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Data Sheet

August 13, 2026

KEYSIGHT / AGILENT / HP

Keysight / Agilent / HP 8164A Lightwave Mainframe with 81682A Tunable Laser Source

The Keysight 8164A Lightwave Mainframe is a versatile platform for optical component and system testing. It supports various plug-in modules, including the 81682A Tunable Laser Source, enabling precise wavelength control and characterization of optical devices. Ideal for research, development, and manufacturing environments.

**MODEL****Keysight / Agilent /
HP 8164A /
81682A****CALIBRATION****Available on
request****CONDITION****Used****STATUS****In stock****RFQ / SKU****8164A / 81682A****LISTING**[https://aumictechlabs.c
om/products/8164a-816
82a-2/](https://aumictechlabs.com/products/8164a-81682a-2/)

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NAICS 423690 • 811210 • 541380

This unit

The Keysight 8164A Lightwave Mainframe paired with the 81682A Tunable Laser Source delivers a modular platform for optical component characterization across the C-band. The 8164A mainframe accepts one tunable laser source module plus four additional compact optical modules, enabling flexible test configurations. The 81682A provides mode-hop free tuning across 1460 nm to 1580 nm with ± 0.01 nm absolute wavelength accuracy and ± 0.5 pm repeatability, making it well-suited for DWDM component validation and optical system development. Technical Specifications 81682A Tunable Laser Source Wavelength range: 1460 nm to 1580 nm (C-band) Maximum output power: +8 dBm Output power (1520–1570 nm): $> +4.5$ dBm Wavelength accuracy

(absolute): ± 0.01 nm Wavelength repeatability: ± 0.5 pm (typical) Wavelength resolution: 0.1 pm
Dynamic range: >60 dB (via optional built-in attenuator) 8164A Mainframe Slots: 1 dedicated TLS slot + 4 module slots Display: Graphical color display, 600 × 400 pixels Interfaces: GPIB, RS-232C serial, Centronics parallel, VGA, PS/2, PCMCIA 2.1 Storage: 2000 MB internal HDD plus ATA/SRAM card support Power: 100–240 VAC $\pm 10\%$, 48–66 Hz, 120–280 VA max Operating temperature: +10°C to +35°C Storage temperature: –40°C to +70°C Humidity: <80% R.H. (non-condensing)
Key Features Mode-hop free tuning for continuous wavelength scanning Extensive triggering with configurable hardware I/O ports Passive component test, stability logging, and data acquisition built-in PC Card slot enables field data transfer and firmware updates Supports all 8153A and 8163A series optical modules for multifunction measurement capability Typical Applications DWDM filter and multiplexer characterization Tunable laser source validation and stability testing Wavelength-dependent optical component measurement Manufacturing test environments requiring automated scanning Compatibility & Integration The 81682A mounts directly into the 8164A mainframe. Additional optical modules - power meters, return loss modules, fixed sources, attenuators, and optical switches - occupy the four remaining slots. Remote control via GPIB or RS-232C enables integration into automated test systems.

Features & description

From manufacturer datasheet

Built-in real-time wavelength meter

Technical Specifications Model: 8164A / 81682A Manufacturer: Hewlett Packard / Agilent / Keysight
Instrument Type: Lightwave mainframe with tunable laser module Series: 8163/8164/8166 lightwave
Alias: 8164A; 81682A; HP 81682A Mainframe: 8164A Lightwave Measurement System TLS Slot: bottom
high-power slot of 8164A Compact Slots: two additional 816x module slots Wavelength Range: 1460 to
1580 nm Absolute Wavelength Accuracy: plus/minus 0.01 nm Relative Wavelength Accuracy:
plus/minus 5 pm (plus/minus 2 pm typical) Wavelength Repeatability: plus/minus 0.5 pm typical
Wavelength Stability: less than plus/minus 1 pm typical Wavelength Resolution: 0.1 pm (12.5 MHz at
1550 nm) Maximum Output Power: plus 8 dBm Power 1520 to 1570 nm: greater than plus 4.5 dBm class
SSE Ratio: 45 dB/nm or better 1520-1570 nm SSE Total: 30 dB or better typical 1520-1570 nm Linewidth
Off: 100 kHz (coherent control off) Linewidth On: greater than 50 MHz (coherent control on, 1480-1580
nm max flat) Power Stability: plus/minus 0.01 dB Option 003: built-in optical attenuator 60 dB range,
about 1.5 dB max-power reduction Fiber: Panda PM Mode Hop Free: entire specified range Laser Type:
InGaAsP external cavity / FP class TLS

8164A81682A Characteristics / Specifications

PARAMETER	VALUE
Model	8164A / 81682A
Manufacturer	Hewlett Packard / Agilent / Keysight
Instrument Type	Lightwave mainframe with tunable laser module
Series	8163/8164/8166 lightwave
Alias	8164A; 81682A; HP 81682A
Mainframe	8164A Lightwave Measurement System
TLS Slot	bottom high-power slot of 8164A
Compact Slots	two additional 816x module slots
Wavelength Range	1460 to 1580 nm
Absolute Wavelength Accuracy	plus/minus 0.01 nm
Relative Wavelength Accuracy	plus/minus 5 pm (plus/minus 2 pm typical)
Wavelength Repeatability	plus/minus 0.5 pm typical
Wavelength Stability	less than plus/minus 1 pm typical
Wavelength Resolution	0.1 pm (12.5 MHz at 1550 nm)
Maximum Output Power	plus 8 dBm
Power 1520 to 1570 nm	greater than plus 4.5 dBm class
SSE Ratio	45 dB/nm or better 1520-1570 nm
SSE Total	30 dB or better typical 1520-1570 nm
Linewidth Off	100 kHz (coherent control off)
Linewidth On	greater than 50 MHz (coherent control on, 1480-1580 nm max flat)
Power Stability	plus/minus 0.01 dB
Fiber	Panda PM
Mode Hop Free	entire specified range
Laser Type	InGaAsP external cavity / FP class TLS
Host Interface	GPIB on 8164A

