

Answer #307

The answer is (g), as can be seen in an mpeg video by clicking your mouse on the photograph at the left below.



If you turn the projector around so that it creates its image on the white screen behind the projector, it will cast an inverted image of the object on the platform of the projector onto the screen: a green field on the left with a red field on the right, as seen in the photograph at the right above. In order to achieve this, the light exiting the lens to its right must be red, and the light exiting the lens to its left must be green. As the projector is rotated the camera, or an observer looking at the overhead projector lens, views this behavior.

This setup is a model of the "optically programmed traffic signal," a traffic light which makes use of a Fresnel lens in the front of the traffic light so that observation of the light is limited to the lane(s) of traffic being controlled by that light. Compared with the normal type of traffic signal, these are a bit less bright and appear to be less brilliant colors. Because the optics is aimed at a particular lane of traffic they must be very rigidly mounted, so that they do not swing or rotate under the influence of wind.

It was interesting for me to see these systems mounted hanging from wires and using other very loose suspensions, as well as pointing in the wrong direction so they could be seen from the wrong lane of traffic, and sometimes NOT from the correct lanes. This happened regularly in the area where I live, until the installers found out what they are and how they actually work, and realized that they had to be installed carefully!!

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