

SOLARMETER™

MODEL 6.5R

Reptile UV Index Meter • 0-199.9 UV Index

Handheld Digital UV Index Radiometer
with Integral Sensor



APPLICATIONS

- Measures UV Irradiance In The Wavelengths That Enable Vitamin D3 Synthesis in Reptiles
- Monitors Instantaneous UV Index
- Allows UV Index Tracking Over Time



ENVIRONMENT



PUBLIC HEALTH



OUTDOOR
ACTIVITIES



REPTILES / PETS

FEATURES AND BENEFITS

- Spectral Response Erythemally Weighted to Match Vitamin-D Action Spectrum in Reptiles
- Ferguson Zone Chart On Meter Front Panel For Easy Reference
- Compact, Handheld, and Durable
- Simple Single-Button Operation
- NIST Traceable Accuracy
- LCD Display
- Made In USA

SENSOR

Solarmeter's Model 6.5R Reptile UV Index Meter is relied on by many scientists and breeders worldwide. The meter is easy for reptile owners to use thanks to the graphics on both the front and back. These graphics match the latest scientific research about proper UV dosages for reptiles. Specifically, the Ferguson Zone chart at the top of the meter provides the user with an instant, accurate reference for the meter's UVI readout.

METER OPERATION

To operate your Solarmeter, aim the sensor window located on the top panel of the meter directly at a UV source. Press and hold the push-button switch on the face of the meter. For best results take note of the distance the reading was taken from the UV source in order to ensure repeatable results.

Battery operation voltage is viable from 9V down to 6.5V. Below 6.5V, the numbers on the LCD display will begin to dim, indicating the need for battery replacement. Under typical service load, a standard 9V battery will last approximately 2 years.

PROPER USAGE OF SOLARMETER™ ULTRAVIOLET RADIOMETER

- Wear eye protection when checking UV lamps (Glasses that provide wrap around protection are ideal).
- Allow lamps to warm up prior to taking readings (at least 15 minutes).

100 East Glenside Avenue
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SolarMeter.com

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ISO 9001
2015



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SOLARMETER MODEL 6.5R UVI READOUT

FERGUSON ZONE	SPECIES INCLUDE		SUGGESTED UVB
Zone 1: Crepuscular or Shade Dweller, Thermal Conformer	<ul style="list-style-type: none"> Crested Gecko Leopard Gecko Tokay Gecko Burmese Python 	<ul style="list-style-type: none"> Green Tree Python Milk Snake Reticulated Python 	Shade Method: Gradient UVI 0-0.7
Intermediate Between Zones 1 & 2	<ul style="list-style-type: none"> Fiji Branded Iguana Corn Snake Carpet Python 		Shade Method: Gradient UVI 0-0.7
Zone 2: Partial Sun / Occasional Basker, Thermoregulator	<ul style="list-style-type: none"> Australian Water Dragon Emerald Tree Monitor Green Anole Monkey-Tailed Skink Pygmy Chameleon Ornate Box Turtle 	<ul style="list-style-type: none"> Red Foot Tortoise Boa Constrictor Red-Tailed Ratsnake Garter Snake Western Hognose Snake 	Shade Method: Gradient UVI 0-1.0 <i>or</i> Sunbeam Method: UVI Maximum 1.1-3.0 in Basking Zone
Intermediate Between Zones 2 & 3	<ul style="list-style-type: none"> Blue-Tongued Skink Chinese Water Dragon 	<ul style="list-style-type: none"> Panther Chameleon Common Musk Turtle 	Sunbeam Method: UVI Maximum 1.1-3.0 in Basking Zone
Zone 3: Open or Partial Sun Basker, Thermoregulator	<ul style="list-style-type: none"> Black-and-White Tegu Frilled Lizard Standing's Day Gecko Yemen Chameleon 	<ul style="list-style-type: none"> Indian Star Tortoise Leopard Tortoise Spotted Turtle Diamond Python 	Sunbeam Method: UVI Maximum 2.9-7.4 in Basking Zone
Intermediate Between Zones 3 & 4	<ul style="list-style-type: none"> Bearded Dragon Bosc or Savannah Monitor Green Iguana 	<ul style="list-style-type: none"> Painted Turtle Red Eared Slider Sulcata or African Spurred Tortoise 	Sunbeam Method: UVI Maximum 2.9-7.4 in Basking Zone
Zone 4: Mid-Day Sun Basker, Thermoregulator	<ul style="list-style-type: none"> Chuckwalla Uromastyx 	<ul style="list-style-type: none"> Rhinoceros Iguana Texas Horned Lizard 	Sunbeam Method: UVI Maximum 4.5-8.0 in Basking Zone

The above chart is an abbreviated version from the January 2016 Journal of Zoo and Aquarium Research, "How much UV-B does my reptile need? The UV-Tool, a guide to the selection of UV lighting for reptiles and amphibians in captivity" by Frances Baines, Joe Chattell, James Dale, Dan Garrick, Iri Gill, Matt Goetz, Tim Skelton, and Matt Swatman.

Note: Data is shown in two basic sets of values with two ways of providing UV: "Shade Method" for Zones 1 and 2, the shade-dwelling species. (These are given low-level UVB across a wide area of the vivarium with a gradient to zero in deep shade, as they don't generally bask in bright hot patches of sunlight). "Sunbeam Method" is for Zones 3 and 4, which are species that bask in sunlight. (These are given higher UVB, but limited to the basking zone in a much smaller part of the vivarium, like "a patch of sunlight" under a lamp. Vivarium should still have a gradient to zero in deep shade).

