Ideal for display mura (nonuniformity) evaluation and inspection on smartphones and tablet PCs.

Accurately and easily measures the distribution of luminance and chromaticity.
The included software provides advanced functionality with simple operation to make the entire measurement process easier, from measurement preparations such as focusing and positioning through measurements of luminance and chromaticity distribution to evaluation of measurement results.

**GUI assists with normal workflow**

**Easy-to- understand screens with easy-to-use tools**

**Automatic measurement area extraction function**

The light-emitting areas of measurement subjects can be automatically extracted and set as evaluation regions. This eliminates the need for manually defining and positioning evaluation regions, reducing the setup time required.

**Multi-subject measurement capability**

Evaluation of the mura (unevenness) of multiple subjects can now be performed simultaneously. With the previous CA-S20w, the same tone gradation scale was used for all subjects; if subject luminances were very different, adjusting the scale to properly view one subject caused saturation of tones in evaluation areas for other subjects. But with CA-S25w, each evaluation area has its own tone gradation scale which can be individually adjusted according to the subject luminance. This allows the mura of multiple subjects with widely different luminances to be viewed simultaneously on the same screen.

**Various mura (unevenness) display functions**

- **Pseudocolor display**
  Luminance and chromaticity distribution can be easily observed.

- **Spot measurement**
  The size and number of spots to be evaluated (indicated by black circles in the screen example above) can be freely defined by the user to enable multi-point measurement using the average values of each spot. Up to a maximum of 2500 spots can be defined.

- **Chromaticity diagram display**
  Variations in chromaticity can be displayed on the chromaticity diagram display.

**Other convenient functions**

- **Data transfer to Excel®, etc.**
  The desired range of data or spot values can be selected and transferred to Excel®, Word®, etc. via the clipboard. The various graphs and displays can also be copied and pasted, making it easy to create reports.

- **Multiple exposure function**
  By combining measurement data obtained using exposure times optimized for different luminance levels, subjects requiring a wide dynamic range (such as a gray scale) can be easily measured.

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**Own a CA-2000?**

The new CA-S25w software can also be used with existing CA-2000 instruments. It provides vast improvements over the previous CA-S20w software, while also being able to read data measured and saved using CA-S20w. Visit our website to download the latest CA-S25w free of charge.
Compact and lightweight so it can be easily set up where needed.

Interchangeable lenses for measurements of various subjects
Standard, wide-angle, and telephoto lenses (plus two macro rings for the telephoto lens) are available, enabling the optimum lens to be selected according to the particular subject, measurement area, or measurement method.

Comprehensive factory calibration
Each lens is individually factory-calibrated at multiple focal points to correct for sensitivity variations due to the combination of sensor, optical filters, and the lens itself. By using the included calibration data, high-accuracy measurements of luminance and chromaticity distribution can be taken immediately after receiving the product without being restricted to a particular measurement method, subject size or subject brightness.

Even flickering light sources such as PDP or OLED televisions can be measured with good accuracy.
The synchronization frequency (4 to 2,000 Hz) of display devices and pulsed light sources can be input to enable synchronized measurements.

NEW Includes advanced Data Management Software CA-S25w as standard accessory
Advanced functions such as focus assist function, positioning assist function, and automatic measurement area extraction function greatly simplify troublesome measurement preparations.

NEW Includes SDK (software development kit)
The SDK can be used by customers to efficiently create their own software for controlling the CA-2500.

XYZ filters provide high correlation with the spectral response of the human eye.
Instead of the RGB color-separation filters used by digital video cameras, etc., the CA-2500 uses XYZ filters that closely match the CIE 1931 color-matching functions to provide luminance and chromaticity measurements that have high correlation with the spectral response of the human eye.

Expanded low-luminance measurement range
The minimum measurable luminance has been improved from 0.1cd/m² to 0.05cd/m².

NEW Improved durability
Service life measurement cycles have been increased to approximately 5 times that of the CA-2000.

