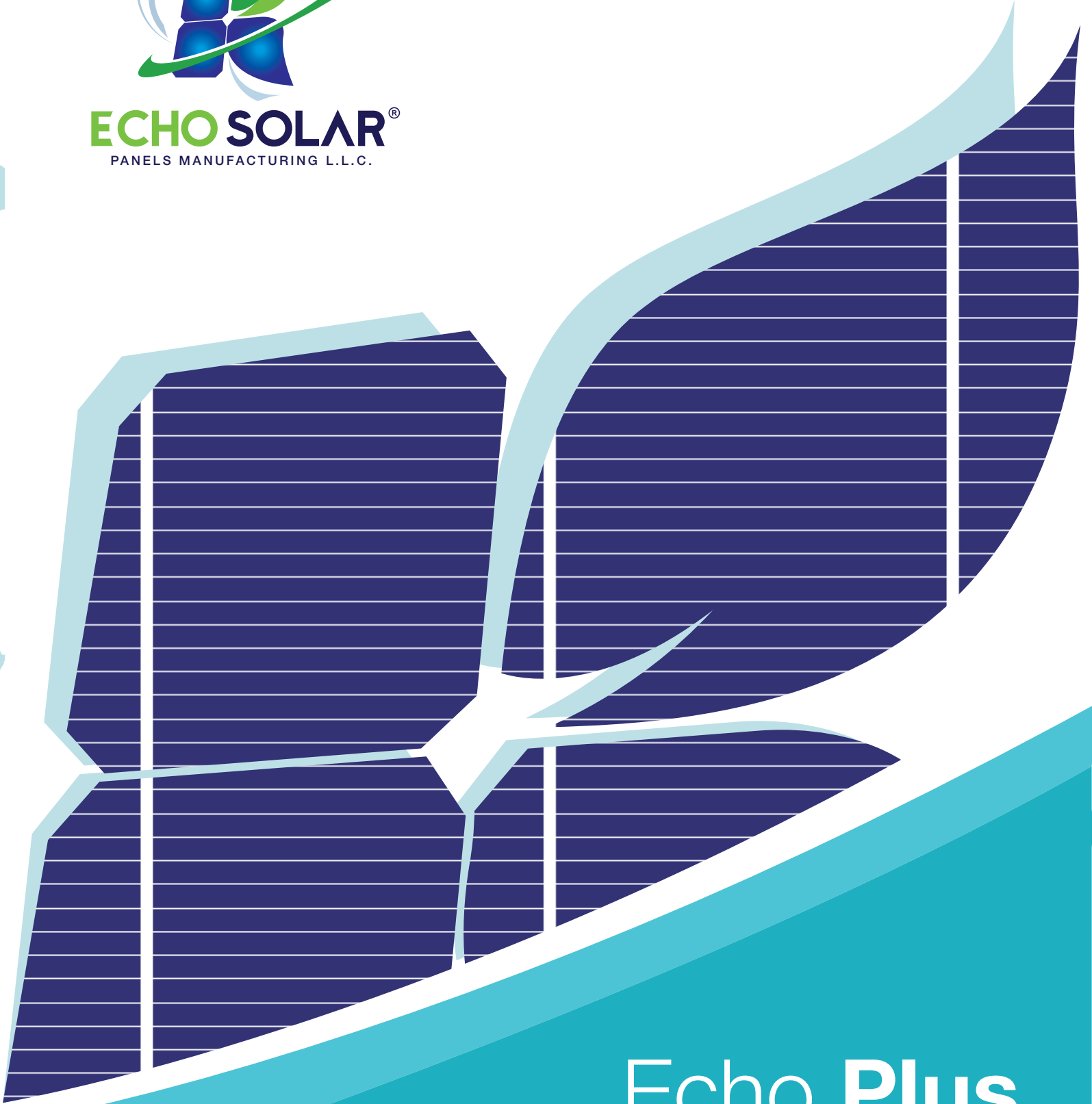




**ECHO SOLAR**<sup>®</sup>  
PANELS MANUFACTURING L.L.C.

**Powering** Green Energy



# Echo Plus

**HIGH ENERGY DENSITY PRODUCT**



More power per m<sup>2</sup>



Robust & Durable Design



100% PID FREE



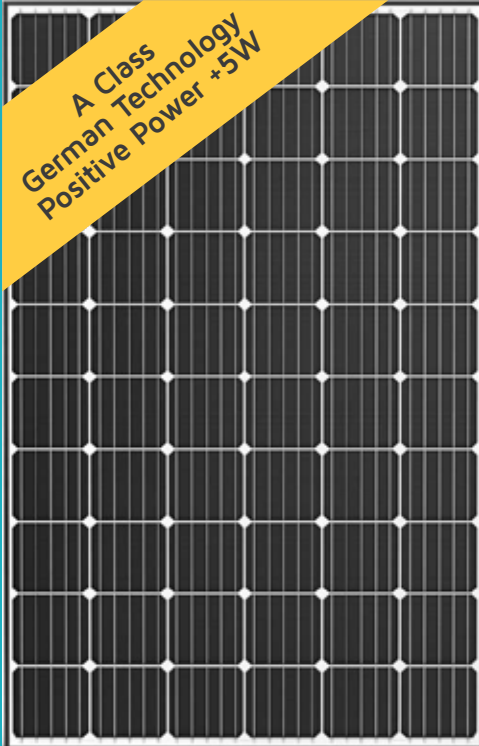
Low LID

info@echosolarae.com  
www.echosolaruae.com

# ECHO PLUS

## MONO-CRYSTALLINE MODULE

### A-CLASS



ECHO Modules are manufactured at the highest levels in Dubai with state of art manufacturing facility having elevated feature and unsurpassed performance.

### ECHO QUALITY CONTROL

Material Inspection



Process Monitoring



Functionality Check



Quality Reports



Module Packaging



**Multi-crystalline modules designed for residential, commercial and utility applications - rooftop or ground mount.**



**4 & 5Bus-bar Solar Cell**

Cutting Edge Technology Thoroughly methodically & carefully designed by professionals to improve the Efficiency of module.



**PID Free**

Long-term yield security with Anti-PID Technology



**Resistance to Salt corrosion & Humidity**

Module complies with IEC 61701



**High Strength Design**

Module complies with advanced load Test



**IP67 Rating Junction Box**

Advanced Water and Dust Proof Level



**Superior Performance at High Temperature**

Less power loss



**Low-light Performance**

Advanced glass and solar cell performance in low-light environments



**Safe Electronics**

Protection against short circuits and thermally induced power losses due to potted junction box and welded cables.



