

One of the most regularly asked question is “how much does one hour in Solarbox represent?”

The standard ASTM D3424 gives an indication of the average daily radiation received in Miami, Florida.

(Miami, Singapore and Okinawa are the subtropical test sites, those sites are generally hot and humid throughout the whole year). The average daily radiation received in Miami is $1 \text{ MJ/m}^2_{(295-400 \text{ nm})}$, it is generally accepted that Miami conditions are 4 – 5 times more severe than Europe. In the enclosed table a comparison is made between natural conditions in subtropical and European sites and Solarbox. The table reports Irradiance in the UV range (295 to 400 nm) and the related overall Irradiance in the 295 to 800 nm range as specified in the most diffused standard.

Irradiation range	Average daily radiation Miami	Average daily radiation Europe	Daily radiation in Solarbox. Irradiance set : $550 \text{ W/m}^2_{(295-800 \text{ nm})}$	Daily radiation in Solarbox. Irradiance set: $1000 \text{ W/m}^2_{(295-800 \text{ nm})}$
295-400 nm	1 MJ/m^2	0.22 MJ/m^2	5.3 MJ/m^2	9.6 MJ/m^2
295-800 nm	9.2 MJ/m^2	2.0 MJ/m^2	50.4 MJ/m^2	88.3 MJ/m^2

The conclusion is that 1 hour exposure at 550 W/m^2 in Solarbox is equivalent to 24 hours in Europe and to 5.3 hours in Miami., the acceleration factor may be nearly doubled increasing Irradiance up to 1000 W/m^2 .