

TES-132 Solar Power Meter (Datalogging)

- ❑ Wide spectral range.
- ❑ Excellent long term stability / Cosine corrected.
- ❑ Automatic transmission measurements.
- ❑ Select either power or transmission.
- ❑ Solar energy measurement.
- ❑ User calibration factor setting function.
- ❑ Select either W/m^2 or $Btu / (ft^2 \times h)$ units.
- ❑ Data Hold/MAX/MIN/AVG modes.
- ❑ Auto Data Memory function. (43000 sets)
- ❑ Manual Data Memory function. (99 sets)
- ❑ Software and USB interface to PC.



132 Datalogging Solar Power Meter

FEATURES

- Wide spectral range.
- Excellent long term stability.
- Cosine corrected.
- Automatic transmission measurements.
- Select either power or transmission.
- Solar energy measurement.
- Current time setting function.
- User calibration factor setting function.
- End-mount light sensor.
- Select either W/m² or Btu / (ft² x h) units.
- Data Hold/MAX/MIN/AVG modes.
- Auto Data Memory function. (43000 sets)
- Manual Data Memory function. (99 sets)
- Software and USB interface to PC.

APPLICATIONS

- Meteorology.
- Agriculture.
- Solar radiation measurement.
- Solar power research.
- Physics and optical laboratories.
- Solar transmission measurement.
- Identify high performance windows.

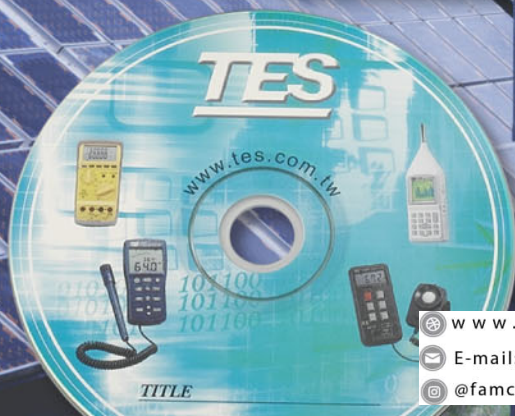
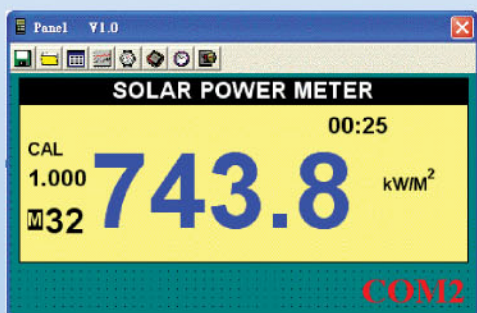
SPECIFICATIONS

Display	LCD display, 4 digit LCD reading
Range	2000 W/m ² 634 Btu / (ft ² x h)
Resolution	0.1 W/m ² 0.1 Btu / (ft ² x h)
Spectral response	400 to 1000nm
Accuracy	Typically within ± 10 W/m ² [± 3 Btu / (ft ² x h)] or $\pm 5\%$, whichever is greater in sunlight ; Additional temperature induced error ± 0.38 W/m ² /°C [± 0.12 Btu / (ft ² x h)/°C] from 25°C
Angular accuracy	Cosine corrected <5% for angles < 60°
Drift	< $\pm 2\%$ per year
Calibration	User recalibration available
Over-Input	Display shows "OL"
Sampling Rate	4 times/sec
Manual Data Memory and Read	99 sets
Auto Data Memory	43000 sets
Battery	6 pcs 1.5V size AAA
Battery Life	Approx. 200 hours
Operating Temp and Humidity	0°C to 50°C (32°F to 122°F) below 80%RH
Storage Temp and Humidity	-10°C to 60°C below 70%RH
Dimension & Weight	150(L)x72(W)x35(H) mm / Approx. 320g
Accessories Included	Operation Manual, 6 pcs 1.5V size AAA, USB Cable, CD software