**100 % EL testing Pre-EL & Post EL**



**Anti-reflective and anti-soiling surface reduces power loss from dirt and dust**

## PERFORMANCE | STC (Ir: 1000 W/m<sup>2</sup>, Temp: 25°C, AM: 1.5)

Module Type	EM175	EM180
Maximum Power(Pmax)	175W	180W
Number of Cells	36	36
Open Circuit Voltage(Voc)	23.54V	23.86V
Short Circuit Current(Isc)	9.48A	9.54A
Maximum Power Voltage(Vpm)	20.03V	20.35V
Maximum Power Current(Ipm)	8.75A	8.87A
Module Efficiency(η)	17.53%	18.05%
Operating Temperature	-40 to 85°C	
Maximum System Voltage	1000V	
Maximum Fuse Rating	15A	
Power Tolerance	0~+5W	
Temperature Co-efficient Voc	-0.26%/°C	
Temperature Co-efficient Pmax	-0.35%/°C	
Temperature Co-efficient Isc	0.02%/°C	

## PERFORMANCE | NOCT (Ir: 800 W/m<sup>2</sup>, Ambient Temp: 20°C, Wind speed: 1m/s)

Module Type	EM175	EM180
Maximum Power(Pmax)	130.57W	134.35W
Open Circuit Voltage(Voc)	21.41V	21.68V
Short Circuit Current(Isc)	7.71A	7.77A
Maximum Power Voltage(Vpm)	18.16V	18.43V
Maximum Power Current(Ipm)	7.19A	7.29A

## MECHANICAL PROPERTIES

Cells	ARC coated cells
Cell Type	Mono-crystalline
Cell Dimension	156X156mm
Module Dimensions	1481X675X35mm
Weight	11 Kgs.
Junction-Box	IP67
Connectors Type	MC4 Compatible
Cable Length	1000mm
Front Cover	Low Iron Tempered Textured Glass
Back Cover	Weather resistant back sheet
Frame	High strength Anodized aluminum frames
Front Load Capacity	5400Pa
Rear Load Capacity	2400Pa

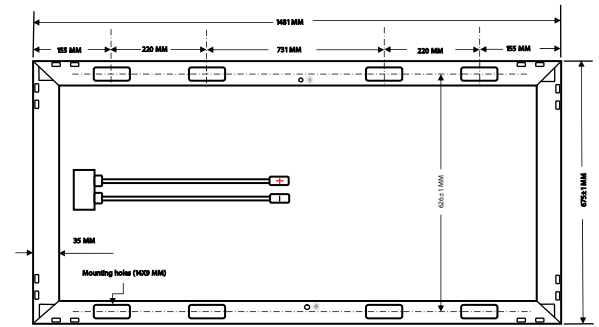
## CERTIFICATES & WARRANTY

Certificates	ISO 9001:2015 IEC 61215, IEC 61730 - I & II IEC 61701 (Maximum Severity) IEC 62716
Module Fire Rating	CLASS A
Product Warranty	10 Years
Linear Output Warranty Power	25 Years

