



# ***Portable Spectrophotometer LSP-C11***

## DESCRIPTION :

Portable Spectrophotometer LSP-C11 adopts 1000 line precision blazed grating as the spectroscopic element, the silicon photocell array with large photosensitive area as the detector. The full spectrum LED with high life as the light source, and the optical resolution is less than 10 nm in the visible light range. Under the condition of d/8 geometric optical illumination recommended by CIE, spectrophotometer can accurately measure the SCI and SCE reflectance data of samples / fluorescent samples. It has stable performance, accurate color measurement and powerful function.

## FEATURES :

- Designed with combined LED light source with high life and low power consumption, including UV / excluding UV
- Dual optical path system, the optical resolution in the visible range is less than 10 nm
- It measures the SCI and SCE spectrum of the sample at the same time
- Accurate spectrum and lab data, used for color matching and accurate color transmission
- USB / Bluetooth dual communication mode, wider adaptability
- Large capacity storage space, which can store more than 30000 pieces of test data
- Camera locating position and Stabilizer cross measurement position
- PC software has powerful function expansion

## APPLICATION :

Portable Spectrophotometer is used in plastic electronics, paint and coating, textile printing and dyeing, printing paper, automobile, medical treatment, cosmetics and food industries, as well as scientific research institutions and laboratories etc.

## SPECIFICATION :

|                            |   |
|----------------------------|---|
| Model                      | LSP-C11   |
| Reflect                    | 8°(diffused illumination, 8 degree viewing angle)   |
| Optical Geometry           | SCI (specular component included)/SCE (specular component excluded)<br>Include UV / excluded UV light source  |
| Standards                  | ISO7724-1, ASTM E1164, DIN5033 Teil7  |
| Integrating Sphere Size    | Φ 40 mm   |
| Light Source               | Combined full spectrum LED light source, UV light source  |
| Spectrophotometric Mode    | Flat Grating  |
| Sensor                     | Silicon photodiode array (double row 40 groups)   |
| Wavelength Range           | 400 to 700 nm   |
| Wavelength Interval        | 10 nm   |
| Semi band Width            | 10 nm   |
| Measured Reflectance Range | 0 to 200%   |
| Measuring Aperture         | MAV: Φ8 mm / Φ10 mm   |
|                            | SAV: Φ4 mm / Φ5 mm  |
| Specular Component         | SCI & SCE   |
| Color Space                | CIE LAB, XYZ, Yxy, LCh, CIE LUV,<br>s-RGB, βxy,DIN, Munsell (C/2)   |
| Color Difference Formula   | $\Delta E^*_{ab}$ , $\Delta E^*_{uv}$ , $\Delta E^*_{94}$ , $\Delta E^*_{cmc}(2:1)$ , $\Delta E^*_{cmc}(1:1)$ , $\Delta E^*_{00}$                               |
| Other Colorimetric Index   | WI (ASTM E313 CIE/ISO, AATCC, Hunter),  |
|                            | YI(ASTM D1925 ASTM 313),  |
|                            | Metamerism Index MI,  |
|                            | Staining Fastness, Color Fastness, Color Strength, Opacity,<br>8° Glossiness  |
| Illuminant                 | D65, A , C, D50, F2(CWF), F7(DLF), F10(TPL5), F11(TL84),<br>F12(TL83/U30)   |
| Observer Angle             | 2° / 10°  |
| Measuring Time             | About 1.5 s (Measure SCI & SCE about 3.2 s)   |
| Repeatability              | Spectral reflectance: MAV/SCI, Standard deviation within 0.1% (400 nm to 700 nm: within 0.2%)   |
|                            | Chromaticity value: MAV/SCI, within $\Delta E^*_{ab}$ 0.04 ( When a white calibration plate is measured 30 times at 5 second intervals after white calibration) |
| Inter-instrument Error     | MAV/SCI, Within $\Delta E^*_{ab}$ 0.2 (Average for 12 BCRA Series II color tiles)   |
| Measurement Mode           | Single Measurement, Average Measurement(2 to 99 times)  |
| Locating Method            | Camera Locating, stabilizer cross position  |
| Displayed Data             | 3.5 inch TFT color LCD, Capacitive Touch Screen   |
| Data Port                  | USB   |
| Data Storage               | Standard 1000 Pcs, Sample 20000 Pcs   |
| Language                   | English   |
| Operating temperature      | 0 to 40°C   |
| Operating humidity         | 0 to 85 % RH  |
| Dimension                  | 129 × 76 × 217 mm   |
| Battery                    | Li-ion battery, 6000 measurements within 8 hours  |
| Weight                     | Approx. 600 g   |

**STANDARD ACCESSORIES :**

| <b>Accessories no.</b> | <b>Name</b>                        |
|------------------------|------------------------------------|
| 1                      | Power Adapter                      |
| 2                      | User Guide                         |
| 3                      | PC Software                        |
| 4                      | USB cable                          |
| 5                      | White and Black Calibration Cavity |
| 6                      | Protective Cover                   |
| 7                      | Wrist strap                        |
| 8                      | One aperture (8 mm or 4 mm )       |