

# UHE Solar Simulators



## Introducing the UHE Solar Simulator Family

- Industry Leading Efficiency
- Up to 30x30cm Target Areas
- Working Distance up to 50cm
- Turn Key Operation
- Class AAA

The UHE-NS and UHE-NL solar simulators are turn key operation class AAA Solar Simulators designed for either downward facing or horizontal beam operation. In downward facing beam orientation the UHE-NS and UHE-NL produces uniform light slightly above standard desk height. This configuration allows for either operation of the simulator from either a standing or seated position. See the **configuration options** at the end of this brochure for more information and dimensions



Standard downward facing with option for horizontal operation



Easy access to filter tray



Integrated control unit positioned for easy access from standing or seated position



Large testing area and working distances for easy integration.

Numerous sample area accessories, instrument configuration options and accessories are available.

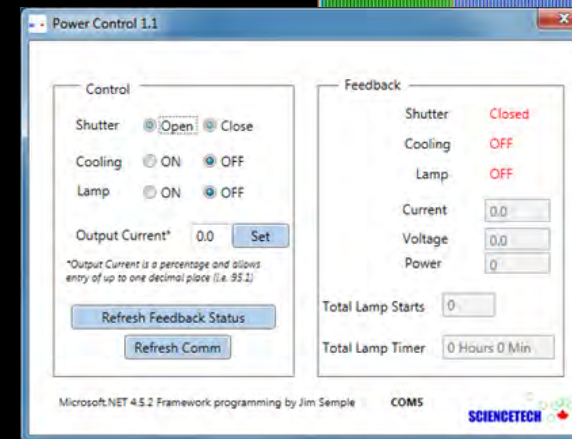
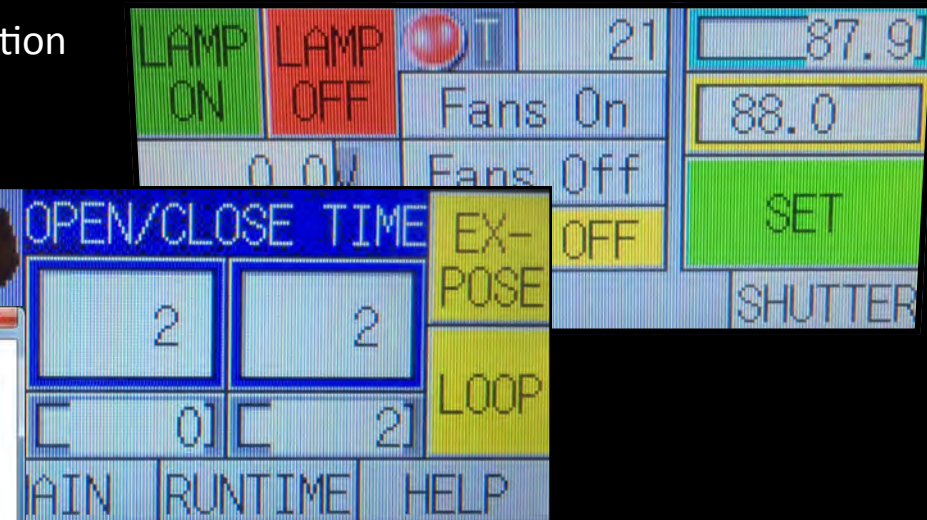


## Control Unit and Software

Sciencetech's UHE-NS and UHE-NL solar simulators are controlled from a single touch screen interface control unit.

**Standard features** included with Sciencetech's UHE-NS and UHE-NL solar simulators include:

- Touchscreen interface
- Shutter and exposure control (200ms closing/opening time)
- Lamp starts and timer log
- Forced air cooling safety interlock
- RS232 communication
- Power Control<sup>†</sup> software with graphical user interface included,
- Single power line connection for lamp power, cooling, and communication



