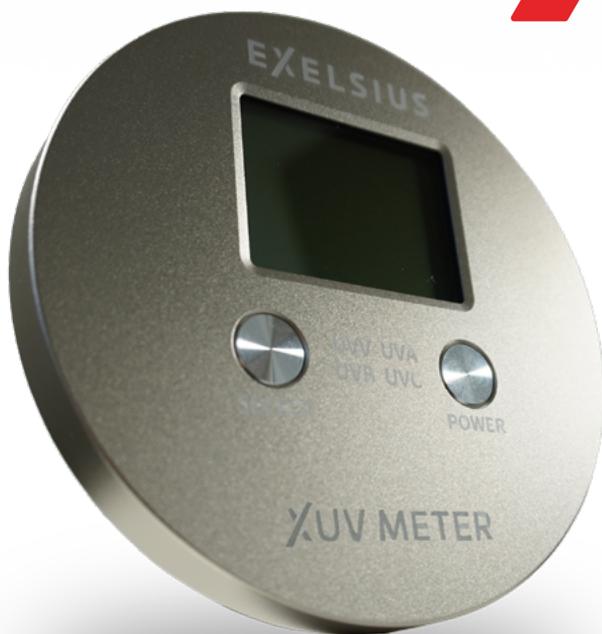# EXELSIUS

PROCESS PARTNER FOR THE ELECTRONICS INDUSTRY

XUV METER

UV MEASUREMENT DEVICE

USER MANUAL

Please read this manual carefully before using
and reserve it for reference.
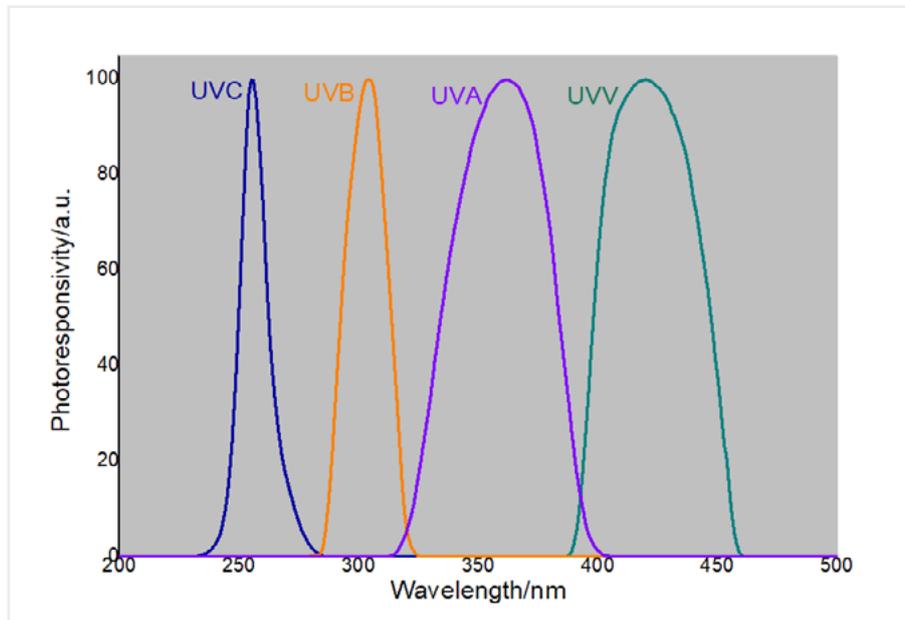
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I. THE XUV METER:

The XUV meter is designed to simultaneously measure UV energy, UV intensity, and temperature. It is suitable for monitoring UV curing processes in a wide range of equipment, including UV curing machines, UV dryers, UV coating systems, exposure units, printing machines, and other UV-related industrial equipment.

