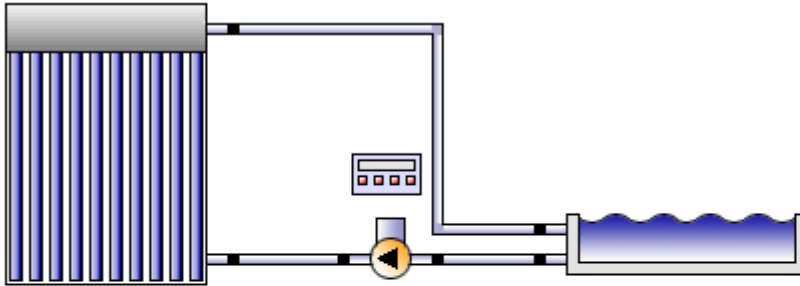


## Project

## 48a: Pool (solar thermal)



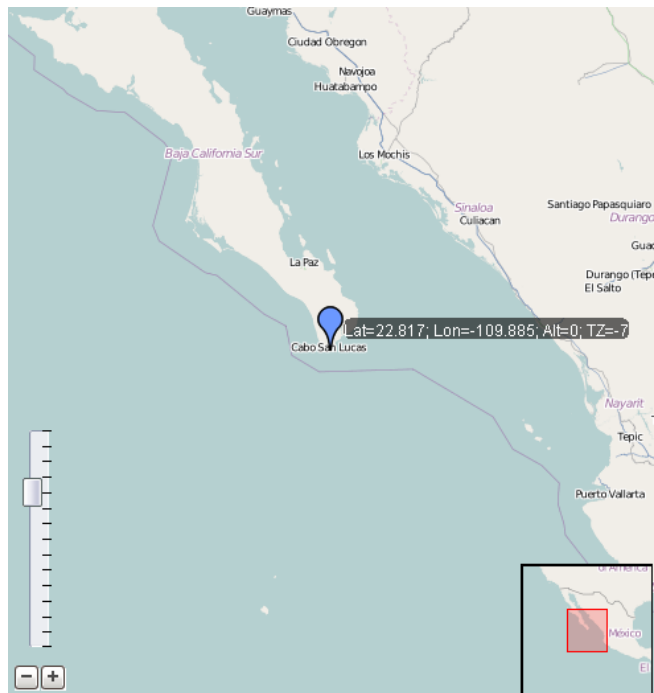
Temperature setting 90 °F  
 Length 24 ft  
 Width 16 ft  
 Average depth 3.94 ft

Number of collectors 3  
 Total area 69 ft<sup>2</sup>  
 Orientation 0 °  
 Tilt angle 45 °

### Location of the system

Cabo  
 Longitude: -109.885°  
 Latitude: 22.817°  
 Elevation: 0 ft

### Map section



### This report has been created by:

William Elliott  
 303 47 Str.E  
 S7K 5H2 Saskatoon

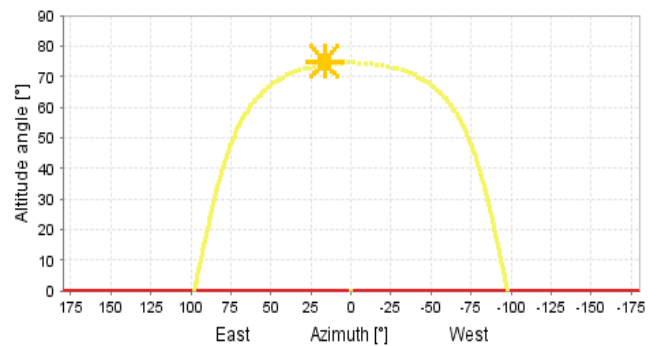
### System overview (annual values)

Total fuel and/or electrical energy consumption of the system [Etot]	4,093.2 kBtu
Total energy consumption [Quse]	19,273 kBtu
System performance (Quse / Etot)	4.71
Comfort demand	Energy demand covered

## Overview solar thermal energy (annual values)

Collector area	69 ft <sup>2</sup>
Solar fraction total	100%
Total annual field yield	18,850 kBtu
Collector field yield relating to gross area	273 kBtu/ft <sup>2</sup> /Year
Collector field yield relating to aperture area	314 kBtu/ft <sup>2</sup> /Year
Max. energy savings	-
Max. reduction in CO2 emissions	-

## Horizon line



## Meteorological data-Overview

Outdoor temperature 24h	80.2 °F
Annual global irradiance	637 kBtu/ft <sup>2</sup>
Annual diffuse irradiance	232.6 kBtu/ft <sup>2</sup>

## Component overview (annual values)

<b>Collector North America Swimming pool absorber</b>		<b>WSE47</b>	
Data Source			u138368
Number of collectors			3
Number of arrays			20
Total area	ft <sup>2</sup>		69
Total aperture area	ft <sup>2</sup>		60
Tilt angle	°		45
Orientation	°		0
Collector field yield [Qsol]	kBtu		18,850.5
Irradiation onto collector area [Esol]	kBtu		43,280.1
Collector efficiency [Qsol / Esol]	%		43.6
Direct irradiation after IAM	kBtu		30,879
Diffuse irradiation after IAM	kBtu		16,876

