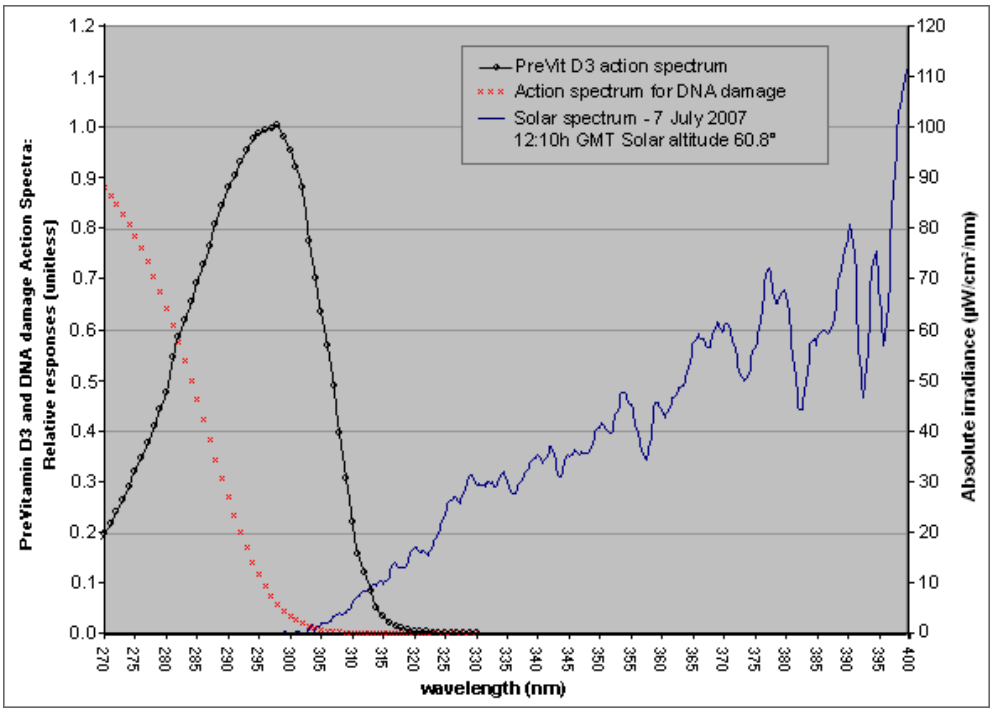
UNDERSTANDING UV LIGHT

For a number of years now, reptile keepers have understood that diurnal reptiles heavily rely on UVB for the synthesis of vitamin D3 for the absorption of calcium through the gut. It has also been readily accepted that UV emitted from artificial light sources reduces exponentially from the surface of the light source. Over the years, most companies have produced tubes and globes that produce UVB between 2% and 10% at a distance of 30cm so depending on the species needs and the distance from the tube to the animal, the reptile could be provided with the correct amount of UVB to achieve this synthesis.