This meter is specifically intended for measuring UV intensity and UV energy from UV light sources.
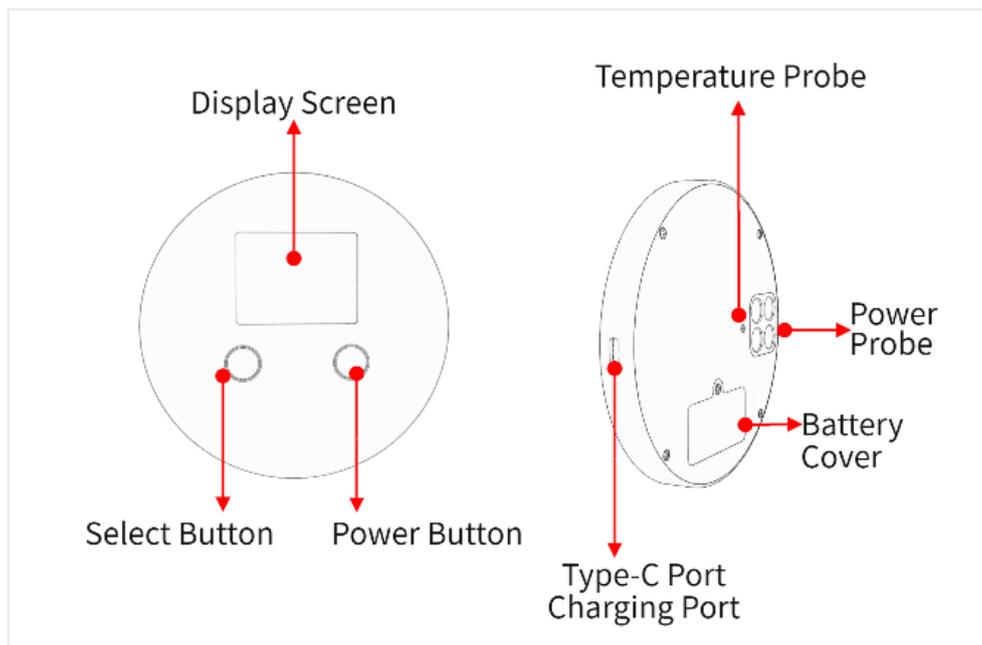
II. PARAMETERS:

SPECTRAL RANGE	• UVC: 230nm-280nm (λp=254nm) • UVB: 280nm-315nm (λp=310nm) • UVA: 315nm-400nm (λp=365nm) • UVV: 395nm-445nm (λp=420nm)
IRRADIANCE MEASUREMENT RANGE	0 ~ 2,000mW/cm²
IRRADIANCE RESOLUTION	0.01mW/cm²
ENERGY MEASUREMENT RANGE	0 to 999,999 mJ/cm²
MEASUREMENT ACCURACY (H = standard value)	• H < 5 mW/cm²: ±0.5 mW/cm² • H ≥ 5 mW/cm²: ±10% of H (typical ±5%)
TEMPERATURE MEASUREMENT RANGE	−55 °C to +125 °C
SAMPLING RATE	2,048 samples per second
IRRADIANCE DATA STORAGE RATE	32 samples per second
TEMPERATURE DATA STORAGE RATE	2 samples per second
RECORDING PERIOD	32 minutes
POWER SUPPLY	2 × AAA alkaline batteries
DISPLAY	240 × 160 dot-matrix LCD
DIMENSIONS	Diameter: 120 mm	Thickness: 13 mm
WEIGHT	225 g
SUPPLY VOLTAGE	DC 3 V
OPERATING CURRENT	39mA
OPERATING POWER CONSUMPTION	117mW

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III. SPECTRAL RESPONSE CURVE:

