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UNI-T UT385 Laser Power Meter User Manual

**UT385
Laser Power
Meter
User Manual**

Preface

Thank you for purchasing this brand-new product. In order to use this product safely and correctly, please read this manual thoroughly, especially the safety notes.

After reading this manual, it is recommended to keep the manual at an easily accessible place, preferably close to the device, for future reference.

Limited Warranty and Liability

Uni-Trend guarantees that the product is free from any defect in material and workmanship within one year from the purchase date. This warranty does not apply to damages caused by accident, negligence, misuse, modification, contamination or improper handling. The dealer shall not be entitled to give any other warranty on behalf of Uni-Trend. If you need warranty service within the warranty period, please contact your seller directly.

Uni-Trend will not be responsible for any special, indirect, incidental or subsequent damage or loss caused by using this device.

Contents

INTRODUCTION

UT385 laser power meter is a stable, safe, and reliable tool for applications such as laboratories, laser device manufacturers, and industrial enterprises.

FEATURES

- Precise laser sensor
- Split design with a retractable spring wire, which is easy to operate
- LCD screen for clear readings
- Data storage function
- Selectable and customizable wavelengths
- Threshold alarm function
- Low power consumption

ACCESSORIES

Open the package and check if any item below is missing or damaged.
Device ———————————————- 1
9V battery ——————————— 1
English manual ———————————- 1
USB cable ——————————— 1

SAFETY INSTRUCTION

1. Never stare into the laser beam directly or expose eyes to the reflected laser light, otherwise, eyesight impairment or even blindness may occur. Especially the high-frequency laser, such as UV-light, is invisible by naked eyes and requires extra attention.
2. No laser over 40mW is allowed to input, the sensor may be damaged by a high-power laser.

3. To avoid inaccurate measurement, please keep the sensor illuminated surface clean and free from scratch and contamination.
4. Check the device and accessories for any damage or abnormality before usage. Do not operate the product if you find it damaged obviously, no display, or you suspect it is faulty.
5. Operating instructions must be followed during measurement.
6. Do not open the meter shell or change the internal circuit to avoid damage to the meter.
7. Users should change the battery in time when the icon blinks on the LCD. Remove the batteries during long-time storage to avoid battery leakage.
8. Do not use or store the meter in an environment of high temperature, high humidity, flammable, explosive or intense electromagnetic.
9. Clean the meter shell with a soft damp cloth and neutral detergent. Do not use abrasive or solvents, to protect the meter from corrosion.

