

Museum

of
the

Fine Arts Research & Holographic Center

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Integral Holograms

Moving white light viewable holograms (3-D movies) are being used in trade shows and point of purchase displays as attention getting devices; in education as an in-class instructional aid; in scientific demonstrations and medical illustrations; in portraiture to capture that special moment; and in artistic expression which captivates the viewer.

An integral hologram (the combination of cinema and holography) can be made of virtually any subject that can be recorded on 16mm or 35mm black and white movie film: three dimensional objects or products, time lapse sequences, computer animation and graphics, your family and friends. In fact, any image that shows sequential perspective can be made into a moving white light viewable hologram.

BRIEFLY, HERE IS HOW IT WORKS:

The subject is filmed with either a 16mm or 35mm movie camera, usually while rotating on a 360 degree motorized turntable. All views of the subject are recorded on the movie film. What the camera sees is what the viewer will see in the finished hologram.

Next, the movie film is processed in the usual manner and edited. (If the movie film was shot with negative footage, a positive work print must be made) This positive movie film is carefully inserted into our Holographic printing system. In printing, each frame of the movie film is projected with laser light, focused, and recorded side by side on the holographic film.

When the light travels through the holographic film it spreads or diffracts the light into a vertical spectrum forming beautiful rainbow colors (like a prism). By moving the hologram up and down in front of the light source, the viewer sees the image in different colors. Because each eye sees a slightly different angle of the subject, the viewer sees a true three-dimensional moving picture, apparently suspended in mid-air behind the film. As the viewer moves or the hologram moves in front of the viewer, he sees different perspectives of the same image. The image can actually move because each hologram is made up of hundreds of holograms, each being one frame of the movie film.

After processing, the holographic moving image can be viewed with a 100-watt clear vertical filament light bulb (Edison-type), or in sunlight. No projection system is necessary for viewing! The hologram is mounted in clear plastic and illuminated from above or below by the light source desired. Many beautiful displays have been constructed for the display of holograms. It is also possible to mount the hologram on a mirrored surface and illuminate it from the front.

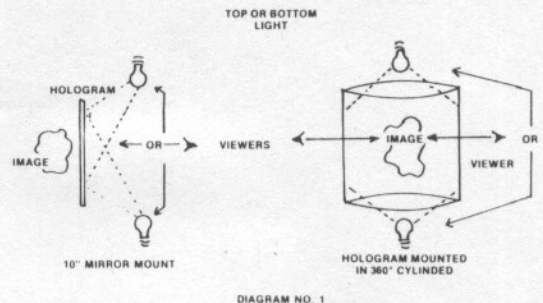
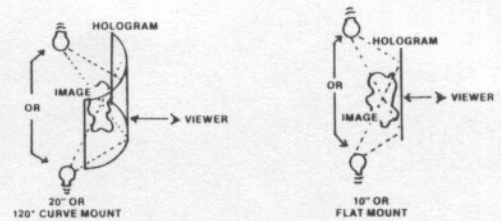
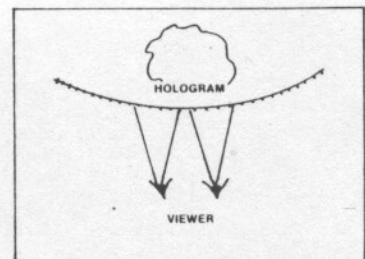
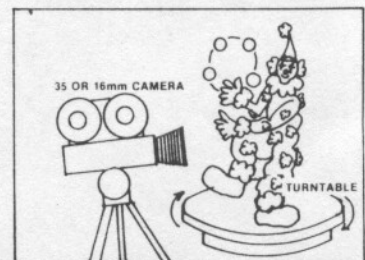


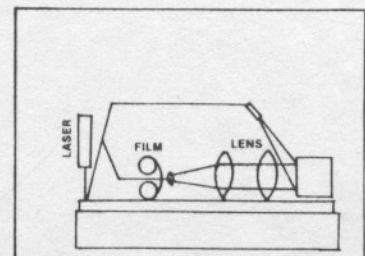
DIAGRAM NO. 1



Because each eye sees a slightly different angle of the subject, the viewer sees a true 3-D moving image. A 3-D moving picture without a projector!



When making a white light hologram, a subject is first filmed with a 35mm movie camera while rotating on a 360 degree motorized turntable. All views are recorded on film.



Next, the movie film is put into our special laser printer. Each movie frame is projected and recorded on holographic film. After processing, the 3-D image appears.