HeatSaver® Thermal Shades

Part of the Solution...

Performance & Weather Nov. 11 - 26

Southern exposure only with limited shading is an important factor. *These tests are limited.* *In particular they do not include glazing on the west, north and east building faces.* As such they may not accurately reflect building envelope performance under optimal control conditions.

Solar panels extending 36" from the building above the windows average 0% shading during November.

The weather and temperature information gathered is based on the U.S. Postal Code for the Chicago Center for Green Technology (60612) and sourced through the WeatherUnderground website.

The room is approximately 47 feet wide from east to west. The windows being tested are at opposite ends, approximately 40 feet apart. They are double glazed, wood cased with no films applied or gasses present. The window wells are quite deep. At almost exactly 11" from the inside face of the glass to the face of the shades there is ample room for convection currents.

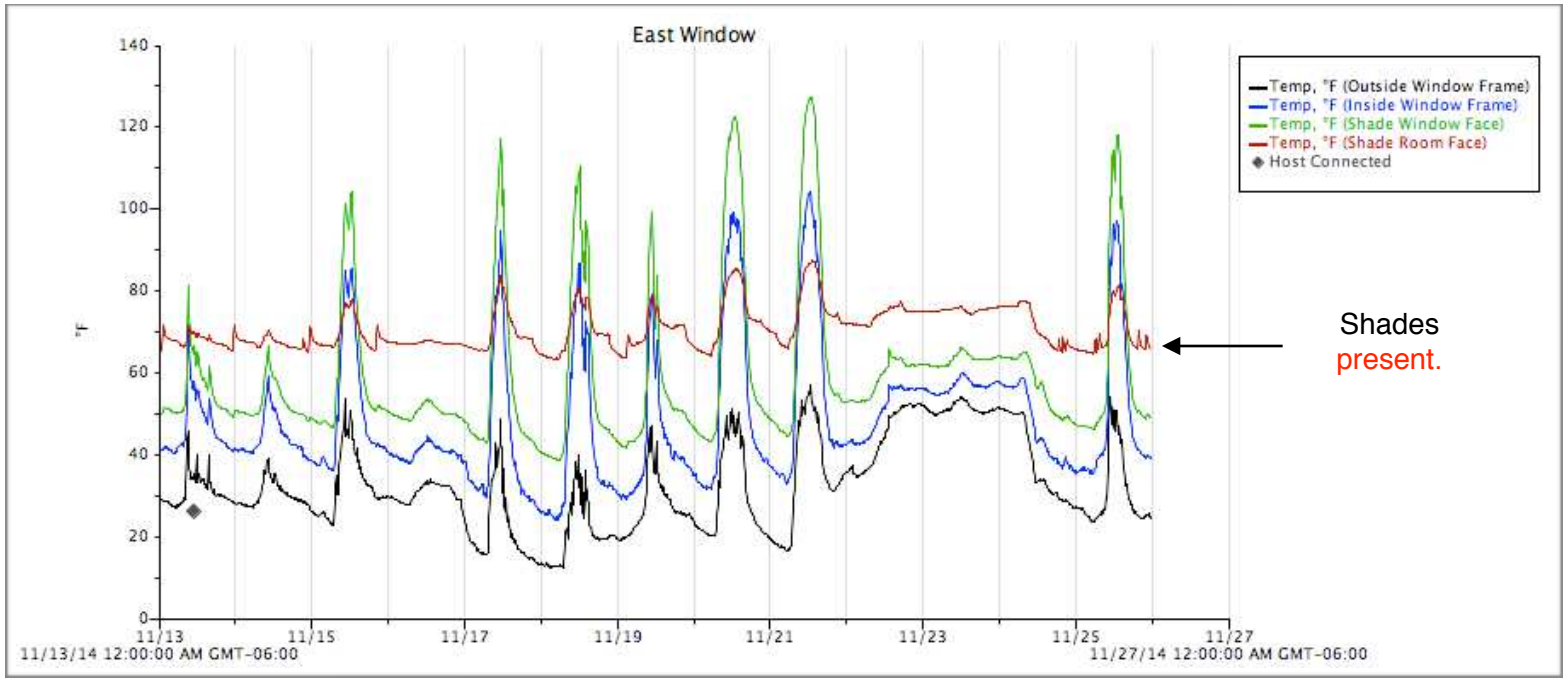
The ceilings are 128" high, there are four HVAC vents equally spaced across the ceiling. Both the vents and ducts are exposed. The thermostat dedicated to the room is on the opposite wall. Daily records of thermostat settings have not been available. It is safe to assume an average setting of 72°F.

