PVSYST V4.1

INERSOL, Ingeniería Energética y Medioambiental S.L.
Panel Solar USP 50

Characteristics of a PV module

Manufacturer, Model : **USL, USP 50**

Availability : Produced from 2004

Data source : Photon Mag. 2005

File : USL_USP50.PAN of 01/07/06 11h00

STC power (manufacturer)	**PNom**	**50**	**Wc**	**Technology**		**Si-mono**	
Module size (W x L)	.	0.536 x 0.826	m²	Rough module area	Amodule	0.44	m²
Number of cells		1 x 36		Sensitive (cells) area	Acells	N/A	m²

Specifications for the model (manufacturer or measurement data)

Temperature reference cond.	Tref	25	℃	Irradiation refe rence	Gref	1000	W/m²
Open circuit voltage	Voc	20.5	V	Short circuit current	Isc	3.40	A
Maximum power point voltage	Vmpp	16.7	V	Max. power point current	Impp	2.99	A
=> maximum power	Pmpp	49.9	W	Isc temperature coefficient	mu ISC	1.4	mA/℃

One-diode model parameters

Shunt resistance	Rsh	200	ohm	Saturation current at 20℃	Io	130	nA
Series resistance	Rs	0.34	ohm	Voc temp. coefficient	muVoc	-78	mV/℃
				Diode quality factor	Gamma	1.30	

Reverse bias parameters, for use in behaviour of PV arrays under partial shadings or mismatch

Reverse characteristics (darkness)	Brev	3.20	mA/V²	(quadratic factor, per cell)			
Number of by-pass diodes per module		2		By-pass diode reverse voltage	Vrev	-0.7	V

Model results for standard conditions (STC: T=25°C, G=1000 W/m², AM=1.5)

Maximum power point voltage	Vmpp	16.3	V	Maximum power point current	Impp	3.09	A
Maximum power	Pmpp	50.2	Wc	Power temper. coefficient	muPmpp	-0.49	%/℃
Efficiency (/ module area)	Eff_mod	11.3	%	Fill factor	FF	0.720	
Efficiency (/ cells area)	Eff_cells	N/A	%				

PV module : USLUSP 50Photon Mag. 2005