SM52TEN-B / SM52TEN-WH
Surface Mount Loudspeakers

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Owner's Manual

Introduction

Thank you for purchasing the AtlasIED SM52TEN Strategy Series® surface mount loudspeakers. The SM52TEN loudspeaker is designed to provide high fidelity, long life and installation convenience for commercial and residential applications. Their weather-resistant properties make them perfect for use indoors or out. The SM52TEN is available in either black or white.

Key Features

- Includes internal, high efficiency 70.7V / 100V transformer (may be bypassed by 6Ω operation)
- Barrier strip input with weather resistant cover
- Bracket included for wall mounting (EN54-24 Mounting Evaluated)
- Also compatible with optional mounting systems (EN54-24 Mounting Not Evaluated):
  - Omnimount™ 10.0 series or other mounting systems (single shaft or dual hole mount) may be used to match $\frac{1}{4}$"-20 insert(s) on rear of speaker. Dual hole mounting systems must match $2\frac{3}{8}$" (60mm) OC, $\frac{1}{4}$"-20 insert spacing.

Placement

Outdoor Use

The materials used in the construction of the SM52TEN loudspeaker systems are weather resistant. The hardware is brass, the grille is powder-coated aluminum, and the bracket is zinc plated, powder coated steel. The enclosure itself is shatter resistant. Adhering to these mounting guidelines will further extend the life of the product when installed outdoors:

- Whenever possible, mount the speaker under an eave or other protective overhang
- Always aim the speaker downward, at a 15-18 degree angle to prevent water from accumulating on the speaker cone
- Do not place the speaker in a location where water, snow, or ice will accumulate on the speaker for extended periods of time

Indoor Use

The SM52TEN loudspeaker works very well when it is wall-mounted in indoor applications. When the loudspeaker is placecd on a wall, it can take advantage of the natural boundary effect that occurs when a loudspeaker system is placed against one or more surfaces. This boundary effect will provide increased overall output. When mounted against one surface (on a wall), the loudspeaker output will increase by 3dB. When mounted against two surfaces (on the wall near the ceiling or corner), the loudspeaker output increases by 6dB. When mounted against three surfaces (in a corner near the ceiling), the loudspeaker output increases by 9dB.

Shelf Mounting (Indoor)

The bottom surface of the SM52TEN is a flat 90° to the speaker baffle to maintain level surface when placing on shelves. All models can also be horizontally installed in any placement option.

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1601 JACK MCKAY BLVD.
ENNIS, TEXAS 75119 U.S.A.

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SUPPORT@ATLASIED.COM

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Installation

Fixed Install

The SM52TEN loudspeaker includes a versatile yet simple U-bracket designed to provide easy vertical or horizontal installation on almost any surface. The loudspeaker may be installed using screws or bolts placed through the "Keyhole" shaped holes in the mounting bracket. The center $5/8$" hole allows wire to exit through the bracket when wall mounting, for a clean installation. The unused inserts on the rear of the SM52TEN are $1/4$"-20. These openings can be used with forged eyebolt and approved safety cable (wire rope sling) where redundant support is required for seismic or safety considerations. These parts are available through multiple sources:

- Eyebolt, Lifting With Shoulder, Steel, Plain Finish, $1/4$"-20 Thread Size, 1" Thread Length, 1" Shank Length, $17/32$" Shoulder Diameter, $5/32$" Shoulder Length, $3/4$" Eye Inside Diameter, $1 1/4$" Eye Outside Diameter, $2 3/8$" Overall Length, 500 lb. Working Load Limit

- Galvanized Steel Cable Spool, $1/8$"

- Sleeve N Thimble™ Kit for $1/8$" Cable

- Swage It Tool for $1/16$", $3/32$", and $1/8$" Cable Size

- The mounting knobs included with the SM52TEN may be easily interchanged with standard, $1/4$"-20 vandal proof hardware