STRUCTURE DESCRIPTION

① Device ② Buttons ③ LCD screen ④ USB interface ⑤ Sensor illuminated window (laser entrance)	⑥ Sensor protection cover ⑦ Probe handle ⑧ Probe handle holder ⑨ Spring wire
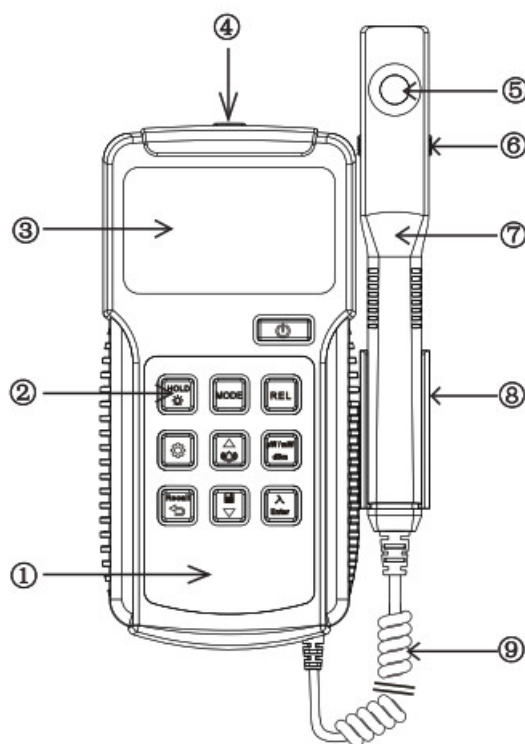
LCD FUNCTIONS
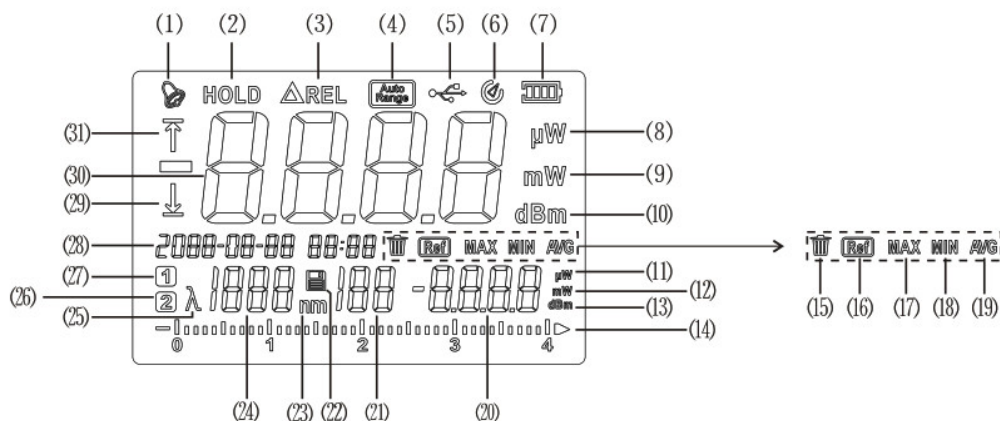
1	Audio alarm	17	Maximum measurement
2	Data hold	18	Minimum measurement
3	Relative value	19	Average measurement
4	Auto range	20	Secondary display area for maximum, minimum, average value, and so on
5	USB connection	21	Data storage number
6	Auto power off	22	Data storage icon
7	Battery status	23	Wavelength unit nm
8	Unit pW (main display area)	24	Wavelength value
9	Unit mW (main display area)	25	Wavelength icon
10	Decibel unit dBm (main display area)	26	Customized wavelength number 1
11	Unit pW (secondary display area)	27	Customized wavelength number 2
12	Unit mW (secondary display area)	28	Date and time
13	Unit dBm (secondary display area)	29	Lower limit icon
14	Simulation bar	30	Main display area
15	Delete data	31	Upper limit icon
16	Obtain relative value		

BUTTONS DESCRIPTION

1. ⏻ **Power on/off**

   In power-off status, long press the button 1s to power on

   In power-on status, long-press it 1s to turn on/off auto power-off, short press to power off.

2. **HOLD/ 🔆 HOLD/Backlight**

   Short press it to enter/exit HOLD mode. Long press it to turn on/off the backlight.

3. **MODE: MAX/MIN/AVG modes**

Short press it to switch between Maximum/Minimum/Average modes, and long-press it to exit.

4. **REL: Relative Value**

Long press it to obtain relative value. Short press it to enter/exit the relative value mode.

5. ⚙ **Settings**

Short press it to enter setting mode. Short press ((🔔)) or ▼ to switch the setting item according to the codes below.

S.dt: set date and time

S.dlt: set lower limit threshold

S.ult: set upper limit threshold

rSt?: restore settings

dEL?: delete saved data

Short press ↩ (Recall) the button to exit the setting mode.

Short press λ Enter button to enter the according to item's setting.

6. ((🔔))▲ **Up/Audio Alarm**

In normal measurement mode, long-press the button to turn on/off the audio alarm, and short press it to switch between upper/lower/upper and lower limit test modes or exit.

In setting mode, short press it to switch setting item or increase setting value.

Note: only the upper limit will be detected when the icon displays and only the lower limit will be detected when the icon displays. Both the icons will be displayed when upper and lower limit test modes are turned on simultaneously.

7. μW / mW / dBm **Switch units and Auto Range**

Short press the button to switch between μw/mW/dBm/auto range modes.

Note the icon [Auto Range] displays during auto range mode, otherwise, it is in manual range.

8. ↩ (Recall) **Review/Return**

Short press the button to enter storage data review mode or return.

9. 💾▼ **Save/Down**

In normal measurement mode, long-press the button to save the current measured value, the icon will 💾 blink if 199 groups of data storage have been fulfilled. Short press it to check the date and time. In setting mode, short press the button to switch setting item or decrease setting value.

