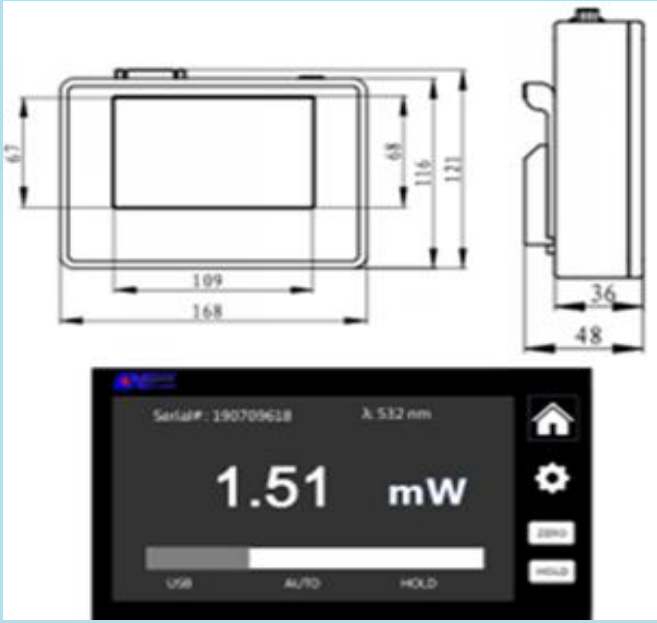
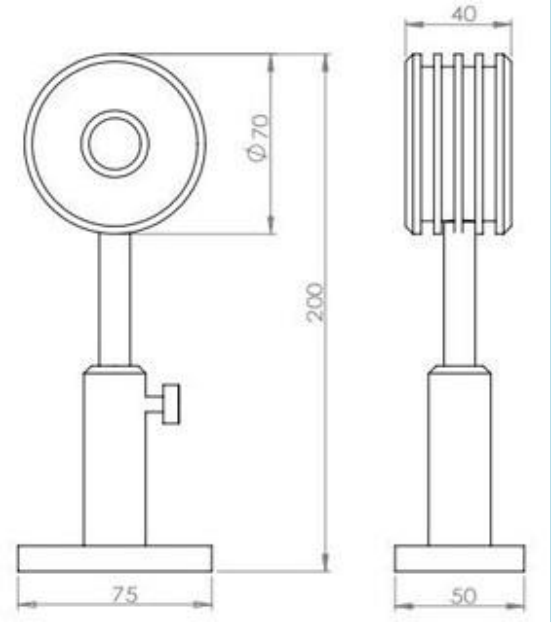
# Thermopile Laser Power Meter TS2/5/15+TP100 (wide spectrum range)

1.Wavelength range: 0.19 -20μm
2. Damage threshold: 15kW/cm$^2$
3. Power measurement range:2mW-15W
4. Sensitivity diameter: 14mm
5. Minimum measuring precision:0.1mW
6. SMA905/ FC fiber switch connector (Optional)

| | | | |
|---|---|---|---|
| Header Model | TP100 | TP100 | TP100 |
| Probe Model | TS2 | TS5 | TS15 |
| Power Range | 2 mW - 2 W | 5 mW - 5 W | 10 mW - 15 W |
| Sensitive Diameter | 14 mm | 14 mm | 14 mm |
| Detector Coating | Broadband | Broadband | Broadband |
| Wavelength Range | 0.19-20 μm | 0.19-20 μm | 0.19-20 μm |
| Max. Average Power Density | 15 kW/cm$^2$ | 15 kW/cm$^2$ | 15 kW/cm$^2$ |
| Sensitivity | 2 mW | 2 mW | 5 mW |
| Calibration Uncertainty (k=2) | ±2% | ±2% | ±2% |
| NEP (Noise Equivalent Power) | 0.2 mW | 0.2 mW | 0.5 mW |
| Response Time (0-90%) | <1 sec. | <1 sec. | <1 sec. |
| Linearity | ±1% | ±1% | ±1% |
| Power Supply | 2×18650 batteries | 2×18650 batteries | 2×18650 batteries |
| Total Weight | 1.454 kg | 1.454 kg | 1.454 kg |
| Cooling Method | Air | Air | Air |
| Computer Connecter | USB 1.1 and USB 2.0 | USB 1.1 and USB 2.0 | USB 1.1 and USB 2.0 |
| Instrument Power | 100-240 VAC, 50/60 Hz, DC 12V-3.34A | 100-240 VAC, 50/60 Hz, DC 12V-3.34A | 100-240 VAC, 50/60 Hz, DC 12V-3.34A |
| Temperature (Operating) | 5°C - 45°C (41°F - 113°F) | 5°C - 45°C (41°F - 113°F) | 5°C - 45°C (41°F - 113°F) |
| Temperature (Storage) | -20°C - 70°C (-4°F - 158°F) | -20°C - 70°C (-4°F - 158°F) | -20°C - 70°C (-4°F - 158°F) |




