



Located in Van Nuys, California since 1979, Louroe Electronics™ is the World Leader in Audio Monitoring Technology. Louroe products are used in over forty countries and are utilized in both the private sector and government applications. Louroe serves the needs of law enforcement, security, health care, entertainment, hospitality and retail industries and many more. At Louroe Electronics we maintain rigorous standards to ensure our products provide reliability, durability and excellent performance for our customers' needs.

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**SPEAKER MICROPHONE – CEILING MOUNT****DIVISION 27 – COMMUNICATIONS****27 50 00      Distributed Communications and Monitoring Systems****27 51 00      Distributed Audio-Video Communications Systems**

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**Notes to Specifier:**

1. Specifiers may alternately wish to include this specification in the following section:

<b>28 13 26</b>	<b>Access Control Remote Devices</b>
<b>28 47 17</b>	<b>Notification Devices and Methods</b>

2. Where several alternative parameters or specifications exist, or where, the specifier has the option of inserting text, such choices are presented in **<bold text>**.

3. Explanatory notes and comments are presented in **colored** text.

**BI-DIRECTIONAL SPEAKER MICROPHONE – CEILING MOUNT****PART 1 GENERAL****1.01 SUMMARY**

- A. Section includes a ceiling-mounted full duplex audio microphone and speaker combination, where the microphone produces a line level output and speaker produces a 1, 6, or 10 Watt output.
- B. Related Requirements
  - 1. 10 00 00 Specialties (Division 10)
    - a. 10 17 00 Telephone Specialties
  - 2. 27 00 00 Communications (Division 27)
    - a. 27 15 00 Communications Horizontal Cabling
    - b. 27 30 00 Voice Communications
      - 1) 27 32 00 Telephone Sets
  - 3. 28 00 00 Electronic Safety and Security (Division 28)
    - a. 28 13 19 Access Control Systems Infrastructure
    - b. 28 23 00 Video Surveillance

**1.02 SUBMITTALS**

- A. Informational Submittals
  - 1. Product Data - Manufacturer's printed or electronic data sheets
  - 2. Manufacturer's instructions
- B. Closeout Submittals
  - 1. Warranty documentation
  - 2. Manufacturer's installation, configuration, and operation manuals
  - 3. As-built wiring diagrams
  - 4. Recommended spare parts list

**1.03 QUALIFICATIONS**

- A. Manufacturer shall have a minimum of five years' experience in providing commercial speaker microphone systems.
- B. Manufacturer's products shall be manufactured in the United States of America.
- C. Installers shall meet Manufacturer's requirements for equipment installation.

**1.04 WARRANTY**

- A. Manufacturer shall provide a limited 24 month warranty for the product to be free of defects in material and workmanship.

END OF SECTION

**PART 2 PRODUCTS****2.01 EQUIPMENT**

- A. Manufacturer: Louroe Electronics  
6955 Valjean Ave.  
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Phone: (818) 994-6498  
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- B. Model: AOP550, AOP555, AOP650, AOP665
- C. Alternates: None

**2.02 DESCRIPTION**

- A. The bi-directional speaker microphone shall be a full duplex audio microphone and speaker combination, designed for interface to third party audio and video equipment.
1. The speaker microphone shall have built-in muting and half-duplex functionality.
- B. The microphone shall produce a line level output and connect to the audio input of the receiving device.
- C. The speaker shall produce a **<1> <6> <10>** Watt output from a line level input transmitted by an audio driver device.

**Models AOP550, AOP555 are 1 Watt units.**

**Model AOP650 is a 6 Watt unit.**

**Model AOP665 is a 10 Watt unit.**

- D. The speaker microphone shall incorporate echo cancellation, attenuation, and noise filtering.
- E. The speaker microphone shall be mounted on a ceiling in a **<flush> <surface>** mount configuration.

<u>Model</u>	<u>Speaker Dia.</u>	<u>Mounting Surface</u>
<b>AOP550</b>	<b>4"</b>	<b>Flush</b>
<b>AOP555</b>	<b>4"</b>	<b>Surface</b>
<b>AOP650</b>	<b>5"</b>	<b>Flush</b>
<b>AOP665</b>	<b>6.5"</b>	<b>Flush</b>

**F. Specifications**

1. Microphone
- Type: Electret condenser
  - Output: line level (0 dB)
  - Sensitivity: -45 dB
  - Frequency response: 40 Hz to 15 kHz +/- 1 dB
  - Output Impedance: 600  $\Omega$  unbalanced
  - Gain: adjustable
  - Connector: Terminal block

2. Speaker
  - a. Power output: **<1 Watt> <6 Watts> <10 Watts>**  
**Models AOP550, AOP555 are 1 Watt units.**  
**Model AOP650 is a 6 Watt unit.**  
**Model AOP665 is a 10 Watt unit.**
    - 1) Volume shall be adjustable via a potentiometer inside the unit.
  - b. Impedance: **<8  $\Omega$ > <2K  $\Omega$ >**  
**Models AOP550, AOP555 have 8  $\Omega$  impedance.**  
**Models AOP650, AOP665 have 2K  $\Omega$  impedance.**
  - c. Connector: Terminal block
  - d. Magnet: Neodymium
  - e. Size: **<4"> <5"> <6.5">** diameter round  
**See table in commentary following Section E above.**
3. Electrical
  - a. Voltage: 12 VDC, **<200> <700> <1000> mA**  
**Models AOP550, AOP555 draw 200 mA.**  
**Model AOP650 draws 700 mA.**  
**Model AOP665 draws 1000 mA (1 A).**

## 2.03 ACCESSORIES

- A. The Manufacturer of the speaker microphone shall offer the following optional accessory:
  1. Audio
  2. Power over Ethernet (PoE) Interface/Power Extractor – provides the following functions:
    - a. Provides 12 VDC to power the speaker phone by extracting power from a (nominal) 48 VDC IEEE 802.3af PoE connection or from a directly connected dedicated 12 VDC power source
    - b. Adjusts the audio output gain of the speaker microphone's microphone for connection to the audio input of a third party audio or video device
    - c. Receives an external line level audio input and provides amplified output to the speaker on speaker microphone.

**Louroe model numbers the Power over Ethernet (PoE) Interface/Power Extractor is IF-PX.**

**END OF SECTION**

## **PART 3 EXECUTION**

### **3.01 INSTALLERS**

A. Contractor personnel shall comply with all applicable state and local licensing requirements.

### **3.02 INSTALLATION**

A. Contractor shall follow Manufacturer's written installation instructions in their entirety.

**When the speaker microphone is part of an audio monitoring system, it is recommended that Contractor post notice of audio monitoring on the premises in accordance with Federal and State regulations.**

**END OF SECTION**