



Specifications: HP590i

Mounting hardware included

System Type	5.25-inch, two-way, high-SPL, open-ceiling, ported (32-watt transformer for 25/70.7/100-volt or voice coil direct)
Impedance (nominal) ¹	8 ohms
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)	90°
Coverage Angle (-6 dB @ 10 kHz)	55°
Coverage Angle (averaged 2-10 kHz)	85°
Directivity Factor (Q)	5.5 (averaged 100 Hz - 10 kHz); 9.1 (2 kHz)
Directivity Index (DI)	5.7 dB (averaged 100 Hz - 10 kHz); 9.6 dB (2 kHz)
Tap Selector	Six-position rotary switch with voice coil direct
Transducer - Low-Frequency Driver	133 mm (5.25 in.) Polypropylene cone, butyl rubber surround
Transducer - High-Frequency Driver	25 mm (1.0 in.) Convex aluminum tweeter with tractrix profile horn
Low-Frequency Voice Coil	25.4 mm (1.00 in.)
Crossover Frequency	3.0 kHz
Network Type: Low Pass	N/A
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	Four-pin, 5 mm Euroblock for individual or daisy chain connection
Colors	Black or white
Height	298.2 mm (11.74 in.)
Diameter	245.9 mm (9.68 in.)
Weight	4.3 kg (9.5 lbs.)
Shipping Weight	10.0 kg (22.0 lbs.)
Packaging	Two per box
Included Accessories	Hanging hardware, Euroblock connector and terminal weather boot
Optional Accessories	Surface-mount bracket (AC-RS-SM5)
Regulatory - UL	UL 2239 (hanging cable) approved
Regulatory - CE	Approved

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	100.0 dB	17 W	100.0 dB	2.5 W	91.5 dB
9 W	97.0 dB	9 W	97.0 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				

- 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

Key Features

- Patented BroadBeamHP® waveguide technology delivers a consistent dispersion pattern for maximum intelligibility and edge-to-edge coverage (up to 8 kHz, independently verified).
- One 133 mm (5.25 in.) polypropylene woofer and one 25 mm (1.00 in.) convex aluminum tweeter with a 90° waveguide mounted to a proprietary cast-aluminum HP5™ baffle and heat sink.
- Average sensitivity of 87.5 dB offers high output capabilities and reduced amplification costs.
- Weatherized components for indoor and outdoor applications.
- Patented ZeroReflection™ enclosure technology for optimal sound reproduction and cabinet rigidity.
- Includes hanging hardware with aircraft cables and integrated Speed-Clamp™ self-locking wire grip for fast, easy and secure installation. Also includes Euroblock connector and terminal weather boot.
- Easy-access six-position selectable tap switch for 25-, 70.7- and 100-volt applications with voice coil direct position simplifies ordering and inventory tracking.
- Optional accessory: AC-RS-SM5 bracket for surface-mount applications.
- UL 2239 (hanging cable) approved.
- High-quality black or white paint finish. Custom paint colors optional.

Description

The HP590i is a high-powered, 5.25-inch, two-way, horn-loaded loudspeaker in a ported, open-ceiling enclosure design. The HP590i incorporates a low-profile grille, proprietary HP5™ motor-board and six-position tap switch with voice coil direct position. Hanging hardware is included and features a Speed-Clamp™ self-locking cable grip for fast, easy and secure installation.

Applications

Engineered for high SPL and effective low-end response (69 Hz @ - 10 dB), the HP590i delivers consistent foreground music, sound reinforcement, and PA for applications requiring longer throw or higher volume. For indoor/outdoor applications, the HP590i incorporates a powder-coated steel grille, polypropylene driver



and durable enclosure design. 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-inch subwoofer may be used with bass down to 38 Hz.

BroadBeamHP® Wide Dispersion Technology

SoundTube's proprietary BroadBeamHP® technology incorporates a 1-inch aluminum 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 (up to 8 kHz, independently verified). The result is an audio system with fewer speakers, reduced power needs, shorter installation time and cost savings on shipping and labor.

Patented SoundTube Technologies

SoundTube Entertainment and MSE Audio Group constantly develop new technologies that enhance audio product performance. SoundTube Entertainment innovations are protected by multiple U.S. and international patents, which explicitly cover SoundTube dispersion, enclosure and dome technologies. 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, engi-

neers 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

Data Acquisition and Verification

All data for SoundTube speakers are independently collected from and verified by NWAA Labs (www.nwaalabs.com) using their proprietary MACH testing system. All data are collected and analyzed according to ASTM, ISO and AES standards using EASRA, TEF and MLSSA. Full balloon data including both phase and magnitude are 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 in.) low-frequency transducer and a 25 mm (1.00 in.) 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 (1.00 in.).