Header TP100

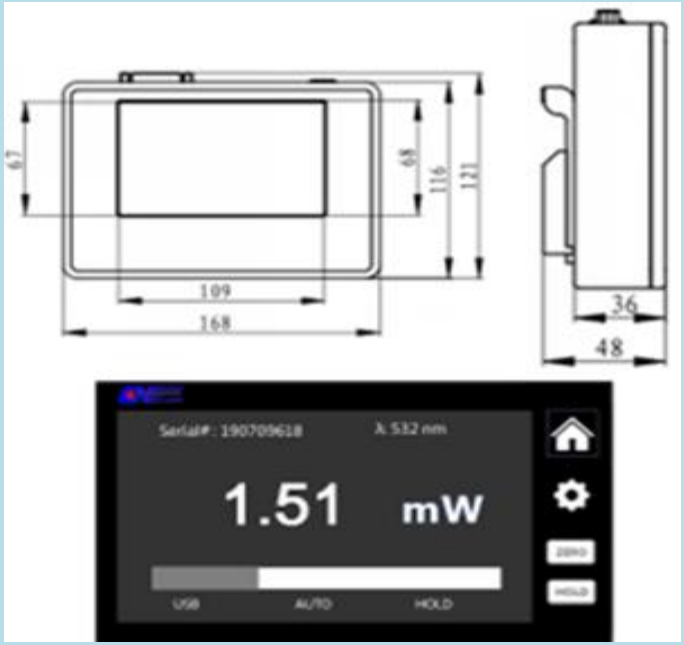



Probe TS2/ 5/ 15

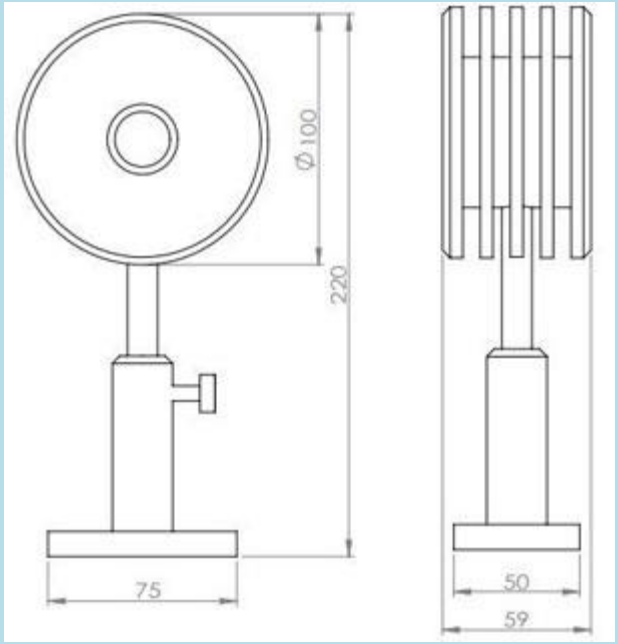
# Thermopile Laser Power Meter TS 35/50+TP100 (wide spectrum range)


1. Wavelength range: 0.19 -25μm
2. Damage threshold: 40kW/cm$^2$
3. Power measurement range: 10mW-50W
4. Sensitivity diameter: 22mm
5. Minimum measuring precision: 0.001W
6. SMA905/ FC fiber switch connector (Optional)

| | | |
|---|---|---|
| Header Model | TP100 | |
| Probe Model | TS35 | TS50 |
| Power Range | 10 mW - 35 W | 10 mW - 50 W |
| Sensitive Diameter | 22 mm | 22 mm |
| Continuous measurement time (<10 W) | Unlimited | Unlimited |
| Continuous measurement time (10-50W) | ≤5 min (10-35W) | ≤5 min (10-50W) |
| Probe Coating Film | Broadband coating | |
| Probe Material | Thermopile | |
| Wavelength Range | 0.19-25 μm | |
| Max. Average Power Density | 40 kW/cm$^2$ | |
| Sensitivity | 10 mW | |
| Calibration Uncertainty (k=2) | ±2% | |
| Response Time (0-90%) | <1 sec. | |
| Linearity | ±1% | |
| Power Supply | 18650 (2 batteries) | |
| Overall Weight | 1.926 kg | |
| Cooling Method | Air cooling | |
| Computer Interface | USB 1.1 and USB 2.0 | |
| Instrument Power | 100-240 VAC, 50/60 Hz, DC 12V-3.34A | |
| Temperature (Operating) | 5°C - 45°C (41°F - 113°F) | |
| Temperature (Storage) | -20°C - 70°C (-4°F - 158°F) | |




