



## **Infrared Classroom Audio System**

**Models PA-IRSYSB** (Four Speaker System)  
**PA-IRSYS** (Two Speaker System)

Califone understands that the proper utilization of audio technology can assist classroom learning and student comprehension.

Acknowledged research validates the use of enhanced sound field amplification in learning areas. The Infrared Classroom Audio System delivers all of the benefits of sound field amplification with greater audio coverage & reception with dual ceiling sensors to expand the coverage area and avoids “drop out” of the signals. Two wireless mics ensure the teacher and students will be heard by everyone in addition to amplifying audio played from computers and other sources. It can also connect with secondary systems (such as an assistive listening system) as well as announcements made from the school’s main office.

The Califone Infrared Classroom Audio Systems will help:

- Improve academic achievement
- Increase on-task behavior
- Increase attention to verbal instruction
- Improve comprehension for English Language Learners
- Improve ease of listening and teaching
- Reduce vocal strain and fatigue on teachers
- Works with PC/MAC teleconferencing systems such as Microsoft® Netmeeting so the entire class can participate in distance learning applications

The benefits of the Infrared Classroom Audio System are enhanced by its use of “array” speakers. Array speakers are most commonly seen at concerts and they deliver several advantages of being used in the classroom:

- Array speakers target a tighter sound pattern directly at the audience with a narrower projection pattern. (A wider pattern bounces the sound off the walls and windows, which adds additional disruptive background noise to the very environment the system was installed to overcome.)
- Array speakers distribute the sound more evenly so the volume levels are the same at the front & rear of the room.



PA-IRSYS shown

**“We know that this technology is helping our students. We know they are able to hear the teacher better, which creates a more language-focused learning environment.”**

Debra Drysdale, Principal  
G.W. Carver Elementary School  
Yuma, AZ

**“We believe that using the Califone audio system in the classroom helps to naturalize the teacher’s speaking voice, allowing for the appropriate tone and pitch to reach each student. With this system, teachers tend to speak at a lower volume into the microphone, allowing a wider range of pitches to come through, and ultimately this helps to reduce strain on their voices”**

Jim Dieckmann, Library Media Teacher, in a Case Study on  
Clear View Charter Elementary School  
Chula Vista, CA

Califone® International Inc. 800-722-0500  
califone.com



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## Features

1. Two ceiling-mounted IR receivers (more than what other brands offer as standard equipment) deliver twice the reception with less signal drop out and allows increased wireless coverage for classrooms of up to 2,000 sq. ft.
2. Beltpack transmitter & headset mic\* will operate all day long on a single charge. Ensures full wireless mobility to move about the classroom with its 40' transmission range
3. Quick operating guide printed onto the inside of the cabinet for easy referral. Lockable metal case safely stores equipment while not in use
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5. Two non-powered array speakers (PI30-SP) with protective steel grilles include wall-mounting brackets and hardware (not shown)
6. All array speakers feature three transducers with high-performance neodymium magnets, which are twice as efficient as conventional ferrite magnets, and deliver more power from a smaller, lighter speaker (which is also easier to install)
7. Built in charging station for the wireless handheld mic. Includes a 2nd infrared frequency enabling both mics to function at the same time
8. Two powered array speakers (PI30-PS with PA-IRSYB package only) comes with fixed and variable volume controls, for other daisy-chained speakers and one for a dedicated speaker system for students with special needs
9. Built-in mixing panel on the front with separate volume levels for both wireless mics, bass, treble controls, IR receiver, and an overnight recharger for the belt-pack transmitter
10. Balanced and unbalanced (3.5mm, XLR, 1/4") mic inputs and aux-in connects the audio from a computer, LCD projectors, and other media players for enhanced audio amplification
11. Connects with low / high voltage paging systems (25V / 70V) with a dedicated sensitivity switch
12. Connects with PC/MAC teleconference systems such as Microsoft® Netmeeting, enables the entire class to participate in conference calls
13. Exterior flange for surface or flush-mounting the panel box