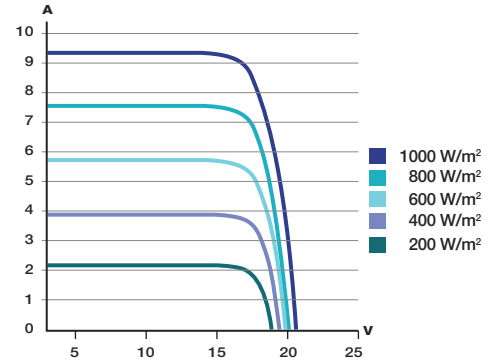
## LOADING QUANTITY

No. of Modules Per Pallet	30 Modules	
No. of Palletes in 20 ft. Container	19 Palletes	570 Modules
No. of Palletes in 40ft. HQ Container	45 Palletes	1350 Modules

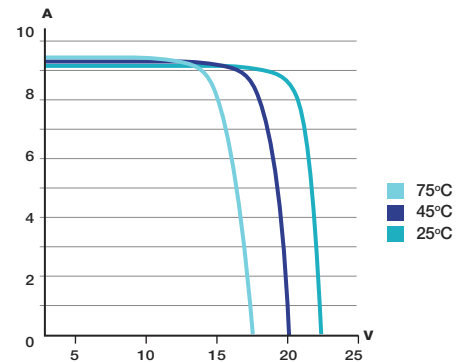
## MODULE BACK VIEW



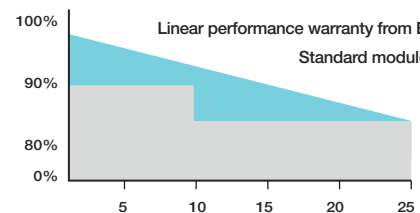
## IV CHARACTERISTICS @ LOW IRRADIANCE



## IV CHARACTERISTICS @ TEMPERATURES



## LINEAR PERFORMANCE WARRANTY



36 Cells  
Mono-Crystalline



175W - 180W  
Power Output



18.05%  
Efficiency



0~+5W  
Power

## PERFORMANCE | STC (I<sub>r</sub>: 1000 W/m<sup>2</sup>, Temp: 25°C, AM: 1.5)

Module Type	EM280	EM285	EM290	EM295	EM300
Maximum Power(P <sub>max</sub> )	280W	285W	290W	295W	300W
Number of Cells	60	60	60	60	60
Open Circuit Voltage(V <sub>oc</sub> )	38.46V	38.64V	39.12V	39.36V	39.78V
Short Circuit Current(I <sub>sc</sub> )	9.30A	9.36A	9.49A	9.56A	9.60A
Maximum Power Voltage(V <sub>pm</sub> )	32.20V	32.69V	33.25V	33.49V	33.84V
Maximum Power Current(I <sub>pm</sub> )	8.70A	8.72A	8.74A	8.81A	8.87A
Module Efficiency(η)	17.20%	17.50%	17.80%	18.10%	18.44%
Operating Temperature	-40 to 85°C				
Maximum System Voltage	1000V				
Maximum Fuse Rating	15A				
Power Tolerance	0~+5W				
Temperature Co-efficient Voc	-0.26%/°C				
Temperature Co-efficient P <sub>max</sub>	-0.35%/°C				
Temperature Co-efficient I <sub>sc</sub>	0.02%/°C				

## PERFORMANCE | NOCT (I<sub>r</sub>: 800 W/m<sup>2</sup>, Ambient Temp: 20°C, Wind speed: 1m/s)

Module Type	EM280	EM285	EM290	EM295	EM295
Maximum Power(P <sub>max</sub> )	202.35W	208.31	211.98W	215.58W	219.41W
Open Circuit Voltage(V <sub>oc</sub> )	35.62V	35.84	36.01V	36.06V	36.45V
Short Circuit Current(I <sub>sc</sub> )	7.34A	7.39A	7.43A	7.59A	7.65A
Maximum Power Voltage(V <sub>pm</sub> )	29.37V	30.06V	30.24V	30.45V	30.73V
Maximum Power Current(I <sub>pm</sub> )	6.89A	6.93A	7.01A	7.08A	7.14A