High and Low temperatures originate from the graphs below. Temperatures were confirmed and averages were taken from the Onset data spreadsheets.

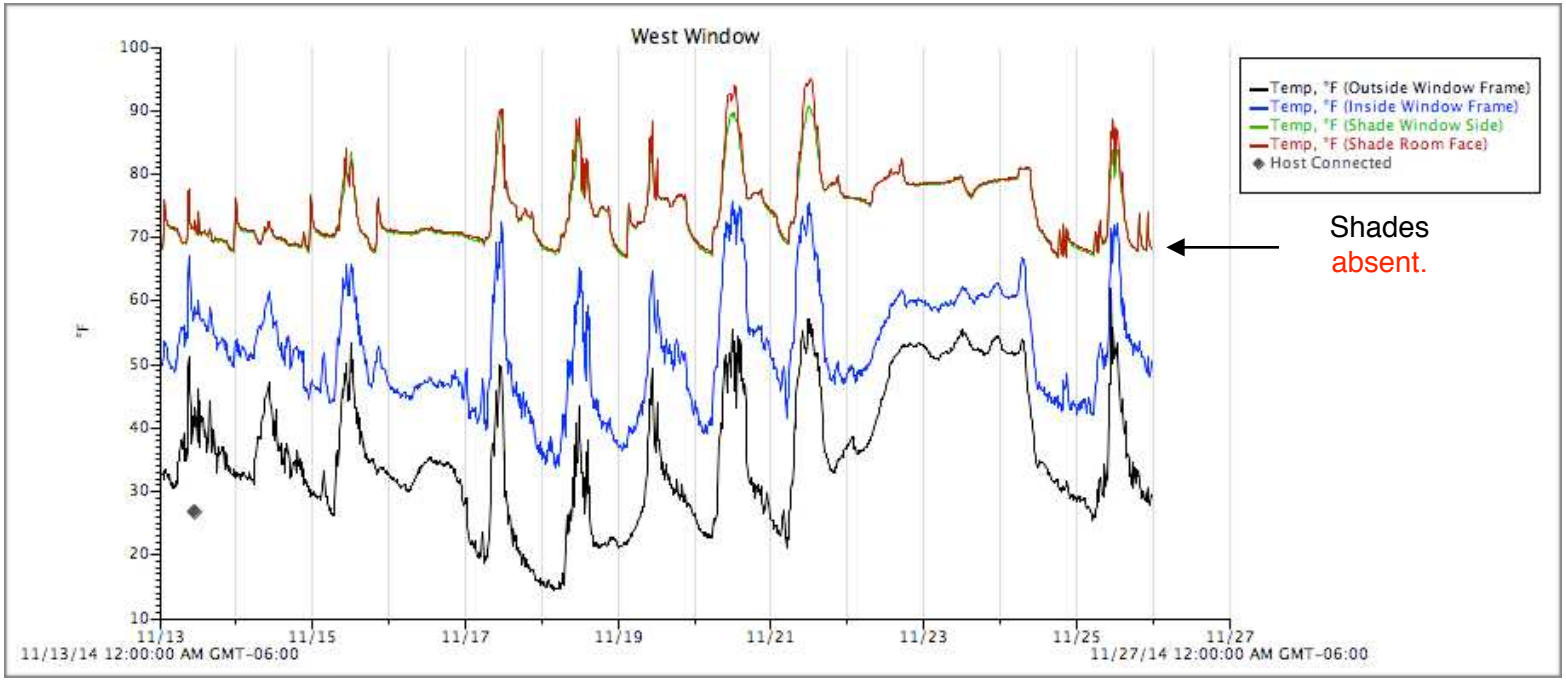
East Windows = Shades ***permanently deployed*** throughout test period.
West Windows = Shades ***permanently raised*** throughout test period.

