SOUNDTUBE®

RS400i
Open-Ceiling Speaker

Description

The RS400i is a 4", two-way ported speaker with an open-ceiling enclosure design that delivers effective low-end response (76 Hz) and 125° off-axis performance (2 to 10 kHz, independently verified). SoundTube's proprietary BroadBeam® waveguide tweeter system delivers consistent high-performance audio across the operating bandwidth. The RS400i speaker design incorporates a low-profile grille and a five-position tap switch with transformer bypass position. Hanging hardware is included and features a SpeedClamp™ self-locking cable grip for fast, easy, and secure installation.

RS400i PRODUCT SPECIFICATIONS

System Type	4", coaxial, open-ceiling, ported (20 W transformer for 25/70.7/100 V or transformer bypass applications)
Impedance (Nominal) [1]	4 Ω
Sensitivity dB @ 2.83 V / 1 M	85.5 dB
Sensitivity dB @ 1 W / 1 M [2]	82.5 dB
Frequency Response (±3 dB) [3]	95 Hz - 20 kHz
Frequency Response (±10 dB) [3]	76 Hz - 22 kHz
Max. Program Power [4]	40 W
Max. Continuous Power RMS [5]	20 W
Max. Power SPL @ 1 M [6]	95.5 dB
Coverage Angle (±6 dB @ 2 kHz)	127°
Coverage Angle (±6 dB @ 10 kHz)	81°
Coverage Angle (Avg. 2-10 kHz)	125°
Directivity Factor (Q)	3.5 (averaged 100 Hz - 10 kHz	4.6 (2 kHz)
Directivity Index (DI)	4.2 dB (averaged 100 Hz - 10 kHz	6.6 dB (2 kHz)
Tap Selector	Five-position rotary switch with transformer bypass
Transducer: Low-Frequency Driver	102 mm (4") polypropylene cone, butyl rubber surround
Transducer: High-Frequency Driver	25.4 mm (1") convex titanium tweeter with waveguide
Low-Frequency Voice Coil	25.4 mm	1"
Crossover Frequency	2.3 kHz
Network Type: Low Pass	12 dB per octave, 2nd order
Network Type: High Pass	12 dB per octave, 2nd order
Enclosure Material	Injection molded ABS, glass fiber reinforced
Grille	Steel with powder-coat finish
Inputs	4-pin, 5.08 mm Euroblock for individual or daisy chain connection
Colors	Black or white
Height	223.5 mm	8.8"
Diameter	195.6 mm	7.7"
Weight	2.3 kg	5.07 lbs
Packaging	One per box
Included Accessories	Hanging hardware, Euroblock connector, and terminal weather boot
Optional Accessories	Surface-mount bracket (AC-RS-SM5) and hanging kits
Certifications	CE, RoHS, UL 1480A, UL 2239

Features

- Patented BroadBeam waveguide technology delivers a consistent dispersion pattern for maximum intelligibility and edge-to-edge coverage (up to 10 kHz, independently verified)
- One 4" (102 mm) polypropylene woofer and one 1" (25.4 mm) convex titanium tweeter with FerroFluid cooling.
- Weatherized components for indoor and outdoor applications.
- Includes UL listed hanging hardware with adjustable galvanized steel cables and integrated SpeedClamp™ self-locking cable grip for fast, easy, and secure installation. Also includes Euroblock connector and terminal weather boot.
- Patented ZeroReflection™ enclosure technology for optimal sound reproduction and cabinet rigidity.
- Easy access five-position selectable tap switch for 25, 70.7, and 100 V applications with transformer bypass position simplifies ordering and inventory tracking.
- Steel grille with protective powder-coated finish for lasting durability.
- Average sensitivity for 82.5 dB offers high-output capabilities and reduced amplification costs.
- UL 1480A approved.
- High-quality black or white paint finish. Custom paint colors optional.
- Optional accessory: AC-RS-SM5 bracket for surface-mount applications.

