



## SM590i-II PRODUCT SPECIFICATIONS

System Type	5.25", coaxial, surface-mount, ported, high power (33 W transformer for 25/70.7/100 V or transformer bypass)
Impedance (Nominal)	8 Ω
Impedance (Min)	7 Ω
Sensitivity dB @ 2.83 V / 1 M	87 dB
Sensitivity dB @ 1 W / 1 M <sup>3</sup>	87 dB
Frequency Response (±3 dB) <sup>1</sup>	100 Hz - 22 kHz
Frequency Response (±10 dB) <sup>1</sup>	69 Hz - 22 kHz
Max. Program Power	160 W
Max. Continuous Power RMS <sup>2</sup>	80 W
Max. SPL dB @ 1 M	106 dB
Coverage Angle (±6 dB @ 2 kHz)	90° Horizontal   90° Vertical
Coverage Angle (±6 dB @ 10 kHz)	65° Horizontal   65° Vertical
Coverage Angle (Avg. 2-10 kHz)	80° Horizontal   85° Vertical
Angle of Pointability (Vertical)	0° - 18° Upward   0° - 29° Downward
Angle of Pointability (Horizontal)	±33°
Directivity Factor (Q)	5.7 (averaged 100 Hz - 10 kHz)   9.3 @ 2 kHz
Directivity Index (DI)	6 dB (averaged 100 Hz - 10 kHz)   9.7 dB @ 2 kHz
Tap Selector	Six-position rotary switch with transformer bypass
Low-Frequency Driver	1 x 133 mm (5.25") polypropylene cone, butyl rubber surround
High-Frequency Driver	25.4 mm (1") convex titanium w/ 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
Grille Material	Powder-coated aluminum
Inputs	Four-pin, 5.08 mm Euroblock for individual or daisy chain connection
Color	Black or white (custom colors available)
Height	289.6 mm   11.4"
Width	212.3 mm   8.36"
Depth (Including Bracket)	266.2 mm   10.48"
Weight	4.3 kg   9.5 lbs
Included Accessories	Mounting hardware, safety cable, Euroblock connector, and terminal weather boot
Optional Accessories	Stainless steel U-bracket (AC-SM-UB5), pole-mount adapter (AC-SM-PMA5), bent shaft (AC-SM-BS5)
Packaging	One per box
Certifications	CE, RoHS, IP55

## Description

The SM590i-II is a high-powered 5.25", two-way horn-loaded loudspeaker in a ported surface-mount enclosure that delivers effective low-end response (69 Hz @ ±10 dB) and consistent dispersion pattern (2-10 kHz, independently verified).

The SM590i-II incorporates a low-profile grille, proprietary motor board and six-position tap switch with transformer bypass. Mounting hardware is included and features a fast-action Speed Lever™ for easy and secure installation with a proprietary captured ball-mounting system. Optional accessories include a pole-mount adapter, a bent shaft, and a U-bracket.

## Features

- High-power output (106 dB) for long throw and high SPL requirements.
- One 5.25" (133 mm) polypropylene woofer and one 1" (25.4 mm) Tractrix profile horn convex titanium dome tweeter mounted to a proprietary cast-aluminum baffle and heat sink.
- 87 dB average sensitivity offers high output capabilities and reduced amplification costs.
- Includes weatherized components for indoor and outdoor applications.
- Easy access, six-position selectable tap switch for 25, 70.7, and 100 V applications with transformer bypass position.
- Aluminum grille with powder-coat finish.
- Includes a tool-free Speed Lever™ captured ball-mounting system for a fast and secure installation.
- Vertical and horizontal pivoting offer precision aiming for indoor and outdoor applications.
- Pan and tilt capabilities
- CE approved.
- High-quality black or white paint finish.
- Included accessories: corrosion-resistant captured ball-mount, safety cable, Euroblock connector and terminal weather boot.

