

These are the types of holograms and primary supports that can be found in the collection.

Type of Hologram

120° Integral Stereogram (Multiplex)

A type of white light transmission hologram which is formed by recording multiple photographs onto a single hologram. The resulting image usually only provides horizontal parallax, and often provides the effect of an animated three dimensional image. 120° integral stereograms are not complete cylinders

360° Integral Stereogram (Multiplex)

A type of white light transmission hologram which is formed by recording multiple photographs onto a single hologram. the resulting image usually only provides horizontal parallax, and often provides the effect of an animated three dimensional image. 360° integral stereograms are complete cylinders, and are often mounted on a motor-driven base which allows them to rotate at a constant speed.

Computer Generated Stereogram

Hologram produced from multiple 2-d perspective recordings of computer-generated images. Images can be analog, animated, reduced or enlarged. This is an alternative to the analog hologram process, in which the subject is imaged directly onto the film with a laser exposure.

Dichromated Gelatin (reflection)

Dichromated Gelatin (DCG) is a chemical-gelatin mix that produces very bright images in a golden-yellow color. The images have the least range of depth, but they are viewable in normal room light without special spotlights.

Embossed Mylar Foil (white light transmission)

Holograms stamped on foil in large numbers, from a transmission hologram master, and often used in applications where high security is desired. Embossed holograms are transmission holograms with a mirror. The holographic information is transferred from light sensitive glass plates to nickel embossing shims. The holographic images are "printed" by stamping the interference pattern onto plastic and then backing the images with a light reflecting foil. The resulting hologram can be duplicated millions of times for a few cents apiece.

Holographic Stereogram

Hologram produced from movie footage of a rotating subject. Images can be computer generated, animated, reduced or enlarged, or photographed on site. This is an alternative to the original hologram process, in which the subject is imaged directly onto the film with a laser exposure.

Embossed holograms

Embossed holograms are used in the security industry because they are difficult to counterfeit.

Laser Transmission

A type of hologram which is constructed by causing the object beam and reference beam to interfere from the same side of the holographic film or plate. In order to view the reconstructed image, semi-coherent filtered light or very coherent laser light is transmitted to the viewer through the hologram. Other types of holograms use a laser transmission hologram as the master, from which copies are made. This is the earliest type of hologram developed by Leith and Upatniks in 1962. Transmission holograms are lit from the rear (like a photographic transparency) and bend light as it passes through the hologram to your eyes to form the image.



Rainbow Holograms

See "White Light Transmission Holograms."

Reflection Holograms

Reflection Holograms are lit from the front, reflecting the light to you as you view it, like a painting or photograph hung on a wall. Different film emulsions produce images with different characteristics. (Silver Halide, Dichromated Gelatin, Photo Polymer)



White Light Transmission Holograms

White light transmission holograms are illuminated with incandescent light (white light) and produce images that contain the rainbow spectrum of colors. The colors change as the viewer moves up and down and are often called "rainbow" holograms. Holographers have developed considerable control over the colors displayed in this type of hologram to produce images in a specific color or in near full, natural color. Transmission holograms are lit from the rear (like a photographic transparency) and bend light as it passes through the hologram to your eyes to form the image.

Primary Support Options

Film

Most holographic film is just like photographic film in many ways. It often contains photosensitive silver halide crystals. The major difference in holographic film is that it is capable of very high resolution. Holographic film is also specially designed to be sensitive to a particular wavelength of light.

Film (photopolymer)

Photopolymer is the newest of the recording materials. Developed by Polaroid and Dupont, photopolymers have a plastic backing and are suitable for long production runs. The image depth of photo polymers is slightly less than that of silver halide; however, the images are brighter, with a wider angle of view.

Foil

Foil is often the support material for embossed holograms.

Glass

Sometimes emulsion is applied to glass, which provides greater stability than film during the exposure process.

Hard Plastic

Sometimes used as a support material for embossed holograms (such as record albums). Holographers occasionally apply emulsion to thick plastic just as they would to glass. Film can be made sturdier after being developed if it is laminated onto plastic sheets. This technique is most often used in large-format holography, since heavy glass plates would be difficult to safely manage.

Metal

Anything that is solid enough to retain an imprint image can be used to record a hologram. Metal is often used as a master shim, from which other holograms are embossed onto plastic or other material.