[1] Impedance listed per IEC 60268-5 with a minimum less than 80% the nominal impedance

[2] 1 W/1 M sensitivity determined using nominal impedance

[3] Frequency response measured in half or full space as dictated by speaker mounting configuration

[4] Max program power is 3 dB above max continuous power

[5] Continuous power rating, EIA-426-B test

[6] Max output based on max continuous power

Transformer Taps

70.7 V	Output	100 V	Output	25 V	Output
20 W	95.5 dB	20 W	95.5 dB	2.5 W	86.5 dB
10 W	92.5 dB	10 W	92.5 dB	1 W	83.5 dB
5 W	89.5 dB	5 W	89.5 dB	0.63 W	80.5 dB
2.5 W	86.5 dB			0.31 W	77.5 dB

Applications
Designed for indoor and outdoor background to foreground SPL applications, the RS400i includes a single-point mounting system for rapid open-ceiling installations with an optional bracket for surface-mount applications. The broad dispersion pattern (125°) and high sensitivity (82.5 dB 1 W / 1 M) make the RS400i speaker ideal for retail, restaurants, grocery stores, hotels, casinos, fitness centers, conference rooms, big box stores, museums, trade shows, airports, and other open-ceiling applications. For applications where additional bass is required, SoundTube's RS1001i-II-T 10" subwoofer may be used with bass down to 38 Hz.

Patented 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.

BroadBeam® Wide Dispersion Technology
SoundTube's proprietary BroadBeam technology incorporates a high-frequency waveguide mated to a 1" convex titanium tweeter. The BroadBeam high-frequency waveguide delivers a consistent dispersion pattern across the upper registers of the frequency spectrum (up to 10 kHz, independently verified). The result is better edge-to-edge coverage, reduced power needs, shorter installation time and cost savings on shipping and labor.

Technical Data and Specification Tools
SoundTube Entertainment strives to provide complete and effective technical information and data to dealers, engineers and designers. All data is 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

Independent Data Acquisition and Verification
All data for SoundTube speakers is independently collected from and verified by NWAA Labs (www.nwaalabs.com) using their proprietary MACH testing system. All data is 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 a 102 mm (4") low-frequency transducer and a 25 mm (1") high-frequency transducer mounted in a patented BroadBeam® waveguide with a crossover network installed in the ported enclosure. The low-frequency voice coil diameter shall be 25.4 mm (1").

Performance specifications of a typical production unit shall be as follows: usable frequency response shall extend from 76 Hz - 22 kHz (±10 dB). Measured sensitivity (2.83 V input, 1 meter) shall be at least 85.5 dB. The speaker shall be available for 25, 70.7, and 100 V modes and shall include a five-position tap switch with a transformer bypass position. The frequency dividing network shall have a crossover frequency of 2.3 kHz with slopes of 12 dB per octave (2nd order) for both low and high pass filters. Rated power capacity shall be at least 20 W continuous (RMS) and conform to EIA-426-B testing. Maximum continuous output at 1 meter shall be 95.5 dB.

The low-frequency transducer shall have a polypropylene cone with butyl rubber surround. The high-frequency transducer shall be constructed of titanium with a proprietary BroadBeam waveguide.

Installation for the unit shall be by UL listed, galvanized steel cable affixed to the speaker chassis via an integrated snap hook. For safety redundancy, a secondary cable shall be included. The external wiring input connector shall be a four-pin, 5.08 mm Euroblock for 4 Ω or distributed systems and shall accept from 10 - 22-gauge wire. The system shall have a weather-resistant boot covering all wire connectors.

The enclosure shall be constructed of injection-molded, glass-reinforced ABS. The grille shall be constructed of powder-coated steel for lasting performance in the elements. Overall cabinet dimensions shall be no more than 223.5 mm (8.8") in height by 195.6 mm (7.7") in diameter. The speaker shall include hanging hardware, Euroblock connector, and weather-resistant terminal boot.

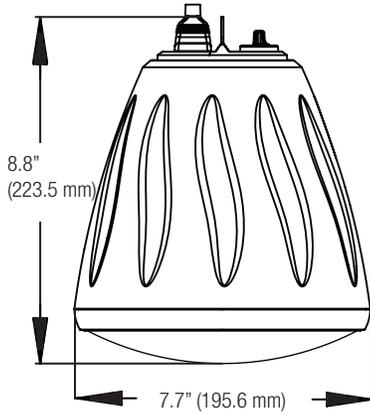The system shall be the SoundTube RS400i with hanging hardware for both low and high impedance applications.

