



# F. W. Behler, Inc.

## Site Report

**Report Name** PV vs. ST  
**Report Date** 4/28/2012 11:59:34 AM  
**Declination** -11d 22m  
**Location** York, PA 17406  
**Lat/Long** 40.015 / -76.597  
**Weather Station** Harrisburg Intl AP, PA, Elevation: 302 Feet, (40.200/-76.767)  
**Site Distance** 16 Miles

**Report Type** Thermal

**Array Type** Fixed Angle  
**Tilt Angle** 40.02 deg  
**Ideal Tilt Angle** 40.02 deg  
**Azimuth** 180.00 deg  
**Ideal Azimuth** 180.00 deg

**Collector Make** Alternate Energy Technologies  
**Collector Model** AE-32  
**Collector Area** 31.9 Sq. Feet  
**Collector Count** 2  
**Total Collector Area** 63.7 Sq. Feet  
**Solar Fraction** 0.716  
**Annual Production** 10.350 Million BTU  
**Electricity Saved** 3,363.4 KWH  
**Annual Savings** \$403.61  
**Collector Fluid** Glycol

**Layout Configuration** Single Picture  
**Layout Point Count** 1

**Notes:** 1.7-kW vs. 2, 4x8 panel systems



# F. W. Behler, Inc.

## System Picture Layout

Layout Type      Single Picture  
Layout Point Count    1





## F. W. Behler, Inc.

### Thermal Energy Cost Savings

## Energy Source Used to Heat Water

Energy Source	Electricity
Energy Efficiency	98.0 %
Energy Cost	\$0.12 per KWH
Total Electricity Saved	3,363.4 KWH

## Estimated Monthly Savings

January	\$18.81
February	\$25.34
March	\$34.77
April	\$37.77
May	\$40.83
June	\$41.68
July	\$43.37
August	\$42.15
September	\$40.57
October	\$36.89
November	\$20.71
December	\$20.74
Annual Savings	\$403.61

Notes: 1.7-kW vs. 2, 4x8 panel systems



## F. W. Behler, Inc.

### Thermal Data Input Assumptions

#### Estimated Average Daily Hot Water Usage (gallons/day)

January	64.0
February	64.0
March	64.0
April	64.0
May	64.0
June	64.0
July	64.0
August	64.0
September	64.0
October	64.0
November	64.0
December	64.0

#### Other Assumptions

Tank Temperature	120.0 °F
Water Supply Temperature	55.0 °F
Main Tank Volume	120.0 Gallons
Secondary Tank Volume	0.0 Gallons
Heat Exchanger Efficiency	97.00 %

Notes: 1.7-kW vs. 2, 4x8 panel systems



# F. W. Behler, Inc. Summary Report

## Solar Obstruction Data

Month	Actual Shaded Solar Radiation Azimuth=180.0 Tilt=40.02 KWH/m <sup>2</sup> /day	Solar Hot Water Shaded Cost Savings Electricity \$0.12/KWH	Solar Fraction Azimuth=180.0 Tilt=40.02	Solar Hot Water Produced Azimuth=180.0 Tilt=40.02 MMBTU	Solar Hot Water Demand Azimuth=180.0 Tilt=40.02 MMBTU
January	2.58	\$18.81	0.393	0.482	1.227
February	3.51	\$25.34	0.586	0.650	1.108
March	4.24	\$34.77	0.727	0.892	1.227
April	4.68	\$37.77	0.816	0.968	1.187
May	4.87	\$40.83	0.853	1.047	1.227
June	5.08	\$41.68	0.900	1.069	1.187
July	5.04	\$43.37	0.907	1.112	1.227
August	4.91	\$42.15	0.881	1.081	1.227
September	4.98	\$40.57	0.876	1.040	1.187
October	4.34	\$36.89	0.771	0.946	1.227
November	2.68	\$20.71	0.447	0.531	1.187
December	2.71	\$20.74	0.434	0.532	1.227
<b>Totals</b>	<b>49.62</b>	<b>\$403.61</b>	<b>0.716</b>	<b>10.350</b>	<b>14.445</b>
	<b>Effect: 99.92%</b>				
	<b>Sun Hrs: 4.14</b>				

**Notes:** 1.7-kW vs. 2, 4x8 panel systems



# F. W. Behler, Inc.

## Solar Site Analysis Report

Image File roof.JPG

### Solar Obstruction Data

Month	Actual Shaded Solar Radiation Azimuth=180.0 Tilt=40.02 KWH/m <sup>2</sup> /day	Solar Hot Water Shaded Cost Savings Electricity \$0.12/KWH	Solar Fraction Azimuth=180.0 Tilt=40.02	Solar Hot Water Produced Azimuth=180.0 Tilt=40.02 MMBTU	Solar Hot Water Demand Azimuth=180.0 Tilt=40.02 MMBTU
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<b>Totals</b>	<b>49.62</b>	<b>\$403.61</b>	<b>0.716</b>	<b>10.350</b>	<b>14.443</b>
Effect: 99.92%					
Sun Hrs: 4.14					

Notes: [None]