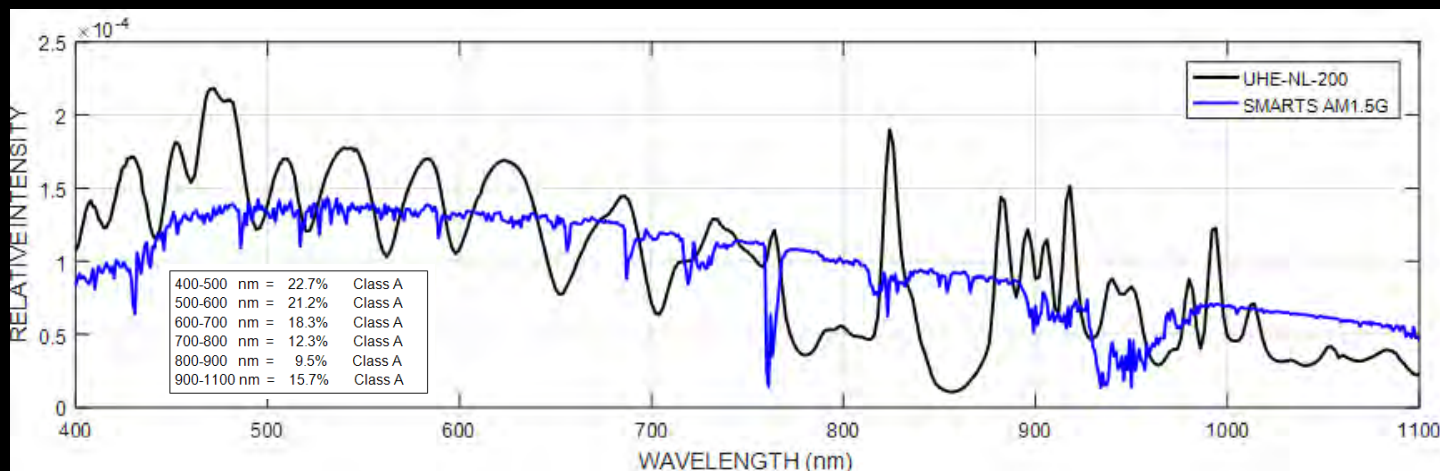
**Browse UHE Solar Simulators**



Sciencetech's UHE-NS/NL series solar simulators include a two-position filter holder. An add-on upgrade is available to increase the available filter positions to four.



The most popular options are AM filters; however, a range of other filter options are available.

