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Data Sheet
August 15, 2026

AGILENT

Agilent 81689A Tunable Laser Opt. 022 (S+C band) **CALIBRATED WITH DATA**

Agilent Keysight 81689A Compact Tunable Laser ModuleCBand The Agilent 81689A isacompact C-band tunable laser source module with continuous output power during tuning for DWDM component, amplifier, and system test. OEM February 2002 compact tunable laser technical specifications rate 1525 nm to 1575 nm with 0.01 nm resolution and greater than or equal to 6 dBm output across the band. Multi-channel DWDM test beds, optical amplifier stimulus, integrated waveguide device characterization with optional PMF, and compact spare channels beside DFB combs. The Agilent 81689A isacompact C-band tunable laser source module with continuous output power during tuning for DWDM component, amplifier, and system test. OEM February 2002 compact tunable laser technical specifications rate 1525 nm to 1575 nm with 0.01 nm resolution and greater than or equal to 6 dBm output across the band. Multi-channel DWDM test beds, optical amplifier stimulus, integrated waveguide device characterization with optional PMF, and compact spare channels beside DFB combs. Mode-hop free continuous power during tuning

MODEL Agilent 81689A	CALIBRATION Available on request
CONDITION Used	STATUS In stock
RFQ / SKU 81689A	LISTING https://aumictechlabs.com/products/81689a-2/

NIST-traceable cal · SAM registered · 30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Agilent 81689A Tunable Laser Opt. 022 is a compact laser source designed for C-band applications, offering precise wavelength control and stable optical output. This module is particularly suited for testing optical amplifiers and DWDM (Dense Wavelength Division Multiplexing) systems, providing the

flexibility required for both installation and maintenance phases. Its design emphasizes reliability and ease of integration into existing test setups, making it a valuable asset for engineers and system integrators in telecommunications and optical research environments. Technical Specifications General Manufacturer: Agilent / Keysight Model: 81689A Product Family: 81689A, 81689-A, 81689 A Type: Compact Tunable Laser Module Band: C-Band (S+C band specified in option name) Designed For: DWDM transmission systems, optical amplifier testing, integrated optical device characterization. Wavelength Characteristics Wavelength Range: 1525 nm to 1575 nm Wavelength Resolution: 0.01 nm (equivalent to 1.25 GHz at 1550 nm) Wavelength Accuracy: ±0.3 nm Wavelength Repeatability: ±0.05 nm Wavelength Stability: ±0.02 nm (over 24 hours) Optical Output Maximum Output Power: ≥ 6 dBm (across the specified wavelength range) Optical Power Stability: ±0.03 dB (over 1 hour) Tuning Speed: < 10 seconds per 50 nm Spectral Characteristics Spectral Linewidth: 20 MHz Modulation Capabilities Internal and External Modulation: Supported Modulation Output (via Mainframe): TTL reference signal Modulation Input (via Mainframe): TTL signal Fiber and Connector Option 022: Standard Single-mode fiber with angled contact output connector interface Polarization Maintaining Fiber (Panda) Options: Available (e.g., Option 072) Connector Type: Angled Contact (Option 022) Environmental and Physical Operating Temperature: 15 °C to 35 °C Storage Temperature: −20 °C to +70 °C Humidity: < 80% Relative Humidity at 15 °C to 35 °C Dimensions: Compact module designed for integration into mainframes Compatibility Mainframes: Compatible with Agilent 816x Mainframes, Agilent 8163A Lightwave Multimeter, Agilent 8164A Lightwave Measurement System, or Agilent 8166A Lightwave Multichannel System Calibration and Documentation Calibration Status: Often supplied calibrated with calibration data Recommended Re-calibration Period: 2 years Laser Safety Laser Class: Class IIIb according to FDA 21 CFR 1040.10, Class 3A according to IEC 825-1 Why Choose Aumictech for the Agilent 81689A Tunable Laser Opt. 022 (S+C band)? At Aumictech, we specialize in supplying high-end optical test equipment. Whether you need precise wavelength control for DWDM system testing, stable optical output for amplifier characterization, or reliable performance for laboratory research, our team ensures the Agilent 81689A Tunable Laser Opt. 022 delivers maximum performance for your application.

