

*Sound, Anemometer, Light, %RH, Temp., Type K*

# 5 IN 1 METER

**Model : LM-8102**

**ISO-9001, CE, IEC1010**



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[www.WorldTesters.com](http://www.WorldTesters.com)

[sales@eztech-usa.com](mailto:sales@eztech-usa.com)

# 5 in 1

# Anemometer, Humidity meter, Light Meter, Thermometer, Sound level meter

Model : LM-8102

## FEATURES

- \* 5 in 1 professional measuring instrument: Anemometer, Hygrometer, Type K Thermometer, Light meter, Sound level meter.
- \* Anemometer use low-friction ball bearing mounted wheel design provides high accuracy.
- \* Light meter use exclusive photo diode and color correction filter light sensor, spectrum meets C.I.E. photopic.
- \* Type K thermometer use standard type K (NiCr-NiAl) thermocouple input jack suitable for all kinds of type K probe.
- \* Humidity meter use high precision humidity sensor with fast response time.
- \* Sound level meter's characteristic is simulated as " Human Ear Listing " response, used the " A " frequency weighting and " Fast " time weighting to meet IEC 61672 class 2.
- \* Sound level meter can cooperate the external 94 dB sound calibrator and just press the front buttons to make the calibration
- \* Built- in microprocessor circuit assures excellent performance and accuracy.
- \* Concise and compact buttons arrangement, easy operation.
- \* Memorize the maximum and minimum value with recall.
- \* Hold function to freeze the current reading value.
- \* °C/°F detection by pressing button on the front panel.
- \* Lux/Feet-candle selection by pressing front button.
- \* Air velocity measuring units selection by pressing button on the front panel for five kinds of units.
- \* Multi channel display for relative humidity and temperature measured values or air velocity and temperature measured values at the same time.
- \* Zero button design makes light meter calibration.
- \* Rough housing case suitable for handling with one hand,
- \* RS232/USB computer data bus

## GENERAL SPECIFICATIONS

Display	LCD display, LCD size : 41.5 x 31.5 mm.
Measurement	5 in 1 : Anemometer ( Air velocity + Temp. ) Humidity ( %RH + Temp. ) Light Thermometer ( type K ) Sound level
Operating Humidity	Max. 80 %RH.
Operating Temperature	0 to 50° C (32 to 122° F)
Over Input Display	Indication of "- - - -"
Data Output	RS 232/USB PC serial interface. * Connect the optional RS232 cable UPCB-02 will get the RS232 plug. * Connect the optional USB cable USB-01 will get the USB plug.
Power Supply	DC 1.5 V battery ( UM4, AAA ) x 4 PCs, Or DC 9V adapter input. @AC/DC power adapter is optional.
Power Consumption	Anemometer : Approx. DC 11 mA. Other functions : Approx. DC 7.5 mA.
Weight	335 g/0.74 LB ( battery included ).
Dimension	HWD 248 x 70 x 34 mm ( 9.8 x 2.8 x 1.3 inch ).
Standard Accessory	Instruction Manual..... 1 PC
Optional Accessories	Carrying case. Type K Temperature probe. Sound Calibrator/SC-941. USB cable/USB-01. RS232 cable/UPCB-02. Data Acquisition software, SW-U801-WIN. AC to DC power adapter.

## ELECTRICAL SPECIFICATION ( 23 ± 5°C )

### Hygrometer ( Humidity/Temp. )

Measurement	Range	Resolution
Humidity	%RH	10 to 95 %RH 0.1 %RH
	Temperature ( Semiconductor )	32 to 122 °F 0 to 50 °C 0.1 °F 0.1 °C

Measurement	Range	Accuracy
Humidity	10 to 95 %RH	< 70 %RH : ± 4 %RH  ≥ 70 %RH : ± ( 4%rdg + 1.2 %RH )
	32 to 122 °F	± 2.5 °F
	0 to 50 °C	± 1.2 °C

### Type K Thermometer

Measurement	Range	Resolution
Temperature ( Type K )	-148 to 2372 °F	0.1 °F
	-100 to 1300 °C	0.1 °C

Measurement	Range	Accuracy
Temperature ( Type K )	-148 to 2372 °F	± (1% rdg + 2°F)
	-100 to 1300 °C	± (1% rdg + 1°C)

### Anemometer ( Air velocity/Temp. )

Measurement	Range	Resolution
Air velocity	ft/min	80 to 5910 ft/min 1 ft/min
	m/s	0.4 to 30.0 m/s 0.1 m/s
	km/h	1.4 to 108.0 km/h 0.1 km/h
	MPH	0.9 to 67.0 mile/h 0.1 MPH
	knots	0.8 to 58.3 knots 0.1 knots
Temperature ( Semiconductor )	32 to 122 °F	0.1 °F
	0 to 50 °C	0.1 °C

Measurement	Range	Accuracy
Air velocity	80 to 5910 ft/min	≤ 20 m/s : ± 3% F.S. > 20 m/s : ± 4% F.S.
	0.4 to 30.0 m/s	
	1.4 to 108.0 km/h	
	0.9 to 67.0 mile/h	
	0.8 to 58.3 knots	
Temperature	32 to 122 °F	± 2.5 °F
	0 to 50 °C	± 1.2 °C

#### Remark :

ft/min : feet per minute      MPH : miles per hour  
m/s : meters per second      knots : nautical miles per hour  
km/h : kilometers per hour

### Light

Measurement	Range	Resolution
Light	Lux	0 to 2,200 Lux 1 Lux
	* auto range	1,800 to 20,000 Lux 10 Lux
* auto range	Ft-cd	0 to 204.0 Fc 0.1 Ft-cd
		170 to 1,860 Fc 1 Ft-cd
Temperature ( Type K )	-148 to 2372 °F	0.1 °F
	-100 to 1300 °C	0.1 °C

Measurement	Range	Accuracy
Light	0 to 20,000 Lux	± 5% rdg ± 8 dgt
	0 to 1,860 Fc	
Temperature ( Type K )	-148 to 2372 °F	± (1% rdg + 2°F)
	-100 to 1300 °C	± (1% rdg + 1°C)

Remark : Ft-cd : feet candle

### Sound Level

Measurement Range	Auto range 35 to 130 dB, 3 ranges : range 1 - 35 to 80 dB, range 2 - 50 to 100 dB, range 3 - 80 to 130 dB,	
Resolution	0.1 dB.	
Measurement Frequency	31.5 Hz to 8,000 Hz.	
Weighting	Frequency Weighting	Characteristics of " A " frequency weighting network. * A weighting : The characteristic is simulated as " Human Ear Listing " response.
	Time Weighting	" Fast " time weighting.
Accuracy ( 23 ± 5 °C )	Characteristics of " A " frequency weighting network meet IEC 61672 class 2. Under 94 dB input signal, the accuracy are :	
	31.5 Hz	± 3.5 dB
	63 Hz	± 2.5 dB
	125 Hz	± 2.0 dB
	250 Hz	± 1.9 dB
	500 Hz	± 1.9 dB
	1 K Hz	± 1.4 dB
	2 K Hz	± 2.6 dB
	4 K Hz	± 3.6 dB
	8 K Hz	± 5.6 dB
Calibrator	B & K (Brüel & Kjær), multi-function acoustic calibrator, model : 4226.	
Microphone	Electric condenser microphone.	
Size of microphone	1/2 inch standard size.	
Data Hold	Hold function to freeze the display value.	
Optional Accessories	94 dB Sound Calibrator, Model : SC-941	