PARAMETER	VALUE
Related 81680A	low SSE 1550 nm TLS same band
Related 81640A	1500-1640 nm
Related 81689A	compact plus 6 dBm 1550 nm
Successor	81682B
Safety Class	IEC 60825-1 class 3A class / FDA IIIb class on TLS family
Form	8164A benchtop mainframe plus plug-in TLS Notes Specs from HP/Agilent 8164A catalog and 81682A TLS table (1460-1580 nm, +8 dBm, ± 0.01 nm, 0.1 pm). Confirm option 003/071 and 8164A versus 8164B mainframe.
Linewidth	100 kHz coherent control off; greater than 50 MHz with coherent control on (1480-1580 nm at max flat power). Power stability plus/minus 0.01 dB. Panda PM fiber outputs. 81682A succeeded by 81682B.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

performance tunable-laser modules in the bottom high-power slot plus two compact 816x modules. The 81682A isaC/S-band external-cavity tunable laser for that bottom slot: 1460 to 1580 nm, mode-hop-free, built-in wavelength control loop, maximum output +8 dBm (output 1). Absolute wavelength accuracy plus/minus 0.01 nm; relative plus/minus 5 pm (plus/minus 2 pm typical); repeatability typically plus/minus 0.5 pm; stability typically less than plus/minus 1 pm. Wavelength resolution 0.1 pm (12.5 MHz at 1550 nm). Power from 1520-1570 nm greater than +4.5 dBm class; SSE ratio 45 dB/nm or better (1520-1570 nm). Option 003 built-in 60 dB attenuator (reduces max output about 1.5 dB). Linewidth 100 kHz coherent control off; greater than 50 MHz with coherent control on (1480-1580 nm at max flat power). Power stability plus/minus 0.01 dB. Panda PM fiber outputs. 81682A succeeded by 81682B.

Applications

DWDM passive-component and EDFA stimulus

Mode-hop-free S+C band sweeps

8164A modular lightwave benches with TLS in the high-power slot

Key Features

8164A mainframe high-power TLS slot plus two compact slots

81682A 1460-1580 nm +8 dBm mode-hop-free

Plus/minus 0.01 nm absolute accuracy; 0.1 pm settable

Option 003 60 dB attenuator

Built-in real-time wavelength meter

Technical Specifications

PARAMETER	VALUE
Model	8164A / 81682A
Manufacturer	Hewlett Packard / Agilent / Keysight
Instrument Type	Lightwave mainframe with tunable laser module

Specifications

PARAMETER	VALUE
Series	8163/8164/8166 lightwave
Alias	8164A; 81682A; HP 81682A
Mainframe	8164A Lightwave Measurement System

Specifications

PARAMETER	VALUE
TLS Slot	bottom high-power slot of 8164A
Compact Slots	two additional 816x module slots

PARAMETER	VALUE
Wavelength Range	1460 to 1580 nm

Specifications

PARAMETER	VALUE
Absolute Wavelength Accuracy	plus/minus 0.01 nm
Relative Wavelength Accuracy	plus/minus 5 pm (plus/minus 2 pm typical)
Wavelength Repeatability	plus/minus 0.5 pm typical

Specifications

PARAMETER	VALUE
Wavelength Stability	less than plus/minus 1 pm typical
Wavelength Resolution	0.1 pm (12.5 MHz at 1550 nm)
Maximum Output Power	plus 8 dBm

Specifications

PARAMETER	VALUE
Power 1520 to 1570 nm	greater than plus 4.5 dBm class
SSE Ratio	45 dB/nm or better 1520-1570 nm
SSE Total	30 dB or better typical 1520-1570 nm

Specifications

PARAMETER	VALUE
Linewidth Off	100 kHz (coherent control off)
Linewidth On	greater than 50 MHz (coherent control on, 1480-1580 nm max flat)
Power Stability	plus/minus 0.01 dB

Option 003: built-in optical attenuator 60 dB range, about 1.5 dB max-power reduction

Specifications

PARAMETER	VALUE
Fiber	Panda PM
Mode Hop Free	entire specified range
Laser Type	InGaAsP external cavity / FP class TLS

Specifications

PARAMETER	VALUE
Host Interface	GPIB on 8164A
Related 81680A	low SSE 1550 nm TLS same band
Related 81640A	1500-1640 nm

Specifications

PARAMETER	VALUE
Related 81689A	compact plus 6 dBm 1550 nm
Successor	81682B
Safety Class	IEC 60825-1 class 3A class / FDA IIIb class on TLS family

Form: 8164A benchtop mainframe plus plug-in TLS

Notes

Specs from HP/Agilent 8164A catalog and 81682A TLS table (1460-1580 nm, +8 dBm, ±0.01 nm, 0.1 pm). Confirm option 003/071 and 8164A versus 8164B mainframe.

Ordering Information

OPTION	DESCRIPTION
Option 003	built-in 60 dB attenuator (reduces max output about 1.5 dB). Linewidth 100 kHz coherent control off; greater than 50 MHz with coherent control on (1480-1580 nm)

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

788 S 500 E, Pleasant Grove, UT 84062
sales@aumictech.com · +1 (484) 841-9341
<https://aumictechlabs.com>

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.