Performance specifications of a typical production unit shall be as follows: Useable frequency response shall extend from 69 Hz – 22 kHz (-10 dB). Measured sensitivity (2.83-volt input, 1 meter) shall be at least 87.5 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 voice coil direct 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 watts continuous (RMS) and conform to EIA-426-B testing. Maximum continuous output at 1 meter shall be 106.5 dB.

The low-frequency transducer shall have a polypropylene cone with butyl rubber surround. The high-frequency transducer shall be constructed of aluminum with a tractrix profile horn.

Installation for the HP590i shall be by aircraft cable affixed to the speaker chassis via an integrated snap hook. For seismic and safety redundancy, a secondary aircraft cable shall be included. The external wiring input connector shall be a four-pin, 5 mm Euroblock for 8 ohm or distributed systems and shall accept from 10 – 22-gauge wire. The system shall be for indoor and outdoor applications and 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 298.2 mm (11.74 in.) in height by 245.9 mm (9.68 in.) in diameter. The HP590i 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 Entertainment

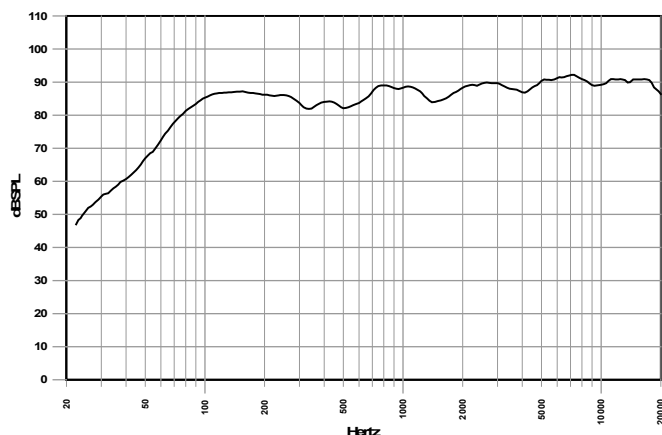
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All SoundTube products come with a 5-year limited warranty.

