



Industrial/Commercial

# ENERGY COST ANALYSIS FORMULA

Company Name: \_\_\_\_\_

Attention: \_\_\_\_\_

Flexon Distributor: \_\_\_\_\_

Salesperson: \_\_\_\_\_ Date: \_\_\_\_\_

## DETERMINE THE FOLLOWING FOR EACH DOORWAY:

Door Size: \_\_\_\_\_ Feet wide X \_\_\_\_\_ Feet high = \_\_\_\_\_ Total square feet (SqF)

Average Wind Speed: \_\_\_\_\_ \*miles per hour X 88 = \_\_\_\_\_ Feet per minute (FPM)

**\*See Chart "A" tab BELOW for National Average Wind Speed by Area.**

Door Size: \_\_\_\_\_ SqF X .80\* X \_\_\_\_\_ FPM = \_\_\_\_\_ Cubic feet per minute (CFM)

**\*Resistance factor**

Temperature Differential: \_\_\_\_\_ degrees F to \_\_\_\_\_ degrees F = \_\_\_\_\_ degrees F (TD)  
Avg. Inside Temp Avg. Outside Temp \*

**\*See Chart "B" for Average Outside Temperature.**

## DETERMINE HEAT LOSS:

\_\_\_\_\_ CFM X 1.08\*\* X \_\_\_\_\_ degrees F (TD) = \_\_\_\_\_ BTU's per hour

\_\_\_\_\_ BTU's per hr X \_\_\_\_\_ hrs per day the door is open = \_\_\_\_\_ daily BTU **LOSS**

\*\* 1.08 is a constant based on an air temperature of 70 degrees F and .75 pounds per cubic foot density. As the temperature drops, density increases and the constant will be higher than 1.08 [i.e.--at 15 degrees F, the value should be approximately 1.12]

## CONVERT BTU'S TO DETERMINE COST OF HEAT LOSS:

	COLUMN A	COLUMN B-Nat'l Avg (Based on Mar 2005-NPGA)
Natural Gas:	BTU's per day divided by 100,000 =	therm (\$1.09 /therm) #1
Electricity:	BTU's per day divided by 3,412 =	KwH (\$0.09 /KwH) #2
Heating Oil:	BTU's per day divided by 140,000 =	Gal. (\$1.76 /gal) #3

Choose #1, #2, or #3 \_\_\_\_\_

\_\_\_\_\_ Amount used \_\_\_\_\_ Cost per unit = \_\_\_\_\_ Cost per day per opening  
**COLUMN A** **COLUMN B**

## DETERMINE PAYBACK:

Cost per day per opening \_\_\_\_\_ X No. of days per week \_\_\_\_\_ = \_\_\_\_\_ **Loss / Week**

Cost loss per week \_\_\_\_\_ X No of weeks per year \_\_\_\_\_ = \_\_\_\_\_ **Loss / Year**

## Wind-Average Speed (MPH)

City, State	ANNUAL
BIRMINGHAM AP,AL	7.2
HUNTSVILLE, AL	8.2
MOBILE, AL	9.0
MONTGOMERY, AL	6.6
ANCHORAGE, AK	7.0
ANNETTE, AK	10.6
BARROW, AK	11.9
BARTER IS.,AK	13.2
BETHEL, AK	12.8
BETTLES,AK	6.7
BIG DELTA,AK	8.2
COLD BAY,AK	16.9
FAIRBANKS, AK	5.4
GULKANA,AK	6.8
HOMER, AK	7.8
JUNEAU, AK	8.3
KING SALMON, AK	10.8
KODIAK, AK	10.9
KOTZEBUE, AK	13.0
MCGRATH, AK	5.2
NOME, AK	10.6
ST. PAUL ISLAND, AK	17.4
TALKEETNA, AK	4.8
VALDEZ, AK	6.0
YAKUTAT, AK	7.3
FLAGSTAFF, AZ	6.5
PHOENIX, AZ	6.2
TUCSON, AZ	8.3
WINSLOW, AZ	8.9
YUMA, AZ	7.8
FORT SMITH, AR	7.6
LITTLE ROCK, AR	7.8
BAKERSFIELD, CA	6.4
BLUE CANYON, CA	6.8
EUREKA, CA.	6.8
FRESNO, CA	6.4
LONG BEACH, CA	6.4
LOS ANGELES AP, CA	7.5
LOS ANGELES C.O., CA	6.2
MOUNT SHASTA, CA	5.1
REDDING, CA	7.1
SACRAMENTO, CA	7.9
SAN DIEGO, CA	7.0
SAN FRANCISCO AP, CA	10.6
SAN FRANCISCO C.O., CA	8.7
SANTA BARBARA, CA	6.1
SANTA MARIA, CA	7.0

