

COLOR MATCHING WITH ARTIFICIAL LIGHT

Application

This procedure describes the equipment and test method required for the visual color matching of paint, textiles, plastics and various other materials.

Equipment Required

Any of the following Macbeth Color Matching Systems may be used.

1. **Macbeth SPL 65 SpectraLight II Color Matching system**

If manufactured after 1985, model SPL 75 can be updated to model SPL 65 with a change in filters and authorized factory calibration/certification to manufacturer's specifications.

a. **North Sky Daylight - 6500 °K**

This type of light is provided by a series of 750 watt Tungsten Halogen lamps used in conjunction with Macbeth proprietary blue daylight filters.

b. **Horizon Sunlight - 2300 °K**

This type of light is provided by a series of 500 watt Tungsten Halogen lamps. They are wired in series to burn at half their rated voltage to produce an exaggerated red-yellow incandescent light. This light simulates early morning sunrise and late afternoon sunset.

c. **Cool White Fluorescent - 4150 °K**

This type of light is typical of automobile showroom lighting and is provided by two or four 30 watt cool white fluorescent tubes depending on model type (single or dual) spectrolight.

Date	Action	Revisions
2001 03 14	Revised	Editorial – no technical change A. Cockman
1995 08 25		

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d. Ultra Violet - Source

This type of light is combined with the North Sky Daylight source to truly simulate natural daylight where ultra violet light is present. U.V. is not visible light so there is no Kelvin associated with it. In SpectraLight II, two levels of U.V. are available for evaluation. When U.V. is selected with any source except Daylight, then five times the amount of near U.V. is provided. This amount of U.V. exaggerates the presence of optical brighteners, whitening agents, fluorescent dye and pigments. When U.V. is selected in SPL II with Daylight, the proper ratios of near U.V. to Daylight is provided to simulate true Daylight. U.V. should not be used for color matching.

Sources:

Macbeth
405 Little Britain Road
New Windsor, NY 12553-6148
Tel: 800-622-2384 (USA)
800-421-265687 (Canada)
914-565-7660 (Outside
USA and Canada)
Fax: 914-561-0267

Germany:
Kollmorgen Instruments GmbH,
Fraunhoferstrasse 14
D-82152 Martinsried, Munich
Tel: (49) 89 85707 0
Fax: (49) 89 85707 509

United Kingdom:
Macbeth Division of Div. Of
Kollmorgen (UK) Ltd.
Macbeth House, Pacific Rd.
Altrincham, Cheshire WA14 5BJ
Tel: (44) 61 926 9822
Fax: (44) 61 926 9835

Photo Research
Kollmorgen Instruments Corp.
9330 DeSoto Avenue
Chatsworth, CA 91311-4926
Tel: 818-341-5151
Fax: 818-341-7070

Note:

- 1) Suppliers who are not included in color formulation may, at the discretion of Ford Quality Control, use alternative light sources for color matching provided that these lights conform to acceptable National or International standards. In cases of dispute a Macbeth system will be used for arbitration.
- 2) The area surrounding the color matching equipment, including the booth and table, should be neutral gray, approximately matching Munsell N7 to N7.5 Color Standard. Paint matching this standard is available from Macbeth or any major paint supplier. Every effort should be made to minimize extraneous light.