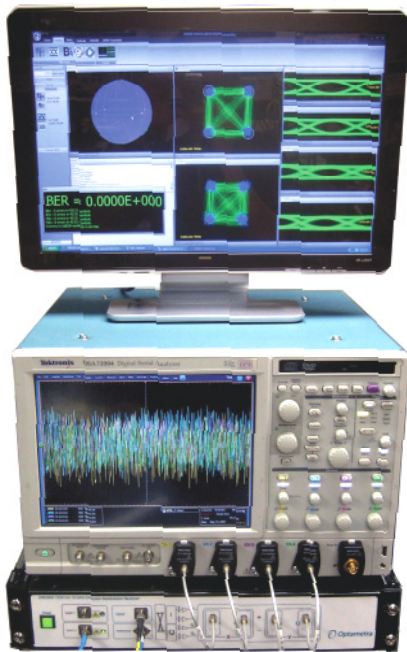


OM4005/OM4006 40 G and OM4105/OM4106 100 G Coherent Lightwave Signal Analyzer™/Pro™



OM4006 Coherent Lightwave Signal Analyzer Pro: OM3005 Coherent Modulation Receiver driving real-time Tektronix oscilloscope running Optametra Signal Analysis Suite

Key Features

- Complete coherent signal analysis system for polarization-multiplexed QPSK, differential BPSK/QPSK, and other advanced modulation formats
- Displays constellation diagrams, phase eye diagrams, Q-factor, Poincaré sphere, signal waveform, and extracted laser phase characteristics, with available analysis options (e.g. bit error rate)
- Optametra Signal Analysis Suite tolerates > 1 MHz instantaneous signal laser linewidth—compatible with standard network tunable sources
- OM3005/OM3105 Coherent Modulation Receiver (CMR™) includes Signal and Reference tunable laser sources
- No laser phase or frequency locking required
- Smart polarization separation follows signal
- Incorporates Optametra OM3005/OM3105 Coherent Modulation Receiver (CMR™) for high stability, linear, polarization-diverse, optical field detection
- Runs with Tektronix, Agilent and LeCroy real-time oscilloscopes¹
- OM4006/OM4106 CLSA Pro™ enables faster external processor and access to internal functions via its MATLAB interface

Optametra's OM4005/OM4006 40 G and OM4105/OM4106 100 G Coherent Lightwave Signal Analyzers™ (CLSA™)/Pro™ are new 1550 nm (C-band) fiber optic test systems for visualization and measurement of complex-modulated signals, offering a complete solution to testing both coherent and direct-detected transmission systems. Optametra's hardware includes the OM3005 (40 G) and OM3105 (100 G) polarization-diverse Coherent Modulation Receiver™ (CMR™) enabling simultaneous measurement of any modulation format, including dual-polarization (DP) QPSK. Optametra's software performs all calibration and processing functions to enable real-time burst-mode constellation diagram display, eye-diagram display, Poincaré sphere, and bit-error detection. Bit rates up to 43 Gb/s (40G DP-QPSK) can be analyzed by the OM4005/OM4006, upgradable to 112 Gb/s (100G DP-QPSK). The OM 4105/OM4106 directly supports 100 G.

Interface:

Line Code OOK, BPSK, QPSK, DBPSK, DQPSK, DP-BPSK, DP-QPSK

Data Any PRBS or user supplied pattern

Data Rates Up to 43 Gb/s OM4005/OM4006
Up to 112 Gb/s OM4105/OM4106

Control

Built-in Ethernet interface

Measurement:

Display Eye diagrams, vector modulation (constellation diagrams), Poincaré sphere, decision threshold Q plot

Signal Quality Bit-error rate (by examination of payload), eye decision threshold Q-factor, tributary skew, constellation alignment (bias, phase angle), constellation mask, constellation statistics

Linewidth: 100-kHz short term
Accuracy: 5 pm
Wavelength: C or L-band tunable
C-band 1527.6-1565.5 nm
L-band 1570.01-1608.76 nm

Calibration Routines:

Gain, offset, linewidth, receiver path mismatch (hybrid phase angle and state of polarization factory calibrated)

Requirements when using external lasers

Instantaneous linewidth < 2 MHz
Short-term stability < 200 MHz
Suggested reference power: +7 to +13 dBm

Other Characteristics:

Lasers Power: +13 dBm

Receiver

C-band (1530 to 1575 nm)
Maximum recommended *total* input optical power +18 dBm

¹ Requires 4-channel, 12 GHz real-time oscilloscope bandwidth—OM4105/OM4106 requires 20 GHz Tektronix DS072004 through DSA72004B

² MATLAB is a registered trademark of the MathWorks

General characteristics:

Size:

Assembled (H x W x D) 8.9 cm x 43.2 cm x 29.85 cm / 3.5 in x 17.0 in x 11.75 in

Weight:

Net 11.8 kg / 26 lbs **Shipping** 15.9 kg / 35 lbs

Operating temperature range: +10° C to +35° C

Storage temperature range: -20° C to +70° C, non-condensing humidity

Humidity: 15% to 80% relative humidity, non-condensing

Power requirements : 100 – 240 V~ 50–60 Hz, 1 power cable, Max. 100 VA

Calibration interval: 1 year

Limited warranty: 1 year, extended warranty program available

Model	Description
OM4005/OM4105 Complex Modulation Analyzer	Polarization-diverse complex receiver system. Purchase includes one (1) license to Signal Analysis Suite. The initial release includes OOK, BPSK, QPSK, DPSK, DQPSK, optional dual-pol formats, optional BER calculation, constellation diagram, eye diagram, data and error display, polarization analysis, Q-factor, and will work on PRBS or user-entered data. Includes installation and training. Includes integration of customer's real-time oscilloscope.
OM4006/OM4106 Complex Modulation Analyzer Pro	OM4005 as above; Professional model further enables external processor, MATLAB and MATLAB interface with access to all internal variables for custom filters, optional BER calculation, compensation, analyses and plots.

Please contact Optametra Sales (sales@optametra.com) for a price quote or to arrange a demonstration