- TORX Drive Button Head $1/4$" Machine Screw, Tamperproof, $1/2$" Length

- One-Way Round Head $1/4$" Machine Screw, Tamperproof, $1/2$" Length

- Spanner Flat Head $1/4$" Machine Screw, Tamperproof, $1/2$" Length

Overhead Suspension

CAUTION: Suspending any object is potentially dangerous and should be attempted only by individuals who have thorough knowledge of the techniques and regulations of rigging objects overhead using ONLY hardware approved for this type of installation. AtlasIED strongly recommends that SM52TEN loudspeakers only be suspended overhead when taking into account all current national, federal, state, and local regulations. It is the responsibility of the installer to insure that the speaker is installed according to those regulations. If the SM52TEN loudspeaker is suspended, AtlasIED strongly recommends that the system be inspected at least once a year. If any signs of weakness or damage is detected, remedial action should be taken immediately.

ATTENTION: La suspension de tout objet est potentiellement dangereuse et ne devrait être accomplie que par du personnel qualifié, compétent et au fait des différentes loi et restrictions en matière de gréage et en n'utilisant que du matériel approuvé pour ce type d'installation. AtlasIED recommande fortement que les haut-parleurs SM52TEN ne soit suspendus qu'en tenant compte de la règlementation locale, provinciale et nationale. Il incombe à l'installateur de d'assurer que l'ouvrage effectuée rencontre les lois et règlementation en vigueur. Si le haut-parleur SM52TEN est suspendu, AtlasIED recommande fortement que l'installation soit inspectée une fois par année. Si l'installation est endommagée, ou montre des signes de faiblesse, des actions correctives doivent être entreprises immédiatement.

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Terminal Cover

The SM52TEN includes a weather-resistant terminal cover with grommet. Remove cover to gain access to the barrier strip. Feed service line through grommet before terminating to barrier strip. Secure terminal cover (with grommet) over barrier strip when complete. The weather-resistant cover and grommet must be used in all applications.

6Ω Connections

The SM52TEN loudspeakers include an 6Ω switch position.

CAUTION: Do not set switch to 6Ω position when speakers are wired in 70.7V / 100V Systems.

The SM52TEN includes a two pole barrier strip housed by a weather-resistant cover. The barrier strip is designed to accept either spade connectors or bare wire.

Amplifier limitations will dictate how many SM52TEN loudspeakers may be connected. Most consumer amplifiers are rated to operate at a 4Ω minimum output impedance per channel (check the back panel of the amplifier or the amplifier owners manual to verify). With this arrangement, two SM Series loudspeakers may be connected in parallel to each channel of the amplifier (two 6Ω loudspeakers per channel = a 4Ω load). (See Figure 1)

Be sure to use good quality, unshielded twisted pair speaker cable to connect the amplifier to the loudspeaker(s) (#14AWG for runs <80', #12AWG for runs >80'). Standard ZIP style speaker cable may also be used if twisted pair cable is not available.

DO NOT USE SHIELDED INSTRUMENT STYLE (Guitar) CABLES TO CONNECT SPEAKERS.

When making connections, be sure to maintain proper polarity between speakers. (Red wire to red or (+) terminal, black wire to black or (–) terminal where applicable)
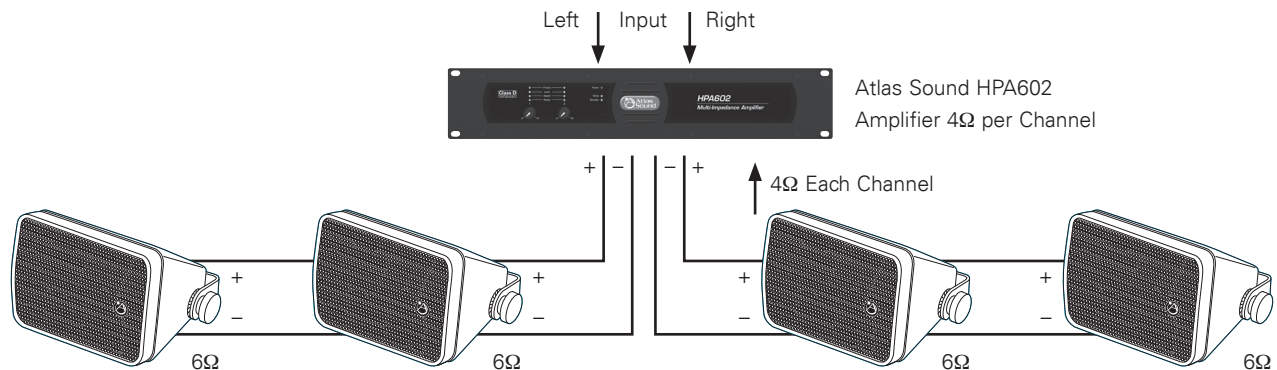