Header TP100



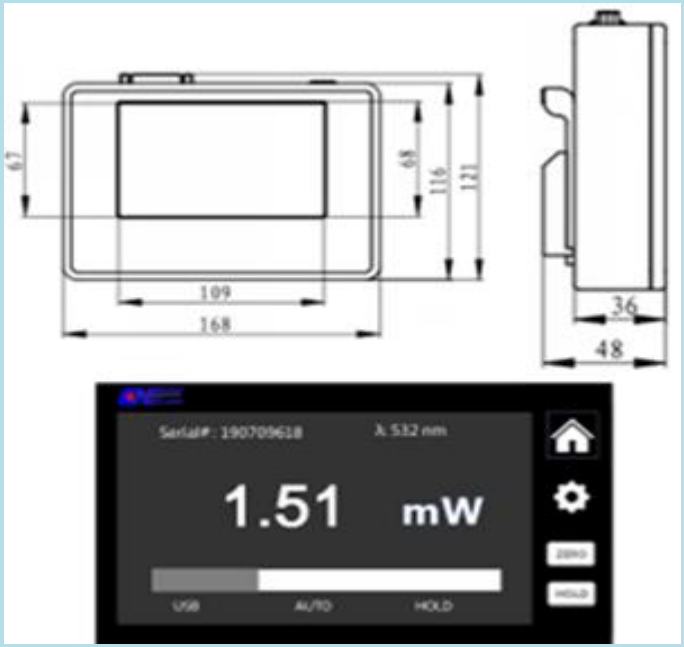

Probe TS35/ 50

# Thermopile Laser Power Meter TS100+TP100 (wide spectrum range)

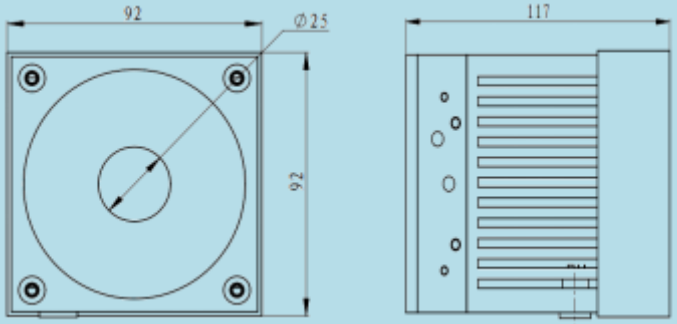

**Features:**

- Wavelength range: 0.19 -20μm
- Damage threshold: 45KW/cm$^2$
- Power measurement range: 0.5W-100W
- Sensitivity diameter: 25mm
- Minimum measuring precision: 0.001W

| | |
|---|---|
| Header Model | TP100 |
| Probe Model | TS100 |
| Power Range | 0.5 W - 100 W |
| Sensitive Diameter | 25 mm |
| Continuous measurement time (<80 W) | 2 h |
| Continuous measurement time (80-100 W) | ≤8 min |
| Probe Coating Film | Broadband coating |
| Wavelength Range | 0.19-20 μm |
| Max. Average Power Density | 45 kW/cm$^2$ |
| Sensitivity | 0.1 W |
| Calibration Uncertainty (k=2) | ±2% |
| Response Time (0-90%) | <7 sec. |
| Linearity | ±1% |
| Power Supply | 18650 (2 batteries) |
| Cooling Method | Fan cooling |
| Computer Interface | USB 1.1 and USB 2.0 |
| Instrument Power | 100-240 VAC, 50/60 Hz, DC 12V-3.34A |
| Temperature (Operating) | 5°C - 45°C (41°F - 113°F) |
| Temperature (Storage) | -20°C - 70°C (-4°F - 158°F) |




