

# THE NEW STANDARD

Exo Terra takes the guesswork out of reptile lighting

NOW ALSO AVAILABLE IN LINEAR

## REPTILE UVB 100

### Tropical Terrarium Bulb

- Ideal for all tropical and sub-tropical reptiles
- Optimal levels of UVB
- Provides necessary UVB rays for optimal calcium metabolism
- UVA rays stimulate appetite, activity and reproductive behavior



## REPTILE UVB 150

### Desert Terrarium Bulb

- Ideal for all desert dwelling reptiles
- High UVB output
- Very high D<sub>3</sub> conversion
- Provides necessary UVB rays for optimal calcium metabolism
- Recommended for terrariums with dense screen covers



## REPTILE UVB 200

### High Output UVB Bulb

- Ideal for desert reptiles with very high UV requirements
- UVB helps prevent metabolic bone disease
- Very high D<sub>3</sub> Yield Index
- Increased Vitamin D<sub>3</sub> photosynthesis



Unlike 15 years ago, when the knowledge of this subject was minimal, we now know the requirements of most species kept in captivity. In order to provide reptiles the best possible lighting solution Exo Terra® has tweaked all spectrums and added several new bulbs based on recent research.

No longer should anyone rely on the old 5.0 and 10.0 UVB principle, as these fictive numbers only vaguely indicate the UVB output of the bulb ranging between 280-320nm. The wavelength that is responsible for vitamin D<sub>3</sub> photosynthesis however, ranges from 290 to 310 nm with a peak production at 294nm. The UVB range below 290nm is undesirable, and can even be harmful, while radiation above 310nm destroys vitamin D<sub>3</sub>. The positive effects of UVB lighting for your reptile also depend on many other factors, such as whether the bulbs are correctly sited, changed regularly and turned on for a sufficient number of hours.



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# CHOOSING THE RIGHT UVB BULB

Check the UVB rating for your animal

**1**

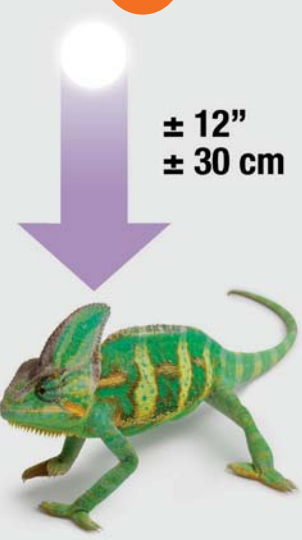
NAME	LATIN NAME	UVB RATING
<b>LIZARDS</b>		
Bearded & Rainier's Dragon	Pogona vitticeps & henrylawsoni	★★★★★
Longear Gecko	Eublepharis macularius	★★★★
Spiny-tailed lizard	Spinosaurus	★★★★
<b>Veiled Chameleon</b>	<b>Chamaeleo calcaratus</b>	<b>★★★</b>
Spiny-tailed lizard	Urosaurus	★★★★
Parrot Chameleon	Chamaeleo parvulus	★★★
Orange-bellied Dragon	Phrynosoma macleayi	★★★
Orange-bellied Dragon	Phrynosoma macleayi	★★★
Arctic Green & Yellow	Arctic green & yellow	★★★
Ocellated Gecko	Phyllorhynchus ocellatus	★★★
Topiary Gecko	Phyllorhynchus	★★★




Check your animal's star rating on Exo Terra®'s Reptile UVB Chart.

Check the average basking distance between your animal and the bulb

**2**




± 12"  
± 30 cm



Check your terrarium set-up for the average basking distance.

