HeatSaver® Thermal Shades

Part of the Solution...

Performance & Weather Data June 26 - July 9

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 provide 100% shading during June.

The weather 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.

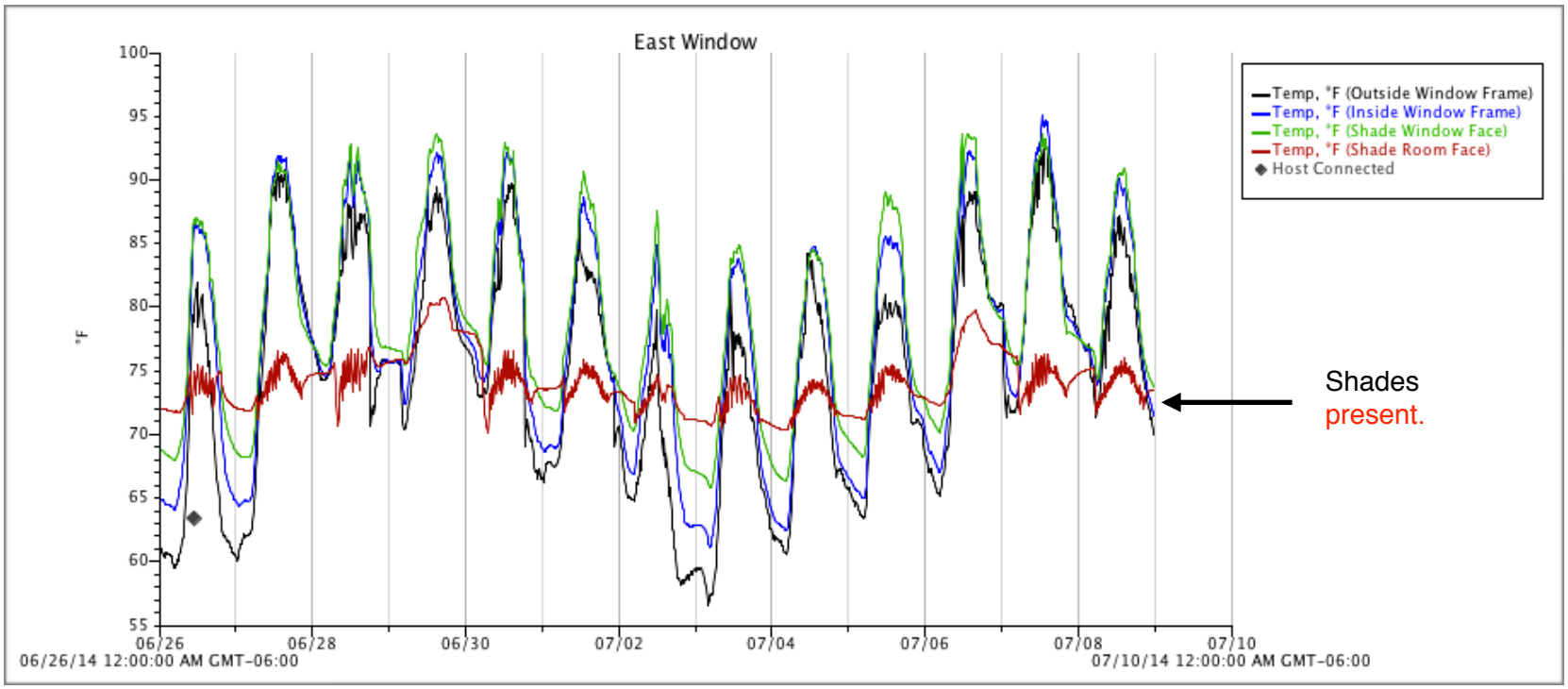
The ceilings are 128" high, there are four HVAC vents equally spaced across the ceiling. Both the vents and ducts are exposed. The thermostat dedicated to the room is on the opposite wall. Daily records of thermostat settings have not been available. It is safe to assume an average setting of 72ºF.

