

ILFORD RED SENSITIVE HOLOGRAPHIC FILM

THE BIPS FACTOR (BUILT-IN PRE-SWELL)

All ILFORD red sensitive holographic emulsions are characterised by a unique feature, the BIPS factor.

When we coat the emulsion onto the substrate at the factory, we incorporate into it a neutral substance which washes out during chemical processing thereby reducing the layer thickness. This is called the Built-in Pre-Swell factor (or BIPS for short).

The reason we do this is so that it becomes unnecessary to pre-swell the emulsion (with triethanolamine for example) if a gold coloured reflection hologram is required from a He-Ne exposure. With ILFORD recommended chemical processing, the colour of the reflection hologram will automatically be a bright, yellow/gold colour because the BIPS factor was designed to make it so.

The BIPS factor has another use. If the exposure is made with pulse ruby laser and the ILFORD processing recommendations followed, then the wavelength of replay will correspond to 633 nm, thus producing He-Ne reflection masters automatically.

What if I don't want pre-swelling?

Some people don't want a gold hologram after a red exposure. They might want the replay wavelength to be exactly the same as the exposure wavelength. No problem. Just rinse the unexposed film in clean water for 30 seconds and dry (under safelight conditions, of course). The BIPS factor is thus removed and you now have a 'no shrink' emulsion. In compensation for this extralittle step the film will double its sensitivity just so that you don't feel the washing step was a waste of time.

What happens if I use my own chemistry?

The effect of the BIPS is only apparent if ILFORD recommended developer and bleach are used i.e. non-tanning chemicals. If you use, or want to use pyrogallol, PBQ or other 'nasties', these override the BIPS factor and so the shift in wavelength replay will not be observed.