

## **Models to Estimate Monthly Mean Daily Global Solar Radiation on a Horizontal Surface in Alexandria**

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**Abstract :** Solar radiation data are of great significance for solar energy system design. This study aims at developing and calibrating new empirical models for estimating monthly mean daily global solar radiation on a horizontal surface in Alexandria, Egypt. Day length hours, sun height, day number, and declination angle calculated data are used for this purpose. A comparison between measured and calculated values of solar radiation is carried out. It is shown that all the proposed correlations are able to predict the global solar radiation with excellent accuracy in Alexandria.

**Keywords :** solar energy, global solar radiation, model, regression coefficient

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