



# HIOKI

2003

## 3661-20 OPTICAL POWER METER 3662-20, 3663-20 LASER LIGHT SOURCE

Field measuring instruments



# Reliable Testing of Optical Power Loss



ISO14001  
JQA-E-90091



<http://www.hioki.co.jp/>

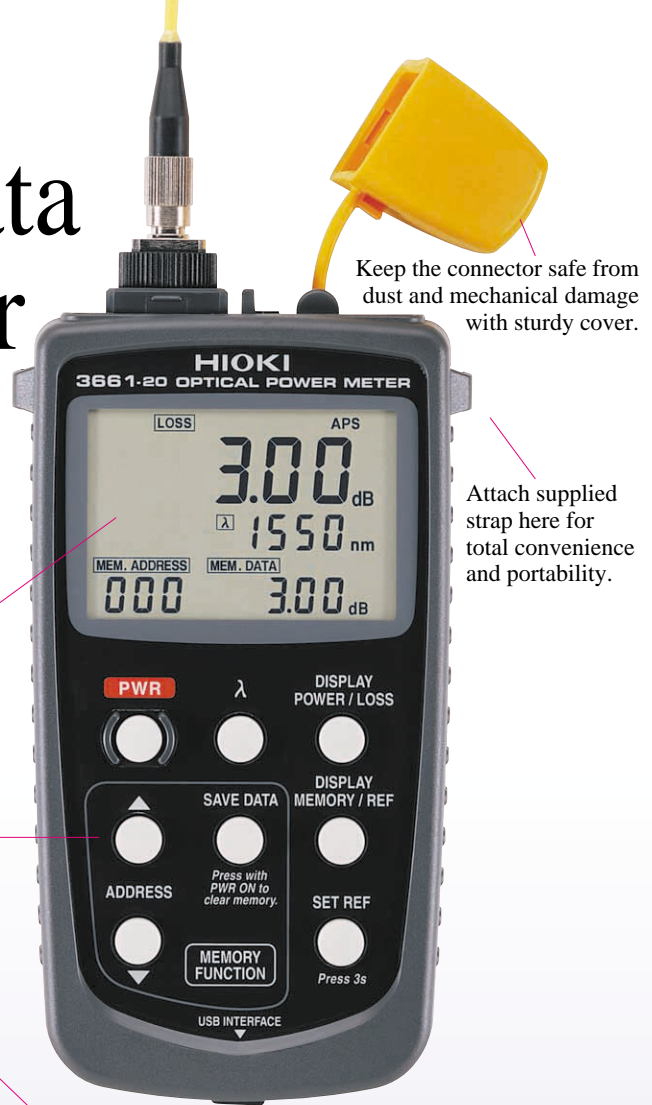
HIOKI company overview, new products, environmental considerations and other information are available on our website.

**3661-20**  
includes  
**Memory**  
&  
**USB<sup>1.1</sup>**  
**Interface**

# Quickly collect data and process it later on a computer

## Features of 3661-20

- Simple and intuitive operation**  
 Large LCD shows measurement results and memory data at a glance  
 Ergonomic key layout
- Large Memory**  
 Store up to 1000 data for each wavelength: 850 / 1310 / 1550 nm
- Effective data processing**  
 USB interface and supplied application software allows easy data management on a computer



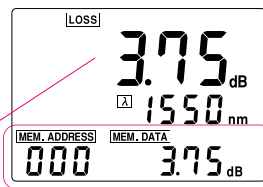
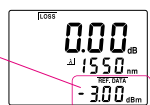
Keep the connector safe from dust and mechanical damage with sturdy cover.

Attach supplied strap here for total convenience and portability.

## Optical Loss measurement

After obtaining an optical power value to be used as reference, the measurement result is compared to this reference and the loss is automatically shown on the display.

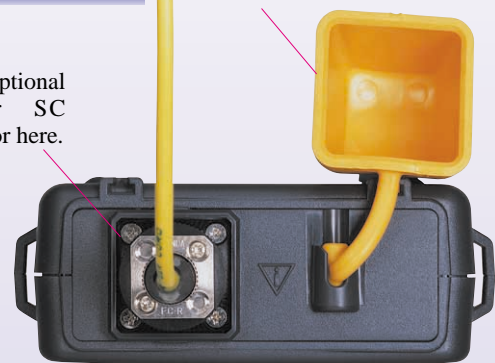
- Step 1**  
 Connect light source to 3661-20 with short reference cable (about 2 m).
- Step 2**  
 Select wavelength to be measured according to light source.
- Step 3**  
 Switch to POWER display to measure optical power received from light source. Store this as reference value.
- Step 4**  
 Connect light source and 3661-20 to both ends of cable to be measured.
- Step 5**  
 Switch to the LOSS display to measure power loss. Store the results in memory.



