



### Specifications: SM590i

### Mounting hardware included

|   |  |
|---|--|
| System Type                             | 5.25" Coax, open-ceiling, ported (33 Watt transformer for 25/70.7/100 Volt or voice coil / 8 Ohm direct) |
| Frequency Response (-3 dB) <sup>1</sup> | 71 Hz - 22 kHz   |
| Low Frequency (-10 dB) <sup>1</sup>     | 61 Hz - 20 kHz   |
| Max. Program Power                      | 160 Watts  |
| Max. Continuous Power RMS <sup>2</sup>  | 80 Watts   |
| Max. SPL dB @ 1 M                       | 108.5 dB   |
| Sensitivity dB @ 1W/1M <sup>3</sup>     | 89.5 dB  |
| Impedance (nominal)                     | 8 Ohm (nominal value)  |
| Coverage Angle (-6 dB @ 500 Hz)         | 166° (average)   |
| Coverage Angle (-6 dB @ 4 kHz)          | 88° (average)  |
| Directivity Factor (Q)                  | 5.69 (Averaged 100 Hz - 10 kHz); 5.87 @ 2 kHz  |
| Directivity Index (DI)                  | 6.12 dB (Averaged 100 Hz - 10 kHz); 7.69 dB @ 2 kHz  |
| Tap Selector                            | 6-Position rotary switch with voice coil direct (8 Ohm)  |

### Transformer Taps

| 70.7 V | Output   | 100 V | Output   | 25 V   | Output  |
|--------|----------|-------|----------|--------|---------|
| 33 W   | 104.5 dB | 33 W  | 104.5 dB | 5 W    | 96.5 dB |
| 17 W   | 102 dB   | 17 W  | 102 dB   | 2.5 W  | 93.5 dB |
| 9 W    | 99 dB    | 9 W   | 99 dB    | 1.3 W  | 90.5 dB |
| 6 W    | 97.5 dB  | 6 W   | 97.5 dB  | 0.63 W | 87.5 dB |
| 3 W    | 97.5 dB  |       |          |        |         |

### Transducers

|                          |  |
|--------------------------|--|
| Low Frequency Driver     | 1 x 133 mm (5.25 in) Polypropylene cone, butyl rubber surround |
| High Frequency Driver    | 25 mm (1.0 in) Convex aluminum horn-loaded tweeter             |
| Low Frequency Voice Coil | 25 mm (1.0 in)   |
| Crossover Frequency      | 3 kHz  |

### Network Type

|                           |  |
|---------------------------|--|
| Low Pass                  | N/A  |
| High Pass                 | 12 dB per octave, 2nd order                                    |
| Enclosure Material        | Drawn aluminum backcan with ABS baffle                         |
| Motor Board               | Cast aluminum  |
| Grille                    | Iridite-plated steel with powder-coat finish                   |
| Inputs                    | 4 Pin, 5 mm Euroblock for individual or daisy chain connection |
| Colors                    | Black or white   |
| Length                    | 305.1 mm / 12.01 in  |
| Height                    | 316.9 mm / 12.48 in  |
| Width (including bracket) | 216.6mm / 8.53 in  |
| Weight                    | 4.3 kG / 9.5 lbs   |
| Shipping Weight           | 10 kG / 22.0 lbs (2 per box)                                   |

### Accessories

|           |  |
|-----------|--|
| Included  | Hanging hardware, Euroblock connector & terminal weather boot                        |
| Optional  | U-Mount Bracket (AC-SM-UB5), Pole Mount Adaptor (AC-SM-PMA5), Bent Shaft (AC-SM-BS5) |
| Packaging | 2 Per box, can ship as single  |

<sup>1</sup> Frequency response is 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 Volts at a distance of 1 meter.

SoundTube continually develops new product innovations and improvements. Updates to existing products without prior notice are an example of SoundTube's drive for constant improvement.

## Key Features

- High-power output (108.5 dB) for longer throw and higher SPL requirements.
- One 133 mm (5.25 in) polypropylene woofer and one 25 mm (1.0 in) horn-loaded convex aluminum dome tweeter mounted to a proprietary cast-aluminum HP5™ baffle & heat sink.
- 89.5 dB Average sensitivity offers high output capabilities and reduced amplification costs.
- Weatherized components for indoor/outdoor applications. Includes a tool-free SpeedLever™ captured ball mounting system for a fast & secure installation.
- Included accessories: Mounting hardware, Euroblock connector & terminal weather boot.
- Vertical and horizontal pivoting offer precision aiming for indoor & outdoor applications.
- Easy access 6-position selectable tap switch for 25, 70.7 & 100 Volt applications with voice coil/8 Ohm direct simplifies ordering and inventory tracking.
- Optional accessories: Pole-Mount Adaptor, Bent Shaft, U-Bracket.
- High quality black or white paint finish.