NEW

Includes advanced Data Management Software CA-S25w as standard accessory
Advanced functions such as focus assist function, positioning assist function, and automatic measurement area extraction function greatly simplify troublesome measurement preparations.

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NEW

Improved durability
Service life measurement cycles have been increased to approximately 5 times that of the CA-2000.
Applications

- Simultaneous luminance/chromaticity distribution measurement of multiple small- or medium-sized LCD or organic EL panels
- Luminance/chromaticity measurement of single large-sized LCD or organic EL panels
- Luminance distribution measurements in illumination field
- Measurements of luminance/correlated color temperature distribution of various light-emitting subjects
- Luminance distribution measurements of automobile instrument panel meters

System Configuration

Components other than those shown in the areas shaded are common for all packages.

- Telephoto
- Wide
- Telephoto
- Macro 1
- Telephoto
- Macro 2
- 2D Color Analyzer
- CA-A60
- Personal computer (commercial product)
- USB cable
- IF-A18
- AC Adapter
- Tripod
- CA-A3
- Pan Head
- CA-A4
- CA-S25w
- Data Management Software
- CA-A57
- Standard Lens
- Hood Cap
- CA-A71
- CA-A68
- CA-A59
- Telephoto Lens
- CA-A58
- Wide Lens
- CA-A75
- Standard accessories
- Soft Case
- CA-A60
- Optional accessories

Measurable object size with typical measurement distances (Width/height of measurement square)

<table>
<thead>
<tr>
<th>Distance (mm)</th>
<th>Standard lens</th>
<th>Measurable object size (mm)</th>
<th>Measurable object size (mm)</th>
<th>Measurable object size (mm)</th>
<th>Measurable object size (mm)</th>
<th>Measurable object size (mm)</th>
<th>Measurable object size (mm)</th>
<th>Measurable object size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>16</td>
<td>4.4</td>
<td>4.8</td>
<td>190</td>
<td>8.6</td>
<td>9.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>23</td>
<td>6.5</td>
<td>4</td>
<td>235</td>
<td>11</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>500</td>
<td>48</td>
<td>12</td>
<td>10</td>
<td>175</td>
<td>13</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td>96</td>
<td>20</td>
<td>22</td>
<td>369</td>
<td>39</td>
<td>43</td>
<td>139</td>
<td>5.9</td>
</tr>
<tr>
<td>2000</td>
<td>192</td>
<td>40</td>
<td>44</td>
<td>875</td>
<td>80</td>
<td>87</td>
<td>275</td>
<td>12</td>
</tr>
<tr>
<td>3000</td>
<td>288</td>
<td>61</td>
<td>65</td>
<td>3662</td>
<td>175</td>
<td>12</td>
<td>175</td>
<td>12</td>
</tr>
<tr>
<td>5000</td>
<td>480</td>
<td>102</td>
<td>111</td>
<td>4499</td>
<td>203</td>
<td>221</td>
<td>711</td>
<td>32</td>
</tr>
</tbody>
</table>

Data Management Software CA-S25w

- Controllable instruments: CA-2000, CA-2500
- Display language: English, Japanese (Selectable at time of installation)
- System Requirements:
  - OS: Windows® XP Professional 32-bit SP3, 64-bit SP2 (English, Japanese and Chinese (Simplified versions))
  - CPU: Pentium® 4 2.8 GHz equivalent or higher
  - Memory: 1024 MB or more
- Hard Disk: Needs free space of 80 MB at least on system drive (where OS is installed).
- In addition, each lens needs the following free spaces for installing calibration data:
  - For standard lens: approx. 540 MB
  - For wide lens: approx. 470 MB
  - For telephoto lens: approx. 1.3 GB
- To save measurement data on hard disk, additional free space is required (approx. 110 MB for 10 measurement data)
  - Approx. 1 MB required for setting files containing spot settings, measurement condition settings, etc.
- Display: Display capable of at least 1280 x 768 dots / 65536 colors (High color, 16-bit)
- Others: Optical drive capable of reading CD-ROM (for installing software) and DVD-ROM (for installing calibration data) necessary.
  - USB port: For connecting measuring instrument.

