ENERGY EFFICIENCY DONE RIGHT

In'Flector Window Insulator

Solar Loading & Insulation Evaluation

Fahrenheit Temperature Recording

Western Ontario, Canada

Winter

2009

Solar Loading
Temperature Recording
Nov. 29 & 30 2009

The solar loading performance and the insulating performance of the In'Flector Window Insulator was recorded with East facing double pane low-e argon gas filled windows. Conditions recorded every ½ hour include; the amount of sunshine, surface temperature recordings of the wall beside the window surface temperature of the In'Flector and the surface temperature of a non-insulated double pane low-e window argon gas filled window. Test Location Windsor, Ontario; test equipment Raytek Raynger MX.

Nov. 29/09 East Facing Windows

Weather Conditions	Time of temp recording	Surface Temperature of wall	Surface Temperature of In'Flector with window screen behind	Surface Temperature of In'Flector	Surface temperature of low-e window non-insulated	Outside Temperature
Sunny with thin cloud	8:00 AM	67	69	70	64	31.6
Sunny with thin cloud	8:30 AM	67	76	81	66	31.6
Sunny with thin cloud	9:00 AM	67	84	87	67	32
Sunny with thin cloud	9:30 AM	67	84	91	74.5	33.8
Sunny with thin cloud	10.00 AM	67	81.5	88	71.5	35.6
Minimal sun striking the window	10:30 AM	67.5	76	81.5	70	35.6
No Sun	11:00 AM	68	75	78	69	37.4
No Sun	11.30 AM	69	74.5	76.5	67	37.4
No Sun	12:00 PM	69	72.5	74.5	66	39.2
No Sun	12:30 PM	68.5	71	71	65	39.2
No Sun	1:00 PM	68	68	69.5	65	41
No Sun	1:30 PM	68	68	69	65	41
No Sun	2:00 PM	68	68.5	68.5	65	42.8
No Sun	2:30 PM	67.5	68	68	64.5	42.8
No Sun	3:00 PM	67	67	67	64	44.6

Nov. 30/09 East Facing windows

Weather Conditions	Time of temp recording	Surface Temperature of wall	Surface Temperature of In'Flector with window screen behind	Surface Temperature of In'Flector	Surface temperature of low-e window non-insulated	Outside Temperature
Clear & Sunny	8:30 AM	67	84	95	70	33.8
Clear & Sunny	9:00 Am	67	84.5	97	70.5	33.8
Clear & Sunny	9:30 AM	67	90.5	98.5	70.5	35.6
Partial cloud cover	10:00 AM	67	84	95.5	70.5	35.6
Overcast	10:30 AM	66.5	68.5	74	68	37.4
Overcast	11:00 AM	66.5	71	71.5	67	37.4
Overcast	11:30AM	66.5	68	68	66.5	37.4
Overcast	12:00 PM	66.5	68	68	66.5	39.2
Overcast	12:30 PM	66.5	68	68.5	66.5	39.2

Nov. 29/09 South Facing Window

Weather Conditions	Time of temp recording	Surface Temperature of wall	Surface Temperature of In'Flector with window screen behind	Surface Temperature of In'Flector	Surface temperature of low-e window non-insulated	Outside Temperature
Sunny with thin cloud	10.00 AM	67	85	93	77	35.6
Sunny with thin cloud	10:30 AM	67.5	85	94.5	77	35.6
Sunny with thin cloud	11:00 AM	68	88	97	81	37.4
Sunny with thin cloud	11:30 PM	69	92.5	101.5	84.5	37.4
Heavy Cloud	12:00 PM	69	80	91	78	39.2
Heavy Cloud	12:30 PM	68.5	77	81	73	39.2
Heavy Cloud	1:00 PM	68	72.5	76	69.5	41
Heavy Cloud	1:30 PM	68	72	75.5	69	41
Heavy Cloud	2:00 PM	68	70	71	67.5	42.8
Heavy Cloud	2:30 PM	67.5	69.5	70	66	42.8
Heavy Cloud	3:00 PM	67	68	68.5	66	44.6
Heavy Cloud	3:30 PM	67	66	67	64	44.6

Nov. 30/09 South Facing Window

Weather Conditions	Time of temp recording	Surface Temperature of wall	Surface Temperature of In'Flector with window screen behind	Surface Temperature of In'Flector	Surface temperature of low-e window non-insulated	Outside Temperature
Clear & Sunny	9:30 Am	67	87	96	70.5	35.6
Clear & Sunny	10:00 AM	67	87	97.5	70.5	35.6
Overcast	10:30 AM	66.5	76.5	84	68	37.4
Overcast	11:00 AM	66.5	78	82.5	66	37.4
Overcast	11:30 AM	66.5	71	73	66	37.4
Overcast	12:00 PM	66.5	71	74	66	39.2
Overcast	12:30 PM	68	75	77.5	66	39.2
Overcast	1:00 PM	67.5	75	78.5	66	39.2
Overcast	1:30 PM	67	73.5	76.5	66	39.2
Overcast	2:00 PM	67	71	74	66	39.2
Overcast	2:30 PM	66.5	72.5	75.5	65	39.2

