

Art 455 Holography Laboratory Procedure

Split-Beam Transmission Hologram

1. Preparation

- (a) Get key out of locker and set up lab.
- (b) Turn on laser and unlock your locker.
- (c) Clean glass part of film holder in wet lab.

2. Creating Imagery

- (a) Create imagery after reading the Still Life Assignment included in the syllabus.
Create your set up using light colored sculptures to create a still life.
The depth of field can be approximately half the length of the laser cavity.
Place objects in object beam with the ground plane down as you face the film.
If you are making an Advanced Holography transfer: objects and film are positioned with ground plane to the left and vertical as you face the film.
Make sure objects don't cast unwanted shadows.
Look through the film holder at your still life and adjust objects to create a unique composition.
- (b) Move final mirrors to illuminate your object as much as possible.
- (c) Check that you have 2 beams and your objects do not block either beam.
Block the object beam and observe the reference beam on the card.
Block the reference beam and observe the patterns of your set-up on the card.
- (d) Place black cards behind screen to block peripheral light

3. Exposing the Film

- (a) Shutter the laser, turn off all non-safe lights and shut both wet lab doors.
- (b) Find emulsion (sticky) side of film. Emulsion faces laser light in film holder. Load film between the two 5 x 7 glass sheets and place into holder.
- (c) Let film settle about 5 clock minutes.
- (d) Expose for __ seconds. (Determined in class.)

4. Developing the Film

- (a) Carefully remove glass from film holder **with fingers on both sides of glass**. Open glass and remove your film without touching the exposed area.
- (b) Develop for 3 minutes with continuous agitation turning film over once to about 50% density.
- (c) Move film into Stop Bath solution for 2 minutes.
- (d) Rinse in water for 1 minute (You can now turn on main lights.)
- (e) This hologram does not require bleach although you may choose to use bleach. Bleach will make the image brighter but may add more haze. If you use bleach use EDTA and bleach until film is clear.
- (f) Rinse for 5 minutes.
- (g) Place film in Photo-Flo (to remove water spots) for 30 seconds if you want and hang film to dry.
- (h) Clean workbench putting away anything you used.

5. Cleanup and Leaving

- (a) Carefully pour chemicals back in their labeled bottles.
- (b) Rinse trays and wipe up spills.
- (c) Turn off LASER and **unplug hot glue gun**
- (d) Turn off 2 safe lights in wet lab, safe lights in **Laser Lab**, and **classroom** lights.
- (e) Lock-up laser lab door and classroom door. Test outside lock on 136 HASKETT from hallway side.
- (f) PUT KEY BACK IN LOCKER.