



BS-680FC Wall-Mount Speaker



FEATURES

- Innovative design based on the Golden Ratio (1:1.618)
- Quick and easy installation
- Strong all-metal body
- Horizontal / vertical installation
- Wall / in-wall mounting
- Two steatite screw terminal blocks and thermal fuse
- EN 54-24 certified in 2010 (Certificate No.: 1438/CPD/0178)
- In compliance with BS 5839 part 8
- Ideally suited for voice alarm system application

DESCRIPTION

The BS-680FC speaker has a strong, all-metal body, and are ideally suited for voice alarm system applications. 16cm (6") double cone speaker unit ensures high-quality sound. The speaker can be quickly and easily installed in either a horizontal or a vertical orientation.

Either concealed in-wall wiring or exposed wiring can be used for speaker cable connection. BS-680FC is EN 54-24* certified and is therefore legalized for a use in conjunction with fire detection systems. It is also in compliance with BS 5839 part 8. Two steatite screw terminal blocks (1 cable to 1 connection type) allow bridge connection. The selectable input impedance can be easily adjusted by changing the top position of the unit's transformer. Both wall and inwall mounting are possible. The innovative structural design is based on the Golden Ratio (1: 1.618), and also permits direct wall installation with screws, making the speaker unit resistant to falling even if outward force is applied to it.

**EN 54-24: Loudspeaker for voice alarm systems for fire detection and fire alarm systems*

SPECIFICATIONS

| | |
|-------------------------------|---|
| Rated Input | 6 W (100V line), 3W (70V line) |
| Rated Impedance | 100 V line: 1.7 kΩ(6 W), 3.3 kΩ(3 W), 6.7k Ω(1.5 W), 13 kΩ(0.8 W) 70 V line: 1.7 kΩ(3 W), 3.3 kΩ(1.5 W), 6.7k Ω(0.8 W), 13 kΩ(0.4 W) |
| Sensitivity | >94dB (1W, 1m) (500Hz – 5kHz, pink noise) >77dB (1W, 4m) (100Hz – 10kHz, pink noise) according to EN 54-24 >89dB (1W, 1m) (100Hz – 10kHz, pink noise) converted based on EN 54-24 |
| Maximum Sound Pressure Level* | >84dB (6W, 4m) (100Hz – 10kHz, pink noise) according to EN 54-24 >96dB (6W, 1m) (100Hz – 10kHz, pink noise) converted based on EN 54-24 |
| Frequency Response | 150 Hz - 20k Hz (peak -20 dB) |
| Coverage Angle (-6dB) | 500Hz: 180° (horizontal and vertical); 1kHz: 140° (horizontal and vertical); 2kHz: 120° (horizontal), 110° (vertical); 4kHz: 100° (horizontal), 80° (vertical); according to EN 54-24 |
| Environmental type | A (indoor applications) according to EN 54-24 |
| Speaker Component | 16 cm (6") double cone-type |
| Applicable Cable | Solid copper wire:ø1.0 – ø3mm (AWG 18 – 9) |
| Connection | Screw connector (steatite terminal x 2) bridging |
| Finish | Baffle, Cabinet: Steel plate, off-white (RAL 9010 or equivalent color) Grille: Surface-treated steel plate net, off-white (RAL 9010 or equivalent color), paint |
| Dimensions | 310 (W) x 190 (H) x 90 (D) mm |
| Weight | 2.6kg (5.73 lb) |
| Accessory | Rubber grommet x 2, Speaker mounting screw (4 x 16) x 4 |

**TOA's rating is conservative, specifying a 100% confidence level. According to notified body CNBOP the following measures have been verified: 89.7dB at 6W, 4m and 101.7dB at 6W, 1m.*

Note: The specification data was measured in an anechoic chamber.

Reference axis; axis is on the center of grill surface and perpendicular to the grill surface.

Reference plane; plane is on the grill surface and perpendicular to the reference axis.

