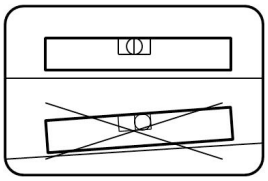
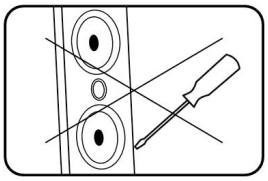
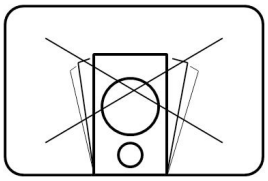
## Safety advice



Choose a plane surface

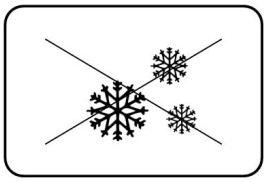


Do not open the loudspeaker

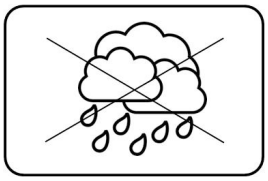


Avoid vibrations

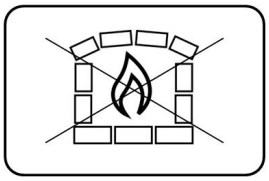
Do not use aggressive, alcohol-based or abrasive cleaning agents



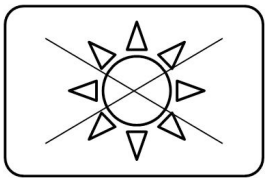
Protect against extreme cold



Avoid moisture



Keep away from heat sources



Avoid direct sunlight

## Troubleshooting

| Problem | Possible cause | Solution |
|---|---|---|
| Lack of low frequency response | - Speaker polarity not correct<br>- Listening or speaker position not optimal | - Check cable connection<br>- Improve listening or speaker position |
| Loudspeaker hums | - Decoupling device missing | - Install absorber or spikes |
| Left and right channel at different levels | - Balance setting on control unit wrong<br>- Output set at different levels | - Re-adjust the amplifier carefully |
| Stage not center positioned | - Speaker polarity not correct | - Check cable connection |

Breaking-in period

The drivers used in the loudspeaker are complex and filigree mechanical devices and require a breaking-in period before they are able to deliver their best performance.
This procedure period depends on temperature and humidity conditions and can last several weeks. In order to shorten this period, we advise to operate your loudspeakers for about 20 hours at medium level using standard music material but with increased low frequency proportion. Once the components are completely broken-in, it is possible to enjoy the full performance of The Reference.

Beware of clipping!

Be careful to set the volume at the correct level particularly when dealing with low power amplifiers to avoid damaging the loudspeakers. In case of audible distortion decrease the volume immediately.

Conditions of guarantee

The Reference speakers warranty is covered by Ground Zero´s local distribution partners and their terms and conditions. For further information contact your local retailer or distributor.
Positioning and connection has to done according the owner´s manual. Ground Zero cannot accept any responsibility for damages or accidents caused by inappropriate positioning or connection.

GROUND ZERO®
GERMAN ENGINEERING

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www.ground-zero-audio.com - info@ground-zero-audio.com

# The Reference

GROUND ZERO®

## Owner´s manual

Thank you for purchasing the handmade high end loudspeakers
The Reference by Ground Zero
These loudspeakers are designed and developed in Germany
for most sophisticated music reproduction.

