LECTURE 1 – QUIZ

Question 1: What is the intensity of light in [W/m^2] onto the various modules for a house located at sea level in a sunny day?

a) ~ 1000 W/m^2
b) ~ 1360 W/m^2
c) ~ 700 W/m^2

Solution: solar irradiance of ~ 1360 W/m^2 is in outer space. At sea level, and with an optimum tilt, we can receive an irradiation of ~ 1000 W/m^2. If the module is not perpendicular to the position of the sun, then the irradiation at that plane will be lower.

Question 2: What is the intensity of light in [W/m^2] onto the various modules for a house located at sea level in a sunny day?

a) ~ 1000 W/m^2
b) ~ 1360 W/m^2
c) ~ 700 W/m^2

Solution: when the module is perpendicular to the sun, the maximum irradiation at sea level is ~ 1000 W/m^2.

Question 3: If the module is flat (i.e. placed horizontally at 0º), and the sun is positioned as it is in question 1 and 2:

a) There is slightly more intensity and the spectrum is more reddish (for situation 2).
b) There is slightly more intensity and the spectrum is more reddish (for situation 1).
c) There is slightly more intensity and the spectrum is more bluish (for situation 1).

Solution: due to Rayleigh scattering, the spectrum is more blue when the sun is high (i.e. situation 1, and more red during sunrise and sunset, when the sun is lower (i.e. situation 2).