

Technical note: inspection of polarizers

Polarizers should be periodically inspected for bleaching spots. The recommended inspection periods are shown in Table 1.

Table 1: Recommended inspection periods

Filter types	Inspection period (service hours)
“No type”, H	1000
AR	2000

Bleaching spots cannot be identified by observing the filter alone in its mounted position. For this reason is it quite common to overlook this damage. However, bleaching spots can seriously impair the 3D image quality, and therefore should be controlled.

There are two common methods for detection of bleaching spots:

1. Observation of the screen with the crossed eye,
2. Dismounting and stacking the filters.

In the first method, one of the projectors is shut down, and a white image is displayed in the other. The screen is inspected with a polarized eyewear and the opposite eye, closing the other eye. The screen should appear dark. Any white spots on the screen are manifestations of bleaching damage. The inspection is repeated for the second projector (with the observing eye switched).

It may be difficult to spot small bleaching spots. With the second method all bleaching spots are spotted, regardless of their size.

In this method the filters are dismounted and observed in a stacked configuration, preferably against a bright and diffuse light source. The filter stack should appear dark. Any white patch or spot is a manifestation of bleaching damage. A scheme for polarizers stack inspection is shown in Figure 1.

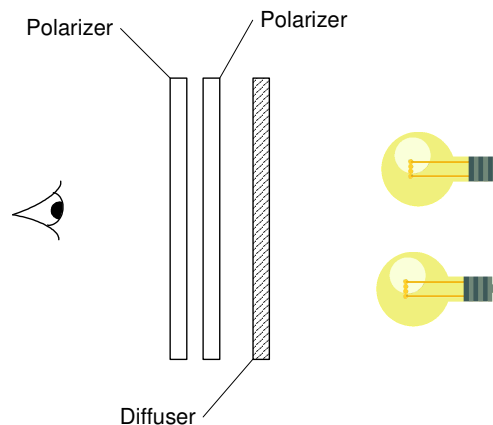


Figure 1: Observing a stack of polarizers

The stacking methods for different filters are illustrated in Figure 2. An example of bleaching damage is shown in Figure 3.

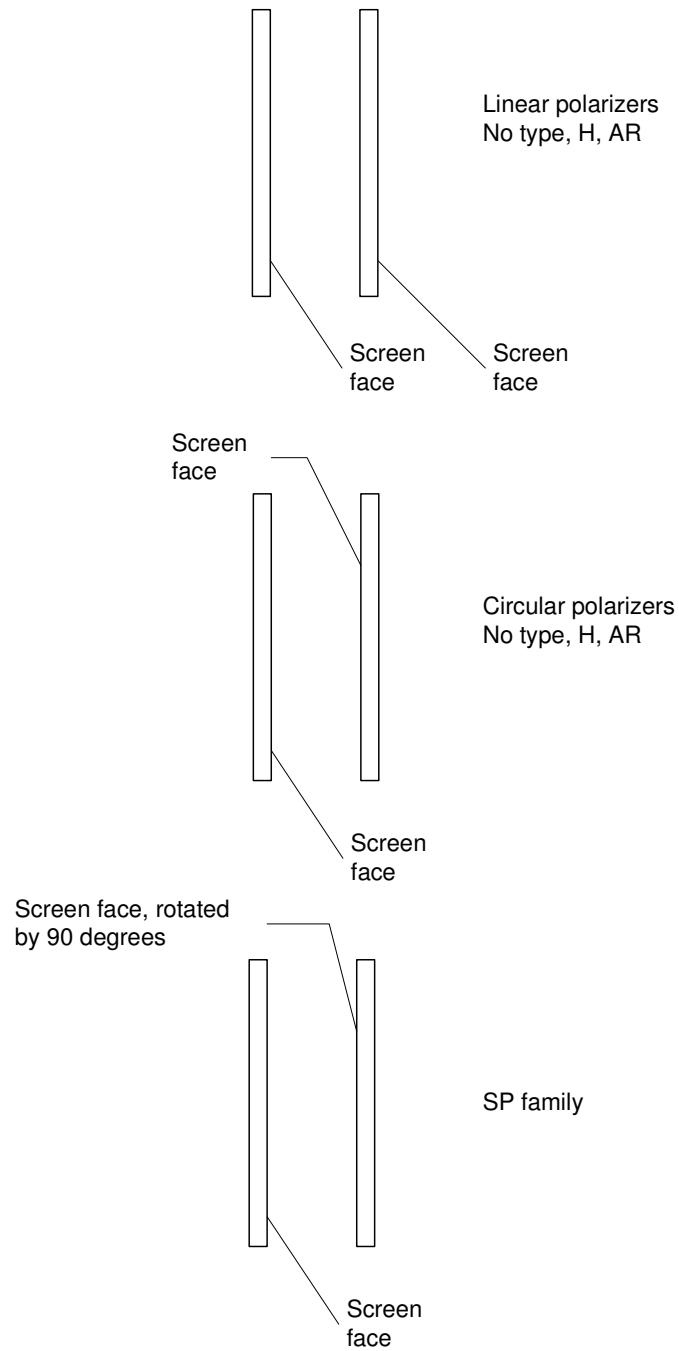


Figure 2: Stacking different filters for bleaching inspection

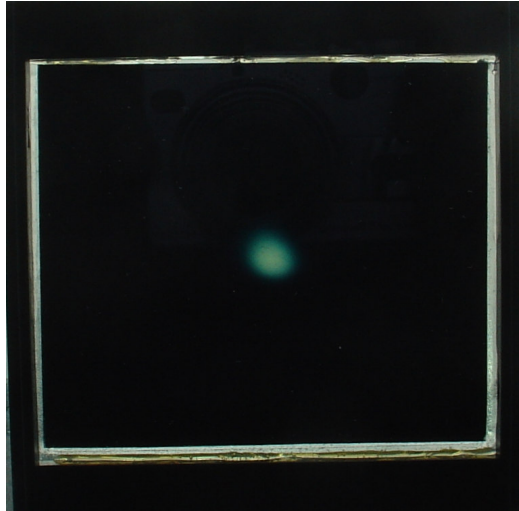


Figure 3: Observation of a bleaching damage in a stack of polarizers