



## LIST OF OUTDOOR THIN FILM OEM SOLAR MODULES

Electrical Output are Rated at Standard Test Condition 100mW/m<sup>2</sup>, 25<sup>0</sup>C, AM1.5

PART No.	LENGTH (mm)	WIDTH (mm)	OPEN CIRCUIT VOLTAGE(V)	VOLTAGE AT NOMINAL POWER(V)	NOMINAL POWER(Wp)
81046FPA2	44	121	3.3	2.4	0.287
80991FP2	52.36	65	3.3	2.4	0.181
80994FP	52.36	65	3.3	2.4	0.181
81081FP2	52.36	75	3.3	2.4	0.210
80908MH	57	50	3.3	2.4	0.148
80954FA	57.6	54.2	3.3	2.4	0.155
80761MF	60	90	3.3	2.4	0.290
90440JH	37	82	4.9	3.6	0.158
80160JQ	55	23	4.9	3.6	0.066
80147MF	55	23	4.9	3.6	0.066
90032MH	57	50	4.9	3.6	0.157
80936FA	57.6	54.2	4.9	3.6	0.162
90033JH	70	30	4.9	3.6	0.113
80907MH	70	30	4.9	3.6	0.113
80582MFK	Ø71		4.9	3.6	0.230
80999MF	72	60	4.9	3.6	0.231
81049FP2	75	33.88	4.9	3.6	0.136
81012MF2	75	71.7	4.9	3.6	0.302
80062MQ	75	71.7	4.9	3.6	0.309
81030MF	75	71.7	4.9	3.6	0.309
81048FA	81	190	4.9	3.6	0.768
80881FA	85	85	4.9	3.6	0.388
81013MF	95	75	4.9	3.6	0.376
80063MH	114	36	4.9	3.6	0.215
90010MH	120	112	4.9	3.6	0.658
80960FA	122	115	4.9	3.6	0.656
80460QP	30	192	6.5	4.8	0.305
80600MF	75	71.7	6.5	4.8	0.318
80623FA	81	190	6.5	4.8	0.841
90035MH	97	80	6.5	4.8	0.460
80570MH	108.4	33.8	6.5	4.8	0.210
80660MH	108.4	33	6.5	4.8	0.198
90066MH	119	38.4	6.5	4.8	0.260
80624FA	122	144	6.5	4.8	0.975
81053FA	162	192	6.5	4.8	1.756
90036MH	57	50	6.5	4.8	0.157

PART No.	LENGTH (mm)	WIDTH (mm)	OPEN CIRCUIT VOLTAGE(V)	VOLTAGE AT NOMINAL POWER(V)	NOMINAL POWER(Wp)
80900MF2	81	192	8.2	6.0	0.916
80900MH	81	192	8.2	6.0	0.924
80900MHN	81	192	8.2	6.0	0.924
80900JH	89.5	51.7	8.2	6.0	0.277
80203HPO	105	105	8.2	6.0	0.662
80763MH	110	60	8.2	6.0	0.400
90055HPO	113.5	159	8.2	6.0	1.102
80764HPO	114	250	8.2	6.0	1.683
90038HPON	114	250	8.2	6.0	1.683
80050HPO	135	182	8.2	6.0	1.417
80902FPAI	144	162	8.2	6.0	1.287
80957FA	162	162	8.2	6.0	1.633
90004MH	57	50	9.8	7.2	0.155
90053HP	72	225	9.8	7.2	0.989
80772HP	81	192	9.8	7.2	0.968
90511HP	115	122	9.8	7.2	0.887
90052MH	122	82	9.8	7.2	0.616
80065HP	195	144	9.8	7.2	1.729
80271FA	162	192	9.8	7.2	1.830
80066JH	488	16	9.8	7.2	0.363
90005MH	120	112	11.4	8.4	0.831
80961FA	122	115	11.4	8.4	0.817
90006FA	142	194	11.4	8.4	1.612
80641CA	144	325	11.4	8.4	2.617
80625FA	144	325	11.4	8.4	2.738
81051FA	162	192	11.4	8.4	1.809
80662FA	192	81	11.4	8.4	0.906
80830FAI	192	192	11.4	8.4	2.073
80434CPA	194	285	11.4	8.4	3.260
80067CPO	194	285	11.4	8.4	3.276
80073FPA	194	285	11.4	8.4	3.276
90019FA	242	285	11.4	8.4	3.508
80695CA	194	285	13.0	9.6	3.152
91210FA	194	285	13.0	9.6	3.152
80825JH	47	24	14.7	10.8	0.051
80068JH	48	20	14.7	10.8	0.044
80930JH	69	52	14.7	10.8	0.203
80610MH	69	52.3	14.7	10.8	0.203
90041FA	170	80	16.3	12	0.865

