AccuMap-SE™

J.A. Woollam Co.
Ellipsometry Solutions

AccuMap-SE™

Characterizing thin film uniformity of large panels just got easier. The AccuMap-SE combines a high-speed M-2000® spectroscopic ellipsometer with fast mapping for large panels. Gain confidence about your coatings that only accurate spectroscopic ellipsometry measurements can provide. The broad spectral range of the M-2000 is well suited to all thin films in photovoltaic and flat panel display applications.

Determine uniformity of film thickness and optical constants (*n* & *k*) for a wide range of coatings:

- Amorphous, Microcrystalline and Polycrystalline Silicon
- CIS/CIGS
- CdTe, CdS
- Low-ε Coatings on Glass
- Transparent Conductive Oxides (ITO, SnO_2:F, AZO, ZnO_x...)
- Polymer Films (polyimide, PEDOT, P3HT, PV2P,...)
- Single and Multiple Layer Coatings

M-2000 source unit with patented rotating compensator design - supplies broadband light to the samples with modulated polarization.

Broadband polarized light reflects off panel coatings.

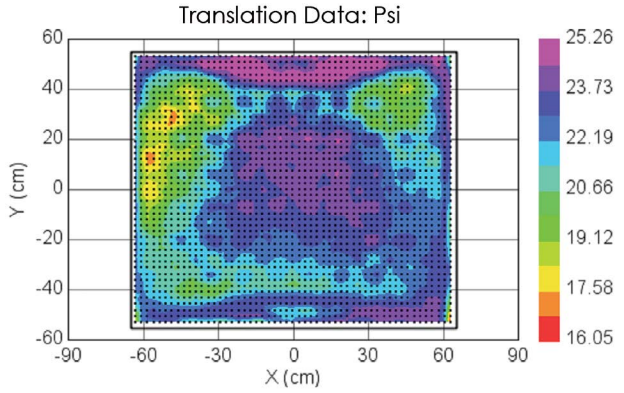
M-2000 receiver unit collects spectroscopic ellipsometry data across entire spectrum (UV to NIR) simultaneously with latest CCD technology.

Camera-based alignment maintains correct positioning of M-2000 optics as they "fly" over large panels.
*Patent-pending

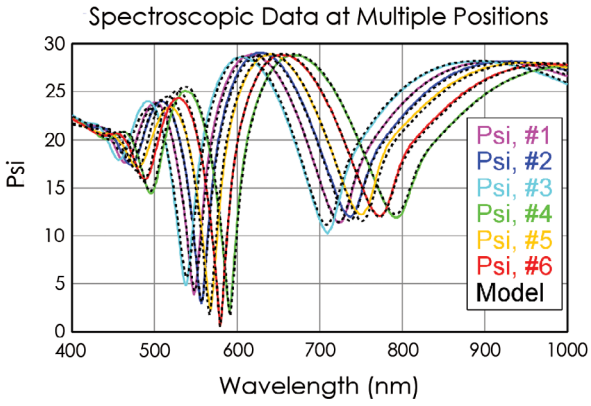
91"
2.3m

Dimensions correspond to a system configuration with 0.5m x 1.0m XY.

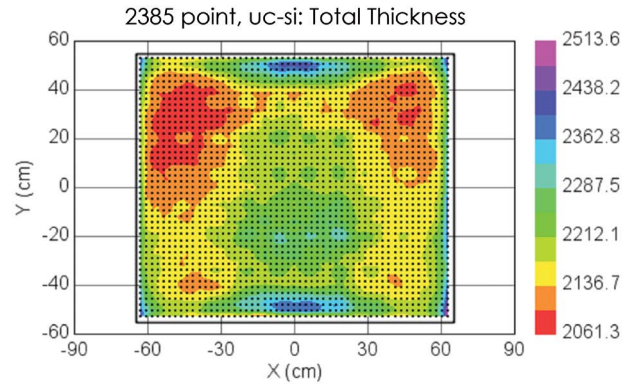
(1)



(2)



(3)



A microcrystalline silicon film was mapped at hundreds of points across a 1.1 x 1.3 meter panel. User defined routines acquire data over full panel (Figure 1). Spectra are analyzed at each position versus wavelength (Figure 2). Thickness and index maps over full panel are obtained (Figure 3).

