

# CHOOSING YOUR REPTILE

## LIGHTING AND HEATING

What lights do I need for my pet Bearded Dragon, Python, Gecko or other reptile, turtle or frog?

**Is specialised lighting and heating required for indoor reptile enclosures?** The answer is yes - for most reptile enclosures in Australia, specialised lighting and heating will help your reptiles not only remain healthy, but also thrive.

Before you decide what heating and lighting is best for your pet, it's important to consider the following factors:



**1. Natural Habitat** Ideally, you should try to match your pet's conditions to what he would experience in the wild. Answer the following questions about your pet to work out his optimal conditions:

Is your reptile naturally diurnal (primarily active at day) or nocturnal (primarily active during the night)?

**Diurnal reptiles:** it is good practice to set up a warm end to your reptile's enclosure where they can bask under a lamp and get warm and a lower temperature end where they can go to cool down. This self-regulation of temperature is a natural skill of reptiles and helps with normal body functions and natural behaviour for your pet reptile.

**Nocturnal reptiles:** lower strength day time lighting is still required to ensure that your reptile can settle into its natural sleeping rhythm.

In the wild, does your reptile naturally live in an open environment where it is exposed to a lot of direct sunlight (eg. desert or open forest) or under a canopy (eg. rainforest) where it is exposed to only mottled sunlight?



**Desert:** you can use higher wattage lights shining directly on your pet's basking area, to mimic the basking environment they would experience in the wild.



**Rainforest:** your rainforest pet will need lower wattage lights, or you can use terrarium decorations such as logs to mottle the light, mimicking what they might experience in the wild.

**2. Reptile Enclosure Size** for larger enclosures, your reptile will be able to self-regulate their temperature much more effectively since they can move around to suit their comfort level. Higher wattage lights and heat lamps can therefore be utilised in the warm end of a larger enclosure.

**3. Reptile Temperature Range** a reptile enclosure should be maintained at temperature ranges that are in line with their natural environment in the wild. Temperatures consistently above or below this range is likely to lead to health issues. For example, a heat lamp for an Eastern Bearded Dragon in Brisbane (natural range) will be required to operate a lot less than a heat lamp for a Darwin Carpet Python in Melbourne (well south of natural range).



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**4. Distance of Light and Heat Source** the greater the distance between the heat source and the reptile basking area, the stronger the wattage of globe required to get adequate UVB rays. For example, 15cm is too close, 30cm is ideal, and 45cm is too far. Rocks and logs can be used to manage the distance and optimise the temperature at the basking area.



**5. Odour Control** some light globes are specially built as negative ion generators, which can eliminate odours in your reptile habitat. By generating large amounts of negative oxygen ions, bacteria, dust and other particles are collected and drop to the ground - cleaning the air.



**6. Reptile Enclosure Location** the location of your enclosure is an important consideration. Is the enclosure next to a window and exposed to filtered, natural light? Or is it kept in a dark room with little natural light? The less natural light available will increase the required day globe light strength. Importantly, only UVA light will penetrate glass windows and enclosures, while UVB light will be blocked. In their natural conditions, reptiles would be exposed to UVA, UVB, heat and infrared light from the sun.



**7. UVA and UVB Light: How do I get UVA light for my reptile?** UVA light is known as a visible or bright light because it is the light that we can see. It is provided by an incandescent bulb. Reptiles are able to see a wider range of UVA light that is not always provided by normal human light globes.

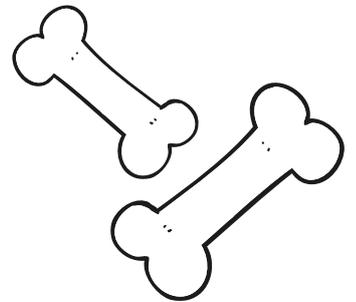
Allowing reptiles to see the full range of colours and light that they naturally see in the wild reduces stress, promotes proper feeding, encourages normal activity levels including breeding and socialising, stimulates foraging for food and makes them generally more comfortable. For comparison, imagine being kept in an environment where you could not see red or purple - it would be quite uncomfortable!

UVA light lamps are often called “Day Lights” because they simulate the visible light of the sun during the day. If there is sufficient natural light in your reptile’s enclosure so that your reptile can enjoy when the sun is out, then “Day Lights” are only required for diurnal species.

Basking lights are special UVA daytime lights with a focused beam that allows an area to be set up for a reptile to bask in.

### **How do I get UVB light for my reptile and why is it so important?**

Reptiles require Vitamin D3 in their system to synthesise [healthy calcium levels](#) to maintain bones, growth and egg production. Without Vitamin D3, your reptile can be susceptible to deadly Metabolic Bones Disease, blindness, mouth rot and other illnesses. For many reptiles, UVB light is the main way that Vitamin D3 is produced. For others, they may be able to get sufficient Vitamin D3 through other ways such as food. Therefore, providing UVB light is critical for many reptiles to stay healthy and thrive.



### **What is the right UVB level for my reptile?**

UVB light comes in two strengths:

**5.0 UVB** nocturnal and rainforest lizards and snakes, frogs, pythons, snakes, blue tongue lizards, water dragons, geckos, etc

**10.0 UVB** diurnal desert lizards such as bearded dragons, goannas, monitors, etc

There are mixed views among reptile enthusiasts on which reptiles require UVB through lighting and which can get sufficient Vitamin D3 through their diets.



