



Photovoltaic Cell Data Compilation

Calibration Conducted For:

Kaitlyn VanSant
(for Solasta)

Comments

Cell 60010 was contacted via two different methods for comparison purposes.

Data Collected By:

National Renewable Energy Laboratory
Solar Cell/Module Performance Group
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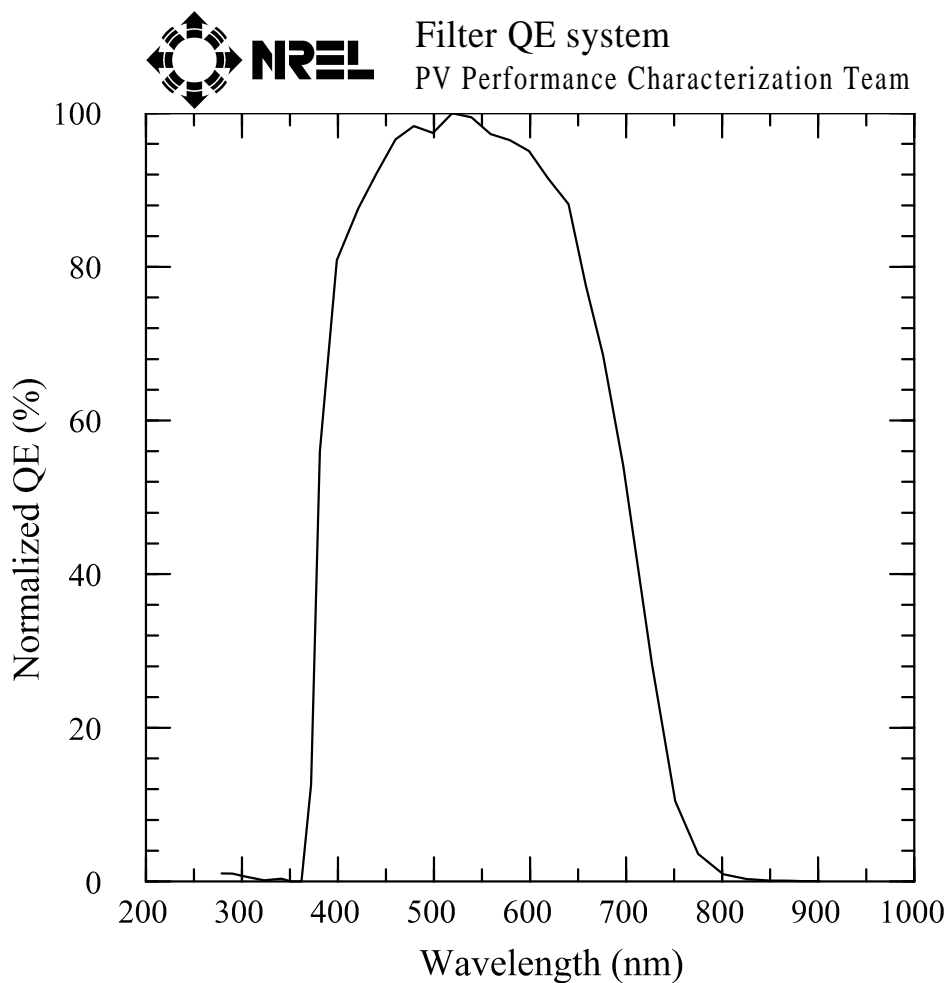
<u>Cell ID</u>	<u>Graph type</u>	<u>Filename</u>	<u>Page</u>
60010	FQE	FQE 100402-092753	3
60010	X25 LIV	X25 LIV 100331-095632	4
60010	X25 LIV	X25 LIV 100331-100553	5
60020	FQE	FQE 100402-132643	6
60020	X25 LIV	X25 LIV 100331-101851	7
63061	FQE	FQE 100402-135138	8
63061	X25 LIV	X25 LIV 100331-110606	9

