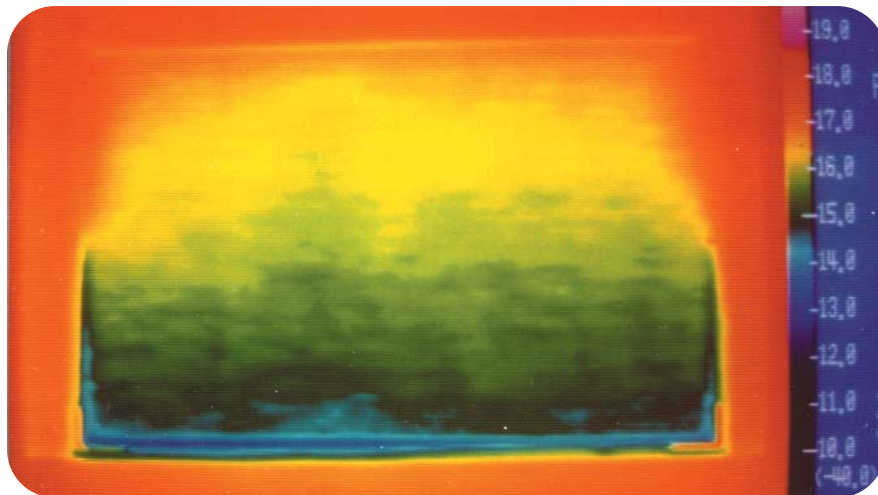


Uncovered Window



Window with Comfortex Symphony® Cellular Shades with ComforTrack™ Energy Saving Sidetrack System.

**SAVING ENERGY NEVER LOOKED SO GOOD!**  
**Energy Saving Report on the use of**  
**Comfortex Symphony Cellular Shades on Windows**  
**to Reduce Utility Expenses.**

Report performed October 2005 using  
 Energy Data as of Week beginning October 10, 2005



Comfortex is a proud ENERGY STAR Partner

## **Saving Energy will Save Money**

This winter, residential heating expenditures are projected to increase for all fuel types compared to year-ago levels, according to forecasts released in October 2005 by the Energy Information Administration. In the wake of Hurricane Katrina and Rita's impact on energy production in one of the nation's main energy hubs, and with gasoline and heating fuel prices soaring even higher, consumers will be seeking additional ways to reduce their homes' energy consumption. The average household can cut their utility expense by 30 percent by incorporating energy efficient products into their homes.

Improving a home insulation is one of the fastest and most cost-efficient ways to reduce energy waste and make the most of energy dollars. A good insulating system protects a home from outside temperatures and protects it against air leaks. As much as they are beautiful, windows are one of the greatest sources of wasted energy in the home. The smallest gap or leak can equal as much airflow as an open window. Heat always moves from warm to cold areas. In the winter, warm air from inside the home is trying to escape through windows. In summer, the sun shining down conducts heat easily through your windows, contributing as much as 53% heat in the home. In the end, homeowners pay an average from 10% to 25% of their energy bill for air that is escaping out their windows.

**Homeowners pay an average from 10% to 25% of their energy bill for air that is escaping out their windows.**

With the exception of replacing windows, the installation of energy efficient window treatments are one of the best ways to conserve energy and reduce utility bills when it comes to insulating windows. To be effective, window treatments must trap air between the shade or blind and the window glass. Comfortex Symphony® Insulating Cellular Shades act as a barrier to heat flow, trapping air between the shade and window and helping you to save money on energy costs. Comfortex's ComforTrack™ Side Track System can provide an additional barrier to seal the edges of drafty areas around windows.

### **How much can window treatment really save?**

Based on calculations using Lawrence Berkeley National Laboratory computer software, the savings per window can be substantial.

**Burlington, VT**

\$26.50\* per window

\$432.21 based on 10 years

\* These numbers are based on a Comfortex Symphony Shade with ComforTrack Energy Saving Sidetrack. Without ComforTrack, energy savings amounts will be reduced by 17%.

Overtime, these numbers add up, proving that window coverings are worthwhile investment and solid solution to improve a home's energy efficiency.

## What's U got to do with it? A glossary of energy efficiency terminology

To understand how we achieved our saving numbers, you need to understand the terminology.

The **U-Factor** is a measure of window glass' ability to inhibit the flow of heat through it. The lower the U-factor, the more energy-efficient the window, door, or skylight. The larger the heating bill, the more important a low U-factor becomes.

**Solar Heat Gain Coefficient (SHGC)** refers to the amount of heat from the sun that passes through the window. SHGC is expressed as a number between 0 and 1.

