

Introduction

In this exercise you will investigate the efficiency of a parabolic dish cooker.

Procedure

1. Utilizing the data taken with the parabolic dish cooker:
 - a) On a single graph, plot temperature vs. time for both heating trials.
 - b) Determine the linear range for each of the curves that has the highest slope and calculate the slope of each of the curves in the linear range.
 - c) Take the average of the two slopes and use this value to determine the rate at which energy is being transferred into the pot of water. Remember that the pot contained 500mL of water.
2. Based on a diameter of 4 feet, determine the theoretical rate at which the dish should be able to collect the energy from the Sun assuming a 100% efficiency and an AM1 direct energy value of $1000\text{W}/\text{m}^2$.
3. Using the results from steps 1 and 2, determine the efficiency at which the parabolic dish solar collector system was able to convert the Sun's energy to heat and transfer it into the water contained in the cooking pot.
4. Submit your results in the form of a "memo-style" report.

