

**HP 8167B**

	<b>HP 8167B</b>
Wavelength range	1255 nm to 1365 nm
Absolute wavelength accuracy, typ. [1]	±0.1 nm
Relative wavelength accuracy	±0.035 nm (1310–1350 nm) ±0.050 nm (1255–1365 nm), typ. ±0.001 nm [2]
Wavelength resolution	0.001 nm, 170 MHz at 1300 nm
Wavelength stability (typ., over 1 hour at constant temperature)	< ±100 MHz
Wavelength repeatability	±0.035 nm (1310–1350 nm) ±0.050 nm (1255–1365 nm), typ. ±0.001 nm [2]
Sidemode suppression ratio, typ. [3]	>40 dB (1260–1360 nm at -3 dBm)
Source spontaneous emission [4]	< -45 dB/0.1 nm (1310–1350 nm) < -40 dB/0.1 nm (1260–1360 nm) < -35 dB/0.1 nm (1255–1365 nm)
Relative intensity noise (RIN, typ.)	< -145 dB/Hz
Linewidth (typ., coherence control off)	100 KHz
Effective linewidth (typ., coherence control on)	10–500 MHz (1260–1360 nm)
Tuning speed (typ. for a 1/10/100 nm step) [5]	200 ms (250 ms with #003)/300 ms/2 s
Output power	> +4 dBm peak typ. > +3 dBm (1310–1350 nm) > -3 dBm (1260–1360 nm) > -7 dBm (1255–1365 nm) reduce by 1 dB/1.5 dB/1 dB/2.5 dB respectively
for #023/#003/#007/(#023 and #003) [5]	
Minimum output power/with #003 [5]	-7 dBm/-47 dBm
Power linearity/with #003 [5, 6]	±0.1 dB/±0.3 dB
Power stability (over 1 hour) [7]	±0.03 dB (typ. ±0.01 dB)
Power repeatability (typ.) [6]	±0.04 dB
Power flatness versus wavelength/with #003 [5, 7]	±0.1 dB /±0.2 dB

- [1] Measured with wavelength meter in vacuum.
- [2] Performance when controlled with appropriate wavelength meter.
- [3] Measured by heterodyning method.
- [4] At maximum specified output power. Measured with optical spectrum analyzer at 0.1 nm resolution bandwidth.
- [5] Listed options are described on page 6.
- [6] With option #003 at constant relative humidity (±5%).
- [7] With option #003 at 1355 nm and 1359.5 nm, power may vary by up to ±0.25 dB typically, depending on ambient relative humidity and related water absorption.

### Supplementary Performance Characteristics

**Output isolation (typ.):** 50 dB.  
**Return loss (typ.):** 60 dB (except option 021).

### Operating Modes

#### Internal modulation

**Modulation frequency:** 250 Hz–300 kHz (squarewave).  
**Duty cycle:** 50 % fixed.  
**Modulation depth:** 100 % (on/off).

**Modulation output:** TTL reference signal.

#### External modulation

**Modulation frequency:** 200 kHz–20 MHz (at 3 dB optical bandwidth, typ.).  
**Modulation depth (max, typ.):** ±15 %.

#### Coherence control

**Effective linewidth:** 50–500 MHz typ. (30–500 MHz typ. for HP 8168D and 10–500 MHz typ. for HP 8167B).  
 (For measurements on components with 2 m long patchcords and connectors with 14 dB return loss, the effective linewidth results in a typical power stability of  $\leq \pm 0.025$  dB ( $\leq \pm 0.1$  dB for HP 8167B and HP 8168D) over 1 minute by drastically reducing interference effects in the test setup).

### General

**Polarization-maintaining fiber**  
**Fiber type:** Panda.

**Orientation:** TE mode in slow axis, in line with connector key.  
**Polarization extinction ratio:** >15 dB for HP 8167B between 1310 nm and 1350 nm (>12 dB typ. over full wavelength range), >15 dB for HP 8168D over full wavelength range, >15 dB for HP 8168E/F between 1490 nm and 1575 nm (>12 dB typ. over full wavelength range).

#### HP-IB interface

**HP-IB interface function code:** SH1, AH1, T6, LA, SR1, RL1, PP0, DC2, DT0, C0.

#### Passive component test software

Files and data can be stored on memory cards according to PCMCIA type 1, standard PCMCIA 1.0/JEIDA 4.0. Type 1 cards are 3.3 mm thick. Recommended card capacity 512 kByte.

#### Laser class

**HP 8168D and HP 8168E:** Class I according to FDA 21 CFR 1040.10, Class 3A according to IEC 825-1; 1993

**HP 8167B and HP 8168F:** Class IIIb according to FDA 21 CFR 1040.10, Class 3A according to IEC 825-1; 1993.

**Analog output:** provides output voltage, proportional to optical output power (except #003).

**Recalibration period:** 2 years.

**Warm-up time:** typically <1 hour, can be used with reduced power in this phase.

### Environmental

**Storage temperature:** -40 °C to +70 °C.

**Operating temperature:** +10 °C to +35 °C.

**Humidity:** <95 % R.H. (+10 °C to +35 °C).

Specifications are valid at non-condensing conditions.

**Power:** 100 to 240 Vrms, ±10 %, 260 VA max.

#### Dimensions:

145 mm H, 426 mm W, 545 mm D (5.8" x 16.9" x 21.6").

**Weight:** net, 18 kg (40 lbs), shipping, 21 kg (46 lbs).