

Spectrophotometer
AATCC Evaluation Procedure 6

What this Evaluation is Used For:

Spectroscopy- The study of the emission and absorption of light and of the electromagnetic spectrum. This instrument performs basic color analysis, including color classification, color matching, & shade sorting.

How This Evaluation works:

This test measures the percentage of light transmitted or reflected at each wavelength in the visible spectrum (400-700 nm) and yields a spectral power distribution or either reflectance or absorbance data. The sample's color is also converted to L*a*b* coordinates. If a sample standard is available, the spectrophotometer will also yield ΔE values for assessing visible color differences. Each spectral power distribution that is produced is specific to the colorant or mixture of colorants used in the object. It may be broad or narrow and have one or more peaks depending on the colorant. The shape describes the color in a two-dimensional plot.

Equipment Needed:

Spectrophotometer – in our case a Datacolor Spectraflash SF300 with Colortools Software Ver 1.3
Test samples that are an adequate size to fit the sample holder
(Samples that have been submitted to the colorfastness tests and an identical untreated sample)

Procedure: (operate this device only with instructor supervision!

- 1) Calibrate the Spectrophotometer using standard protocol specified by Colortools and Datacolor.
- 2) Place specimen in sample holder.
- 3) Record spectral power distribution for reflectance, L*a*b* coordinates, and ΔE values.

Report:

- 1) State the Spectrophotometer is being used.
- 2) Attach graph / computer results to applicable test(s).