Solasta a-Si Cell

Device ID: 60010

Device Temperature: $23.9 \pm 0.8^\circ\text{C}$

Apr 02, 2010 09:27



Voltage bias: 0.000E+0 V

Cal: FQE pyro - ref cell cal 100402-08562

Light bias current: 12.4 mA

Light Biased area: 0.80 cm^2 Light bias current density: 16 mA/cm^2

Solasta

a-Si Cell

Device ID: 60010

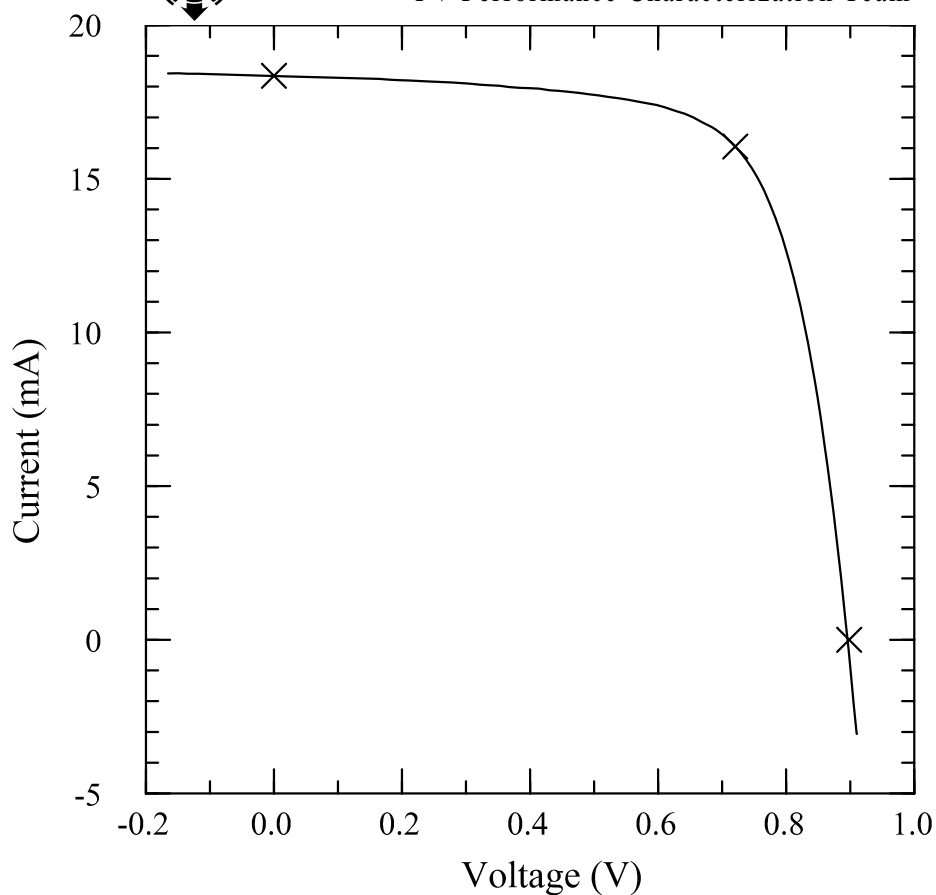
Mar 31, 2010 09:56

Spectrum: ASTM G173 global

Device Temperature: 25.4 ± 1.1 °CDevice Area: 1.093 cm²Irradiance: 1000.0 W/m²

X25 IV System

PV Performance Characterization Team



$$V_{oc} = 0.8983 \text{ V}$$

$$I_{sc} = 18.347 \text{ mA}$$

$$J_{sc} = 16.782 \text{ mA/cm}^2$$

$$\text{Fill Factor} = 70.19 \%$$

$$I_{max} = 16.054 \text{ mA}$$

$$V_{max} = 0.7206 \text{ V}$$

$$P_{max} = 11.568 \text{ mW}$$

$$\text{Efficiency} = 10.58 \%$$

Probing both "front" contacts.

