

Radiant Heat Panels (RHP) in Reptile Enclosures

Short summary (not a substitute for skipping guide):

RHPs are great for steady ambient heat (especially at night/winter) in PVC-style enclosures. Choose wattage based on your coldest room temperature (many calculators assume ~72-75F+). If your room drops into the mid-60s in winter, size up - oversizing is usually fine because the thermostat limits output. Footprint matters: a smaller panel can leave more roof space for UVB/LED/halogen/sky hides and helps maintain a real cool-side gradient. Always run an RHP on a thermostat (I prefer herpstat thermostats). Solid-top PVC: screw into the ceiling. Mesh-top: mounting strips, a plywood backer, or bolt-through with washers/nuts, then cover mesh with a topper to retain heat/humidity.

1) What an RHP is

An RHP is a ceiling-mounted radiant heater that provides broad, non-lighted IR-C heat. It is excellent for maintaining warm-side ambient temps and for winter/night support when room temperatures fall. A RHP takes the place of a DHP or CHE in your basking heating setup. It must be ran on a thermostat for safety.

2) The three common brands

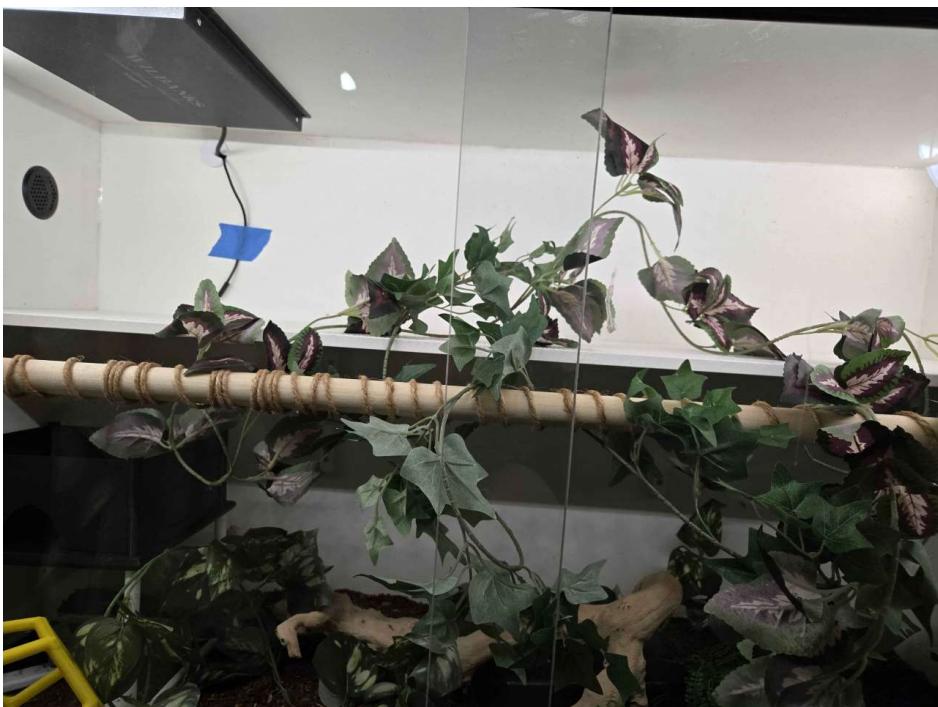
- **VE / Reptile Basics:** Typically the most budget-friendly; however considerably physically larger for the wattage. Ordered directly from the reptile basics website. Their panel size recommendation is listed on their radiant heat panel FAQ page. **80W panel pictured in 4x2x2 thanks to Sco.**



- **Pro Products (Pro Heat):** Mid-size footprints. Must be ordered by emailing/calling to get the correct size/wattage. Preferred over VE/reptile basic panels. **100W Panel pictured in 4x2x2 thanks to Sco.**



- **Reptirad / Wilbanks:** Compact footprints for the wattage (good when roof space + gradients matter). Best prices are found from blackboxcages unless cornelworld in canada starts shipping to the US again when tariffs are sorted. Can be ordered in the UK as well where they are based. This is my preferred choice. Wilbanks website has a size calculator on their panel page. Wilbanks(dubia panels now as well) are just rebranded reptirads so they are interchangeable. **80W Panel pictured in a 4x2x2 thanks to Sco.**



3) Choosing wattage: the variable that matters most is your room temperature

Enclosure size matters, but the make-or-break variable is usually the coldest ambient room temperature. If your room drops from the 70s to the mid-60s/low-60s in winter, a panel that is 'correct on paper' may underperform.