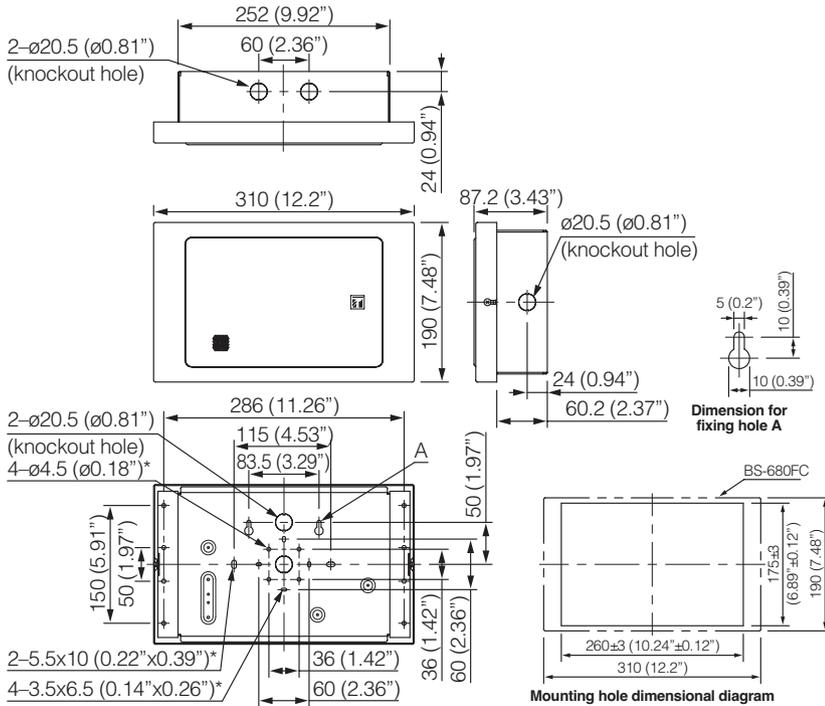
horizontal plane; plane is containing the reference axis and perpendicular the the reference plane



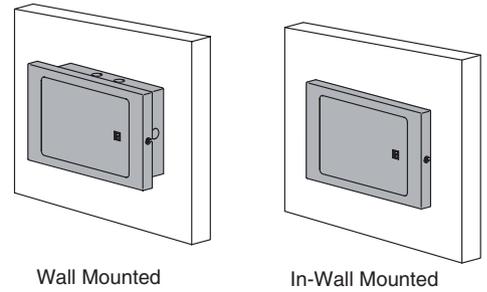
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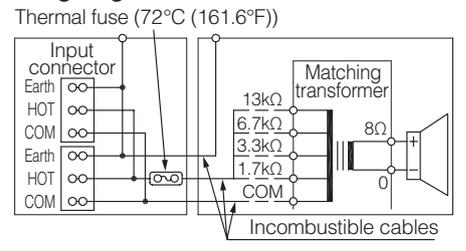
APPEARANCE AND DIMENSIONAL DIAGRAM



Installation Example



Wiring Diagram



*Since no mounting screws are supplied with the speaker, separately prepare them appropriate for the construction of all and its thickness.

ARCHITECT'S & ENGINEER'S SPECIFICATIONS

The speaker shall be a 16 cm (6") double cone-type speaker suitable for wall-mounting. Both wall and in-wall mounting shall be possible. Two steatite terminal blocks shall allow bridge connection. The speaker shall be EN 54-24 certified and compliant with BS 5839-8. The speaker shall include a transformer having multiple taps (0.8W, 1.5W, 3W, 6W at 100V line and 0.4W, 0.8W, 1.5W, 3W at 70V line) adjustable.

The sensitivity at 1W input measured at a distance of 1m shall be 94 dB (500 Hz to 5k Hz, pink noise). The speaker shall have a frequency response of 150 to 20k Hz (-20dB).

The specifications based on EN 54-24 measurement conditions are follows: The sensitivity with 1W input shall be 74 dB at a distance of 4m and 89 dB at a distance of 1m converted based on EN 54-24 (100 Hz to 10k Hz, pink noise).

The maximum sound pressure level with 6W input shall be 84 dB at a distance of 4m and 96 dB at a distance of 1m converted based on EN 54-24 (100 Hz to 10k Hz, pink noise). The coverage angle (-6 dB) shall be: 180 degrees (horizontal and vertical) at 500Hz, 140 degrees (horizontal and vertical) at 1k Hz, 120 degrees (horizontal)/110 degrees (vertical) at 2k Hz and 100 degrees (horizontal)/80 degrees (vertical) at 4k Hz. The environmental type according to EN 54-24 shall be A (indoor application).

The speaker baffle and cabinet shall be constructed of steel plate.

The grille shall be surface-treated steel plate net. The speaker shall be available in off-white color. The unit shall have dimensions of 310 (W) x 190 (H) x 90 (D) mm (12.2" x 7.48" x 3.54"), and a weight of 2.6 kg (5.73 lb).

The wall-mount speaker shall be a TOA model BS-680FC.