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- Display language: English, Japanese (Selectable at time of installation)
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  - USB port: For connecting measuring instrument.
**Main Specifications CA-2500**

**Model**
- CA-2500S
- CA-2500W
- CA-2500T

**Light receptor**
- CCD image sensor (monochrome); 2/3-inch; Effective number of pixels: 1,000 x 1,000 pixels; Equipped with XYZ filter (closely matches CIE 1931 standard color matching function) and ND filter

**Lens**
- Interchangeable Standard, wide, and telephoto lenses; low-magnification and high-magnification macro ring filters (with use of telephoto lens)

**Measurement points (Resolution)**
- 980 x 980 (490 x 490 or 196 x 196 selectable by using Data Management Software CA-525w)

**Color indication modes**
- XYZ, Luv, L*uv, TdAuv, Dominant wavelength, Excitation purity, L'v contrast

**Display modes**
- PseudoColor, Chromaticity diagram, Spot, Cross section, Color difference

**Measurement sizes (length per side of square) (11)**
- Standard lens
- Wide lens
- Telephoto lens
- With low-magnification macro ring
- With high-magnification macro ring

<table>
<thead>
<tr>
<th>Lens Type</th>
<th>Standard lens</th>
<th>Wide lens</th>
<th>Telephoto lens</th>
<th>With low-magnification macro ring</th>
<th>With high-magnification macro ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement size</td>
<td>88 m / 250 m</td>
<td>115 m / 300 m</td>
<td>115 m / 300 m</td>
<td>Approx. 57 mm (Fixed)</td>
<td>Approx. 27 mm (Fixed)</td>
</tr>
<tr>
<td>Measurement size</td>
<td>210 m / 500 m</td>
<td>275 m / 650 m</td>
<td>57 m / 150 mm</td>
<td>Approx. 14 mm</td>
<td>Approx. 7 mm</td>
</tr>
<tr>
<td>Measurement size</td>
<td>440 m / 1,100 m</td>
<td>850 m / 2,000 m</td>
<td>420 m / 3,000 m</td>
<td>Approx. 14 mm</td>
<td>Approx. 7 mm</td>
</tr>
</tbody>
</table>

**Measurement range (including ND filter use)**
- Measurement time: Single: Approx. 5 sec. or more; 4-time integration: Approx. 6 sec. or more; 16-time integration: Approx. 10 sec. or more; 64-time integration: Approx. 30 sec. or more

**Accuracy (3)**
- Luminance: ±0.005 ±0.005 ±0.005 ±0.005
- Chromaticity: ±0.002 ±0.002 ±0.002 ±0.002
- Inter-point error: Luminance: ±3% ±3% ±3% ±3%
- Chromaticity: ±0.003 ±0.003 ±0.003 ±0.003

**Repeatability (4)**
- Luminance: 0.5% 0.5% 0.5% 0.5%
- Chromaticity: 0.001 0.001 0.001 0.001

**Size**
- Body only: 160 (W) x 164 (H) x 192 (D) mm (Height including handle: 211 mm)
- When lens and hood are attached: 224 (D) mm 219 (D) mm 234 (D) mm 424 (D) mm

**Weight**
- 3.5 kg approx. (when standard lens and lens hood are attached)

**Power source**
- AC adapter 100-240 V, ~ 0.7 A, 50-60 Hz

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**Cautions Regarding Temperature / Humidity Conditions for CA-2500**

It is recommended that the instrument be used and stored under standard conditions (Temperature: 23°C; Relative humidity: 40%), and that areas subject to high temperature and/or humidity be avoided. In addition, in order to maintain the measurement accuracy of this instrument, it is recommended that it be inspected regularly about once a year. For details on how to have the instrument inspected, please contact the nearest Konica Minolta authorized service facility.

