



Preliminary Specifications: RS31-EZ(-T)

System Type	3 inch full-range, pendant mount, 8 ohm with optional 20-watt transformer for 25/70.7/100-volt applications
Impedance (nominal) ¹	8 ohm
Sensitivity dB @ 2.83 V/1 m	86.0 dB
Sensitivity dB @ 1 W/1 m ²	86.0 dB
Frequency Response (-3 dB) ³	150 Hz - 22 kHz
Frequency Response (-10 dB) ³	100 Hz - 22 kHz
Max. Program Power ⁴	40 W
Max. Continuous Power RMS ⁵	20 W
Max. Power SPL @ 1 m ⁶	101.0 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)
Transducer - Full-Range Driver	76.1 mm (3.0 in.) Polypropylene driver with butyl rubber surround
Enclosure Material	ABS
Grille	Corrosion-resistant, powder-coated aluminum
Inputs	Screw terminal
Colors	Black or white
Height	80 mm (3.15 in.)
Height (with stabilizing arm)	139.7 mm (5.5 in.)
Diameter	110.4 mm (4.35 in.)
Weight	0.6 kg (1.4 lbs.)
Shipping Weight	0.9 kg (2.0 lbs.)
Packaging	One per box
Included Accessories	10 ft speaker hanging cable
Optional Accessories	20-watt transformer (AC-RS31-XFMR)
Regulatory - UL	UL 1480 (UEAY) planned
Regulatory - CE	Approved
RoHS	Approved

Transformer Taps

	70.7 V	Output	100 V	Output	25 V	Output
¹ 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
² 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
³ 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
⁴ 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
⁵ Continuous power rating, EIA-426-B test	1.25 W	88.0 dB			0.32 W	82.0 dB
⁶ Max output based on max continuous power						

Key Features

- Two models are available, the RS31-EZ and the RS31-EZ-T. The latter includes a 20-watt transformer.
- One 3 inch (76.1 mm) polypropylene driver with butyl rubber surround
- Weatherized components for indoor/outdoor applications.
- Ultra-low profile ZeroReflection™ ABS enclosure (4 inch diameter by 3.15 inch height without stabilizing arm).
- Corrosion-resistant, powder-coated aluminum grille.
- UL 1480 (UEAY) planned.
- High quality black or white paint finish.
- Included accessories: 10ft speaker hanging cable.
- Optional accessories: the RS31-EZ-T includes a 20-watt transformer (AC-31-XFMR) that incorporates a 5 position tap switch. This transformer kit is also available as an optional accessory.

Description

The RS31-EZ(-T) is a premium full-range 3 inch pendant-mount speaker, with overall dimensions smaller than a 4 inch sphere. The RS31-EZ(-T) incorporates a 10 ft length of speaker hanging cable for open-ceiling applications. Components have been weatherized for indoor/outdoor applications.

The RS31-EZ is an 8 ohm speaker without transformer. The RS31-EZ-T is shipped with the AC-RS31-XFMR transformer module to add a 20W transformer and 5 position tap switch that mounts directly above the hanging point.

Applications

Engineered for rapid installation and low profile mounting for smaller venues, the RS31-EZ(-T) is ideal for retail, restaurants, conference rooms, patio areas, educational facilities or any setting where full-range intelligibility, unobtrusive design and 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

RS31-EZ(-T)

Open-Ceiling Speaker

Preliminary Technical Information for System Engineers



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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.

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) 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 transducer shall consist of one full-range 76.2 mm (3.0 in.) polypropylene cone 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, with an optional 20-watt transformer (AC-RS31-XFMR) for distributed systems. The optional transformer shall have a five-position tap switch for 25-, 70.7- and 100-volt applications. 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.

Open-ceiling installation for the unit is designed to mount via 10 foot hanging cable (included). When the optional 20-watt transformer is incorporated, it will mount directly above the hanging point. The RS31-EZ and RS31-EZ-T utilize weatherized components for indoor and outdoor applications.

External wiring shall be by low-profile screw terminal and shall accept from 10 – 22-gauge wire.

The enclosure shall be constructed of injection-molded, ABS. The grille shall be constructed of powder-coated aluminum for lasting performance and affix to the speaker baffle via pressure fit. Overall cabinet dimensions shall be no more than 80 mm (3.15 in.) in height by 110.4 mm (4.35 in.) in diameter. The unit height with stabilizing arm shall be no more than 139.7 mm (5.5 in.).

The system shall be the RS31-EZ for low-impedance applications or the RS31-EZ-T for high-impedance applications.

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

RS31-EZ(-T)

Open-Ceiling Speaker

Preliminary Technical Information for System Engineers



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Graphs and Plots

Frequency Response

Phase/Impedance Response

Vertical Beamwidth (-6 dB)

Directivity Index (DI)

RS31-EZ(-T)

Open-Ceiling Speaker
Preliminary Technical Information for System Engineers



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Polar Plots

———— Horizontal
----- Vertical

125 Hz

250 Hz

500 Hz

1,000 Hz

2,000 Hz

4,000 Hz

8,000 Hz

10,000 Hz

Technical data, EASE™ plots, SoundTubeSPEC™ software and product downloads available at www.soundtube.com

Mechanical Drawings

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.