

ABSTRACT

Indonesia is a country in the equator. This means that Indonesia has considerable solar energy from the sun. Solar energy has a huge potential that can be used for the future considering that solar energy can be converted into electrical energy in an environmentally friendly manner, without pollution or damage to the environment. Currently the use of solar thermal energy has been done a lot, one example is a solar thermal collector. The solar thermal collector is a part of the equipment needed to convert solar radiation energy to a form of heat energy for various purposes. There are several types of solar collectors that have been carried out, one of which is the parabolic type. In this study, research will be conducted on parabolic type solar collectors with a diameter of 50 cm and a depth of 20 cm parabolic. Made of stainless steel and flexible mirror coated. There is a receiver tube for storing water with a focus point of 10 cm from the base of the satellite dish. Tests on this tool were carried out for 70 minutes with variations in intensity from $700 \text{ W} / \text{m}^2$ – $2000 \text{ W} / \text{m}^2$ and variations in water mass from 100 - 600 grams. There are several parameters tested in this test, from which the water temperature, lost mass from water, environmental intensity and temperature were taken. After the data is obtained, efficiency calculations are then carried out. The greatest efficiency is obtained when the intensity is $2000 \text{ W} / \text{m}^2$, the mass of the water is 600 grams, the tube diameter is 6 cm and coated with a flexible mirror. The efficiency obtained is 33.038%.

Keywords: Solar Collector, Parabolic, Efficiency, Intensity