Features & description

From manufacturer datasheet

Built-in attenuator range of 9 dB without an external attenuator module

Technical Specifications Model: 81689A Instrument Type: compact tunable laser source module Wavelength Range: 1525 nm to 1575 nm Wavelength Resolution: 0.01 nm (1.25 GHz at 1550 nm) Absolute Wavelength Accuracy Typical: plus or minus 0.3 nm Relative Wavelength Accuracy: plus or minus 0.3 nm Wavelength Repeatability: plus or minus 0.05 nm Wavelength Stability 24 Hour Typical: plus or minus 0.02 nm at constant temperature Wavelength Stability 1 Hour Typical: plus or minus 0.01 nm at constant temperature Tuning Speed Typical: less than 10 s per 50 nm Linewidth Typical Coherence Control Off: 20 MHz Linewidth Typical Coherence Control On: greater than 100 MHz Maximum Output Power Continuous During Tuning: greater than or equal to 6 dBm (1525 to 1575 nm) Minimum Output Power: minus 3 dBm Power Stability 1 Hour: plus or minus 0.03 dB at constant temperature Power Stability 24 Hour Typical: typ plus or minus 0.06 dB Power Repeatability Typical: plus or minus 0.02 dB Power Linearity: plus or minus 0.1 dB Power Flatness Versus Wavelength: plus or minus 0.3 dB Sidemode Suppression Typical At 0 Dbm: greater than 40 dB (1525 to 1575 nm) Signal To Sse Ratio Typical At 6 Dbm: greater than or equal to 39 dB/nm

81689A Characteristics / Specifications

PARAMETER	VALUE
Model	81689A
Instrument Type	compact tunable laser source module
Wavelength Range	1525 nm to 1575 nm
Wavelength Resolution	0.01 nm (1.25 GHz at 1550 nm)
Absolute Wavelength Accuracy Typical	plus or minus 0.3 nm
Relative Wavelength Accuracy	plus or minus 0.3 nm
Wavelength Repeatability	plus or minus 0.05 nm
Wavelength Stability 24 Hour Typical	plus or minus 0.02 nm at constant temperature
Wavelength Stability 1 Hour Typical	plus or minus 0.01 nm at constant temperature
Tuning Speed Typical	less than 10 s per 50 nm
Linewidth Typical Coherence Control Off	20 MHz
Linewidth Typical Coherence Control On	greater than 100 MHz
Maximum Output Power Continuous During Tuning	greater than or equal to 6 dBm (1525 to 1575 nm)
Minimum Output Power	minus 3 dBm
Power Stability 1 Hour	plus or minus 0.03 dB at constant temperature
Power Stability 24 Hour Typical	typ plus or minus 0.06 dB
Power Repeatability Typical	plus or minus 0.02 dB
Power Linearity	plus or minus 0.1 dB
Power Flatness Versus Wavelength	plus or minus 0.3 dB
Sidemode Suppression Typical At 0 Dbm	greater than 40 dB (1525 to 1575 nm)
Signal To Sse Ratio Typical At 6 Dbm	greater than or equal to 39 dB/nm
Relative Intensity Noise Typical	less than minus 137 dB/Hz (100 MHz to 2.5 GHz at +3 dBm)
Module Dimensions	75 mmHx 32 mmWx 335 mmDModule Weight: 1 kg
Output Isolation Typical	38 dB
Return Loss Typical Angled Options	55 dB

PARAMETER	VALUE
Return Loss Typical Straight Options	40 dB
Pm Extinction Ratio Typical	16 dB
Internal Digital Modulation Low Band	50 percent duty 200 Hz to 300 kHz
Internal Digital Modulation High Band	greater than 45 percent duty 300 kHz to 1 MHz
External Analog Modulation Depth	greater than or equal to plus or minus 15 percent, 5 kHz to 1 MHz, 5 Vp-p
Operating Temperature	15 C to 35 C
Storage Temperature	minus 20 C to +70 C
Humidity	less than 80 percent RH at 15 C to 35 C noncondensing
Warm Up Time	less than 40 min
Recalibration Period	2 years
Absolute wavelength accuracy	Typical: plus or minus 0.3 nm
Wavelength stability	24 Hour Typical: plus or minus 0.02 nm at constant temperature
Linewidth	Typical Coherence Control Off: 20 MHz
Maximum output power	Continuous During Tuning: greater than or equal to 6 dBm (1525 to 1575 nm)
Power repeatability	Typical: plus or minus 0.02 dB
Power stability	1 Hour: plus or minus 0.03 dB at constant temperature
Relative intensity noise	Typical: less than minus 137 dB/Hz (100 MHz to 2.5 GHz at +3 dBm)
Output isolation	Typical: 38 dB
Return loss	Typical Angled Options: 55 dB