STOCKTON, CA	7.5
COLORADO SPRINGS, CO	10.0
DENVER, CO	8.7
GRAND JUNCTION, CO	8.1
PUEBLO, CO	8.6
BRIDGEPORT, CT	12.0
HARTFORD, CT	8.5
WILMINGTON, DE	9.1
WASHINGTON DULLES AP, D.C.	7.4
WASHINGTON NAT'L AP, D.C.	9.4
APALACHICOLA, FL	7.8
DAYTONA BEACH, FL	8.7
FORT MYERS, FL	8.0
GAINESVILLE, FL	6.7
JACKSONVILLE, FL	8.0
KEY WEST, FL	11.2
MIAMI, FL	9.3
ORLANDO, FL	8.6
PENSACOLA, FL	8.4
TALLAHASSEE, FL	6.3
TAMPA, FL	8.3
VERO BEACH, FL	8.4
WEST PALM BEACH, FL	9.7
ATHENS, GA	7.4
ATLANTA, GA	9.1
AUGUSTA,GA	6.5
COLUMBUS, GA	6.8
MACON, GA	7.5
SAVANNAH, GA	7.9
HILO, HI	7.2
HONOLULU,HI	11.3
KAHULUI, HI	12.8
LIHUE, HI	12.8
BOISE, ID	8.7
POCATELLO, ID	10.1
CAIRO,IL	8.5
CHICAGO,IL	10.4
MOLINE, IL	9.9
PEORIA, IL	10.0
ROCKFORD, IL	10.0
SPRINGFIELD, IL	11.1
EVANSVILLE, IN	8.0
FORT WAYNE, IN	10.0
INDIANAPOLIS, IN	9.6
SOUTH BEND, IN	10.2
DES MOINES, IA	10.8
SIOUX CITY, IA	11.0
WATERLOO, IA	10.7
CONCORDIA, KS	12.2
DODGE CITY, KS	14.0
GOODLAND, KS	12.6

TOPEKA, KS	9.9
WICHITA, KS	12.3
GREATER CINCINNATI AP	9.1
JACKSON, KY	7.1
LEXINGTON, KY	9.2
LOUISVILLE, KY	8.3
PADUCAH KY	8.1
BATON ROUGE, LA	7.6
LAKE CHARLES, LA	8.7
NEW ORLEANS, LA	8.2
SHREVEPORT, LA	8.3
CARIBOU, ME	11.2
PORTLAND, ME	8.8
BALTIMORE, MD	9.2
BLUE HILL, MA	15.4
BOSTON, MA	12.5
WORCESTER, MA	10.1
ALPENA, MI	8.1
DETROIT, MI	10.4
FLINT, MI	10.2
GRAND RAPIDS, MI	9.8
HOUGHTON LAKE, MI	8.9
LANSING, MI	9.9
MUSKEGON, MI	10.8
SAULT STE. MARIE, MI	9.1
DULUTH, MN	11.0
INTERNATIONAL FALLS, MN	8.9
MINNEAPOLIS-ST.PAUL, MN	10.5
ROCHESTER, MN	13.1
SAINT CLOUD, MN	8.0
JACKSON, MS	7.4
MERIDIAN, MS	6.1
TUPELO, MS	7.0
COLUMBIA, MO	9.9
KANSAS CITY, MO	10.8
ST. LOUIS, MO	9.6
SPRINGFIELD, MO	10.6
BILLINGS, MT	11.2
GLASGOW, MT	10.8
GREAT FALLS, MT	12.7
HELENA, MT	7.7
KALISPELL, MT	6.5
MISSOULA, MT	6.2
GRAND ISLAND, NE	11.8
LINCOLN, NE	10.3
NORFOLK, NE	11.5
NORTH PLATTE, NE	10.2
OMAHA EPPLEY AP, NE	10.5
OMAHA (NORTH), NE	9.1
SCOTTSBLUFF, NE	10.6
VALENTINE, NE	9.7