Header TP100



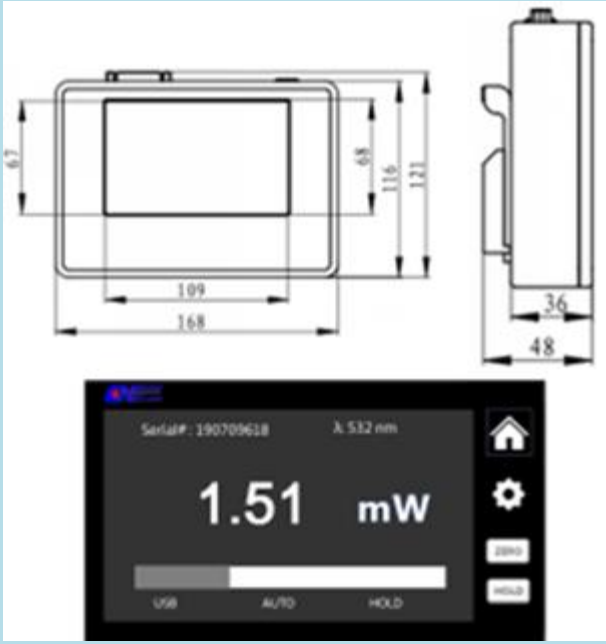

TS100

# Thermopile High Precision Laser Power Meter

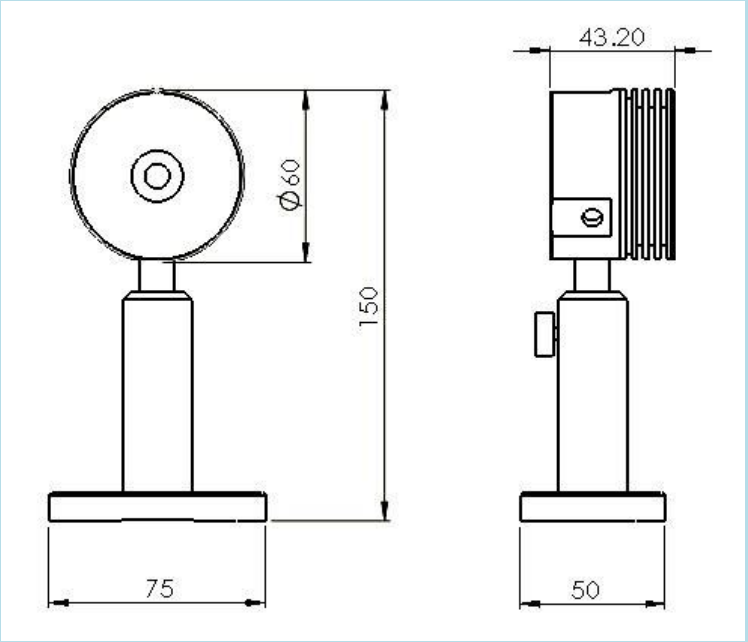

**Features:**

- Wavelength range: 0.19 -15μm
- Damage threshold: 1.5KW/cm$^2$
- Power measurement range: 100μW-5W
- Sensitivity diameter: 8.5mm
- Minimum measuring precision: 0.01mW
- SMA905 fiber switch connector (Optional)

| | | |
|---|---|---|
| Header Model | TP100 | |
| Probe Model | HS1 | HS5 |
| Power Range | 100μW - 1 W | 500μW - 5 W |
| Sensitive Diameter | 8.5 mm | 8.5 mm |
| Probe Coating Film | Broadband coating | |
| Probe Material | Thermopile | |
| Wavelength Range | 0.19-15 μm | |
| Max. Average Power Density | 1.5 kW/cm$^2$ | |
| Sensitivity | 100μW | 500μW |
| Calibration Uncertainty (k=2) | ±2% | |
| Response Time (0-90%) | <1 sec. | |
| Linearity | ±0.5% | |
| Power Supply | 18650 (2 batteries) | |
| Overall Weight | 1.434 kg | |
| Cooling Method | Air cooling | |
| Computer Interface | USB 1.1 and USB 2.0 | |
| Instrument Power | 100-240 VAC, 50/60 Hz, DC 12V-3.34A | |
| Temperature (Operating) | 5°C - 45°C (41°F - 113°F) | |
| Temperature (Storage) | -20°C - 70°C (-4°F - 158°F) | |