One Onset data logger and four sensors deployed per window assembly.

Black = outside window frame. Blue = inside window frame.
Green = window side face of shade. Red = room side face of shade.



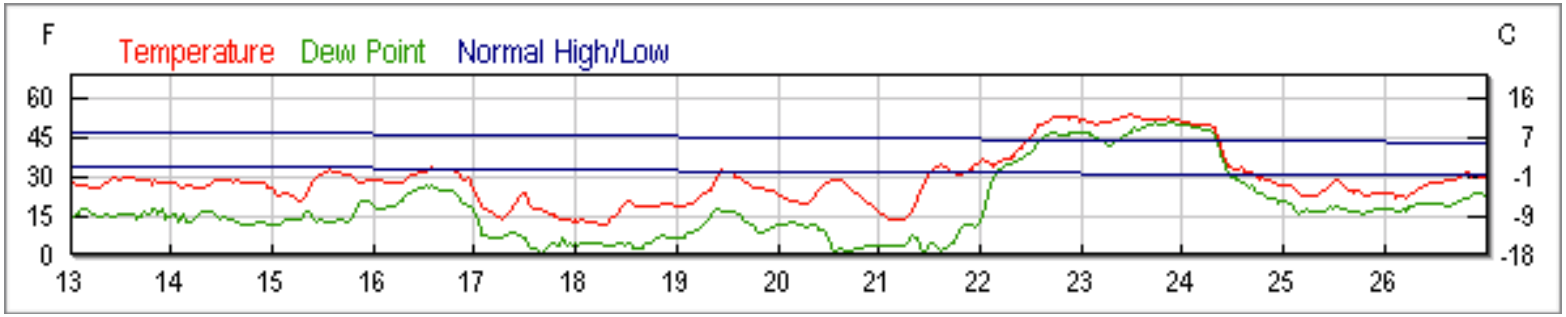
East Windows		Averages	Temperature Comparisons		
Outside Window Frame (1) (3)	Nov 21 High 57°	32.57°	11/21	36° High	13° Low
(2)	Nov 18 Low 12°		11/18	21° High	12° Low
Inside Window Frame (4)	Nov 21 High 104°	48.21°	11/21	36° High	13° Low
	Nov 18 Low 24°		11/18	21° High	12° Low
Window Side Face (4)	Nov 21 High 127°	59.50°	11/21	36° High	13° Low
	Nov 18 Low 39°		11/18	21° High	12° Low
Room Side Face (3)	Nov 21 High 87°	70.77°	11/21	36° High	13° Low
	Nov 18 Low 63°		11/18	21° High	12° Low



West Windows		Averages	Temperature Comparisons		
Outside Window Frame	Nov 25 High 56º	35.66º	11/25	30º High	22º Low
	Nov 18 Low 15º		11/18	21º High	12º Low
Inside Window Frame	Nov 20 High 76º	52.15º	11/20	30º High	17º Low
	Nov 18 Low 34º		11/18	21º High	12º Low
Window Side Face	Nov 21 High 91º	73.98º	11/21	36º High	13º Low
(4” inset from wall face)	Nov 19 Low 67º		11/19	33º High	19º Low
Room Side Face	Nov 21 High 95º	74.40º	11/21	36º High	13º Low
(4.5” inset from wall face)	Nov 19 Low 67º		11/19	33º High	19º Low

