



Standard Terminology of Solar Energy Conversion¹

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1. Scope

1.1 This terminology pertains to the conversion of solar energy into other forms of energy by various means, including thermal absorption (i.e., solar thermal) and the photovoltaic effect (i.e., photovoltaics).

1.2 This terminology also pertains to instrumentation used to measure solar radiation.

1.3 This terminology also pertains to glass for solar energy applications.

1.4 Fundamental terms associated with electromagnetic radiation that are indicated as derived units in Standard **IEEE/ASTM SI 10** are not repeated in this terminology.

1.5 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

2. Referenced Documents

2.1 ASTM Standards:²

- C162** Terminology of Glass and Glass Products
- C1048** Specification for Heat-Strengthened and Fully Tempered Flat Glass
- C1651** Test Method for Measurement of Roll Wave Optical Distortion in Heat-Treated Flat Glass
- D1003** Test Method for Haze and Luminous Transmittance of Transparent Plastics
- D1245** Practice for Examination of Water-Formed Deposits by Chemical Microscopy
- D4865** Guide for Generation and Dissipation of Static Electricity in Petroleum Fuel Systems
- D5544** Test Method for On-Line Measurement of Residue After Evaporation of High-Purity Water
- D7236** Test Method for Flash Point by Small Scale Closed Cup Tester (Ramp Method)

¹ This terminology is under the jurisdiction of ASTM Committee E44 on Solar, Geothermal and Other Alternative Energy Sources and is the direct responsibility of Subcommittee E44.01 on Terminology and Editorial.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

- E349** Terminology Relating to Space Simulation
- E490** Standard Solar Constant and Zero Air Mass Solar Spectral Irradiance Tables
- E491** Practice for Solar Simulation for Thermal Balance Testing of Spacecraft
- E927** Specification for Solar Simulation for Photovoltaic Testing
- E948** Test Method for Electrical Performance of Photovoltaic Cells Using Reference Cells Under Simulated Sunlight
- E816** Test Method for Calibration of Pyrheliometers by Comparison to Reference Pyrheliometers
- E1021** Test Method for Spectral Responsivity Measurements of Photovoltaic Devices
- E1036** Test Methods for Electrical Performance of Nonconcentrator Terrestrial Photovoltaic Modules and Arrays Using Reference Cells
- E1125** Test Method for Calibration of Primary Non-Concentrator Terrestrial Photovoltaic Reference Cells Using a Tabular Spectrum
- E1171** Test Methods for Photovoltaic Modules in Cyclic Temperature and Humidity Environments
- E1362** Test Method for Calibration of Non-Concentrator Photovoltaic Secondary Reference Cells
- E1462** Test Methods for Insulation Integrity and Ground Path Continuity of Photovoltaic Modules
- E2236** Test Methods for Measurement of Electrical Performance and Spectral Response of Nonconcentrator Multi-junction Photovoltaic Cells and Modules
- E2527** Test Method for Electrical Performance of Concentrator Terrestrial Photovoltaic Modules and Systems Under Natural Sunlight
- F1863** Test Method for Measuring the Night Vision Goggle-Weighted Transmissivity of Transparent Parts
- G113** Terminology Relating to Natural and Artificial Weathering Tests of Nonmetallic Materials
- G130** Test Method for Calibration of Narrow- and Broad-Band Ultraviolet Radiometers Using a Spectroradiometer
- G138** Test Method for Calibration of a Spectroradiometer Using a Standard Source of Irradiance
- G167** Test Method for Calibration of a Pyranometer Using a Pyrheliometer
- G173** Tables for Reference Solar Spectral Irradiances: Direct Normal and Hemispherical on 37° Tilted Surface