Because an RHP must be thermostated, sizing up is generally low risk: the thermostat simply runs it at a lower output most of the time. The upside is extra headroom during cold snaps.

Quick sizing example (starting point) — 4x2x2 / 48x24 enclosure

Cold room temp ~70–72F+: an ~80W panel is often enough for night/ambient support in a PVC enclosure.

Cold room temp ~66–69F (or high ventilation / screen tops): plan on roughly ~100–125W.

Cold room temp ≤65F: consider ~100-125W, especially if you want headroom during winter cold snaps. May be able to get away with 80-100w if you are using a thick solid PVC enclosure.

Sizing up is usually low-risk as long as you use a thermostat (preferably a herpstat) — the panel just runs at lower output most of the time.

What I ask before recommending a panel:

- Enclosure interior dimensions and top type (solid vs mesh)
- Coldest room temp in winter
- Ventilation level (screen tops and large vents lose heat faster)
- What must fit on the roof (UVB, LEDs, sky hide, basking lamp)

4) Footprint matters: roof 'real estate' and heat gradient

Two panels can be similar wattage but very different in physical size. That matters for:

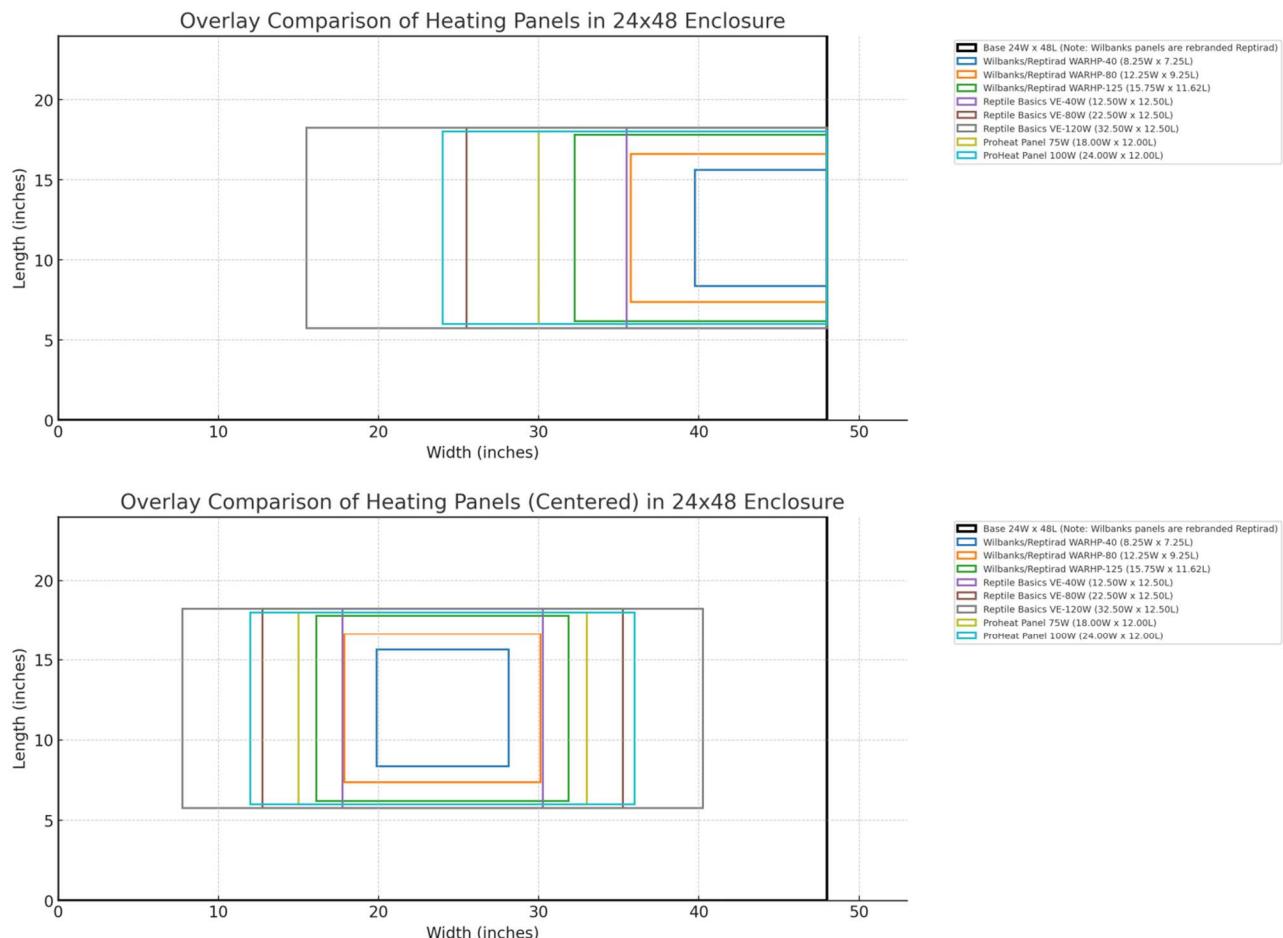
- 1) Roof real estate: space for UVB/LEDs/halogen, hides, cable routing.
- 2) Gradient: the more ceiling you heat (i.e larger panel and higher wattage), the harder it is to keep a true cool side.

