



## MK350S Premium

Handheld Spectrometer

### Specification

Spectrum	
Sensor	CMOS Linear Image Sensor
Illuminance meter class	Directional response conforms to JIS C 1609-1:2006 for General Class AA. Directional response conforms to DIN 5032 Part 7 Class B.
Wavelength Range	380 to 780 nm
Wavelength Data Increment	1 nm
Spectral Bandwidth	Approximately 12 nm (Half Bandwidth)
Wavelength Reproducibility	$\pm 1 \text{ nm}^{*1}$
Measurement Range	1 to 150,000 lx
Illuminance Accuracy	Illuminant A @ 2,856 K $\pm 2.5\%$
Illuminance Repeatability ( $2\sigma$ )	at 20,000 lx <sup>*2</sup> 0.2% in CIE 1931 x,y (100 to 150,000 lx) 0.5% in CIE 1931 x,y (5 to 100 lx) 1% in CIE 1931 x,y (1 to 5 lx)
Color Accuracy	x y: $\pm 0.002$ (100 to 150,000 lx) x y: $\pm 0.0025$ (5 to 100 lx) x y: $\pm 0.003$ (1 to 5 lx)
Color Repeatability ( $2\sigma$ )	x y: 0.0002 (500 to 150,000 lx) x y: 0.0004 (30 to 500 lx) x y: 0.001 (5 to 30 lx) x y: 0.002 (1 to 5 lx)
CCT Accuracy	$\pm 2\%$
CRI Accuracy @ Ra	$\pm 1.5\%$
Stray Light	-25 dB max. <sup>*3</sup>
Integration Time Range	60us to 5,000 ms
Digital Resolution	16 bits

Flicker	
Measurement Range	1 to 150,000 lx
Sampling Rate	100k sample/sec
Frequency Range	5 to 50k Hz
Frequency Resolution	2, 4, 8, 16, 32 Hz
Accuracy	5% (5 to 30K Hz) <sup>*6</sup>
Bandwidth	40K @ Gain 1 to Gain 3 20K @ Gain 4
Feature	
Capture Function	One time / Continuous
Operation Mode	Standalone Mode / WiFi Mode <sup>*4</sup> USB Mode ( MSC Mode <sup>*5</sup> +PC connection )
Integration Mode	Auto / Manual
Dark Calibration	Yes (Auto)
Measuring Modes	<ol style="list-style-type: none"> <li>1. Basic Mode</li> <li>2. Spectrum Mode</li> <li>3. CRI Mode</li> <li>4. CIE 1931 / 1976 Chromaticity Mode</li> <li>5. LUX Image Distribution Mode</li> <li>6. Log Mode</li> <li>7. BIN Chart Mode</li> <li>8. Quality Control Checker Mode</li> <li>9. Measurement Comparison Mode</li> <li>10. Transmit Mode</li> <li>11. TM-30-15 Mode</li> <li>12. Flicker Mode</li> <li>13. Frequency Mode</li> <li>14. Flicker Risk Mode</li> <li>15. Blue Light Hazard Mode</li> <li>16. Browser Mode</li> <li>17. Option Mode</li> </ol>
Measuring Capabilities	<ol style="list-style-type: none"> <li>1. Illuminance (LUX)/Foot Candle (fc)</li> <li>2. Correlated Color Temperature ; CCT (K)</li> <li>3. CIE Chromaticity Coordinates               <ol style="list-style-type: none"> <li>(1) CIE 1931 x,y Coordinates</li> <li>(2) CIE 1976 u',v' Coordinates</li> <li>(3) CIE 1931 XYZ Value</li> </ol> </li> <li>4. <math>\Delta x</math> , <math>\Delta y</math> , <math>\Delta u'</math> , <math>\Delta v'</math></li> </ol>

