

Exploratorium Cookbook I

A Construction Manual for Exploratorium Exhibits
Revised Edition

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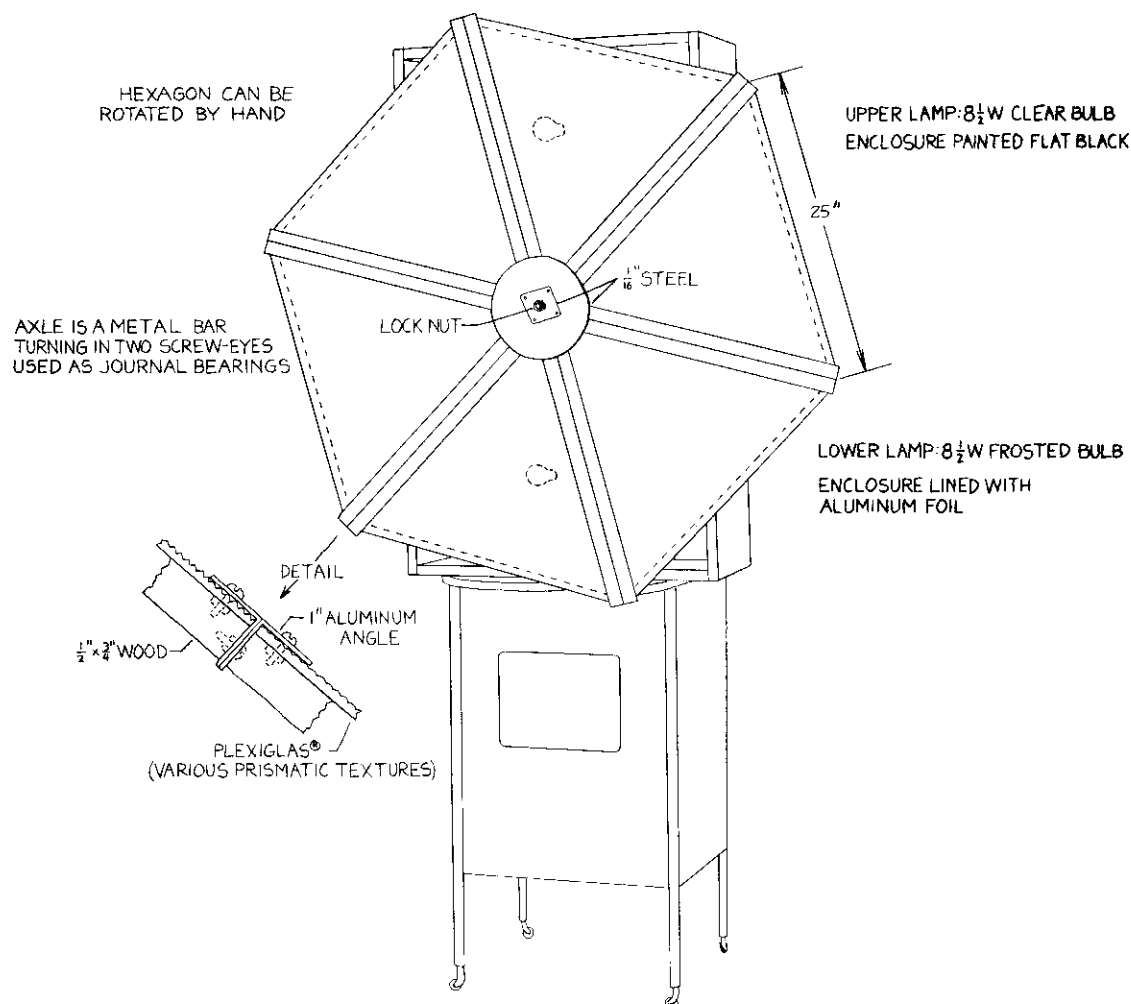
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Refractions (Bathroom Window Optics)



Description

When light passes through a transparent surface with a regularly patterned texture, the light forms characteristic patterns. This exhibit shows the patterns created by six different kinds of textured plastic used for bathroom windows. A clear light bulb is used to approximate a point source against a black background, and a frosted bulb in a reflective enclosure gives a different sort of pattern.

Construction

You will want to pick out the most interesting textures from glass shops and plastics suppliers. Some of the most beautiful patterns are formed by regular prismatic surfaces.

We originally built this exhibit with a number of light bulbs in each enclosure, but found that the patterns were more beautiful with a single clear bulb in the black enclosure, and a single frosted bulb in the reflective enclosure.

If you use aluminum angle-iron, be sure to file all corners round or provide some edging on the wheel. It can be spun quite fast and could hurt someone.

Related Exploratorium Exhibits

DIFFRACTION PATTERNS

Diffraction; Lenticular Images (3-D Dots); Long Path Diffraction; Multiple Images (Multiple Lens Box); Points of Light; Spherical Reflections (Christmas Tree Balls)

REFRACTION

Critical Angle; Glass Bead Rainbows; Prism Tree; Rainbow Encounters

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