

PROFESSIONAL LIGHT MEASUREMENT

X-200

PPFD • ePAR • Spectral Analysis • DLI • Plant Research



Quick Guide

Portable Spectrometer

01 | TECHNICAL SPECIFICATIONS

350-1050

nm
SPECTRAL RANGE

1

nm
RESOLUTION

± 5%

CALIBRATION
ACCURACY

KEY PERFORMANCE SPECIFICATIONS

PARAMETER	SPECIFICATION
Measurement Range	0 to 99,999 $\mu\text{mol}/\text{m}^2/\text{s}$; 0 to 200,000 lx ^{*1}
Calibration Accuracy	± 5% ^{*1 *2}
Spectral Repeatability	≥ 0.999
Long-term Drift (Instability)	< 2% per year
Non-linearity	< 1% (within 6000 $\mu\text{mol}/\text{m}^2/\text{s}$)
Spectral Range	350 - 1050 nm
Spectral Width (FWHM)	< 6 nm
Spectral Resolution	1 nm
Wavelength Repeatability	± 1 nm
Directional (Cosine) Response	± 5% @ 75°
Tilt Error	< 0.5%
Temperature Response	< 0.15% /°C
Daily Total Uncertainty	< 5%

ENVIRONMENTAL & OPERATING CONDITIONS

PARAMETER	SPECIFICATION
Sensor Operating Temperature	-10 to 50 °C
Sensor Operating Humidity	< 90% RH (non-condensing)

*1 : Under CIE Standard Illuminant A and halogen lamp, 25°C, for more details, please refer to the *X-Series Spectrometer Calibration Guide*.

*2 : This specification applies to the range of 20-200,000 lx.

01 | TECHNICAL SPECIFICATIONS

INTERFACE & DATA OUTPUT

PARAMETER	SPECIFICATION
Data Output Connector	Aviation connector (via Type-C adapter) ^{*3}
Data Output Format	csv

ELECTRICAL SPECIFICATIONS

PARAMETER	SPECIFICATION
Power Consumption	200 mW
Operating Voltage	3.3 V
Operating Current	60 mA
Warranty	3 years against defects in materials and workmanship ^{*4}

SUPPORTS LIGHT SOURCES

Supports all common light sources, including LED, fluorescent, incandescent, HID, gas discharge lamps and natural light.

METRICS ANALYSIS

- ✔ PAR Irradiance
- ✔ PPFD
- ✔ TPDF
- ✔ PFD-UV
- ✔ PFD-R
- ✔ PFD-G
- ✔ PFD-B
- ✔ PFD-FR
- ✔ PFD-NIR
- ✔ Illuminance
- ✔ Spectral Distribution
- ✔ Peak Wavelength
- ✔ Peak Wavelength Value
- ✔ Spectral Photon Fraction
- ✔ R/B
- ✔ R/FR
- ✔ CCT
- ✔ CRI
- ✔ Chlorophyll A
- ✔ Chlorophyll B
- ✔ Avg PPFD
- ✔ Light Uniformity Coefficient
- ✔ PPF
- ✔ Efficiency
- ✔ DLI

^{*3} : Result display requires connection to a smartphone.

^{*4} : For complete and latest warranty and after-sales service information, please visit our official website.

02 | SOFTWARE GUIDE

TYPE-C DIRECT CONNECTION

Tips: Connect directly to Android smartphones via the included Type-C adapter cable.

*Solutions compatible with both iOS and Android systems are currently under development and will be available soon. Please stay tuned for updates.

APP DOWNLOAD

Scan the QR code with your browser to download the XPAR App.
Visit www.xparlab.com for technical support.



STEP-BY-STEP CONNECTION

01

EXTENSION CABLE CONNECTION

Align screw holes on the sensor cable connector. Insert the extension cable and hand-tighten to secure.



02

CONNECT TO MOBILE DEVICE

Insert the Type-C connector into your Android phone or tablet USB port.



03

GRANT USB PERMISSION

When prompted, tap **“Allow”** to allow XPAR to access USB Serial.

USB device detected.
Allow this app to access the sensor?

Cancel

Allow

04

START MEASUREMENT

Tap **“Start”** to begin. View real-time PPFD and spectral data. Tap **“Save”** to store readings.

PPFD

255.6 $\mu\text{mol}/\text{m}^2/\text{s}$

Start

Save

02 | SOFTWARE GUIDE

MORE FEATURES

01

SWITCH WAVELENGTH RANGE

Tap the wavelength range button to switch. Full 350-1050 nm range.



02

ENTER PRO MODE FOR ADVANCED DATA VIEW

Switch to Pro Mode by tapping the Pro button, where you can access and view comprehensive, detailed measurement parameters.

03

PAR MAPS

Tap PAR Maps for grid-based PPFd uniformity measurement. Select a sampling grid and collect data points sequentially.



04

DATA HISTORY

Tap Records to access saved measurement data, including key parameters and spectral plots.

03 | PACKAGE CONTENTS & APPLICATION

WHAT'S IN THE BOX

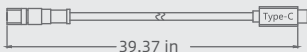
SPECTROMETER SENSOR X1

0.98(L) × 0.98(W) × 1.52(H) in / Net Weight: 2.33 oz
with 11.81 in integrated cable



EXTENSION CABLE X1

Length: 39.37 in
Type-C connector



TELESCOPIC SUPPORT X1

Retracted: 8.46 in
Extended: 39.37 in



QUICK GUIDE X1

This manual
*For the complete and latest electronic
manual, please visit our official website.



CALIBRATION CERTIFICATE X1

NIST-traceable



APPLICATION SCENARIOS

AGRICULTURAL RESEARCH

Greenhouses, plant factories, vertical farms

LIGHT SOURCE TESTING

LED, fluorescent, natural - all sources

SCIENTIFIC RESEARCH

Lab spectral analysis, ecology studies

HORTICULTURAL LIGHTING CALIBRATION

Grow light verification, fixture uniformity test

DON'T HAVE AN ANDROID PHONE?

To ensure a seamless experience, we suggest the following verified models.

✔ **RECOMMENDED MODEL:**

Motorola Moto G Play | 2024 | Unlocked | Made for US

✔ **REFERENCE PRICE:** \$125

✔ **RECOMMENDED PURCHASE CHANNELS:** Amazon