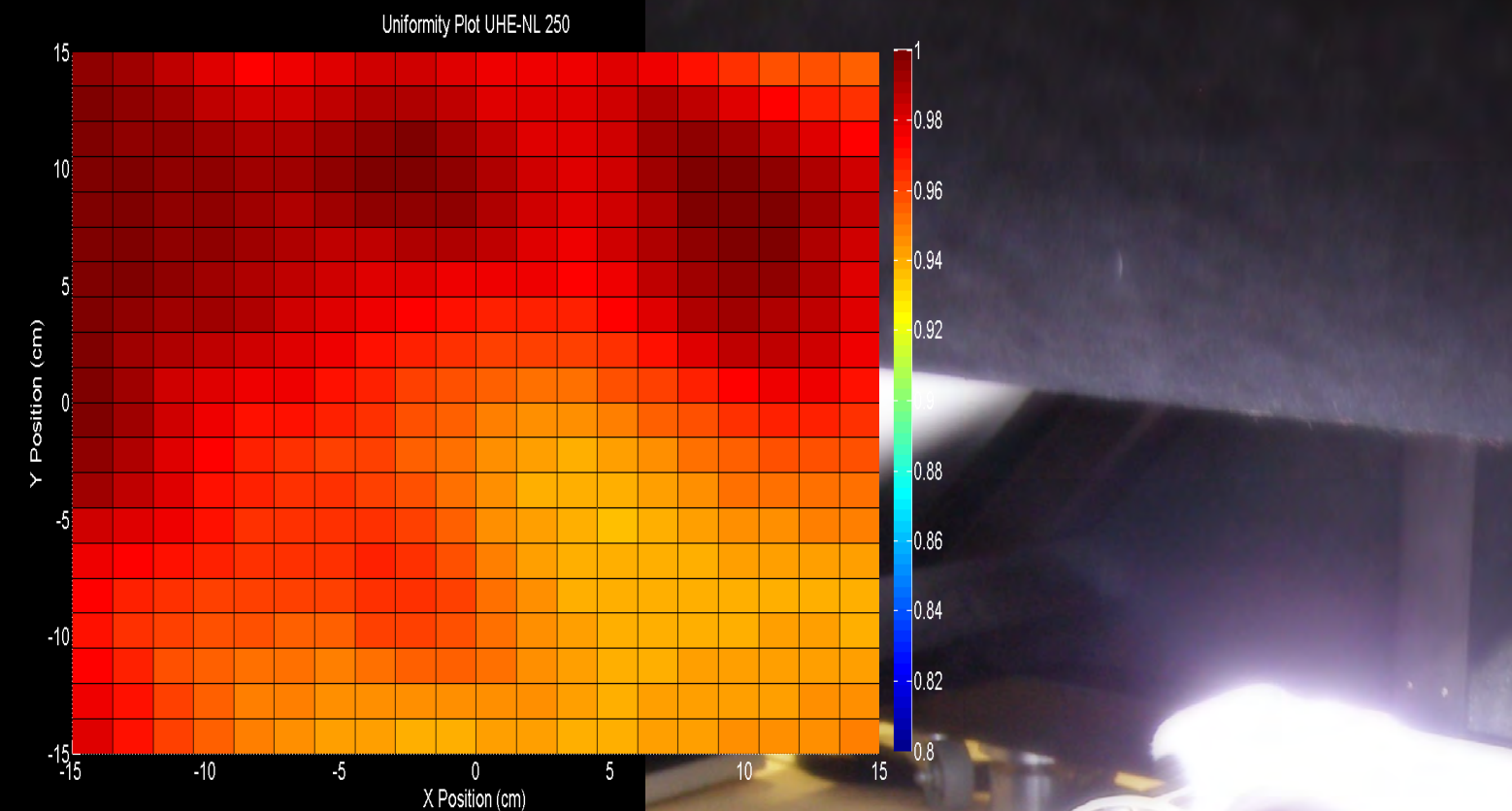


UHE-NL with AM1.5G-FT-3 filter installed providing class A spectral match to the AM1.5G spectrum

Model	Part No.	Description
AM1.5G-FT-3	160-8023	AM1.5G Standard Range
AM-ALL-FT-2	640-8017	Provides AM1.5D, 1.5G and AM0 spectral match, Standard Range
AM-1.5GX-FT-3	640-8018	Provides Extended Range AM1.5G match
AM-CLP-FT-3	640-8019	Provides USFDA and COLIPA spectral match
Custom Filters	—	Custom filters available upon request*
Band Pass / Short Pass / Long Pass Filters	—	See the HPF brochure
IR Water Filter	—	See the IR water filter brochure

\*Other filtering options include options for selectively filtering UV, VIS and IR portions of the spectrum. Please contact a Sciencetech sale representative for more information.

UHE-NS/NL simulators are aligned and tested for Uniformity in our calibration laboratory. Strict quality control procedures are enforced to ensure simulators meet the required specifications.



Typical Non-Uniformity Plot (Data for UHE-NL-250 shown)

Sciencetech offers a wide range of target plane accessories including fully featured cell chucks and IV testing software.



**Browse Modular IV**

Cell Chuck Family	Simulator Model Number					
	UHE-NS-75	UHE-NS-100	UHE-NL-150	UHE-NL-200	UHE-NL-250	UHE-NL-300
SCI-SCC3	X					
SCI-SCC6		X	X			
SCI-SCC12				X	X	X

The UHE-NS/NL family of solar simulators are feature rich, convenient integrated systems suitable for a variety of research and testing requiring a stable and reliable uniform light source.

UHE-NL series solar simulators can produce 1 Sun or more solar irradiance at a variety of solar spectral classifications (with an

appropriate AM filter).

All of the electronics are contained inside the UHE-NL system to reduce clutter. With the UHE-NL all of the simulator functions can be controlled from a single touch screen interface or from the provided Sciencetech Power Control software.



