

WHY LED?

There has been much development with LED for use with moth traps over the past few years. We here at ALS started looking at LED to attract insects as long ago as 12 years but at that point, while high quality LEDs generating visible light have been around for over a decade, it was only in the last few years that efficient and powerful LEDs generating the desired wavelengths of UVA have become available.

Since then LED has come a long way and units can be found that does give off this important ultra violet spectrum. In 2017 we invested over £1200.00 into LED equipment from the US, China, Germany and the UK. Testing has been carried out by ourselves, Chris Williams and Dave Grundy, in the UK, Europe and North America, and [as a result], in 2019 we started to sell the most versatile and robust of the units tested.

At first, I was quite sceptical wondering what advantages 12 volt battery powered LED moth traps may have over the traditional actinic light moth traps.

My first question was how the catch rate of LED traps would compare to those using a single 15W actinic.

After initial trials with various UV LED sources, one design was selected for long-term testing. Tests were carried out over a two year trial period comparing 2x 2W LEDs to a single 15W actinic in both Heath and Skinner moth traps in various habitats, and results showed that both light sources performed similarly, some nights the LED would catch more than actinic, others the actinic would outperform the LED, other nights, results were almost identical. Testing of both light sources were conducted on the same night in the same habitat. See graphs below for comparisons to 15W actinic light.

My second question was what the power consumption of a viable LED trap would be, compared with an actinic.

Running a 15W actinic from a 14Ah lithium battery would give a runtime of eight hours, or twelve hours with a 22Ah lithium battery. Powering 2x 2W LED units, a 4Ah lithium battery would run for nine hours (not enough for all night out of the high summer months) and eighteen hours with an 8Ah lithium battery.

This will mean that for the first time, moth traps with batteries that would last all night can be taken on airplanes*. The legal limit for batteries is set at 8Ah. I now use only LED moth traps for overseas travel and in many cases where remote locations are an issue, I carry two LED moth traps with two 8Ah lithium batteries in a single day rucksack. No control boxes are required meaning the load is lighter too!

Looking at pricings, a 15W 12 volt Heath Trap with a 22Ah lithium battery would cost nearly £450.00 but the LED Heath Trap with 8Ah lithium battery would only cost £390.00 and would give a similar catch and can be transported by air travel. Looking at other costings, if the recorder is wanting to set up with 125W MV moth traps where generators are needed, the cost of a Honda EU10, moth trap and cable, all of which are heavier and need several journeys to 'set up' plus a nights fuel is required, then just over £1,000.00 would be required. This became quite an eye opener for me!

****Please note: Always check with your airline company before flying as some may differ.***

Jon Clifton
Anglian Lepidopterist Supplies

Many thanks to Chris Williams and Dave Grundy for helping test LED over the past few years.

