

ASU-PTL Photovoltaic Module Qualification

Type Test Certificate C1-JUM07006 is awarded to

Manufacturer: Jumao Photonics Company, Ltd.

Type: JMP-220W-S5-BIPV

Models: JMP-245W-S5-BIPV, JMP-240W-S5-BIPV, JMP-235W-S5-BIPV, JMP-230W-S5-BIPV, JMP-225W-S5-BIPV, JMP-220W-S5-BIPV, JMP-215W-S5-BIPV, JMP-210W-S5-BIPV, JMP-205W-S5-BIPV

Specifications: 100 monocrystalline silicon Delsolar cells, Tyco j-box and connectors, EVA encapsulant, tempered glass superstrate, tempered glass substrate. Maximum system voltage is 1000 V. (See photos on back.)

Tested type: JMP-220W-S5-BIPV

Sampling: Eight manufacturer-supplied unconditioned test samples

Test samples received: 7/25/08

Tests conducted from: 7/25/08 to 3/23/09

Tests conducted at: PTL, 7349 E. Unity Avenue, Mesa, Arizona, 85212 Web: www.poly.asu.edu/ptl

This laboratory is accredited by the American Association for Laboratory Accreditation (A2LA).

Manufacturer's Address: Jumao Photonics (Xiamen) Co., Ltd., Siming Photonics Building, Xiamen City, Fujian, 361009, P.R. China

Test data and analysis detailed in Test Report #: R-JUM07006

PTL Projects: JUM07006

Original Certificate Issue Date: March 23, 2009



The **Arizona State University Photovoltaic Testing Laboratory (ASU-PTL)** acknowledges that the above photovoltaic modules have been subjected to and passed the minimum requirements defined in test standard(s):

1. IEC 61215: Crystalline silicon terrestrial photovoltaic (PV) modules - Design qualification and type approval [2005-04].

Models listed above qualified based upon IEC Retest Guidelines [12/30/04] and IEC/TC82/WG2 Type and Model Conventions [4/16/02].

All tests in the above listed test standard(s) are within the ASU-PTL's scope of accreditation. Exception(s): None

Deviations from, additions to, or exclusions from aforementioned test standard(s): None

This test certificate may be used by the manufacturing company for its own purposes. However, the ASU-PTL cannot accept any legal responsibility from such use.

This test certificate pertains only to the modules tested at the date of test and does not guarantee any past or future performance.

If the tested type undergoes any future design or process modifications, limited re-testing is required to maintain valid certification according to the applicable Retest Guidelines.

This certificate is valid only with the accompanying photos on the back.

Dr. Govindasamy Tamizhmani

Dr. Govindasamy Tamizhmani, Director
Certifying Authority

Joseph M. Kuitche

Joseph M. Kuitche, Operations Manager
Certifying Witness

Bo Li

Bo Li, Test Manager
Certifying Witness