TES-1333 Solar Power Meter

Sourcing the best efficiency of Solar Energy Reception

- Wide spectral range
- W/m² and Btu / (ft² x h) units display
- MAX / MIN / AVG mode
- Solar energy measurement
- Current time setting function



1333/1333R SOLAR POWER METER



FEATURE:

- Wide spectral range.
- Excellent long term stability.
- Cosine corrected.
- Automatic transmission measurements.
- Select either power or transmission.
- Solar energy measurement.
- Current time setting function.
- User calibration factor setting function.
- End-mount light sensor.
- Select either W/m² or Btu / (ft² x h) units.
- Data Hold/MAX/MIN/AVG modes.
- Data Memory and Read function. (99 sets)
- Auto Data Memory and RS232 interface to PC. (TES-1333R)

APPLICATIONS

- Meteorology.
- Agriculture.
- Solar radiation measurement.
- Solar power research.
- Physics and optical laboratories.
- Solar transmission measurement.
- Identify high performance windows.

SPECIFICATIONS

Display	3-1/2 digits. Max. indication 1999
Range	2000 W/m ² 634 Btu / (ft ² x h)
Resolution	1 W/m ² 1 Btu / (ft ² x h)
Spectral response	400-1100nm
Accuracy	Typically within ± 10 W/m ² [± 3 Btu / (ft ² x h)] or $\pm 5\%$, whichever is greater in sunlight; Additional temperature induced error ± 0.38 W/m ² /°C [± 0.12 Btu / (ft ² x h)/°C] from 25°C
Angular accuracy	Cosine corrected <5% for angles < 60°
Drift	< $\pm 2\%$ per year
Calibration	User recalibration available
Over-Input	Display shows "OL"
Sampling Time	Approx. 0.4 second
Manu Data Memory and Read	99 sets
Auto Data Memory	32000 sets (TES-1333R)
Battery	4 pcs size AAA
Battery Life	Approx. 100 hours
Operating Temp and Humidity	0°C to 50°C (32°F to 122°F) below 80%RH
Storage Temp and Humidity	-10°C to 60°C below 70%RH
Weight	Approx. 165g
Dimension	111(L) x 64 (W) x 34(H) mm
Accessories	Carrying Case, Operation Manual, 4 pcs size AAA, RS232 cable (for TES-1333R), CD software (for TES-1333R)

TES SS1

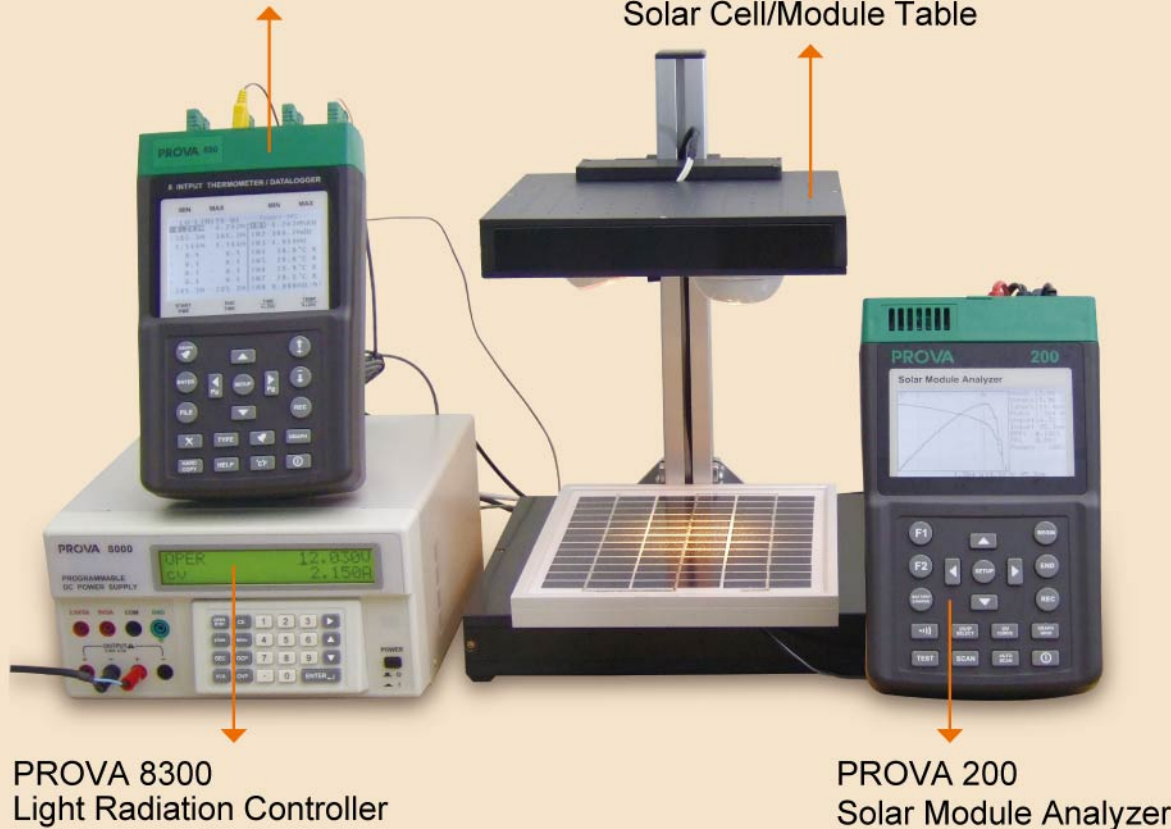
Educational Solar Power Development System