\* Batteries for mics must be purchased separately

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## Specifications

### Infrared Mic Specifications\*

Transmitting & Receiving Mode IR  
 Transmitting & Receiving Frequency 2.35MHz or 2.85MHz  
 Wireless Transmission Range: Approximately 40 ft., for rooms up to 2,000 sq. feet  
 240mA  
 Current Consumption  
 AF Output 650mV AF 1kHz  
 Mic Inputs: Balanced and unbalanced, condenser (XLR, 1/4", 3.5mm) 1/4"  
 Line Output:  
 AC Power Requirements: 110 – 125 VAC, 50/60 Hz  
 Modulation: FM (Frequency Modulation)  
 Sensitivity: 7 microvolts  
 Frequency Response: 50 Hz - 15 KHz +/- 3dB  
 Wireless Transmission Range: Approximately 40 ft.  
 Dynamic Range: 100 dB  
 Distortion <1%  
 Battery Two 1.2V (AA) or Two 1.5V (not included)

### Student Hand Held Microphone\*

Sub-carrier frequency 2.85MHz  
 Microphone Unidirectional, dynamic  
 Power 2-'AA' NiMH Rechargeable batteries (not included)  
 Microphone Recharging Station Included

### "Project Intercept"

Please contact us immediately if you experience any difficulties with your Infrared Classroom Audio System. Our "Project Intercept" customer service program will quickly repair or replace items under warranty. Simply contact us via phone or email [warranty@califone.com](mailto:warranty@califone.com)

Visit our website at [www.califone.com](http://www.califone.com) to learn more about the complete line of *Califone*® audio enhancing and visual technology products including: Wired and Wireless public address systems and lecterns, wireless microphones, headphones & headsets, group listening centers, multimedia players and computer peripheral products.

*We are proud of helping teachers enhance student understanding and achievements since 1947, with your satisfaction as our first priority.*

The Infrared Classroom Audio System carries a limited six-year warranty and service support available through authorized dealers nation-wide. Its warranty covers school use - unlike some other PA products whose warranties would be voided if used in schools.

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### Receiver/Amplifier

Audio Power 30 Watts RMS  
 Power Requirements 18VAC 50 VA  
 Speaker Connections for 2 speakers  
 Mono inputs 2 - (RCA type, Hi Z, Mixed)  
 Auxiliary Volume Control 1  
 Sub-carrier frequencies 2.35 MHz or 2.85 MHz  
 Type Super heterodyne - crystal controlled  
 Signal-to-noise >80 dB  
 Image rejection 40 dB  
 Reception sensitivity >25dBuV  
 Reception selectivity ±40kHz  
 Condenser, balanced and unbalanced ( 3.5mm, XLR, 1/4") mic inputs, aux in and line out

### Belt-Pack Transmitter with hands-free headset mic (HBM-319)

Single carrier 2.35MHz  
 Audio distortion <1.0%  
 Mic input impedance 2.2k ohms  
 Auxiliary Mic input jack 3.5mm  
 Built-in mic Unidirectional electret  
 Microphone gain adjustment Max to -50dB  
 Power 2-'AA' NiMH rechargeable batteries (not included)

### Non-Powered Array Speakers (PI30-SP) with PA-IRSYS package

Two (2) wall mounted speakers w/ 2 heavy duty steel mounting brackets  
 Transducers Three per speaker, each 16 Ohm  
 Magnets High performance neodymium  
 Power rating 30 watts RMS, 150 - 15kHz  
 Speaker Weight 3.2 lbs. each, bracket 1.7 lbs each  
 Connection Terminals Spring-loaded terminals

### Powered Array Speakers (two PI30-PS speakers come with PA-IRSYSB package only in addition to two standard PI30-SP speakers)

Two (2) wall mounted speakers w/ 2 heavy duty steel mounting brackets  
 Dual line in Connects audio from whiteboards, LCD projectors, computers, cameras and other media players  
 Fixed and Variable Line out Controls the volume to two different sets of speakers

### External Infrared Dome Sensors

Two (2) 360 degree ceiling mounted infrared sensors for optimal coverage of infrared signal pickup throughout the entire classroom  
 Cable length 30 ft standard  
 Power Powered by receiver  
 Size 3.9" (D) x 1.2" (thick)  
 Weight 7.5 oz each  
 Sensor Type Lensed infrared diode  
 Number of Lensed Diodes 6  
 Reception Angle 360 degrees

### Storage Cabinet

Construction Lockable steel case stores mics  
 Built-in charging ports For belt-pack transmitter & handheld mic  
 Dimensions (L x W x H) 10.6" x 4.75" x 11.8"

Total System Weights : PA-IRSYS: ship weight 39 lbs., 1 carton  
 PA-IRSYSB: ship weight 45 lbs., 2 cartons

Safety Approvals: AC Wall adapter is C-UL/CE approved  
 Warranty 6 years from date of purchase (PA only, all other parts one year)