

### Preliminary Specifications: IW31-EZ

System Type	3-inch full-range, in-wall (20-watt transformer for 25/70.7/100-volt or transformer bypass)
Impedance (nominal) <sup>1</sup>	8 ohm
Sensitivity dB @ 2.83 V/1 m	86.0 dB
Sensitivity dB @ 1 W/1 m <sup>2</sup>	86.0 dB
Frequency Response (-3 dB) <sup>3</sup>	150 Hz - 22 kHz
Frequency Response (-10 dB) <sup>3</sup>	100 Hz - 22 kHz
Max. Program Power <sup>4</sup>	40 W
Max. Continuous Power RMS <sup>5</sup>	20 W
Max. Power SPL @ 1 m <sup>6</sup>	101 dB
Coverage Angle (-6 dB @ 2 kHz)	N/A
Coverage Angle (-6 dB @ 10 kHz)	N/A
Coverage Angle (averaged from 2 to 10 kHz)	105°
Directivity Factor (Q)	N/A (averaged 100Hz - 10kHz), N/A (2kHz)
Directivity Index (DI) dB	N/A (averaged 100Hz - 10kHz), N/A (2kHz)
Tap Selector (transformer accessory only)	Six-position rotary switch or transformer bypass
Transducer - Full-Range Driver	76.1 mm (3.0 in.) Polypropylene driver with butyl rubber surround
Enclosure Material	ABS baffle, steel backcan
Grille	Corrosion-resistant, powder-coated aluminum
Inputs	Hardwire lead
Colors	White
Backcan Height	88.9 mm (3.50 in.)
Visible Height	127.0 mm (5.00 in.)
Visible Width	127.0 mm (5.00 in.)
Weight	1.4 kg (3 lbs.)
Shipping Weight	1.8 kg (4 lbs.)
Packaging	One per box
Included Accessories	Conduit connector, paint mask and wire nuts
Optional Accessories	Pre-construction bracket (AC-IW3-PCB), Theft-resistant stainless steel grille (AC-IW3-TRG), 10-inch powered subwoofer (SM1001p)
Regulatory - UL	UL 1480 (UEAY) and 2043 approved
Regulatory - CE	Approved
RoHS	Approved

#### Transformer Taps

	70.7 V Output		100 V Output		25 V Output	
<sup>1</sup> Impedance listed per IEC 60268-5 with a minimum less than 80% the nominal impedance	20 W	100.0 dB	20 W	100.0 dB	5 W	94.0 dB
<sup>2</sup> 1 W 1 m sensitivity determined using nominal impedance	10 W	97.0 dB	10 W	97.0 dB	2.5 W	91.0 dB
<sup>3</sup> Frequency response measured in half or full space as dictated by speaker mounting configuration	5 W	94.0 dB	5 W	94.0 dB	1.25 W	88.0 dB
<sup>4</sup> Max program power is 3 dB above max continuous power	2.5 W	91.0 dB	2.5 W	91.0 dB	0.63 W	85.0 dB
<sup>5</sup> Continuous power rating, EIA-426-B test	1.25 W	88.0 dB			0.32 W	82.0 dB
<sup>6</sup> Max output based on max continuous power						

### Key Features

- One 3-inch (76.1 mm) full-range high-extrusion, high-fidelity polypropylene driver with butyl rubber surround.
- Weatherized components for indoor/outdoor applications.
- Rapid installation, blind-mount fixed-wing mounting mechanism with constant tension design affixing to wall thicknesses ranging from 0.1 inch (2.5 mm) to 1.5 inch (38.1 mm).
- Shallow 3.5-inch deep all steel backcan with integrated backcan, driver and baffle configuration.
- Ultra-compact design with a total visible footprint of 5-inch square.
- Corrosion-resistant, powder-coated aluminum grille with snap fit attachment
- UL 1480 (UEAY) and 2043 approved.
- High quality black or white paint finish.
- Included accessories: Conduit connector, paint mask and wire nuts.
- Optional accessories: Pre-construction bracket (AC-IW3-PCB), theft-resistant stainless steel grille (AC-IW3-TRG) and 10-inch powered subwoofer (SM1001p).

### Description

The IW31-EZ is a premium full-range 3-inch in-wall speaker for applications requiring 8 ohm or distributed audio solutions. The IW31-EZ incorporates a low profile grille with a total visible footprint of 5-inch square and an integrated backcan and driver design for an ultra compact installations in wall plates. The in-wall speaker includes a six-position tap switch with a transformer bypass position. Mounting hardware is included and features a fast and secure constant tension SpeedWing™ mounting system. All components in the IW31-EZ are completely weatherized for indoor and outdoor applications.

### Applications

Engineered for rapid installation and low profile mounting for smaller venues, the IW31-EZ is ideal for retail, restaurants, conference rooms, educational facilities, transportation hubs, correctional facilities or any setting where full-range intelligibility, low profile design and in-wall installation ease are paramount. For additional bass response down to 41 Hz (-10 dB), the SM1001p powered 10-inch subwoofer may be incorporated.



## Patented SoundTube Technologies

SoundTube Entertainment and the MSE Audio Group constantly develop new technologies which enhance audio product performance. SoundTube Entertainment innovations are protected by multiple U.S. and international patents, which explicitly cover SoundTube dome, enclosure and dispersion technologies. The MSE Audio Group actively defends its patents in order to protect SoundTube resellers and end-users.

## Technical Data and Specification Tools

### Technical Data

SoundTube Entertainment strives to provide complete and effective technical information and data to dealers, engineers and designers. All data are available from SoundTube Entertainment or at [www.soundtube.com](http://www.soundtube.com).

Technical data and downloads include:

EASE™ data – 3-D polar plots.