Model	UHE-NS-75	UHE-NS-100	UHE-NL-150	UHE-NL-200	UHE-NL-250	UHE-NL-300
Part Number	166-9026	166-9027	166-9028	166-9029	166-9030	166-9031
Illuminated Area, 1 Sun AM1.5G (mm)	75x75	100x100	150x150	200x200	250x250	300x300
Illuminated Area, 1 Sun AM0 (mm)	50x50	70x70	100x100	140x140	175x175	200x200
Working Distance <sup>2</sup> (mm)	200	300	500	575	650	650
Uniformity Classification <sup>3</sup>	A (<2%)					A (<3%)
Spectral Match Classification <sup>4</sup>	A (Different Spectral Filters Available)					
Spectral Range (nm)	300-1800					
Temporal Stability Classification <sup>5</sup>	A+ (<1% over 10 seconds)					
Collimation (deg, half angle)	8	8	8	9	9	10
Typical Irradiance	1 Sun +/- 10%					
Lamp Power (W) And Model Number	150 (XE150)	300 (XE300)	500 (XE500)	1000 (XE1000)	1600 (XE1600)	1600 (XE1600)
Control Unit	Integrated Touchscreen Control Unit					
Dimensions (L x W x H) (mm)	970x437x1917 (V) / 1917 x 437 x 437 (H)			970x437x1917 (V) / 1917 x 437 x 437 (H)		
Weight (kg)	70			95		
Power Requirements	110-115V/60 Hz 10A or 220-240V/ 50Hz 6A			220-240V/ 50Hz, 10A		
Line Regulation	<0.2%					

# Configuration Options

The UHE-NS/NL Simulators can be configured at the time of order. Various options have been designed to cover most requirements.

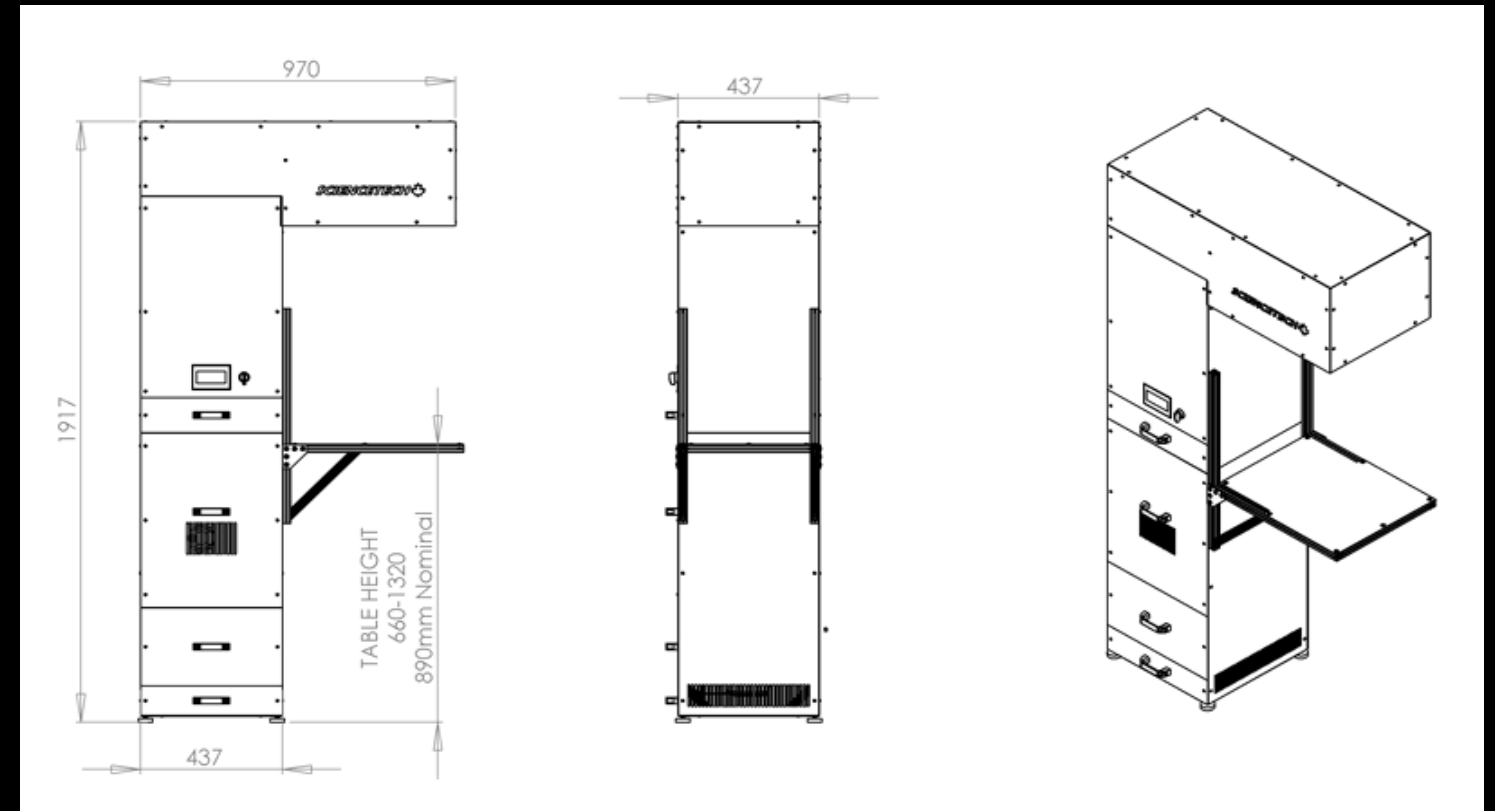
Sciencetech prides itself on providing custom solutions. Please contact a Sciencetech sales engineer and let us know how we can help you!

