

## 1.2 Product features:

- New REF user-defined.
- User self-calibration function.
- 9V laminated battery with 200hrs battery life.
- With FC/SC/ST general-purpose interfaces
- Optional auto-off function and backlight switch.

## 1.3 Technical parameters


Model	NF-906A	NF-906C
Wave-length (nm)	800~1700	
Probe	InGaAs	
Detection limit	± 1.0mm	
Power detecting range (dBm)	-70~+10	-50~+28
Uncertainty degree	±5%	
Standard wavelength (nm)	850、1300、1310、1490、1550、1625	
Display resolution	0.01dBm	
Working temp (°C)	-20~+70	
Storage temp (°C)	-30~+80	
Automatic shutdown time (min)	15	
battery serving time (h)	200	
Overall dimension (mm)	185×105×50	
Power supply	9V battery, AC adapter	
Weight(g)	350	


## 1.4 Applications

- ◆ Measuring power output.
- ◆ Measuring loss in fiber cable or device.
- ◆ Measuring loss in a fiber device.
- ◆ Identifying system problems.

## 2. Functional description

### 2.1 Startup and shutdown

Press  button to turn the tester on.

Press  for approximately 2 seconds to turn it off. 2s continuously, the meter will be closed.

### 2.2 Auto-off function

The Auto-off function is auto-matically enabled when NF-906 is turned on. the unit will turn off after 15mins. Auto-off is displayed when the feature is on. The Auto-off function can be toggled on or off by press the power button.

### 2.3 Backlight

The backlight is on when the tester is turned on and when any key is pressed. The backlight times out after approximately 30 seconds of inactivity to conserve battery cover.

## 2.4 Description for control panel



### (1) Power Key (⏻)

- Used to turn on the power meter, if press it by 2s continuously, the meter will be turned off.
- Auto-off function selection: this key can be used to activate or shut down the Auto-off function, in addition, if there is no operation over 15min, the power meter will be off automatically.

### (2) Wavelength Key (λ)

This key is used to select the desire wavelength value at the range of: 850nm, 1300nm, 1310nm, 1490nm, 1150nm and 1625nm, once confirmed, the specified value will be on the left upper corner of screen.

### (3) Power conversion key (dBm/W)

This button can be used for the conversion between the absolute and relative measurements of optical power.

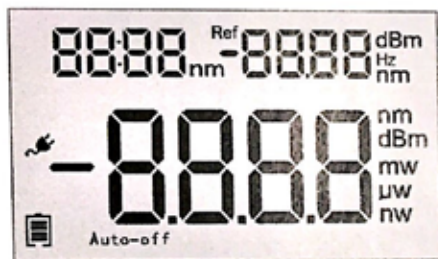
### (4) Calibration Key (REF)

Press this key continuously to save the current power value as reference value, which will be on the right upper corner of screen; if just press this key shortly, it will be switched to relative power measurement, while the reference power value will be shown on the right upper corner of screen, and show the relative power value between the current measurement and reference power, the unit is dB.

## 3. Handling instruction

### 3.1 Information on LCD

After press (⏻) key to start the meter, the following information will be shown on LCD:



(1) if the meter is supplied by battery, the icon (🔋) at the left bottom will be ON. With the reduce of electric amount of battery, the display segment of battery becomes less and less till empty.

(2) When connect with AC adapter, a icon (⚡) will be lightened at the middle of screen, at the same time, the electric amount icon (🔋) is ON as well.

(3) At the left lower position, it is a "Auto-off" icon. The Auto-off function is activated simultaneously and the icon is lightened as well, but if there is no operation, the meter will be shut down 15mins later.

(4) At the middle display-area of screen, the value of power will be displayed, the unit is dBm, W, dB.

(5) At right upper display-area of screen, show reference power value, and the wavelength value at the left.

(6) The user self-calibration function is just the course of power conversion and calibration. (calibration of each wavelength)

A. After open the battery cover. Turn the toggle switch to "ON" position, then it is available to carry out power calibration after startup.

B. The details of calibration are shown as follows:

REF Key	If press it every time, a 0.05dB value will be increased for from current value. The power value calibrated will be shown on LCD
dBm/W Key	If press it each time, a 0.05dB value will be reduced from current value. The power value calibrated will be shown on LCD
Wavelength Key	Used for the selection of wavelength
ON/OFF Key	Shortly press this key to save the value calibrated Press this key by 2s continuously to close the power meter

C. Open the battery cover, turn the toggle switch to OFF position for normal operation.

**ATTENTION:** it is strongly suggested that the fiber power meter should be measured or calibrated so that the accuracy and reliability can be guaranteed.