REFERENCES

An In-Depth Look At UV Light And Its Proper Use With Reptiles by Dr. Frances M. Baines - Reptiles Magazine January / February 2017

How Much UV-B Does my Reptile Need? The UV-Tool - A Guide to the Selection of UV Lighting for Reptiles and Amphibians In Captivity - Journal of Zoo and Aquarium Research 4(1): 42 - 63 (2016)

Reptile Lighting Information by Dr. Frances M. Baines - Reptiles Magazine 2009

Meeting Ultraviolet B Radiation Requirements of Amphibians in Captivity: A Case Study with Mountain Chicken Frogs (Leptodactylus Fallax) and General Recommendations for Pre-Release Health Screening - Zoo Biology 34: 46-52 (2015)

Voluntary Exposure of Some Western-Hemisphere Snake and Lizard Species to Ultraviolet-B Radiation in the Field: How Much Ultraviolet-B Should a Lizard or Snake Receive in Captivity? Zoo Biology 29 : 317-334 (2010)

A Comparison of UVB Compact Lamps in Enabling Cutaneous Vitamin D Synthesis in Growing Bearded Dragons - Journal of Animal Physiology and Animal Nutrition 2017 (Apr 27)

Reptile Lighting is a Process Not a Bulb, Exotic: A Practical Resource For Clinicians, Exotic DVM 9(3): 29-36 (2007)

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CARE AND MAINTENANCE

- Do not subject the meter to extremes in temperature, humidity, shock or dust. If accidentally exposed to extreme humidity or damp conditions, abnormally high readings may occur. Allowing the meter to dry out naturally or placing it in a bag with silica gel will restore normal function.
- Use a very soft cloth to clean the instrument. Keep sensor free of oil, dirt, etc.

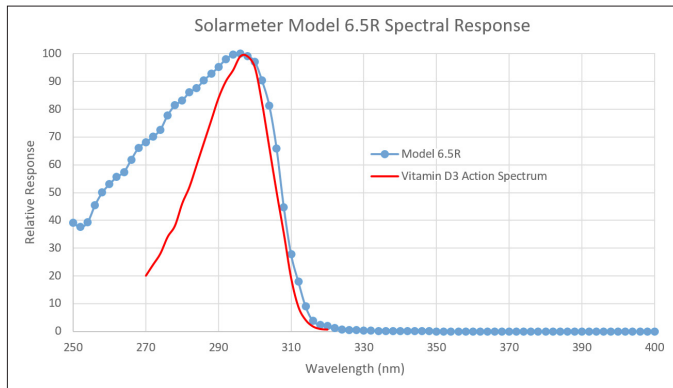


Fig. 1. Model 6.5R Spectral Response (Linear)

WHAT IS A FERGUSON ZONE?

Using the original Solarmeter® Model 6.5 UV Index Meter, a team of herpetologists led by Professor Gary Ferguson of Texas Christian University published research in 2010, which summarized the daily UV exposure of 15 species of reptiles that were studied in the wild. These species were grouped into four zones, aka "Ferguson Zones," according to their daily sun exposure requirements. In 2012, the British and Irish Association of Zoos and Aquaria (BIAZA) built on Ferguson's research to produce a document allocating Ferguson Zones to 254 species of reptiles and amphibians. You can download this report here. Today, ongoing research continues to apply Ferguson Zones to even more species.

WHICH METER DO I NEED FOR MY REPTILE - MODEL 6.5R REPTILE UV INDEX METER OR THE MODEL 6.2R REPTILE UVB LAMP METER?

Ideally, reptile keepers will want both meters. Because the Model 6.5R Reptile UV Index Meter's erythemally weighted action spectrum is extremely close to the action spectrum for vitamin D3 synthesis, it is the ideal tool to determine proper UV dose for your reptile, per the appropriate Ferguson Zone for the species. In fact, the 6.5R's readings can function as a proxy for the vitamin D3-producing ability of the habitat's light source. Meanwhile, the Model 6.2R Reptile UVB Lamp Meter determines if UVB lamps are performing to manufacturer's specifications, gauges intensity, and measures aging over time. So, in short, use the Model 6.5R to determine proper UV dose for the animal, and use the Model 6.2R to determine UVB lamp output.

SPECIFICATIONS

MODEL	6.5R
IRRADIATION RANGE	0-199.9 UV Index
RESPONSE	280-400 nm Diffey Erythematol Action Spectrum <i>(Closely matches Vitamin-D Action Spectrum)</i>
RESOLUTION	0.1 UV Index
CONVERSION RATE	3.0 Readings / Sec
DISPLAY	3.5 Digit LCD
DIGIT SIZE	0.4" / 10.2 mm
OPERATIONAL TEMPERATURE	32°F to 100°F / 0°C to 37.8°C
OPERATIONAL HUMIDITY	5% to 80% RH
ACCURACY	±10% Ref. NIST
METER DIMENSIONS	4.2L x 2.4W x 0.9D in / 106.7L x 61W x 22.9D mm
WEIGHT	4.5 oz / 128g Including Battery
POWER SOURCE	9-Volt DC Battery
LENS	UV Glass
DIFFUSER	Teflon
AGENCY APPROVAL	CE Mark

REV A | MODEL 6.5R | Apr 2020
Specifications subject to change without notice.

SOLARMETER™ by Solar Light Company Inc. is the industry standard for UV and visible light radiometers that measure both indoor and outdoor light sources. Our NIST Traceable meters are used to monitor lamp irradiance and aging for UV sterilization, reptile husbandry, indoor tanning, red/blue light phototherapy, UV curing and UV Index.

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