10. λ Enter **Wavelength/confirm**

In normal measurement mode, short press the button to switch laser wavelength, and long-press it to enter wavelength setting.
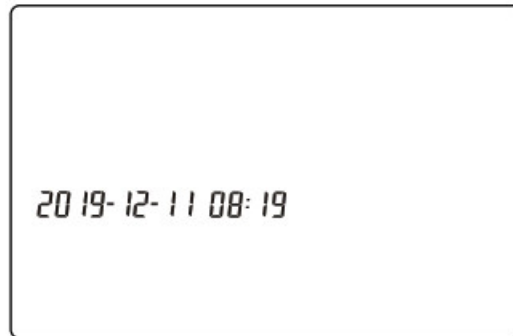
In the date and time setting, short press this button to switch the digit position.

In setting mode, short press this button to confirm selection or enter the item.

OPERATION INSTRUCTION

1. **Date and Time Setting**

Short press ⚙ to enter the setting interface, switch to S.dt, and short press $\overset{\lambda}{\text{Enter}}$ to enter date and time setting interface as the figure below:

```
20 19- 12- 11 08: 19
```

Short press ▲(((🔔))) and ▼ button to adjust setting value (long press to rapidly adjust). Short press ⚙ to move the cursor to the left, while a short press $\overset{\mu W / mW}{\text{dBm}}$ to move the cursor to the right.
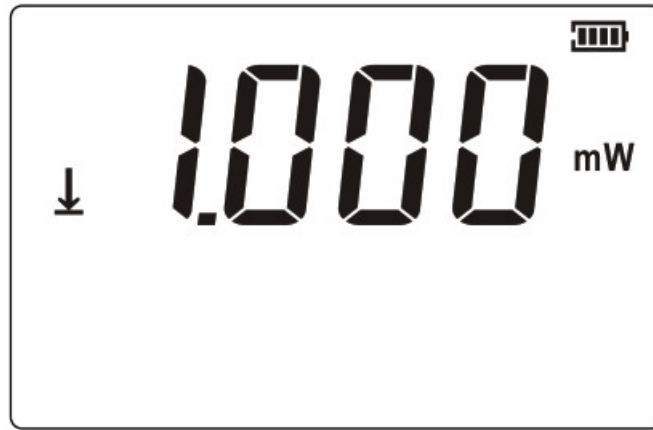
After the setting is done, the short press $\overset{\lambda}{\text{Enter}}$ button, the blinking of the icon 💾 means the date and time setting is saved, then short press to $\overset{\text{Recall}}{\hookleftarrow}$ exit.

2. **Upper/lower Limit Threshold Setting**

Short press ⚙ to enter the setting interface, select S.dlt, and short press to enter lower limit threshold setting interface as the figure below:

```
            ▥
↓  1.000  mW
```

In setting interface, select S.ult and short press to enter upper limit threshold setting interface as the figure below:

Short press ▲(((🔔))) and ▼■ button to adjust setting value (long press to rapidly adjust).

After the setting is done, short press the λEnter button to confirm and save the setting, or short press the ↰Recall button to exit and not to save.

3. **Relative Value Mode**

Long press REL button to set current measured value as relative value and displays it in the secondary display area, as shown in the figure:
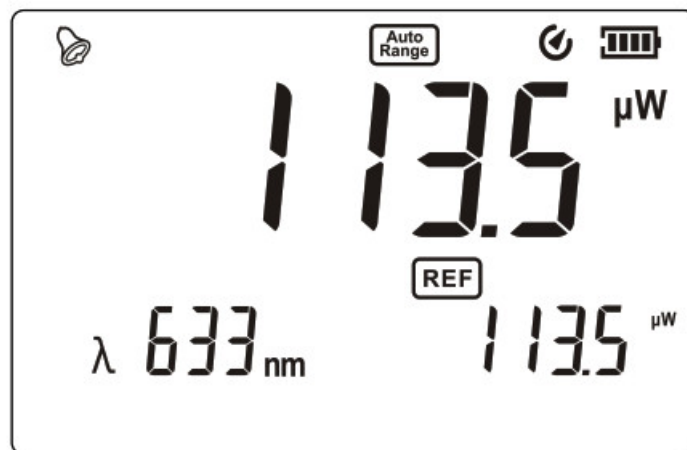
The short press REL button can enter relative value mode. It will subtract the relative value from the actual measuring value, the difference will be displayed in the main display area as shown in the figure:
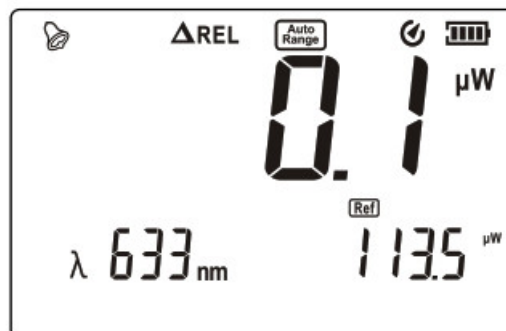
4. **Customized Wavelength Setting**