Example panel footprints from my overlay chart (inches):

| Panel | Footprint (W x L) | Planning note |
|-----------------------------|-------------------|---|
| Reptile Basics VE-120W | 32.50 x 12.50 | Large; can cover a big portion of a 4x2 roof. |
| Reptile Basics VE-80W | 22.50 x 12.50 | Mid footprint. |
| Reptirad/Wilbanks WARHP-125 | 15.75 x 11.62 | High output in a much smaller package. |
| Reptirad/Wilbanks WARHP-80 | 12.25 x 9.25 | Compact. |

| | | |
|--------------|---------------|---|
| ProHeat 100W | 24.00 x 12.00 | Longer footprint; still smaller than VE-120W. |
| ProHeat 75W | 18.00 x 12.00 | Mid footprint. |

Figure 1: footprint overlay in a 24 x 48 inch roof area (4 x 2 enclosure)



Use this to visualize how much roof space different panels consume, and how that can affect gradient + room for lighting/hides.

5) Thermostat control: required

An RHP should always be run on a thermostat. Do not plug an RHP directly into the wall. **You will harm your animal or possibly kill it if you do not use a thermostat. The best/safest/reliable thermostat on the market is the herpstat brand.**

Control types you will see:

- **On/off:** Cycles full power on and off. Works, but tends to create bigger swings and more noticeable cycling.
- **pulse:** Rapid cycles to approximate partial power. Preferable over on/off thermostat.

- **dimming:** Smoothly reduces power to maintain a stable temperature.

Probe placement matters. I generally want the probe secured so it cannot be moved by the animal or you risk overheating due to improper readings. Always verify with independent tools (reliable thermometer&IR temp gun) after installation.

6) Mounting options (solid top vs mesh top)

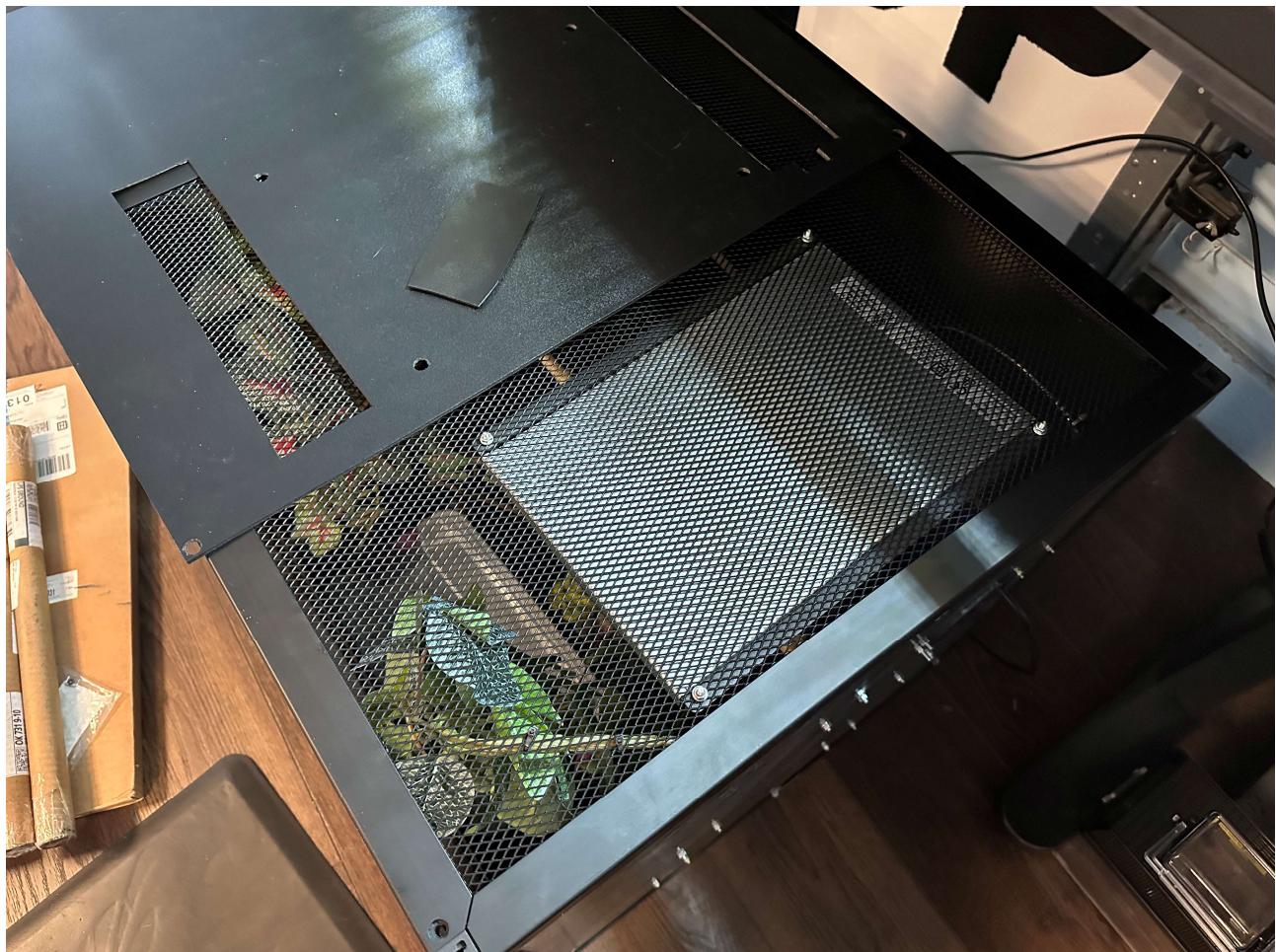
Solid-top PVC: panels typically screw directly into the enclosure ceiling at the manufacturer mounting points.

