Kodak

Matchprint Virtual

Lighting Test Procedure

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1. OVERVIEW

Poor lighting conditions can strongly affect color-viewing in the Kodak® Matchprint® Virtual software. When the color viewed on a calibrated monitor does not match a hard copy Kodak Verification Proof (also known as a Golden Master proof), you need to investigate the lighting conditions.

The following procedure enables Kodak specialists to match the viewing lighting luminance to the customer's calibrated monitor luminance. It also helps determine whether the color quality of the viewing lighting conforms to Matchprint Virtual requirements.

1.1 Prerequisites

Before starting the lighting test procedure, ensure that the following tasks are completed:

- The Matchprint Virtual calibration software is installed on a qualified computer connected to qualified monitors.
- An approved Matchprint Virtual colorimeter (DTP 94) is available on-site.
- You have checked the viewing environment and there are no outstanding issues. See the customer's completed presite document, located in the Microsoft® Outlook® messaging and collaboration client under **Public Folders\All Public Folders\WFS\MV**.
- The Kodak InSite™ software or Kodak PressProof™ software is operating properly.
- You have confirmed that the Kodak Verification Proof does not match the color on the customer's monitor. See *Testing Color Matching Using a Kodak Verification Proof*, available on TechPlanet at http://techplanet.creo.com/software_solutions/workflow_software/matchprint_virtual/nav/v5-0/reference.htm#technical_bulletins.

1.2 Tools Required

Contact John Maurer (john.maurer@kodak.com) or Brenda Power (brenda.power@kodak.com) to obtain the following items:

- Kodak MVP Verification software (lighting test software). You must download this software on an Apple® Macintosh® computer that is running Apple Mac OS® 10.3.9 or later.

  Important: The MVP Verification software is an internal-only development tool. Do not leave it with customers. Remember to remove it from the customer's system when testing is complete.

- Stand for the colorimeter (the "banana" holder)

- Kodak Matchprint® Pro Super White media
- Chromaticity Target graph paper

2. ADJUSTING THE VIEWING LIGHTING LUMINANCE

To ensure color-accurate viewing, the viewing lighting must have the same luminance as the customer's calibrated monitor. You must determine the luminance value for the monitor, and then adjust the lighting in the viewing booth until the luminance levels match.

2.1 Obtaining the Monitor Luminance Value

1. Check that the monitor has been on for at least one hour.
2. Calibrate the monitor. For instructions, see the *Matchprint Virtual Monitor Calibration Quick Reference Card*, available on TechPlanet at http://techplanet.creo.com/software_solutions/workflow_software/matchprint_virtual/nav/v5-0/reference.htm#user_guides.
3. Record the luminance value that appears when the calibration is finished—for example, `205`.
4. Make a note of all external lighting sources in the room, such as overhead lights, desk lamps, exit signs, windows, and so on. Eliminate these sources wherever possible (turn off lights, close blinds, and so on).

2.2 Adjusting Luminance of a GTI SOFV-1ex Viewing Booth

If the customer uses the GTI SOFV-1ex soft-proofing viewer, you can adjust the booth's lighting using the table below. You do not need additional tools.

1. Turn the viewing booth lamps on at full intensity for at least 15 minutes.
2. Locate the monitor luminance value in the following table, and adjust the dimmer setting on the booth (it may be a knob or digital scale) to match the setting shown.

Monitor Luminance Value (see Section 2.1)	Dimmer Setting
245-253	61
236-244	60
228-235	59
222-227	58
216-221	57
211-215	56

Monitor Luminance Value (see Section 2.1)	Dimmer Setting
205-210	55
197-205	54
191-196	53
185-190	52
180-184	51
175-179	50
168-174	49
163-167	48
151-162	47
131-150	46
126-130	45
110-125	44

If the luminance of your monitor is not listed on this table, use the lighting test software tool to adjust the booth's dimmer setting, as described in the next section.