<sup>1</sup> Frequency response measured in half space and includes a low-frequency peak > ±3 dB

<sup>2</sup> Continuous power rating, EIA-426-B test

<sup>3</sup> 2.83 V at a distance of 1 meter

## Transformer Taps

70.7 V	Output	100 V	Output	25 V	Output
33 W	102 dB	33 W	102 dB	5 W	94 dB
17 W	99.5 dB	17 W	99.5 dB	2.5 W	91 dB
9 W	96.5 dB	9 W	96.5 dB	1.3 W	88 dB
6 W	95 dB	6 W	95 dB	0.63 W	85 dB
3 W	92 dB				

## Applications

Engineered for high SPL and effective low-end response, the SM590i-II delivers consistent high-performance music and paging for applications requiring longer throw or higher volume above the existing ambient noise level. The SM590i-II is ideal for surface-mount sound reinforcement/PA in applications with high ambient noise levels including casinos, warehouses, airports, transportation, shipping centers, schools, gyms, arenas, and stadiums. For applications where additional bass is required, SoundTube's RS1001i-II-T subwoofer provides bass down to 41 Hz ( $\pm 10$  dB).

## 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.

## 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](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

## Independent Data Acquisition and Verification

All data for SoundTube speakers is independently collected from and verified by NWAALabs ([www.nwaalabs.com](http://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 25.4 mm (1") high-frequency transducer with a frequency dividing network installed in a 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 69 Hz - 22 kHz ( $\pm 10$  dB, half space, independently verified). Measured sensitivity (2.83 V input, 1 M) shall be at least 87 dB. The speaker shall have a nominal impedance of 8  $\Omega$  and be available for 25, 70.7, and 100 V modes with transformer bypass. 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 filters. Rated power capacity shall be at least 80 W continuous (RMS) and conform to EIA-426-B testing. Maximum continuous output at 1 M shall be 106 dB.

The low-frequency transducer shall have a polypropylene cone with butyl rubber surround. The high-frequency transducer shall be constructed of titanium material and incorporate a high SPL horn.

Installation for the speaker shall be by proprietary and corrosion-resistant captured-ball mounting system. A tool-free system captured-ball mounting system with a locking zinc alloy lever and cast-aluminum ball shall be used. For safety redundancy, a secondary safety cable shall be included and attached to the speaker chassis via 1/4 - 20 UNC bolt. The external wiring input connector shall be a four-pin, 5.08 mm Euroblock for 8  $\Omega$  or distributed systems and shall accept from 10 - 22-gauge wire. The system shall be for indoor/outdoor applications and shall have a weather-resistant terminal boot covering all wire connectors.

The enclosure shall be constructed of injection-molded, glass reinforced ABS. The grille shall be constructed of powder-coated aluminum for lasting performance. Overall cabinet dimensions shall be no more than 289.6 mm (11.4") in height by 212.3 mm (8.36") in width by 266.2 mm (10.48") in depth (including SM bracket). The unit shall include mounting hardware, Euroblock connector, and terminal weather boot.

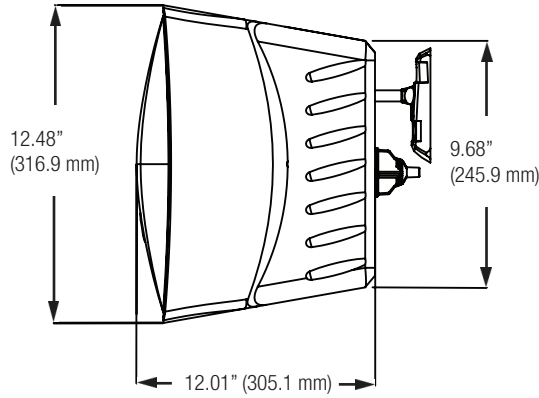
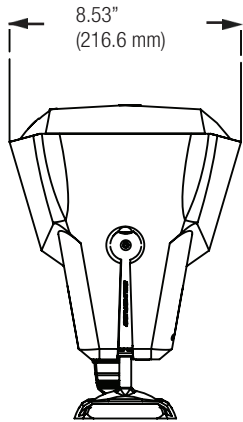
The system shall be the SoundTube SM590i-II with mounting hardware for both low and high impedance applications.

