

**Performance & Weather Dec. 11 - 24**

**Southern exposure only with limited shading is an important factor. *The 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 Dec.**

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.

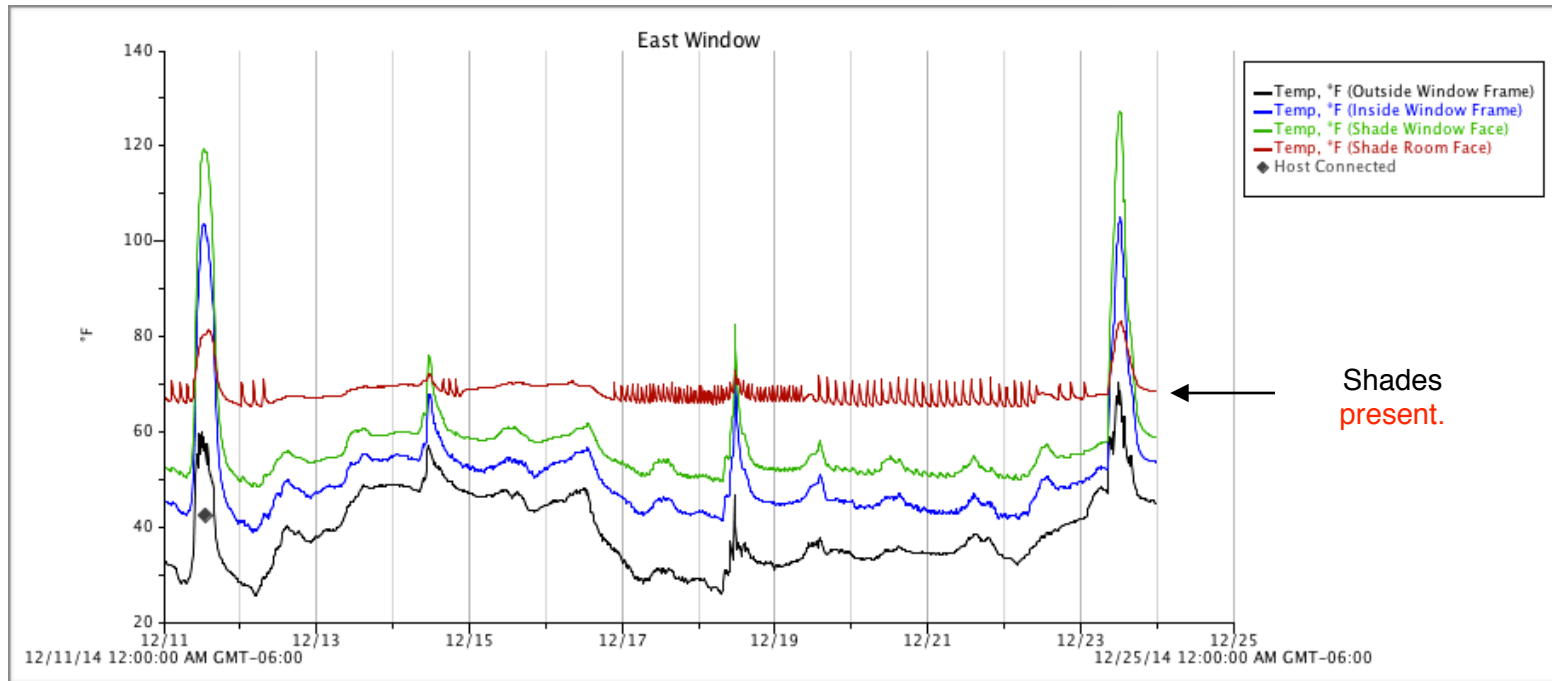
The ceilings are 128" high, there are four HVAC vents equally spaced across the ceiling. Both the vents and ducts are exposed. The thermostat dedicated to the room is on the opposite wall. Daily records of thermostat settings have not been available. It is safe to assume an average setting of 72°F.

