



## Features

**Low noise figure**

**User-configured optical input power alarm**

**Gain-flattened for DWDM applications from 1546.12 nm to 1561.42 nm**

**Constant output power and gain modes**

**Element management through HFC Element Manager**

# SG4-OA\*

## Optical Amplifiers

A new high-power EDFA module enables advanced architecture solutions for Motorola's 1 GHz SG4000 modular node.

The Motorola SG4000 1 GHz modular optical node supports the migration from traditional Hybrid Fiber Coax (HFC) networks to more advanced Fiber Deep architectures. The SG4-OA\* series of optical amplifiers is designed exclusively for the SG4000 optical node, and occupies a single unused RF module location. The SG4-OA\* is a high-power, Erbium-Doped Fiber Amplifier (EDFA) that allows operators to use 1550 nm Dense Wave Division Multiplex (DWDM) transmitters over longer distances.

With an adjustable output and three nominal powers (13 dBm, 16 dBm, and 19 dBm), the SG4-OA\* accommodates a variety of link budgets. The SG4-OA\* operates from  $-40^{\circ}\text{C}$  to  $60^{\circ}\text{C}$ , providing a practical and cost-effective alternative to remote hubs or Optical Transport Network (OTN) terminals. Equipped with four operating modes, the SG4-OA\* satisfies a wide range of system design requirements. The SG4-OA\* is gain-flattened for optimum performance in broadcast, narrowcast, or return path designs.

The SG4-OA\* front panel provides SC/APC or E2000 bulkhead fittings for optical input and output, up/mode and down/enable switches, LED status indicators for the various operating modes, and input and output test points.

# Specifications

## OPTICAL INPUT

Optical Wavelength	1530.33 nm to 1561.42 nm
Optical Input Power	-10 dBm to 10 dBm
Optical Input Power Test Point Scale Factor	1.0 ±0.25 mW/V

## OPTICAL OUTPUT

Preset Optical Output Power	
SG4-OA13	13 dBm
SG4-OA16	16 dBm
SG4-OA19	19 dBm
Output Power Adjustment Range	
SG4-OA13	10.0 to 13.0 dBm
SG4-OA16	13.0 to 16.0 dBm
SG4-OA19	16.0 to 19.0 dBm
Output Power Stability vs Temp	±0.5 dB
Optical Return Loss	40 dB min.
Optical Noise Figure at $P_{in} = 0$ dBm, $\lambda = 1550$ nm, $T_a = 25$ °C ±5 °C	
SG4-OA13	5.1 dB max
SG4-OA16	5.0 dB max
SG4-OA19	4.9 dB max
Preset Optical Gain	
SG4-OA13	10 dB
SG4-OA16	13 dB
SG4-OA19	16 dB
Gain Adjustment Range	
SG4-OA13	7 to 13 dB
SG4-OA16	10 to 16 dB
SG4-OA19	13 to 19 dB
Gain Stability vs Temp	±0.75 dB
Optical Output Power Test Point Scale Factor	10 mW/V ±2.5 mW/V

## POWER

DC Power Consumption	
SG4-OA13	370 mA
SG4-OA16	400 mA
SG4-OA19	450 mA

## MECHANICAL

Dimensions	2.1 in W x 6.5 in L x 2.4 in H (5.3 cm x 16.5 cm x 6.1 cm)
Operating Temperature	-40 °C to +60 °C (-40 °F to +140 °F)
Weight	1.0 lb (0.48 kg)
Optical Connectors	SC/APC or E2000
Eye Protection	Optical safety shutter or protective plug
Visual Interface	Tri-color status LED

All features, functionality, and other product specifications are subject to change without notice or obligation.

## MODELS

534226-001-00	SG4-OA13-R, 1550 nm EDFA, 13 dBm nominal output, SC/APC optical connector
534232-001-00	SG4-OA13/E-R, 1550 nm EDFA, 13 dBm nominal output, E2000 optical connector
534226-002-00	SG4-OA16-R, 1550 nm EDFA, 16 dBm nominal output, SC/APC optical connector
534232-002-00	SG4-OA16/E-R, 1550 nm EDFA, 16 dBm nominal output, E2000 optical connector
534226-003-00	SG4-OA19-R, 1550 nm EDFA, 19 dBm nominal output, SC/APC optical connector
534232-003-00	SG4-OA19/E-R, 1550 nm EDFA, 19 dBm nominal output, E2000 optical connector



# MOTOROLA

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