



## SunEye News

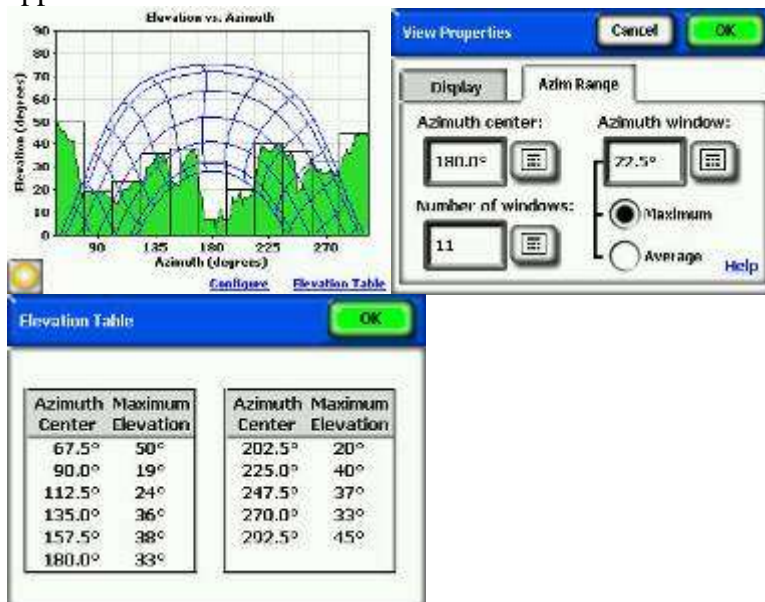
January 21, 2008

You may be interested in some recent news about Solmetric and the Solmetric SunEye™:

### ***New SunEye software version 2.8 now available.***

Version 2.8 has begun shipping from the factory, and is now available to download from the Solmetric website at <http://www.solmetric.com/support.html>. Here is a quick overview of the primary features:

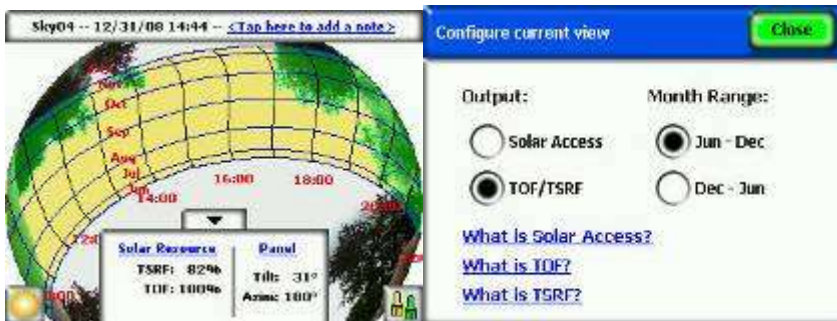
1. *Obstruction Elevation View.* A new view in the SunEye enables users to view the elevation angle of all obstructions as a function of azimuth. Users can identify azimuth windows and the SunEye identifies the maximum (or average) elevation within each window. Many rebate and incentive programs require this information and this SunEye display makes the data easy to see and easy to use for rebate applications.



When exporting reports from the desktop software, the user can output a CSV file with the Windowed Obstruction Elevation values for *all* Skylines in a session. The maximum (or average) obstruction elevation in each azimuth window is shown for all the Skylines in the session, as in the table below, using California's New Solar Homes Partnership windows as an example. The "Maximum Maximum" can be useful for knowing the worst case obstruction elevation across the whole area of the array.

| Azimuth Window Center (North=0; East=90) | Maximum Elevation (0-90) | Maximum Elevation (0-90) | Maximum Elevation (0-90) | Maximum Elevation (0-90) | Maximum Elevation (0-90) |
|------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                                          | MAXIMUM                  | SKY01                    | SKY02                    | SKY03                    | SKY04                    |
| 67.5                                     | 24                       | 24                       | 22                       | 22                       | 20                       |
| 90                                       | 24                       | 17                       | 19                       | 21                       | 24                       |
| 112.5                                    | 35                       | 22                       | 26                       | 29                       | 35                       |
| 135                                      | 39                       | 30                       | 32                       | 25                       | 39                       |
| 157.5                                    | 62                       | 62                       | 50                       | 43                       | 22                       |
| 180                                      | 55                       | 40                       | 43                       | 45                       | 55                       |
| 202.5                                    | 55                       | 40                       | 36                       | 55                       | 52                       |
| 225                                      | 55                       | 25                       | 53                       | 55                       | 28                       |
| 247.5                                    | 51                       | 20                       | 25                       | 28                       | 51                       |
| 270                                      | 52                       | 48                       | 52                       | 33                       | 52                       |
| 292.5                                    | 42                       | 37                       | 42                       | 33                       | 37                       |