Fan blowing over device

Solasta

a-Si Cell

Device ID: 60010

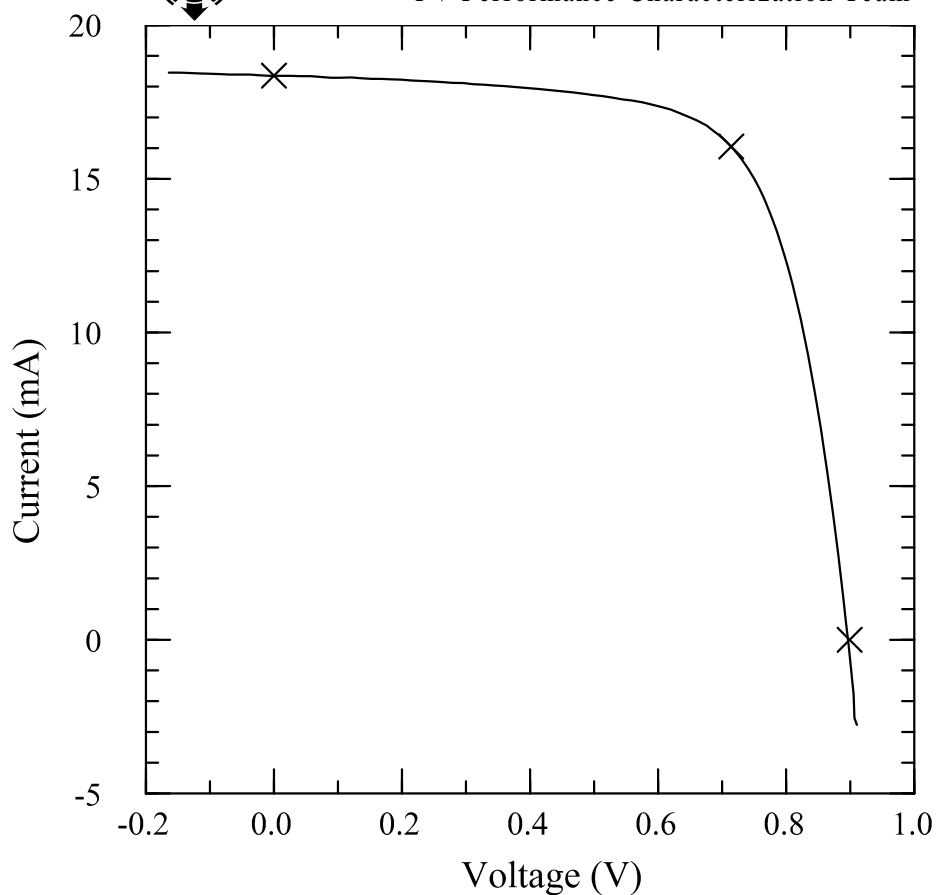
Mar 31, 2010 10:05

Spectrum: ASTM G173 global

Device Temperature: 25.2 ± 1.1 °CDevice Area: 1.093 cm^2 Irradiance: 1000.0 W/m^2 

X25 IV System

PV Performance Characterization Team

 $V_{oc} = 0.8990 \text{ V}$ $I_{sc} = 18.360 \text{ mA}$ $J_{sc} = 16.794 \text{ mA/cm}^2$

Fill Factor = 69.44 %

 $I_{max} = 16.048 \text{ mA}$ $V_{max} = 0.7142 \text{ V}$ $P_{max} = 11.461 \text{ mW}$

Efficiency = 10.48 %

Kelvin probe on one "front" contact.