ELKO, NV	5.9
ELY, NV	10.3
LAS VEGAS, NV	9.3
RENO, NV	6.6.
WINNEMUCCA, NV	8.0
CONCORD, NH	6.7
MT. WASHINGTON, NH	35.5
ATLANTIC CITY AP, NJ	10.0
NEWARK, NJ	10.2
ALBUQUERQUE, NM	9.0
CLAYTON, NM	11.8
ROSWELL, NM	8.6
ALBANY, NY	8.9
BINGHAMTON, NY	10.2
BUFFALO, NY	11.9
ISLIP, NY	8.9
NEW YORK C.PARK, NY	9.4
NEW YORK (JFK AP), NY	11.9
NEW YORK (LAGUARDIA AP), NY	12.2
ROCHESTER, NY	9.7
SYRACUSE, NY	9.4
ASHEVILLE, NC	7.6
CAPE HATTERAS, NC	11.1
CHARLOTTE, NC	7.4
GREENSBORO-WNSTN-SALM-HGHPT,NC	7.5
RALEIGH, NC	7.8
WILMINGTON, NC	8.7
BISMARCK, ND	10.2
FARGO, ND	12.3
WILLISTON, ND	10.0
AKRON, OH	9.7
CLEVELAND, OH	10.6
COLUMBUS, OH	8.4
DAYTON, OH	9.9
MANSFIELD, OH	11.0
TOLEDO, OH	9.4
YOUNGSTOWN, OH	9.8
OKLAHOMA CITY, OK	12.3
TULSA, OK	10.3
ASTORIA, OR	8.5
EUGENE, OR	7.6
MEDFORD, OR	4.8
PENDLETON, OR	8.6
PORTLAND, OR	7.9
SALEM, OR	7.0
SEXTON SUMMIT, OR	11.9
GUAM, PC	7.4
JOHNSTON ISLAND, PC	15.8
KOROR, PC	7.1
KWAJALEIN, MARSHALL IS., PC	13.3
MAJURO, MARSHALL IS, PC	10.3

PAGO PAGO, AMER SAMOA, PC	10.7
POHNPEI, CAROLINE IS., PC	6.4
CHUUK, E. CAROLINE IS., PC	8.9
WAKE ISLAND, PC	13.8
YAP, W CAROLINE IS., PC	8.1
ALLENTOWN, PA	9.2
ERIE, PA.	11.2
HARRISBURG, PA	7.6
MIDDLETOWN/HARRISBURG INTL APT	7.6
PHILADELPHIA, PA	9.6
PITTSBURGH, PA	9.1
AVOCA, PA	8.4
WILLIAMSPORT, PA	7.8
PROVIDENCE, RI	10.5
CHARLESTON AP,SC	8.6
COLUMBIA, SC	6.9
GREENVILLE-SPARTANBURG AP, SC	7.0
ABERDEEN, SD	11.2
HURON, SD	11.5
RAPID CITY, SD	11.3
SIOUX FALLS, SD	11.1
BRISTOL-JHNSN CTY-KNGSPRT, TN	5.5
CHATTANOOGA, TN	6.0
KNOXVILLE, TN	6.9
MEMPHIS, TN	8.8
NASHVILLE, TN	8.0
OAK RIDGE, TN	4.4
ABILENE, TX	11.9
AMARILLO, TX	13.5
AUSTIN, TX	9.2
BROWNSVILLE, TX	11.4
CORPUS CHRISTI, TX	12.0
DALLAS-FORT WORTH, TX	10.7
DEL RIO, TX	9.9
EL PASO, TX	8.8
GALVESTON, TX	11.0
HOUSTON, TX	7.9
LUBBOCK, TX	12.4
MIDLAND-ODESSA, TX	11.1
PORT ARTHUR, TX	9.7
SAN ANGELO, TX	10.4
SAN ANTONIO, TX	9.1
VICTORIA, TX	10.0
WACO, TX	11.2
WICHITA FALLS, TX	11.6
SALT LAKE CITY, UT	8.8
BURLINGTON, VT	9.0
LYNCHBURG, VA	7.7
NORFOLK, VA	10.6
RICHMOND, VA	7.7
ROANOKE, VA	8.0

