

## Low Cost Solar Simulators

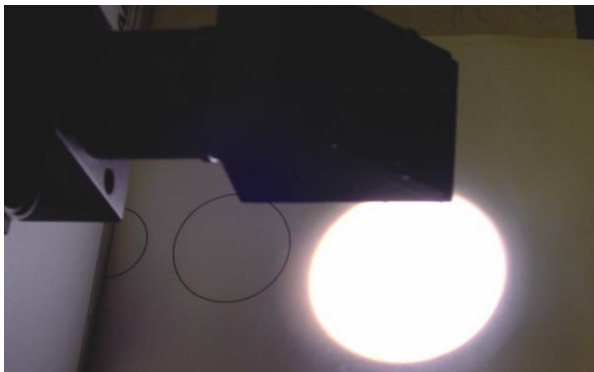
### Cost effective and functional design



Abet Technologies Model 10500 Low Cost Solar Simulator with a 10513 90° Uniform Illumination Accessory with Manual Shutter

#### Cost Effective Patented Solution

Abet Technologies model 10500 is a patented, US Pat. No. 8116017, low cost solar simulator providing an attractive alternative to more fully featured and expensive solar simulators for applications that do not require a large area illuminated field. The optical system of the 10500 produces a collimated 25 mm beam. Focus or defocus it for higher irradiance or larger solar cells. One sun output is achievable up to a 35 mm diameter illuminated field.



10500 Low Cost Solar Simulator with the 10512 90° Uniform Illumination Accessory

- 1Sun Output Over 35 mm Diameter Field
- ASTM, IEC & JIS Class A AM1.5G Output
- Compact Integrated Design
- Fast F/1.0 Fused Silica Condenser
- DC Xenon Arc Lamp

#### Innovative Optical Design

The 10500 utilizes a fast F/1 optical system and rear reflector to collect radiation from the lamp, allowing over 3 suns output over smaller fields. The beam can be collimated at 25 mm diameter or defocused to illuminate larger cells. Focus, lateral, and rear reflector adjustments allow for optimizing beam size and uniformity. One sun performance for up to a 35 mm diameter illuminated field with uniformity of +/- 25% can be achieved with careful alignment. Smaller areas within the illuminated field will provide higher levels of uniformity if required.

#### Adaptable System Configuration

The 10500 offers a flexible design that can be adapted to your particular needs. The standard configuration is a horizontal output full spectrum solar simulator with an AM 1.5G filter included. For down beam illumination, a 90 beam turner is available.

#### Complete test solutions

Best test results are obtained when the 10500 is equipped with one of the class B uniformity capable Uniform Illumination Accessories, see ordering information, which can be ordered with working distances to 450 mm and offer a manual shutter option. A low cost 15151 calibrated reference cell facilitates quantitative metrology.

#### 2015 Product line update

Take a look at the performance improvements designed into the new SunLite™ line of Abet Solar Simulators.

## Specifications

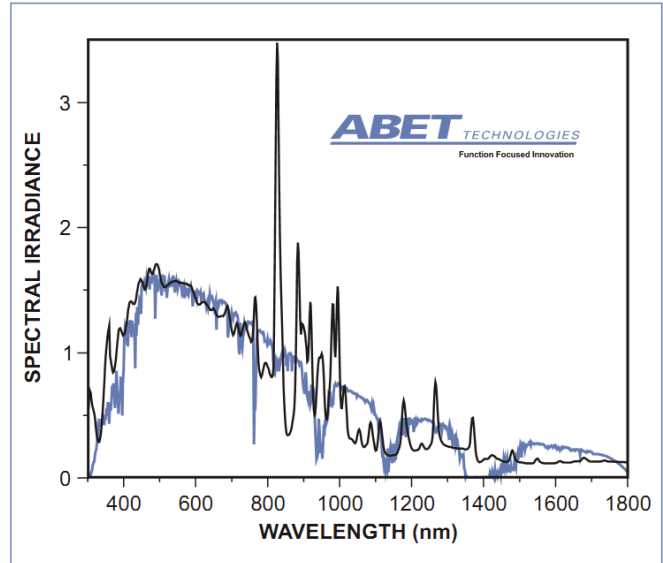
Illumination field.....	User adjustable
1 Sun Irradiance.....	35 mm Diameter (max)
Spectral Match with AM1.5G Air Mass Filter	
ASTM.....	Class A
IEC.....	Class A
JIS.....	Class A
Temporal Stability	
ASTM.....	Class A
IEC.....	Class B
JIS.....	Class A
Irradiance uniformity	
Basic Model.....	No classification
With Uniform Illumination Accessory capable of	
ASTM.....	Class B
IEC.....	Class B
JIS.....	Class B
Ozone-free Xe Arc Lamp (included).....	150 W
Typical life .....	1500 hours
Elapsed Time Meter (included)	
Working Distance.....	User selectable
Universal Input 90-250V, 50-60Hz, power supply included	
Standard Output Direction.....	Horizontal
Optional 90° Beam Turner Accessories provide infinitely adjustable beam direction selectivity.	
<i>Abet Technologies regularly continues to upgrade our products, therefore all specifications are subject to change without notice.</i>	

