

**E. I. du Pont de Nemours & Co., Inc.
Imaging Systems, Optical Element Venture
Experimental Station Laboratory, P. O. Box 80352
Wilmington, DE 19880-0352**

October 31, 1991

**Du Pont Holographic Recording Film
PRODUCT INFORMATION SHEET**

Material : OmniDex® 352
Lot Number: E70044-039-2
Quantity: 5 SHEETS

Dimensions: 8.5 x 12 inches USABLE COATED AREA
 8.5 x 14 inches BASE AREA

Nominal coating thickness = 25 μ m

This material produces reflection -type holograms.

We strongly recommend using these materials promptly (within 12 months).

Photospeed (exposure requirement): 30 mJ/cm².

The photospeed is measured by producing simple mirrors at normal incidence.

Sensitized at wavelength of 450-550 nanometers.

Curing conditions: overall UV and/or visible light exposure of 50-100 mJ/cm².

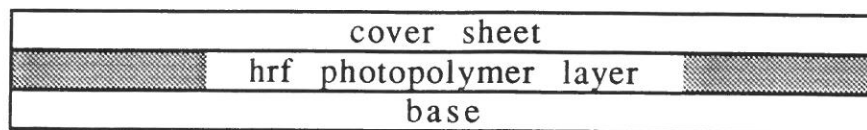
Baking conditions after curing: 100°C for 1 hour.

NO CHARGE SAMPLE FOR EVALUATION

Du Pont HOLOGRAPHIC RECORDING FILM

EXPOSURE AND PROCESSING INSTRUCTIONS

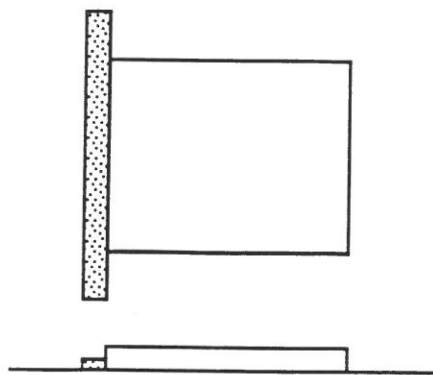
1. Handle the film under red safelights.
2. Holographic recording film is a three-layer sandwich of Mylar® base, holographic recording film photopolymer, and Mylar® cover sheet.



3. There are two basic ways to mount the film for exposure.
 - A. Leave the cover sheet on and mount by forming a glass/holographic recording film/glass sandwich.
 - B. Remove the cover sheet and laminate the tacky hrf photopolymer to a glass plate. Most customers expose the film this way. A detailed description follows.

HAND LAMINATING HOLOGRAPHIC RECORDING FILM TO A GLASS PLATE

Apply enough layers of tape to your tabletop to form a "stop" for the glass plate. If you're right-handed, locate the stop along the left edge of the plate. The tape should be a little longer than the width of the glass. Lay the glass down with one edge against the tape.

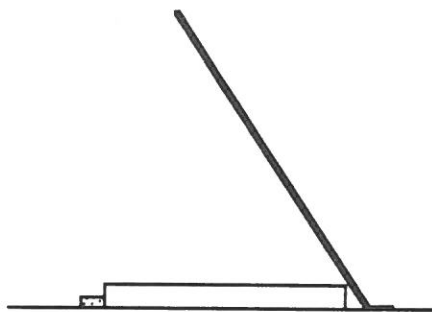


Cleanliness is very important. If possible, clean and laminate the glass in a clean air environment such as a laminar flow clean bench. Clean the glass in place by laying a sheet of lens

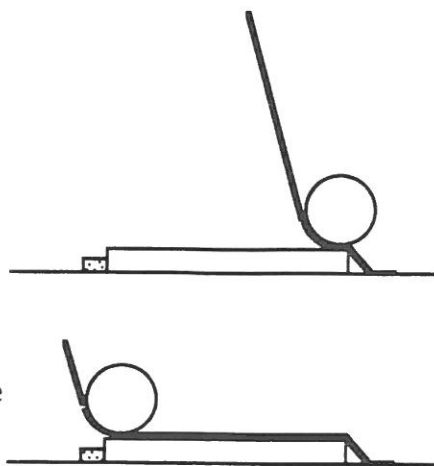
paper across the glass at the end opposite the tape. Half of the lens paper should be on the glass and half should be on the table. Squirt a line of reagent grade methanol onto the lens paper at the end of the glass and drag the wet paper across the glass toward the tape and off. Use just enough methanol to wet the whole plate. The lens paper that hangs off the glass will help absorb any excess methanol. Afterwards, the methanol should evaporate almost instantly. Repeat this cleaning, if necessary.

Immediately after cleaning the glass plate, remove the cover sheet from a piece of holographic recording film by holding a small peeled-back corner of the film and pulling off the cover sheet in **one quick, continuous motion**. Discard the cover sheet.

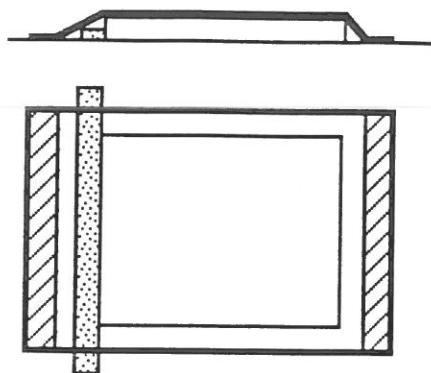
Without letting it touch anything, position the film "above" the glass with the sticky side down. Press the film to the table along the edge of the glass opposite the stop. Press a 1/2-in. strip down smooth and straight with your fingertip. Hold the rest of the film up away from the plate.



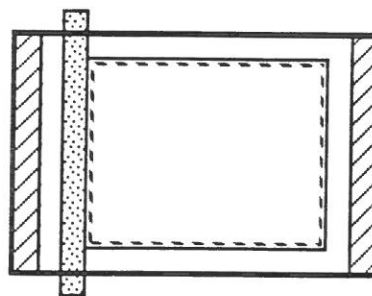
Use a roller that's wider than the glass plate. Place the roller over the film onto the edge of the glass. We use a 12-in. Kodak master print roller, cat. no. 1477116. (An 18-in. roller is also available.) Roll the film onto the glass toward the taped edge and right off onto the table. Use as much **pressure as you can and hold the pressure constant throughout the lamination**. Do not pull on the film during lamination. If the film is stretched, its slow relaxation to the unstretched state will cause distortions.



You should now have the film attached to the table at both ends of the glass.



Leaving the glass in place, trim off the excess film with a sharp blade. Cut the film on the glass, about 1/16-in. in from the edge. Discard the excess film. Press and smooth the cut edges of the laminated film to the plate. (Dragging a small plastic ruler along the cut edge works well.) Now lift up the plate.



4. Image the film as you would silver halide or dichromated gelatin. See the Product Information Sheet for the recommended imaging conditions.
5. Provide an overall UV and/or white light exposure to ensure complete cure in the imaged and non-imaged areas of the film. We use a standard contact copy vacuum frame exposure unit with a 1000 W Hg arc lamp. See the Product Information Sheet for the recommended UV-curing conditions.
6. [For OmniDex™ 352 only.] If you going to color tune this film, go to the GA2 Color Tuning Film instructions, otherwise proceed to step 7.
7. Bake the film in an oven to increase the brightness of the image. See the Product Information Sheet for the recommended baking conditions. Use a convection oven with forced-air exhaust to minimize your exposure to vapors.