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

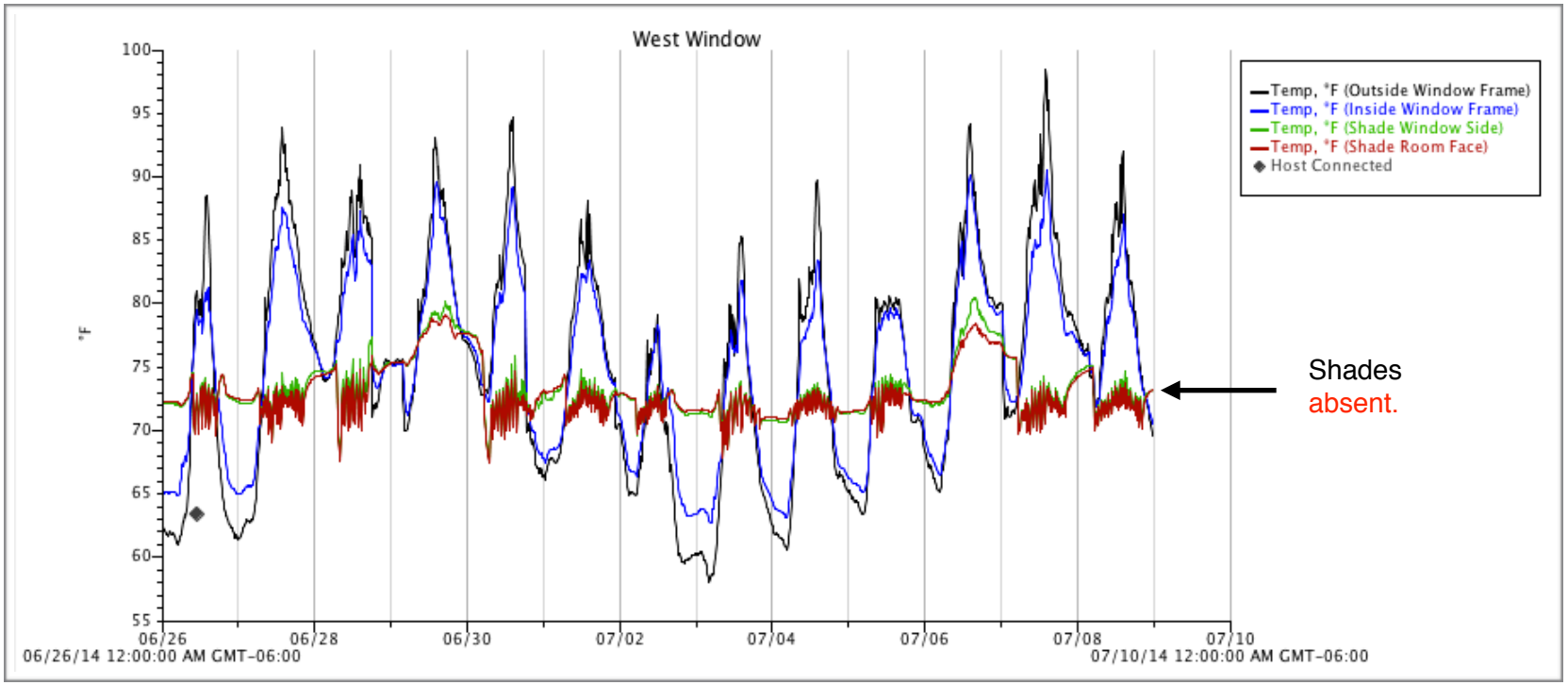
East Windows = Shades ***permanently deployed*** throughout test period.
West Windows = Shades ***permanently raised*** throughout test period.

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.