### 3.2 Wavelength selection

There is a wide range of wavelength including 850nm, 1300nm, 1310nm, 1490nm, 1550nm and 1625 nm for your option, it is available to carry out switch through the press of  $\lambda$  key.

### 3.3 Absolute power measurement

(1). Use one major bridge wire to connect the output port of light source and the detecting port of fiber power meter as shown in the following fig:



NF-906 Fiber Power Meter

Light Source

(2). Turn on the light source to enter working mode and select wavelength to be tested.  
(3). Turn on the fiber power meter and select specified wavelength. (Selection method: press the  $\lambda$  key to select the desired wavelength value)  
(4). The current power value on screen is just the absolute power value of current output of light source as shown in the following Fig (the current value is -09.73dBm):



### 3.4 Relative power (LOSS) measurement

Relative power measurements are used to determine the power loss between two points in the system. The power level is first measured at one point and that value is saved in the meter as a reference. The power is then measured at another point. The meter subtracts the reference value from the new reading and displays the difference in dB

- (1). Connect the desired connector to the meter, connect the two ends of optical fiber jumper with light source and power meter.



NF-906 Fiber Power Meter

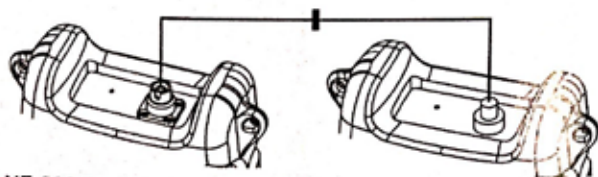
Light Source

- (2). Turn on the light source and power meter to enter working mode and select wavelength to be tested.

- (3). When the output power of light source has been detected, just press **(REF)** key, this power value will be stored as the current reference value (this power value consists of actual output power of light source and loss value caused by major test bridge wire)



- (4). Connect the tested optical fiber jumper with light source and power meter.



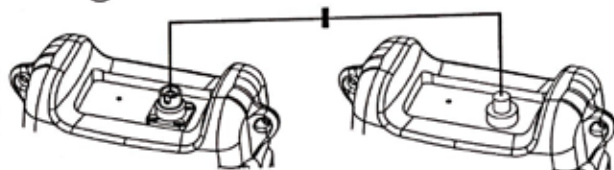
NF-906 Fiber Power Meter

Light Source

- (5). Shortly press **(REF)** key, the value on screen is the loss value of the bridge wire being inserted.



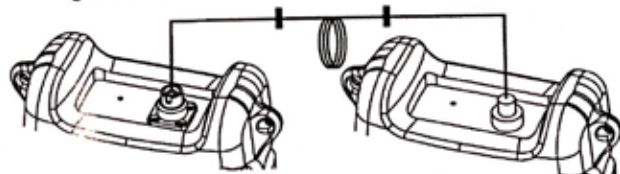
- (6). If to measure the loss of optical fiber link, it is necessary to carry out local initialization reference for light source and optical power meter, as shown in the following Fig, read the initial reference value on optical fiber meter, and it is available to press the **(REF)** key continuously to save this reference value.



NF-906 Fiber Power Meter

Light Source

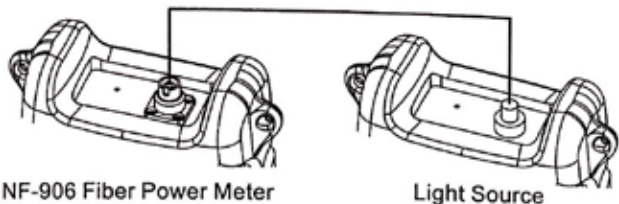
- (7). Put the light source and NF-906 Optical Fiber Meter at the two ends of optical fiber link being tested respectively, the value on power meter is just the loss value of optical fiber link being tested (including the loss of linker).



NF-906 Fiber Power Meter

Light Source

- (1). Connect the desired connector to the meter, connect the two ends of optical fiber jumper with light source and power meter.

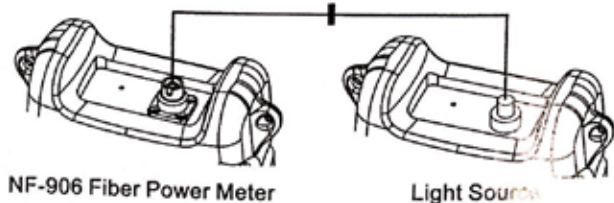


- (2). Turn on the light source and power meter to enter working mode and select wavelength to be tested.