Header TP100




Probe HS1/ 5

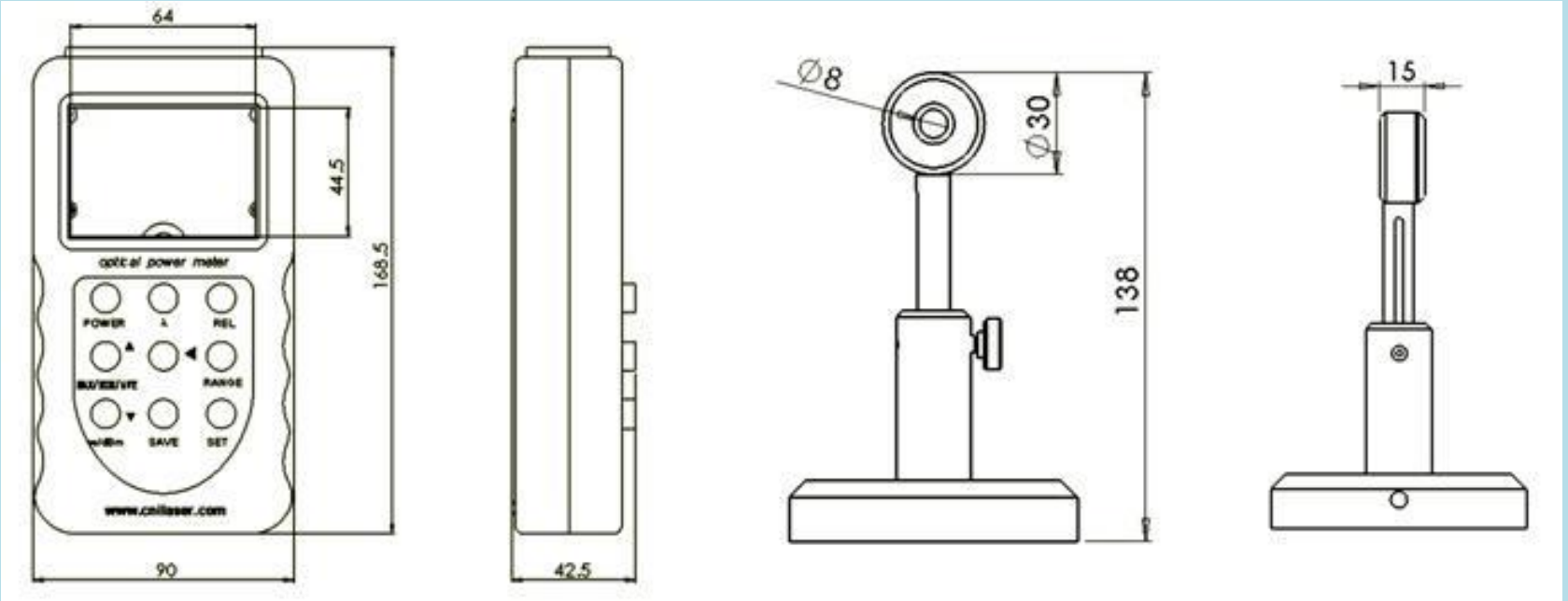
TS HS are all available with USB version. There is no header needed. Probe is connected by the USB driver below directly to the computer.

# High Precision Photoelectric Laser Power Meter

**Features:**

- Wavelength range: 320-1100 nm
- High precision: ±2%
- Resolution: 2nW
- Minimum measuring precision: 0.001nW

