

ExpressScan 4Base Flat Field Procedure

Flat fielding is a method of non-uniformity correction. Flat fielding is performed by computer software after an image has been captured to correct for differences in individual sensors, lenses, filters, and the components of the light source. Non-uniformity is most noticeable as edge drop-off, vignetting, or a colorcast in some areas of the image.

To make corrections by flat fielding, an initial calculation of gain for each pixel in each color is recorded in the Flat Field Reference file. Thereafter, the software adjusts all image data, pixel by pixel, using the gain data in the Flat Field Reference file.

The Flat Field Reference files are created after installation and after the lens is in focus, but before the scanner is calibrated. After installation, the Flat Field Reference files must be recreated any time you change or reposition any component between the lighthouse and the camera sensors, including the lens, filters, and diffusion plate, as well as the camera, or lighthouse assembly.

To create the Flat Field Reference file, perform the following steps.

1. Go to the Camera Calibration screen and enter the password (**987**).
2. Ensure that the lens is in focus and that the image is the correct size.
3. Ensure that the film gate area is clean and free of dust, and that no film is loaded.
4. Press Flat Field. A message will appear and ask you to stop the lens down to F16.
Caution: Make a note where the lens F-stop was before you change to F16.
5. Leave the cover over the camera and lens assembly closed.
6. Press TEST. Spot aim: in the camera cal screen will change to 68. 68 is the Aim when you flat field.
7. Press Hit Aim. The scanner will take three images, and then adjust Spot read back. If the Exposure Values go up to 254, and the Aim (68) is not met, open the lens to a point between F16 and F11.
8. Keep using Hit Aim until the Spot read back is close to 68, 68, 68 +- 3.
9. Press TEST, and then press Flat File. The scanner will take 11 images, and then create the first flat field file.
10. You will need to perform flat fielding for each image size. The first was 4Base. Now check 1Base and do Flat Field, and then check Base/4 and do Flat Field. The check box is on the left side of the image in the camera calibration screen.
11. After they are all done, close and reopen the scanner program.
12. Make sure you open the lens back to where it was before you started. This should be F4.