Look up the corresponding UVB rating to choose a suitable bulb

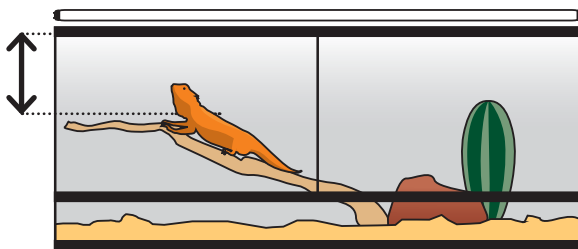
**3**



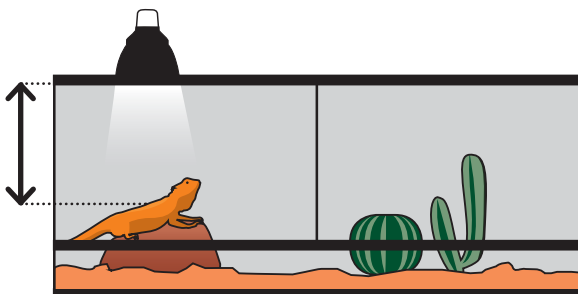
Compare the animal rating and bulb positioning height with those featured on the bulb packaging. If these match, you found the right Exo Terra® bulb for your reptile!

Exo Terra®'s new lighting range utilizes a unique UV rating system. In just three easy steps, it will help you determine which bulb is right for your animal.

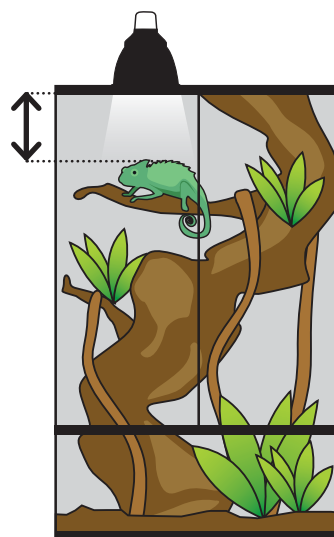
The numbers 100, 150 & 200 refer to the average UVB output at 4" or 10 cm from the bulb. All our new UVB bulbs have been designed for maximum vitamin D<sub>3</sub> photosynthesis, by concentrating the UVB output near the 294 nm within the UV output. At this wavelength vitamin D<sub>3</sub> synthesis is most active!



Linear Lighting - UVB Exposure: Shade Method



Spot Light - UVB Exposure: Sunbeam Method



Spot Light - UVB Exposure: Sunbeam Method

Check the average basking distance between your animal and bulb



# EXO TERRA REPTILE UVB CHART



**Bearded & Rankin's Dragon**  
*Pogona vitticeps & henrylawsoni*



**Red-eared Sliders**  
*Trachemys scripta elegans*



**Leopard Gecko**  
*Eublepharis macularius*



**Veiled Chameleon**  
*Chamaeleo calytratus*



**Ball Python**  
*Python regius*



**Green Iguana**  
*Iguana iguana*



**Crested Gecko**  
*Rhacodactylus ciliatus & auriculatus*



**Corn Snake**  
*Pantherophis guttatus*



**Russian Tortoise**  
*Agriemys horsfieldii*



**Green Anolis**  
*Anolis carolinensis*



**Yellow Bellied Slider**  
*Trachemys scripta scripta*



**Day Gecko**  
*Phelsuma*



**Chinese Water Dragon**  
*Physignathus cocincinus*



**Greek Tortoise**  
*Testudo Graeca*



**Long-tailed Lizard**  
*Takydromus sexlineatus*



**Milk Snake**  
*Lampropeltis spec.*



**Spiny-tailed Lizard**  
*Uromastix*



**Collard Lizard**  
*Crotaphytus collaris*



**Painted Turtle**  
*Chrysemys picta*



**Panther Chameleon**  
*Chamaeleo pardalis*



**African Spurred Tortoise**  
*Geochelone sulcata*



**Curly Tail Lizard**  
*Leiocephalus spec.*



**Hermann's Tortoise**  
*Testudo hermanni*



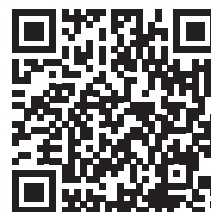
**Steppe Runner**  
*Eremias arguta*



**Boa Constrictor**  
*Boa constrictor*

## EXO TERRA APP

Use the Exo Terra APP to choose the most suitable Exo Terra UVB bulb for your animal, at home, or on the go!