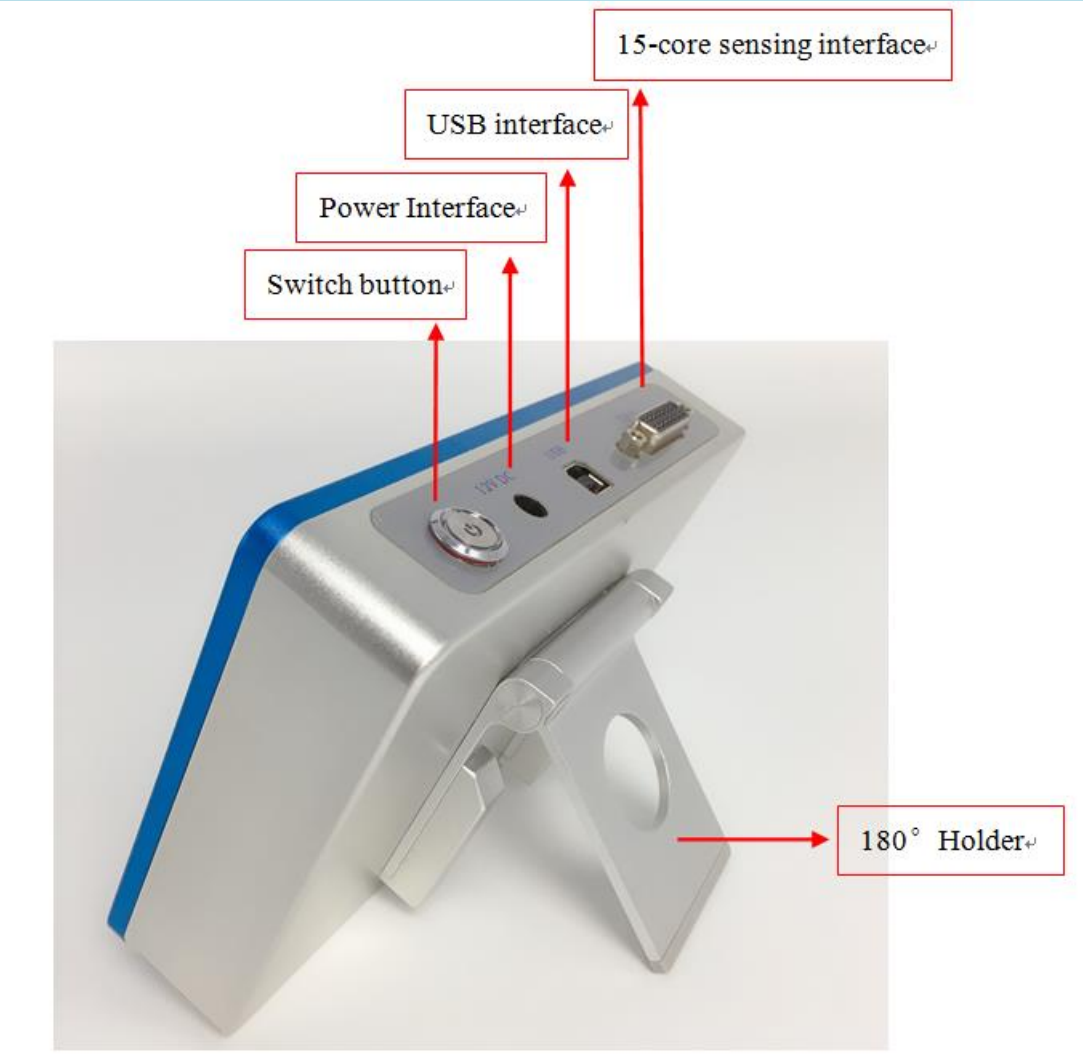
| | |
|---|---|
| Model | PS100 |
| Detector Model | PD-MN-100 |
| Power Range | 2nW -100mW |
| Active Area Diameter | 8mm |
| Receiving Element | Si Photo diode |
| Wavelength Range | 320-1100 nm |
| Measurement Display | nW/ μW/ mW/ dBm/ dB |
| Calibration Uncertainty (k=2) | ±2% |
| Response Time (0-90%) | 0.2sec. |
| Total Weight | 0.8kg |
| Instrument Power | 100-240 VAC, 50/60 Hz, DC 9V-1.4A |
| Temperature (Operating) | 5℃-45℃ (41℉-113℉) |
| Temperature (Storage) | -20℃-70℃ (-4℉-158℉) |
| Warranty | 1 year |