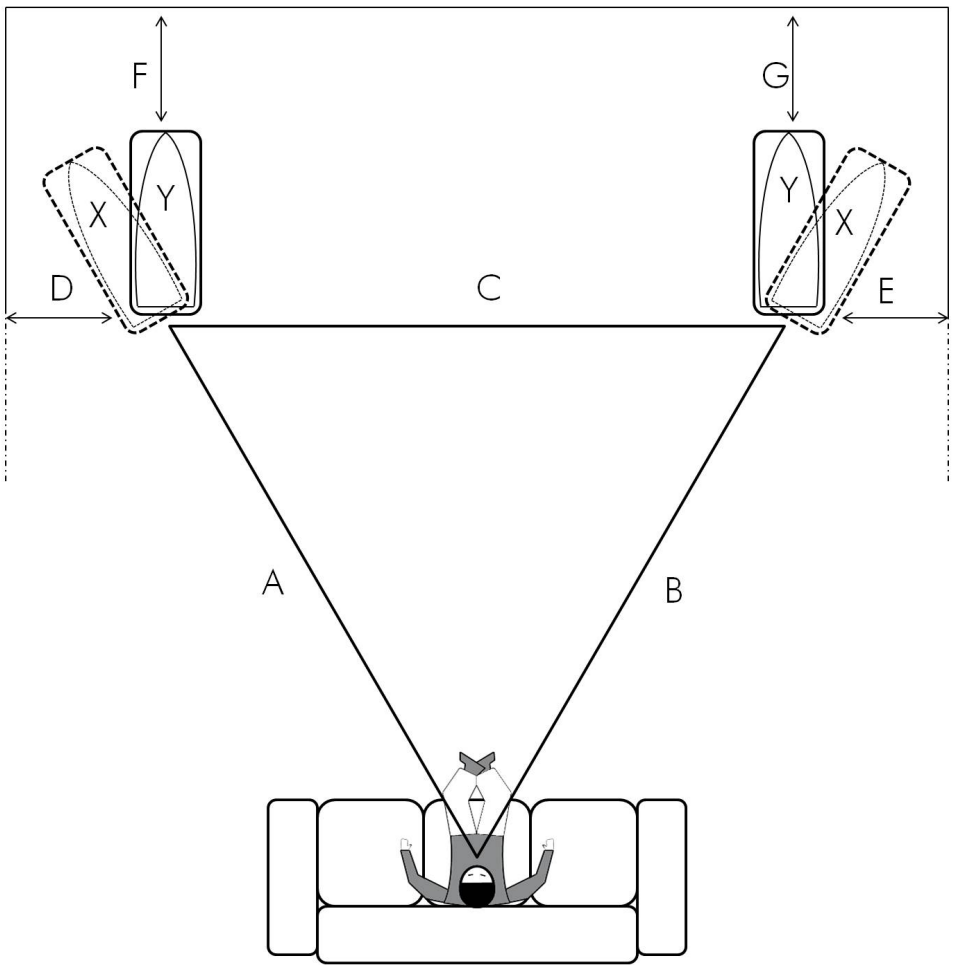
Serial number: _____

Technical highlights

- 2 Way D'Appolito technology creating a realistic 3-dimensional sound stage and ambience
- High end Made in Germany drivers and crossovers
- Klippel® optimized 18 cm / 7" mid woofers with coated paper cone
- 28 mm / 1.1" tweeter with 2-layer hand coated silk dome
- 18dB Mundorf® crossover with high end Mcaps® and baked wire treatment Mcoils®
- Low resonance tear-drop shaped bass-reflex enclosure with multi-layer high gloss painting
- High efficient downfire technology extending the low frequency response

RESPECT THE MUSIC

# Perfect listening position




Stereo triangle

- Option1: **A** = **B** = **C** = min 2meter (6.56ft)
- Option 2: **A** = **B** = **C**-33% = min 2meter (6.56ft)
  [ Example A = B = 3m (11.8ft) and C=2m (6.56ft) ]

Distance to side walls

- **D** = **E** = min 1meter (3.28ft)

Distance to rear wall

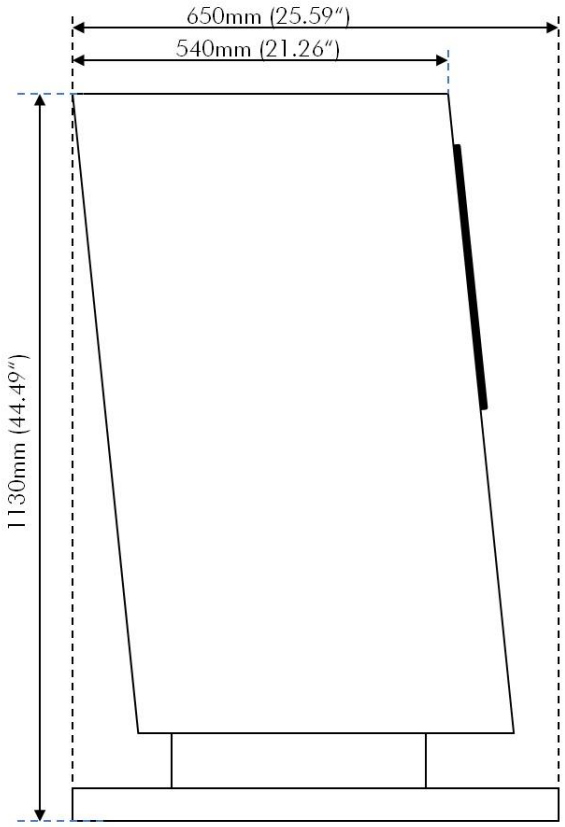
- Option 1: **F** = **G** = 1 - 2meter (3.28 - 6.56ft) = Bass Level 0dB
- Option 2: **F** = **G** = 0.5 - 1meter (1.64 - 3.28ft) = Bass Level ~+3dB
- Option 3: **F** = **G** > 2meter (>3.28ft) = Bass Level ~-2dB

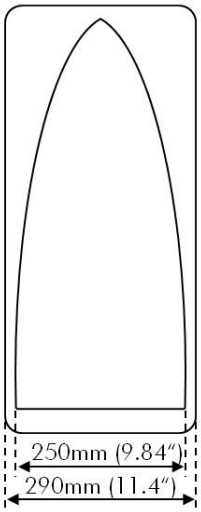
Speaker alignment

- **Y** = ~30° off-axis = Low damped rooms with hard floor and blank reflecting walls around
- **X** = On-axis = Highly damped rooms with carpet and damping furniture around

# Technical specifications

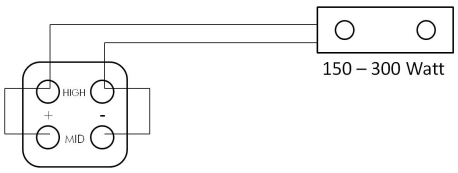
- Type: Floorstand 2 Way D'Appolito, downfire-bass-reflex
- Power requirement: 150 – 300 Watt
- Impedance: 3 – 6 Ohm
- Impedance minimum: 2.8 Ohm
- Frequency response: 30 – 25000 Hz
- Crossover frequency: 1950 Hz (18 dB)
- Recommended temperature range: +10°C - +40°C
- Dimensions (without spikes): 1130 x 650 x 290 mm / 44.49" x 25.59" x 11.4"



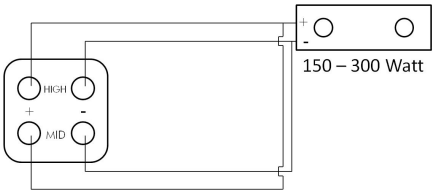




# Wiring instruction

Standard connection




Bi-Wiring




Bi-Amping