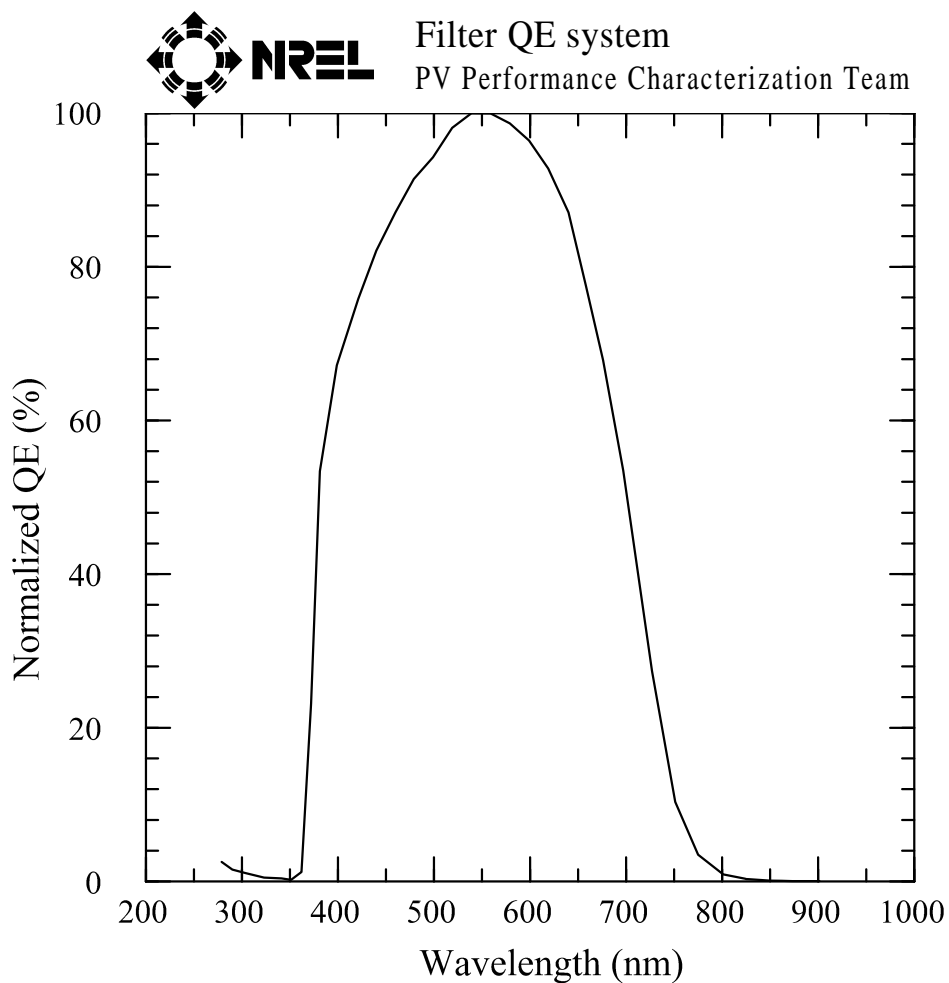
Fan blowing over device

Solasta a-Si Cell

Device ID: 60020

Device Temperature: $24.7 \pm 0.8^\circ\text{C}$

Apr 02, 2010 13:26



Voltage bias: 0.000E+0 V

Cal: FQE pyro - ref cell cal 100402-13004

Light bias current: 10.8 mA

Light Biased area: 1.00 cm^2 Light bias current density: 11 mA/cm^2

Fan blowing under device

Solasta

a-Si Cell

Device ID: 60020

Device Temperature: 25.2 ± 1.0 °C

Mar 31, 2010 10:18

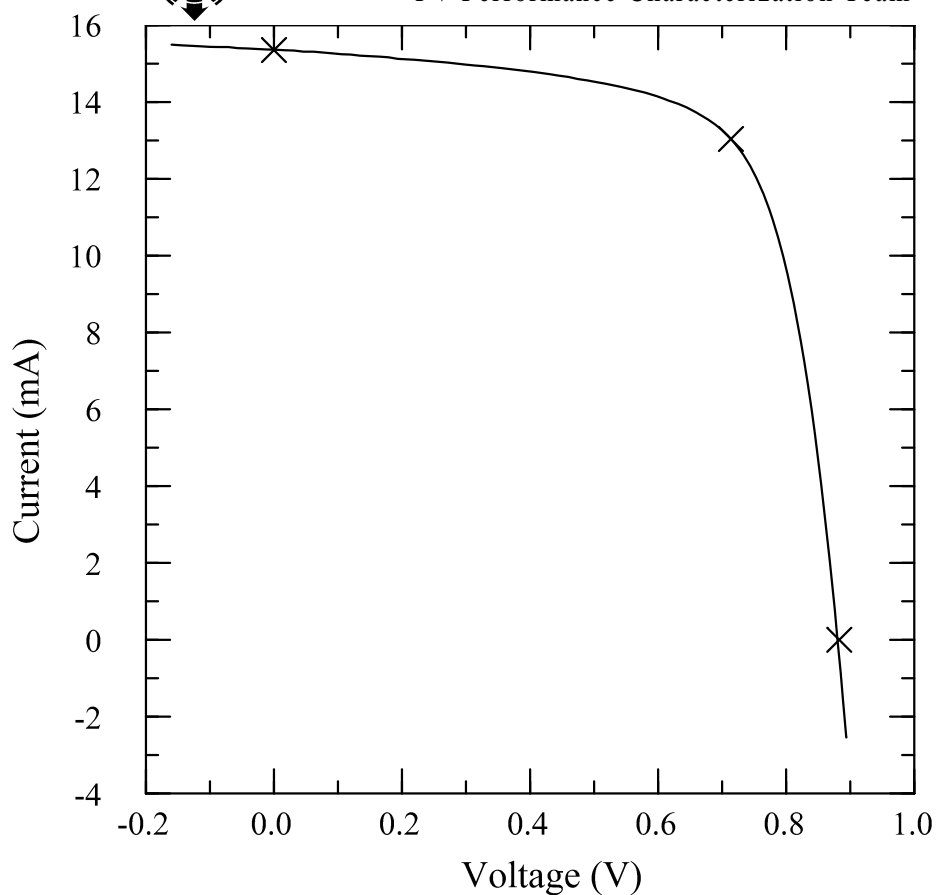
Device Area: 0.9224 cm^2

Spectrum: ASTM G173 global

Irradiance: 1000.0 W/m^2 

X25 IV System

PV Performance Characterization Team



$$V_{oc} = 0.8828 \text{ V}$$

$$I_{max} = 13.038 \text{ mA}$$

$$I_{sc} = 15.351 \text{ mA}$$

$$V_{max} = 0.7138 \text{ V}$$

$$J_{sc} = 16.642 \text{ mA/cm}^2$$

$$P_{max} = 9.3058 \text{ mW}$$

$$\text{Fill Factor} = 68.67 \%$$

$$\text{Efficiency} = 10.09 \%$$

Kelvin probe on one and single probe on second "front" contact.

