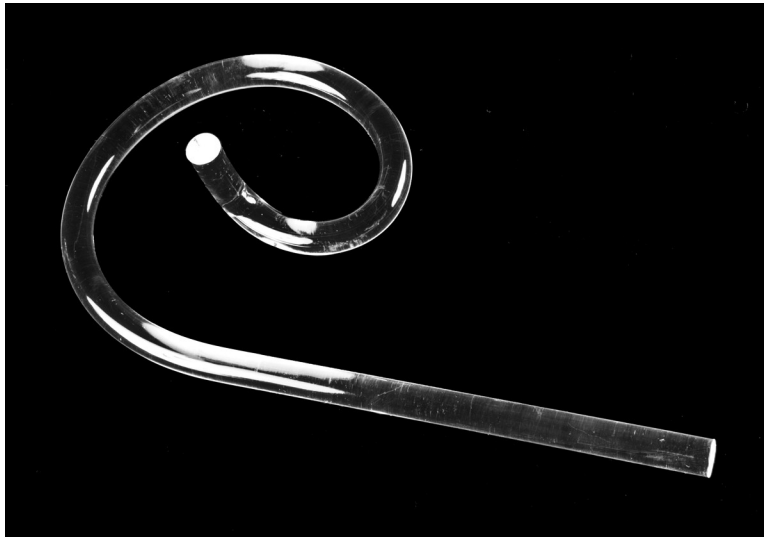




## **LUMIROD**

**LMRD01**



*Figure 1*

### **DESCRIPTION**

The Lumirod is used to demonstrate total internal reflection (TIR), the phenomenon on which optical fiber transmission is based. It consists of a 1/2-inch diameter clear acrylic rod, 24 inches long, that has been formed into the shape shown in *Figure 1*, and with the ends cut square and polished for optical clarity. Counter-intuitively, light rays aimed at one end of the rod do not exit the acrylic material at the first bend, but are transmitted inside the rod around bends in two different directions and emerge at the other cut end of the rod.

### **ACCESSORIES REQUIRED**

You will need a bright, directed light source. A small, high intensity flashlight, such as a penlight, or a laser pointer is suitable. If available, a laser pointer is preferred, because its narrow, parallel, bright beam makes the internal reflections easier to see.

### **ACTIVITIES**

The demonstrations should be performed in a darkened room. The path of the light beam inside the rod is visible from outside because some of the light is scattered sideways