

Improved!

Wider wavelength range  
**800 to 1660 nm**

(Register up to 8 custom wavelengths  
adjustable in 5nm units)

**HIOKI**

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

Optical/Telecom Measurement



## Reliable Testing of Optical Power Loss



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



ISO 9001  
JMI-0216



ISO14001  
JQA-E-90091



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

# 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

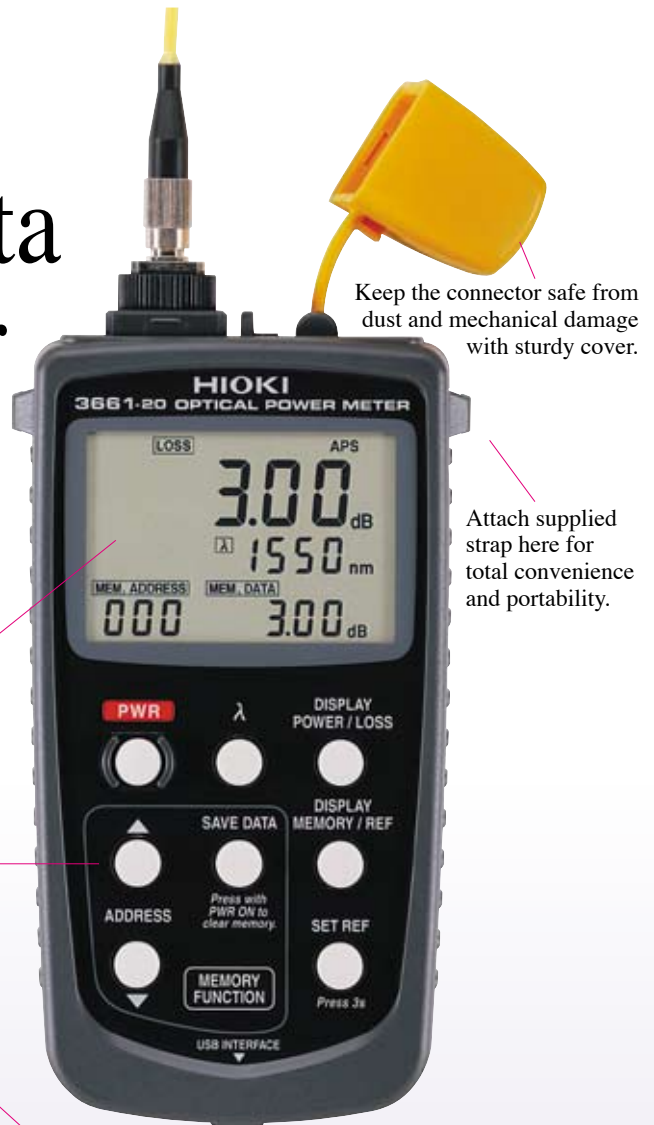
### Large Memory

\*Store 1000 sets of data for each registered wavelength

\*Register up to 8 custom wavelengths adjustable in 5nm units

### 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.

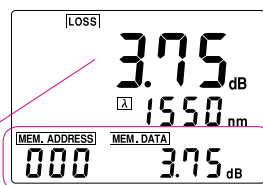
### Step 4

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

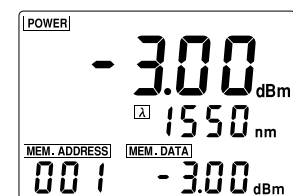
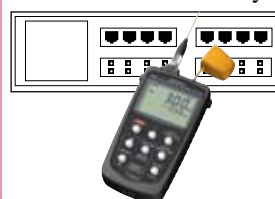
Attach connector cover here to prevent dust from accumulating on the connector.

Mount optional FC or SC connector here.



## Optical Power measurement

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





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

# Two types of laser light sources

## 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

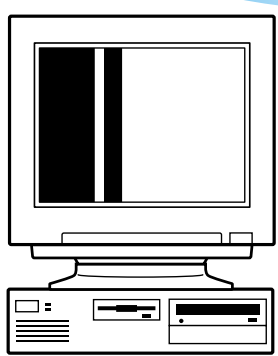
# To PC



USB connector with dust cover



Use supplied USB cable



Free PC Software

Wavelength	Number of data
1550 nm	1000
1310 nm	3
1470 nm	3
1490 nm	3
1500 nm	3
1520 nm	3

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.