IV. OPERATION:

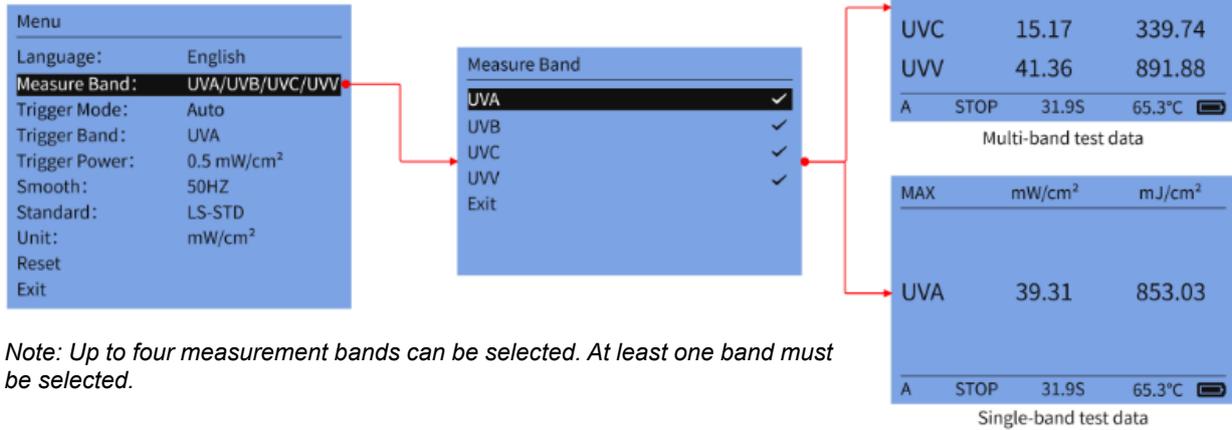### 1. XUV METER STRUCTURE

2. PARAMETER SETTINGS

When the device is powered off, press and hold the "POWER" button to enter setting mode.
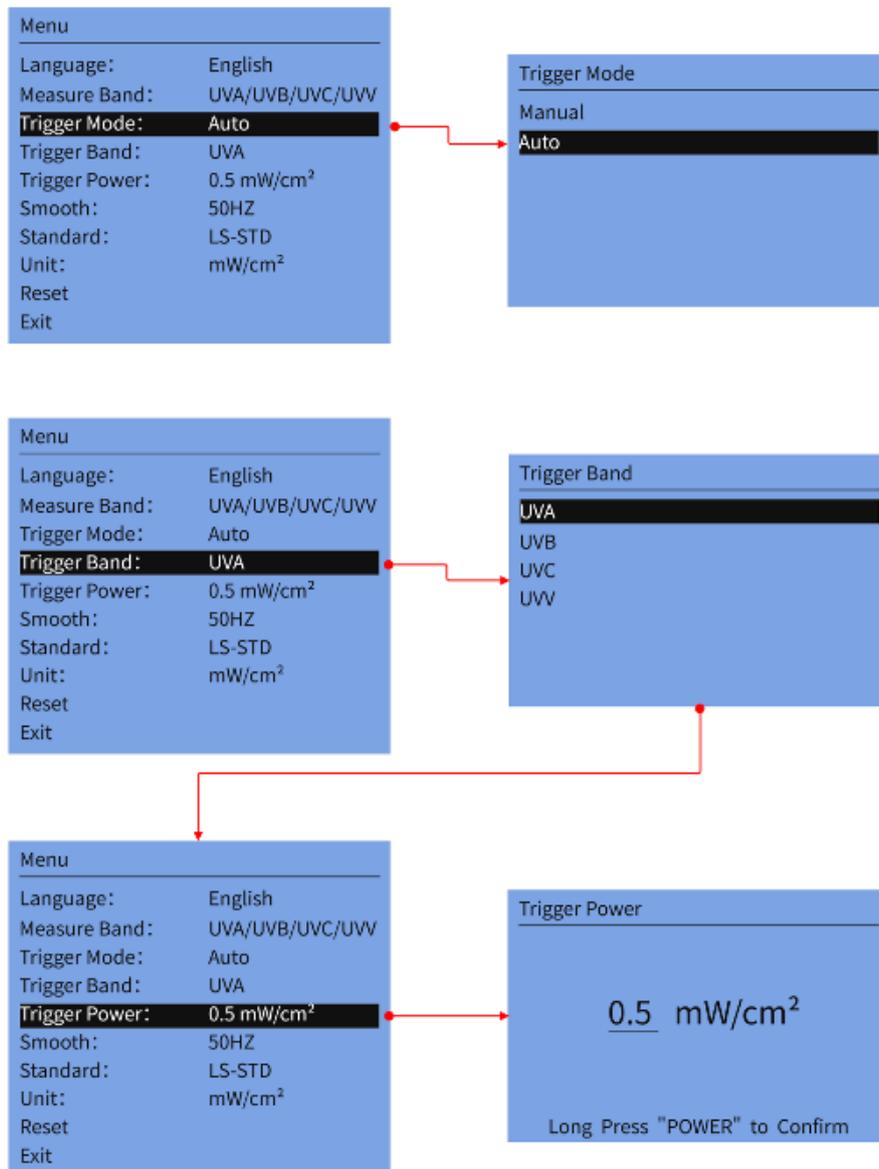In setting mode:
  • Use the "SELECT" button to navigate through the parameters.
  • Use the "POWER" button to confirm the selection.
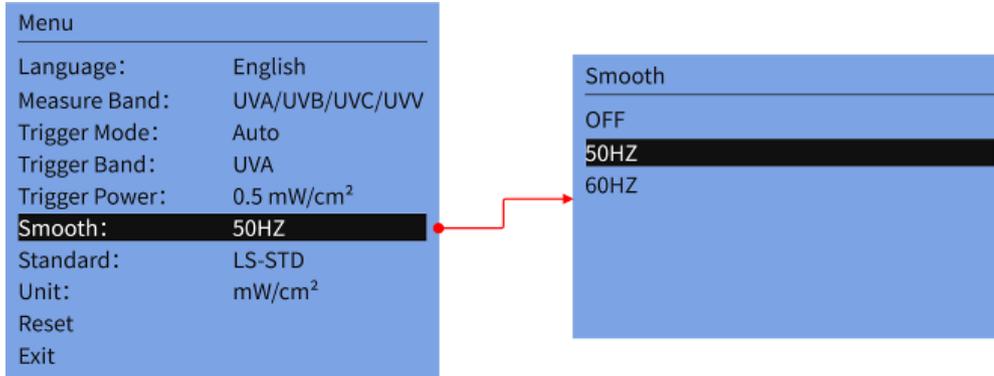
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A. MEASURE BAND: UVA / UVB / UVC / UVV:

MAX	mW/cm²	mJ/cm²
UVA	39.31	853.03
UVB	34.61	787.42
UVC	15.17	339.74
UVV	41.36	891.88

A	STOP	31.9S	65.3°C

Multi-band test data

Menu

Language:	English
Measure Band:	UVA/UVB/UVC/UVV
Trigger Mode:	Auto
Trigger Band:	UVA
Trigger Power:	0.5 mW/cm²
Smooth:	50HZ
Standard:	LS-STD
Unit:	mW/cm²
Reset	
Exit	

Measure Band

- UVA ✓
- UVB ✓
- UVC ✓
- UVV ✓
- Exit

MAX	mW/cm²	mJ/cm²
UVA	39.31	853.03

A	STOP	31.9S	65.3°C

Single-band test data

Note: Up to four measurement bands can be selected. At least one band must be selected.

