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## BLOCK CHAIN RENEWABLE ENERGY SYSTEM

**66S4**

FOMSOD 66S EQUITABLE ENERGY S400 [400kg/ Batch] (Solar)

### TECHNICAL DATA

Drying Chamber:	1.88 m x 1.58 m x 2.48 m	Size:	400 Kg/Batch
Tray:	1.88 m x 1.38 m	Material:	*FGSS
No. of Trays:	30	Power Requirement:	1.04 kW
System type	Solar		
<b>Collector Plane Orientation</b>	Tilt	30°	Azimuth 0°
<b>User's needs :</b>	Fixed constant load	400 W	Global 3504 kWh/Year
<b>PV Array Characteristics</b>			
Total number of PV modules	No. modules	24	Unit Nom. Power 250 Wp
Array global power	Nominal (STC)	<b>6000 Wp</b>	At operating cond. 5370 Wp (50°C)
Array operating characteristics (50°C)	U mpp	27 V	I mpp 200 A
Total area	Module area	<b>39.2 m<sup>2</sup></b>	Cell area 35.0 m <sup>2</sup>
<b>Power Bank:</b>	<b>28.8 kWh</b>		
<b>Heat Exchanger/Drying Chamber Characteristics</b>			
Collection Efficiency:	98.0 %	Pick-up Efficiency:	75.0 – 90.0 %
Drying Efficiency:	90.0 %		
Drying Time (t) in hrs. @ 75 % Initial moisture content:	4 ≤ t ≤ 18		
<b>Relative Humidity</b>	<b>Initial</b>		<b>Final</b>
Capillary moisture:	65 %		46 %
Absorbed Moisture:	35 %		0 %
<b>PV Array loss factors</b>			
Thermal Loss factor	Uc (const)	20.0 W/m <sup>2</sup> k	Uv (wind) 0.0W/m <sup>2</sup> k/m/s
Wiring Ohimic Loss	Global array res.	2.3 mOhm	Loss Fraction 1.5% at STC
Serie Diode Loss	Voltage Drop	0.7V	Loss Fraction 2.3% at STC
<b>System Production</b>	<b>Available Energy</b>	<b>7928 kWh/year</b>	Specific prod. 2592 kWh/kWp/year
	Used Energy	3504 kWh/year	Excess (unused) 557 kWh/year
	Performance Ratio PR	32.68 %	Solar Fraction SF 100.00%
Loss of Load	Time Fraction	0.0%	Missing Energy 0.0kWh/year
Battery ageing (state of Wear)	Cycle SOW	93.9%	Static SOW 91.7%
	Battery Lifespan	20 years	
<b>CO<sub>2</sub> Balance</b>			
Produced Emissions	Total:	8.19 tCO <sub>2</sub>	
Replaced Emissions	Total:	32.2 tCO <sub>2</sub>	
System Production:	647.76 kWh/yr	Lifetime:	25 years
		Annual Degradation:	1.0 %
Grid Lifecycle Emissions:	402 gCO <sub>2</sub> /kWh		
<b>CO<sub>2</sub> Emission Balance</b>	<b>Total: 22.6 tCO<sub>2</sub></b>		
System Lifecycle Emissions Details:			
<b>Item</b>	<b>Modules</b>	<b>Supports</b>	
<b>LCE</b>	1713 kgCO <sub>2</sub> /kWp	2.68 kgCO <sub>2</sub> /kg	
<b>Quantity</b>	4.50 kWp	180.0 kg	
<b>Subtotal [kgCO<sub>2</sub>]</b>	7707	483	
Saved CO <sub>2</sub> Emission:	11.6 tCO <sub>2</sub>		
<b>COST:</b>	<b>13,200,000 NGN</b>		

\* Food Grade Stainless Steel