Multifunction Meter

The product should have,

- 7- Inch Touch screen
- Removable microSD memory card
- Inbuilt-Three phase power quality analyser
- Recording should be in accordance with the class-S of EN 61000-4-30
- Voltage L1, L2, L3, – average values in the range up to 500 V, » L1, L2, L3 currents, – average values, current measurement in the range up to 3 kA (depending on the current probes used)
- Measurement of Frequency in the range of 40 Hz – 70 Hz
- Measurement of Active (P), Reactive (Q) and Apparent (S) Power
- Measurement of Power factor (PF), cosϕ,
- Measurement of Harmonics (up to 40th for voltage and current),
- Measurement of Total harmonic distortion (THD) for current and voltage
- Short circuit loop impedance test (Z_{L-PE}, Z_{L-N}, Z_{L-L}) from 0.13 Ω…1999.9 Ω according to IEC 61557
- Short circuit loop impedance test without RCD tripping (Z_{L-PE}) from 0.50 Ω…1999.9 Ω according to IEC 61557.
- RCD tripping time test for general and short-time delay RCD up to 300 ms with the resolution of 1ms
- RCD tripping time test for selective RCD up to 500 ms with the resolution of 1ms
- Measurement of RCD tripping current test up to 1000 mA.
- Earth resistance measurement
  1) 2- Pole method (up to 0.00 Ω…99.9 kΩ)
  2) 3-Pole method (0.50 Ω…1.99 kΩ with the accuracy of from ± (2% m.v. + 3 digits)
  3) 4-Pole method (0.50 Ω…1.99 kΩ with the accuracy of from ± (2% m.v. + 3 digits)
  4) **3Pole + Clamp method to measure the individual earth pit resistance without disconnection from the grid (0.00 Ω…1.99 kΩ with the accuracy of from ± (2% m.v. + 3 digits)**
  5) Soil resistivity measurement up to 0.0 Ω m…99.9 kΩm
- Insulation resistance measurement with 50V, 100V, 250V, 500V, & 1000V up to 9.99 GΩ with the accuracy of ±3%
- Resistance of protective conductors and equipotential bondings
  1) Measurement of resistance of protective conductors and equipotential bondings with ±200 mA current from 0.12 Ω…400 Ω acc. to IEC 61557-4 with the accuracy of ±2%
  2) Measurement of resistance with low current from 0.0 Ω…1999 Ω with the accuracy of ±3%
- Phase sequence indication- in the same direction (correct), opposite direction (incorrect), UL-L voltage: 95 V…500 V (45 Hz…65 Hz)
- Safety standard in accordance with the EN 61326-1 & EN 61326-2-2
- Memory of measurement results are unlimited – 4GB memory
- CAT IV 300V (III 500V)
- Battery chemistry should be Li-ion with 11V 3.4AH

- The kit should be work with battery and charging conditions
- The charger should be provided 12V DC with 2.5A
- Software for report generation.
- Interface USB, Wi-Fi, Bluetooth
- Ingress protection: IP51
- Quality standard: ISO 9001
- Weight should not more 3 kg
- Operating temperature 0 to 45°C

PV Testing parameter:

- Open circuit voltage measurement should be up to 1000 V with the resolution of 0.1 and with the accuracy of ±3%
- Short circuit measurement should be up to 20A with the resolution of 0.1 and with the accuracy of ±3%
- Inverter efficiency measurement
- Continuity of protective and equipotential bonding resistance measurements
- Insulation resistance measurement on the DC side
- Earth resistance measurement
- Should measure the current and power both AC and DC side
- CAT II 1000V DC

IRM Parameter:

- **Instrument should have** measurement capability in the range of **100 W/m² to 1400 W/m²** for solar irradiance.
- **Instrument should have** a resolution of **1 W/m²** for irradiance measurement.
- **Instrument should have** an irradiance measurement accuracy of **±5% of the measured value**.
- **Instrument should have** measurement capability in the range of **0 to 444 BTU/ft²·h** for solar irradiance in BTU units.
- **Instrument should have** a resolution of **1 BTU/ft²·h** for BTU measurements.
- **Instrument should have** a BTU measurement accuracy of **±(5% of the measured value + 2 digits)**.
- **Instrument should have** the capability to measure **PV module surface temperature and ambient temperature**.
- **Instrument should have** a temperature measurement range of **-20.0°C to +100.0°C**.
- **Instrument should have** a temperature resolution of **0.1°C**.
- **Instrument should have** temperature measurement accuracy of **±(1% of the measured value + 5 digits)**.
- **Instrument should have** the ability to measure **inclination angle** in the range of **-90° to +90°**.
- **Instrument should have** a resolution of **1°** for inclination angle measurement.
- **Instrument should have** an inclination angle accuracy of **±4°**.
- **Instrument should have** the capability to measure **position direction using a compass**.
- **Instrument should have** a directional measurement range of **0° to 360°**.

- **Instrument should have** a resolution of **1°** for compass-based position direction measurement.