All SoundTube speakers come with a 5-year limited warranty and 3-year warranty on all electronics.

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Mechanical Drawings

Side

8.8"
(223.5 mm)

7.7" (195.6 mm)

Optional Accessory
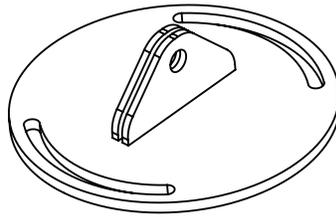
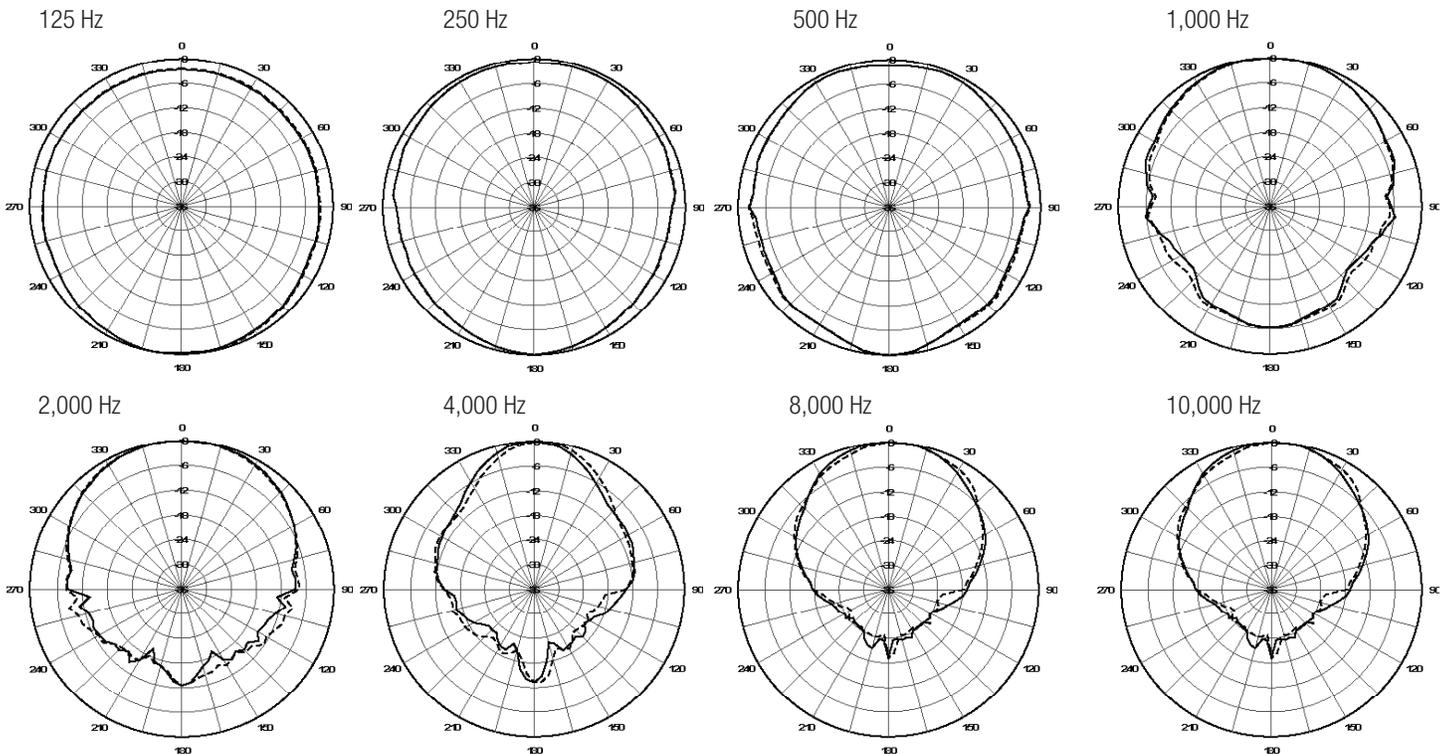**Surface-Mount Bracket
(AC-RS-SM5)**

