



OPTIMIC™ 1160

Fiber Optic Microphone for Extended Frequency Applications

Miniature fiber optic microphone for indoor acoustic monitoring with extended frequency range response. Ideal where the footprint for microphone placement is severely limited or where the microphone is a sub-component in another device or system.

FEATURES

- ▶ Small, lightweight MEMS design
- ▶ Absolute EMI/RFI immunity
- ▶ Completely passive sensor with no metal or electrical parts
- ▶ Extended frequency response
- ▶ Standard analog output
- ▶ 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
Frequency Response	10-15,000 Hz
Conformity 10 - 1,000 Hz	±0.5 dB
Conformity 1,000 - 15,000 Hz	±3.0 dB
Sensitivity	100 mV/Pa ±10% at 1 kHz
Equivalent Self-Noise	≤31 dBA
Maximum Acoustic Pressure	114 dB SPL
Total Harmonic Distortion	<1% at 84 dB SPL
Equivalent Vibration Sensitivity	Max. 45 dB SPL/g at 1 kHz
Supply Voltage	8-15 V DC
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	
Material	Polycarbonate
Dimensions D/L	6/23 mm
Weight	0.6 g
Optical Cable Length	10 m

APPLICATIONS

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



OPTIMIC™ 1160 System Kit

Complete, versatile, cost-effective solution

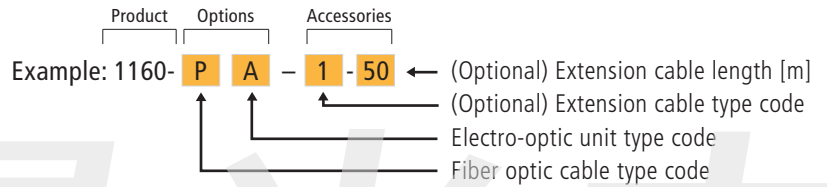
Optoacoustics' OPTIMIC 1160 system is comprised of our advanced OPTIMIC fiber optic microphone, electro-optic unit, audio cable with BNC connector, DC power supply and a ruggedized carrying case.



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	EOU 200 Single Channel
Code	P	F	A	B

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



SOUND SOLUTIONS FROM LIGHT TECHNOLOGY

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.

EOU 100



Single Channel EOU 100 is extremely compact. It features a pair of ST fiber optic connectors; a 3.5 mm socket for analog output; green LED voltage indicator. Unit uses external DC power only.

EOU 200 / 250 / 275



Single Channel EOU 200 features two analog outputs (one with volume control for headphones, another with fixed gain for monitor equipment); one pair of ST fiber optic connectors; two 3.5 mm sockets (one for analog output, another for headphones); green/red LED voltage indicator. **EOU 250** adds a DSP for up to 22 dB of real-time ambient noise removal (three levels: low, mid, high). **EOU 275** includes DSP as well as 16-bit uncompressed SD Flash memory card recorder.

EOU 300 / 350 / 375



Dual Channel EOU 300 supports monitoring with two sensors simultaneously. It features two pairs of ST fiber optic connectors; two 3.5 mm stereo sockets (one for analog output, another for headphones); dual volume control knobs; green/red LED voltage indicator. **EOU 350** adds a DSP for up to 22 dB of real-time ambient noise removal (three levels: low, mid, high). **EOU 375** includes DSP as well as 16-bit uncompressed SD Flash memory card recorder.

Indoor EOU Models - OPTIMIC FAMILY

Single and Dual Channel; DSP-Based and Built-In Flash Recorder Options

Our compact indoor electro-optical unit (EOU) series provides regular analog signals for high performance recording, monitoring and analyzing equipment. Optoacoustics manufactures a complete line to suit every application.

Each of our EOU units is designed to drive its designated OPTIMIC fiber optic microphones at consistent, peak performance.

INDOOR EOU SERIES TECHNICAL SPECIFICATIONS

EOU Model	100	200	250/275	300	350/375
Signal Output [V p-p]	5	5 / 9	5 / 9	5 / 9	5 / 9
Battery Type	None	9V	9V	4 x AA	4 x AA
Power Supply [V]	8-15	8-15	8-15	8-15	8-15
Power Consumption [mA]	80	70	120	130	130
Power Supply Connector	3.5 mm	3.5 mm	3.5 mm	3.5 mm	3.5 mm
Headphone Output	None	Mono	Mono	Stereo	Stereo
Line Output	Yes	Yes	Yes	Yes	Yes
Adjustable Gain Range [dB]	None	45	45	45	45
DSP Latency, 16 kHz Sampling	None	None	32 msec	None	32 msec
Flash Recorder Built-In	None	None	on 275	None	on 375
Micro SD Flash Sampling Rate	N/A	N/A	44.1 kHz	N/A	44.1 kHz
Operating Temperature	-20 to +60 °C (-4 to +140 °F)				
EOU Box					
Material	Zinc Alloy		Anodized Aluminum		
Weight [g]	75	210	230	330	330
Dimensions [mm]	W 45	W 67	W 67	W 86	W 86
	D 65	D 110	D 110	D 175	D 175
	H 16	H 27	H 27	H 28	H 28
Optical Connector Type	ST	ST	ST	ST	ST
Line Out Connector	3.5 mm	3.5 mm	3.5 mm	3.5 mm	3.5 mm
Audio Out Connector	BNC	BNC	BNC	BNC	BNC