B. TRIGGER MODE: MANUAL / AUTO

Menu

Language:	English
Measure Band:	UVA/UVB/UVC/UVV
Trigger Mode:	Auto
Trigger Band:	UVA
Trigger Power:	0.5 mW/cm²
Smooth:	50HZ
Standard:	LS-STD
Unit:	mW/cm²
Reset	
Exit	

Trigger Mode

- Manual
- Auto

Menu

Language:	English
Measure Band:	UVA/UVB/UVC/UVV
Trigger Mode:	Auto
Trigger Band:	UVA
Trigger Power:	0.5 mW/cm²
Smooth:	50HZ
Standard:	LS-STD
Unit:	mW/cm²
Reset	
Exit	

Trigger Band

- UVA
- UVB
- UVC
- UVV

Menu

Language:	English
Measure Band:	UVA/UVB/UVC/UVV
Trigger Mode:	Auto
Trigger Band:	UVA
Trigger Power:	0.5 mW/cm²
Smooth:	50HZ
Standard:	LS-STD
Unit:	mW/cm²
Reset	
Exit	

Trigger Power

0.5 mW/cm²

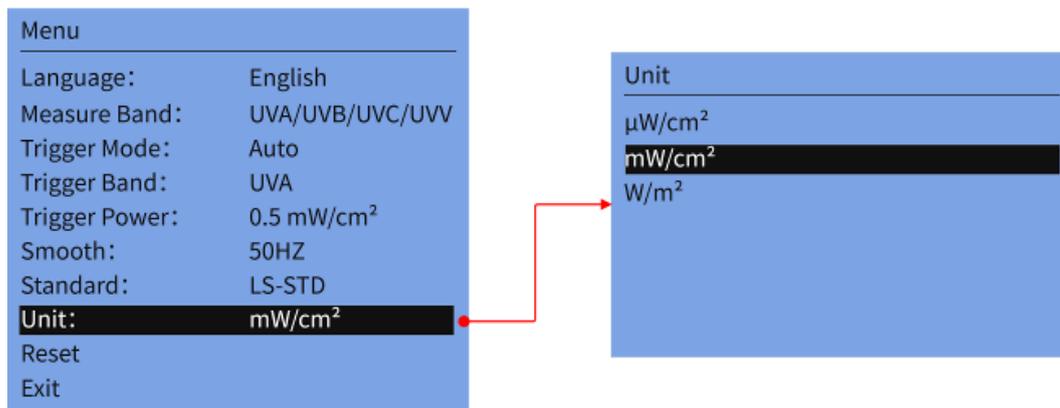Long Press "POWER" to Confirm

C. SMOOTH: OFF / 50 HZ / 60 HZ:

- OFF: Select this option when no smoothing is required and the UV lamp is powered by direct current (DC).
- 50 Hz: Select this option when the AC power frequency is 50 Hz.
- 60 Hz: Select this option when the AC power frequency is 60 Hz.

D. UNIT: µW/cm², mW/cm², W/m²

E. RESET:

Reset the factory default settings as follows:

LANGUAGE	No reset
MEASUREMENT BAND	UVA / UVB / UVC / UVV
TRIGGER MODE	Manual
SMOOTH	50 Hz
STANDARD	LS-STD
UNIT	mW/cm²

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III. MEASUREMENT:

A. MANUAL MODE

- Briefly press the "POWER" button and follow the on-screen prompts to start a new measurement. The instrument automatically enters the measurement (RUN) state.
- To end the measurement, briefly press the "POWER" button again, or wait until the recording time reaches 32 minutes.

