Differences between the types of radiations:

The three types of radiations: **Direct normal**, **Diffuse Horizontal** and **Global Horizontal** radiations.

- **Direct Normal Radiation** is the radiation that is incident normal to a surface; i.e. the rays are perpendicular to the plane of the surface.
    - The value for the direct normal radiation is a concentrated value incident on a surface and it represents the solar resource used by various concentrating solar technologies such as Photovoltaics.
- **Diffuse Horizontal Radiation** is the radiation that is refracted through the medium of the earth's atmosphere and other variable elements such as clouds before hitting any point on the earth's surface.
    - The radiation (heat) that we experience on the earth's surface is the diffused radiation scattered by the atmosphere and all the particles therein and therefore of greater importance while working on the human comforts (indoor and outdoor).
- **Global Horizontal Radiation** is the total amount of radiation received by a surface horizontal to the ground and includes both Direct and Diffused radiation. It also includes the radiation that is reflected off the ground and various other surfaces and scatters within the atmosphere.

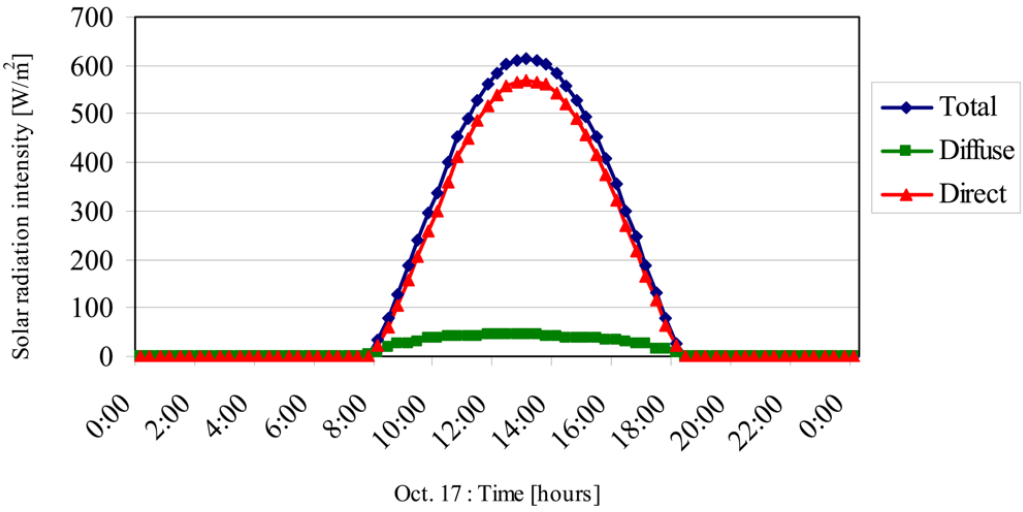

Fig 1: An example of direct, diffused and total radiation on a clear, sunny day *source: www.mdpi.com*

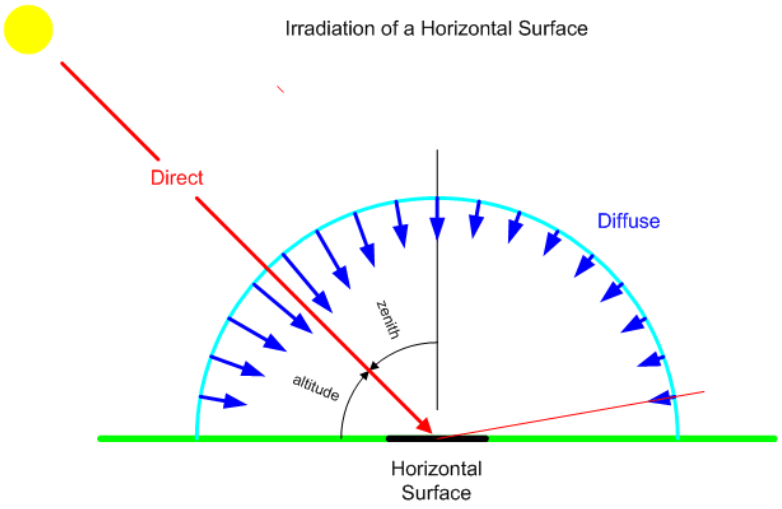

Fig 2: Direct and diffused radiation incident on a horizontal surface *source: www.brighton-webs.co.uk*