2011	249.7	102
124	Kyocera	KD210GH-2PU	88.2	1026.9	6.16 %	Multi	EU	2009	2/2011	212.1	129
125	Isofoton	ISF-255	87.9	1023.9	6.43 %	Mono	ES	2012	4/2012	255.0	–
126	Schott Solar	SCHOTT POLY TM 220	87.5	1019.3	6.85 %	Multi	CZ	2008–2009	2/2011	224.7	133
127	Calrays	CPM 250-A-96	87.5	1019.0	6.88 %	Mono	–	–	7/2011	244.0	137
128	Sharp	NU-185E1	87.4	1017.6	7.01 %	Mono	GB	2005	3/2011	186.1	125
129	Scheuten Solar	Multisol P6-60	87.4	1017.3	7.04 %	Multi	DE	–	6/2011	238.1	104
130	Evergreen Solar	ES-A-210-fa2	87.2	1015.9	7.16 %	Ribbon	US	2008	3/2011	210.0	126
131	Shell Solar (now with Solarworld)	Shell SQ 150-C	87.0	1013.1	7.42 %	Mono	PT	Through 2005	2006	155.8*3	122
132	Sovello	SV-X-205-fa1	86.8	1010.4	7.67 %	Ribbon	DE	–	2/2011	206.1	136
133	SolarWorld	Sunmodule Plus SW 210 poly	86.8	1010.2	7.69 %	Multi	DE	2004	2006	212.2*3	97
134	First Solar	FS-265	86.7	1010.0	7.70 %	CdTe	US	2006–2011	2007	65.4*3	131
135	Emmvee Photovoltaics	ES-230P60	86.6	1008.0	7.89 %	Multi	IN	2008–2011	3/2010	234.0	132
136	Shell Solar	Shell PowerMax Eclipse 80-C	86.5	1007.3	7.95 %	CIS	US	2005–2006	2007	90.8*3	–
137	Day4 Energy	Day4 48MC 185	86.1	1003.1	8.33 %	Multi	CA	2006	2/2011	186.5	124
138	Sovello	SV-X-200-fa1	85.5	995.2	9.06 %	Ribbon	DE	2009–2011	1/2011	205.0	140
139	Solar-Fabrik	SF 130/4-130	85.4	994.6	9.11 %	Mono	DE	2006–2010	3/2010	130.7	138
140	Suntech Power	STP190-18/Ub	85.3	993.2	9.24 %	Multi	CN	2005	2/2011	182.9	135
141	Solar-Fabrik	SF 145A	84.2	980.3	10.42 %	Ribbon	DE	2003–2004	2005	145.8*3	143
142	Hanwha SolarOne	SF160 M5-24 (175 W)	83.7	974.7	10.93 %	Mono	CN	–	2007	174.6*3	128
143	Canadian Solar	CS6A-170P	83.3	969.9	11.37 %	Multi	CN	2007 (purchased)	2007	174.4*3	141
144	Sunways	MHH plus 190 (190 Wp)	83.3	969.4	11.41 %	Multi	DE	2003–2005	2005	199.5*3	142
145	Isofoton	IS-170/24	82.9	964.8	11.83 %	Mono	ES	2007	2009	172.8	144
146	Kyocera	KC170GT-2	82.8	964.0	11.91 %	Multi	JP	Through 2006	2006	178.4*3	146
147	Isofoton	I-110/24	81.3	947.2	13.44 %	Mono	ES	Through 2005	2006	102.5*3	145
148	BP Solar International	BP 7185 S	81.1	944.0	13.73 %	Mono	ES, IN	–	2005	185.1*3	148
149	Photowatt International	PW 1650-175W	80.6	938.4	14.25 %	Multi	FR	2005 (purchased)	2006	171.4*3	149
150	Sharp	NT-R5E3E	79.8	928.7	15.13 %	Mono	JP	2003	2005	187.9*3	151
151	Evergreen Solar	ES-180-RL	76.6	892.3	18.46 %	Ribbon	DE	2006–2008	2007	185.4*3	150
	Alex Solar Energy & Technology	ALM-190D-24	*2	*2	*2	Mono	CN	2009	7/2011	187.8	113
	ASE (now with Schott Solar)	ASE-300-DG-FT (300 W)	*2	*2	*2	Ribbon	US	1997–2006	2007	308.1*3	147
	CNPV Solar Power	CNPV-240P	*2	*2	*2	Multi	CN	2006	7/2011	243.1	24
	Conergy	PowerPlus 235P	*2	*2	*2	Multi	DE	–	1/2012	240.0	19
	Evergreen Solar	ES-E-210-fc3	*2	*2	*2	Ribbon	US	–	2/2011	211.2	120
	Fluitemik	FTS-220 P	*2	*2	*2	Multi	PT	–	11/2011	231.8	90
	Hanwha SolarOne	SF160-24-1M175 (scac)	*2	*2	*2	Mono	CN	–	2/2010	183.0	81
	Hengdian Group Dmegc	DM190-M125-72	*2	*2	*2	Multi	PT	–	11/2011	231.8	90
	Huanghe Photovoltaic Technology	HH230(30P)	*2	*2	*2	Multi	CN	–	1/2012	231.7	10
	JA Solar Technology	JAP6-60-240/3BB	*2	*2	*2	Multi	–	–	1/2013	242.1	–
	Latitude Solar	Latitude P6-60/6 (235)	*2	*2	*2	Multi	SE	–	1/2012	241.2	–
	Linuo Group	LN180(36)M-185	*2	*2	*2	Mono	–	2003	7/2011	191.8	59
	Magi Solar Energy Technology	MGSM-240D-60	*2	*2	*2	Mono	CN	–	7/2011	246.1	93
	M-Prime	M 235P	*2	*2	*2	Multi	PT	–	1/2012	240.7	50
	Nelumbo	NEI 230-3VA	*2	*2	*2	Multi	CZ	–	2/2011	228.5	17
	Qixin Solar Electrical Appliance	SL230CE-30P	*2	*2	*2	Multi	–	–	4/2012	239.6	–
	Risen Energy	SYP185S-M	*2	*2	*2	Mono	CN	–	7/2011	191.7	52
	Solibro	SL1-95	*2	*2	*2	CIGS	DE	2008	2/2011	97.3	–
	Sonalis	SL-190CE-36M	*2	*2	*2	Mono	–	–	1/2012	192.2	130
	Sunpeak / Alpexsolar	ALP235W	*2	*2	*2	Mono	IN	2009–2010	3/2010	233.0	111
	SunPower	SPR-245NE-WHT-D	*2	*2	*2	Mono	–	–	1/2012	245.2	3
	SunPower	SPR-320NE-WHT-D	*2	*2	*2	Mono	–	–	1/2012	325.5	2
	SunPower	SPR-327NE-WHT-D	*2	*2	*2	Mono	–	–	1/2012	325.8	1
	Topsolar Green	TSM72-125M-190W	*2	*2	*2	Mono	CN	–	7/2011	185.9	100
	Topsolar Green	TSM96-125M-250W	*2	*2	*2	Mono	CN	–	3/2012	246.6	–
	Upsolar	UP-M185M	*2	*2	*2	Mono	CN	2010–2011	2/2011	189.2	101

*1 when the date of production was unavailable, the date when the PHOTON Lab bought the module was used (if possible)

*2 no data available

*3 STC power specification was not determined by PHOTON Lab but by the manufacturer

