# flex

# FLEX SOLAR MODULES

60-Cell PERC Mono: 285 W - 295 W

# Experience, capability and execution

Flex is the Sketch-to-Scale™ solutions provider that designs and builds intelligent products for a connected world. Established in 1969, Flex is a fortune 500 company with over 200,000 professionals working across 12 industries and 100 locations in 30 countries. Flex provides innovative design, engineering, manufacturing, real-time supply chain insight and logistics services to companies of all sizes – including many of the world's largest brands.

Flex has delivered over 8 million solar modules to customers around the world - with in-depth experience and history designing and manufacturing products for top tier solar, inverter and energy technology companies. Flex solar modules are produced to the highest standards of excellence and performance, reflecting the company's outstanding manufacturing, design and global supply chain capabilities; execution that meets the most stringent designs, standards and technologies globally.

# Safety

» ETL Certified to UL 1730

# **Performance Tested**

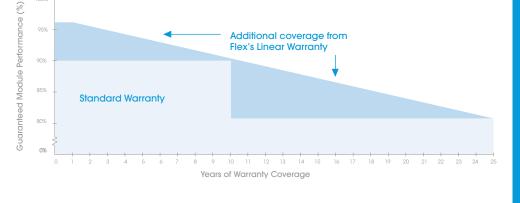
- » PID test conditions
  96 hours, 85 C, 85% RH, -1kV
- » IEC 61215 long-term operations in a variety of climates including snow loading up to 5400 Pa and hail testing
- » Low glare anti-reflective coated (ARC) tempered glass
- » Outstanding performance in low-light irradiance environment
- » Power tolerances +5 W

# Quality

- » Manufactured under Flex's renowned Quality Management System of Excellence
- » Solar module factories are ISO 9001 and 14001 certified
- » Manufatured to AQL 0.4 Level II quality and tested up to 3x beyond IEC standards

### Warranty

- Notice that the second s
- » 25-year linear power warranty at STC: – Year 1:  $\leq$  3.0% of rated power
  - After year 1: ≤ 0.7% rated power degradation per year



FLV-MA-285P60AB FLV-MA-290P60AB FLV-MA-295P60AB



#### **1. POWER**

- » PERC 285- 295 W Black on Black
- » High module efficiency with positive power tolerance (0 ~ +5W)

#### 2.1,000 V

- » Support 1000 V system voltage
- » 4 Bus Bar Configuration

#### 3. PID FREE

- » Anti PID Cell Technology
- » Anti PID Encapsulation Technology

# 4. CERTIFIED

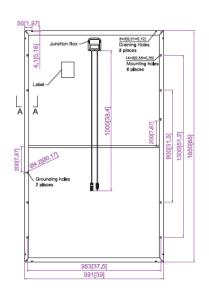
» UL1730: ETL

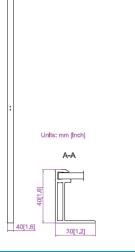
# 5. QUALITY

- » ISO 9001, ISO 14001
- » 100% Final Inspection

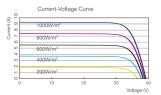
contraction of the second seco

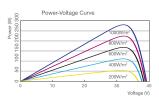
# flex

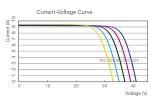




#### I-V CURVE







MECHANICAL PARAMETERS				
Cell (mm)	Almost Full Square Mono 156.75 x 156.75			
Weight (kg)	19.0 (approx)			
Dimensions (LxWxH) (mm)	1650 x 991 x 40			
Cable Cross Section Size (mm <sup>2</sup> )	4			
No. of Cells and Connections	60 (6 x 10)			
Junction Box	IP67, 3 diodes			
Connector	Amphenol UTX			
Packaging Configuration	27 Per Pallet			
WORKING CONDITIONS				
Maximum System Voltage	DC 1000 V (IEC)			
Operating Temperature	-40°C~+85°C			
Maximum Series Fuse	15 A			
Maximum Static Load, Front Maximum Static Load, Back	5400 Pa 2400 Pa			
NOCT	45±2°			
Application Class	Class A			
Fire Performance	Class 1			
ELECTRICAL PARAMETERS				
Rated Maximum Power at STC (W)	285	290	295	
Open Circuit Voltage (Voc/V)	39.25	39.46	39.64	
Maximum Power Voltage (Vmp/V)	31.70	31.80	32.03	
Short Circuit Current (Isc/A)	9.46	9.57	9.66	
Maximum Power Current (Imp/A)	8.99	9.12	9.21	
Module Efficiency (%)	17.43	17.74	18.04	
Power Tolerance (W)	-0~+5 W			
Temperature Coefficient of lsc (alsc)	+0.060%/°C			
Temperature Coefficient of Voe ( $\beta$ Voc)	-0.300%/°C			
Temperature Coefficient of Pmax (yPmp)	-0.390%/°C			
STC	Irradiance 1000W/m², Cell Temperature 25°C, Air Mass 1.5			

ELECTRICAL DATA (NOCT)				
Туре	285	290	295	
Max Power (Pmax) (W)	208.36	212.02	215.67	
Open Circuit Voltage (Voc) (V)	36.01	36.24	36.46	
Max Power Voltage (Vmp) (V)	28.62	28.81	28.87	
Short Circuit Current (Isc) (A)	7.73	7.81	7.89	
Max Power Current (Imp) (A)	7.28	7.36	7.47	
Condition	Irradiance of	Under Normal Operating Cell Temperature, Irradiance of 800 W/m², spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s		

Electrical data do not refer to a single module and they are not part of the offer. They only serve for comparison among different module types.

Flex is a leading end-to-end supply chain solutions company that delivers design, engineering, manufacturing, and logistics services to a range of industries and end-markets, including data networking, telecom, enterprise computing and storage, industrial, capital equipment, appliances, automation, medical, automotive, aerospace and defense, energy, mobile, computing, and other electronic product categories. Flex is an industry leader that helps its customers design, build, ship, and service their products through an unparalleled network of facilities in more than 30 countries and across five continents.

Copyright © 2017, Flex. 0116-2 All rights reserved. No part of this document may be reproduced in any form without the prior written permission of Flex.