Effect of parabolic solar energy collectors for water distillation

ABSTRACT

This research article briefly summarizes the augmentation of condensate output using concentrators. This study compares a single-slope solar still, a compound conical concentrator (CCC) solar still, and a compound parabolic concentrator–tubular solar still (CPC–TSS). The effect of miniaturization of the absorber (increase in the concentration factor) and some modifications in the solar still assembly show a remarkable increase in output. The measured daily yield rate per square meter of absorber area of the single slope solar still, CCC solar still, and CPC–TSS is 2,100, 18,000, and 6,100 ml, respectively. It was found that the CCC solar still provides the maximum yield.

Keyword: Compound conical concentrator; Compound parabolic concentrator; Desalination; Solar still