Code	Part No.	Description
-HB	N/A	Horizontal Beam Option (Please specify at time of order)
-AT100	166-8016	Automated Beam Attenuation from 0-100% in 10% Steps
FS-02-N	115-9027	Optical Feedback for Long Term Stability
UHE-DARK	166-8017	Light Tight Sample Area.
ADJ-STAGE	166-8018	Manual Adjustable Stage, 250mm travel

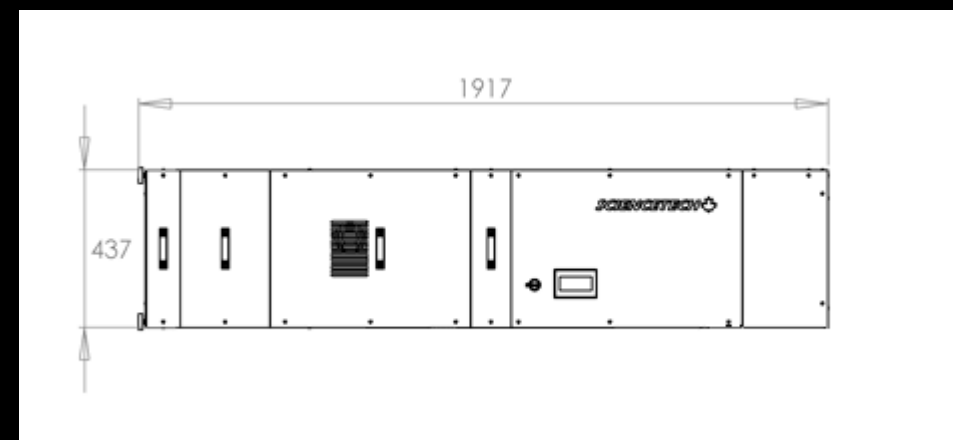
1. Power control software is available with any Sciencetech light source controlled with a touch screen control unit
2. Working distance +/- 10%
3. Uniformity is defined as :  

$$\text{Uniformity (\%)} = \frac{(\text{Max Irradiance} - \text{Min Irradiance})}{(\text{Max Irradiance} + \text{Min Irradiance})} \times 100\%$$
 Uniformity is measured using the following methods:
  - Compliant to ASTM E 927-05. Measured with 36 point in 6 x 6 grid. Detector is no bigger than each grid size
  - Compliance to IEC 60904-9-2007 and JIS C 8912 can tested upon request
4. Spectral Match is measured with a calibrated spectroradiometer with grating monochromator and broad band detector. Measurement resolution is set < 10nm.
5. Temporal Instability is defined as:  

$$\text{Temporal Instability (\%)} = \frac{(\text{Max irradiance} - \text{Min irradiance})}{(\text{Max irradiance} + \text{Min Irradiance})} \times 100\%$$
 Temporal Instability is measured by taking 20 samples per second for 10 seconds.



UHE-NL with Downward Facing Beam



UHE-NL Horizontal Beam Option

### Mounting Options:

- 1/4-20 Levelling feet
- Optional 1" T-Slot (80/20) extrusion

	With Downward Facing Beam Option
WEIGHT (kg)	95 kg
L x W x H (mm)	970 x 437 x 1917
	Horizontal Facing Beam Option
L x W x H (mm)	1917 x 437 x 437
Weight (kg)	80 kg