OLYMPIA, WA	6.7
QUILLAYUTE, WA	6.0
SEATTLE SEA-TAC AP, WA	9.0
SPOKANE, WA	8.9
WALLA WALLA, WA	5.3
YAKIMA, WA	7.1
SAN JUAN, PR	8.4
BECKLEY, WV	8.9
CHARLESTON, WV	6.2
ELKINS, WV	6.2
HUNTINGTON, WV	6.6
GREEN BAY, WI	9.9
LA CROSSE, WI	8.8
MADISON, WI	9.9
MILWAUKEE, WI	11.5
CASPER, WY	12.9
CHEYENNE, WY	12.9
LANDER, WY	6.8
SHERIDAN, WY	8.0

## Normal Daily Temperature, Deg F

City, State	ANN
BIRMINGHAM AP,AL	61.8
HUNTSVILLE, AL	60.3
MOBILE, AL	67.5
MONTGOMERY, AL	64.9
ANCHORAGE, AK	35.9
ANNETTE, AK	45.9
BARROW, AK	9.4
BETHEL, AK	29.0
BETTLES,AK	21.9
BIG DELTA,AK	27.8
COLD BAY,AK	38.3
FAIRBANKS, AK	26.9
GULKANA,AK	27.1
HOMER, AK	37.4
JUNEAU, AK	40.6
KING SALMON, AK	33.5
KODIAK, AK	40.8
KOTZEBUE, AK	21.6
MCGRATH, AK	25.5
NOME, AK	26.2
ST. PAUL ISLAND, AK	34.7
TALKEETNA, AK	33.1
UNALAKLEET, AK	27.1
VALDEZ, AK	37.7
YAKUTAT, AK	39.0
FLAGSTAFF, AZ	45.8
PHOENIX, AZ	72.6
TUCSON, AZ	68.4
WINSLOW, AZ	55.0
YUMA, AZ	74.2
FORT SMITH, AR	60.6
LITTLE ROCK, AR	61.8
NORTH LITTLE ROCK, AR	61.3
BAKERSFIELD, CA	65.4
BISHOP, CA	56.0
BLUE CANYON, CA	0.0
EUREKA, CA.	52.7
FRESNO, CA	63.3
LONG BEACH, CA	64.3
LOS ANGELES AP, CA	63.0
LOS ANGELES C.O., CA	66.0
MOUNT SHASTA, CA	49.4
REDDING, CA	62.0
SACRAMENTO, CA	60.8
SAN DIEGO, CA	64.2
SAN FRANCISCO AP, CA	57.1
SAN FRANCISCO C.O., CA	57.0

SANTA BARBARA, CA	59.1
SANTA MARIA, CA	57.3
STOCKTON, CA	61.6
ALAMOSA, CO	41.1
COLORADO SPRINGS, CO	48.5
DENVER, CO	50.3
GRAND JUNCTION, CO	53.0
PUEBLO, CO	52.7
BRIDGEPORT, CT	51.7
HARTFORD, CT	49.9
WILMINGTON, DE	54.2
WASHINGTON DULLES AP, D.C.	53.8
WASHINGTON NAT'L AP, D.C	58.0
APALACHICOLA, FL	68.1
DAYTONA BEACH, FL	70.4
FORT MYERS, FL	74.4
GAINESVILLE, FL	68.6
JACKSONVILLE, FL	68.0
KEY WEST, FL	77.8
MIAMI, FL	75.9
ORLANDO, FL	72.3
PENSACOLA, FL	67.7
TALLAHASSEE, FL	67.2
TAMPA, FL	72.4
VERO BEACH, FL	72.4
WEST PALM BEACH, FL	74.7
ATHENS, GA	67.1
ATLANTA, GA	61.3
AUGUSTA,GA	63.2
COLUMBUS, GA	65.0
MACON, GA	64.4
SAVANNAH, GA	66.3
HILO, HI	74.0
HONOLULU,HI	77.2
KAHULUI, HI	75.6
LIHUE, HI	75.6
BOISE, ID	50.9
LEWISTON, ID	52.7
POCATELLO, ID	46.4
CAIRO,IL	0.0
CHICAGO,IL	49.0
MOLINE, IL	49.6
PEORIA, IL	50.7
ROCKFORD, IL	47.7
SPRINGFIELD, IL	52.4
EVANSVILLE, IN	55.8
FORT WAYNE, IN	49.9
INDIANAPOLIS, IN	52.3
SOUTH BEND, IN	49.5
DES MOINES, IA	49.9
DUBUQUE,IA	46.4