Included Accessory

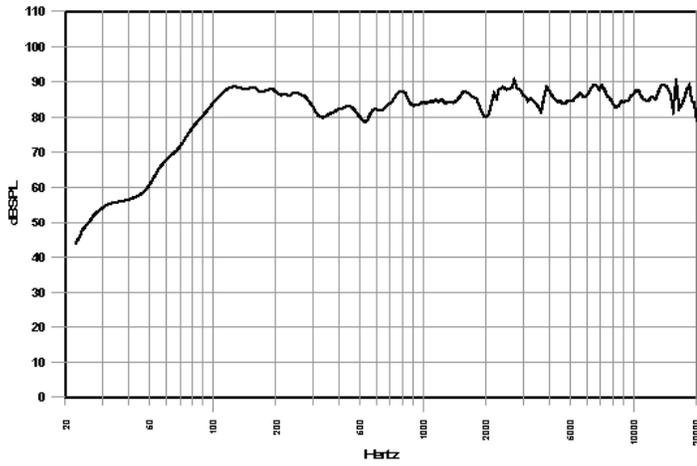**Hanging Hardware: Main and Safety Cables w/ SpeedClamp™**

SoundTube's hanging cable kit incorporates hanging and safety cables and fasteners for an integrated and easy-to-install system. Hanging hardware and safety cables are infinitely adjustable to 2.74 m (9 ft).
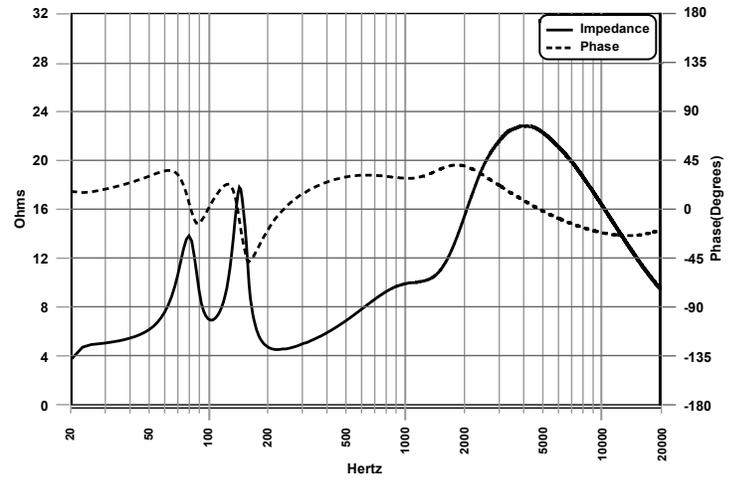
Plots

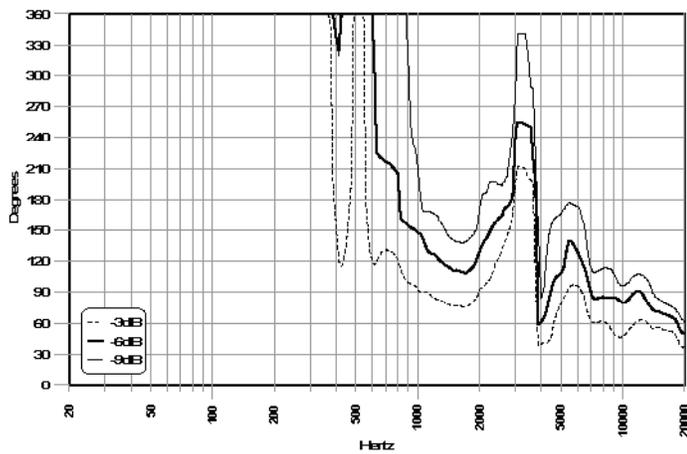125 Hz

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

Graphs

Frequency Response

Phase/Impedance Response

Vertical Beamwidth

Directivity Index (DI)