

What Deer See

It is important to know what a deer or other animal sees when it approaches a highway with STRIETER-LITES installed, during the minute before they run across. As a vehicle approaches and drives by the crossing point, the STRIETER-LITES reflect the light from the headlights in sequence with the leading edge of the lights preceding the vehicle. Depending on the distance from the highway, a deer is likely to see the light from several reflectors simultaneously. Basically they see a row of lights that appear to be moving. Deer, as in all wildlife, are alerted by any movement around them, especially while in motion. In approaching these unnatural moving light patterns deer have been observed to either retreat or wait to cross until the lights cease.

The information in this document reports on two sets of photographic measurements that were made from the vantage point of a deer coming toward the highway. The first set of photos shows the **effect of distance**.

The second set compares the light coming from **different colored reflectors** to help answer the question: Can deer actually see the light from red reflectors considering that they may not have red cones in their retina?

At various distances

Initially a red reflector was mounted and illuminated with white light as it would be by the headlights on an oncoming vehicle. A digital camera was positioned at various distances from 50 to 600 feet from the reflector in the location of an approaching deer. The experiment was repeated with a blue-green reflector and an amber reflector.

In all cases the reflectors were very easy to see and photograph. With the naked eye they were also easy to see even beyond 600 feet.



Fifty feet from a red reflector. The illuminating white light is on the left.

Viewing different colored reflectors

Research conducted by scientists indicates that deer cannot see red light because they do not have red cones in their retina. If this is true, it suggests that deer would not be able to see red deer warning reflectors. Yet, there is ample evidence that red reflectors are effective in warning deer of oncoming vehicles.

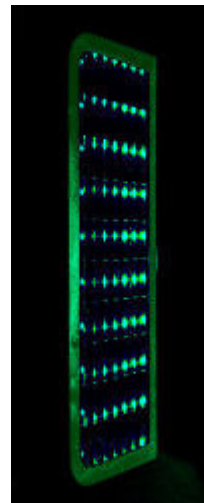
To determine exactly how the various colored reflectors look to deer, four STRIETER-LITE reflectors were illuminated with white light and photographed with a digital camera at a distance of two feet. The reflectors were made with plastic that is colored red, cyan (blue-green), amber and white.

To simulate what deer would see, each photograph was processed with a photo editing program to remove all of the red light. Instead of coming out black, the pictures are all blue-green. This indicates that the plastic of the red reflectors transmits this color light as well as red.

The results show that deer see all four types of reflectors - red, cyan, amber and white. The photos below are of the red reflector. The original photo is on the left and the one with the red light removed is on the right.



Human view



Deer view