## SoundTube®

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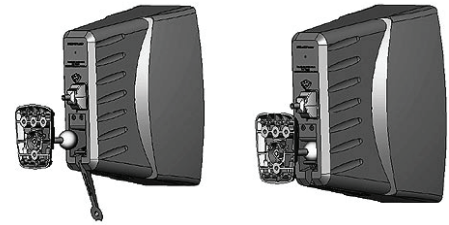
All SoundTube speakers come with a 5-year limited warranty and 3-year warranty on all electronics.

## Mechanical Drawings

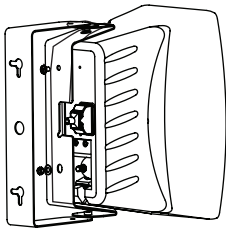


Unlocked

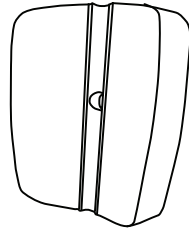
Locked



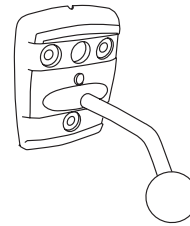
## Optional Accessories



U-Mount Bracket (AC-SM-UB5)



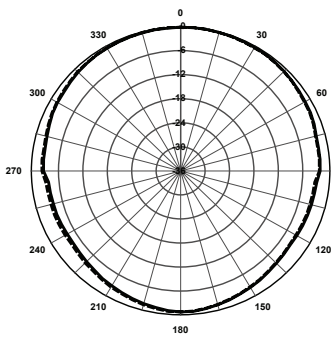
Pole-Mount Adapter (AC-SM-PMA5)



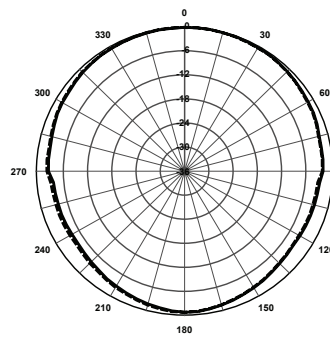
Bent Shaft (AC-SM-BS5)

