

Ground Zero GZIC 165.2HE
- entry-level component system for car radios

Loud is good



► Ground Zero is expanding its Iridium series with a 6.5" component system that makes perfect sense, especially in the budget class. We take a look at what makes the GZIC 165.2HE so special.

Inexpensive speakers are often powered directly by the car radio. Anyone who upgrades with a retrofit amplifier costing over \$100 will likely want to choose speakers that perform better. At Ground Zero, the Iridium series is ideal for beginners, offering a wide range of component, coaxial, and flat

speakers. In the 6.5-inch component lineup, you will find a flat component, a SPL version, and the standard GZIC 165.2, with the HE now being the fourth addition. HE stands for High Efficiency, meaning Ground Zero aims to provide a system with maximum dB per watt. Why does



Woven lead wires and a powder-coated steel frame on the mid-bass driver

this matter? High efficiency allows for high sound pressure levels with low amplifier power, which is relevant to car radio use. A car radio chip typically outputs around 15 watts, which is minimal compared to aftermarket amplifiers. Therefore, using a high-efficiency speaker with a car radio helps achieve reasonable listening levels.

How does the GZIC 165.2HE differ from the standard 165.2? At first glance, it doesn't seem much. The small tweeter with its 19-millimeter Mylar plastic dome remains unchanged – no surprise, since tweeters are always loud and are balanced by resistance in the crossover. Our HE mainly differs in the midbass driver, specifically in its motor, which is defined by the parameter $B \cdot l$ (magnetic flux density multiplied by the length of the voice coil wire). To create a more powerful motor with the same magnet size, the only solution is to increase l . The HE 6.5" accomplishes this by using flat wire wound on edge, allowing more turns to fit into the air gap. Additionally, a common technique has been used: the wire resistance and coil impedance are reduced from 4 ohms to 3 or 2 ohms, causing the amplifier to deliver more current and consequently more power. These measures enhance the loudspeaker's efficiency, especially in the midrange, which is why a phase plug was used in the HE instead of a dust cap to improve radiation characteristics, despite overall benefits in difficult door mounting situations.

Measurements and sound

As expected, our GZIC 165.2HE stands out with its solid sound pressure. At 2.5 ohms, the DC resistance is at the lower limit for a 3-ohm speaker, but there's no need to worry about the radio; it's fine. We measure a sound pressure level (2V, 1m) of just under 89 dB, roughly 5 dB higher than the GZIC 165.2. And 5 dB makes a big difference: the HE requires only about a third of the power to achieve



The HE motor can only be recognized by the lettering; the HE technology is hidden inside



Ground Zero GZIC 165.2HE

Price	120 Euro
Distributor	Ground Zero, Egmatung
Hotline	08095 873830
Internet	www.ground-zero-audio.com

Rating

Sound	55 %	1,2	■■■■■
Bass	11 %	1,5	■■■■■
Neutrality	11 %	1,5	■■■■■
Transparency	11 %	1,0	■■■■■
Spatial imaging	11 %	1,0	■■■■■
Dynamics	11 %	1,0	■■■■■
Lab	30 %	1,2	■■■■■
Frequency response	10 %	1,5	■■■■■
Max. SPL	10 %	1,0	■■■■■
Distortions	10 %	1,0	■■■■■
Practice	15 %	1,5	■■■■■
Crossover	10 %	1,5	■■■■■
Build quality	5 %	1,5	■■■■■

Specifications

Basket diameter	165 mm
Mounting diameter	143 mm
Mounting depth	65 mm
Magnet diameter	90 mm
Membrane tw	19 mm
Casing tw	41 mm
slope wf/tw	-12 dB
Tweeter protection	PTC
Tweeter level adjustable	0, -3 dB
Grid	-
Others	-
Nominal impedance	3 Ohm
DC resistance Rdc	2,47 Ohm
Coil inductivity Le	0,16 mH
Coil diameter	25 mm
Membrane surface Sd	139 cm ²
Resonance frequency fs	79 Hz
Mechanical Q-Factor Qms	5,56
Electrical Q-factor Qes	1,86
Overall Q-factor Qts	1,39
Equivalent volume Vas	10,3 l
Moved mass Mms	10,7 g
Rms	0,97 kg/s
Cms	0,37 mm/N
B x l	2,67 Tm
SPL 2 V, 1 m	89 dB
Recommended power	20 – 75 W

Ground Zero GZIC 165.2HE

Middle Class 1,2



Price-Performance: very good

"Really well made, especially for car radios"

the same SPL as the 165.2. The midbass driver's frequency response is excellent, featuring an unfiltered polymer membrane. The crossover manages the tweeter, which only begins at 5 kHz—the small plastic dome is well protected. However, this is the weakest point of the GZIC; for EUR 120 at specialized stores, you can't expect miracles. Still, the HE offers a generally balanced and enjoyable sound. Voices and instruments come through very clearly, and there is sufficient bass despite the HE's high resonance frequency. The HE's strength is typical of high-efficiency systems: it sounds dynamic and lively, unlike systems that often come across as sluggish due to limited motor power.

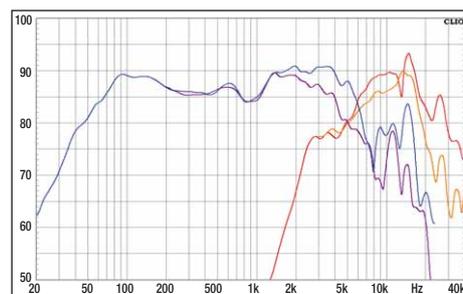
Conclusion

Although three GZIC 6.5" models already exist, the GZIC 165.2HE clearly expands the lineup. For just EUR 120, you get a well-designed system that is also compatible with car radios.

Elmar Michels



The HE comes with a small plastic dome tweeter



With just under 89 dB at one watt, the HE 6.5" is louder than average and also works perfectly without a crossover. The tweeter does not quite reach 20 kHz and has a small resonance before that



The compact crossover houses a 12 dB filter for the tweeter