Even if the product is used within the specified operating temperature/humidity range or stored within the specified storage temperature/humidity range, the displayed values may be affected by long-term conditions of use or storage.

If the instrument is used under the following high-temperature conditions for a long period of time, the displayed values may change as follows:

- Temperature: 30°C; Relative humidity: 70%; Period under these conditions: 720 hours (30 days)
  - Accuracy: Luminance: ±0.003 Chromaticity: ±0.003

- Temperature: 39°C; Relative humidity: 55%; Period under these conditions: 336 hours (14 days)
  - Accuracy: Luminance: ±0.006 Chromaticity: ±0.006

These differences in display values are due to the instrument materials and/or components being affected by the temperature and humidity conditions of long-term use or storage. In particular, optical filters are easily affected by temperature or humidity. Although measures have been taken to improve resistance to temperature/humidity changes, the accumulated effect of long-term use or storage may affect the displayed values.

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**SAFETY PRECAUTIONS**

- For correct use and 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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**KONICA MINOLTA OPTICS, INC.**

Osaka, Japan

Phone: 888-473-2565 (In USA), 201-236-4300 (outside USA) Fax: 201-785-2482

Konica Minolta Sensing Americas, Inc.
Newark, New Jersey, USA

European Headquarters: BENELUX
Münchberg, Germany

Phone: +49 (0) 6464 120 000 Fax: +49 (0) 6464 120 999

For a list of distributors, please visit our website or contact us directly

For more information, please visit our website or contact us directly

---

**KONICA MINOLTA OPTICS (Korea)**

Konika Minolta Optics, Inc. Korea

Phone: +82 (0) 2-927-6620 Fax: +82 (0) 2-927-6623

Konika Minolta Sensing Singapore Pte Ltd.

Singapore

Phone: +65 9663-5533 Fax: +65 9662-9721

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http://konicanolta.com/instruments/network

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**KONICA MINOLTA OPTICS, INC.**

Konika Minolta Sensing Europe B.V.

Osaka, Japan

Phone: 888-473-2565 (In USA), 201-236-4300 (outside USA) Fax: 201-785-2482

Konica Minolta Sensing Europe B.V.

Nieuwegein, Netherlands

Phone: +31 (0) 248-119-193 Fax: +31 (0) 248-128-090

Groningen, France

Phone: +44 (0) 800 110 10 70 Fax: +44 (0) 800 110 10 82

Roeselare, Belgium

Phone: +44 (0) 322-480-00 Fax: +44 (0) 322-488-30

Munich, Germany

Phone: +46 (0) 31-979466 Fax: +46 (0) 31-745-9445

Zweibrücken, Germany

Phone: +86 (0) 21-5489-0202 Fax: +86 (0) 21-5489-0000

Tokyo, Japan

Phone: +81 (0) 580-00-1551 Fax: +81 (0) 580-00-1582

Osaka, Japan

Phone: +81 (0) 6-6665-5533 Fax: +81 (0) 6-6660-9721

---

**KONICA MINOLTA OPTICS, INC.**

Konica Minolta Sensing Americas, Inc.

Osaka, Japan

Phone: 888-473-2565 (In USA), 201-236-4300 (outside USA) Fax: 201-785-2482

Konica Minolta Sensing Europe B.V.

Osaka, Japan

Phone: 888-473-2565 (In USA), 201-236-4300 (outside USA) Fax: 201-785-2482

Konica Minolta Sensing Singapore Pte Ltd.

Singapore

Phone: +65 9663-5533 Fax: +65 9662-9721

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Some lamp control methods may make accurate measurements difficult.

For details, please contact your nearest Konica Minolta sales office or dealer.

If you have any questions about specifications, please contact your Konica Minolta representative.