

SEMI D63-0818 (Reapproved 0224) TEST METHOD FOR DEPOLARIZATION EFFECT OF FPD COLOR FILTER

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1 Purpose

- 1.1 This Standard establishes implementation practices for testing the depolarization effect of FPD color filters.
- 1.2 These methods can be applied to manufacturing, quality control, and development work.

2 Scope

- 2.1 This Standard specifies measuring methods.
- 2.2 In this Standard, the depolarization effect of color filters is obtained by measuring the reduction in polarization efficiency when polarized light passes through color filters.

NOTICE: SEMI Standards and Safety Guidelines do not purport to address all safety issues associated with their use. It is the responsibility of the users of the Documents to establish appropriate safety and health practices, and determine the applicability of regulatory or other limitations prior to use.

3 Referenced Standards and Documents

- 3.1 None.

NOTICE: Unless otherwise indicated, all documents cited shall be the latest published versions.

3.2 Definitions

3.2.1 *contrast ratio* — the ratio between the maximum and minimum luminance when two polarizing films are set parallel and perpendicularly to one another while a sample to be tested is placed between them. An absolute value is measured unique to the measurement system consisting of a light source, polarizing film, and luminance meter. Absolute contrast ratio values cannot be compared with different measurement systems.

3.2.2 *depolarization level* — an increase in the minimum luminance (reduction in depolarization level) when the sample is inserted between two polarizing films from when it is placed outside the two films.

4 Test Procedure and Calculation for Contrast Ratio

4.1 Reference Measurement

- 4.1.1 Place the light source, two polarizing films, and luminance meter as shown in Figure 1.
- 4.1.2 Set two polarizing films parallel and perpendicularly, and obtain the maximum luminance (LRmax) and the minimum luminance (LRmin).

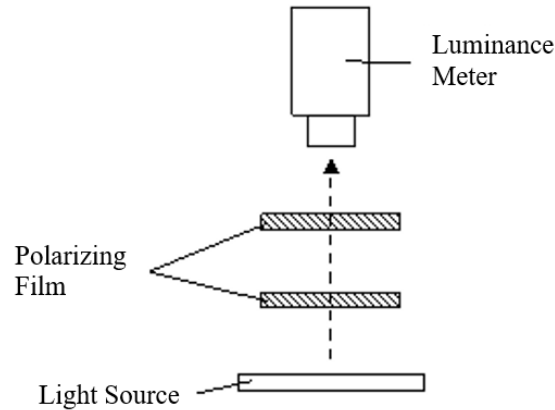


Figure 1
Configuration of Contrast Ratio Measurement (Reference Measurement)

4.1.3 Calculate LR_{max} / LR_{min} to obtain the reference contrast ratio (CR_{ref}).

4.2 Sample Measurement

4.2.1 Place the sample between two polarizing films (refer to Figure 2).

4.2.2 Set two polarizing films parallel and perpendicularly, and obtain the maximum luminance (LS_{max}) and the minimum luminance (LS_{min}).

4.2.3 Calculate LS_{max} / LS_{min} to obtain the sample contrast ratio (CR_{sam}).

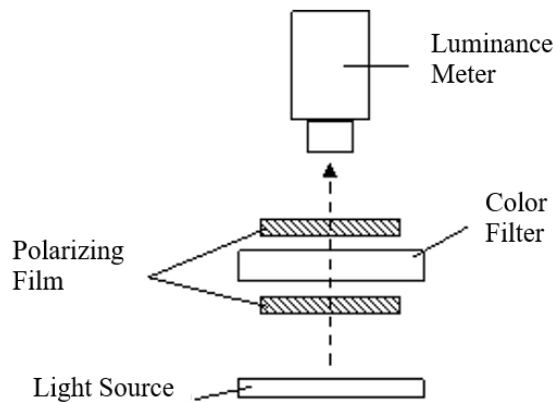


Figure 2
Configuration of Contrast Ratio Measurement (Sample Measurement)

5 Report of Contrast Ratio

5.1 Report the following items together with the measurement results (LR_{max} , LR_{min} , CR_{ref} , LS_{max} , LS_{min} , and CR_{sam}).

- Sample creation conditions, film thickness, glass substrate type, and product name
- Measurement environment (brightness, temperature, and humidity of the measurement environment)
- Light source (type, product name, luminance, and wavelength distribution)