Important notes

- Nov. 29/09 the heating system did not come on between 7:30 and 2:30 PM = 7 hours free heat!
- Nov. 29/09 the interior ambient temperature of the home rose 1 degree Fahrenheit after 3 hours
- The In'Flector surface temperature remained warmer than the surface temperature of the wall, hours after no exposure to the sun!
- Nov. 30/09 occasional sun breaks caused temperature fluctuations of the surface temperature of the In'Flector

Dec.01/09
Solar Loading

The solar loading performance and the insulating performance of the In'Flector Window Insulator was recorded with East facing double pane low-e argon gas filled windows. Conditions recorded every ½ hour include; the amount of sunshine, surface temperature recordings of the wall beside the window, surface temperature of the In'Flector with a window screen between the In'Flector and the window, surface temperature of the In'Flector and the surface temperature of a non-insulated double pane low-e window argon gas filled window.

Test Location Windsor, Ontario
Test equipment Raytek Raynger MX.
Test Date: Dec 1st/09

Sky Conditions	Time of temp recording	Surface Temperature of wall	Surface Temperature of In'Flector with window screen behind	Surface Temperature of In'Flector	Surface temperature of low-e window non-insulated	Outside Temperature
Heavy Cloud	10.00 AM	67	66.5	66.5	64	39.2
Thick Cloud occasional Sunny breaks	10:30 AM	67	69	74	64	39.2
Sunny breaks with thin cloud	11:00 AM	67	80	89	68	41
Sunny with thin cloud	11:30 PM	67.5	94	107	81	41
Sunny	12:00 PM	68	98	112.5	84.5	41
Sunny	12:30 PM	68	100	117	88	42.8
Sunny	1:00 PM	68.5	102.5	119.5	88	42.8
Sunny with thin cloud	1:30 PM	68.5	102.5	115	88	42.8
Sunny with thin cloud	2:00 PM	69	101.5	109	82	42.8
Sunny	2:30 PM	69	102.5	118	88	44.6
Sunny with thin cloud	3:00 PM	69	102.5	114	86	44.6
Sunny with thin cloud	3:30 PM	69	101	108	82	46.4
Sun setting	4:00 PM	68	88	92	70	46.4
Sunset	4:30 PM	67.5	74	79	66	44.6
Dark	5:00 PM	67	74	74	64	44.6
Dark	5:30 PM	67	68.4	68.4	64	42.8

Important notes

- Dec 1st/09 the heating system did not come on between 11:00 AM and 8:00 PM = 9 hours free heat!
- Dec 1st/09 the interior ambient temperature of the home rose 3 degree Fahrenheit after 3 hours
- The In'Flector surface temperature remained warmer than the surface temperature of the wall, hours after no exposure to the sun!

Dec.06/09
Solar Loading

The solar loading performance and the insulating performance of the In'Flector Window Insulator was recorded with East facing double pane low-e argon gas filled windows. Conditions recorded every ½ hour include; the amount of sunshine, surface temperature recordings of the wall beside the window surface temperature of the In'Flector and the surface temperature of a non-insulated double pane low-e window argon gas filled window.

Date: Dec. 06/09
Test Location Windsor, Ontario;
Test equipment: Raytek Raynger MX.

East Facing Window

Sky Conditions	Time of temp recording	Outside Temperature	Surface Temperature of In'Flector	Surface Temperature of low-e window non-insulated	Surface Temperature of interior wall beside window
Sunny with thin cloud	8:00 AM	24.8	69.8	65	67.2
Sunny with thin cloud	8:30 AM	26.6	74	66.8	67.2
Sunny	9:00 AM	28.4	87.2	70.2	67.4
Sunny with thin cloud	9:30 AM	28.4	88.6	71.2	67.4
Sunny with thin cloud	10:00 AM	28.4	98.4	76.6	67.4
Sunny with thin cloud	10:30 AM	28.4	90.6	74.2	67.4
No Sun striking window	11:00 AM	28.4	81.8	68.2	67.6
No Sun striking window	11:30 AM	30.2	73.8	66	67.8
No Sun striking window	12:00 PM	32	73.8	66	68.6
No Sun striking window	12:30	33.8	72.6	66	70.6