B. AUTO MODE

- Briefly press the "POWER" button and follow the on-screen prompts to start a new measurement. The instrument enters the READY state and automatically switches to the measurement (RUN) state once the trigger conditions are met.
- The measurement ends automatically when:
  - the recording time reaches 32 minutes, or
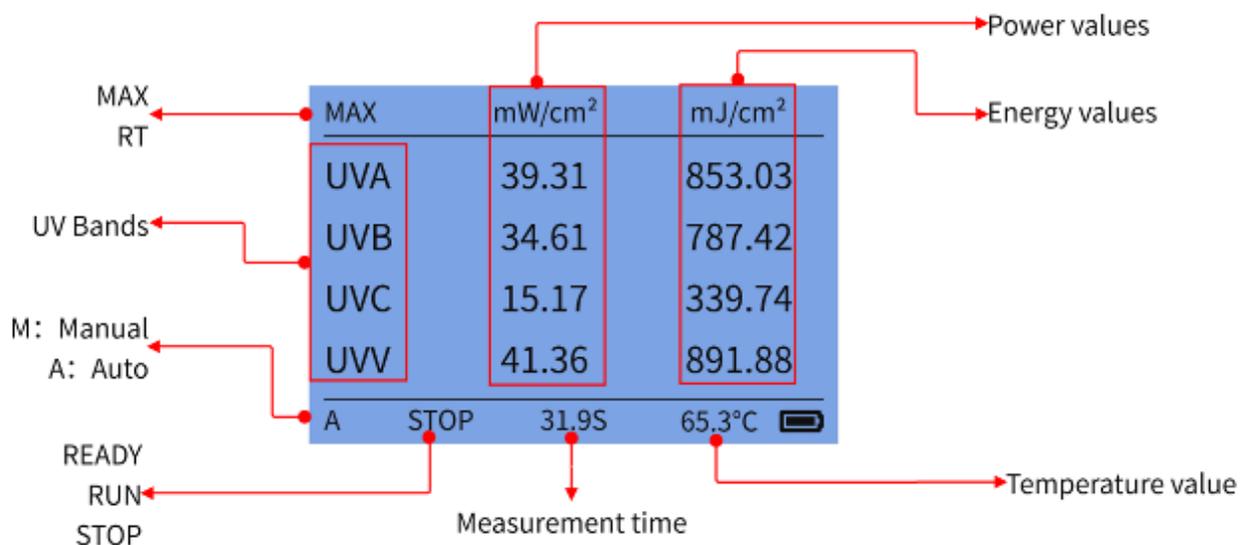 - the trigger conditions are no longer met.

Note: Since the maximum recording time is 32 minutes, AUTO mode is recommended for long production lines where a longer waiting time is required before reaching the UV lamp position.
- *In the READY state, the maximum waiting time is 50 minutes. If the measurement is not triggered within this time, the device automatically shuts down.*
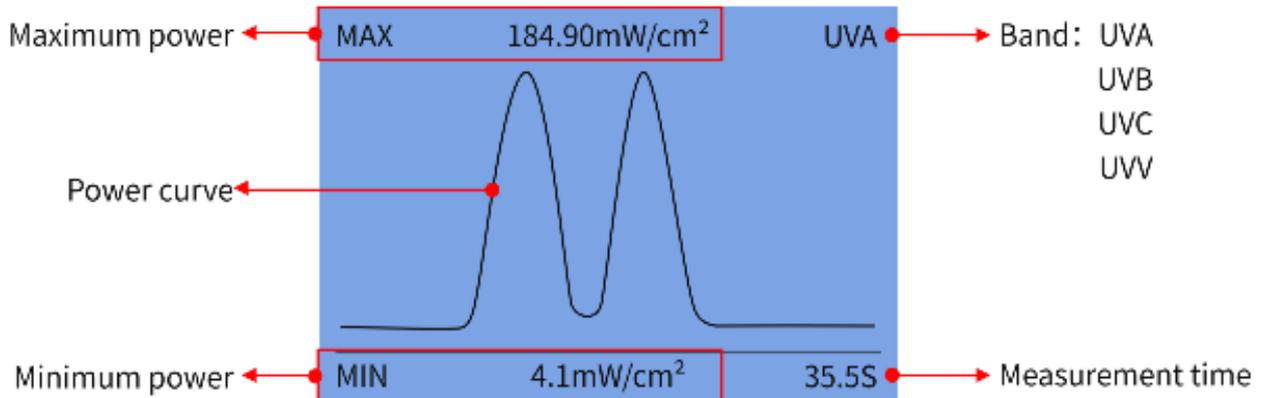
C. VIEW DATA