In winter, by keeping shades raised on sunny days, this solar heat gain can offset the amount of heat necessary to keep your home warm. A product with a high SHGC rating is more effective at collecting solar heat gain during the winter. A product with a low SHGC rating is more effective at reducing cooling loads during the summer or in southern climates. The lower the SHGC, the less solar heat it transmits and the greater it's shading ability.

**Air leakage** is measured in terms of the amount of air (cubic feet per minute) that passes through a unit area of a window, door, or skylight (square foot) under given pressure conditions. Air leakage is expressed in units of cubic feet per minute per square foot of frame area (cfm/ft<sup>2</sup>). A product with a low air leakage rating is tighter than one with a high air leakage rating.

Why is air leakage so important? The uncontrolled movement of air into or out of the house is a cost to the homeowner. For example, any cold outdoor air that leaks into (air infiltration) the home must be heated to room temperature to maintain the comfort of the occupants, so air infiltration is a heating cost. The same problem occurs in air-conditioned homes in summer, when warm outdoor air infiltrates, resulting in an additional cooling load.

When interior-conditioned air (either heated for winter or cooled for summer) leaks to the outside, the homeowner also pays the energy costs associated with the air leakage.

**Why is the preventing air leakage so important? The uncontrolled movement of air into or out of the house is a cost to the homeowner.**

## Methodology

The data provided in this report was prepared using RESFEN5 modeling software. RESFEN is a software program created by the Windows and Daylighting Group at the Lawrence Berkeley National Laboratory located in Berkeley, California. It calculates energy use associated with the heating and cooling energy of residential windows. The software compares window factors such as U-factors, Solar Heat Gain Coefficients (SHGC) and air leakage (infiltration) rates. Additional information was provided by the New York State Energy Development Authority located in Albany, New York.

The model factors in variables such as heating and cooling equipment, common building types, costs for gas and electricity, and weather conditions. The net result shows the difference between a bare window and one covered with a window treatment with properties similar to Comfortex's Symphony® Cellular Shades alone and when paired with the ComfortTrack™ Side Track System.

### Assumptions used to make the calculations to provide saving amounts include:

**Window Size:** The standard double pane window size used is 54" x 64" (24 square feet) with a U-Factor of 0.54; SHGC of 0.90 with air infiltration rate of 0.42 Cfm/ft<sup>2</sup>.

**House Size:** The home size used in the model is a 2,000 square feet with a high performance gas furnace and high performance electric air conditioner.

**Cooling efficiencies:** U-Factor of 0.29; SHGC of 0.38; and air infiltration rate of 0.33.

**Heating efficiencies:** U-Factor of 0.29; SHGC of 0.90; and air infiltration rate of 0.33.

**Energy Prices:** Current energy prices are supplied to RESFEN through the United States Energy Information Administration (EIA).

**Energy Price Increase Assumptions:** Forty percent increase on supplied natural gas price and an eleven percent increase has been placed on the electric utility cost for the first year - winter 2005-2006. These numbers are based on published reports from regarding energy price increases expected during winter 2005-2006.

A further assumption is placed on the 10 year savings number that energy prices will rise in years 2-10. Fifteen percent increase on supplied natural gas price per year with a ten percent increase has been placed on the electric utility cost.

## Energy Savings using Comfortex Symphony Insulating Cellular Shades with ComforTrack Energy Saving Sidetrack System

Actual energy savings may vary for individual homes, based upon house orientation, quality and size of the windows, heating ventilation air conditioning systems, shading of landscape trees and usage of the shades (i.e. shades are lowered in the summer to block heat, etc.).

### What this all means for your customer

By sharing this information with your customer, you can illustrate what an expected reduction of energy costs may be yearly by covering a window with Comfortex Symphony Insulating Cellular Shades with ComforTrack. You are also can determine how long it will take to pay back their investment in cellular shades based on their energy savings.