PART No.	LENGTH (mm)	WIDTH (mm)	OPEN CIRCUIT VOLTAGE(V)	VOLTAGE AT NOMINAL POWER(V)	NOMINAL POWER(Wp)
81052FAI	288	325	21.2	15.6	5.605
80550FAPN	244	96	22.8	16.8	1.485
80180FA	244	115	22.8	16.8	1.741
80552FAIB	281	320	22.8	16.8	5.322
80933FA	288	81	22.8	16.8	1.415
80580CA	288	139	22.8	16.8	2.530
80774FA	288	139	22.8	16.8	2.530
81043CA	288	244	22.8	16.8	4.353
80270FA	288	244	22.8	16.8	4.353
80432CA	288	325	22.8	16.8	5.717
80620FA	288	325	22.8	16.8	5.717
90047CA	288	488	22.8	16.8	8.140
80850FA	288	488	22.8	16.8	8.140
80640CA	300	1000	22.8	16.8	18.328
80824CA	300	1000		rear contact: Ni	
80790FPAN	310	110	22.8	16.8	2.110
90016MH	310	110	22.8	16.8	2.156
80540CA	325	576	22.8	16.8	10.095
80776FA	325	576	22.8	16.8	10.095
90007MH	120	112	24.5	18.0	0.826
80962FA	122	115	24.5	18.0	0.809
80281MH	192	74.7	24.5	18.0	0.918
80230C	192	81	24.5	18.0	0.992
80903FA	192	81	24.5	18.0	0.940
80800CE	192	488	24.5	18.0	0.144
90011MH	194	142	24.5	18.0	6.114
80130MHNO	194	142	24.5	18.0	1.783
90064MHO	195	192	24.5	18.0	2.281
80892FA	195	192	24.5	18.0	2.338
80180MH	244	115	24.5	18.0	1.816
90018MH	285	194	24.5	18.0	3.564
90020MH	285	242	24.5	18.0	4.425
90013C	142	323	24.5	18.0	2.924
80780MH	325	144	24.5	18.0	2.982
90060CA	325	576	24.5	18.0	10.061
90490HP	450	90	24.5	18.0	2.398
80931FAP	450	90	24.5	18.0	2.336
80851MH	488	72	24.5	18.0	0
80841MH	488	144	24.5	18.0	4.652
81056FA	488	144	24.5	18.0	4.465

PART No.	LENGTH (mm)	WIDTH (mm)	OPEN CIRCUIT VOLTAGE(V)	VOLTAGE AT NOMINAL POWER(V)	NOMINAL POWER(Wp)
90062MH	576	54	24.5	18.0	1.985
81040FA	576	54	24.5	18.0	1.936
90014MH	190	75	27.7	20.4	0.910
90480C	192	81	29.3	21.6	0.990
80770FA	192	81	29.3	21.6	0.938
90481FA	288	244	31.0	22.8	4.485
80604CAP	420	40	35.9	26.4	0.845
90061CA	325	576	48.9	36.0	11.922
80480C	809	25	81.5	60.0	1.145
90355C	976	25	81.5	60.0	1.145
80891C	576	25	92.9	68.4	0.599
80996C	894	25	92.9	68.4	1.225
80890C	976	25	92.9	68.4	1.073
80110C	325	192			0

TYPES	DESCRIPTION
Type A	Edge protection laser rim
Type B	Solar Module with hole
Type C	No protective coating on back. Solar module for processing by encapsulation of unprotected semiconductor layer Figures for electrical data apply to a real contacting
Type F	Back protected by special foil against outdoor condition
Type J	Back with protective coating and free contact strips. Contacting by soldering at various points along the contact strip. Maximum relative humidity 75% without condensation. Figures for electrical data refer to contacting at a central point
Type K	Circular solar module
Type M	Back with protective coating and free contact points. Contacting possible by soldering. Wide range of applications outdoors using further encapsulation, edge sealing or housing integration
Type N	With cable and sealed soldering points, standard cable length approximately 20cm, cable type 0.25mm <sup>2</sup> .
Type O	Surrounding laser line for complete electrical isolation of both solar cells and contact areas
Type P	Isolated negative pole for optimal area utilization
Ends with '2'	Glass thickness 2.3mm otherwise 3.2mm

CELL TEMPERATURE COEFFICIENTS	
Power	Minus 0.2% per degree Celsius
Open Circuit Voltage	Minus 0.33% per degree Celsius
Short Circuit Current	Plus 0.08% per degree Celsius
LIMITS	
Permissible module temperature	Minus 40 degree Celsius to plus 80 degree Celsius
Relative Humidity	With type J and M maximum 75% relative humidity without condensation; Higher relative humidity permissible depending on version
Soldering conditions	250 to 290 degree Celsius for 1 to 2sec (flux cored solder), Interflux IF141, 0-500, SN60 Pb40