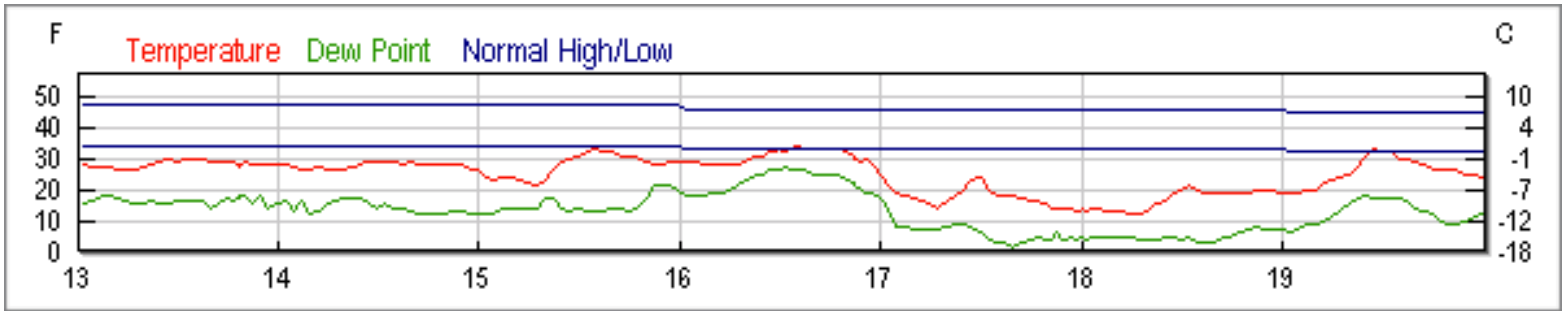
Weather Data Nov 13 - 26 http://bit.ly/1yPFIuS

High Nov 22 54º Low Nov 21 13º



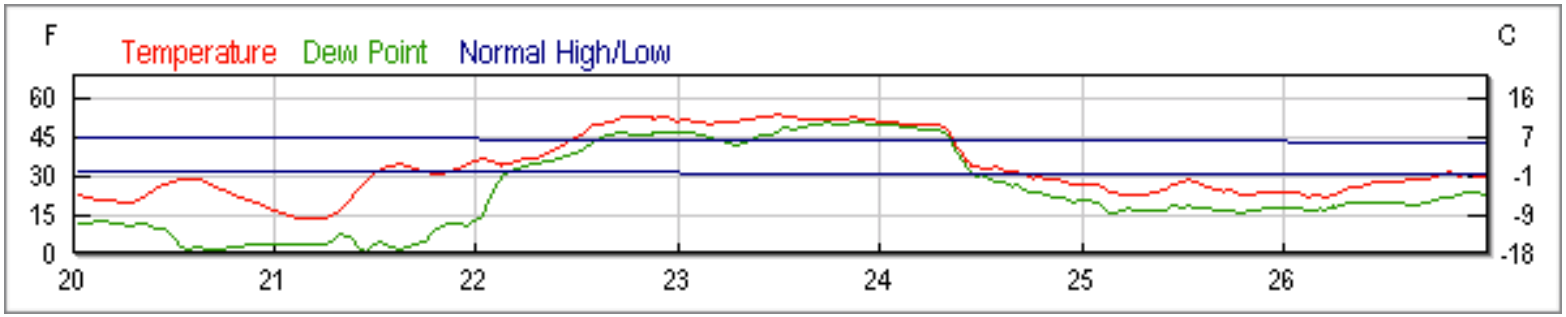
Daily Data Nov 13 - 19

11/13 http://bit.ly/1zpcqSu	11/14 http://bit.ly/1xIIQbm	11/15 http://bit.ly/1uEVTd4
11/16 http://bit.ly/1uEWbkb	11/17 http://bit.ly/1t8XZfX	11/18 http://bit.ly/1wXYlsf
11/19 http://bit.ly/1ujk6kj		



Daily Data Nov 29 - 26

11/20 http://bit.ly/1qHlGBC	11/21 http://bit.ly/1raqk5R	11/22 http://bit.ly/1usjFnJ
11/23 http://bit.ly/1tq267y	11/24 http://bit.ly/1FsmDPE	11/25 http://bit.ly/1zvbJqi
11/26 http://bit.ly/1xMSINH		



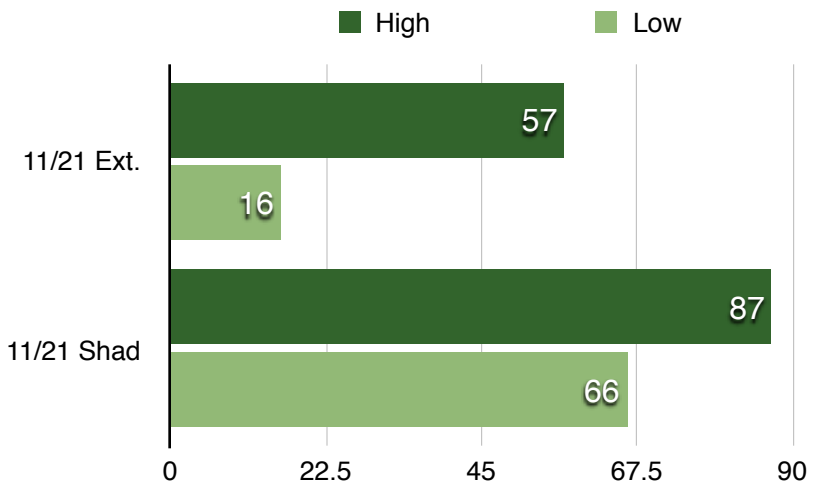
Notes.

