Using Resolution Targets for the Document Archive Writer 4800

The *Kodak* Digital Image Resolution Targets for the *Kodak Digital Science* Archive Writer Model 4800 are located on the Archive Writer Interface Software Version 2.1 CD. There are separate resolution targets for printing at the specified reduction ratios.

NOTE: For 40:1 and 50:1 printing there is an A image and a B image to allow for printing in the A and B channel of the microfilm.

The primary purpose of the targets are to produce images that will indicate if the Document Archive Writer imaging function is operating correctly. These targets should not be used to analyze the acceptability of any other image processed by the Document Archive Writer. The quality of any other image is dependent upon the process that originally generated the image, and any image processing applied to the image before being sent to the Document Archive Writer.

Printing resolution targets

Following is the procedure for printing resolution targets:

1. From the Archive Writer Interface Software window, select **DefaultSimplexResoTarget** for printing a simplex resolution target or **DefaultDuplexResoTarget** for printing a duplex resolution target from the Application list box and run the job.

2. Select **Start** to process the resolution target image(s).

NOTES:

•   If a resolution target is printed at a reduction ratio other than what is designated (using some sort of scaling instead of just printing unscaled), the resolution target will be scaled and the resulting image on film cannot be used for proper analysis.

•   Printing the Default Reso (simplex or duplex) Target application automatically prints all files in either the Reso/Simplex or Reso/Duplex directories. If other images are desired, they must be added manually to these directories.

Performing a density test

Performing a density test allows you to set an exposure value that gives you the best results for your images. Once you have found the optimum exposure density and set the value on the Archive Writer Setup dialog box, you should not have to perform the density test again.

It is recommended that you run the following density test a few times so you can select an optimal density value.

1. Open the Administration application.

2. Select **File>Archive Writers** to display the Archive Writer Setup dialog box.
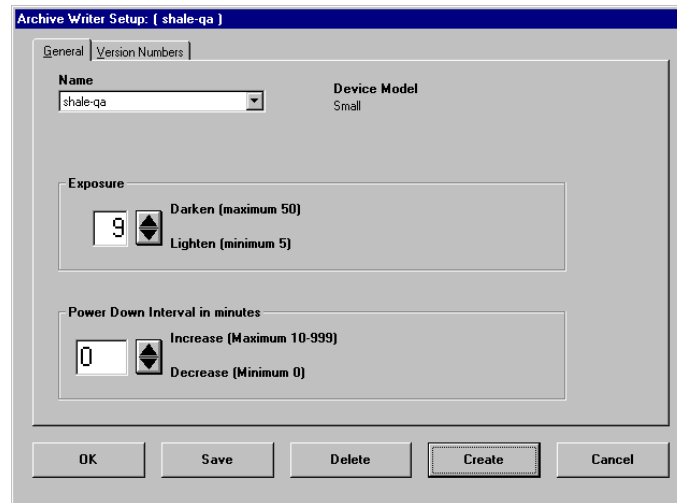
3. Select the Writer name from the Name list box.

4. Enter an exposure value of **9** in the Exposure field.

5. Click **OK.** A confirmation box will be displayed. Click **Yes** to save the value and close the Archive Writer Setup dialog box.

6. Exit the Administration application.

7. Open the AWIS application and run the Default Reso Target (simplex or duplex) application as previously described in the "Printing resolution targets" section.

8. Repeat Steps 1 through 7, incrementing the exposure value by 1 each time you run the Default Reso Target (simplex or duplex) application, until you have run 7 tests (up to an exposure value of 15).

   NOTE: It is recommended that you write down the corresponding image(s) with the selected exposure value as you run each density test.

9. Process the film. Use a processor or a third party. The method selected must assure consistency of processing over any period of time. The D-max density variance within the processing system should not exceed ±0.03 value.

10. Review the density test results with a calibrated densitometer. Refer to *Density Block* in the next section, "Reading resolution targets" to obtain a density value for the image.

11. After the desired density/exposure value has been determined, set the exposure value on the Archive Writer Setup dialog box.

Reading resolution targets

In the context of these instructions for resolution targets printed in Negative mode, the term "ON" means negative appearing, and "OFF" means positive or clear appearing.

Line pairs

Set marked **100** has 4 pixels ON followed by 4 pixels OFF.
Set marked **200** has 2 pixels ON followed by 2 pixels OFF.
Set marked **300** has 1 pixel ON followed by 2 pixels OFF.
Set marked **400** has 1 pixel ON followed by 1 pixel OFF.

These line pairs are produced in two directions. These lines should be consistent and straight; there should be no jagged edges. These "lines" are used to measure the operation of the LED writing device and should not be associated with AIIM/ANSI "line pairs per millimeter."

There are five groupings located in the middle and at each corner area of the target. The viewing of the groupings should be similar and consistent.

Long Ladders

These "ladder steps" for 200, 300 and 400 are produced as above with the addition of a continuous line perpendicular to the "ladder steps."

The lines and the "ladder steps" should be consistent and straight; there should be no jagged edges. This should be consistent along the entire length of the ladder. The density of each section of steps is indicated by the arrows.

Characters

A set of characters printed in upper- and lower-case at 3-, 4- and 6-point type; a block of these characters appear in Negative mode and Positive mode.

The minimum level of readability of the characters should 4-point.

Density Block

This "square" can be used to read the D-max value; any sufficiently clear area on the film can be used to determine the D-min value.

The square should be completely negative and not have any clear pixel spots.

The acceptable D-max is very subjective. It is usually between 0.95 and 1.1 values.

The acceptable D-min should be less than 0.08 value.

Expanding Triangles

There is a set of five expanding isosceles triangles divided into positive and negative sections. There is one set located in each corner.

The lines that create the borders for the triangles should be consistent, straight and non-jagged.

Pos/Neg Dots

There are two squares of positive dots and negative dots. Within each square (right reading oriented) there is a pattern of 1 pixel dot, 2 pixel dots horizontal, 2 pixel dots vertical and a 2x2 pixels dot (square). These are followed by shot lines to aid viewing.

The pixel discrimination should be readable.

In conclusion, if the above observations can be made, then the Writer is operating correctly in conjunction with the film processing. If the above observations cannot be made, be sure the film density is within the acceptable range before calling for service support.