Specifications

Wavelength Range:

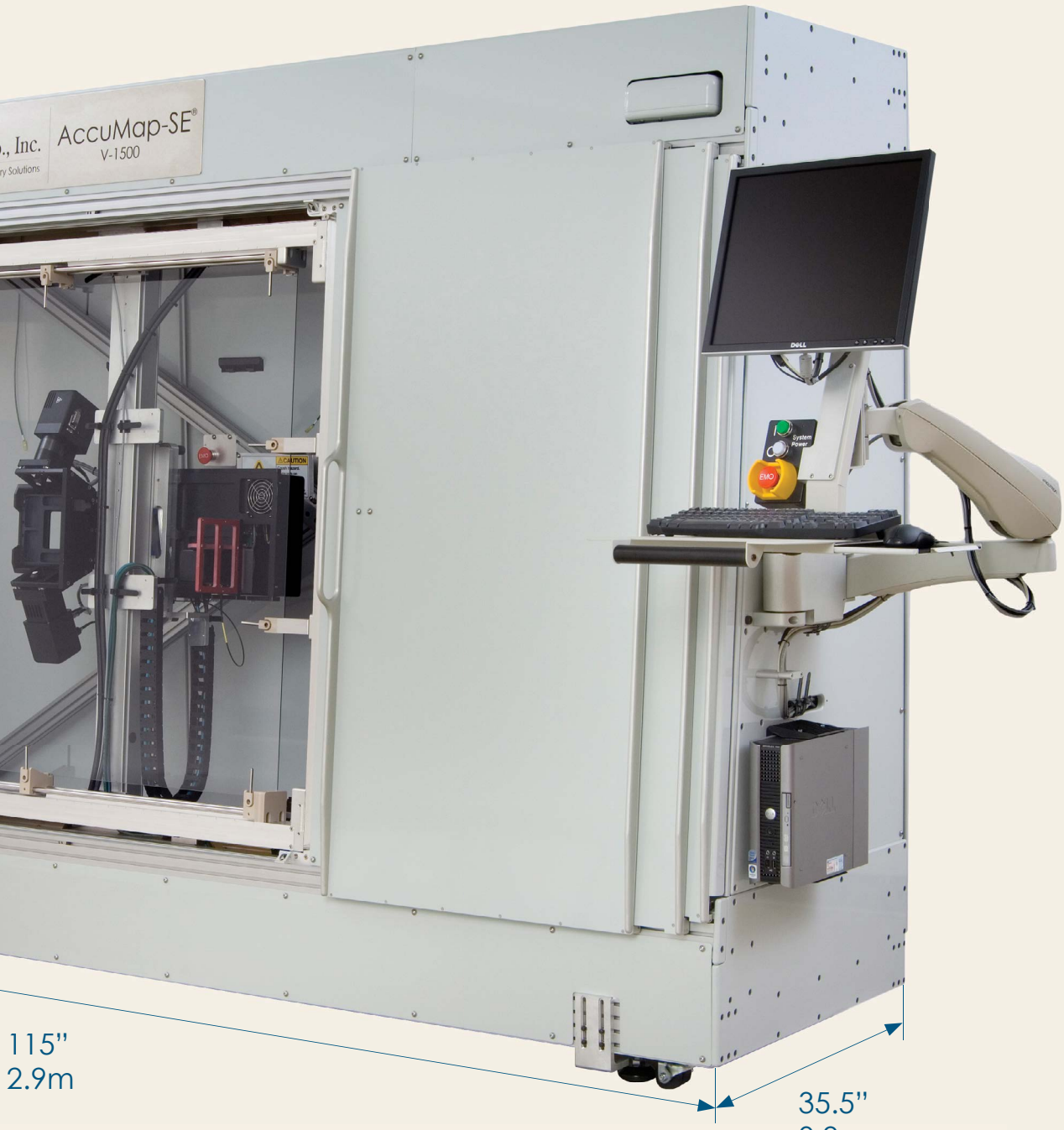
M2000V	370-1000nm, 390 wavelengths
M2000VI	370-1690nm, 590 wavelengths
M2000U	245-1000nm, 470 wavelengths
M2000UI	245-1690nm, 670 wavelengths

Angle Range:

Fixed angle near 65°

Data Acquisition Rate:

< 6 seconds per point *(includes time for movement to new point, automated alignment, and data collection)*



**Dimensions correspond to a system configuration with 1.1m x 1.3m XY.*

Large Area Mapping:

0.5m x 1.0m XY
1.0m x 1.0m XY
0.6m x 1.2m XY
1.1m x 1.3m XY
1.1m x 1.5m XY
(Custom sample sizes available)

System Overview:

Patented rotating compensator ellipsometry, simultaneous CCD detection of all wavelengths, automated sample alignment.