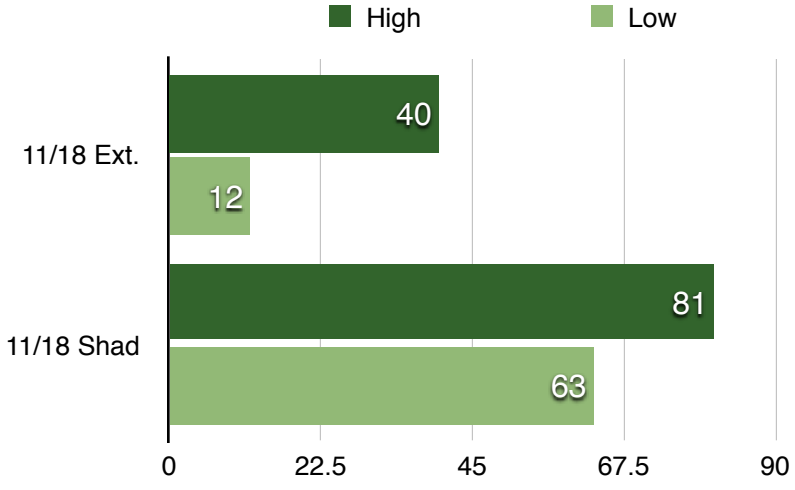
(1) The Nov 21 exterior **High of 57°** vs. **Low of 16°** = **41° difference.** By comparison the Nov 21 face of shade **High of 87°** vs **Low of 66°** = **21° difference.**

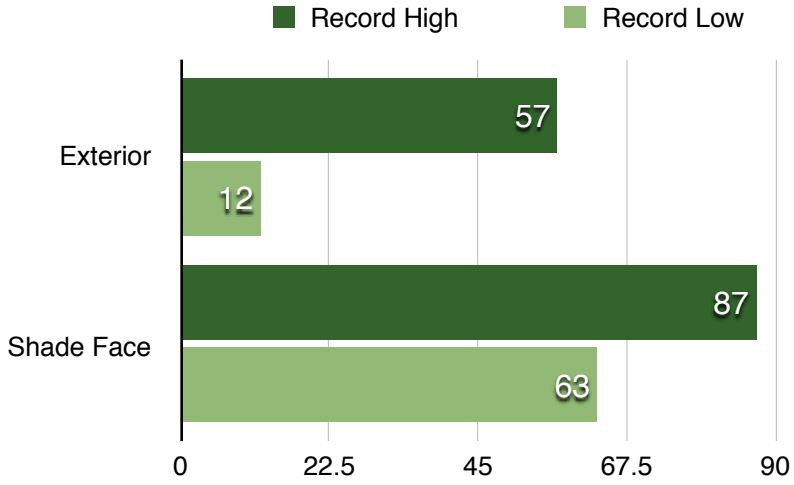
(2) The Nov 18 exterior **Low of 12°** vs. **High of 40°** = **28° difference.** By comparison the Nov 18 face of shade **Low of 63°** vs. **High of 81°** = **18° difference.**

(3) The exterior **High of 57°** to **Low of 12°** = **45° swing.** The face of shade **High of 87°** to **Low of 63°** = **24° swing.**

(4) The East Window High temperatures recorded on the inside of the window frame and window side face of the shades is not indicative of a typical installation where the shades would normally be raised during the day to allow for passive gains. Similarly some of this heat penetration to the inside face of the shade is likely to raise those temperatures somewhat.







The energy savings and increased comfort due to the temperature moderating and stabilizing effect of ***HeatSaver® Thermal Shades*** is evident.