2.3 Adjusting Luminance of Other Viewing Booths or Luminaires

If the customer has any type of viewing booth other than the GTI SOFV-1ex, you must use lighting test software to check the booth luminance. The software can also be used to check the booth's color quality and temperature.

Reminder: The MVP Verification software is for internal-only use. Do not leave this software with customers.

1. Turn the viewing booth lamps on at full intensity for at least 15 minutes.
2. Adjust the dimmer knob or LCD display to the middle setting.
3. Place the Matchprint Digital Halftone Super White paper in the same position that you place hard proofs for viewing. This may be flat against the back wall or lying on the booth's table surface.
4. Connect the colorimeter to the Macintosh computer or to the monitor. Do not connect it to the keyboard.
5. On the Macintosh computer, install the lighting test software by dragging it onto the desktop or to the **Applications** folder.
6. Double-click **MVP Verification** to start the lighting test software.
7. In the Starter Project window, click **Close**.

8. On the Starter Proj toolbar, from the **Tools** menu, select **Meas Light**.

   The message `Place device in calibration plaque or on desk` appears.

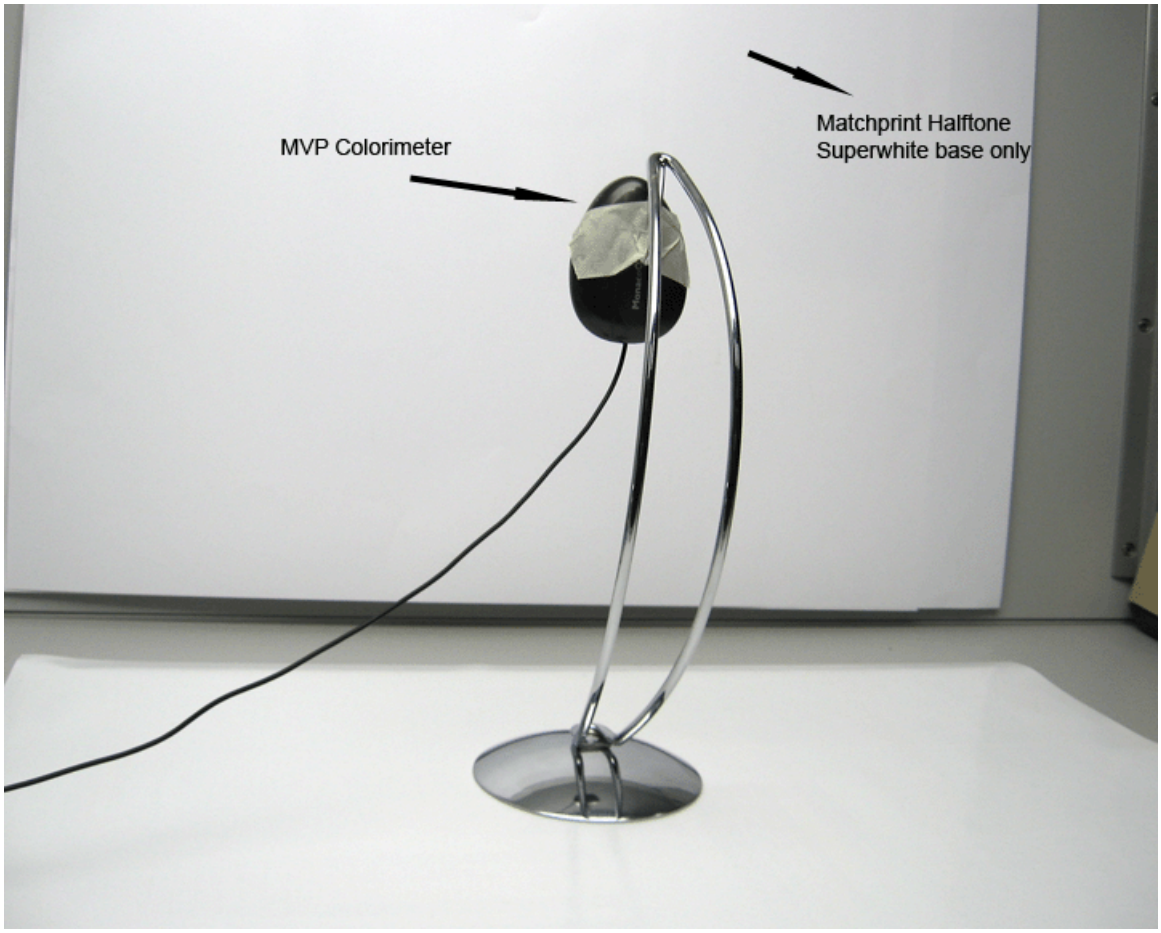
9. Place the colorimeter flat on a table, desk, or other opaque surface. Click **OK**.