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Storage temperature	minus 20 C to +70 C
Operating temperature	15 C to 35 C
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Humidity	less than 80 percent RH at 15 C to 35 C noncondensing
Warm Up Time	less than 40 min
Recalibration Period	2 years Notes Numeric rows from Agilent 81689A/81689B/81649A Compact Tunable Laser Modules Technical Specifications February 2002 (5988-3675EN).
Internal digital modulation	Low Band: 50 percent duty 200 Hz to 300 kHz
External analog modulation	Depth: greater than or equal to plus or minus 15 percent, 5 kHz to 1 MHz, 5 Vp-p
Internal Digital Modulation Low Band	50 percent duty 200 Hz to 300 kHz
Internal Digital Modulation High Band	greater than 45 percent duty 300 kHz to 1 MHz
External Analog Modulation Depth	greater than or equal to plus or minus 15 percent, 5 kHz to 1 MHz, 5 Vp-p
Operating Temperature	15 C to 35 C
Storage Temperature	minus 20 C to +70 C
Humidity	less than 80 percent RH at 15 C to 35 C noncondensing
Warm Up Time	less than 40 min
Recalibration Period	2 years Notes Numeric rows from Agilent 81689A/81689B/81649A Compact Tunable Laser Modules Technical Specifications February 2002 (5988-3675EN).

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.

specifications rate 1525 nm to 1575 nm with 0.01 nm resolution and greater than or equal to 6 dBm output across the band.

Applications
Multi-channel DWDM test beds, optical amplifier stimulus, integrated waveguide device characterization with optional PMF, and compact spare channels beside DFB combs.

Key Features
Mode-hop free continuous power during tuning
Fits compact slots in 8163/8164/8166 lightwave mainframes
Optional Panda PMF outputs for defined polarization
Internal and external digital modulation paths via mainframe
Built-in attenuator range of 9 dB without an external attenuator module

Technical Specifications

Technical Specifications

PARAMETER	VALUE
Model	81689A
Instrument Type	compact tunable laser source module
Wavelength Range	1525 nm to 1575 nm
Wavelength Resolution	0.01 nm (1.25 GHz at 1550 nm)
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Relative Wavelength Accuracy	plus or minus 0.3 nm
Wavelength Repeatability	plus or minus 0.05 nm
Wavelength Stability 24 Hour Typical	plus or minus 0.02 nm at constant temperature
Wavelength Stability 1 Hour Typical	plus or minus 0.01 nm at constant temperature
Tuning Speed Typical	less than 10 s per 50 nm
Linewidth Typical Coherence Control Off	20 MHz
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Power Stability 24 Hour Typical	typ plus or minus 0.06 dB
Power Repeatability Typical	plus or minus 0.02 dB
Power Linearity	plus or minus 0.1 dB
Power Flatness Versus Wavelength	plus or minus 0.3 dB

PARAMETER	VALUE
Sidemode Suppression Typical At 0 Dbm	greater than 40 dB (1525 to 1575 nm)

Signal To Sse Ratio Typical At 6 Dbm: greater than or equal to 39 dB/nm

Specifications

PARAMETER	VALUE
Relative Intensity Noise Typical	less than minus 137 dB/Hz (100 MHz to 2.5 GHz at +3 dBm)
Module Dimensions	75 mmHx 32 mmWx 335 mmDModule Weight: 1 kg
Output Isolation Typical	38 dB
Return Loss Typical Angled Options	55 dB
Return Loss Typical Straight Options	40 dB
Pm Extinction Ratio Typical	16 dB
Internal Digital Modulation Low Band	50 percent duty 200 Hz to 300 kHz
Internal Digital Modulation High Band	greater than 45 percent duty 300 kHz to 1 MHz
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Notes
Numeric rows from Agilent 81689A/81689B/81649A Compact Tunable Laser Modules Technical Specifications February 2002 (5988-3675EN).

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

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