Figure 1

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Line Matching Transformer Connections

The SM52TEN includes a two pole barrier strip housed by a weather-resistant cover. The barrier strip is designed to accept either spade connectors or bare wire. AtlasIED recommends using #18AWG for wire runs up to 500', #16AWG for wire runs of 500' to 1000', and #14AWG for runs over 1000', Building codes often dictate that speaker wire must be plenum rated and run in conduit. Be sure to check local code requirements before installation.

The SM52TEN is equipped with line matching transformers. These types of loudspeakers require an amplifier capable of driving a 70.7V line in order to ensure that the wattage taps selected will be appropriate. If the amplifier is not rated for 70.7V output, the AtlasIED AF140 autoformer can be used and configured as a step-up transformer for this purpose. Contact a local dealer for details.

Connect the speaker cable to the (+) and (–) barrier strip terminals on the back of the SM52TEN. Using a small screwdriver, adjust the wattage selector switch on the back of the SM52TEN to the desired wattage tap.

CAUTION: DO NOT SWITCH TO 6Ω POSITION WHEN LOUDSPEAKERS ARE WIRED IN 70.7V / 100V SYSTEMS.

Quantity of loudspeakers per amplifier will be dictated by the amplifier's wattage rating (at least 20% headroom should be allowed for extended range program material such as paging or digital music sources) i.e. an 120-watt amplifier will power 6 loudspeakers tapped at 20-watts each. (5x20=100, 120x 83%=100 <120W) (See Figure 2)

