

# ZYGO's NewView™ 3DPV-W Profilers: Increase Efficiency, Yield Enhancement and Cost Savings for the Photovoltaics Industry

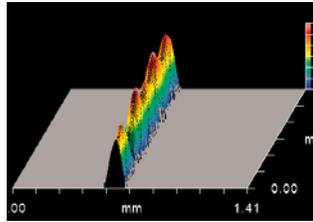
*Cost-per-watt improvements drive photovoltaics manufacturing. Like the semiconductor, data storage and flat panel display industries before it, the photovoltaic industry is moving towards much tighter production control to achieve the increased efficiencies and lower costs required to reach grid parity and ultimately power plant parity. ZYGO continues to be a key player in the three preceding industries and is leveraging this expertise offering the metrology insight to develop and control your photovoltaic processes.*



## Wafer Based Processes

### Conductor Grid – Cross Sectional Area

Conductor grid Cross Sectional Area (CSA) directly affects photon efficiency, electrical cell efficiency and the material cost of the solar cell.



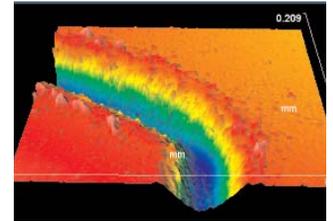
Optical efficiency degrades as conductor line width increases, but electrical efficiency degrades as conductor CSA is decreased. Conventional AOI systems only measure line width; ZYGO's NewView 3DPV-W uniquely measures 3D CSA providing you the information to optimize both optical and electrical efficiency in on-line and off-line applications.

Ag paste is expensive. Variations in conductor grid CSA create electrical pinch points at the narrowest CSA that limit electron flow. Decreasing the CSA variation minimizes the Ag material that is outside the electron flow thus minimizing wasted conductor. Measuring 3D CSA gives you the process insight to minimize CSA variations and lower the cost per watt of production solar cells, potentially paying for your ZYGO tool investment in less than six months.

### Laser – Edge Isolation

Balancing laser power, dwell time, and pulse rate optimizes edge isolation while minimizing surface debris assures successful edge isolation while maximizing laser life.

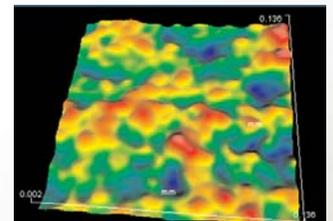
2D stylus profilers cannot provide the insight needed. The NewView 3DPV-W is fast and was easy to use to keep your line running smoothly while keeping your costs down.



### Wafer Texture

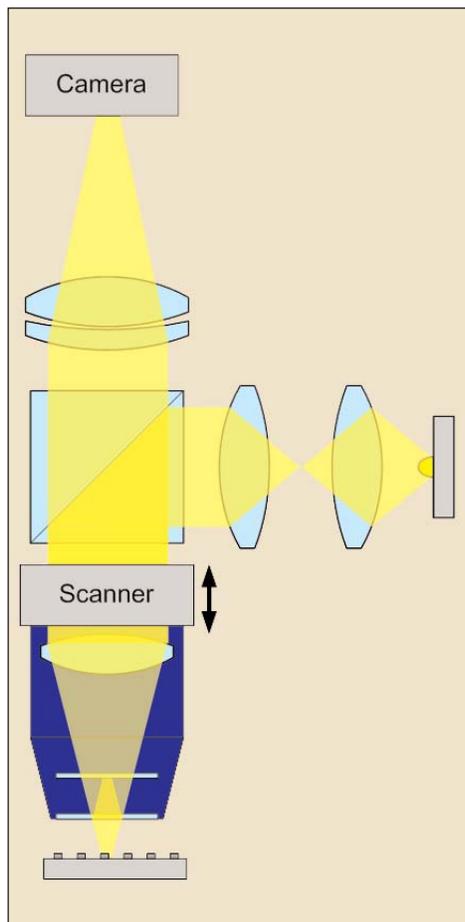
Photon absorption is a direct function of wafer texture.

Minimizing etching time while both removing saw damage and increasing photon absorption requires full 3D profiles of the wafer surface. ZYGO's NewView 3DPV-W with Advance Texture Analysis software highlights when saw damage is removed and why the surface is absorbing at selected spatial frequencies; again lowering costs and increasing cell efficiency.



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## How It Works



The NewView™ 3DPV-W is based on scanning white light interferometry. Interferometry is a traditional technique in which a pattern of bright and dark lines (fringes) result from an optical path difference between a reference and a sample beam, both beams are created by the instrument itself. In the NewView 3DPV a precision translation stage, CCD camera and patented acquisition algorithms generate a three dimensional surface map of the sample surface, and the 3-Dimensional thickness map of transparent films to sub-nanometer height resolution and micron level image resolution.

Specifications subject to change without notice.  
Covered by one or more of the following US patents:  
5,402,234 and 5,398,113. Other US and foreign patents pending.  
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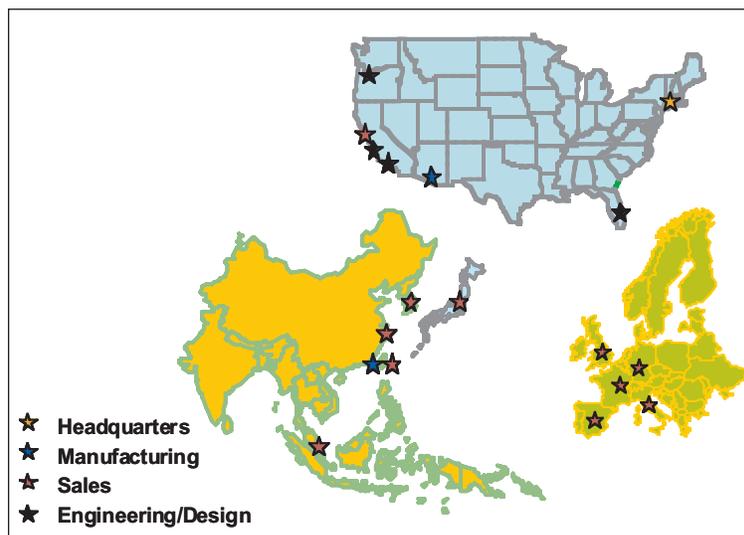


## ZYGO Worldwide Support

For over 35 years, the world's leading technology companies have relied on Zygo Corporation. With an installed base of over 10,000 interferometer based metrology products in critical production, quality control, and R&D applications, ZYGO has earned a reputation for the highest quality, reliability, and uncompromised performance. Recognized as a valued partner for its innovation and responsiveness, Zygo Corporation works closely with customers to realize the competitive advantages its products and technology offer. With over 550 dedicated employees in offices around the world, ZYGO has the infrastructure necessary to meet the production challenges of today and tomorrow.

## ZYGO Worldwide Support

ZYGO's worldwide sale, service and engineering organization is set up to directly support your production and development.



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