SOUNDTUBE

HP590i

Open-Ceiling Speaker

HP590i PRODUCT SPECIFICATIONS

System Type	5.25”, two-way, high SPL, open-ceiling, ported (33 W transformer for 25, 70.7, and 100 V or transformer bypass)
Impedance (Nominal) [1]	8 Ω
Sensitivity dB @ 2.83 V / 1 M	87.5 dB
Sensitivity dB @ 1 W / 1 M [2]	87.5 dB
Frequency Response (±3 dB) [3]	95 Hz - 22 kHz
Frequency Response (±10 dB) [3]	69 Hz - 22 kHz
Max. Program Power [4]	160 W
Max. Continuous Power RMS [5]	80 W
Max. Power SPL @ 1 M [6]	106.5 dB
Coverage Angle (±6 dB @ 2 kHz)	88°
Coverage Angle (±6 dB @ 10 kHz)	55°
Coverage Angle (Avg. 2-10 kHz)	85°
Directivity Factor (Q)	5.5 (Avg. 100 Hz - 10 kHz) | 9.1 (2 kHz)
Directivity Index (DI)	5.7 dB (Avg. 100 Hz - 10 kHz) | 9.6 dB (2 kHz)
Tap Selector	Six-position rotary switch with transformer bypass
Transducer: Low-Frequency Driver	133 mm (5.25”) polypropylene cone, butyl rubber surround
Transducer: High-Frequency Driver	25 mm (1”) convex titanium tweeter with tractrix profile horn
Low-Frequency Voice Coil	25.4 mm | 1”
Crossover Frequency	3 kHz
Network Type: Low Pass	N/A
Network Type: High Pass	12 dB per octave, 2nd order
Enclosure Material	Injection molded ABS baffle, glass fiber reinforced
Grille	Steel with powder-coat finish
Inputs	4-pin, 5.08 mm Euroblock for individual or daisy chain connection
Height	298.2 mm | 11.7”
Diameter	245.9 mm | 9.7”
Weight	4.3 kg | 9.5 lbs
Included Accessories	Hanging hardware, Euroblock connector and terminal weather boot
Optional Accessories	Surface mount bracket (AC-RS-SM5)
Certifications	CE, UL2239, RoHS

Description

The HP590i is a high-powered, 5.25”, two-way, horn-loaded loudspeaker in a ported enclosure design. The HP590i incorporates a low-profile grille, proprietary motor-board and six-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.

For indoor/outdoor applications, the HP590i incorporates a powder-coated steel grille, polypropylene driver and durable enclosure design.

Features

- Patented BroadBeamHP® waveguide technology delivers a consistent dispersion pattern for maximum intelligibility and edge-to-edge coverage (2-8 kHz, independently verified)
- One 5.25” (133 mm) polypropylene woofer and one 1” (25.4 mm) convex titanium tweeter with a 90° waveguide mounted to a proprietary cast-aluminum baffle and heat sink
- Weatherized components for indoor/outdoor applications
- Average sensitivity of 87.5 dB offers high output capabilities and reduced amplification costs
- Patented ZeroReflection™ enclosure technology for optimal sound reproduction and cabinet rigidity
- Easy-access, six-position selectable tap switch for 25, 70.7, and 100 V applications with transformer bypass position
- Includes hanging hardware with galvanized steel cables and integrated SpeedClamp self-locking wire grip for fast, easy and secure installation. Also includes Euroblock connector and terminal weather boot
- UL2239 (hanging cable) approved
- High quality black or white painted finish. Custom colors available
- Optional accessory: surface-mount bracket (AC-RS-SM5)

[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

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Transformer Taps

70.7 V	Output	100 V	Output	25 V	Output
33 W	102.5 dB	33 W	102.5 dB	5 W	94.5 dB
17 W	100 dB	17 W	100 dB	2.5 W	91.5 dB
9 W	97 dB	9 W	97 dB	1.3 W	88.5 dB
6 W	95.5 dB	6 W	95.5 dB	0.63 W	85.5 dB
3 W	92.5 dB				

Applications

Engineered for high SPL and effective low-end response, the HP590i delivers consistent foreground music, sound reinforcement, and PA for applications requiring longer throw or higher volume. The HP590i is ideal for open-ceiling music and paging applications with high ambient noise levels including casinos, warehouses, airports, transportation hubs, shipping centers, schools, gyms, arenas and stadiums. 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.

BroadBeamHP® Wide Dispersion Technology

SoundTube's proprietary BroadBeamHP technology incorporates a 1" titanium dome tweeter with a waveguide mated to a polypropylene woofer. BroadBeamHP technology delivers a consistent dispersion pattern across the upper registers of the frequency spectrum (2-8 kHz, independently verified). The result is an audio system requiring fewer speakers with higher intelligibility, offering 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 133 mm (5.25") low-frequency transducer and a 25 mm (1") high-frequency transducer with 90° waveguide and 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 range shall extend from 69 Hz - 22 kHz (±10 dB). Measured sensitivity (2.83 V, 1 M) shall be at least 87.5 dB. The speaker shall have a nominal impedance of 8 Ω. The speaker shall be available for selectable 25, 70.7, 100 V modes and shall include a six-position tap switch with a transformer bypass position. The frequency dividing network shall have a crossover frequency of 3 kHz with a slope of 12 dB per octave (2nd order) for the high-pass filter. Rated power capacity shall be at least 80 W continuous RMS and conform to EIA-426-B testing. Maximum continuous output at 1 meter shall be at least 106.5 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 tractrix profile horn.

