

# KINGFISHER

## Fiber Optic Microphone SOM(5) SPL



### FEATURES

- Robust design suited to industrial applications
- Absolute EMI/RFI immunity
- Completely passive sensor with no metal or electrical parts
- Linear response at up to 140 dB SPL
- Extended frequency response
- High reliability and environmental stability
- Optical fiber connection over extended lengths without signal loss
- Exceptionally low sensitivity to vibration

### APPLICATIONS

- Hazardous area SPL measurement
- Industrial equipment monitoring
- High voltage electrical utilities
- Oil and gas detection sites
- Highly explosive areas
- High RF areas
- Severe electromagnetic fields



Fiber optic microphone for indoor and outdoor acoustic monitoring of signals with sound pressure levels (SPL) as high as 140 dB. Ideal for industrial use, placement in heavy machinery, or where the microphone requires very robust housing and fiber cables.

The SOM(5) SPL system comprises of an advanced fiber optic microphone & single-channel electro-optic unit (EOU200), for digital-to-analog conversion of optical microphone output signals. The Single Channel EOU 200 with enhanced electronics box. It features two analog outputs (one with volume control for headphones, another with fixed gain for monitoring equipment); one pair of ST-style fiber optic connectors; two 3.5 mm sockets (one for analog output, another for headphones); green/red LED voltage indicator. DSP model provides up to 22 dB of real-time ambient noise removal (three levels: low, mid, high). Unit is powered either by internal battery or external DC power supply.

## TECHNOLOGY

It's built around a tiny MEMS membrane and two optical fibers. When acoustic waves impinge on the membrane they cause it to vibrate, changing the intensity of light that is reflected from incoming to outgoing fibers. This patented mechanism detects even the slightest changes in membrane displacement, with resolutions at a fraction of an Angstrom. Such precision translates to clear sound and low self-noise, and produces exceptional microphone performance. ■

## TECHNICAL SPECIFICATIONS

<b>Polar Pattern</b>	Omnidirectional
<b>Frequency Response</b>	10-15,000 Hz
Conformity 10 - 10,000 Hz	±1 dB
Conformity 10,000 - 15,000 Hz	±3.0 dB
<b>Sensitivity</b>	7.5 mV/Pa ±10% at 1 kHz
<b>Equivalent Self-Noise</b>	≤55 dBA
<b>Maximum Acoustic Pressure</b>	140 dB SPL
<b>Total Harmonic Distortion</b>	<1% at 110 dB SPL
<b>Equivalent Vibration Sensitivity</b>	Max. 45 dB SPL/g at 1 kHz
<b>Supply Voltage</b>	8-15 V DC
<b>Current Drain (max.)</b>	110 mA
<b>Operating Temperature</b>	-20 to +60 °C (-4 to +140 °F)
<b>Storage Temperature</b>	-20 to +60 °C (-4 to +140 °F)
<b>Humidity - 1000 hours</b>	Up to 95% RH at +40 °C
<b>MTBF</b>	>100,000 hours
<b>Microphone Head</b>	
Material	Delrin
Dimensions D/L	10/70mm
Weight	5 g
<b>Type of Fiber Optic Cable</b>	Multimode 100µm
<b>Optical Cable Length</b>	10 m standard (lengths available up to 100m)

## PRODUCT CODES

### KINGFISHER SOM(5)SPL – Full Systems

**3-299-635\*** SOM(5)SPL010XT - Security Optical Microphone with 10 meters of 5.1mm Black Polyamide optic cable no extension tube

**3-299-636\*** SOM(5)SPL020XT - Security Optical Microphone with 20 meters of 5.1mm Black Polyamide optic cable no extension tube

\*All kits come as standard with: Electro Optical Unit (EOU200), Audio cable with 3.5mm jack, 8-12V DC power adapter & Guidance Manual

### KINGFISHER SOM(5) Accessories, Components & Upgrades

**3-229-646** Extension Cable Type Outdoor, **5mm Millspec MIL STD** (specify length from 10-100m)

**3-299-647** Extension Cable Type Outdoor, **5.1mm Polyamide, lightweight, rigid** (specify length from 10-100m)

**3-299-690** OPTIClear Software - PC Based speech enhancement utilizing a single channel noise reduction algorithm. OPTIClear works in both real-time and post-processing modes. Price for 1 license includes USB dongle

**3-299-654** EOU200 + DSP (instead of EOU200)  
- **Built-in noise canceling via DSP**

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