2. *Solar Resource Summary (US only)*. Tilt Orientation Factor (TOF), and Total Solar Resource Fraction (TSRF) are comparisons to the optimum available solar resource which is a function of the weather. TOF/TSRF automatically calculates TSRF for your nearest weather station (US only) using the hourly TMY3 data from the U.S. National Renewable Energy Laboratory, and can be displayed within the SunEye's Annual Sunpath view. TOF/TSRF are required for various state rebate programs, and this SunEye feature makes these values conveniently available. The user can display either Solar Access or Solar Resource in the Annual Sunpath view.



Note that this view requires comparison to optimal values that depend on weather. The SunEye now incorporates the US weather model NREL – TMY3 for these calculations, so this display mode is currently available only for US locations.

3. The “Edit Mode” to add and remove obstructions can now be used outside the sunpaths, if the user enables it. This has previously been available only on the desktop software, but now is implemented in the device as well.



## ***We've Moved!***

Solmetric Corporation has outgrown its original offices, and has moved to a new location in Sebastopol, California. The new address is as follows.

Solmetric Corporation  
117 Morris Street, Suite 100  
Sebastopol CA 95472  
phone: 707-823-4600  
fax: 707-823-4620

## ***Free Webinars on Shade Measurements (US and Canada only)*** **Shade Measurement Tips and Techniques**

Whether you are an experienced user, or just getting started, this seminar will help you with making shade measurements and interpreting the results. Topics include:

- Fundamentals of sun paths
- Effects of shading on energy production
- Measurement techniques
- Using the Solmetric SunEye
- Common requirements for US state rebates



You'll be able to see common issues and solutions, and ask your own questions directly from Solmetric representatives. All from your own computer. This session is intended for participants from the US and Canada.

**Register for a session now by clicking a date below:**

[Tue, Feb 10, 2009 1:00 PM - 2:30 PM PST](#)

[Tue, Mar 10, 2009 1:00 PM - 2:30 PM PDT](#)

Once registered you will receive an email confirming your registration with information you need to join the Webinar.

## ***SunEye Tips***

NOTE: Here are some definitions useful for site evaluation of solar access.

- **Insolation.** The incident solar radiation on the earth's surface in a given time window, typically expressed in kWh/m<sup>2</sup>/day.

- **Solar Access/Shading.** Solar access is the ratio of the insolation in a given location including shade to the insolation available at that location without shade. Solar Access is typically expressed in percent for a given time period, such as a month, season, or year.
- **Optimum tilt and orientation.** For any location, the optimum tilt and orientation is the specific fixed tilt and orientation for solar panels that absorbs maximum solar energy over the course of one year.
- **Tilt and Orientation Factor (TOF).** TOF is the solar insolation at the *actual* tilt and orientation divided by the insolation at the *optimum* tilt and orientation, expressed in percent.
- **Total Solar Resource Fraction (TSRF).** TSRF is the ratio of insolation available accounting for both shading and TOF, compared to the total insolation available at a given location at the optimum tilt and orientation and with no shading. TRSF is also expressed in percent, according to the following equation:  $TSRF = \text{Solar Access} * \text{TOF}$ .
- **Magnetic Declination.** Magnetic declination is the azimuth offset between magnetic North and true North, expressed in degrees East or West.
- **Typical Meteorological Year (TMY).** TMY is a collection of weather information that includes data about insolation for every hour of a typical year, typically computed using historical weather data.

More information is available in a recent article in Solar Pro Magazine about Solar Site evaluation. Download it from our web site at <http://www.solmetric.com/press.html>.