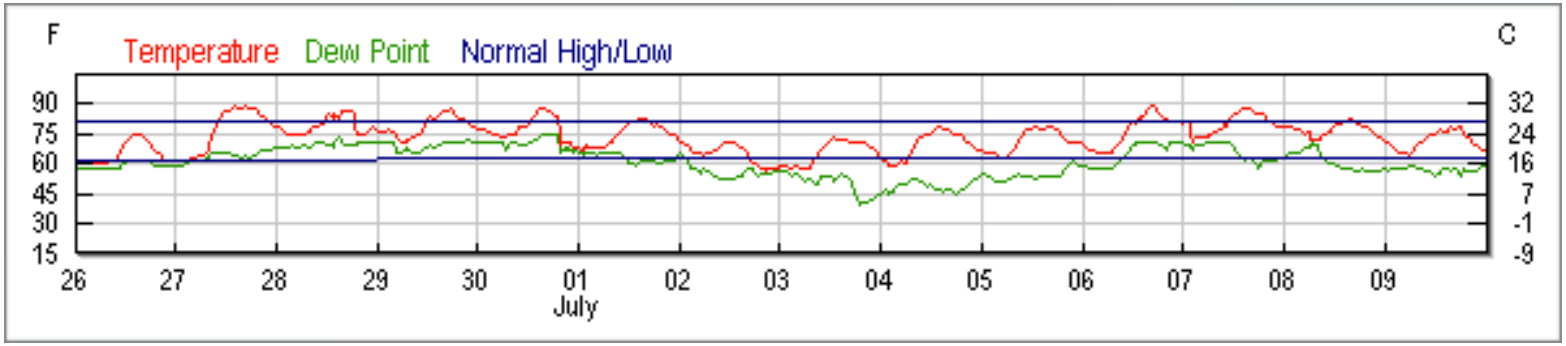
East Windows			Averages	Temperature Comparisons		
Outside Window Frame (1) (3)	July 7	High 93°	74.86°	07/07	89° High	72° Low
(2)	July 3	Low 57°		07/03	75° High	57° Low
Inside Window Frame (4)	July 7	High 95°	77.45°	07/07	89° High	72° Low
	July 3	Low 61°		07/03	75° High	57° Low
Window Side Face (4)	June 29	High 93°	79.10°	06/29	88° High	71° Low
	July 3	Low 66°		07/03	75° High	57° Low
Room Side Face (3)	June 29	High 81°	74.07°	06/29	88° High	71° Low
	July 4	Low 70°		07/04	79° High	60° Low



West Windows				Averages	Temperature Comparisons		
Outside Window Frame	July 7	High	98°	75.28°	07/07	89° High	72° Low
	July 3	Low	58°		07/03	75° High	57° Low
Inside Window Frame	July 7	High	91°	75.01°	07/07	89° High	72° Low
	July 3	Low	63°		07/03	75° High	57° Low
Window Side Face	July 6	High	80°	73.17°	07/06	89° High	66° Low
(4.5” inset from wall face)	July 4	Low	70°		07/04	79° High	60° Low
Room Side Face	June 29	High	79°	72.97°	06/29	88° High	71° Low
(4” inset from wall face)	June 28	Low	68°		07/04	79° High	60° Low

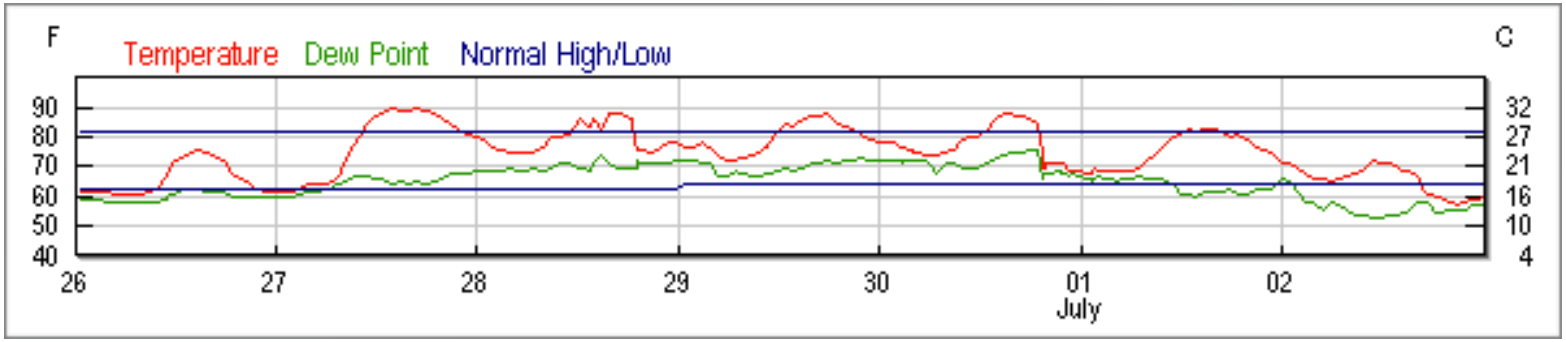
Weather Data June 26 - July 09 http://bit.ly/1oAQgW0