## MECHANICAL PROPERTIES

Cells	ARC coated cells
Cell Type	Mono-crystalline
Cell Dimension	156X156mm
Module Dimensions	1640X992X40mm
Weight	18 Kgs.
Junction-Box	IP67
Connectors Type	MC4 Compatible
Cable Length	1000mm
Front Cover	Low Iron Tempered Textured Glass
Back Cover	Weather resistant back sheet
Frame	High strength Anodized aluminum frames
Front Load Capacity	5400Pa
Rear Load Capacity	2400Pa

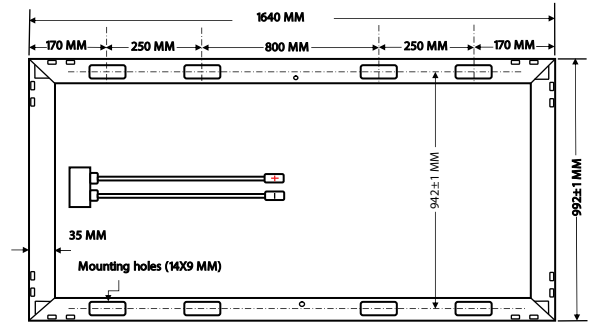
## CERTIFICATES & WARRANTY

Certificates	ISO 9001:2015 IEC 61215, IEC 61730 - I & II IEC 61701 (Maximum Severity) IEC 62716
Module Fire Rating	CLASS A
Product Warranty	10 Years
Linear Output Warranty Power	25 Years

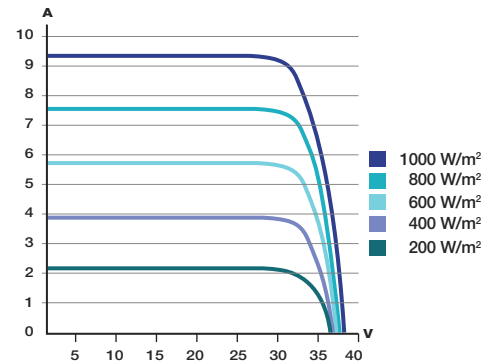
## LOADING QUANTITY

No. of Modules Per Pallet	30 Modules	
No. of Palletes in 20 ft. Container	12 Palletes	360 Modules
No. of Palletes in 40ft. HQ Container	28 Palletes	840 Modules

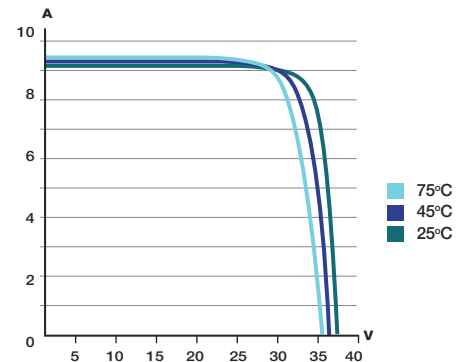
## MODULE BACK VIEW



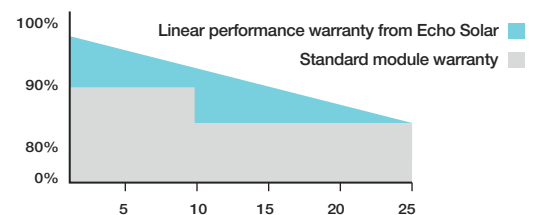
## IV CHARACTERISTICS @ LOW IRRADIANCE



## IV CHARACTERISTICS @ TEMPERATURES



## LINEAR PERFORMANCE WARRANTY



60 Cells  
Mono-Crystalline



280W - 300W  
Power Output



18.44%  
Efficiency



0~+5W  
Power



PROUDLY MADE IN UAE

## PERFORMANCE | STC (Ir: 1000 W/m<sup>2</sup>, Temp: 25°C, AM: 1.5)

Module Type	EM345	EM350	EM355	EM360
Maximum Power(Pmax)	345W	350W	355W	360W
Number of Cells	72	72	72	72
Open Circuit Voltage(Voc)	46.75V	47.08V	47.37V	47.73V
Short Circuit Current(Isc)	9.45A	9.48A	9.51A	9.54A
Maximum Power Voltage(Vpm)	39.71V	40.05V	40.57V	40.69V
Maximum Power Current(Ipm)	8.69A	8.75A	8.81A	8.87A
Module Efficiency(η)	17.78%	18.04%	18.30%	18.56%
Operating Temperature	-40 to 85°C			
Maximum System Voltage	1000V			
Maximum Fuse Rating	15A			
Power Tolerance	0~+5W			
Temperature Co-efficient Voc	-0.26%/°C			
Temperature Co-efficient Pmax	-0.35%/°C			
Temperature Co-efficient Isc	0.02%/°C			

