

# 103W

## ESHINE POWERSTATION

*Standard Solar Powerstation*

### Introduction

The eSHINE Power Systems have been specifically designed to meet the power demands for any particular load, with a variety of run times, for any location globally. Valen Energy has engineered all power systems to optimise performance taking into consideration local conditions.

Our Design formula at its absolute simplistic form for every location globally is MWS X LNL X 5DB (middle of winter sunlight x Longest night length x 5 days back up). Our systems are the most advanced and highly sort after globally as all components have been designed by Valen Light to talk to each other and work together.

The tables on page 2 represent system component sizing. Simply look up your powerstation model number with the relevant details to find your specific energy storage and solar panel information (example model no: EPS-D-FN-086).



*Valen Energy reserves the right to make changes at any time in order to supply the best product possible.*

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## Energy Storage System

Our Extreme Energy Storage Systems (ESS) have been designed to handle high and low ambient temperatures. With an extreme temperature electrolyte allowing the system to function better under stress, coupled with thicker plating and casing to increase temperature ranges far beyond other energy storage systems.

OPERATING PROFILE	ESS MODEL	ESS QUANTITY	SYSTEM VOLTAGE	ESTIMATED LxHxW
FN	EBGF	4	24	485 x 240 x 175mm
9X	EBAA	4	24	330 x 220 x 175mm
6X	EAGF	4	24	350 x 180 x 180mm
3X	EAGF	2	24	350 x 180 x 180mm
3X	EAEA	2	24	320 x 130 x 90mm

\* Model example: EPS-D-FN-007. See above table to select your Energy Storage system model.

FN = full night operation, therefore your ESS model will be EAEA

ESS Type	GEL
ESS Design	Extreme
Voltage	12
Autonomy / back up	5 x run profile
Daily Average DOD	12%
Operating temperature	-39 to +68
Recyclable percentage	98%
Shipping classification	Non DG (dangerous goods)
Warranty	5 Years
Life expectancy	8 years
Upgraded internal plates	YES
Larger case insulation	YES

## Solar Panel

Made from Grade A silicone to deliver a high performance cell in both sunny and overcast days and providing power year round for 20+ Years. The eSHINE systems have backing sheets to ensure vandal protection from rocks and projectiles striking the underside of the solar panel.

EPS - 103	Location	Tilt Angle	DN				FN				9X				6X				3X			
			Panel Model	No. of Panels	Estimated Area		Panel Model	No. of Panels	Estimated Area		Panel Model	No. of Panels	Estimated Area		Panel Model	No. of Panels	Estimated Area		Panel Model	No. of Panels	Estimated Area	
					M	FT			M	FT			M	FT			M	FT			M	FT
	A	60	X	X	X	0.0	#N/A	2	12.8	42.1	SFFA	2	8.3	27.1	SDHA	2	5.5	18.0	SBJA	2	2.9	9.4
	B	60	X	X	X	0.0	SFHA	2	8.6	28.1	SDHA	2	5.5	18.0	SCFA	2	3.7	12.0	SCGA	1	1.9	6.3
	C	50	X	X	X	0.0	SEDA	2	6.4	21.1	SCIA	2	4.1	13.5	SBJA	2	2.8	9.0	SBJA	1	1.4	4.7
	D	50	X	X	X	0.0	SDEA	2	5.1	16.8	SCCA	2	3.3	10.8	SDAA	1	2.2	7.2	SBGA	1	1.2	3.8
	E	50	X	X	X	0.0	SCJA	2	4.3	14.0	SBJA	2	2.8	9.0	SCFA	1	1.8	6.0	SBDA	1	1.0	3.1
	F	50	X	X	X	0.0	SCFA	2	3.7	12.0	SDCA	1	2.4	7.7	SCBA	1	1.6	5.2	SBBA	1	0.8	2.7
	G	50	X	X	X	0.0	SCCA	2	3.2	10.5	SCIA	1	2.1	6.8	SBJA	1	1.4	4.5	SBAA	1	0.7	2.4
	H	50	X	X	X	0.0	SBJA	2	2.9	9.4	SCFA	1	1.8	6.0	SBHA	1	1.2	4.0	SJAA	1	0.6	2.1
	I	50	X	X	X	0.0	SBHA	2	2.6	8.4	SCCAS	1	1.7	5.4	SBFA	1	1.1	3.6	SIAA	1	0.6	1.9
	J	25	SDCA	2	4.8	0.0	SDBA	1	2.3	7.7	SCAA	1	1.5	4.9	SBEA	1	1.0	3.3	SHAA	1	0.5	1.7
	K	25	SCJA	2	4.4	0.0	SCJA	1	2.1	7.0	SBJA	1	1.4	4.5	SBDA	1	0.9	3.0	SHAA	1	0.5	1.6

\* Model example: EPS-D-FN-007. See above table to select your solar panel model.

D = Location, FN = full night operation, therefore your solar panel model will be SBGA

## Control System

Valen's ASC technology has been designed to adapt to the environment our systems are deployed. The algorithm monitors Energy storage (EESS) capacity and performance, sunlight, ambient temperature & length of night specific to the installation location to automatically adjust load profile when energy capacity has been reduced due to inclement weather thus increasing longevity of components.

System Voltage	12/24 V Auto detect
Max Charge current	10A, 20A
Max PV input W 10A	125w@12v, 250w@ 24v
Max PV input W 20A	250w@12v, 500w@ 24v
Float charge	13.8 / 27.6
Main Charge	14.4 / 28.8 Daily
Boost Charge	14.4 / 28.8 v
Equalisation	14.8 / 29.6
Discharge protection	15 hr
Cut off Voltage	11-12 / 22-24 V
Reconnect voltage	12.8 / 25.6
Over voltage protection	15.5 / 31.0 V

Under voltage protection	10.5 21.0 V
Max PV voltage	85V
Min PV voltage	17 / 34V
temperature compensation	YES
Self consumption	15 mA
Ambient Temperature sensor	YES
Night detection	Adjustable
Data logging	>3 years
Dimensions	125 x 125 x 50mm
Weight	1200g
Dimming	0-10, PWM

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