ASU-PTL Photovoltaic Module Qualification

Test Certificate 05022302 is awarded to

Manufacturer: Mitsubishi Electric Corporation

Type: F158EB3E

Models: BP3165QS, BP3160QS

Specifications: 50 polycrystalline silicon cells, potted junction box, EVA encapsulant, tempered glass superstrate, PVF/PET/PVF substrate, and aluminum alloy frame. Maximum system voltage is 1000 V.

Tested type:	F158EB3E	Sampling:	Eight manufacturer-supplied unconditioned modules
Test modules received:	1/8/04 and 5/6/04		
Tests conducted from:	1/12/04	To:	8/30/04

Tests conducted at: PTL, 7349 E. Unity Avenue, Mesa, Arizona, 85212
This laboratory is accredited by the American Association for Laboratory Accreditation (A2LA).

A2LA ACCREDITED
Certificate #0921-01
Since 6/23/97

Manufacturer's Address: Mitsubishi Electric Corp., 1-3 Komaba-cho, Nakatsugawa-shi, Gifu-ken, Japan

Test data and analysis detailed in Test Report #: 04083001 PTL Projects: MIT03008, MIT03008a, MIT04001, MIT05001

Original Certificate Issue Date: August 30, 2004 Rev. 1 Issue Date: Feb. 23, 2005

Revision 1: The BP3165QS is added as a model. Certificate 05022302 replaces 04083001a.

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

1. IEC 61215: *Design qualification and type approval for crystalline silicon terrestrial photovoltaic (PV) modules [1993-04].*

The F158EB3E qualified by similarity to the F158EB3D (project MIT03006) based upon IEC/TC82/WG2 Retest Guidelines [5/17/00].
Models listed above qualified based upon IEC/TC82/WG2 Retest Guidelines [5/17/00] 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.
If the tested type undergoes any future product or process modifications, limited re-testing is required to maintain valid certification according to the applicable Retest Guidelines.

G. Tamizhmani	Liang Ji	Todd W. Arends
Dr. Govindasamy Tamizh-Mani, Director	Liang Ji, Laboratory Manager	Todd Arends, Test Manager
Certifying Authority	Certifying Witness	Certifying Witness