Long press λEnter to enter customized wavelength setting interface, 2 customized wavelengths can be saved as

1and 2, which can be switched by ![bell] and ![down] button. Short press **Enter** to enter wavelength setting mode, the icon λ on LCD will blink as the figure below:
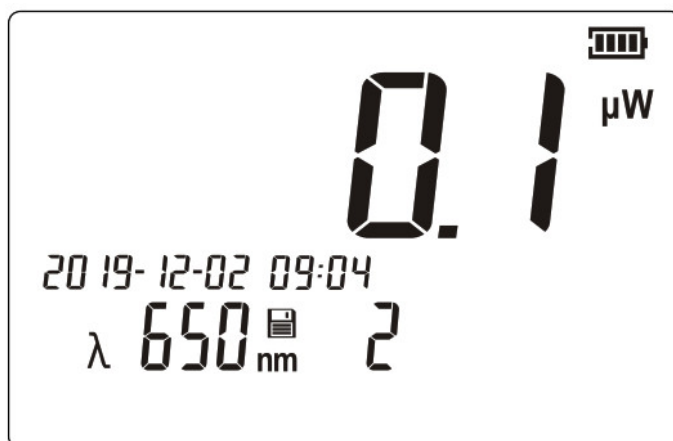

Short press or long-press ![bell] or ![down] button to set customized wavelength.

Short press to save the current setting wavelength, the showing of icon ![save] means the wavelength setting is saved, then short press **Recall** ↩ to exit.

5. **Review or Delete Storage Value**

   Short press button to enter data review mode as shown in the figure.

For example, the current storage data is:

A.The storage serial number is 2.

B.The measured data is 0.1μW.

C.The wavelength is 650nm.

D.The measured time is 09:04 (24-hour) 2nd December 2019

Short press ![bell] and ![down] to switch storage data. Short press **Enter** button to select specified data as the figure below:

Then short press **Enter** button again to delete specified data, short press **Recall** ↩ to cancel deleting. After setting, short press **Recall** ↩ button to exit.

OPERATION STEPS AND NOTICES

1. Power on the meter.
2. Aim the laser at the middle illuminated surface of the sensor and keep the laser angle with the illuminated surface to be 90°, at this point, the reading is the measured laser power.
3. According to the laser type, in case the measured laser output will be influenced by the reflected light of the illuminated surface, please twist the angle a little bit to avoid the direct reflection on the laser port.
4. In weak laser measurement (<1nW), in order to avoid the affection of the light interference such as ambient light, it should be operated in a dark room.

PARAMETERS AND SPECIFICATIONS

Main Parameters

Function	Range	Resolution	Accuracy	Remarks
Laser power Measured range Accuracy	OpW-399.9pW	0.1pW	OpW-10.0pW: ±(5%+0.3) 10.0pW-399.9pW: ±5%	The meter calibrates by the wavelength of 633nm
	0.400mW-3.999(TM	0.001mW	±5%	
	4.00mW-39.99mW	0.01mW		
	-40dBm-16dBm		Formula : dBm=10*lg (mW)	
Measured range	OpW-39.99mW			
Laser wavelength range	400nm-1100nm			
Laser wavelength options	520nm, 633nm, 650nm, 780nm			

General Specifications

- LCD display: 4-digit LCD display, maximum display value: 3999
- Over-range indication: OL will be displayed when the laser power exceeds the range of 39.99mW.
- MAX/MIN/AVG mode: maximum/minimum/average value and the icon of MAX/MIN/AVG will be displayed in

MAX/MIN/AVG mode.