South Facing Window

Sky Conditions	Time of temp recording	Outside Temperature	Surface Temperature of In'Flector	Surface Temperature of low-e window non- insulated	Surface Temperature of interior wall beside window
Sunny with thin cloud	9:30 AM	28.4	74.6	66.2	67.4
Sunny with thin cloud	10:00 AM	28.4	98.4	76.6	67.4
Sunny with thin cloud	10:30 AM	28.4	108.6	81.2	67.4
Sunny	11:00 AM	28.4	116.8	85	67.6
Sunny	11:30 AM	30.2	120.6	86.8	67.8
Sunny	12:00 PM	32	122.4	89	68.6.
Sunny	12:30 PM	33.8	126.2	90.8	70.6
Sunny	1:00 PM	33.8	128.8	90.8	71.2
Sunny	1:30 PM	35.6	126.6	90.2	71.2
Sunny	2:00PM	35.6	127	90.8	71.6
Sunny	2:30 PM	35.6	122	89.4	71.6
Sunny	3:00 PM	35.6	117.2	87.2	71.6
Thin cloud	3:30 PM	35.6	89.7	74.6	71
Cloud Cover	4:00 PM	33.8	79.6	68.4	70

Important notes

- Due to the changing tilt of the Earth on its axis as we approach the Winter Solstice the windows receive more direct sunlight; this is evident by the increased surface temperature of In'Flector from temperature recordings taken on November 29th/09.
- Dec. 06/09 the heating system did not come on between 10:00 AM and 6:30 PM = 8 1/2 hours free heat!
- Dec. 06/09 the interior wall temperature of the home rose from 67.1 degrees Fahrenheit to 71.6 degrees Fahrenheit.
- The In'Flector surface temperature remained warmer than the surface temperature of the wall, hours after no exposure to the sun!

Dec 12/09
Solar Loading

The solar loading performance and the insulating performance of the In'Flector Window Insulator was recorded for East and South facing double pane low-e argon gas filled windows. Conditions recorded every ½ hour include; sky conditions, surface temperature recordings of the wall beside the window, surface temperature of the In'Flector and the surface temperature of a non-insulated double pane low-e window argon gas filled window.

Date: Dec. 12/09
Test Location Windsor, Ontario;
Test equipment: Raytek Raynger MX

East Facing Window

Sky Conditions	Time of temp recording	Outside Temperature	Surface Temperature of In'Flector	Surface Temperature of low-e window non-insulated	Surface Temperature of interior wall beside window
Sunny with thin cloud	8:00 AM	23	69.8	64	66.6
Sunny with thin cloud	8:30 AM	23.7	73.9	64	66.6
Sunny	9:00 AM	24.8	86.2	64	66.6
Sunny	9:30 AM	26.4	95.2	75.8	66.6
Sunny	10:00 AM	28.4	94.8	75.4	67
Sunny	10:30 AM	30.5	92.8	74.8	67
No Sun striking window	11:00 AM	32	84.6	68	67
No Sun striking window	11:30AM	32.5	74.2	64	67
No Sun striking window	12:00 PM	33.8	72.2	65	68.4
No Sun striking window	12:30 PM	33.8	71.4	64.6	69.2

South Facing Window

Sky Conditions	Time of temp recording	Outside Temperature	Surface Temperature of In'Flector	Surface Temperature of low-e window non-insulated	Surface Temperature of interior wall beside window
Sunny	9:00 AM	24.8	82.4	64	66.6
Sunny	9:30 AM	26.4	95.2	75.2	66.6
Sunny	10:00 AM	28.4	102.6	80.4	67
Sunny	10:30 AM	30.5	107.4	83.2	67
Sunny	11:00 AM	32	114.6	87.9	67
Sunny	11:30 AM	32.5	126.6	91	67
Sunny	12:00 PM	33.8	127.2	93.2	68.4
Sunny	12:30PM	33.8	127.8	93.2	69.2
Sunny	1:00PM	35.6	130	99.2	69.6
Sunny	1:30 PM	35.6	125.2	89.8	70.2
Sunny	2:00 PM	35.6	127.6	90.2	70.6
Sunny with thin cloud	2:30 PM	35.6	123	88.8	70.2
Sunny patches heavier cloud	3:00 PM	35.6	116.6	86.8	70.4
Heavy cloud no sun	3:30 PM	35.6	101.2	82	69.2
Heavy cloud no sun	4:00 PM	35.6	84.7	72.1	68.6
Heavy cloud no sun	4:30 PM	34.7	70.6	63.6	68

Important notes

- Due to the changing tilt of the Earth on its axis as we approach the Winter Solstice the windows receive more direct sunlight; this is evident by the increased surface temperature of In'Flector from temperature recordings taken on December 06//09.
- Dec. 12/09 the heating system did not come on between 8:00 AM and 4:45 PM = 8 hours and 45 minutes of free heat!
- Dec. 12/09 the interior wall temperature of the home rose from 66.5 degrees Fahrenheit to 70.5 degrees Fahrenheit which is lower than the interior wall temperature of Dec. 06/09 temperature recordings however the overall temperature in the home from the solar loading produced an extra 15 minutes of free heat over that of Dec. 06/09
- The In'Flector surface temperature remained warmer than the surface temperature of the wall, hours after no exposure to the sun!