Measuring dot gain using the X-Rite 938

Context

☑ Trendsetter Spectrum
☑ Proofsetter Spectrum

Background

These instructions describe how to use an X-Rite 938 SpectroDensitometer to measure dot gain on digital halftone proofs created by a Spectrum proofing device.

Tools and parts

- X-Rite 938 SpectroDensitometer
- White calibration target

Steps

1. Press both the “Function” and “Illum” buttons at the same time. The display will ask if you want to calibrate. Press “Yes”.

2. Place the instrument on the white calibration target. Press down and wait until the calibration function is complete.

3. Press the function key until you see “DOT T” displayed. Make sure the device is set for Status T density measurement. The Status chosen does have an effect on dot gain readings.

4. Read an area of the proof that has no ink on it. This is the “Paper” reading.

5. Next read the “Solid” ink color that is same color as the tint that you wish to read. i.e. Cyan, Magenta, Yellow, or Black. This must be an area that has 100% coverage of the chosen ink color.

6. You are now ready to read the dot area or “Tint” of a swatch with an ink coverage of less than 100%.. Select a tint and press the instrument down to do the reading. Do not let up. Notice if the instrument display reads “Tint”. If it does, you may release the instrument and read the dot area percentage of the measured swatch.

   If you are reading tints above 80% the device may think that you are reading a new solid. When you hold down on the tint reading the instrument will display “Solid”. Before releasing the instrument press the “DIF” key and the display will return to “Tint”. You can now release the instrument and read the dot area percentage of the swatch.

7. Calculate dot gain. We enter dot gain into Harmony as the Target curve from Imation is supplied this way.

   Dot gain is the total dot area read minus the nominal % ink coverage of the swatch.. e.g. if the swatch was created from a postscript file that indicated a 65% tint, and the measured dot area is 85.5%, then the dot gain is 20.5%.

   Dot gain = % dot area – nominal % tint of swatch

   Dot gain = measured value - % tint in postscript file

   = 85.5 % - 65% = 20.5%

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