10. In the Get Light Meas window:

    - In the **Select Target** list, ensure that **Matchprint Super White Paper** is selected.
    - In the **Meas Device** list, ensure that **DTP94** is selected.

11. Tape the colorimeter to the stand (the “banana” holder) about 15 cm (6 in.) from the middle of the white paper.

    Make sure the colorimeter is securely taped to the stand and stays perfectly still, and that it points directly at the white paper, while you take the measurements. You may have to bend the tip of the stand to point the colorimeter directly at the paper—see the picture below.



12. Click **Measure** up to five (5) times to obtain a set of average value measurements.

    Each time you click **Measure**, a row of values appears in the table.

13. Check that all the Y (luminance) values are similar.

14. Record the average Y value. It is the first value listed beside **Ave** in the right pane.

    This average value should equal the monitor luminance value that you obtained in Section 2.1 on page 2.

    - If the Y value matches the monitor luminance value, go directly to step 15.
    - If the Y value does not match the monitor luminance value, do the following steps:

      a. Close the Get Light Meas window.

      b. Increase or decrease the luminance of the viewing booth by adjusting the dimmer setting.

      c. Repeat Steps 8 to 14.

      d. Continue until the average Y value matches the luminance value of the monitor.

15. Perform one of the following actions:

    - Record the average u', v', average Color Temp (K), and dE values that appear in the right pane.
    - Click **Save** to store all the readings as a text file.

    For information on how you can use these values to assess color quality and temperature of the viewing booth, see Section 3.

16. Mark the dimmer knob or LCD display to record its final setting.

17. Close the Get Light Meas window.

3. ASSESSING THE COLOR QUALITY

You can use the lighting test software to test the color quality of the light in the viewing booth and to test the color temperature. The color quality can be affected by ambient light, aging lamps, and luminance problems.

1. Complete all the steps in Section 3.

2. Using the readings that you recorded or saved as a text file, plot the average color quality (u', v') values on the Chromaticity Target chart. The values should lie inside the center reference oval.

   If the values lie outside the oval, consider whether any of the following reasons apply:

   - The lamps are not "MVP Certified."

- The lamps have not been adequately burned in (turned on for at least 100 hours).
- The lamps are aged (used for more than 2500 hours).
- There is ambient light contamination.

3. From the stored readings, record the dE value on the chart. This value should be 3.0 or less.
4. From the stored readings, record the average Color Temp value. This value should be near 5000.

You can plot values from multiple viewing booths on the Chromaticity Target chart. If you are comparing two or more viewing booths, the average u' and v' values of each booth should plot within 0.005 units of each other.

4. TESTING THE COLOR MATCH

1. Place the viewing booth and the qualified monitor side by side.
2. Place the Kodak verification proof in the viewing booth, and confirm that the color on the monitor matches the verification proof.

   For instructions on using the verification proof, see *Testing Color Matching Using a Kodak Verification Proof*, available on TechPlanet at **http://techplanet.creo.com/software_solutions/workflow_software/matchprint_virtual/nav/v5-0/reference.htm#technical_bulletins**