BLUE-GREEN SENSITIVE HOLOGRAPHIC PLATES

ILFORD SP695T

ILFORD SP695T holographic plates consist of the same blue-green sensitive emulsion used on SP672 film, but coated onto glass substrate.

The emulsion is a high contrast, ultra-fine grain emulsion sensitised to the blue and green spectral regions, and is the fastest holographic emulsion currently available for high quality reflection holography. It is coated as a 6 micron thick layer directly onto glass, and has no gelatin supercoat.

The high speed and high optical clarity of SP695T plates makes them highly suitable for the following applications.

- The original recording of laser transmission masters at 514nm in sizes up to 50x60cm.
- The production of H2 white light transmission holograms for display purposes.
- The original recording of laser transmission masters at 488 or 457nm for subsequent transfer into photoresist for embossing purposes.
- The production of white light reflection holograms using argon exposure.

Safelight recommendation

Use an ILFORD 906 (dark red) safelight filter illuminated by a 15 watt bulb. The distance between the plate surface and the safelight should be at least 1.2 metres (4 feet).

Exposure

SP695T plates have similar sensitivity to 514.5nm and 488.0nm light from an argon ion laser, for which typical exposures would be in the region of $100\mu Jcm^{-2}$. For 457.9nm light, the plates are one stop slower, requiring an exposure of about $200\mu Jcm^{-2}$. If amplitude master holograms are being made, the exposure level will be somewhat lower. It is important, however, that the developed plates have a density of 4 for optimum results when a rehalogenating bleach is used.

The exposure and beam ratio may be measured by sampling the reference and object beams normally. This avoids the necessity to make angular corrections. A beam ratio of around 5:1 is a suitable starting point for transmission holograms, or 2:1 for reflection holograms.

Processing

Good results can be obtained with SP695T over a wide range of developer and bleach conditions, but the following are recommended as a starting point.

1 Developer for transmission master holograms

Part A

Sodium sulphite (anhydrous)	10g
Catechol	10g
Hydroquinone	5g
Potassium bromide	5g
Distilled water to	500ml

Part B

Potassium carbonate (anhydrous)	60g
Sodium metaborate	10g
Distilled water to	500ml

Mix 1 part A with 1 part B for use. Develop for approximately 4 minutes at 20°C.

2 Developer for reflection holograms

Part A

Pyrogallol	5g
Potassium bromide	5g
Distilled water to	500ml

Part B

As Part B for transmission holograms (above).

Mix 1 part A with 1 part B immediately before use. Develop for approximately 3 minutes at 20-23°C.

3 *Rehalogenating bleach for both transmission and reflection holograms

Ferric sulphate	30g
EDTA disodium salt	30g
Potassium bromide	30g

Some of the chemicals mentioned above can be hazardous if care is not exercised in their use. Please contact the suppliers of the chemicals for material safety data sheets, which are available free of charge. Please read the sheets carefully, and observe the recommended safety precautions.

* **Guidelines for use of rehalogenating bleach.**
Irritating to eyes and skin. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In case of contact with skin, wash immediately with water. Wear suitable protective clothing, gloves and eye/face protection.

Small volumes may be flushed to industrial waste with plenty of water, but consult local effluent regulations. Large volumes must be collected by licensed contractors.

In case of spillage, wash away with plenty of water.

Drying
SP695T plates should be dried in the normal way. If a squeegee is used, care must be taken not to damage the emulsion surface.

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The right is reserved to withdraw or modify the product at any time.