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

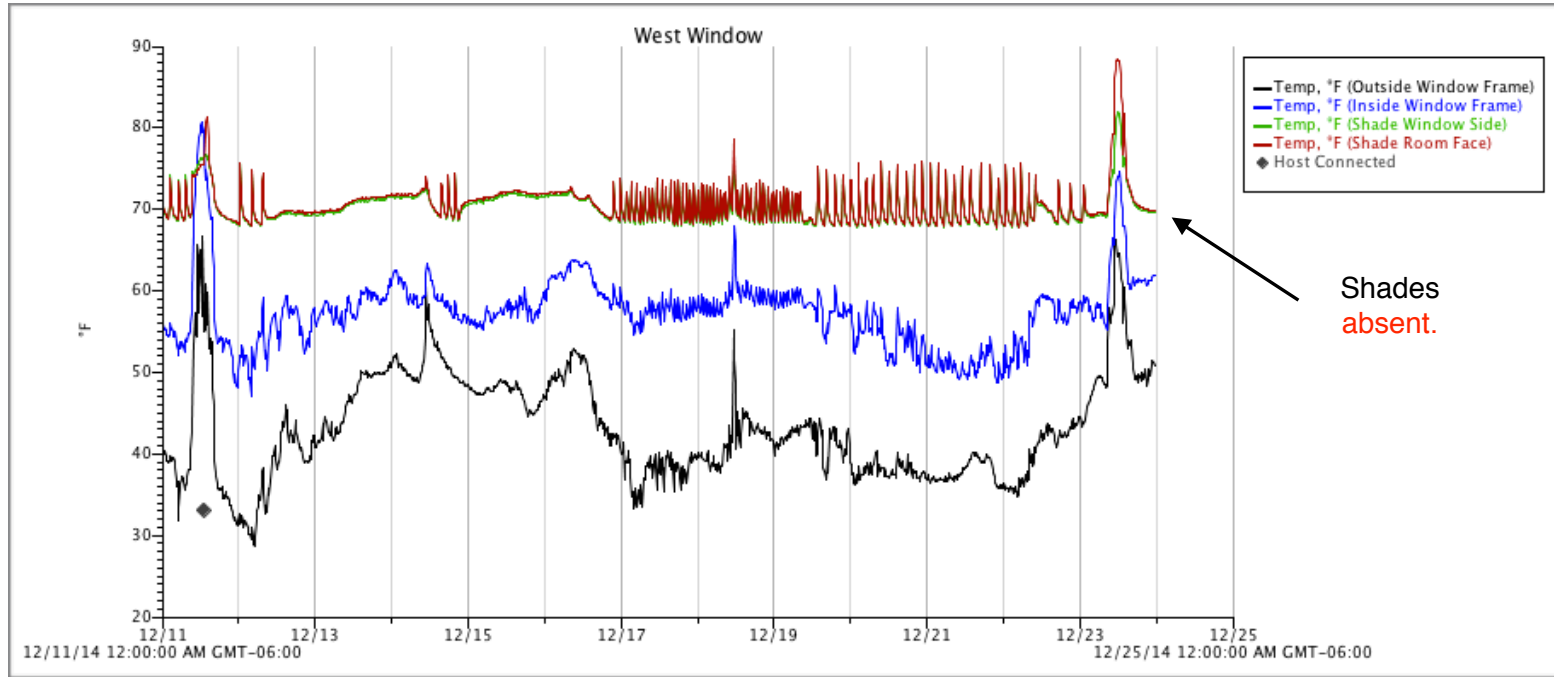
East Windows = Shades **permanently deployed** throughout test period.  
West Windows = Shades **permanently raised** throughout test period.

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)	Dec 23	High 70°	38.98°	12/23	50° High	42° Low
	(2)	Dec 12		Low 26°	12/12	39° High
Inside Window Frame (4)	Dec 23	High 104°	50.17°	12/23	50° High	42° Low
	Dec 12	Low 39°		12/12	39° High	25° Low
Window Side Face (4)	Dec 23	High 127°	57.46°	12/23	50° High	42° Low
	Dec 12	Low 48°		12/12	39° High	25° Low
Room Side Face (3)	Dec 23	High 83°	68.41°	12/23	50° High	42° Low
	Dec 12	Low 65°		12/12	39° High	25° Low



### West Windows

### Averages

### Temperature Comparisons

Outside Window Frame	Dec 23 High 66° Dec 12 Low 29°	43.17°	12/23 50° High 12/12 39° High	42° Low 25° Low
Inside Window Frame	Dec 11 High 81° Dec 12 Low 47°	57.48°	12/11 34° High 12/12 39° High	26° Low 25° Low
Window Side Face (4" inset from wall face)	Dec 23 High 82° Dec 12 Low 68°	70.36°	12/23 50° High 12/12 39° High	42° Low 25° Low
Room Side Face (4.5" inset from wall face)	Dec 23 High 88° Dec 12 Low 68°	70.66°	12/23 50° High 12/12 39° High	42° Low 25° Low