	Average Savings Per Window	Ten Year Savings		Average Savings Per Window	Ten Year Savings
Birmingham, AL	\$15.48	\$243.49	Atlanta, GA	\$16.75	\$263.75
Mobile, AL	\$13.98	\$215.03	Augusta, GA	\$17.20	\$270.15
Montgomery, AL	\$14.80	\$228.13	Columbus, GA	\$16.20	\$252.21
Anchorage, AK	\$12.33	\$205.73	Macon, GA	\$16.37	\$255.16
Flagstaff, AZ	\$22.80	\$381.03	Savannah, GA	\$15.74	\$243.05
Phoenix, AZ	\$18.16	\$270.18	Hilo, HI	\$30.56	\$442.16
Prescott, AZ	\$18.69	\$301.45	Honolulu, HI	\$40.90	\$591.69
Tucson, AZ	\$16.44	\$249.10	Kahului, HI	\$41.17	\$595.59
Fort Smith, AR	\$17.19	\$271.21	Mason City, IA	\$26.52	\$433.81
Little Rock, AR	\$16.68	\$262.58	Boise, ID	\$16.19	\$262.36
Arcata, CA	\$12.69	\$165.26	Pocatello, ID	\$17.95	\$294.31
Bakersfield, CA	\$19.06	\$287.06	Chicago, IL	\$21.00	\$340.74
Fresno, CA	\$20.52	\$311.08	Moline, IL	\$21.47	\$346.19
Long Beach, CA	\$11.07	\$167.45	Peoria, IL	\$21.74	\$350.63
Los Angeles, CA	\$5.99	\$93.70	Rockford, IL	\$22.75	\$368.86
Sacramento, CA	\$17.99	\$277.34	Springfield, IL	\$21.38	\$343.48
San Diego, CA	\$7.11	\$107.19	Fort Wayne, IN	\$15.52	\$250.85
San Francisco, CA	\$8.79	\$146.08	Indianapolis, IN	\$14.99	\$240.26
Santa Maria, CA	\$8.88	\$148.19	South Bend, IN	\$15.17	\$245.08
Colorado Springs, CO	\$4.56	\$68.71	Des Moines, IA	\$23.28	\$376.44
Denver, CO	\$5.77	\$85.85	Sioux City, IA	\$23.93	\$386.94
Eagle, CO	\$3.13	\$48.36	Topeka, KA	\$20.40	\$326.11
Grand Junction, CO	\$8.51	\$125.35	Wichita, KA	\$20.52	\$326.45
Pueblo, CO	\$7.41	\$109.34	Covington, KY	\$18.39	\$297.71
Bridgeport, CT	\$25.41	\$410.96	Lexington, KY	\$17.98	\$290.29
Hartford, CT	\$26.74	\$430.90	Loiusville, KY	\$17.18	\$275.16
Washington, DC	\$24.50	\$396.50	Baton Rouge, LA	\$15.57	\$220.90
Wilmington, DE	\$21.68	\$348.71	New Orleans, LA	\$13.83	\$209.49
Daytona Beach, FL	\$17.74	\$265.34	Shreveport, LA	\$14.00	\$231.74
Jacksonville, FL	\$19.65	\$299.41	Boston, MA	\$23.02	\$373.90
Key West, FL	\$20.86	\$301.31	Worcester, MA	\$24.72	\$403.34
Miami, FL	\$19.30	\$279.66	Caribou, ME	\$36.55	\$606.91
Tallahassee, FL	\$19.71	\$303.36	Portland, ME	\$30.18	\$496.35
Tampa, FL	\$18.94	\$281.01	Baltimore, MD	\$20.63	\$333.70
			Alpena, MI	\$19.06	\$313.81
			Detroit, MI	\$17.78	\$289.33
			Flint, MI	\$18.30	\$297.80
			Grand Rapids, MI	\$18.92	\$307.31

