

1. Introduction

Thank you for purchasing the OPM-570L laser power meter.

Please read this manual carefully before using the product so that you can use it correctly.

After reading, retain this manual for future reference.

2. Outline

This product is a handy laser power meter with analog indication, designed exclusively for measurement of laser beam output from a laser diode (LD).

Capable of checking optical levels up to 10 mW, the

laser power meter has an ultra-slim, mobile photosensor head that is particularly convenient for measurement of Compact Disc (CD) players. It needs no power supply to function so it can be used anywhere, at any time.

This product's design emphasizes compact size, light weight and easy operation in consideration of its application as a checking tool.

The wavelength range from 760 nm to 830 nm is suitable for power level measurement of laser diodes used in CD players, LaserDisc players, laser printers, read-only optical disc (CD-ROM) drives, etc.

The wavelength range from 650 nm to 680 nm is suitable for maintenance of office automation equipment such as laser pointers and bar-code readers.

-1-

3. Specifications

Measuring ranges:

4 ranges: 0.3 mW, 1 mW, 3 mW and 10 mW.

Measurable wavelengths:

760 to 830 nm, 650 to 680 nm

Measuring accuracy:

±5% at 1 mW (full scale value) at 670 nm and 780 nm, using the

photosensor head which

has been paired with the

main unit

Si photodiode (sensor

diameter approx. 9 mm)

Main unit 163H x 100W

x 46D mm, approx. 250

grams

Photosensor head 126H

x 15W x 4D (min.) mm,

approx. 40 grams

Cable length approx. 0.9

m

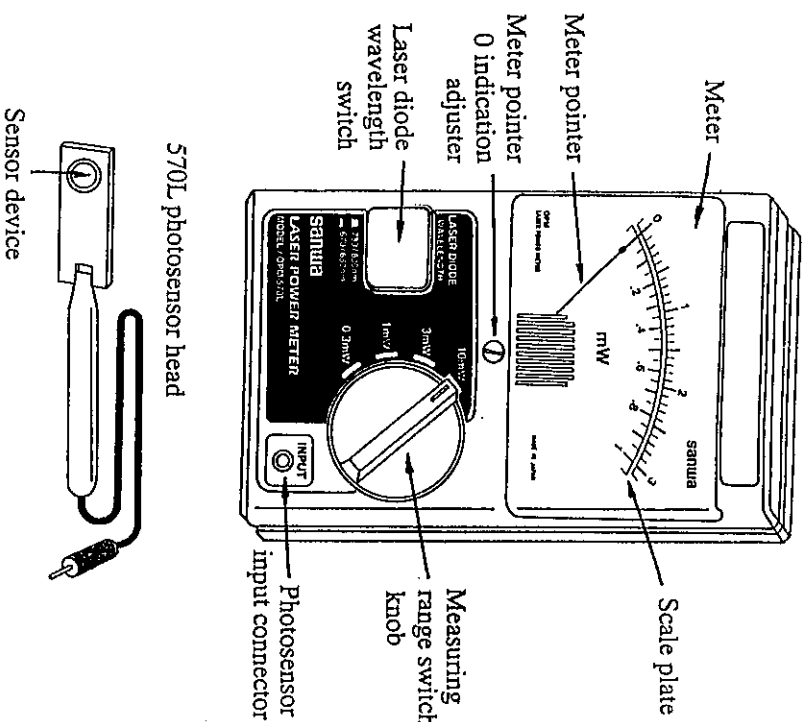
Instruction manual,

carrying case, 570L

photosensor head

-2-

4. Appearance, Controls



-3-

MANUAL INSTRUCTION

7029-MDO

LASER POWER METER



PMUBS

Chiyoda-ku, Tokyo, Japan
Densha Bldg, Sotokanda 2-Chome
ELECTRIC INSTRUMENT CO., LTD.
SANWA ELECTRIC INSTRUMENTS
PMUBS

5. Measuring Method

[Preparation before measurement, remarks]

- Perform the following preparation operation before inserting the photosensor head into the INPUT connector.

- (1) Ensure that the pointer of the meter indicates the 0 position on the left end of the scale plate.
- (2) If the pointer is deviated from the 0 position, adjust the meter pointer 0 indication adjuster so that the pointer indicates the 0 line of the scale correctly.
- (3) Measuring range switch knob:

This switch selects the optical power measuring range from 0.3 mW, 1 mW, 3 mW and 10 mW (all of these values indicate the full scale values).

- (4) Meter scale plate:

Two graduations, with full scale values of 3 and 1, are provided.

- With the 0.3 mW range, multiply the reading on the black graduation with full scale of 3 by 0.1.
- With the 1 mW range, directly read the amber graduation with full scale of 1.
- With the 3 mW range, directly read the black graduation with full scale of 3.
- With the 10 mW range, multiply the reading on the amber graduation with full scale of 1 by 10.

-4-

- (5) Photosensor head:

A photosensor head has been defined as the pair to be used with the main unit. They are given the same numbers and the measurement accuracy is always calibrated in the same combination.

• Optical power measurement

- (1) Insert the plug of the photosensor head into the INPUT connector of the main unit.
- (2) Set the LASER DIODE WAVELENGTH switch according to the measured wavelength. (This push-button switch has two positions: in and out.)

- Infrared light: 760 nm to 830 nm
The LASER DIODE WAVELENGTH switch should not be pushed in but should be set to the out position.

- Visible light: 650 nm to 580 nm
The LASER DIODE WAVELENGTH switch should be pushed into the in position.

- (3) Set the measuring range switch knob to the 10 mW range position, and approach the sensor of the photosensor head to the measurement object to measure optical power value.

Decrease the range in sequence according to the swinging of the meter pointer so that the target value can be measured at an easy-to-read position near the full scale.

Since the infrared laser beam is not clearly visible, infrared light measurement should begin with searching for the beam. Approach the sensor to the laser light output section; the sensor is on the light axis when the meter pointer swings most.

-6-

- (4) After locating the light axis of the laser beam, gently tilt the photosensor head so that the laser beam hits the center of the sensor at an angle of about 10 degrees in the up, down, left or right direction with respect to the perpendicular direction.

In general, the measured optical level can be maximized when the sensor is tilted with respect to the light axis.

6. Operating Precautions

⚠ DANGER

Some measurement objects may output high power of more than 10 mW. Remember that the infrared light from LDs are invisible and be careful not to view the laser beam directly or let the reflection enter your eye because penetration of such high-power laser light in your eyes may result in loss of the vision.

- (1) Do not touch the sensor of the photosensor head directly with your hand (staining it may result in meter indication error). When the sensor becomes dirty, wipe lightly with a piece of tissue paper slightly moistened with alcohol.

MEMO

- (2) Measurement of weak laser power below 1 mW may be affected by ambient light (including external disturbance). Lower the lighting in the room before measuring such weak laser power.
- (3) Measure laser beam by converging it and by tilting the sensor surface of the photosensor head by about 10 degrees from the perpendicular to avoid the effects on return light. Note that the measurement value is variable depending on the light incidence angle and positioning of the sensor surface.

Preventing related problems from occurring requires fixing the photosensor head on a stable object and adjusting the light axis before starting measurement.

- (4) The photosensor head has an ultra-slim design and is made of plastic material. Prevent damaging or fracturing it by not bending it.

7. Calibration

- (1) To maintain safety and accuracy of measurement, the equipment should be calibrated and inspected at least once a year.
- (2) Calibration and inspection will be performed by the manufacturer. Please consult the manufacturer for details.

-7-

-8-