

The Blacklight Zoom Torch

*Makes UV paints glow in the dark, checks
banknotes, detects amber, and much more.*



AstroMedia 

Hands-on Science Series

Please read these instructions before using the Blacklight Zoom Torch for the first time:

- 1. To operate the torch you need a standard AA size battery. Unscrew the back of the lamp, slide the battery in with the positive pole first, and screw the cover back on. With the cover fitted, the torch is splash-proof.*
- 2. The torch is switched on and off with the red rubber button on the back.*
- 3. To adjust the zoom, slide the movable front back and forth.*

Important: Please also note the safety instructions on the back.



What is blacklight?

Visible light contains a wide range of colours, as can be demonstrated with a prism: it produces a spectrum that starts with red and then runs through orange, yellow, green, and blue to violet. However, below the red and beyond the violet there are “colours” or radiations that are invisible to the human eye: the infrared (or IR, from Latin *infra* “below”) and the ultraviolet (or UV, from Latin *ultra* “beyond”). For many insects and other animals, these are visible.

Blacklight is the area of UV radiation that borders directly on violet, also known as UV-A. Man-made blacklight often contains some bluish violet as well, as in this lamp.

What are the special properties of blacklight?

Blacklight itself is invisible to humans, but it can cause numerous substances that initially appear inconspicuous to emit a visible glow. This process is called **fluorescence**. In addition to many minerals, plants, and animals, some chemical substances also show fluorescence, e.g. the optical brighteners in detergents or the signal colours on warning signs or hazard warnings.

Where can you use blacklight?

- Banknotes have invisible security markings that can only be seen under UV light. This blacklight torch can therefore also be used as a bank note checker.
- AstroMedia's Large Star Dome uses the same invisible paint. As a result, the stars and constellations magically light up under blacklight, like in a planetarium. Thanks to the zoom function, the entire dome can be illuminated or a single constellation can be highlighted.
- There are also felt-tip pens with this invisible ink. This allows you to compose secret messages that can only be read under blacklight.
- Blacklight elicits a magical glow from many minerals, including amber. This is why visitors to the Baltic Sea will find it particularly easy to find pieces of amber with the help of a blacklight lamp when they go for a walk on the beach at night.
- Blacklight makes some insects visible, e.g. the scorpions widespread in southern countries.

Safety instructions:

- The LED of this torch emits blacklight, a mixture of blue and UV-A light, which is also part of sunlight and is used in clubs and bars for decorative purposes. Proper use within the scope of the purposes stated in these instructions is harmless. However, the Blacklight Zoom Torch is not a toy. Children should only use it under adult supervision.
- **Caution!** Never look directly into a lit blacklight LED, nor point it at anyone's face, especially not with a high-focus zoom.
- **Battery:** Requires 1 x 1.5V AA battery. Battery not included. Only insert the battery with the positive pole first. Remove the battery when not in use for a long time.
- **Disposal:** By law, the product must be disposed of at a collection point for waste electrical equipment in order to ensure environmentally friendly disposal and recycling. Waste electrical and electronic equipment must not be disposed of together with unsorted household waste. Such devices can contain dangerous and environmentally hazardous substances. Disposal with the household waste is prohibited. If the device contains batteries that are not permanently installed, these must be removed prior to disposal and disposed of separately in accordance with the statutory provisions. Places that sell new batteries usually accept used ones for recycling as well. You thereby contribute to the protection of resources and the environment. More information about waste disposal and recycling is available from your municipal administration.



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**Blacklight magically illuminates the
constellations in the Large AstroMedia Star Dome**