5 x 20 Watts = 100 Watts Total Load on Amplifier

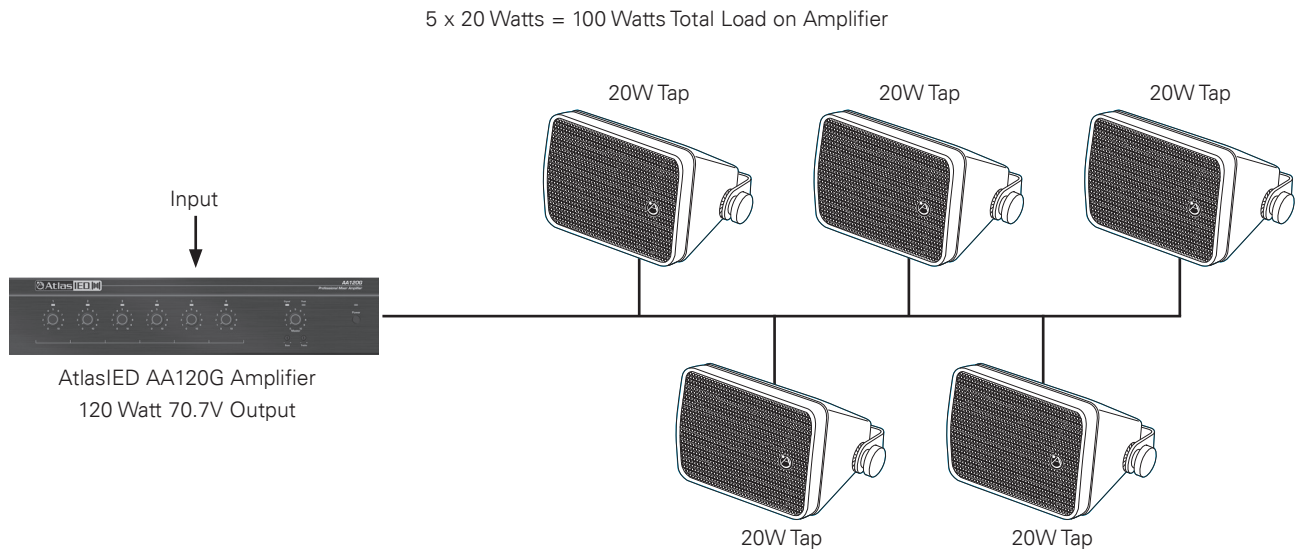Figure 2

Maintenance and Care

AtlasIED surface mount loudspeakers have been designed and manufactured for years of trouble-free service. Clean the SM52TEN with a dampened soft cloth or paper towel. If the loudspeaker is mounted high on a wall or ceiling, use a broom or duster to gently brush it off. Spraying the speaker with high-pressure water is not recommended and will void the warranty.

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System	
Type	Surface Mount Loudspeaker
Operation Mode	Non-Powered Passive
Operating Range (-10dB)	85Hz - 21.25kHz
Frequency Response (±5dB)	93Hz - 20kHz
Usable Low Frequency Limit (10dB Down Point)	65Hz
Input Sensitivity at 1W / 4m (EN54-24)	69dB
Max Input Ratings (6Ω)	24.5 Volts RMS, 34.6 Volts Peak
Transformer Taps - 70V	40W (134Ω), 20W (250Ω), 10W (493Ω), 5.4W (932Ω), 2.7W (1875Ω), 1.3W (3704Ω) and Low Impedance (6Ω)
Transformer Taps - 100V	40W (250Ω) RNP , 20W (493Ω), 10.7W (932Ω), 3.7W (1975Ω), 2.7W (3704Ω) and Low Impedance (6Ω)
Directivity Factor (Q)	13.5 @ 2kHz
Directivity Factor (DI)	11.3 @ 2kHz
Power Handling in 6Ω Switch Position	100 Watts
Max SPL at 4m EN54-24 (Passive 30W @ 100V)	82.3dB (±3dB)
Transducer Complement	
High Frequency	1" (25mm) Dome Tweeter
Low Frequency	5$^1/_4$" Treated Woofer
Crossover Frequency	4.5kHz
Crossover Slope	12dB / Octave
Input Connections	2 Pole Barrier Strip with Weather-Resistant Cover
Driver Protection (High Frequency)	AtlasIED PolyGuard™
Mechanical	
Color	White (RAL-9014) or Black (RAL-9011)
Materials	UV-Resistant PC / ABS Injection Molded Weatherproof Enclosure. (Black or White Finish) Perforated Powder Coated Aluminum Grille Matches Enclosure Color
Ingress Protection (EN54-24)	IP33C
Weight (Net)	9.11 lbs (4.13kg)
Dimensions	6.9" W x 10.3" H x 6.0" D (175.8mm x 261.6mm x 151.7mm)
Warranty Coverage	
Warranty Period	5 Years

Notes:

1. Power: All power figures are calculated using the rated nominal impedance.
2. Frequency response and sensitivity are free field measurements.
3. Recommended power amplification is 1.5X program power
4. RNP - Rated Noise Power

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Dimensional Drawings

6.9"
(175.25mm)

6.9"
(175.83mm)

6.0"
(151.65mm)

0.1"
(3.18mm)

11.7"
(297.99mm)

10.3"
(260.753mm)

0.7"
(18.03mm)

10.38"
(263.5mm)

Ø0.25"
(Ø6.4mm)

1.50"
(38.1mm)

2.35"
(59.7mm)

6.40"
(162.6mm)

8.70"
(221.0mm)

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1601 JACK MCKAY BLVD.
ENNIS, TEXAS 75119 U.S.A.