**Weather Data** Dec 11 - 24 <http://bit.ly/1wsYGSX>

High Dec 14 53°      Low Dec 12 25°



**Daily Data** Dec 11 - 17

12/11 <http://bit.ly/1BseRVe>

12/12 <http://bit.ly/130tIPW>

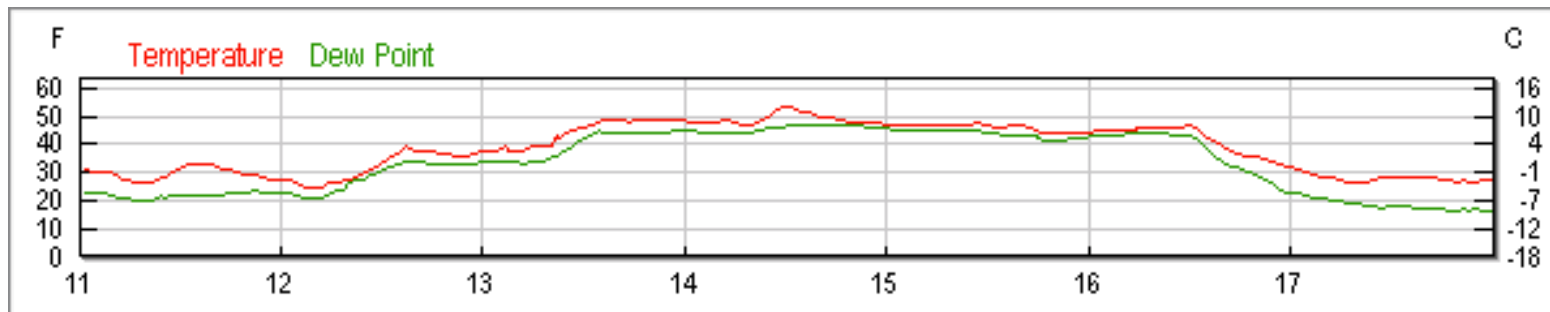
12/13 <http://bit.ly/1ww9CCx>

12/14 <http://bit.ly/1ITCpYe>

12/15 <http://bit.ly/1z3GG8n>

12/16 <http://bit.ly/16t54Ez>

12/17 <http://bit.ly/13g8Df7>



### Daily Data Dec 18 - 24

12/18 <http://bit.ly/1Ccxw86>

12/19 <http://bit.ly/1wOZCFZ>

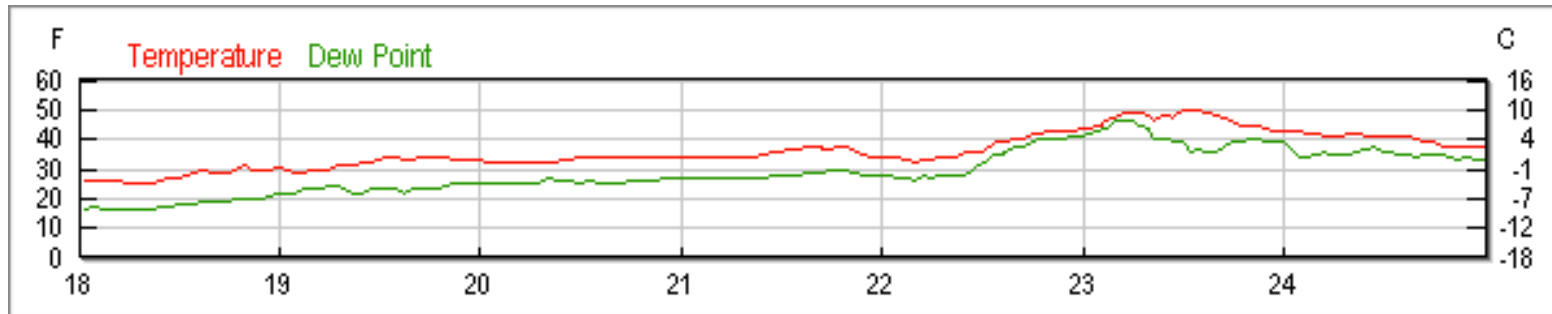
12/20 <http://bit.ly/1HkGd1c>

12/21 <http://bit.ly/1zp1MhO>

12/22 <http://bit.ly/13tzt7>

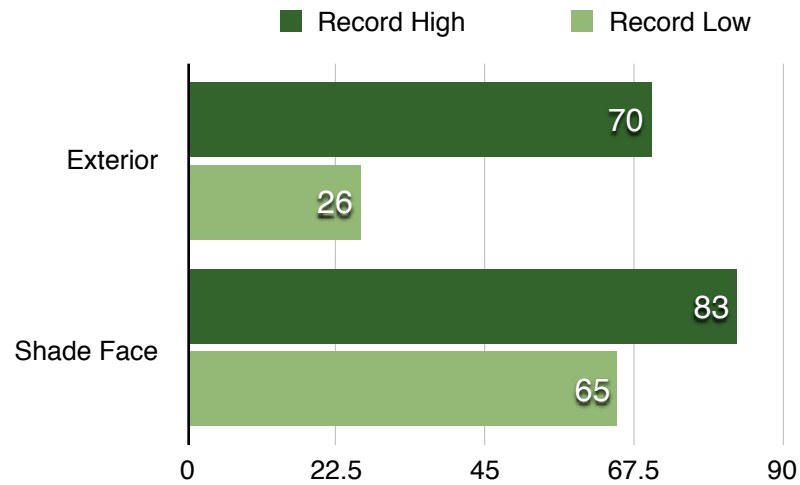