## PERFORMANCE | NOCT (Ir: 800 W/m<sup>2</sup>, Ambient Temp: 20°C, Wind speed: 1m/s)

Module Type	EM345	EM350	EM355	EM360
Maximum Power(Pmax)	257.40W	261.57W	265.56W	269.51W
Open Circuit Voltage(Voc)	43.0V	43.31V	43.58V	43.91V
Short Circuit Current(Isc)	7.71A	7.74A	7.76A	7.78A
Maximum Power Voltage(Vpm)	36.0V	36.33V	36.63V	36.92V
Maximum Power Current(Ipm)	7.15A	7.25A	7.25A	7.30A

## MECHANICAL PROPERTIES

Cells	ARC coated cells
Cell Type	Mono-crystalline
Cell Dimension	156X156mm
Module Dimensions	1956X992X40mm
Weight	21 Kgs.
Junction-Box	IP67
Connectors Type	MC4 Compatible
Cable Length	1000mm
Front Cover	Low Iron Tempered Textured Glass
Back Cover	Weather resistant back sheet
Frame	High strength Anodized aluminum frames
Front Load Capacity	5400Pa
Rear Load Capacity	2400Pa

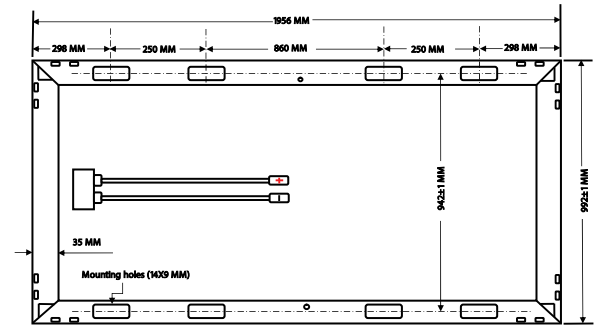
## CERTIFICATES & WARRANTY

Certificates	ISO 9001:2015 IEC 61215, IEC 61730 - I & II IEC 61701 (Maximum Severity) IEC 62716
Module Fire Rating	CLASS A
Product Warranty	10 Years
Linear Output Warranty Power	25 Years

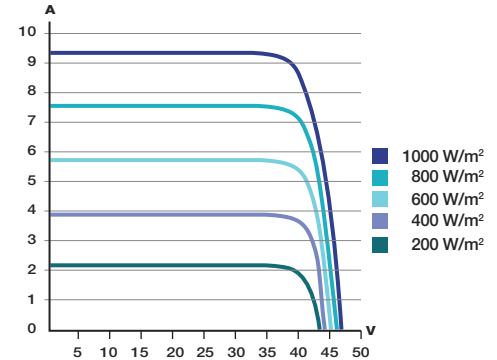
## LOADING QUANTITY

No. of Modules Per Pallet	30 Modules	
No. of Palletes in 20 ft. Container	10 Palletes	300 Modules
No. of Palletes in 40ft. HQ Container	24 Palletes	720 Modules

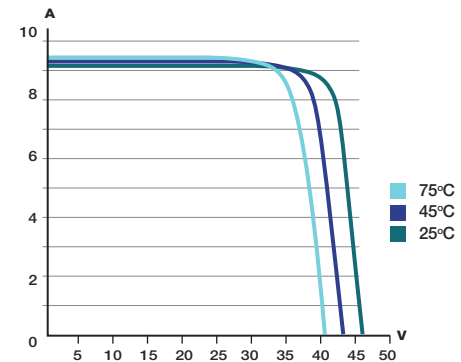
## MODULE BACK VIEW



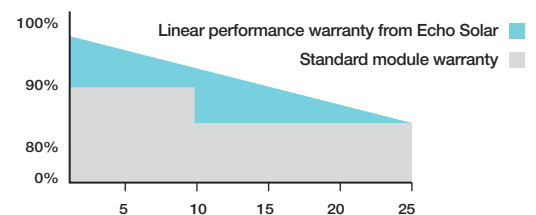
## IV CHARACTERISTICS @ LOW IRRADIANCE



## IV CHARACTERISTICS @ TEMPERATURES



## LINEAR PERFORMANCE WARRANTY



72 Cells  
Mono-Crystalline



345W - 360W  
Power Output



18.56%  
Efficiency



0~+5W  
Power



PROUDLY MADE IN UAE



## Echo Solar Panels Manufacturing L.L.C.

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info@echosolaruae.com | www.echosolaruae.com