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SUPPORT@ATLASIED.COM

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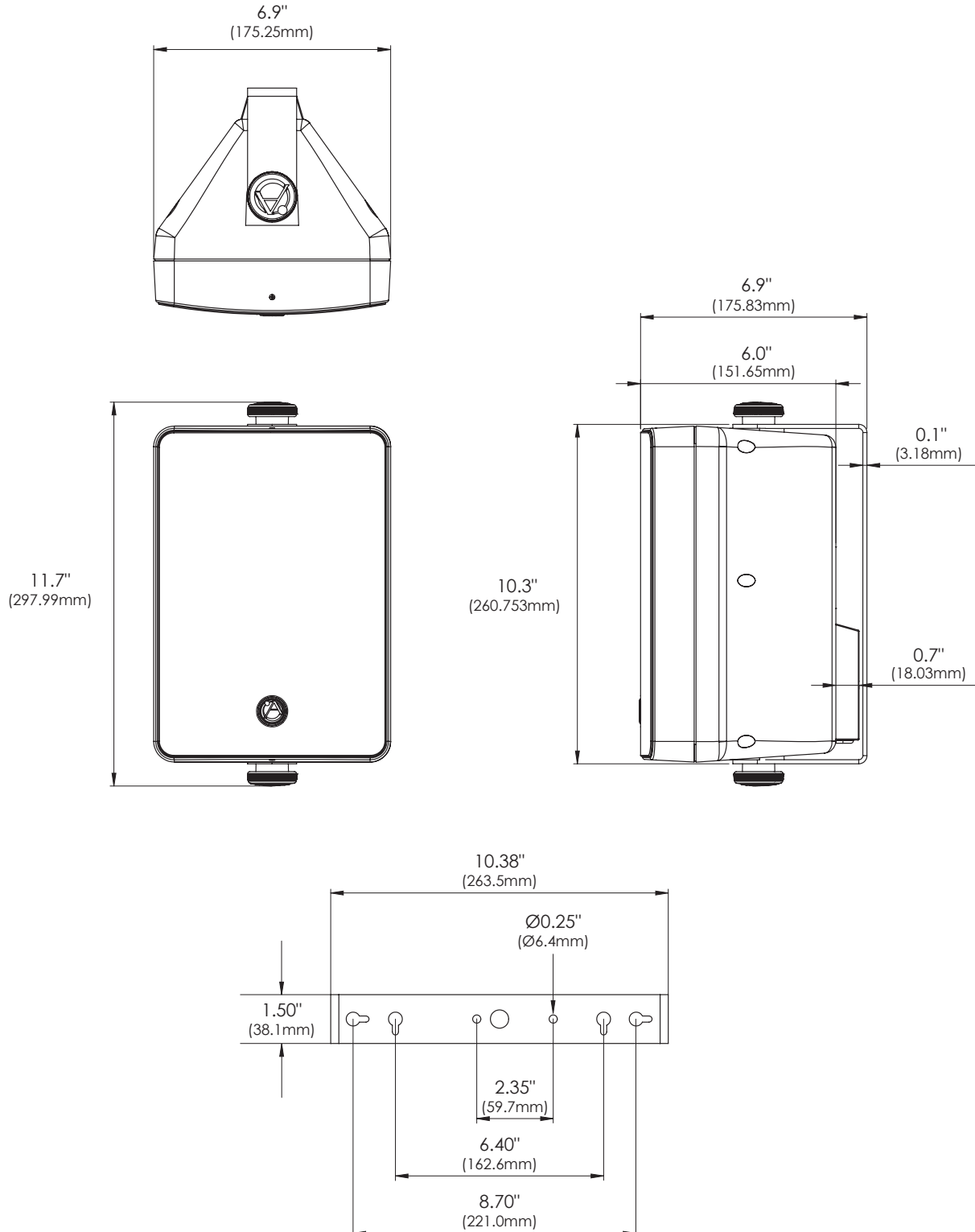
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Frequency Response
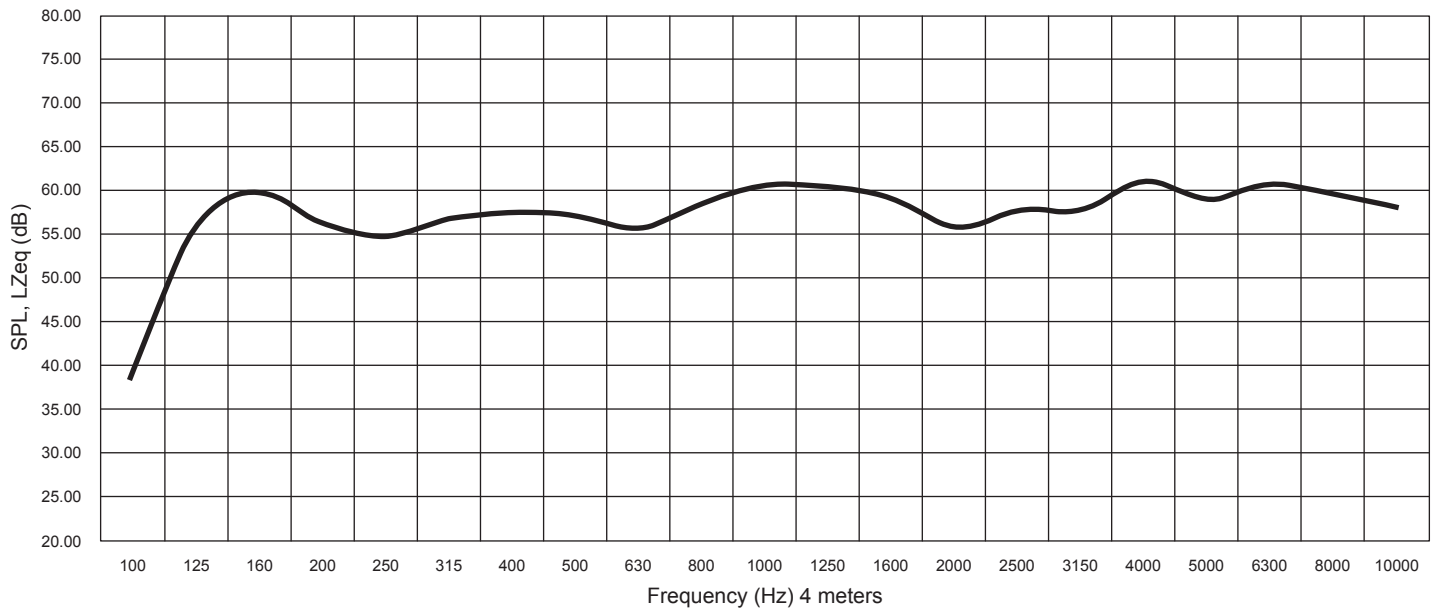
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Horizontal (Figure A) Center Octave Band (Hz)	Rotated right from the reference axis of the speaker (6 dB drop angle)	Rotated left from the reference axis of the speaker (6 dB drop angle)
500	110°	115°
1000	75°	76°
2000	50°	51°
4000	40°	42°