Installation for the speaker shall be 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 8 Ω or distributed systems and shall accept 10 - 22-gauge wire. The unit shall be for indoor and outdoor applications and have a weather-resistant boot covering all wire connections.

The enclosure shall be constructed from 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 298.2 mm (11.74") in height by 245.9 mm (9.68") in diameter. The unit shall include hanging hardware, Euroblock connector and weather-resistant terminal boot.

The system shall be the SoundTube HP590i with hanging hardware for both low and high impedance applications.

SoundTube®

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

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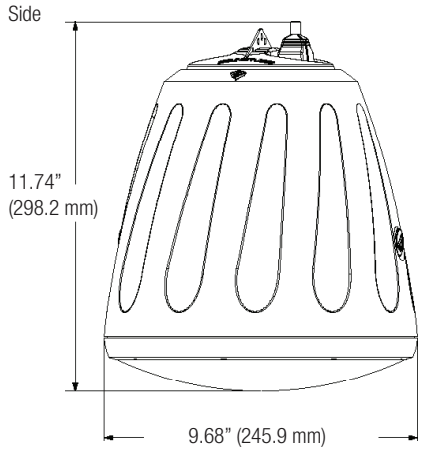
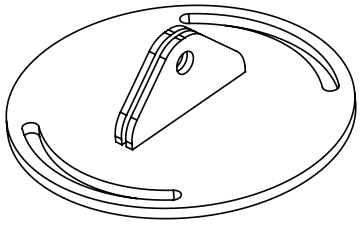
Mechanical Drawings

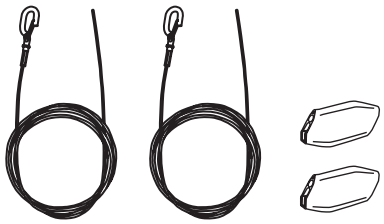


Optional Accessories



Surface-Mount Bracket
(AC-RS-SM5)

Included Accessories

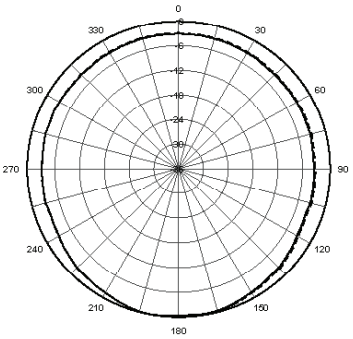


Hanging Hardware: Main and Safety Cables w/ SpeedClamp™

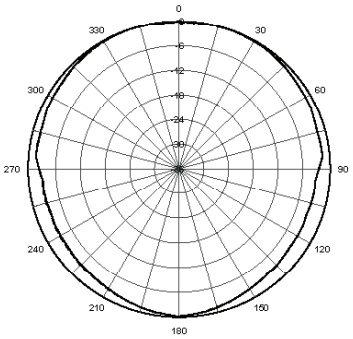
SoundTube's hanging cable kit incorporates hanging and safety cables and fasteners for an integrated and easy-to-install system. Hanging and safety cables are infinitely adjustable to 2.74 m (9').