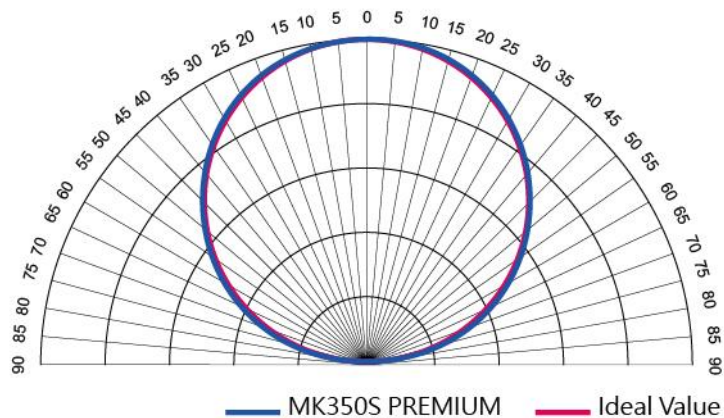
5. Delta uv (Duv)
6. Dominant Wavelength ( $\lambda_d$ ) ; Hue
7. Excitation Purity (%)
8.Scotopic and Photopic Ratio (S/P)
9.BIN ANSI C78.377 or Customized
10.Standard Deviation Color Matching (SDCM)
11.Color Rendering Index (CRI, Ra)/R1 to R15
12.Color Quality Scale (CQS)
13.Gamut Area Index (GAI)
14.TM-30-15 (Rf, Rg, Color Vector Graphic)
15.Television Lighting Consistency Index (TLCI)
16.Flicker Frequency (Hz)
17.Percent Flicker (%)
18.Flicker Index
19.Stroboscopic Effect Visibility Measure (SVM)
20.Flicker Risk - IEEE PAR1789
21. PPFD (400 to 700nm) $\mu\text{mol}/(\text{m}^2 \cdot \text{s})$ (1) PFD-UV (380nm to 400nm) $\mu\text{mol}/\text{m}^2/\text{sec}$ (2) PFD-B (400nm to 500nm) $\mu\text{mol}/\text{m}^2/\text{sec}$ (3) PFD-G (500nm to 600nm) $\mu\text{mol}/\text{m}^2/\text{sec}$ (4) PFD-R (600nm to 700nm) $\mu\text{mol}/\text{m}^2/\text{sec}$ (5) PFD-FR (700nm to 780nm) $\mu\text{mol}/\text{m}^2/\text{sec}$
22. Irradiance (380nm~780nm) ( $\text{W}/\text{m}^2$ )
23. Spectral Power Distribution (SPD), Unit: ( $\text{mW}/\text{m}^2$ )
24.Peak Wavelength ; $\lambda_p$ (nm)
25.Peak Wavelength Value ; $\lambda_{pV}$ ( $\text{mw}/\text{m}^2$ )
26.Transmittance (%)
27.Blue Light Weighted Irradiance ; EB ( $\text{w}/\text{m}^2$ )
28.Blue Light Hazard Efficacy of Luminous Radiation ; KB,V ( $\text{w}/\text{lm}$ )
29.Blue Light Hazard Risk Group(RG)

### System Configurations

<b>Display</b>	4.3" 800X480 Resistive Touch LCD
<b>Max. Files</b>	≅ 21,000 Files @ 8GB SD Card (Excel + JPG)
<b>Battery Operation Time</b>	≤ 4 hours / Fully Charged
<b>Power</b>	Adapter; 2500 mAh (3.7V Rechargeable Li-ion Battery)
<b>Data Output Interface</b>	SD Card (SD2.0,SDHC/up to 32G) / Mini USB Port (USB 2.0) / WiFi SD Card compatible with iOS and Android (Android app not ready yet)

<b>Data Format</b>	Compatible Excel / JPG
<b>Dimensions</b>	163 x 81 x 26.6 mm (H x W x D)
<b>Weight (with Battery)</b>	260 g ± 10 g
<b>Operating Temperature / Humidity</b>	0 to 35 °C, relative humidity 70% or less without condensation
<b>Storage Temperature / Humidity</b>	-10 to 40 °C, relative humidity 70% or less without condensation
<b>Display Languages</b>	English / Traditional Chinese / Simplified Chinese / Japanese / Spanish / German / French / Italian / Russian
<b>Camera Resolution</b>	2M pixels

## Cosine Correction



- \*1 : Input source must be a stable light source.
- \*2 : Temperature  $23 \pm 2^\circ\text{C}$  and relative humidity 50% or less.
- \*3 : Input the 550nm monochromatic light and measure the stray light ratio at  $550\text{nm} \pm 40\text{nm}$ .
- \*4 : It can be connected to mobile phones and tablets.
- \*5 : MSC- Mass Storage Class
- \*6 : Test condition is based on LUX > 300 lx of sine wave light source.

The company reserves the right to change product specifications at any time without prior notice.