- (3). When the output power of light source has been detected, just press  $\text{\textcircled{REF}}$  key, this power value will be stored as the current reference value (this power value consists of actual output power of light source and loss value caused by major test bridle wire)



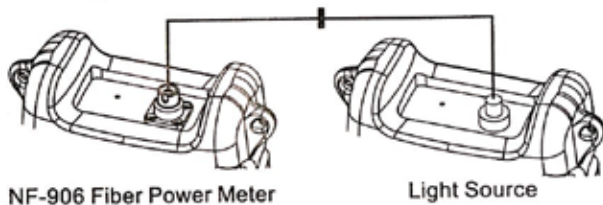
- (4). Connect the tested optical fiber jumper with light source and power meter.



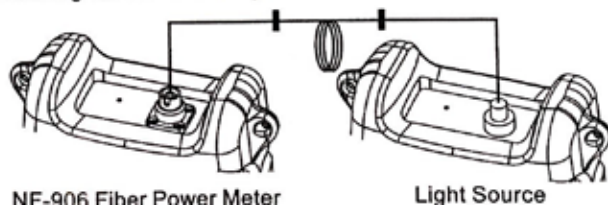
- (5). Shortly press  $\text{\textcircled{REF}}$  key, the value on screen is the loss value of the bridle wire being inserted.



- (6). If to measure the loss of optical fiber link, it is necessary to carry out local initialization reference for light source and optical power meter, as shown in the following Fig, read the initial reference value on optical fiber meter, and it is available to press the  $\text{\textcircled{REF}}$  key continuously to save this reference value.



- (7). Put the light source and NF-906 Optical Fiber Meter at the two ends of optical fiber link being tested respectively, the value on power meter is just the loss value of optical fiber link being tested (including the loss of linker).



## 4. Maintenance

- ◆ Always clean the optical connector each time a connector is attached.
- ◆ Avoid exposing the unit to temperature extremes. Condensation can form inside the unit and affect proper operation.
- ◆ Ensure the dust cap is in place any time a connector is not attached.
- ◆ Store the unit in clean and dry place.

### 4.1 Probe cleanness

Clean the probe of optical power meter regularly.


1. Open the dustproof cap
2. Screw off the adapter of power meter
3. Use 2.5mm special cotton swab with some anhydrous alcohol to clean the surface of probe slightly.

**WARNING:** when clean the probe of optical power meter, it is forbidden to use any hard thing to touch the surface of probe in case cause damage to probe; in addition, keep away from a strong force to avoid crack of probe. Otherwise, the accuracy of measurement value will be reduced, even it fails to carry out any measurement.

**ATTENTION:** when the optical power meter is under idle mode, cover the dust-cap to keep the optical power meter clean.

### 4.2 9V battery replacement

When install or take out the battery, the following information may be helpful for your operation:

- ◆ When the battery energy is lower or no 9V battery installed, a icon  will be on screen.
- ◆ Only an eligible 9V battery can be engaged
- ◆ If no use for a long time, take out the 9V battery in case of corrosion and damage to internal components.

### 4.3 Calibration and measurement

Under proper conditions, if this meter can be used in a right way, a better performance can be guaranteed.

In order to guarantee the performance, it is strongly suggested that a calibration per year should be implemented.

If there is deviation, please calibrate it again.

### 4.4 Transportation

When under transportation, keep the meter at the specified temperature range. And it is suggested the operation should be done as the follows:

- ◆ Only the original packing material can be used
- ◆ Away from high humidity or obvious temperature variation
- ◆ Away from direct sunlight
- ◆ Away from unnecessary impact and vibration.

## 5. Common faults and solutions

Common faults	Possible reason	Solutions
Inaccurate measure result	Mismatch wavelength of light source	Check the correct wavelength is selected
Unable to start or no screen display	Inadequate 9V battery	Replace new battery
Dim LCD display	Inadequate battery	Use power adapter or change the battery
Some variation of optical power when initial start	No preheating for optical maser	Turn on the light source and activate the operating wavelength, then carry out measurement after 30min preheating
Lower output power of light source	Unclean connectivity port of light source	Clean the connectivity port completely

## 6. Warranty

NF-906 is warranted against defects in materials and workmanship for a period of one year from the date of purchase.

**NOTE:** if the damage caused by improper operation or wrong cleanness of optical connector, our company will charge for the maintenance or replacement.

## 7. Standard configuration

- (1). NF-906 Portable optical power meter----- 1 piece
- (2). Operation Manual----- 1 piece
- (3). AC Adapter----- 1 piece
- (4). 9V battery----- 1 piece
- (5). Cotton swab----- 1 piece
- (6). Toolkit----- 1 piece

## Diagram of series products



NF-306



NF-868



NF-8208



NF-268



NF-806R



NF-816



NF-468L



NF-3468



NF8108-M



NF-388



NF-903



NF-906A