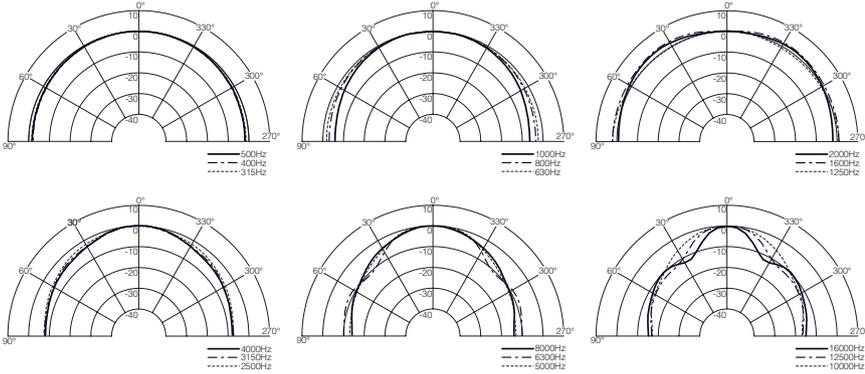


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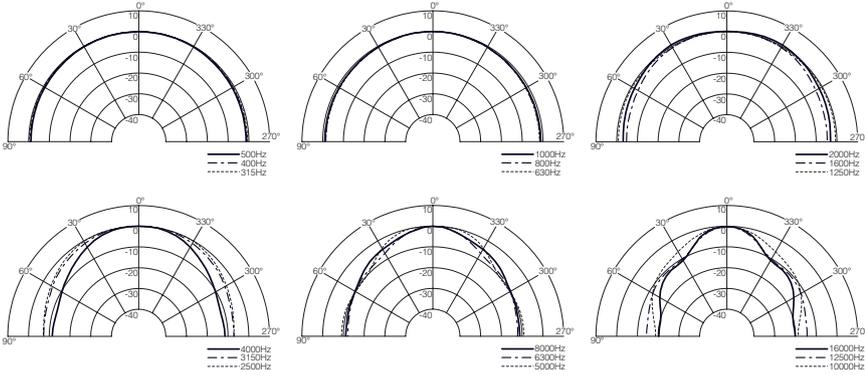


CHARACTERISTIC DIAGRAMS

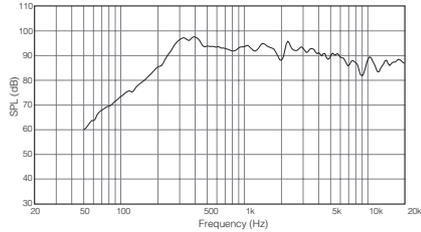
Polar Response (Horizontal)



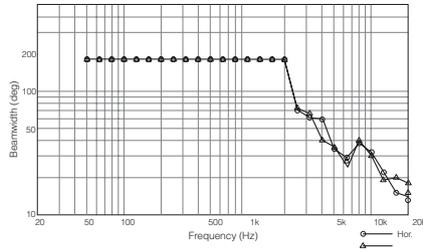
Polar Response (Vertical)



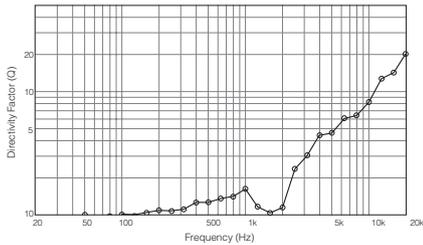
SPL vs. Frequency



Beamwidth vs. Frequency



Directivity Factor vs. Frequency



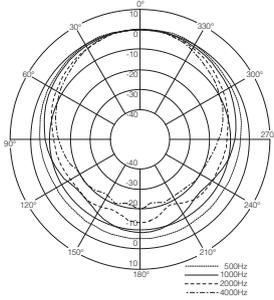


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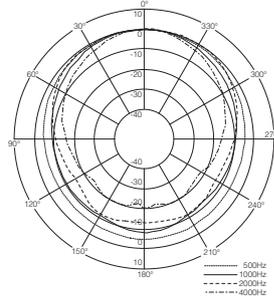


**CHARACTERISTIC DIAGRAMS based on EN 54-24 measurement conditions
(Pink noise, 1W, 4m, Only the BS-680FC without EN baffle)**

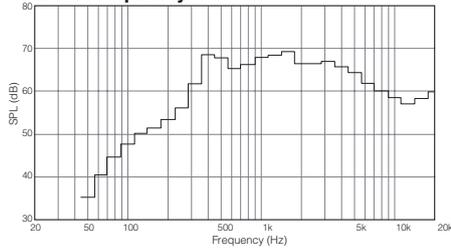
Polar Response (Horizontal)



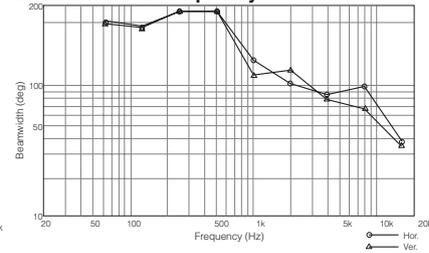
Polar Response (Vertical)



SPL vs. Frequency



Beamwidth vs. Frequency



Directivity Factor vs. Frequency