SIoux CITY, IA	48.5
WATERLOO, IA	46.5
CONCORDIA, KS	53.2
DODGE CITY, KS	55.2
GOODLAND, KS	50.9
TOPEKA, KS	54.0
WICHITA, KS	56.2
GREATER CINCINNATI AP	53.2
JACKSON, KY	55.7
LEXINGTON, KY	54.9
LOUISVILLE, KY	56.1
PADUCAH KY	57.2
BATON ROUGE, LA	67.7
LAKE CHARLES, LA	67.8
NEW ORLEANS, LA	68.1
SHREVEPORT, LA	65.2
CARIBOU, ME	38.8
PORTLAND, ME	45.4
BALTIMORE, MD	55.1
BLUE HILL, MA	48.6
BOSTON, MA	51.3
WORCESTER, MA	46.7
ALPENA, MI	42.8
DETROIT, MI	48.6
FLINT, MI	47.1
GRAND RAPIDS, MI	47.2
HOUGHTON LAKE, MI	43.1
LANSING, MI	46.8
MARQUETTE, MI	39.1
MUSKEGON, MI	47.1
SAULT STE. MARIE, MI	39.7
DULUTH, MN	38.5
INTERNATIONAL FALLS, MN	36.8
MINNEAPOLIS-ST.PAUL, MN	44.9
ROCHESTER, MN	43.6
SAINT CLOUD, MN	41.5
JACKSON, MS	64.2
MERIDIAN, MS	64.1
TUPELO, MS	61.7
COLUMBIA, MO	53.9
KANSAS CITY, MO	53.6
ST. LOUIS, MO	56.1
SPRINGFIELD, MO	55.8
BILLINGS, MT	47.1
GLASGOW, MT	42.4
GREAT FALLS, MT	44.8
HELENA, MT	44.0
KALISPELL, MT	42.4
MISSOULA, MT	44.3
GRAND ISLAND, NE	50.0
LINCOLN, NE	50.8

NORFOLK, NE	48.5
NORTH PLATTE, NE	48.0
OMAHA EPPLEY AP, NE	50.6
OMAHA (NORTH), NE	50.1
SCOTTSBLUFF, NE	48.4
VALENTINE, NE	47.0
ELKO, NV	46.8
ELY, NV	44.6
LAS VEGAS, NV	67.1
RENO, NV	50.8
WINNEMUCCA, NV	49.1
CONCORD, NH	45.1
MT. WASHINGTON, NH	26.5
ATLANTIC CITY AP, NJ	53.0
NEWARK, NJ	54.8
ALBUQUERQUE, NM	56.2
CLAYTON, NM	53.2
ROSWELL, NM	60.8
ALBANY, NY	47.4
BINGHAMTON, NY	45.9
BUFFALO, NY	47.7
ISLIP, NY	51.3
NEW YORK C.PARK, NY	54.7
NEW YORK (JFK AP), NY	53.6
NEW YORK (LAGUARDIA AP), NY	54.3
ROCHESTER, NY	47.6
SYRACUSE, NY	47.4
ASHEVILLE, NC	55.3
CAPE HATTERAS, NC	62.0
CHARLOTTE, NC	60.1
GREENSBORO-WNSTN-SALM-HGHPT,NC	57.8
RALEIGH, NC	59.3
WILMINGTON, NC	63.4
BISMARCK, ND	41.6
FARGO, ND	41.0
WILLISTON, ND	41.5
AKRON, OH	49.7
CLEVELAND, OH	49.6
COLUMBUS, OH	51.4
DAYTON, OH	51.7
MANSFIELD, OH	49.5
TOLEDO, OH	48.5
YOUNGSTOWN, OH	48.3
OKLAHOMA CITY, OK	60.0
TULSA, OK	60.3
ASTORIA, OR	50.9
BURNS,OR	44.1
EUGENE, OR	53.3
MEDFORD, OR	54.3
PENDLETON, OR	52.3
PORTLAND, OR	53.6