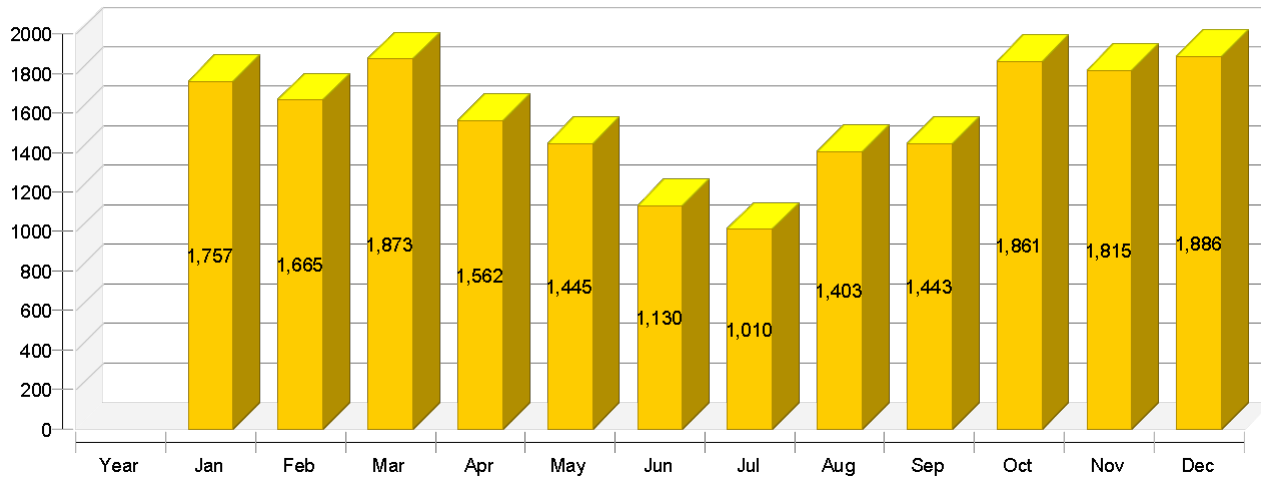
<b>Pool Pool</b>		<b>Outdoor pool</b>	
Pool type			Outdoor pool
Length	ft		24
Width	ft		16
Energy from/to the system [Quse]	kBtu		19,273

<b>Pump Solar loop pump</b>		<b>Pump, large</b>	
Circuit pressure drop	psi		0.056
Flow rate	gpm		1
Fuel and electrical energy consumption [Epar]	kBtu		4,093.2

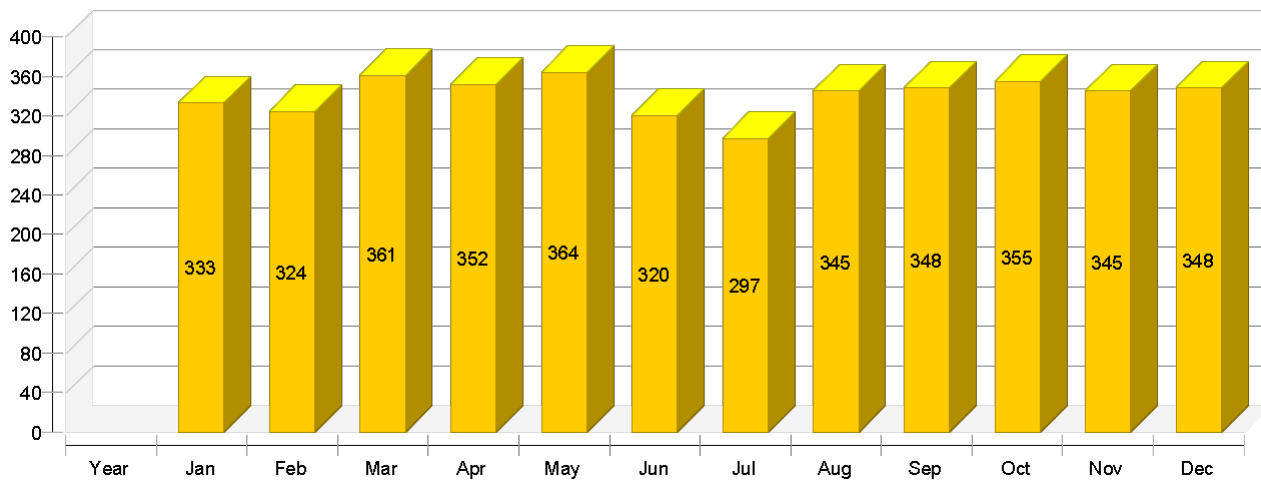
**Solar thermal energy to the system [Qsol]**

kBtu



**Total fuel and/or electrical energy consumption of the system [Etot]**

kBtu



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

**Solar thermal energy to the system [Qsol]**

kBtu	18850	1757	1665	1873	1562	1445	1130	1010	1403	1443	1861	1815	1886
------	-------	------	------	------	------	------	------	------	------	------	------	------	------