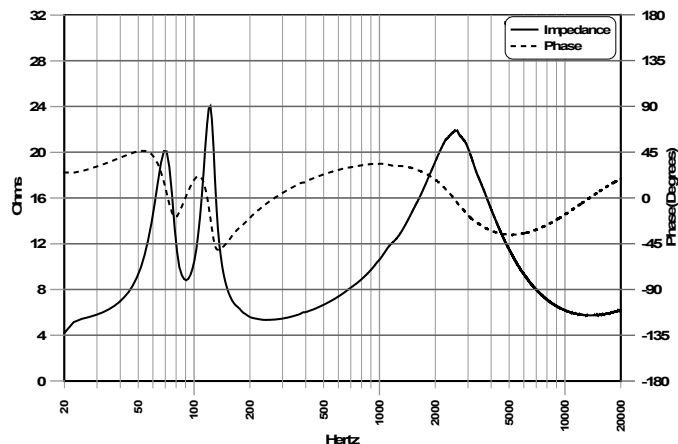


Graphs and Plots

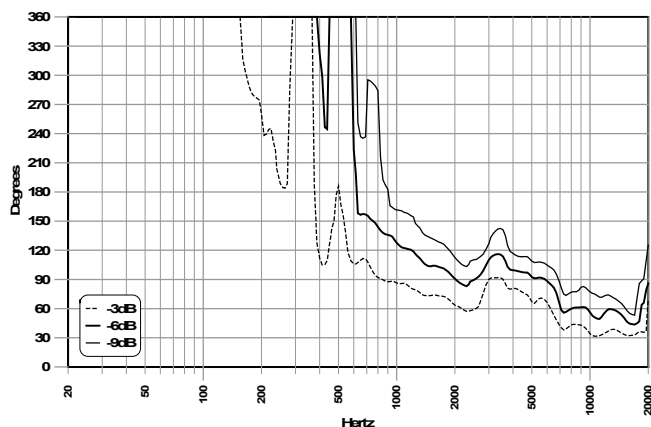
Frequency Response



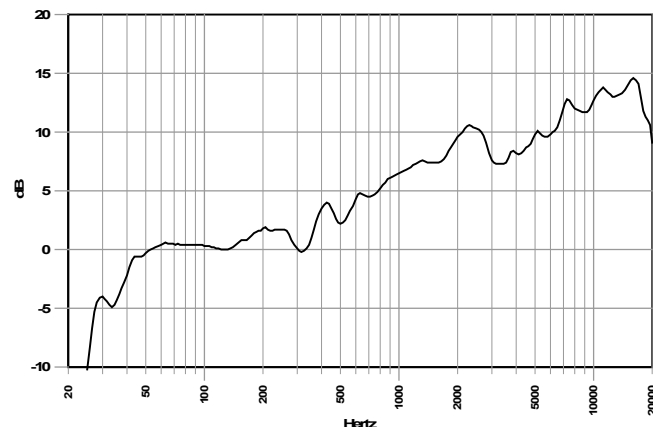
Impedance/Phase



Vertical Beamwidth



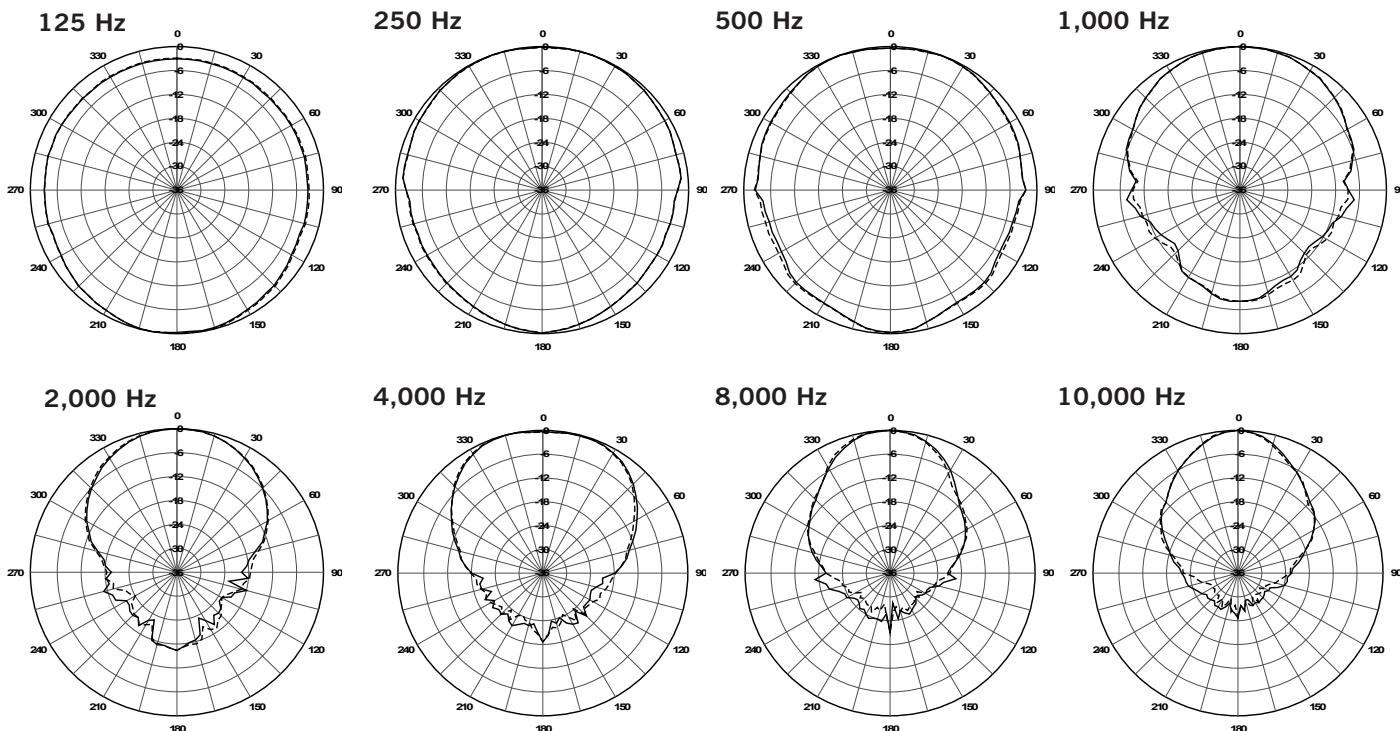
Directivity Index (DI)



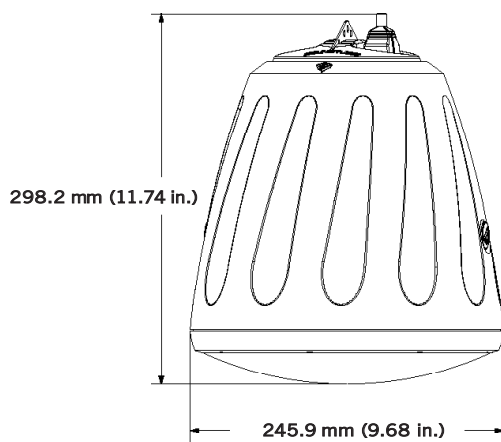


Polar Plots

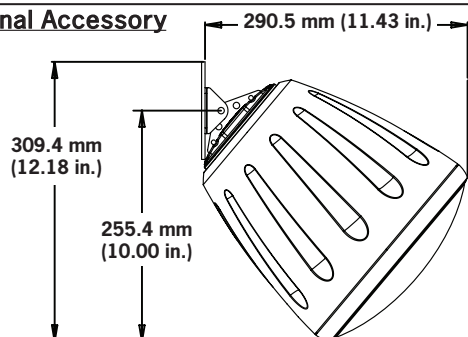
—— Horizontal
- - - - Vertical



Mechanical Drawings



Optional Accessory



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 (9.0 ft).

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.