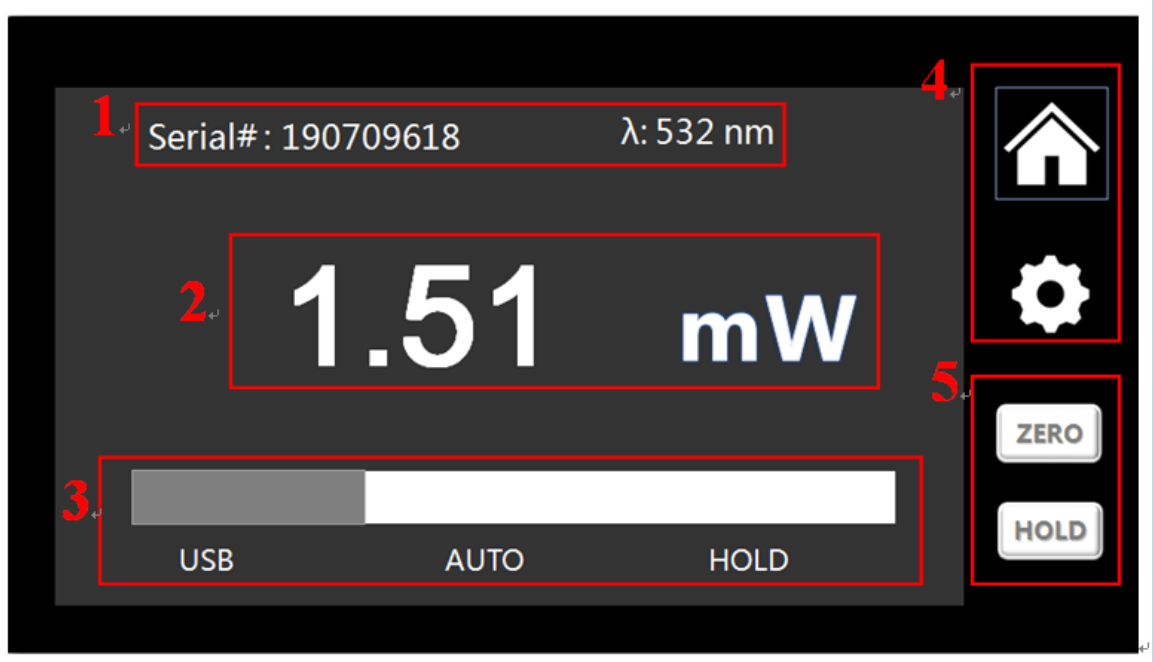

Header

Probe PD-MN-100

Reference of the LP100 operation:



1. Main display interface




Area 1: Power meter information display area, Serial# serial number indicates connected probe version information, and λ indicates set laser wavelength value;

Area 2: Display laser power in real time;

Area 3: Power display progress bar, visual display of laser power changes, "USB, AUTO, HOLD" see below;

USB —— Display USB means that the TP100 header is successfully connected to the computer through the USB data cable, and the PC software can be successfully used;

AUTO —— Display the currently selected test gear position, set different test gear positions through the parameter setting interface, and turn on the default AUTO gear position;

Hold —— After the Hold signal is sent, area 3 displays HOIL;

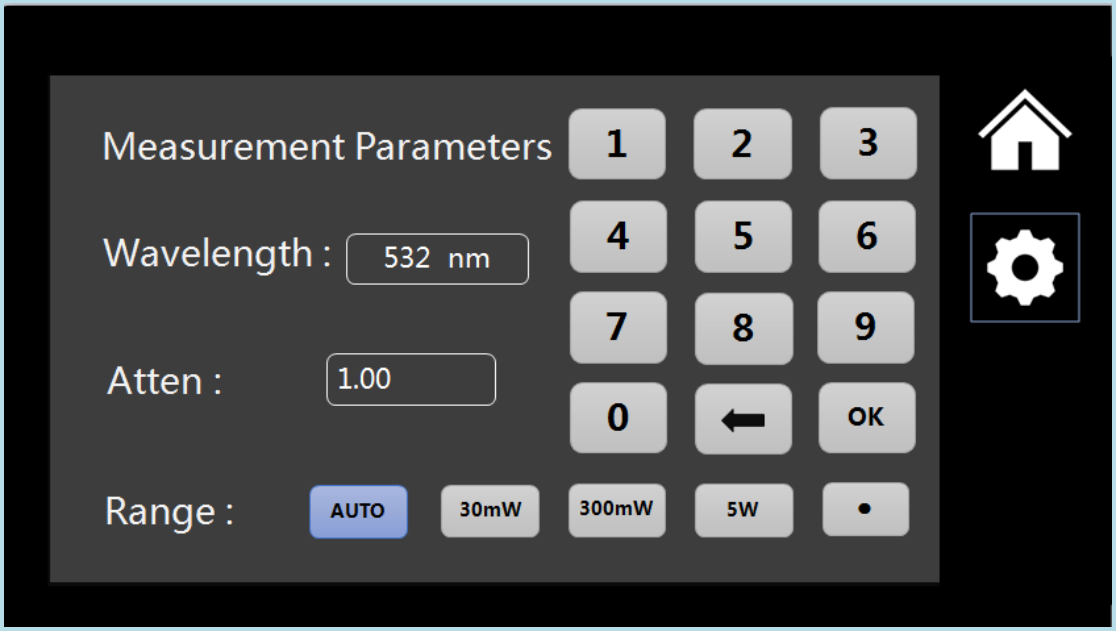
Area 4: Operation interface selection area, divided into main operation interface and parameter setting interface, blue frame indicates the current operation interface;

Area 5: "Zero" button and "Hold" button ribbon;

Hold —— After the Hold signal is sent, Area 2 displays the real-time measurement results and does not change;

Zero —— If the auto range does not work, only the current range power value is reset to zero; no other program will run during the zero return process. If the sensing is not continuous or an error occurs, the zero return procedure will end immediately;