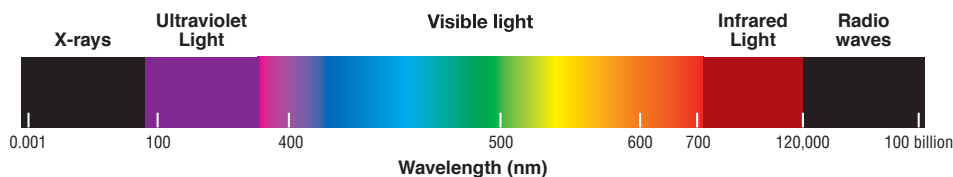


# ABOUT ULTRAVIOLET LIGHT

Ultraviolet radiation only counts for about 3% of the solar energy that reaches the Earth's surface. It is situated in the high energy portion of the electromagnetic spectrum, just beyond visible light.

Ultraviolet radiation is divided into three wavelength groups:

- **UVA** – Long wave ultraviolet A, ranges from 320-400 nm and is significant for reptile vision and wellbeing
- **UVB** – Medium wave ultraviolet B, ranges from 290-320 nm and is required for metabolic processes
- **UVC** – Short wave ultraviolet C, ranges from 180-290 nm and is dangerous to all living organisms



It has been demonstrated that reptiles can see into the ultraviolet range (300-400 nm), especially in the longwave UVA range. It affects the way reptiles see things.

Ultraviolet B or UVB is an important element of sunlight for reptiles. In the wild, most reptiles synthesize their vitamin D<sub>3</sub> from the UVB component of sunlight. Vitamin D<sub>3</sub> is essential for the effective metabolism of dietary calcium in reptiles. UVB reacts with the precursor of vitamin D, 7-dehydrocholesterol, in the skin to produce pro-vitamin D<sub>3</sub>. Depending on heat and the aid of a mechanism in the skin, pro-vitamin D<sub>3</sub> is converted into vitamin D<sub>3</sub> itself. The liver and kidneys transform vitamin D<sub>3</sub> into its active form, a hormone (1,25, hydroxy-vitamin D) that regulates calcium metabolism.

Carnivorous and omnivorous reptiles get a high proportion of their vitamin D<sub>3</sub> requirement from their food. However, plants do not contain D<sub>3</sub> (cholecalciferol), instead they contain D<sub>2</sub> (ergocalciferol), which is far less efficient in calcium metabolism than D<sub>3</sub>. Insects and invertebrates do not contain any vitamin D<sub>3</sub> at all. Herbivorous and insectivorous reptiles are therefore far more dependent upon vitamin D<sub>3</sub> synthesis than carnivorous specimens.

If inadequate levels of vitamin D<sub>3</sub> are available, the animal will rapidly develop the condition known as Metabolic Bone Disease. In this condition, bone density suffers and various other serious metabolic problems occur. Symptoms include swelling, lethargy, general weakness, tremors and softening of the shell in turtles and tortoises. Next to a UVB light source, adequate levels of calcium must be present in the diet or must be provided by means of dietary supplementation.

Juvenile reptiles are most at risk, although adults too can be affected if maintained in a state of deficiency for a long enough period. Egg laying females are also at great risk, due to the extra demands in calcium necessary for egg production. An excess of UVB can cause eye and skin damage, cancer and poor reproduction.

UVB is generally defined as the wavelength range from 290-320nm, but it is the range between 290-305 nm that is most important. Sufficient irradiation within this narrow sub-band of the UVB range is a requirement for the photosynthesis of vitamin D<sub>3</sub> in skin. Although radiation below wavelengths of 310 nm promotes photosynthesis of vitamin D<sub>3</sub>, radiation above 310 nm destroys vitamin D<sub>3</sub> that has been already synthesized in skin tissue or obtained nutritionally.

Reptiles can regulate the exposure to sunlight to protect themselves from the damaging effects of UVB. Season, time of the day and the environmental and body temperature have an influence on the exposure to the Sun and UVB. Many species also have physical adaptations to protect themselves from UVB damage to vital organs like darkly pigmented UVB-absorbing layers in the skin. UVB rays also contribute to a good working immune system and may stimulate psychological health through the production of beta-endorphins.



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