## Description

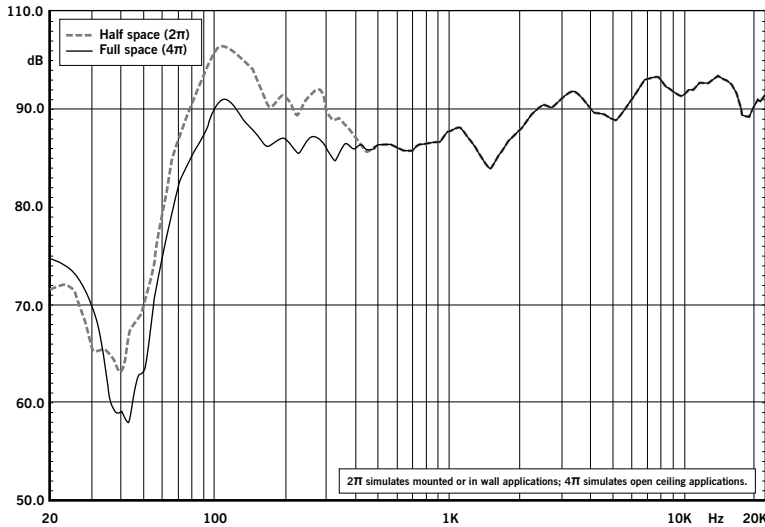
The SM590i is a high-powered 5.25" 2-way horn-loaded loudspeaker in a ported surface-mount enclosure design. The SM590i incorporates a low-profile grille, proprietary HP5™ motor-board and 6-position tap switch with voice coil/8 Ohm direct. Hanging hardware is included and features a fast-action Speed-Lever™ for easy and secure installation with a proprietary captured ball mounting system. Optional accessories include a pole mount adaptor, a bent shaft and a u-bracket.

## Applications

Engineered for high-SPL and effective low-end response (61 Hz @ -10 dB), the SM590i delivers consistent high-performance music and paging for applications requiring longer throw or higher volume above the existing ambient noise level. The SM590i is ideal for surface-mount sound reinforcement/PA in applications with high ambient noise levels including casinos, warehouses, airports, transporta-



### Frequency Response

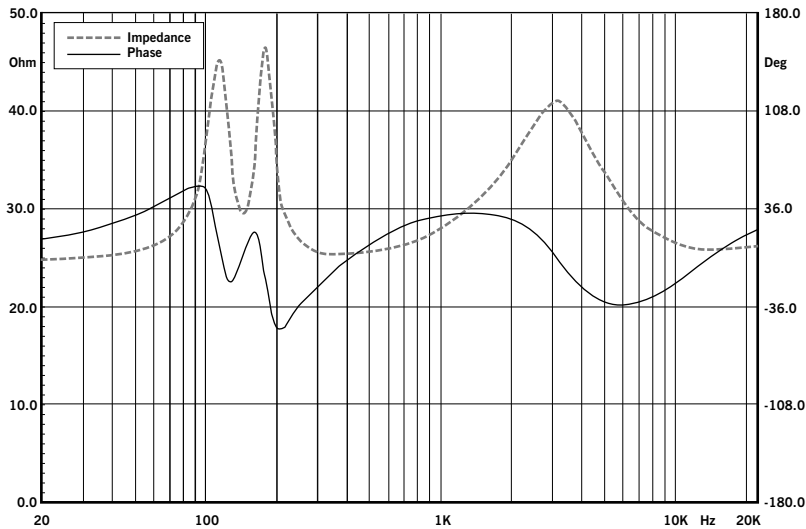


tion & shipping centers, schools, gyms, arenas and stadiums. For additional bass down to 40 Hz (-10 dB) the RS801i subwoofer may be used.

### Patented SoundTube Technologies

SoundTube Entertainment is consistently developing new technologies that enhance audio product performance. SoundTube Entertainment innovations are protected by multiple U.S. and international patents, which explicitly cover SoundTube dome, enclosure, mounting and dispersion technologies. SoundTube Entertainment actively defends its patents in order to protect SoundTube resellers and end-users.