2. Parameter Setting Interface



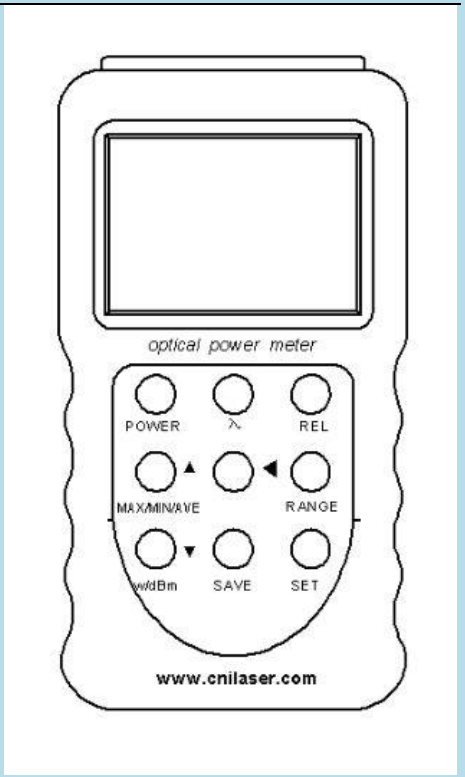

Wavelength —— You can choose to measure the laser power at any wavelength. The default wavelength is 532 nm. Click the wavelength setting box to display the icon. Enter the wavelength value through the right keypad and press OK to complete the setting. The TP100 meter can be set to a wavelength range of 190-25000 nm;

Atten——Set the correction factor, click the correction factor setting box to display the icon, input the coefficient value through the right keypad, press OK to complete the setting. The required correction factor can be set, ranging from 0.01 to 2.00;

Range —— The power position displayed on the parameter setting page can be selected, the AUTO file realizes automatic range selection, the default is Auto auto range, and different test positions can be set;

3.Software operation interface

# Reference of PS100 operation:




## Connection Introduction

1. POWER —— Power switch；

2. λ —— Wavelength compensation parameter;

3. REL —— Relative measurement; If Pressing the button, the light power of relative measurement can be performed;

4. MAX/MIN/AVE —— MAX/MIN/AVE display；

5. ◀ —— Numerical adjustment；

6. RANGE —— Range compensation parameter；

7. W/dBm —— Logarithmic or linear measurement way ; Use it to change the unite of power as “W” or “dbm”;

8. SAVE ——Use it to save the measured parameters that we set;o

9. SET ——Use “Set” button to set wavelength and Power Range；

## Operation

1. Preparation

(1) Long press the "power" to open the laser power meter；

(2) Set the wavelength

Set the measuring wavelength first.Then press “Set” button and “λ” button to enter edit mode and set the wavelength. Finally, Press the "SAVE" button to save it. The available wavelength range is 320-1100nm.

2. Measurement

(1) General measurement

According to the user's habits and characteristics test measurement data, "W/dBm" key can choose display mode for "dBm" or "W"In the measurement condition. Both of these measuring way is the absolute value, and "dBm" is based on a milliwatts logarithmic said value of the benchmark.

(2) Relative measurement “dB(REL)”

If you want to get the relative measurement data, such as loss measurement, etc., can be used in accordance with the "REL" key. First according to the general measurement (initial value), then to press the "REL" key once (with key when the current measured values as a reference point), and then to measure the changed data of the optical power, data is displayed in the last point of the initial value for measuring relative "dBm" value.

(3) Range

① Click the SET - RANGE to select measuring Range, and press "SAVE" button to Save the Settings. Range contains 199.99 mW, 19.999 mW and 19.999 uW；

② When the screen is no "MANUAL" display, automatic range selection for the state, that the instrument automatically switches suitable range is based on the size of the power meter. When press "RANGE" key to display "MANUAL" on the screen, indicating that the instrument is in the range hold, and remain in the current range. In low-range and range, it will not be measured power value. In this case the user should be based on the need to change the range. In automatic range state, when it exceeds the maximum range of input optical power is also this phenomenon. In this case, the user must pay attention to safety equipment.

(4) Explanation

The optical power measurement instrument display in three ways: W, dBm and REL, which is linear display, logarithmic display and relative display.

(5) Notice

Before the test, the operator must be measured wavelength, optical power levels have a certain understanding. You must select the correct measuring wavelength in order to obtain correct measurement results. Do not allow the input optical power exceeds the power range. In the wavelength selection is incorrect, the input optical power is large, the instrument will display inaccurate, and too strong optical power will damage the instrument photodetector.

If you encounter interference mutant power supply system, the host display abnormalities may occur, the keys on the control panel does not work, should be shut down as soon as possible. Ensure that the power supply system voltage is normal, and then restart the work.

Optical power input port must be connected, accurate positioning, otherwise the measurement will be errors.