

Partial Discharge Test

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

6. August 2009

Company / Examined foil:

Madico, Inc.		
Protekt HD		
Fluorcoating	12 micron	outside
PET	127 micron	
Adhesive alt.	5 micron	
EVA alt.	101 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)	1096	-5.5
Mean value in (V)	1160	
Max. value in (V)	1257	8.4

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

Experimental standard deviation: 47 V

Calculation of the max. permissible operating voltage on the basis of the ascertain values

Basis: IEC 60664-1


$$U_{max} = U_e \times 1,414 / 1,2 \times 1,25$$

- 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	1049 VDC
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Responsible for Partial Discharge Testing


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