



SOUND SOLUTIONS FROM LIGHT TECHNOLOGY



OPTIMIC™ 4110

Fiber Optic Microphone for Monitoring Very Weak Signals

Ultra-low noise fiber optic microphone designed for monitoring very weak acoustic signals in selected frequency bandwidths. Ideal for photoacoustic spectroscopy as well as monitoring applications using software or hardware to detect faint signals.

FEATURES

- ▶ Small, lightweight MEMS design
- ▶ Absolute EMI/RFI immunity
- ▶ Completely passive sensor with no metal or electrical parts
- ▶ Extremely low noise, band-limited frequency range
- ▶ Customizable by application
- ▶ High reliability and environmental stability
- ▶ Optical fiber connection over extended lengths without signal loss
- ▶ Exceptionally low sensitivity to vibration
- ▶ Plug-and-play system
- ▶ Cost-effective, long-term solution

TECHNICAL SPECIFICATIONS

Polar Pattern	Omnidirectional	
Resonance Model Options	Model A	Model B
Frequency Response (Resonance)	1.65 kHz	10.5 kHz
Conformity -3.0 dB	1.40 - 1.80 kHz	10.0 - 11.0 kHz
Conformity -10.0 dB	0.9 - 2.10 kHz	9.0 - 12.0 kHz
Sensitivity	500 V/Pa ±10%	
Equivalent Self-Noise	≤5 dBA (<-3 dB SPL/√Hz)	
Maximum Linear Acoustic Pressure	54 dB SPL	
Total Harmonic Distortion	<1% at 54 dB SPL	
Equivalent Vibration Sensitivity	Max. 30 dB SPL/g at Resonance	
Supply Voltage	8-15 V DC	
Current Drain (max.)	< 110 mA	
Operating Temperature	-20 to +60 °C (-4 to +140 °F)	
Storage Temperature	-20 to +60 °C (-4 to +140 °F)	
Humidity - 1000 hours	Up to 95% RH at 40 °C	
MTBF	>100,000 hours	
Microphone Head	Polycarbonate	
Dimensions D/L	6/33 mm	
Weight	1.5 g	
Optical Cable Length	10 m	

APPLICATIONS

- ▶ Photoacoustic spectroscopy
- ▶ Oil and gas detection sites
- ▶ Highly explosive areas
- ▶ High voltage electrical utilities
- ▶ High RF areas
- ▶ Severe electromagnetic fields
- ▶ Aerospace measurements
- ▶ Petrochemical facilities
- ▶ EMC test labs



OPTIMIC™ 4110 System Kit

Complete, versatile, cost-effective solution

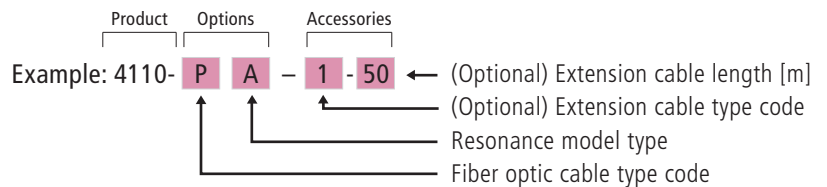
Optoacoustics' OPTIMIC 4110 system is comprised of our advanced OPTIMIC fiber optic microphone, electro-optic unit, audio cable with BNC connector, DC power supply and a ruggedized carrying case.









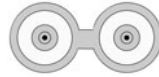
Optoacoustics EOU 100 electro-optic unit showing fiber optic, audio, and power supply connections

PRODUCT ORDERING GUIDE

Use the matrix below to select options and accessories for your order.



Options	Fiber Optic Cable Type		Electro-Optic Unit Type
Item	Clear PVC Ø 1 mm	Kevlar reinforced black PVC Ø 3 mm	EOU 100 Single Channel
Code	P	F	A
			

Accessories	Extension Cable Type (Specify length from 10-100 m)			
Item	Outdoor, Milspec Ø 5 mm	Outdoor, Polyamide Ø 5.1 mm	Indoor, Rugged Ø 3.0 mm	Indoor, Zip Cord Ø 3.0 x 2 mm
Code	1	2	3	4
				



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Optoacoustics is a leading manufacturer of high performance, optical fiber-based sound and vibration sensors. Each of our products combines the natural intelligence of optics and acoustics to meet technical performance demands which cannot be addressed by conventional sensing solutions. Optoacoustics' pioneering technology is protected by over 20 international patents.

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