# MK550T Ø10 Specification List

## MK550T Ø10 Spectroradiometer

| Product Image |  |
|---|---|

### Spectrum

| | |
|---|---|
| Sensor | CMOS Linear Image Sensor |
| Wavelength Range | 380 to 780 nm |
| Wavelength Data Increment | 1 nm |
| Spectral Bandwidth | Approximately 12 nm (Half Bandwidth) |
| Recommending working distance | 30±5 mm ; It's also recommending to touch the DUT/Display for measurement |
| Receptor Size | Ø 10 mm |
| Acceptance angle | ±1° |
| Wavelength Reproducibility | ± 1 nm [5] ( Input source must be a stable light source. ) |
| Display Range | 0.001 to 5000 cd/m² |

| Luminance [1][2][5] | Measurement range (For Accuracy & Repeatability) | 0.004~5000 cd/m² | |
|---|---|---|---|
| | Accuracy | ±2% @ 100 to 5000 cd/m² | |
| | | ±3% @ 0.2 to 100 cd/m² | |
| | | ±4% @ 0.05 to 0.2 cd/m² | |
| | | ±8% @ 0.004 to 0.05 cd/m² | |
| | Repeatability (2σ) [3] | 0.2% @ 100 to 5000 cd/m² | |
| | | 0.5% @ 0.2 to 100 cd/m² | |
| | | 0.8% @ 0.05 to 0.2 cd/m² | |
| | | 8% @ 0.004 to 0.05 cd/m² | |

| Color [1][2][5] | Measurement range (For Accuracy & Repeatability) | 0.01~5000 cd/m² |
|---|---|---|
| | Accuracy | ±0.002 in CIE1931 x, y for white @ 100 to 5000 cd/m² |
| | | ±0.003 in CIE1931 x, y for white @ 0.2 to 100 cd/m² |
| | | ±0.005 in CIE1931 x, y for white @ 0.05 to 0.2 cd/m² |
| | | ±0.005 in CIE1931 x, y for white @ 0.01 to 0.05 cd/m² |
| | Repeatability (2σ) [3] | 0.0005 in CIE1931 x, y for white @ 100 to 5000 cd/m² |
| | | 0.001 in CIE1931 x, y for white @ 0.2 to 100 cd/m² |
| | | 0.002 in CIE1931 x, y for white @ 0.05 to 0.2 cd/m² |
| | | 0.005 in CIE1931 x, y for white @ 0.01 to 0.05 cd/m² |

| | |
|---|---|
| Stray Light | -25 dB max [4] |
| Polarized Error | <2% |
| Integration Time Range | 100us to 5000 ms (fast mode/normal mode ; User could do manual set-up for production line requirement) |
| Digital Resolution | 16 bits |

### Flicker

| | |
|---|---|
| Measurement Range | 5 to 5000cd/m² |
| Sampling Rate | 100k sample/sec  (adjustable) |
| DUT Frequency | 0.5~5K Hz |

| Contrast | Accuracy | ±1%(30Hz AC/DC 10% sine wave) |
|---|---|---|
| | | ±2%(60Hz AC/DC 10% sine wave) |
| | Reproducibility | 1%(20 to 65 Hz AC/DC 10% sine wave) |
| JEITA | Accuracy | ±0.5dB(30Hz AC/DC 10% sine wave) |
| | Reproducibility | 0.3dB(30 Hz AC/DC 10% sine wave) |

### Feature

| | |
|---|---|
| Capture Function | One time/Continuous |
| Operation Mode | Standalone / USB Mode (PC Connection) / RS232 Mode |
| Integration Mode | Auto/Manual (User could do manual set-up for production line requirement) |
| Dark Calibration | Yes (Default setting as Auto ; Possible to set up at SDK) |

| Measuring Capabilities (Spectrum) | 1. Luminance (cd/m2) |
|---|---|
| | 2. Correlated Color Temperature (CCT: K) |
| | 3. CIE Chromaticity Coordinates |
| | (1) CIE 1931 (2-degree, 10-degree) x,y Coordinates |
| | (2) CIE 1976 (2-degree, 10-degree) u',v' Coordinates |
| | (3) CIE 1931 XYZ Value |
| | 4. Δx , Δy , Δu' , Δv' |
| | 5. Dominant Wavelength (λd) |
| | 6. Excitation Purity |
| | 7. Color Rendering Index (CRI = Ra/ R1 to R15; For Lighting application) |
| | 8. Spectral Power Distribution (SPD) mW/m² (Possible to output raw data of SPD by each 1nm from PC Software) |
| | 9. Peak Wavelength (λp) |
| | 10. Peak Wavelength Value (λpV) |
| | 11. Intergration Time (I-Time ; 100us to 5000 ms) |
| | 12. Scotopic and Photopic Ratio (S/P) |

| Measuring Capabilities (Flicker) | 1. Max/Min, Average, Frequency |
|---|---|
| | 2. JEITA (% & dB) |
| | 3. VESA / Contrast Method (FMA % / RMS% / RMS dB / VESA % / VESA dB) |
| | 4. Light waveform ; Time domain lightwave & Frequency domain lightwave (Fast Fourier Transform, FFT) |
| | 5. Flicker Index (IES), Flicker Percentage (IES) for lighting application |

### System Configurations

| | |
|---|---|
| Duisplay | 3.5" 320X240 Resistive Touch LCD |
| Battery | Rechargeable Li-ion Battery (2500 mAh , 3.7V) / Possible to stand by 4~5 ours after full charging |
| Power | DC Power Adapter (5V ; 1.0A) or Via USB (5V) |
| Interface | USB  / RS-232 |
| Dimensions | 220 x 81 x 33mm (H x W x D) |
| Weight (with Battery) | 330 g ± 10 g |
| Operating Temperature/Humidity | 0 to 35 ℃, relative humidity 70% or less without condensation |
| Storage Temperature/Humidity | -10 to 40 ℃, relative humidity 70% or less without condensation |
| Fixture/Screw | 1) ISO Screw: 5mm ;  Depth: 6mm (Compatible to Japanese brand) <br> 2) Tripod Screw: 1/4"-20 UNC ; Depth: 6mm |
| PC Software | 1. QuickMsrTool (Engineering analysis software) <br> 2. uFlicker standard software (For Flicker measurement) <br> 3. SDK / Library @ Windows platform (For User 2nd development, including C language, LabView, etc) |

*1 : Luminance and color testing are based on standard light source at 2856K, 6500K & 9300K. (Not for Monochrome)

*2 : Measure in normal mode with temperature 23±2℃ and relative humidity 50% or less.

*3 : Repeatability test is based on the status of shutter opening.

*4 : Input the 550nm monochromatic light and measure the stray light ratio at 550nm ± 40nm.

*5 : Input source must be a stable light source.

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