Plots

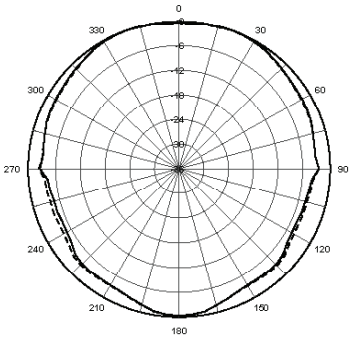
125 Hz



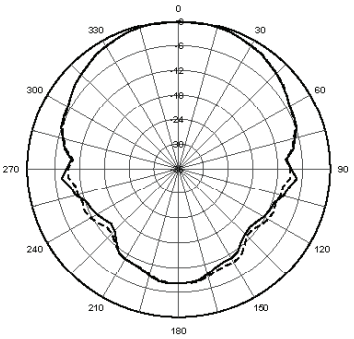
250 Hz



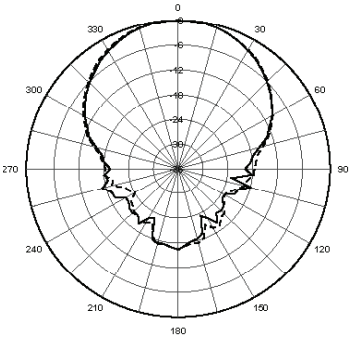
500 Hz



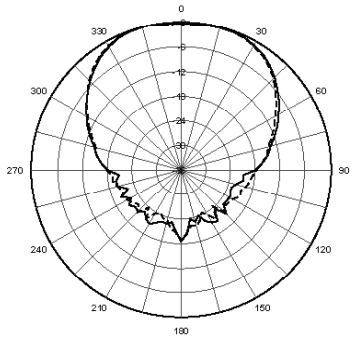
1,000 Hz



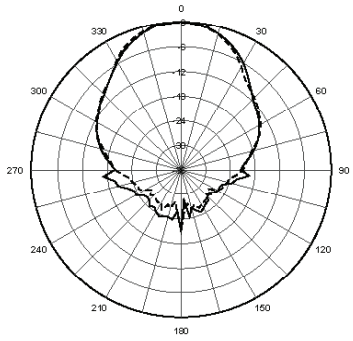
2,000 Hz



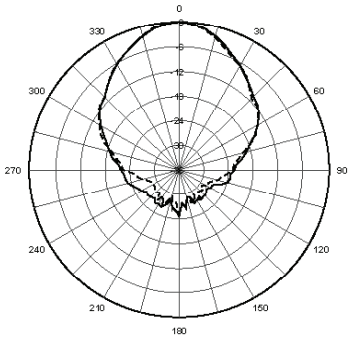
4,000 Hz



8,000 Hz



10,000 Hz



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

Horizontal
Vertical

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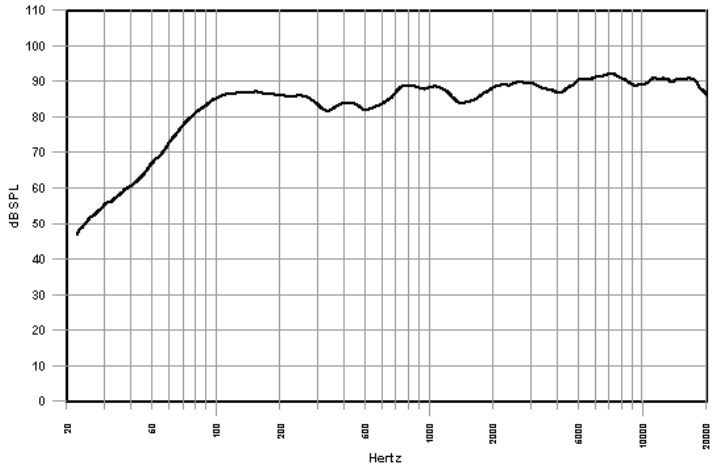
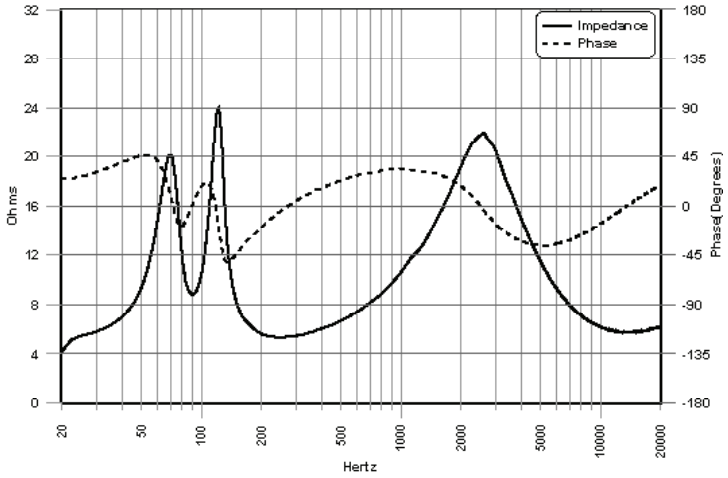
Graphs

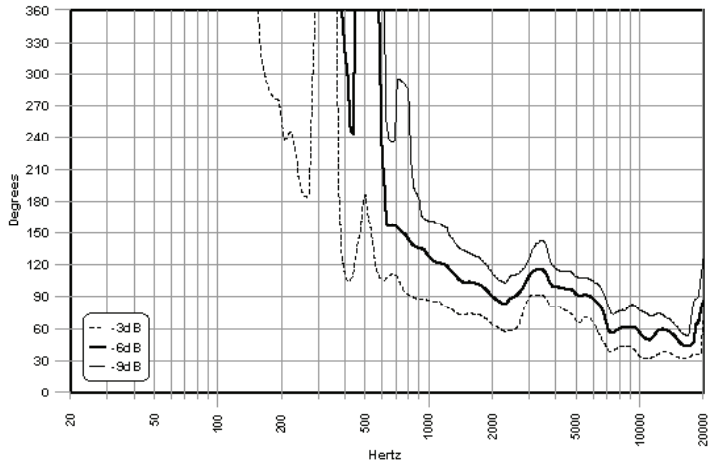
Frequency Response



Phase/Impedance Response



Vertical Beamwidth



Directivity Index (DI)