EASE™ Address – 2-D modeling for distributed systems

Autodesk® Revit® software

Tech Sheets – Technical information and architectural specs for system engineers

SoundTubeSPEC™ – Proprietary speaker placement software

### Acquisition and Verification

All data for SoundTube speakers are independently collected from and verified by NWAALabs ([www.nwaalabs.com](http://www.nwaalabs.com)) using their proprietary MACH testing system. All data are collected and analyzed according to ASTM, ISO and AES standards using EASERA, TEF and MLSSA. Full balloon data including both phase and magnitude is compiled into a variety of formats including EASE 4.x, GLL and CLF.

### Architectural Specifications

The loudspeaker shall consist of one full-range 76.2 mm (3.0 in.) polypropylene driver with butyl rubber surround.

Performance specifications for a typical production unit shall be as follows: Useable frequency response shall extend from 100 Hz – 22 kHz (-10 dB). Measured sensitivity

(2.83 volt input, 1 meter) shall be at least 86.0 dB. The speaker shall have a nominal impedance of 8 ohms. The speaker shall be available for 25-, 70.7- and 100-volt modes and shall include a six-position tap switch with a transformer bypass position. Rated power capacity shall be at least 20 watts continuous (RMS) and conform to EIA-426-B. Maximum continuous power output at 1 meter shall be 101 dB.

The full-range transducer shall have a polypropylene cone with butyl rubber surround.

Installation for the speaker shall be by two-screw, blind-mount, constant tension winged assembly and shall attach to wall thicknesses ranging from 2.5 mm (0.1 in.) to 38.1 mm (1.5 in.). The fixed-wing assembly shall be constructed of steel. The external wiring shall be by hardwire lead.

The maximum backcan dimensions shall be no more than 88.9 mm (3.5 in.) in height. The maximum visible dimension shall be no more than 127.0 mm (5.00 in.) in height by 127.0 mm (5.00 in.) in width. The system shall be for indoor/outdoor applications.

The enclosure shall be constructed of steel. The grille shall be constructed of powder-coated aluminum for lasting performance and affix to the speaker baffle via snap fit. For theft prevention and durability, an optional stainless steel grille with stainless steel one-way screws is available (AC-IW3-TRG).

The system shall be the IW31-EZ for low- or high-impedance applications.

## SoundTube Entertainment

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**All SoundTube products come with a 5-year limited warranty.**

**Graphs and Plots****Frequency Response****N/A****Phase/Impedance Response****N/A**

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**Vertical Beamwidth (-6 dB)****N/A****Directivity Index (DI)****N/A**

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# IW31-EZ

## In-Ceiling Speaker

Preliminary Technical Information for System Engineers



**SOUNDTUBE**  
ENTERTAINMENT

### Polar Plots

———— Horizontal  
- - - - - Vertical

125 Hz

250 Hz

500 Hz

1,000 Hz

N/A

N/A

N/A

N/A

2,000 Hz

4,000 Hz

8,000 Hz

10,000 Hz

N/A

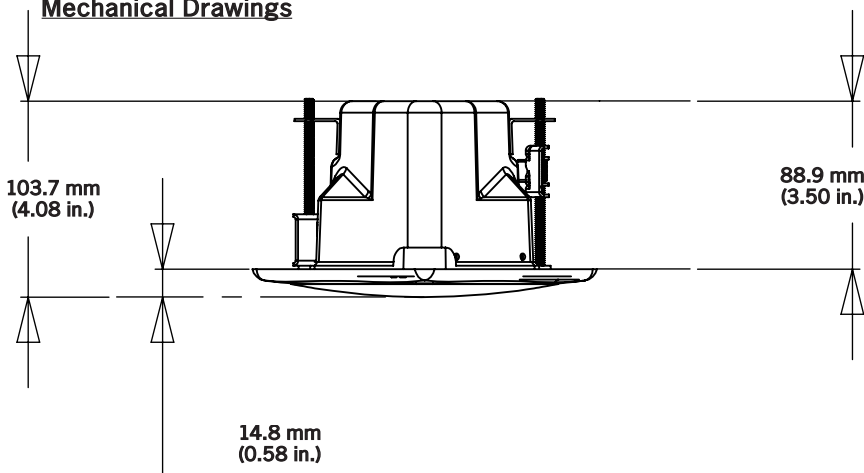
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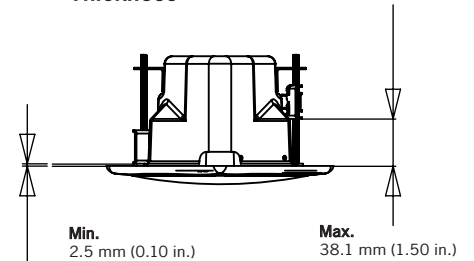
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Technical data, EASE™ plots, SoundTubeSPEC™ software and product downloads available at [www.soundtube.com](http://www.soundtube.com)

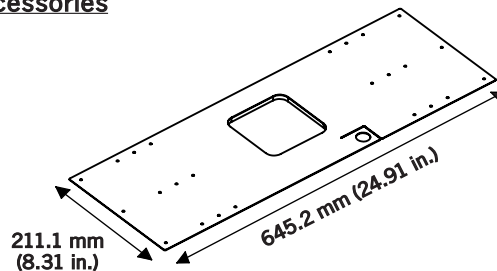
### Mechanical Drawings



### Minimum/Maximum Ceiling Thickness



### Optional Accessories



Pre-Construction Bracket (AC-CM5-PCB)

### Included Accessories

N/A

Tile Bridge

SoundTube Entertainment manufactures a complete line of speakers for:  
**Open-Ceiling • In-Ceiling • Surface-Mount • Outdoor • Sound-Focusing**

All SoundTube products are designed and engineered in the USA.