### Phase/Impedance Response

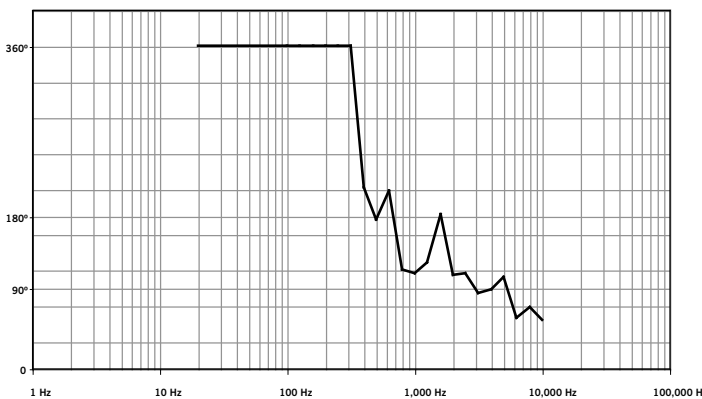


### Technical Data and Specification Tools

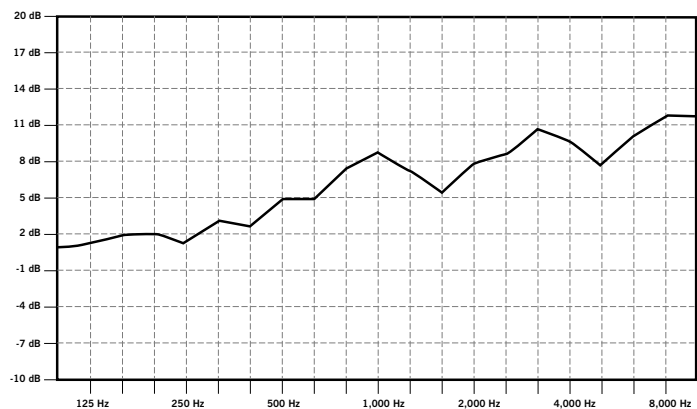
#### Technical Data

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](http://www.soundtube.com).

### Beamwidth (-6 dB)



### Directivity Index (DI)



# SM590i

## Surface-Mount Speaker

Preliminary Technical Information for System Engineers



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### Data Acquisition

All performance data acquired at SoundTube's Technical Measurement Center (TMC) are analyzed using a variety of standard measurement techniques, including Measured Length Sequence (MLS) and Time Delay Spectrometry (TDS). Performance, development and data acquisition tools include: Gold Line TEF 20, CLIO, LMS, LEAP, and proprietary modeling software. EASE™ data are acquired through an automated TEF 20/Outline/EASE™ interface.

**EASE™ Data** – 3-D polar plots.

**SoundTubeSPEC™** – Proprietary SoundTube speaker placement software.

### Architectural Specifications

The loudspeaker shall consist of a 133 mm (5.25 in) low-frequency transducer and a 25 mm (1 in) high-frequency transducer with a frequency-dividing network installed in a ported enclosure. The low-frequency voice coil diameter shall be 25 mm (1 in).

Performance specifications of a typical production unit shall be as follows:

Useable frequency response shall extend from 61 Hz – 22 kHz (-10 dB, half space, no external equalization). Measured sensitivity (2.83 Volt input, 1 meter) shall be at least 89.5 dB. The speaker shall have a nominal impedance of 8 Ohms and shall be available for 25/70.7/100 Volt modes with voice coil/8 Ohm direct. The frequency-dividing network shall have a crossover frequency of 3 kHz with a slope of 12 dB per octave (second order) for the high-pass filter. Rated power capacity shall be at least 80 Watts continuous power (RMS), and conforms to EIA-426-B testing. Maximum continuous output at 1 meter shall be 108.5 dB.

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

Installation for the SM590i shall be by proprietary & corrosion-resistant captured-ball mounting system. SoundTube's tool-free captured-ball mounting system incorporates a locking zinc alloy lever attaching to a cast-alu-

minum ball. For seismic and safety redundancy, a secondary aircraft cable shall be included and attached to the speaker chassis via ¼ - 20 bolt. The external wiring input connector shall be a 4-pin, 5 mm Euroblock for 8 Ohm or distributed systems and shall accept from 10 – 22 gauge wire.

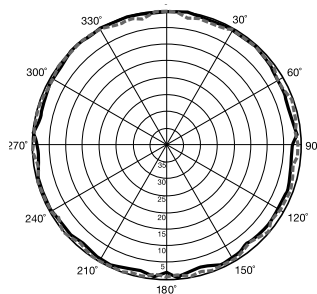
The system shall be for indoor/outdoor applications and shall have a weather-resistant terminal boot covering all wire connectors. The enclosure shall be constructed of injection-molded, glass-reinforced ABS. The grille shall be constructed of iridite-plated, powder-coated aluminum for lasting performance.

Overall cabinet dimensions shall be no more than 316.9 mm (12.48 in) in height by 216.6 mm (8.53 in) in width by 305.1 mm (12.01 in) in depth (including SM bracket). The SM590i shall include mounting hardware, Euroblock connector & terminal weather boot.

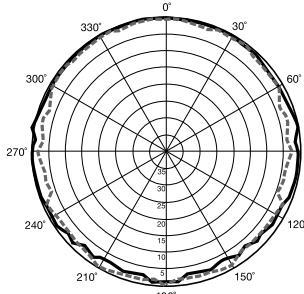
The system shall be the SoundTube SM590i with mounting hardware for both low and high impedance applications.

