Vehicle evaluation application examples

License plates
- Spectrophotometer CM-700d

Exterior paint
- (Orange Peel / Distinctness of Image)
- Spectrophotometer CM-5

Automotive window glass
- Spectrophotometer CM-700d
- Spectrophotometer CM-M6

Door mirrors
- 2D luminance colorimeter CA-2500A

Door handles

Side mirror warning indicators

Brake lamps, signal lamps, fog lamps, hazard lamps, etc.

Exterior paint
- (Metallic pearlescent, etc.)

Headlamps (High illuminance)
- Headlamp light distribution
- Road illuminance distribution

Aluminum wheels

Tires
- Appearance analyzer Rhopoint IQ Flex20

Gloss, Haze

DOI

Appearance analyzers

Spectrophotometer

Colorimeter

Illuminance meter

I series

Analysis software

Object color

Light source color
Lineup of color and light measuring instruments

**Spectrophotometers**

**CM-700d /CM-600d**
These easy-to-operate handheld spectrophotometers condense the latest optical technologies from Konica Minolta plus the high precision and functionality of Konica Minolta's benchtop models into a low-cost, compact and highly portable size. They are perfect for measuring colors of automotive interiors. Offers both ø8 and ø3 mm measurement areas. (CM-700d)

**CM-25cG**
This 2-in-1 model simultaneously measures chromaticity and gloss. Its form and function are suited for managing the color and gloss of vehicle interiors. Moreover, it offers two different measurement areas.
- Color ø8 mm/ ø3 mm
- Gloss ø10 mm/ ø3 mm

**CM-26d /CM-25d**

- di, de-8 (diffuse illumination/8° viewing)
- integrating sphere models with streamlined bodies optimized for color management of automotive interior parts.
- Top-of-the-line CM-26d achieves industry’s highest level of inter-instrument agreement and repeatability.
- Measuring area: ø8 mm/ø 3 mm switchable (CM-26d);
  ø8mm only (CM-25d)

**CM-M6**
Compact, lightweight model for multiple (6) angle measurement. The vertical body incorporates a “Double-Path Optical System” that can stably measure curved surfaces and small targets, making it the tool of choice for measuring exteriors.
- Measurement area ø8 mm

**CM-512m3A**
This multi-angle spectrophotometer is for measuring metallic and pearlescent colors commonly used in automotive exterior paints. A single measurement simultaneously illuminates targets at 3 angles -- highlight (25°), flat (45°) and shade (75°) -- for reading colors. It can also measure colors on curved surfaces. ø12 mm measurement area.

**CM-3700A**
This reference spectrophotometer packages Konica Minolta’s state-of-the-art optical technologies to ensure high accuracy. It is a wise choice for users who apply stringent controls in their pursuit of high quality.

**CM-5**
Despite being compact in size and light in weight, this all-in-one spectrophotometer comes with a top port and a large color LCD that simplify sampling, measurement and analysis. It is perfect for measuring the transmittance of windshield glass before installation.

**Colorimeters**

**CR-400**
Top-seller around the world. De facto standard in handheld colorimeters. ø8 mm measurement area.

**CR-410**
This handheld colorimeter features a wide aperture that is highly suited for measuring samples with uneven surfaces or patterns. ø50 mm measurement area.

**Glossmeters**

**MULTI GLOSS 268A/UNI GLOSS 60A**
These instruments measure the gloss of target surfaces. They are perfect for gloss control operations intended to reduce the degree to which dashboards reflect off of windshields. They also feature a wide measurement range (0.0 - 2,000 GU) that can accommodate anything from plastic to shiny metallic surfaces.

**Appearance analyzers**

**Rhopoint IQ-S/IQ Flex20**
These meters can measure gloss, reflection haze, image clarity and rspec. The Rhopoint IQ-S series is capable of evaluating reflectance characteristics and surface conditions that conventional glossmeters cannot. The IQ Flex features a small aperture probe for measuring small components and curved surfaces.