Top view of 3661-20

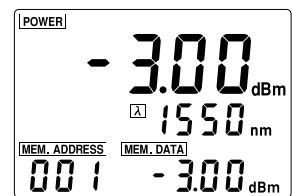
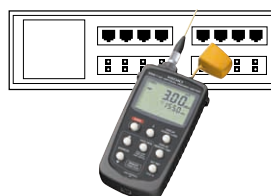
Mount optional FC or SC connector here.

Attach connector cover here to prevent dust from accumulating on the connector.



## Optical Power measurement

Easily measure absolute value of input optical power. Save results in memory.





# Two types of laser light sources

3662-20: 1550 nm  
3663-20: 1310 nm



## Features of 3662-20 3663-20

- ❑ Compact size for easy handling  
Dimensions: approx. 76 (W) × 159 (H, including cover) × 35 (D) mm  
Mass: approx. 180 g (without batteries)
- ❑ Continuous or modulated light output  
Continuous wave (CW) output or 3 types of modulated light output (270 Hz, 1 kHz, 2 kHz) can be selected.

### Top view of 3662-20

Mount optional FC or SC connector here.



Attach connector cover here to prevent dust from accumulating on the connector.

Hand strap

## Transfer up to 1000 data for each wavelength

# To PC



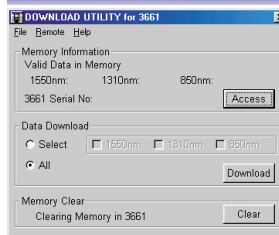
USB connector with dust cover



Use supplied USB cable

Saved data collected with the 3661-20 in the field can be downloaded to a computer via the USB interface. The data are in CSV format, suitable for further processing with spreadsheet software.

### Supplied data transfer software



### Specifications of supplied data transfer software DOWNLOAD UTILITY

- Operating environment: Windows 98, Me, 2000, and XP. CPU, RAM and display requirements follow the specifications of the respective operating system. At least 10 Mbytes of free hard disk space are required.
- Function: Download measurement data stored in memory to a computer via USB cable connection.
- File format: CSV
- Interface standard: USB Ver. 1.1 or later

### Example of data imported into Excel

HIOKI3661DATA.csv										
1 HIOKI 3661 Measurement Data										
2 Comment: 1550, 1310, 850										
3 3661 Serial No. 102100003										
4 Wave Length Data										
5 1550nm 10										
6 1310nm 257										
7 850nm 100										
8										
9										
10 Address No. 1550nm Power[dBm] Loss[dB] Reference[dBm] 1310nm Power[dBm] Loss[dB] Reference[dBm] 850nm Power[dBm] Loss[dB] Reference[dBm]										
11 0 -52.29										
989	978									
990	979									
991	980								11.49	-31.67
992	981									
993	982									
994	983									
995	984									
996	985									
997	986									
998	987									
999	988									
1000	989									
1001	990	5.26	-46.81	-52.69					11.6	-31.67
1002	991	5.22	-46.81	-52.72						
1003	992	5.24	-46.81	-52.71						
1004	993	5.18	-46.81	-52.64						
1005	994	5.27	-46.81	-52.67						
1006	995	5.35	-46.81	-52.76						
1007	996	0.16	-59.81	-52.57						
1008	997	0.08	-59.81	-52.63						

### Related products



## Install UTP Cables Properly

- ❑ Supports UTP up to CAT 5e
- ❑ WireMap & Cable length check
- ❑ Optional connection check capability

**3660 LAN CABLE HiTESTER**

### 3661-20 OPTICAL POWER METER Specifications

Specifications apply to temperature range 23 °C ±5 °C, HIOKI reference wavelength 1310 nm and 1550 nm\*, power -10 dBm, CW, single mode fiber, FC master connector, PC finish

<b>Measurement functions</b>	Optical power measurement (dBm) Measure absolute value of input optical power Optical loss measurement (dB) Automatically compare measured power with previously input reference value to calculate and display loss
<b>Calibration wavelength</b>	850 nm, 1310 nm, 1550 nm
<b>Range</b>	-60 dBm to +9 dBm (auto range)
<b>Accuracy(1310/1550 nm)</b>	±0.22 dB (±5 %) at -10 dBm
<b>Resolution</b>	0.01 dBm (optical power), 0.01 dB (optical loss)
<b>Rated max.</b>	+10 dBm
<b>Connector</b>	FC, SC (using optional connector adapter)
<b>Fiber type</b>	Single mode, multi mode (core dia. 62.5 μm max. NA: 0.275 max.)
<b>Light receiver</b>	InGaAs (dia. 1 mm)
<b>Display update rate</b>	Approx. 3 times/s (approx. 350 ms)
<b>Memory</b>	Max. 1000 data per wavelength
<b>Interface</b>	USB (Ver. 1.1) Dedicated PC application software allows transfer of measurement data from the 3661-20 memory to a computer
<b>Functions</b>	Auto power save (after about 10 minutes of inactivity; defeatable) Settings backup (settings are automatically stored at power-off) Battery check (symbol appears when voltage drops below approx. 4 V)
<b>Applicable standards</b>	Safety: EN61010-1: 2001 Pollution degree 2 EMC: EN61326: 1997 +A1: 1998 +A2: 2001
<b>Operation temp.</b>	0 °C to 40 °C, 80 %rh or less, no condensation
<b>Storage temp.</b>	-10 °C to 50 °C, 80 %rh or less, no condensation
<b>Power supply</b>	LR6(AA) alkaline battery×4
<b>Max. rated power</b>	0.5 VA
<b>Operating time</b>	Approx. 40 hours (continuous use)
<b>Dimensions and mass</b>	Approx. 85 W ×192 H (including 36 mm cover) × 35 D mm, Approx. 300g (without batteries) (Approx. 3.35"(W) 7.56"(H) 1.38"(D), Approx. 10.6 oz.)