SALEM, OR	52.1
SEXTON SUMMIT, OR	47.9
GUAM, PC	78.8
JOHNSTON ISLAND, PC	79.3
KOROR, PC	81.7
KWAJALEIN, MARSHALL IS., PC	82.0
MAJURO, MARSHALL IS, PC	81.1
PAGO PAGO, AMER SAMOA, PC	80.2
POHNPEI, CAROLINE IS., PC	80.9
CHUUK, E. CAROLINE IS., PC	81.6
WAKE ISLAND, PC	80.4
YAP, W CAROLINE IS., PC	80.9
ALLENTOWN, PA	51.2
ERIE, PA.	49.2
HARRISBURG, PA	52.9
MIDDLETOWN/HARRISBURG INTL APT	52.9
PHILADELPHIA, PA	54.3
PITTSBURGH, PA	50.3
AVOCA, PA	49.1
WILLIAMSPORT, PA	49.9
PROVIDENCE, RI	50.4
CHARLESTON AP, SC	65.6
CHARLESTON C.O., SC	66.1
COLUMBIA, SC	63.1
GREENVILLE-SPARTANBURG AP, SC	60.0
ABERDEEN, SD	43.5
HURON, SD	45.2
RAPID CITY, SD	46.6
SIOUX FALLS, SD	45.5
BRISTOL-JHNSN CTY-KNGSPRT, TN	55.5
CHATTANOOGA, TN	59.3
KNOXVILLE, TN	57.6
MEMPHIS, TN	62.3
NASHVILLE, TN	59.1
OAK RIDGE, TN	56.6
ABILENE, TX	64.6
AMARILLO, TX	56.9
AUSTIN, TX	68.6
BROWNSVILLE, TX	73.8
CORPUS CHRISTI, TX	71.6
DALLAS-FORT WORTH, TX	65.4
DEL RIO, TX	69.4
EL PASO, TX	63.2
GALVESTON, TX	69.7
HOUSTON, TX	67.9
LUBBOCK, TX	60.1
MIDLAND-ODESSA, TX	63.3
PORT ARTHUR, TX	68.4
SAN ANGELO, TX	64.9
SAN ANTONIO, TX	68.6
VICTORIA, TX	69.9

WACO, TX	66.7
WICHITA FALLS, TX	63.0
MILFORD, UT	48.8
SALT LAKE CITY, UT	52.0
BURLINGTON, VT	44.6
LYNCHBURG, VA	55.9
NORFOLK, VA	59.2
RICHMOND, VA	57.7
ROANOKE, VA	55.8
WALLOPS ISLAND, VA	56.2
OLYMPIA, WA	49.7
QUILLAYUTE, WA	48.9
SEATTLE C.O., WA	52.8
SEATTLE SEA-TAC AP, WA	52.0
SPOKANE, WA	47.3
WALLA WALLA, WA	0.0
YAKIMA, WA	49.8
SAN JUAN, PR	80.2
BECKLEY, WV	50.9
CHARLESTON, WV	55.0
ELKINS, WV	49.1
HUNTINGTON, WV	54.9
GREEN BAY, WI	43.8
LA CROSSE, WI	46.3
MADISON, WI	45.2
MILWAUKEE, WI	46.1
CASPER, WY	45.1
CHEYENNE, WY	45.6
LANDER, WY	44.6
SHERIDAN, WY	44.7