**Total fuel and/or electrical energy consumption of the system [Etot]**

kBtu	4093	333	324	361	352	364	320	297	345	348	355	345	348
------	------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

**Irradiation onto collector area [Esol]**

kBtu	43280	3801	3644	4145	3536	3382	3062	3073	3378	3225	4045	3932	4058
------	-------	------	------	------	------	------	------	------	------	------	------	------	------

**Electrical energy consumption of pumps [Epar]**

kBtu	4093	333	324	361	352	364	320	297	345	348	355	345	348
------	------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

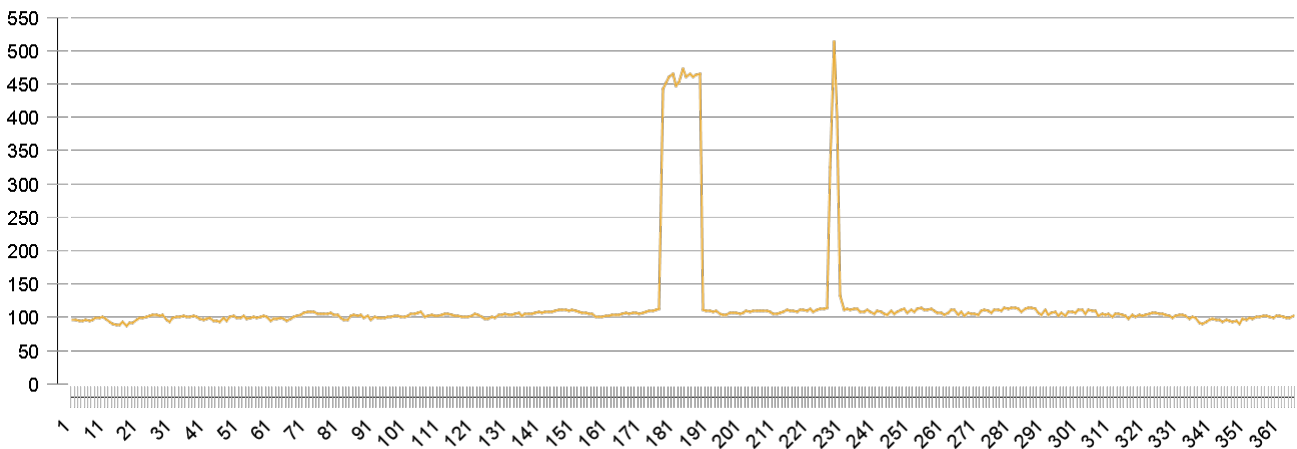
**Heat loss to indoor room (including heat generator losses) [Qint]**

kBtu	2872	234	227	253	247	256	225	209	242	244	249	242	244
------	------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
<b>Heat loss to surroundings (without collector losses) [Qext]</b>													
kBtu	798	64	72	82	72	59	58	51	67	64	72	70	67
<b>Total energy consumption [Quse]</b>													
kBtu	19273	1792	1691	1898	1595	1493	1168	1048	1439	1482	1896	1849	1923

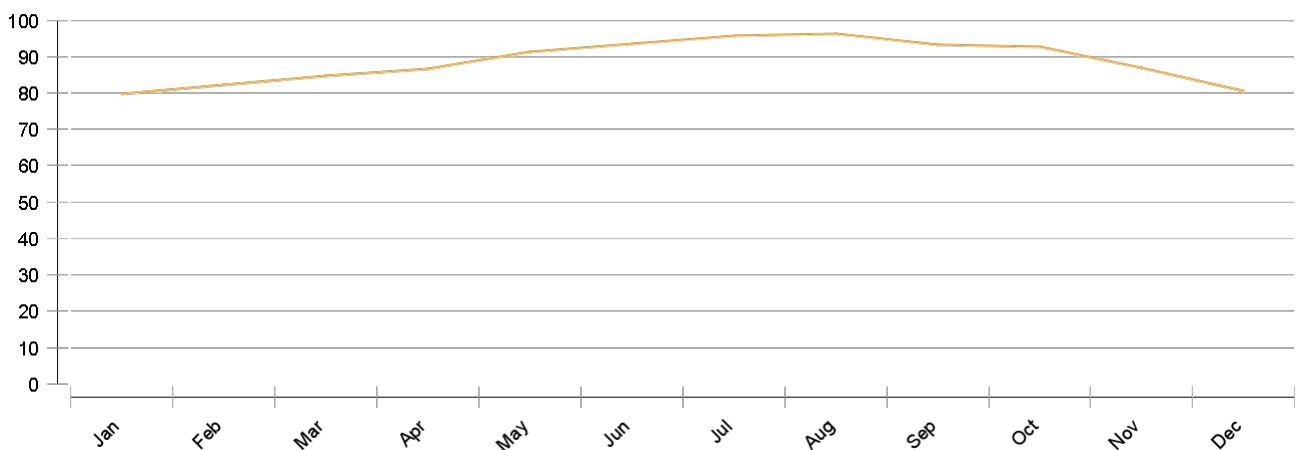
## Collector North America Swimming pool absorber

Daily maximum temperature [ °F]



## Pool Pool

Monthly average - Temperature [ °F]



## Energy flow diagram