## Plots

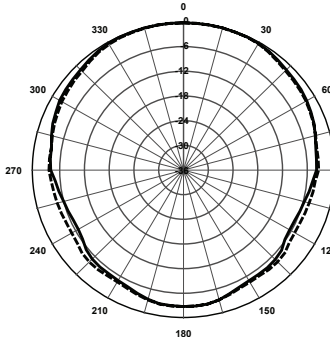
125 Hz



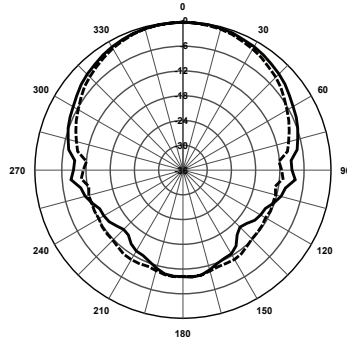
250 Hz



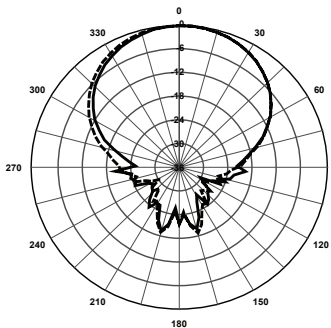
500 Hz



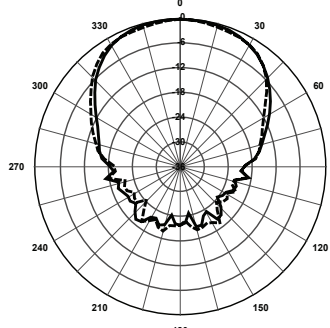
1,000 Hz



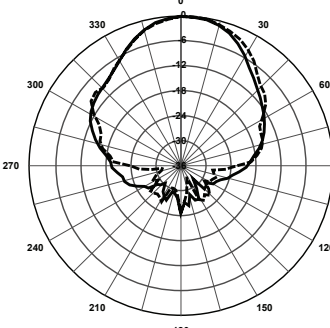
2,000 Hz



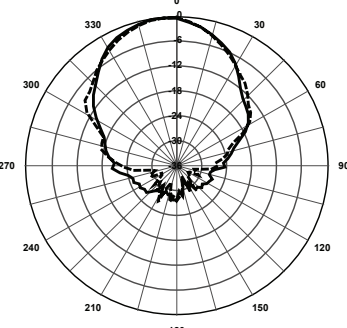
4,000 Hz



8,000 Hz

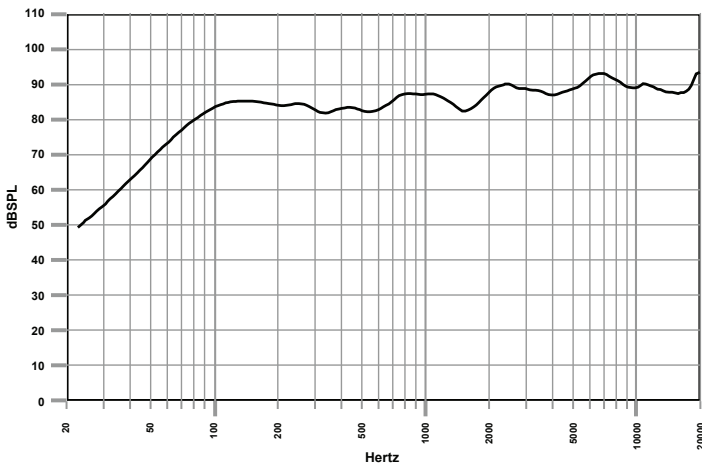


10,000 Hz

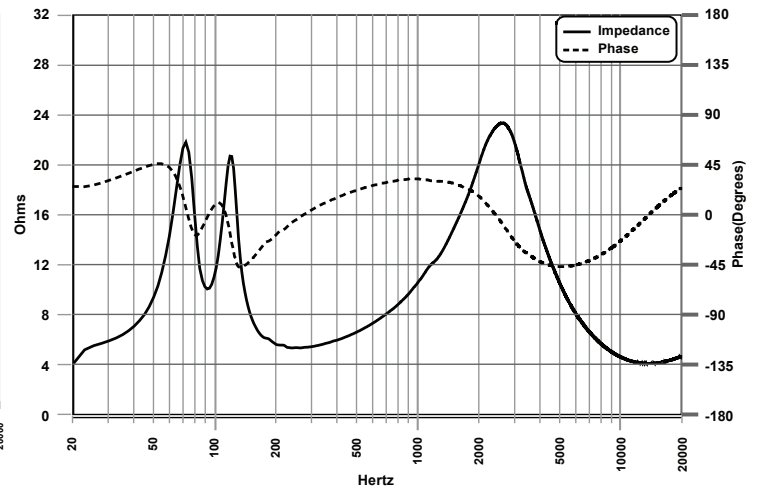


## Graphs

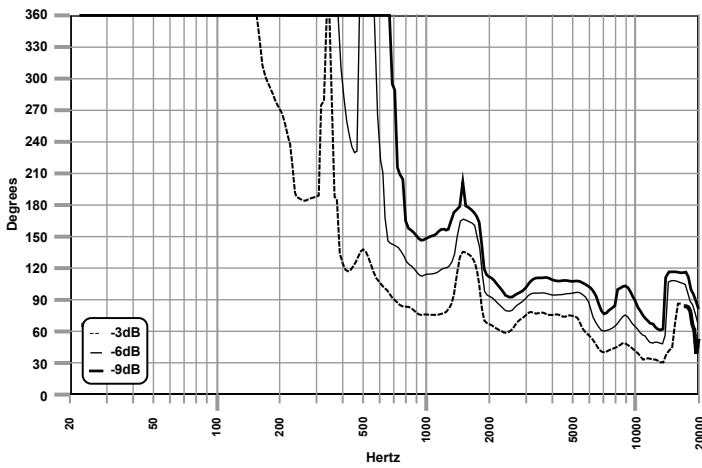
Frequency Response



Phase/Impedance Response



Vertical Beamwidth ( $\pm 6$  dB)



Directivity Index (DI)

