Turtles will benefit from being able to bask and obtain UV light under a mercury vapour source.

Metal halide

The use of metal halides is a relatively new development with regards to reptiles. These lamps require a separate ballast to ignite them, and this can put people off as the initial cost is therefore quite high. Having said that, the test results from some of these lamps are very impressive. They do not seem to have as much of a heating capability or UV output as self ballasted mercury vapour lamps but they have an improved amount of visible light.

Metal halide lamps in my experience create a natural sunlight colour and should be used alongside standard strip or compact UV lighting, ideally in the morning and evening to create a more gentle colour. These lamps provide light similar to midday sunlight. They would be great if you had a very large enclosure with a significant distance between the lamp and basking spot, although again, the levels of UV will decrease moving further away from the lamp source. Plus you will need to ensure that secondary UV lamps are being used. I expect that metal halide lighting will become more affordable and better designed to incorporate into vivaria before long, because it has various advantages.

Halogen heat spots

Halogen heat spots produced for use with reptiles are high quality, tough lamps providing a good heat spot within a tight beam, but their output does not incorporate any UV component. UV lighting must therefore be supplied separately. These lamps, starting at 50 watts, must be used with a reliable thermostat and even inside a protective cage, they will get extremely hot. They can have quite a long lifespan but I would advise changing them once a year to keep the manufacturer's desired colour. All lamps degrade over time; this affects the manufactured colour of the lamp just as much as the UV output of UV lamps.

Beware!

I have also seen kitchen-type halogen bulbs being fitted in vivariums. In my view, these lamps project light in a far too tight a beam and cannot be used properly in most cases. It is better to match the hot spot to the size of the animal.

Beware, too, of a heat light dispersal fitting that dissipates heat into a vivarium. In my experience, this is totally wrong when what you are striving to create is a thermal gradient rather than a constant temperature across the vivarium.

Halogen bulbs.

LED bulbs

LEDs – meaning 'light-emitting diodes' – may be the way of the future, although at present, there is not a commercially-available UV-emitting LED on the market. I understand it would be possible to make a LED that had UVA in its composition in the future. Just imagine how amazing that would be! It will enable us to light nocturnal animals and snake draws with ultra low voltage UVA lighting.

With regards to moon lighting, there is already a fantastic LED solution available. Classica make a range of LEDs in differing colours, including blue. These low voltage water proof lamps have a cluster of six LEDs in a waterproof housing. They are run on USB technology and a power converter can be bought with the lamps. The lamps are bright enough to be view your animals without disturbing them. One or two in an 61 x 46 x 46cm (24 x 18 x 18in) vivarium are usually enough for this purpose.

These particular LED lamps have no red in their colour output and emit no heat at all, totally avoiding this problem and ensuring they are cold to touch. These lamps produce light that is very close to true moonlight, so in theory, this would enable you to view your animals without interfering with the night time cycle. You could use one blue and one white lamp hidden behind plants or rocks to recreate low lighting conditions. It would also be great to link them up to a simulator to recreate the phases of the moon, and see how this impacted on the animals' behaviour.

There is also a range of other colours such as green and red LEDS, plus a colour changeable fitting. I have seen these used in planted vivaria for decorative purposes and think they look great in the daytime and evening, although I would not use these coloured lamps at night.

"LEDs – meaning 'light-emitting diodes' – may be the way of the future, although at present, there is not a commercially-available UV-emitting LED on the market."

Colour gradient lighting

If you think about it, the colour of sunlight differs, depending on environmental conditions. Again, I try to think what the colour and intensity of light would be in my animals's country of origin and aim to match it in their enclosures. This can be achieved by mixing lamps. It is very easy to find double fluorescent lamp controllers on the shelves of most retailers so you can use two lamps at once. I have recently helped with an amphibian exhibit at a famous zoo. We illuminated the area using a combination of a reptile lamp and a plant growth lamp, which improves the way you see the colours of animals. This has been a great success so far. The plants are doing well and the dart frogs are thriving, in the presence of a gentle basking spot lamp, with the natural colours of both plants and animals standing out clearly. ■

"We illuminated the area using a combination of a reptile lamp and a plant growth lamp, which improves the way you see the colours of animals. This has been a great success so far."

Mixed lighting can suit both dart frogs and plants.