

ASU-PTL Photovoltaic Module Qualification

Type Test Certificate C1-GSE07001 is awarded to

Manufacturer: Global Solar Energy, Inc.

Type: GSE115

Models: GSE125, GSE120, GSE115, GSE110, GSE105

Specifications: 192 CIGS cells (two 96-cell groups in parallel), Spelsberg j-box (PV-88) and MC connectors, PVF/Al/PET/EVA backsheet, DNP encapsulant, glass superstrate, and anodized aluminum frame. Max system voltage is 1000 V. (See photos on back.)

Tested type: GSE115 Sampling: Nine manufacturer-supplied unconditioned test samples
Test samples received: 2/20/07
Tests conducted from: 3/12/07 To: 8/14/08
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: Global Solar Energy, Inc., 5575 S. Houghton Road, Tucson, AZ 85747

Test data and analysis detailed in Test Reports: [R-GSE07001](#)

PTL Project: [GSE07001](#)

Original Certificate Issue Date: Sept. 22, 2008



The **Arizona State University Photovoltaic Testing Laboratory (ASU-PTL)** acknowledges that the above photovoltaic test samples have satisfied the requirements of the following test standard(s):

1. IEC 61646: Thin-film terrestrial photovoltaic (PV) modules – Design qualification and type approval [1996].

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.

Handwritten signature of Dr. Govindasamy Tamizh-mani in blue ink.

Dr. Govindasamy Tamizh-mani, Director
Certifying Authority

Handwritten signature of Joseph M. Kuitche in blue ink.

Joseph M. Kuitche, Operations Manager
Certifying Witness

Handwritten signature of Bo Li in blue ink.

Bo Li, Test Manager
Certifying Witness