

# INFRARED LED ARRAY

## FOR ETHOVISION AND THE OBSERVER

Animals which are only nocturnally active (whether in their natural habitat or in the laboratory) or which live in dens provide a specific problem for the behavioral observer; namely providing adequate lighting for filming at the site or in the lab without influencing animals' behavior. This problem can be solved with the new Tracksys Infrared LED Array.

conditions can be coded and analyzed with The Observer software. Under laboratory conditions the array enables video tracking of animals with EthoVision in dim red light or complete darkness, for instance when studying circadian rhythms.

### TECHNICAL NOTES ABOUT VIDEO FILMING IN THE INFRARED (IR)

In order to make good quality films of nocturnal animals, the scene needs to be illuminated with near infrared (IR) and must be filmed with cameras sensitive to IR. Color video cameras are insensitive to IR and their use should be avoided. Standard monochrome CCC video cameras have reasonable sensitivity to the near IR as long as they do not have an IR cut filter fitted, but have low/no sensitivity at 900-1000 nm. However, the more specialist frame transfer monochrome CCD cameras are especially sensitive in the IR, even as far as 1000 nm, and are the preferred (though more costly) option. If one is using the same set-up to film during the night as in the day it is advisable to use an IR pass filter on the lens, to stop any visible light entering the lens. This ensures that the images remain in focus throughout 24 hours, even when bright sunlight (or artificial daylight) is illuminating the scene.



Figure 1. The LED Array

This compact unit, packaged in a waterproof casing, contains a heat-sunk array of 90 infrared LEDs that generate only negligible visible light. This way the observer will have a good view of the animal, but not the other way around! The array can be automatically operated by a light sensitive switch, which activates the LEDs only when light conditions call for it.

The unit is especially suited for field work: running from a 12 V car battery it can illuminate up to 25 m distance. The Infrared LED Array can be used with practically any monochrome, IR-sensitive CCD camera. Video recordings made under these

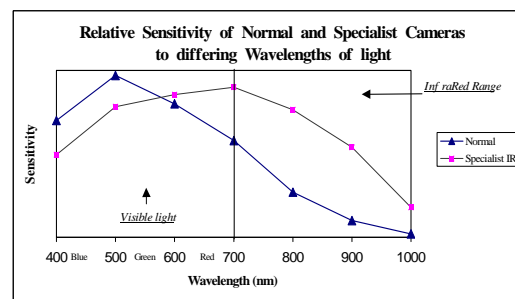


Figure 2. Relation between different camera types and illumination.

## Technical specifications

<b>Size</b>	139 x 80 x 53 mm
<b>Weight</b>	550 g
<b>Power source</b>	12V DC
<b>Power consumption</b>	3.6 - 1.5 W (0.3 - 1.2 A)
<b>Peak output</b>	880 nm
<b>Angle of view</b>	40
<b>Range</b>	5 - 25 m
<b>Other</b>	<ul style="list-style-type: none"><li>▪ Fused;</li><li>▪ Reverse polarity protected;</li><li>▪ ¼", 20 UNC, standard camera mount;</li><li>▪ Visible LED indicators for on/off (easy to obscure); and</li><li>▪ Built in twilight switch (jumper selectable, adjustable sensitivity).</li></ul>

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