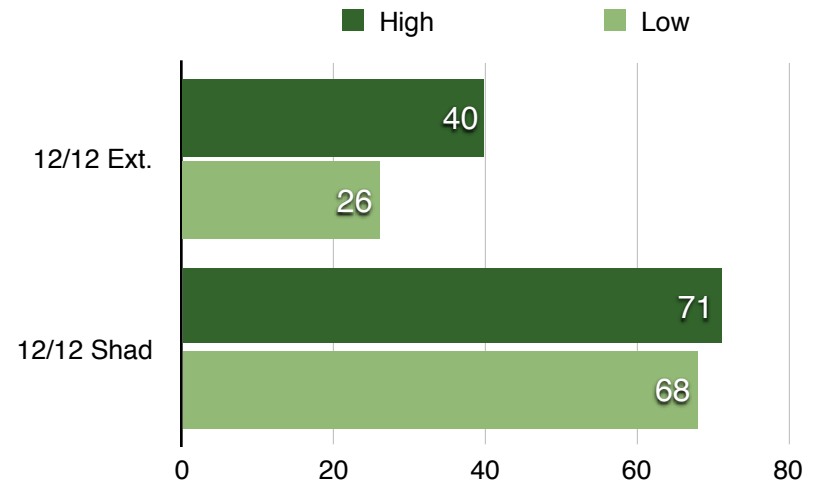
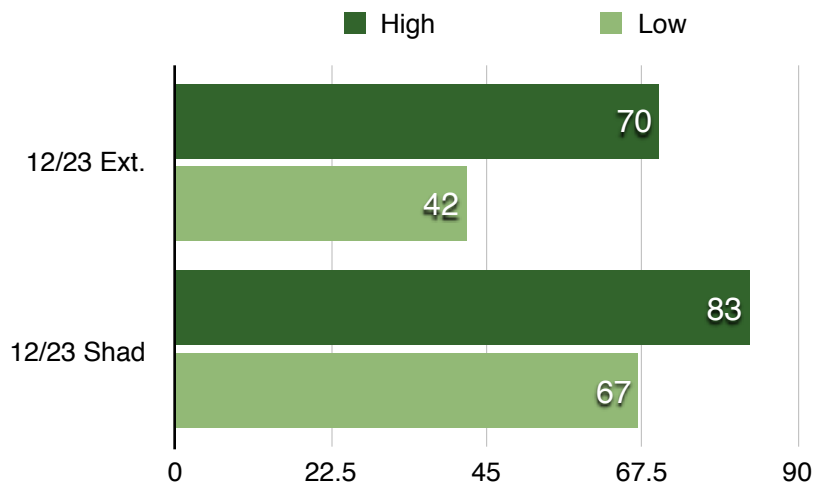
12/23 <http://bit.ly/1HBOv4R>

12/24 <http://bit.ly/1woedDi>



### Notes.

- (1) The Dec 23 exterior **High of 70°** vs. **Low of 42° = 28° difference**. By comparison the Dec 23 face of shade **High of 83°** vs **Low of 67° = 16° difference**.
- (2) The Dec 12 exterior **Low of 26°** vs. **High of 40° = 14° difference**. By comparison the Dec 12 face of shade **Low of 68°** vs. **High of 71° = 3° difference**.
- (3) The exterior **High of 70°** to **Low of 26° = 44° swing**. The face of shade **High of 83°** to **Low of 65° = 18° 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.