

Effect of water flow on concentrator coupled hemispherical basin solar still

ABSTRACT

This research article briefly epitomizes the augmentation of condensate by adopting enhanced desalination methodology and technological approach pondering extensive limelight on its performance generating revenue added approach to all scale applications. The experiments were conducted to study the water flow over the condensing cover of the hemispherical basin single slope solar still. Two types of measurements were performed; one with cooling and the other without cooling. The hourly and daily productivity are also calculated and reported. The system efficiency ranged between 3% to 33% for experiments without flow and 9% to 43% with flow. It is concluded that the average maximum efficiency is recorded for still with cooling water flow technique. The peak efficiency of the system worked out to be 37.85%. The maximum of total productivity for stills with and without water flow are 1.67 L and 1.5 L respectively which achieved in possible flow rate (0.065 kg/min).

Keyword: Solar desalination; Efficiency; Productivity; Hemispherical solar still