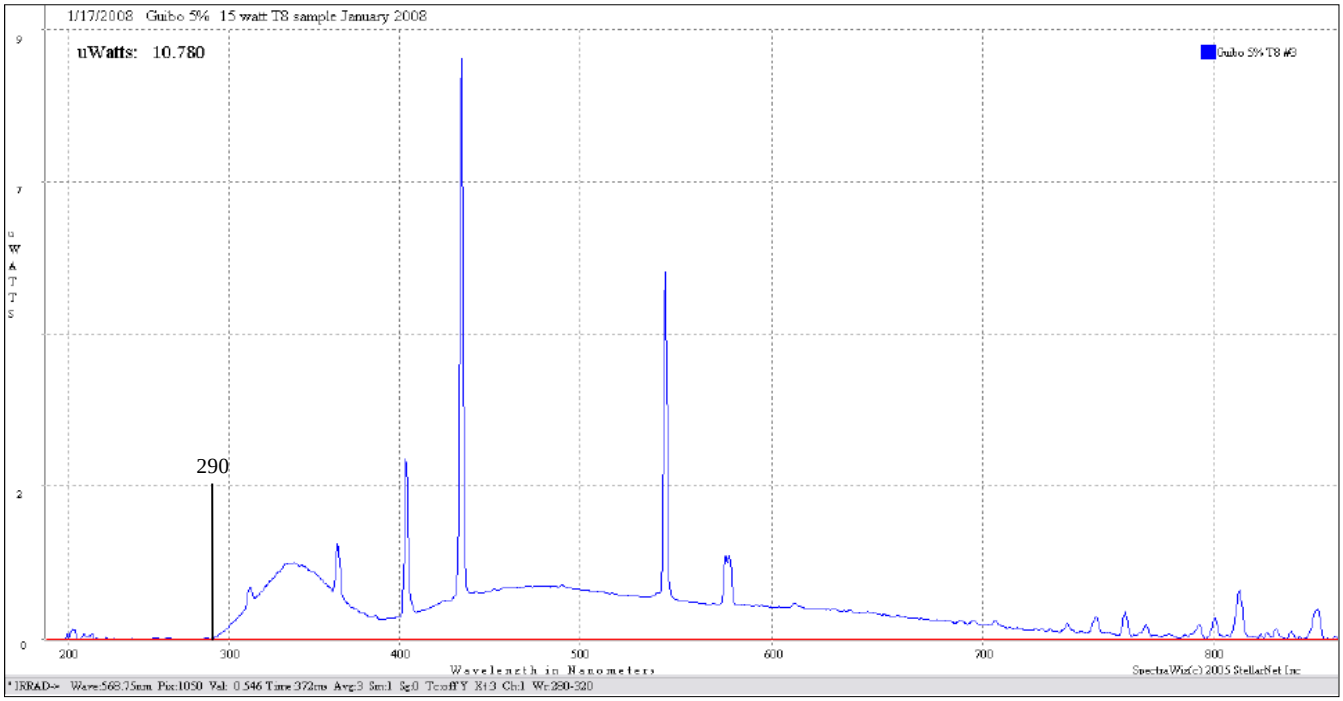
Over time it has also been discovered that reptiles also require a period of white light to simulate daylight. This 'white light' has been added to most commercially sold Reptile UV tubes. It is recommended that these artificial lights are used for a period of 12 hours during the day and then they are switched off at night. In theory, this all seems very simple. However, a problem has come about with the increased incidence of photo-kerato-conjunctivis occurring with the use of some of these lights.



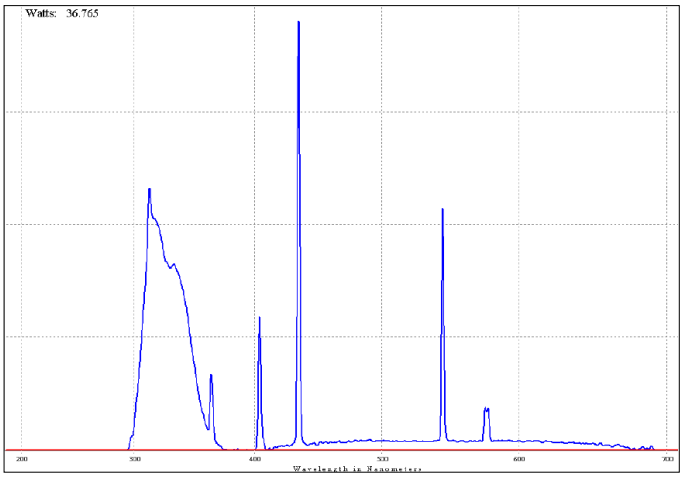
The graph on the above is taken from an article written on the following site:
http://www.uvguide.co.uk/phototherapyphosphor-tests.htm#spectra

From this article, it explains that artificial UV compact fluorescent globes and tubes can produce the same output of UVB (in microwatts per cm2) but the actual wavelength emitted can vary. There is a certain range of wavelengths required for D3 synthesis, but this overlaps with wavelength that can cause DNA damage.

The article goes on to say that most globes associated with photo-kerato-conjunctivitis have a wavelength output range of 275-280 nanometers. In comparison, the globes tested that had not been associated with the disease had a wavelength output range of 290-295 nanometers and steadily increasing.



The graph above are the results of testing on our Outback Max 5.0 tubes which indicates the wavelengths increase after 290 nanometers. This result is also backed by the fact that we use these products ourselves and have not experienced problems with our animals nor have we had customers feedback indicating otherwise. The graph below shows results for our Outback Max 10.0 tubes and shows similar results to the Outback Max 5.0.



In view of this information, these are our recommendations for use:

The Outback and Compact Max 5.0 to be situated at 30cm from the animal and used with nocturnal, tropical and temperate species of reptiles.

The Outback and Compact Max 10.0 to be situated 30cm from animal and used with arid species of reptiles (such as bearded dragons, etc) and turtles or can be 45-50cm for tropical species (eg, if the vivarium is tall).

The UV lighting should be turned on for approximately 12 hours per day for regular use but the day length should be adjusted to suit breeding cycles if that is the intention of the keeper.