WHAT IS A HOLOGRAM?

A hologram is actually a photograph of the light waves that reflect from an object illuminated with laser light. The hologram is recorded on film in such a way as to store all the visual information in the reflected object light waves. After the hologram is developed, colored light is passed through it. The hologram then causes some of this light to be reshaped into a waveform identical to the reflected object light waves. An observer looking at these reformed or reconstructed waves "sees" in complete and full dimension, the original object.

The image which you see on your Laser Pendant is a type of Hologram (three-dimensional Laser Photograph) called a Dichromate Hologram. The science of Hologram recording, called Holography, was first discovered in 1948 by Doctor Dennis Gabor, who was awarded a Nobel Prize in Physics in 1971 for his discovery. In the near future, Holograms will become an everyday encounter. At present, various types of Holograms are already being used in Displays, Educational Audio-Visual Systems, Promotion and Incentive materials, Salesman's aids, Amusement Machines, Camera and Lighting Filters, Computer storage, Credit Card Verification systems, as a medium for Fine Art, and now...Jewelry!
There are many steps associated with making your Laser Pendant:

1. The fine quality glass is cleaned and prepared for processing.
2. A thin layer of a laser light-sensitive material, called Dichromate Gelatin, is deposited on the glass.
3. The gelatin is exposed to laser light reflecting from the actual object.
4. The hologram is sensitized and developed under special conditions which aid in storing all the visual information derived from the reflected object light waves.
5. A disc of cover glass is placed over the image.
6. A layer of sealing material is deposited, thus creating a sandwich to protect the holographic image.
7. The glass is cut into a circular shape and beveled.
8. A second layer of sealer is applied around the newly formed edge.

What is the holographic process! Essentially, holography is an interference phenomenon depending upon the wave nature or oscillating fields of electromagnetic radiation. (Acoustic waves and seismic waves of sufficient coherence can also be used to form holograms).

Holography is a two step process. In the first step, the hologram is recorded. The second step consists of reconstructing the image.

During the recording process, laser light-highly coherent light-is used to illuminate the object to be holographed. The light reflected from the object is made to interfere in space with a second beam from the laser (usually derived from a beam splitter).