



LIGHT

About UV Index

WHAT IS UV INDEX?

Total Global Radiation is the description of all solar energy falling on the Earth's surface. This energy includes visible light, infra-red (heat) energy and ultra-violet radiation. Total Global Radiation is measured in watts m⁻² (watts per square metre).

Natural ultra-violet radiation at the Earth's surface has wavelengths between 280 and 400 nm. The highest energy radiation - and therefore the most damaging - has the lowest wavelengths. Ultra-violet (UV) radiation is also measured in watts m⁻².

UVA radiation has wavelengths between 315 and 400nm. UVA is usually associated with skin reddening and sunburn, called Erythema. UVB radiation has higher energy and lower wavelengths between 280 and 315nm, and is usually associated with skin cancer, cataracts and DNA damage.

The UV Index (UVI) is a simple scale of 0-15+ as a measure of UV radiation and an indication to the risk of over-exposure. UVI is related to watts m⁻² by a factor of 40:

$$1 \text{ UVI} = 1/40 \text{ watts m}^{-2} \text{ effective UV Erythemal radiation}$$

Small amounts of UV radiation are essential for humans in producing vitamin D in the skin, but over exposure can seriously damage health.

Levels of UV radiation are highest around solar noon, as you get nearer to the equator, on cloudless days and at altitudes. However UV levels can also be dangerously high in diffuse cloud conditions and also from reflections off snow and ice.

UV INDEX

Less than 2
3 to 5
6 to 7
8 to 10
11+

EXPOSURE CATEGORY

Low
Moderate
High
Very High
Extreme

REPORTING UV INDEX

The World Meteorological Organisation (WMO) advises that UV Index should be reported as a single value rounded to the nearest whole number.

For a report of the daily maximum UV Index the WMO suggest measurements are taken at 30 minute averages

(Continued).

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About UV Index (continued)

For continuous or "live" UV Index reporting, a 5 or 10 minute measurement average may be more useful to display short-term changes.

It is also important to report sky conditions, e.g. "clear sky" or "cloud free".

WMO guidelines on UV Index and its reporting can be found at

<http://www.who.int/uv/publications/globalindex/en/index.html>

USEFUL LINKS

<http://www.who.int/uv/en>

Http://www.bbc.co.uk/weather/world/features/sun_index.shtml

<http://info.cancerresearchuk.org/healthyliving/sunsmart/knownyourrisk/uvindex/?a=5441>