- Data hold function: the icon of HOLD will be displayed during data hold.
- Backlight: backlight can be turned on/off manually.
- Auto power off: the meter will automatically shut down if no action was detected out within 5 minutes and auto power off can be turned off.
- Sampling rate: 0.5s
- Data storage: maximum 199 sets of data can be saved.
- Impact resistance: 1m drop proof
- Battery requirement: 1*9V battery, new battery should be replaced in time if the low battery icon shows on LCD.
- Product size: 198*104*35mm
- Weight: 319g (includes battery)

Environmental Conditions

Indoor use
Maximum altitude: 2000m
Class of pollution: Class 2
Operating humidity and temperature: 0°C~40°C (≤85%RH)
Storage humidity and temperature: -10°C~50°C (≤75%RH)

Reference Standards

JJG 249-2004; GBT 1153-2012

ONLINE MEASUREMENT

1. Download the PC software according to the General Documents Download Instruction in accessories.
2. Connect the meter with PC by USB cable and make sure the battery is enough.
3. Real-time measured data can be sent and the saved data in meter can be downloaded by USB Interface. The report can be generated by these data.
4. Users can click the [Help] option in the software operating interface for Software User Manual.

BATTERY REPLACEMENT

1. Remove the screw of the battery cover as shown in the figure:
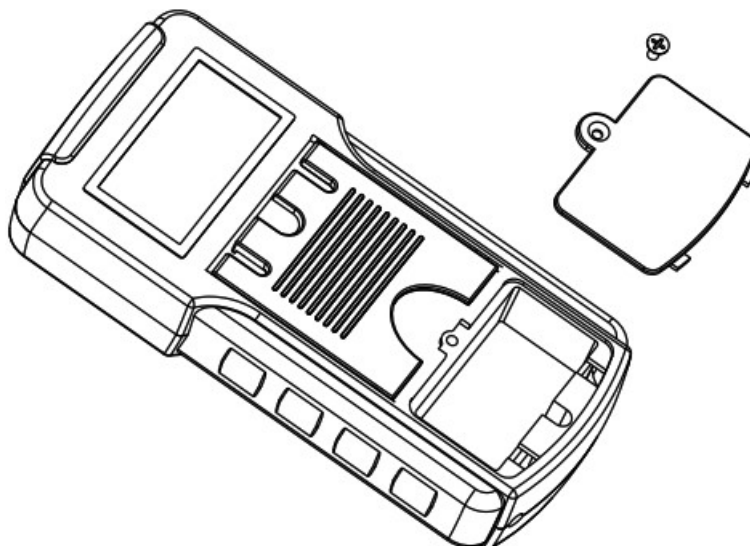
2. Load the 9V battery into the battery compartment correctly, close the cover and tighten the screw as the figure:
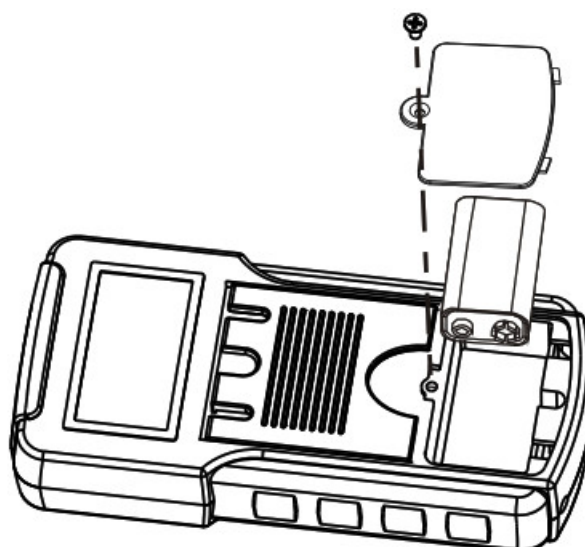
This manual is subject to change without prior notice.

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Documents / Resources

	UNI-T UT385 Laser Power Meter [pdf] User Manual
	UT385, Laser Power Meter