- Briefly press the "SELECT" button to cycle through the following interfaces:
  - Maximum value display
  - UVA / UVB / UVC / UVV power curve display
  - Temperature curve display
- When the device is in the STOP state, press and hold the "SELECT" button to clear the current measurement data.
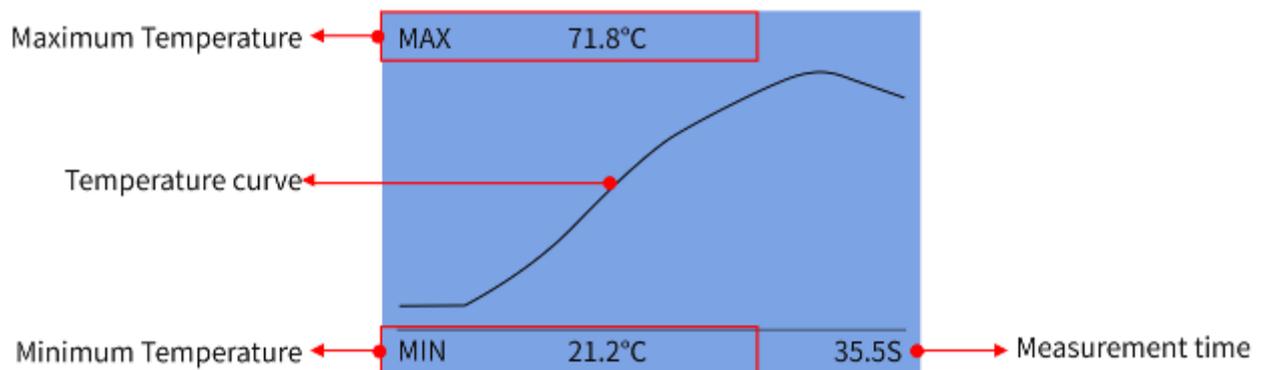
Maximum value interface

Power curve interface

Maximum power ← MAX   184.90mW/cm²   UVA → Band: UVA
    UVB
    UVC
    UVV

Power curve ←

Minimum power ← MIN   4.1mW/cm²   35.5S → Measurement time

Temperature curve interface

Maximum Temperature ← MAX   71.8°C

Temperature curve ←

Minimum Temperature ← MIN   21.2°C   35.5S → Measurement time

V. PC SOFTWARE:

The XUV meter is equipped with a USB communication port and can be connected to a computer using a USB cable. After connecting the device, launch the dedicated PC software to read and manage the measurement data stored in the meter.

The software provides the following functions:
- Parameter configuration
- Measurement data reading
- Display of UV irradiance curves for each band
- Temperature curve display
- UV irradiance data export to Excel
- Temperature data export to Excel
- Report generation

Note: The software is currently compatible with the Windows operating system.

VI. NOTES:

- The meter sensor is located on the rear side of the instrument.
- When the XUV meter is not in use, switch it off.
- Avoid contact with corrosive materials and keep the instrument away from high-humidity environments.
- After powering off, place the meter in its dedicated protective case and store it properly.
- The recommended calibration interval is one year.
- To obtain a calibration certificate, contact EXELSIUS.
- As the UV sensor is highly sensitive to humidity, storage conditions are critical.
- For long-term storage, ensure that the meter is kept in a dry environment.

VII. PACKING LIST:

NO.	DESCRIPTION	QUANTITY	UNIT
1	XUV meter	1	PC
2	USB cable	1	PC
3	Anti-static gloves	1	PAIR
4	Small Phillips screwdriver	1	PC
5	User manual	1	PC
6	Calibration report (on request)	1	PC
7	Plastic case	1	PC

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VIII. SERVICE:

- The XUV meter is covered by a one-year warranty.

  In the event of abnormal operation, please return the entire instrument to EXELSIUS for inspection and maintenance.

- Our contact : contact@exelsius.com