## Ordering Information

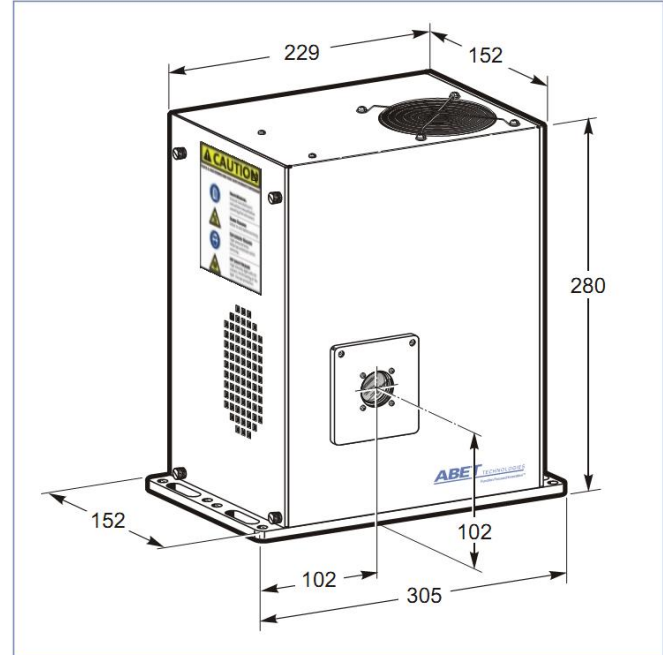
- 10500** AM 1.5G Solar Simulator including Lamp, Power Supply and AM 1.5G Filter
- 10511** Horizontal Output Uniform Illumination Accessory, 100mm Working Distance (up to 450mm optional)
- 10512** 90° Uniform Illumination Accessory, 100 mm Working Distance (up to 450mm optional)
- 10513** 90° Uniform Illumination Accessory with Manual Shutter, 100 mm Working Distance
- 10515** 90° Uniform Illumination Accessory 70 mm Offset
- 10516** 90° Uniform Illumination Accessory 200 mm Offset
- 10517** Uniform Illumination Accessory 450 mm Offset
- 20037** 90° Beam Turner Accessory
- 13014** Replacement 150 W Xe Arc Lamp
- 15151** Low cost reference cell, 10x10 mm, see page 21 for details

## Available Options

If you require a different spectral shaping or working distance option, please contact us with your requirements – many additional solutions are available for photovoltaic or life sciences applications.



Spectral output curve of the Abet Technologies model 10500 Low Cost Solar Simulator (black) and standard AM 1.5G spectrum (blue).



Dimensional diagram of the Abet Technologies model 10500 Low Cost Solar Simulator. The 10500 Solar Simulator is designed as a free standing instrument. If you need to mount it in a more particular way, an array of universal metric/English mounting holes in its base will allow an easy adaptation – please contact us for dimensional details.

Abet Technologies offers an expanding line of ASTM, IEC and JIS standards compliant products for solar cell PV-IV testing, steady state solar simulators, test stations, software, calibrated reference cells and a selection of electronic loads for low and high current cells. Visit [www.abet-technologies.com](http://www.abet-technologies.com) or contact us at [sales@abet-technologies.com](mailto:sales@abet-technologies.com).