Mesh-top options (pick the one that matches your enclosure and panel):

- A) Mounting strips (often sold for some panels like VE/reptile basics)
- B) Plywood backer on top of the mesh, then screw into the plywood
- C) Bolt-through the mesh using washers/nuts (works especially well if the panel has a flat mounting flange like Reptirad/Wilbanks.)

After mounting on mesh, I often cover the mesh area with a thin PVC topper to reduce heat loss and help humidity retention. You could use wood etc.

example mesh-top mounting + topper approach (reptirad on dubia enclosure)



Mesh-top enclosure with an reptirad RHP(panels all mount differently, check with manufacturer reptile basic sells mounting brackets for mesh tops) mounted beneath the mesh and a solid topper panel used to retain heat/humidity.



7) Common mistakes (easy to avoid)

- Picking wattage from a calculator without considering the coldest room temp as most rely on a set ~72-75F figure to do calculations.
- Choosing an oversized footprint that eliminates the cool-side gradient (an issue more with VE/reptile basic panels).
- Running without a thermostat.
- Leaving the panel unsecured on mesh or using hardware without washers/backing support.
- Not re-checking temps after 24-48 hours once the enclosure, substrate, and decor settle and heatsoak.

8) A simple decision making guide to picking your panel. When in doubt ask.

1. Measure the roof space you can dedicate to the panel (after UVB/LED/halogen/sky hides).
2. Confirm the coldest room temp you expect in winter.

- Pick a panel brand/footprint that fits and still allows a proper gradient.
- Choose wattage with winter ambient in mind; when in doubt, size up and let a dimming thermostat do the work.
- Mount securely (especially on mesh), place the probe correctly, then validate temps with independent tools.

If you want tag me in discord @kawaiibeats , send me: enclosure size/type(required), room winter low ambient(required), species, and what must fit on the roof, and I can usually narrow it down to 1-2 good panel options.

Note: It's very important to make sure your cord is properly secured to where you snake has ZERO room to climb on it/through it and get stuck on the panel. Blackboxcages also sells a cord protector that goes against the panel where the cord inserts into it to provide extra protection – especially useful for smaller snakes that could get stuck in that gap.

Home / Accessories / BlackBox Cord Protector for Radiant Heat Panels



BlackBox Cord Protector for Radiant Heat Panels

★★★★★ (13)

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Color Family: Black

Length (ft.) x Width (ft.): **2 ft. x 4 ft.**

1 ft. x 1 ft. 1 ft. x 2 ft. 2 ft. x 2 ft. **2 ft. x 4 ft.** 1.5 ft. x 2 ft.

Product Thickness (in.): **1/8**

1/8 **1/4**

125W reptirad/Wilbanks/dubia next to 80w on a 4x2 for size comparison.