### 3661-20 OPTICAL POWER METER

Includes Data transfer software DOWNLOAD UTILITY CD-R, USB cable (1m), 3853 CARRYING CASE (for 3661-20 main unit), Strap

For optical fiber cable measurement with the 3661-20, an optional connector adapter must be selected.

#### 3661-20 options



9731 FC CONNECTOR ADAPTER



9732 SC CONNECTOR ADAPTER

#### 3662-20, 3663-20 options



9733 FC CONNECTOR ADAPTER



9734 SC CONNECTOR ADAPTER

#### 3661-20, 3662-20, 3663-20 common options



9730 CARRYING CASE  
(Holds 3661-20, 3662-20 and 3663-20)



9735 FC-FC OPTICAL FIBER CABLE  
9736 SC-SC OPTICAL FIBER CABLE  
9737 SC-FC OPTICAL FIBER CABLE  
(1.3 μm-band single-mode optical fiber cable, 2 m)



9738 OPTICAL CONNECTOR CLEANER



9739 SPARE CLEANER  
(30 m × 6 rolls set)

### 3662-20, 3663-20 LASER LIGHT SOURCE Specifications

Specifications apply to temperature range 23 °C ±5 °C, single mode fiber, FC master connector, PC finish, at output end of 2m cable

<b>Light-emitting element</b>	Semiconductor laser diode
<b>Output connector</b>	FC, SC (using optional connector adapter)
<b>Fiber type</b>	Single mode
<b>Output mode</b>	Continuous wave (CW) or modulated light (270 Hz, 1 kHz, 2 kHz)
<b>Output wavelength</b>	1310 ±20 nm (3663-20) 1550 ±20 nm (3662-20)
<b>Spectrum width</b>	5 nm max.
<b>Output level</b>	-6 ±2 dBm
<b>Output level stability</b>	Within ±0.1 dB (temperature constant, 5 minutes) Within 1.0 dB p-p (ambient temperature 0 to 40 °C, 8 hours)
<b>Functions</b>	Battery check (indicator flashes when battery voltage drops)
<b>Applicable standards</b>	Safety: EN61010-1: 2001 Pollution degree 2 EMC: EN61326: 1997 +A1: 1998 +A2: 2001 Laser: IEC 60825 -1: 2001, Class 1 Laser Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No.50, dated July 26,2001.
<b>Operation temp.</b>	0 °C to 40 °C, 80 %rh or less, no condensation
<b>Storage temp.</b>	-10 °C to 50 °C, 80 %rh or less, no condensation
<b>Power supply</b>	LR6(AA) alkaline battery×2
<b>Max. rated power</b>	0.6 VA
<b>Operating time</b>	Approx. 20 hours (3662-20, continuous CW output) Approx. 36 hours (3663-20, continuous CW output)
<b>Dimensions and mass</b>	Approx. 76 W ×159 H (including 36 mm cover) × 35 D mm, Approx. 180g (without batteries) (Approx. 3.00"(W) 6.26"(H) 1.38"(D), Approx. 6.35 oz.)

#### \* HIOKI reference wavelength

The calibration wavelength is a value inherent to the light source used for adjustment and calibration purposes. Normally, the sensitivity of a light receiver will be wavelength dependent, and there will also be individual tolerances. The output of the laser light source used for adjustment and calibration purposes will have the inherent wavelength of the source. For reasons related to continued equipment maintenance, it is not possible to specify a constant value for this wavelength. In order to avoid ambiguity when stating measurement accuracy, we therefore use the expression "HIOKI reference wavelength".

### 3662-20 LASER LIGHT SOURCE (1550 nm)

### 3663-20 LASER LIGHT SOURCE (1310 nm)

Includes hand strap, carrying case (for 3662-20, 3663-20 main unit) with both models

The 3662-20 and 3663-20 are Class 1 Laser products conforming to IEC 60825-1: 2001. **CLASS 1 LASER PRODUCT**

For optical fiber cable measurement with the 3662-20 and 3663-20, an optional connector adapter must be selected.

# HIOKI

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