TES

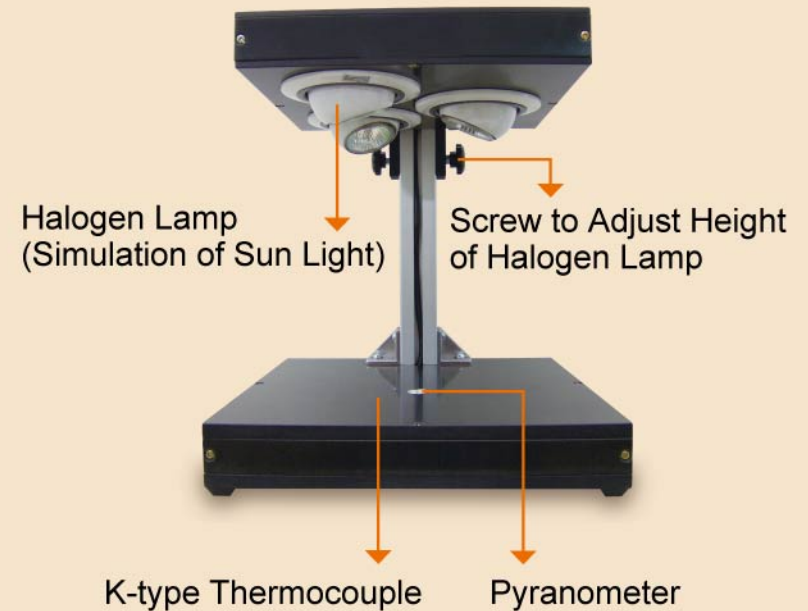
FAMCO
هایپر صنعت

PROVA 800
Multi-Input Thermometer/Datalogger

Solar Cell/Module Table



Solar Cell/Module Table



www.famcocorp.com
E-mail: info@famcocorp.com
@famco_group

Tel: +۹۰۱-۴۸۰۰۰۰۴۹
Fax: +۹۰۱-۴۴۹۹۴۶۴۲

تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)
روبروی پالایشگاه نفت پارس، پلاک ۱۳

TES ELECTRICAL ELECTRONIC CORP.

