TÜVRheinland®
Precisely Right.

Partial Discharge Test

on reverse side foils of PV modules
according to IEC 60664-1, IEC61730

26 February 2010

Company / Examined foil:

Madico, Inc.		
TPE HD 2111 (replace Test sample 3)		
Tedlar SP	25 micron	outside
PET	125 micron	
EVA white	100 micron	cell side

* The EVA is not part of the direct encapsulation system for the solar cells

Number of measurements: 10

Remarks: None

Extinction voltage		Deviation from the mean value (%)
Min. value in (V)	1103	-3.1
Mean value in (V)	1138	
Max. value in (V)	1161	2.0

The mean value minus the experimental standard deviation will be used to calculate the max. permissible voltage.
Experimental standard deviation: 20 V

Calculation of the max. permissible operating voltage on the basis of the ascertain values
Basis: **IEC 60664-1**

Umax = Ue x 1,414 / 1,2 x 1,25

1.414 Calculation of the peak value
1.2 Safety factor (humidity, temperature, etc.)
1.25 Safety factor (double or reinforced insul.)

Maximum permissible system voltage	**1055 VDC**

Responsible for Partial Discharge Testing

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