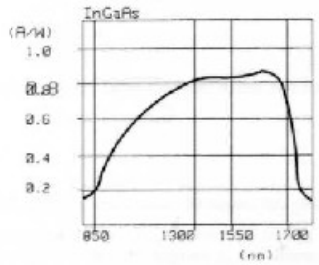
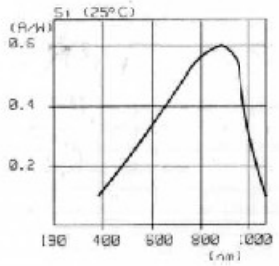
Typical Spectral Response Curves



InGaAs Detector.



Si Detector.

Specifications

Specifications describe the instrument's warranted performance. They apply to optical input signals emerging from optical fibers terminated with FC/PC type connectors. Accuracy specifications are measured with CW signals at -20dBm and 23±5°C and "ZERO" enabled before measurement.

Display :	LCD, 4 digits, dB(rel), dBm, W, λ, low battery indication
Display Res. :	0.01dB (dB/dBm), 0.1% to 1% (W)
Averaging :	3 readings/s (OFF), floating average over 10 readings (ON)
Dimensions :	182mm H, 80mm W, 40mm D (7.2"×3.2"×1.6")
Weight :	net 600g (incl. source, sensor, 4 batteries and 2 connector interfaces)

	81400A	**81401A**
Wavelength Range :	400-1100nm	750-1700nm
Fiber Type :	up to 100/140μm	up to 100/140μm
Measure Range :	+10 to -70dBm 10mW to 1pW	+3 to -70dBm 2mW to 1pW
Noise Floor :	$<3pW_{pp}$	$<3pW_{pp}$
Meas. Uncertaty :	±5%	±5%
Cal. Wavelength :	560/780/ 820/850	820/850/ 1300/1550nm
Sensor Element :	Si	InGaAs

	81411A	**81412A**
Wavelength :	850±10nm	1300±20nm
Spectr. Bandwdth :	<50nm FWHM	<140nm FWHM
Output Power[1] :	>-17dBm	>-20dBm
Dynamic Range[1] :	>53dB	>50dB
Stability[‡] :	0.03dB	0.03dB

	81413A
Wavelength :	1550±20nm
Spectr. Bandwdth :	<200nm FWHM
Output Power[1] :	>-25dBm
Dynamic Range[1] :	>45dB
Stability[‡] :	0.03dB

[1] into 50/125μm. Typically 20dB less into single-mode fiber

[‡] 15 minutes, constant temp.

General

Recalibration period :	1 Year
Storage Temperature :	-40°C to +75°C
Operating Temperature :	-10°C to +55°C
Humidity :	<95% R.H. from 0°C to +40°C
Mains Adapter:	110 to 250V
Batteries :	4 × AA(UM3), Drycells
Operating Hours :	20h (power meter mode)/10h (loss mode)

Performance Tests

The procedures in this section test the performance of the HP 8140A with plug-ins against the specifications. The test equipment given corresponds to tests carried out with FC/PC connectors.

Test Record
It is recommended that you fill out the Test Record provided while doing the test. The Test Record may be reproduced without written permission from Hewlett-Packard.

Test Failure
If the HP 8140A with plug-ins fails any performance test, return the instrument to the nearest Hewlett-Packard Sales/Service Office for repair.

The following are some general guidelines for the tests.

- Perform of the tests in the order given, using the recommended test equipment.
- All the optical connections must be dry and clean. *Do not, use immersion oil* (see cleaning procedure).
- Fix optical cables to the table, and place the optical head and the DUT close together so that cable movement is minimized when performing connections.

Before starting any of the tests, do the following:

- Turn on the Power Meter Standard and allow the instrument and the optical head to warm up for at least 30 minutes.
- Set the CAL factor of the Power Meter Standard to zero.
- ZERO the power meter with the head connector adapter covered with plastic caps (P/N 5040-9361 or 5040-9351).
- Connect up the equipment as indicated.

Accuracy Test

Equipment required for:	HP 81400A	HP81401A
Power Meter Standard	HP 8152A/HP 81520A	HP 8152A/HP 81520A/ HP 81521B
		OR
	HP 8153A/HP 81533A and HP 81530A	HP 8153A/HP 81533A and HP 81520A/ HP 81521B
Connector Adapter	HP 81000AA	HP 81000AA
Connector Interface	HP 81000FI	HP 81000FI
Multimode Fiber (2ea)	HP 81501FC	HP 81501FC
Laser/LED Sources	650/780/820/850nm	820/850/1300/1550nm
Optical Attenuator	HP 8158B Opt.001/011	HP 8158B Opt.002/011 HP 8158B Opt.001/011
Specifications:		
Uncertainty:	±5%	±5%
Calibrated Wavelength (-20dBm)	660/780/820/850nm	820/850/1300/1550nm