7F, No.31 Lane 513, Rui Guang Rd., Neihu Dist, Taipei, Taiwan

Tel : (02) 2799-3660 Fax : 886-2-2799-5099 E-mail : tes@ms9.hinet.net

TES SS1 Educational Solar Power Development System

Includes

- PROVA 200 Solar Module Analyzer
- PROVA 800 Multi-Input Thermometer/Datalogger
- PROVA 8300 Light Radiation Controller
- Solar Cell/Module Table

PROVA 200 Solar Module Analyzer

Features

- I-V Curve Test for Solar Cell.
- Max. Solar cell/module Power (Pmax) search by auto-scan (60V, 6A).
- Best Resolution: 1mV, 0.1mA.
- Manual Single Point I-V Test.
- Max. Voltage (Vmaxp) at Pmax.
- Max. Current (Imaxp) at Pmax.
- Voltage at open circuit (Vopen).
- Current at short circuit (Ishort).
- Efficiency (%) calculation of solar panel.
- RS232C (to USB Bridge) cable for PC.

PROVA 800 Multi-Input Thermometer/Datalogger

Features

- 8 input temperature measurement/logging (°C/°F)
- Graphic display of each input
- 11 types of thermocouple (K, J, E, T, R, S, N, L, U, B, C)
- Easy thermocouple mini connector, no need for wire peeling.
- Basic accuracy 0.05% ± 1°C (K type)
- Sampling rate: 1 sec. / 8 inputs
- Programmable Hi-Lo alarm for 8 inputs
- Standard 2G SD memory card (stores 3.8-year data)
- Built-in calendar clock
- Paperless Recorder

<http://www.tes.com.tw>

TES ELECTRICAL ELECTRONIC CORP.

www.famcocorp.com

E-mail: info@famcocorp.com

@famco_group

Tel: +۹۰۲۱-۴۸۰۰۰۰۰۴۹

Fax: +۹۰۲۱-۴۴۹۹۴۶۴۲

تهران، کیلومتر ۲۱ بزرگراه لشگری (جاده مخصوص کرج)

روبروی پالایشگاه نفت پارس، پلاک ۱۲

PROVA 8300 Light Radiation Controller

Features

1. Control halogen lamp (or other light source) to emulate sunlight irradiance.
2. Low cost for educational purpose.
3. Standard pyranometer (sunlight sensor) to show true irradiance.
4. User Friendly Interface.

Specifications

1. Controller Output Capacity: 40VDC and 5ADC.
2. Range of Irradiance: 100 to 1500 W/m²
3. Pyranometer: Temperature response: +/- 0.5% (-10 to 50 deg. C)
Cosine response: 1/1.5/17% at (30/60/80 deg).
4. Fixed 5V / 2A Accuracy: 5V ±0.25V
5. Fixed 3.3V / 3A Accuracy: 3.3V ±0.16V
6. Power Source: 115V (90V to 130V) or 230V (200V to 240V)
7. Accessories: power cord x 1, users manual x 1
8. Dimensions: 310mm x 250mm x 133 mm / 12.2" x 9.8" x 5.2"
9. Weight: 3.8kg / 8.4lbs

Solar Cell/Module Table

Specifications

1. Dimension: 300 (L) x 300 (W) x 420 (H) mm / 11.8" x 11.8" x 16.5"
2. Height from Halogen Lamps to table base:
* adjustable from 90mm to 30cm. * standard: 150mm.
3. Solar Cell/Module for measurement: max. 300 x 250 mm / 11.8" x 9.8"
4. Light sensor: 0 ~ 1500 W/m²
5. with K-type Thermocouple.
6. with Halogen Lamp (Simulation of Sun Light): DC 12V, 50W x 3pcs.
7. Input Voltage (for Halogen Lamps): DC 0V ~ 40V.
8. Weight: 5.95kg / 13.1 lbs

PROVA SS1

Educational Solar Power Development System

Includes:

- **PROVA 200** Solar Module Analyzer
- **PROVA 800** Multi-Input Thermometer/Datalogger
- **PROVA 8300** Light Radiation Controller
- Solar Cell/Module Table

PROVA 200 Solar Module Analyzer

Please refer to the catalog and data sheet of PROVA 200.

PROVA 800 Multi-Input Thermometer/Datalogger

Please refer to the catalog of PROVA 800.

Solar Cell/Module Table

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