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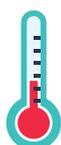
The reptiles listed in the table below include reptiles that definitely require UVB lamps in captivity, and those that may not.

It's important to note there is no harm providing all reptiles with a UVB light, so if you are unsure it is suggested that you do provide UVB lighting.

A reptile who is reluctant to eat may be stimulated to eat with exposure to both UVA and UVB light during daylight hours, spanning over a week or so.



Reptiles That Require UVB Light	Reptiles That May Not Require UVB Light
Bearded Dragons	Carpet Pythons
Blue Tongue Skinks	Green Tree Pythons
Goannas	Geckos
Long Necked Turtle	Snakes
Short Necked Turtle	
Other Diurnal Lizards	
Other Desert Dwelling Lizards	



### 8. Reptile Heating Lamps

A heating lamp is operating correctly when it is able to maintain the temperature in a reptile tank within the ideal temperature range of the reptile species. There are several types of reptile heaters:

- **UVA Light Globe:** in many warmer areas, UVA or daylight doubles up to provide sufficient heat for your reptile, but in many cases, a dedicated reptile heating lamp will be required. The higher the globe wattage, the more heat that will be emitted.
- **Ceramic Heat Lamp:** the most efficient heat lamp is a ceramic heat lamp since no light is emitted, meaning that most of the lamp energy is converted to heat through infrared light. They can also be used at night without disturbing anyone's sleep because there are no visible UVA light rays. Ceramic heat lamps also last much longer than a day light, meaning that they are more cost-effective.
- **Infrared Heat Bulb or "Night Lamps":** infrared globes are popular lights for heating lizards. These globes give off infrared light that is a soft light for humans, but not visible to Australian lizards, so it can be a good option for night use and where a lizard is brooding its eggs or recovering from injury or illness.
- **Halogen lamps:** halogen lights tend to have a much longer life than tungsten filament globes and are more energy efficient.
- **Heating Pad:** reptile heating mats are generally put under the reptile enclosure to warm the terrarium rocks and substrate. Modern research has shown that overhead radiant heat source is strongly preferred and beneficial to reptiles. Heat lights provide measurable ambient heat and also offer a more natural day and night cycle than heating pads for your pet. Therefore, even if heating pads are used, it is recommended that lamps are also utilised.



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Always be aware that heat can dry out the air in a reptile's home which can have severe health consequences, so it is important to regularly monitor and manage the humidity within the enclosure.



#### Other helpful tips for lighting and heating for Australian reptiles:

- UVA, UVB lights and heating lamps should be placed together at one end of the enclosure illuminating the same reptile basking area. The bright white of UVA light will attract the reptile to the warmest area so it can then bask also in the UVB light and heat lamps.
- Develop a day time basking spot to allow the reptile's entire body to be heated. Ensure the basking spot is not too narrow as there is danger in creating a basking spot that is too narrow in focus, causing a small part of your pet to overheat while not warming it's whole body. This can lead to serious burns.
- Ensure lamps are placed on a wire mesh surface as glass, wood, etc, as this will make the lamps ineffective.
- Place lamps directly above reptile enclosures as odd angles can damage your reptile's eyes.
- Provide shade options for your pet reptile so that they can hide from the light when desired.
- Use at least two thermometers to set up and monitor the optimum reptile heating. One in the hottest spot under the basking spot and one at the cool end of the enclosure.
- You can have two separate heat lamps: a day-time globe and a night-time lamp both running for 12 hours per day (using timers), simulating a natural day and night cycle. Reptiles need distinct day and night to maintain their circadian rhythms.
- UVA and UVB globes should be replaced every 6 to 12 months as they emit less light over time.
- Heat lamps with a ceramic socket are safer than those with plastic sockets. Due to the heat output, the plastic sockets might melt. Ceramic should always be used.
- Using a thermostat that operates the heat lamp only when the temperature is below the desired temperature is recommended to ensure temperatures are maintained automatically.
- Ensure that your reptile cannot get too close or touch the lamp, as serious burns can result. If the lamp is inside the reptile terrarium then a protective reptile lamp anti-scald screen cover will be required.

The following table describes the best temperatures for various pet reptiles. It is recommended that you allow temperatures to drop overnight so that they approach the minimum night time temperature (but not below). This simulates the natural environment and is believed to have health benefits for your pet.

Table 2: Reptile Species Temperature Guide (overleaf)

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Reptile Species	Day Time Basking Spot Temperature Range (°C)	Day Time Cool End Temperature Range (°C)	Minimum Night Time Temperature (°C)	Relative Humidity (%)
Bearded Dragon	35-40	24-26	18	35-40%
Carpet Python	30-34	22-26	21	50%
Blue Tongue Lizard	30-35	24-26	18	35-70%
Water Dragon	35-40	24-26	18	80%
Forest Dragon	26-30	22-24	18	80-90%
Children's Python	28-32	22-26	21	10-30%
Green Tree Python	28-30	22-24	26	40-70%
Turtle	28-32	22-26	18	100%
Barking/Thick-Tailed Gecko	26-28	18-20	16	50%
Knob Tailed Gecko	29-32	19-24	17	10-30%
Leaf-tail Gecko	26-27	18-20	16	50%+
Velvet Gecko	29-32	19-24	17	10-30%
Spiny-tail Gecko	29-32	19-24	17	10-30%

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