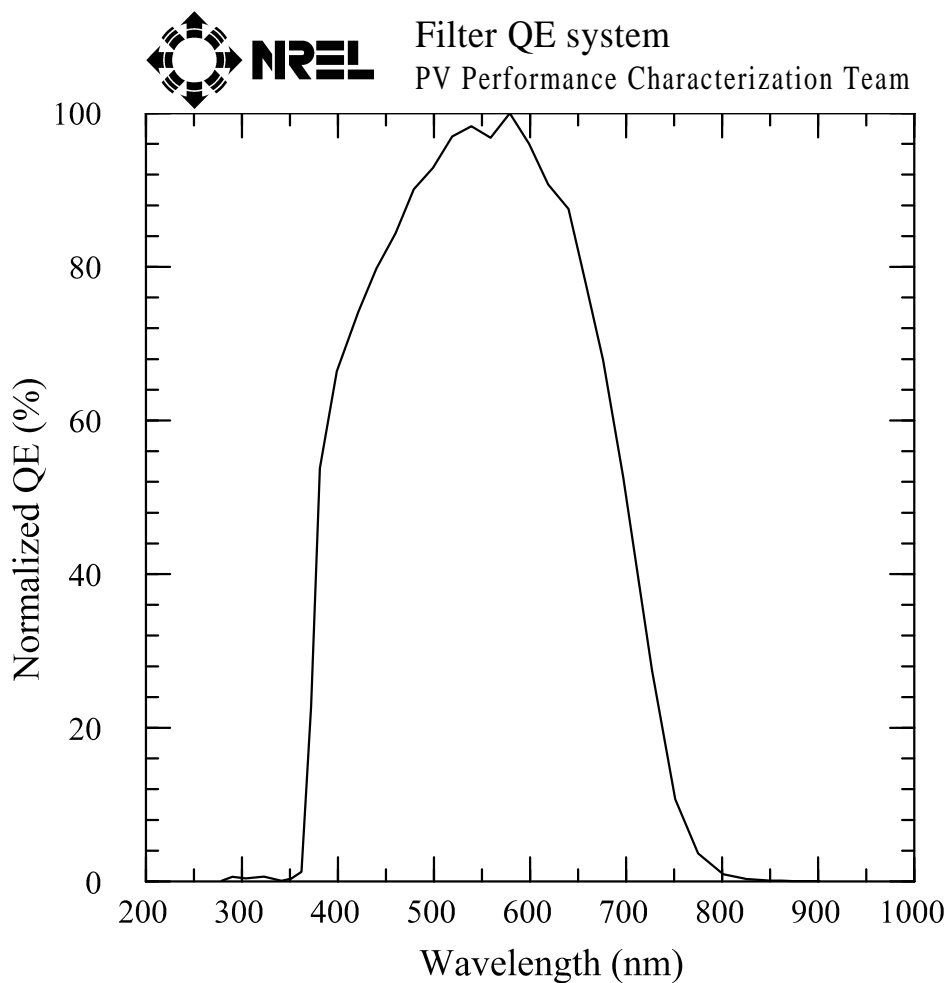
Fan blowing over device

Solasta a-Si Cell

Device ID: 63061

Device Temperature: $24.7 \pm 0.6^\circ\text{C}$

Apr 02, 2010 13:51



Voltage bias: 0.000E+0 V

Cal: FQE pyro - ref cell cal 100402-13004

Light bias current: 13.0 mA

Light Biased area: 1.00 cm^2 Light bias current density: 13 mA/cm^2

Fan blowing under device

Solasta

a-Si Cell

Device ID: 63061

Device Temperature: 25.4 ± 1.1 °C

Mar 31, 2010 11:06

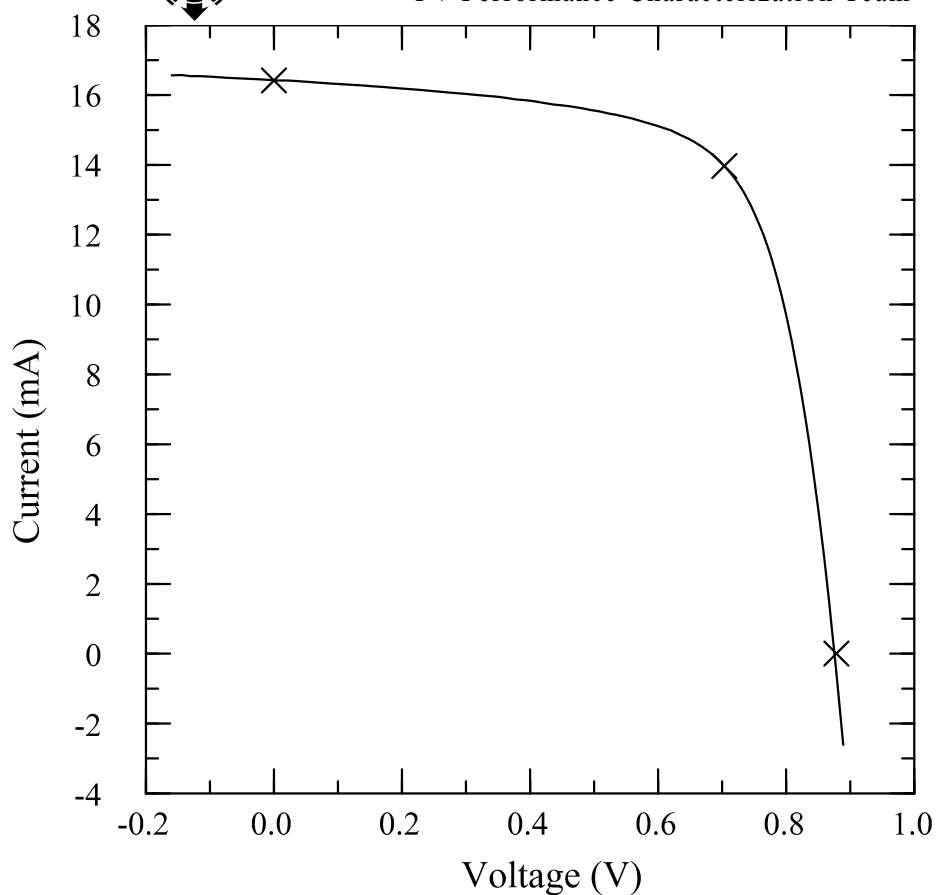
Device Area: 0.9911 cm^2

Spectrum: ASTM G173 global

Irradiance: 1000.0 W/m^2 

X25 IV System

PV Performance Characterization Team

 $V_{oc} = 0.8783 \text{ V}$ $I_{max} = 13.969 \text{ mA}$ $I_{sc} = 16.421 \text{ mA}$ $V_{max} = 0.7035 \text{ V}$ $J_{sc} = 16.568 \text{ mA/cm}^2$ $P_{max} = 9.8270 \text{ mW}$

Fill Factor = 68.14 %

Efficiency = 9.92 %

Kelvin probe on one and single probe on second "front" contact.

Fan blowing under device