## Energy Savings using Comfortex Symphony Insulating Cellular Shades with ComforTrack Side Track System

	Average Savings Per Window	Ten Year Savings		Average Savings Per Window	Ten Year Savings
Houghton, MI	\$19.76	\$324.31	Eugene, OR	\$15.76	\$257.23
Lansing, MI	\$20.08	\$324.05	Portland, OR	\$15.13	\$246.56
Muskegon, MI	\$19.25	\$312.46	Redmond, OR	\$21.15	\$346.18
Sault Ste. Marie, MI	\$19.29	\$320.28	Salem, OR	\$16.13	\$263.08
Duluth, MN	\$26.00	\$431.50	Allentown, PA	\$24.22	\$391.93
International Falls, MN	\$25.41	\$422.35	Erie, PA	\$25.71	\$420.38
Minneapolis, MN	\$23.64	\$385.91	Harrisburg, PA	\$23.27	\$373.41
Rochester, MN	\$24.57	\$403.26	Philadelphia, PA	\$22.59	\$363.48
Columbia, MO	\$19.78	\$318.51	Pittsburgh, PA	\$23.63	\$382.90
Kansas City, MO	\$20.35	\$326.19	Wilkes-Barre, PA	\$24.67	\$402.49
Springfield, MO	\$18.63	\$298.76	Providence, RI	\$27.20	\$397.36
Jackson, MS	\$14.38	\$220.39	Charleston, SC	\$17.53	\$271.85
Meridian, MS	\$13.49	\$207.11	Columbia, SC	\$17.51	\$273.66
Billings, MT	\$18.82	\$305.73	Greenville, SC	\$18.84	\$298.25
Helena, MT	\$17.94	\$293.15	Pierre, SD	\$22.72	\$369.71
Asheville, NC	\$18.13	\$289.91	Rapid City, SD	\$21.60	\$353.93
Charlotte, NC	\$17.71	\$275.39	Sioux City, SD	\$23.35	\$380.90
Greensboro, NC	\$18.34	\$289.18	Chattanooga, TN	\$15.66	\$247.49
Raleigh, NC	\$17.81	\$279.33	Knoxville, TN	\$16.63	\$263.53
Wilmington, NC	\$17.00	\$261.81	Memphis, TN	\$17.55	\$128.31
Bismark, ND	\$21.63	\$354.24	Nashville, TN	\$18.65	\$296.28
Fargo, ND	\$22.85	\$375.45	Austin, TX	\$17.51	\$263.54
Minot, ND	\$22.21	\$366.70	Corpus Christi, TX	\$16.28	\$241.26
Norfolk, NE	\$20.30	\$329.70	El Paso, TX	\$16.27	\$247.99
North Platte, NE	\$19.21	\$312.55	Fort Worth, TX	\$17.63	\$269.54
Omaha, NE	\$18.51	\$299.09	Houston, TX	\$16.08	\$242.23
Concord, NH	\$28.81	\$468.18	Lubbock, TX	\$17.81	\$279.78
Atlantic City, NJ	\$20.03	\$317.78	San Antonio, TX	\$17.26	\$260.13
Newark, NJ	\$20.33	\$322.64	Victoria, TX	\$16.11	\$240.56
Albuquerque, NM	\$17.24	\$272.36	Wichita Falls, TX	\$19.30	\$299.04
Tucumcari, NM	\$17.49	\$275.23	Cedar City, UT	\$15.15	\$244.74
Las Vegas, NV	\$19.01	\$287.05	Salt Lake City, UT	\$16.01	\$256.56
Reno, NV	\$18.41	\$296.31	Lynchburg, VA	\$20.27	\$325.04
Tonopah, NV	\$19.71	\$316.13	Norfolk, VA	\$19.44	\$309.14
Winnemucca, NV	\$20.93	\$337.51	Richmond, VA	\$19.94	\$318.79
Albany, NY	\$30.16	\$487.41	Roanoke, VA	\$19.52	\$313.50
Binghamton, NY	\$28.53	\$468.61	Burlington, VT	\$26.50	\$432.21
Buffalo, NY	\$29.27	\$474.86	Olympia, WA	\$15.15	\$250.21
Massena, NY	\$31.43	\$514.15	Seattle, WA	\$13.67	\$226.31
New York, NY	\$27.16	\$433.13	Spokane, WA	\$20.55	\$337.69
Rochester, NY	\$30.74	\$495.13	Yakima, WA	\$18.19	\$296.71
Syracuse, NY	\$28.37	\$461.99	Green Bay, WI	\$25.81	\$423.09
Akron, OH	\$20.37	\$331.49	Madison, WI	\$23.82	\$388.40
Cleveland, OH	\$20.56	\$334.45	Wilwaukee, WI	\$24.69	\$403.28
Columbus, OH	\$19.08	\$308.16	Charleston, WV	\$15.16	\$243.53
Mansfield, OH	\$21.26	\$345.50	Huntington, WV	\$15.73	\$251.78
Toledo, OH	\$21.97	\$357.75	Casper, WY	\$18.91	\$310.58
Youngstown, OH	\$21.45	\$350.51	Cheyenne, WY	\$14.64	\$271.96
Oklahoma City, OK	\$16.67	\$263.90	Sheridan, WY	\$17.66	\$288.44
Tulsa, OK	\$16.51	\$260.51			

### **Pictured on Cover**

This picture illustrates a common winter weather scenario: a 32 degree Fahrenheit day. The blue color in the first photo indicates cold air being conducted through the glass and seeping in through the leaky window frame. The simulated room is 68 degrees Fahrenheit.

In the second photo, Symphony Energy Smart Cellular Shade with ComforTrack has been added to cover the window. Note the color gradation from blue to green to yellow. The warmer colors indicate areas where the room temperature increased due to blocked drafts and covered glass surfaces. Drafts are blocked significantly since a solid barrier is added between the fabric edge and the window frame. The coldest blue areas have been all but eliminated.

The camera doesn't lie. Installing Energy Smart Cellular Shades with the ComforTrack Sidetrack System helps keep the winter cold where it belongs... outdoors!



*Where Innovation is Always in Fashion™*

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Thermography/Photography provided by Seiki Living Design. Testing conducted and photos taken by the Laboratory for Construction Materials in Toyko, Japan.