Vertical (Figure B) Center Octave Band (Hz)	Rotated right from the reference axis of the speaker (6 dB drop angle)	Rotated left from the reference axis of the speaker (6 dB drop angle)
500	Note 1	Note 1
1000	70°	70°
2000	60°	60°
4000	12°	18°

Note 1: The 6dB was not reached at 500Hz. The minimum sound level reached is 63dB at 110° for the side A and at 100° for the side B.
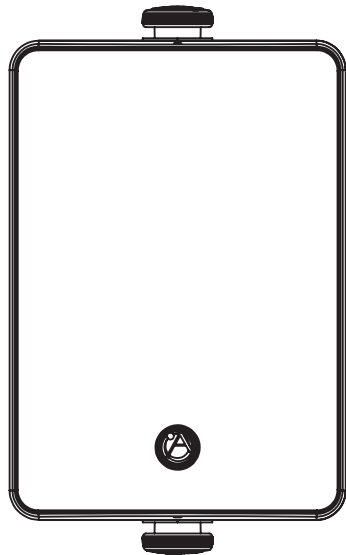
Figure A   Figure B

Reference Axis - A horizontal line running through the center of the speaker, from back to front.

Reference Plane - The facial plane of the speaker.

Reference Point - The intersecting point of the Reference Axis and Reference Plane.

Horizontal Plane - The horizontal plane across the reference point when the device is placed upright.

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Notes

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Atlas Sound LP
1601 Jack McKay Blvd. Ennis, TX 75119 USA
DoP No. 3005

EN 54-24:2008

Loudspeaker for voice alarm systems
for fire detection and fire alarm systems for buildings.

Surface Mount Speakers 30W
SM52TEN Series
Type B

UK Representative:
POLAR Audio Limited
Unit 3, Clayton Manor, Victoria Gardens,
Burgess Hill, RH15 9NB, UK
john.midgley@polar.uk.com

EU representative:
Mitek Europe
23 Rue des Apennins
75017 Paris, France
pp@mitekeurope.com

Limited Warranty

All products manufactured by AtlasIED are warranted to the original dealer / installer, industrial or commercial purchaser to be free from defects in material and workmanship and to be in compliance with our published specifications, if any. This warranty shall extend from the date of purchase for a period of three years on all AtlasIED products, including SOUNDOLIER brand, and ATLAS SOUND brand products except as follows: one year on electronics and control systems; one year on replacement parts; and one year on Musician Series stands and related accessories. Additionally, fuses and lamps carry no warranty. AtlasIED will solely at its discretion, replace at no charge or repair free of charge defective parts or products when the product has been applied and used in accordance with our published operation and installation instructions. We will not be responsible for defects caused by improper storage, misuse (including failure to provide reasonable and necessary maintenance), accident, abnormal atmospheres, water immersion, lightning discharge, or malfunctions when products have been modified or operated in excess of rated power, altered, serviced or installed in other than a workman like manner. The original sales invoice should be retained as evidence of purchase under the terms of this warranty. All warranty returns must comply with our returns policy set forth below. When products returned to AtlasIED do not qualify for repair or replacement under our warranty, repairs may be performed at prevailing costs for material and labor unless there is included with the returned product(s) a written request for an estimate of repair costs before any nonwarranty work is performed. In the event of replacement or upon completion of repairs, return shipment will be made with the transportation charges collect.

EXCEPT TO THE EXTENT THAT APPLICABLE LAW PREVENTS THE LIMITATION OF CONSEQUENTIAL DAMAGES FOR PERSONAL INJURY, ATLASIED SHALL NOT BE LIABLE IN TORT OR CONTRACT FOR ANY DIRECT, CONSEQUENTIAL OR INCIDENTAL LOSS OR DAMAGE ARISING OUT OF THE INSTALLATION, USE OR INABILITY TO USE THE PRODUCTS. THE ABOVE WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

AtlasIED does not assume, or does it authorize any other person to assume or extend on its behalf, any other warranty, obligation, or liability. This warranty gives you specific legal rights and you may have other rights which vary from state to state.

Service

Should your SM52TEN require service, please contact the AtlasIED warranty department through the online warranty claim process.

Online Warranty Claim Processes

1. Warranty submissions are accepted at: https://www.atlasied.com/warranty_statement where the type of return Warranty or Stock return can be selected.

2. Once selected, you will be prompted to enter your login credentials. If you do not have a login, register on the site. If already logged-in, navigate to this page by selecting "Support" and then "Warranty & Returns" from the top menu.

3. In order to file a Warranty Claim, you will need:

    A. A copy of the invoice / receipt of the purchased item

    B. Date of Purchase

    C. The product name or SKU

    D. The serial number for the item (if no serial number exists, enter N/A)

    E. A brief description of the fault for the claim

4. Once all required fields are completed, select the "Submit Button". You will receive 2 emails:

    1. One with a confirmation of the submission

    2. One with a case# for your reference should you need to contact us.

Please allow 2-3 business days for a response with a Return Authorization (RA) number and further instructions.

AtlasIED Tech Support can be reached at 1-800-876-3333 or atlasied.com/support.

Visit our website at www.AtlasIED.com to see other AtlasIED products.

A copy of the DoP can be found at www.AtlasIED.com/SM52TEN

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