High June 27 91° Low July 3 57°



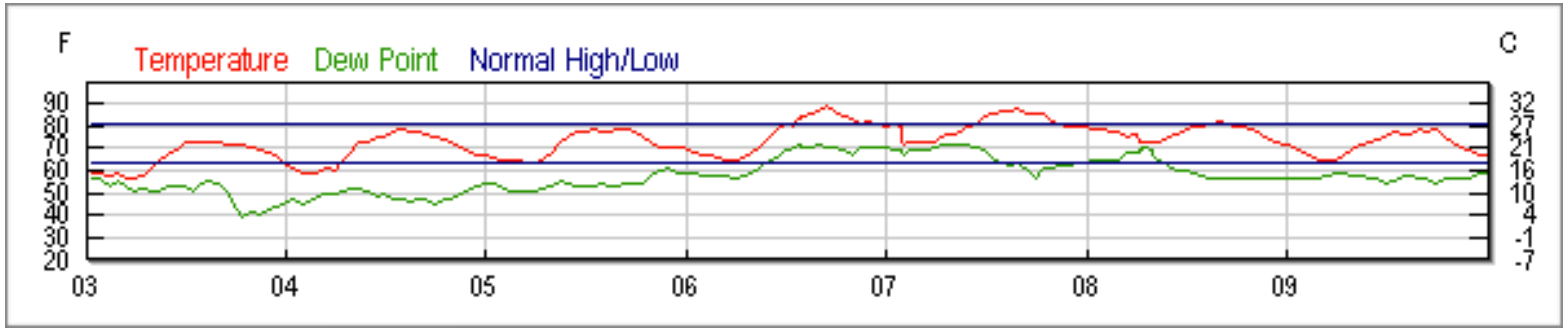
Daily Data June 26 - July 02

06/26 http://bit.ly/1lUN3mE	06/27 http://bit.ly/1wVlMV3	06/28 http://bit.ly/1ofHlqq
06/29 http://bit.ly/1z2lUEo	06/30 http://bit.ly/1o3ysDX	07/01 http://bit.ly/1mkQfKa
07/02 http://bit.ly/1xmjheD		



Daily Data July 03 - 09

07/03 http://bit.ly/1zdnraG	07/04 http://bit.ly/1n31hCZ	07/05 http://bit.ly/1jcFGZc
07/06 http://bit.ly/Vzq1bE	07/07 http://bit.ly/1jc92qh	07/08 http://bit.ly/1n7jkDe
07/09 http://bit.ly/1mCEtt8		



Notes.

(1) The **July 7** exterior **High of 93°** vs. **Low of 71°** = **22° difference.** By comparison the **July 7** face of shade **High of 77°** vs **Low of 73°** = **4° difference.**

(2) The **July 3** exterior **Low of 57°** vs. **High of 82°** = **25° difference.** By comparison the **July 3** face of shade **Low of 70°** vs. **High of 75°** = **5° difference.**

(3) The exterior **High of 93°** to **Low of 57°** = **36° swing.** The face of shade **High of 81°** to **Low of 70°** = **11° swing.** The exterior average of **74.86°** vs. face of shade average of **74.07°** = **0.79° difference.**

(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.