### Software Specifications

- 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

Address ID	Power[dBm]	Loss[dB]	Reference[dBm]	Power[dBm]	Loss[dB]	Reference[dBm]	Power[dBm]	Loss[dB]	Reference[dBm]
111	0			1.57			44.6E		
112	0			52.28			51.0E		
113	0			52.86			52.8E		
114	0			52.97			52.9E		
115	0			52.97			52.9E		
116	0			52.77			52.7E		
117	0			52.77			52.7E		
118	0			52.77			52.7E		
119	0			52.77			52.7E		
120	0			52.77			52.7E		
121	0			52.77			52.7E		
122	0			52.77			52.7E		
123	0			52.77			52.7E		
124	0			52.77			52.7E		
125	0			52.77			52.7E		
126	0			52.77			52.7E		
127	0			52.77			52.7E		
128	0			52.77			52.7E		
129	0			52.77			52.7E		
130	0			52.77			52.7E		
131	0			52.77			52.7E		
132	0			52.77			52.7E		
133	0			52.77			52.7E		
134	0			52.77			52.7E		
135	0			52.77			52.7E		
136	0			52.77			52.7E		
137	0			52.77			52.7E		
138	0			52.77			52.7E		
139	0			52.77			52.7E		
140	0			52.77			52.7E		
141	0			52.77			52.7E		
142	0			52.77			52.7E		
143	0			52.77			52.7E		
144	0			52.77			52.7E		
145	0			52.77			52.7E		
146	0			52.77			52.7E		
147	0			52.77			52.7E		
148	0			52.77			52.7E		
149	0			52.77			52.7E		
150	0			52.77			52.7E		
151	0			52.77			52.7E		
152	0			52.77			52.7E		
153	0			52.77			52.7E		
154	0			52.77			52.7E		
155	0			52.77			52.7E		
156	0			52.77			52.7E		
157	0			52.77			52.7E		
158	0			52.77			52.7E		
159	0			52.77			52.7E		
160	0			52.77			52.7E		



### Related products

## Network Construction with One Single Instrument

- Wiremap (Detect Split Pairs with Wiring Check)
- Cable Length (Get NVP-Enhanced Measurement Accuracy)
- Direction (Identify Up to 21 Cable Destinations)

LAN CABLE HiTESTER 3665-20



### 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>Measurable wavelength</b>	800 to 1660 nm (Register up to 8 custom wavelengths adjustable in 5nm units) 8 default wavelengths preset at 850, 1300, 1310, 1470, 1490, 1550 1625, and 1650 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 Pollution degree 2 EMC: EN61326 +A1+A2+A3
<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.)

### OPTICAL POWER METER 3661-20

Includes Free PC Software application **DOWNLOAD UTILITY** CD-R, USB cable (1m), **CARRYING CASE 3853** (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



**FC CONNECTOR ADAPTER 9731**



**SC CONNECTOR ADAPTER 9732**

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



**FC CONNECTOR ADAPTER 9733**



**SC CONNECTOR ADAPTER 9734**

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



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



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



**OPTICAL CONNECTOR CLEANER 9738**



**SPARE CLEANER 9739**  
(30 m × 6 rolls set)

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### 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>	Output : 1310 ±20 nm ( <b>3663-20</b> ) 1550 ±20 nm ( <b>3662-20</b> )
<b>Spectrum width</b>	5 nm max.
<b>Output level</b>	-6 ±2 dBm
<b>Output level stability</b>	Output level : 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 Pollution degree 2 EMC: EN61326+A1+A2+A3 Laser: IEC 60825 -1, 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 ( <b>3662-20</b> , continuous CW output) Approx. 36 hours ( <b>3663-20</b> , 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".

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

### LASER LIGHT SOURCE 3663-20 (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 **CLASS 1 LASER PRODUCT**

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