### Polar Plots

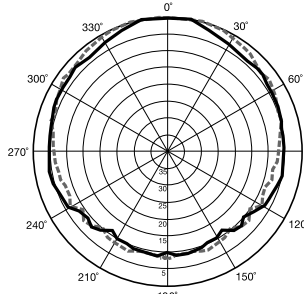
125 Hz



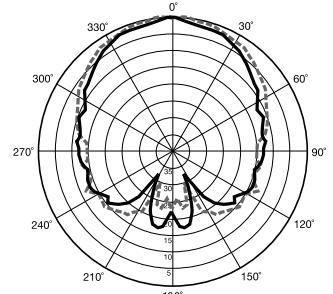
250 Hz



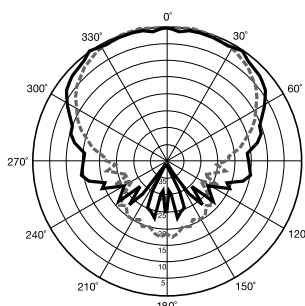
500 Hz



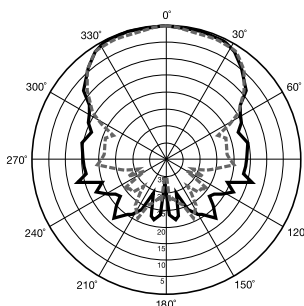
1,000 Hz



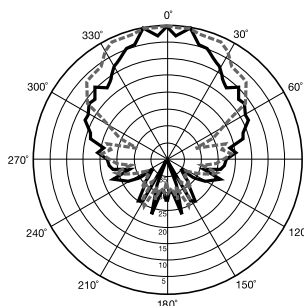
2,000 Hz



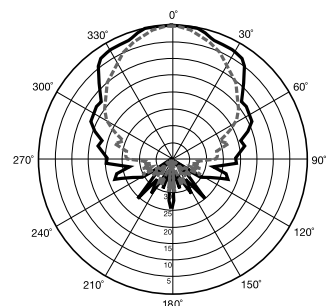
4,000 Hz



8,000 Hz



10,000 Hz



Technical data, EASE™ plots, SoundTubeSPEC™ software & product downloads available at [www.soundtube.com](http://www.soundtube.com)

# SM590i

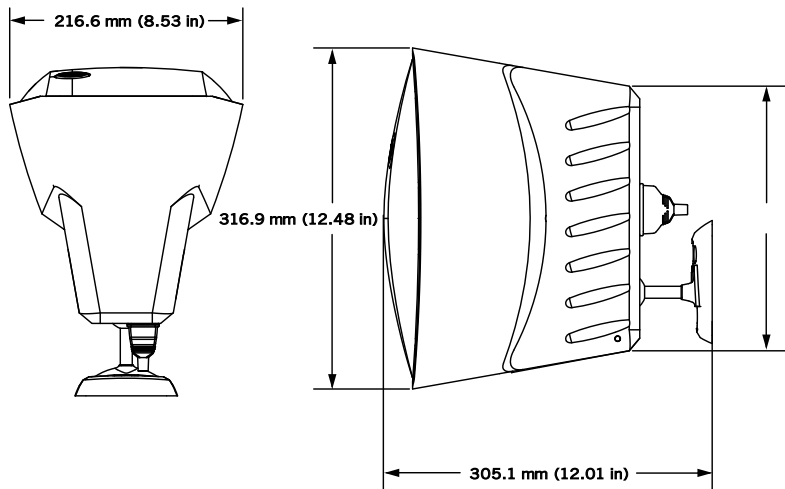
## Surface-Mount Speaker

Preliminary Technical Information for System Engineers



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### Mechanical Drawings



### SoundTube Entertainment

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Fax 435.647.9666  
Toll Free 800.647.TUBE  
www.soundtube.com

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

### Installation

Unlocked

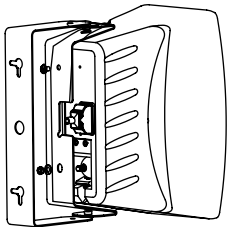


Locked

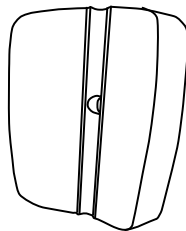


SoundTube's SM590i is a surface-mount speaker designed to mount to a wall, pole, ceiling or other rigid structure. Vertical & horizontal pivoting offer unlimited aiming for indoor & outdoor applications.

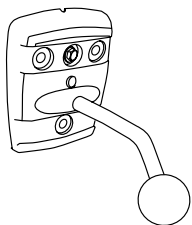
### Optional Accessories



U-Mount Bracket (AC-SM-UB5)



Pole Mount Adaptor (AC-SM-PMA5)



Bent Shaft (AC-SM-BS5)

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.

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