**Light source color**

**Illuminance meters, luminance meters and spectroradiometers**

**CL-500A**
The CL-500A can be used to inspect and control the quality of indoor LED lighting. As a handheld device, it facilitates measurements around door steering wheels, under seats and other hard-to-get-to vehicle interiors locations. It is lightweight, compact and suited for color-rendering index evaluation of light sources, and conforms to both JIS and DIN. The CL-500A can measure and display the color rendering index, photopic luminance (lx), correlated illuminance (lx), correlated color temperature (K) and chromaticity (xy) of light sources.

**CL-200A**
This compact and lightweight colorimeter is perfect for measuring the chromaticity of white LEDs. It can measure and display the correlated color temperature (K), chromaticity (xy), photopic illuminance (lx), tristimulus values (XYZ), dominant wavelength and excitation purity of light sources.
Spectrophotometers

Measurement area: Ø8 mm/Ø 3mm switchable (CM-26d); Gloss Ø10 mm/ Ø3 mm Color Ø8 mm/ Ø3 mm

Installation.

Transmittance of windshield glass before that simplify sampling, measurement and their pursuit of high quality. For users who apply stringent controls in ensure high accuracy. It is a wise choice packages Konica Minolta’s measure colors on curved surfaces. Ø12 mm single measurement simultaneously illuminates This multi-angle spectrophotometer is for the tool of choice for measuring exteriors. measure curved surfaces and small targets, making it highly portable size. They are perfect for measuring colors hard-to-get-to vehicle interiors locations. It is a handheld colorimeter for measuring samples with uneven surfaces or patterns. Ø50 mm. This handheld colorimeter features a wide aperture that is highly suited for measuring colors from plastic to shiny metallic surfaces.

Illuminance meters

T-10A/T-10MA

These highly accurate illuminance meters conform to JS Class AA and DIN Class B. They can accurately measure next-generation PWM-controlled lighting sources. They can also be incorporated into testing systems for multi-point measurements.

2D luminance colorimeters

CA-25000A

This analyzer measures the luminance mura and chromaticity mura of vehicle-mounted displays in 2 dimensions at high resolution. It is suited for development and testing since it can perform measurements, analyses and evaluations very efficiently in a short amount of time. It can accommodate targets of varying size owing to a wide array of interchangeable lenses.

LumiCam 1300 Color/Advanced

This instrument can easily measure the luminance and chromatic distribution of automotive meters and other targets in a short amount of time. It incorporates 6 filters and is highly accurate, which makes it perfect for measuring DRL (Daytime Running Lights).

ProMetric® I / Y Series

These series of photometers measure luminance and chromatic distribution at high resolution. They can also detect missing pixels and uneven photometric performances of vehicle-mounted displays when used in conjunction with the optional TrueTest™ software. Applicable to in-line use. * Y series photometers measure only luminance distribution.

Conoscope Lens for Viewing Angle Performance Measurement Solution for Displays

(For ProMetric® Y/I Series)

This lens can be attached to a ProMetric® Y or I instrument to measure the luminance and chromaticity of vehicle-mounted displays and films such as AR coatings, across a 58° angle viewing cone, in a single shot and at high speed. The lens can be detached in order to use the ProMetric® instrument as a 2-dimensional luminance meter.

Lumicol 1900U/F

These photometers measure luminance and chromatic distribution at high speed. They are suited for adjusting and inspecting automotive display panels along production lines.

Near-Field Measurement System

PM-NFMS™

This near-field light distribution measurement system can analyze the luminance and chromatic characteristics of headlamps at every angle, in a short amount of time and without taking up a lot of space. The system consists of a ProMetric (Y/I series) photometer, a 2-axis goniometer and software.

Automatic appearance inspection software

TrueTest™

This software automates the visual appearance inspections of FPDs, backlight units and other products along production lines. Supported by both the ProMetric® Y/I series.
Applications for Vehicle Evaluation

Color and Light Measuring Instruments

SAFETY PRECAUTIONS

For correct use and for your safety, be sure to read the instruction manual before using the instrument.
Always connect the instrument to the specified power supply voltage. Improper connection may cause a fire or electric shock.

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