



**Ground Zero GZPK 165SQ-C/GZPM 80SQ-C/GZPT 28SQ
- Sound Quality meets Power**

Noble three-way loudspeakers

► With the Plutonium-SQ components, Ground Zero wants to enter an area that can be described as "affordable high-end." With pair prices of 300 to 600 EUR for the speakers, you end up with 1,500 EUR in the case of our three-way combo - perhaps unattainably expensive for average consumers but well within reach for ambitious high-end buyers.

After Ground Zero went over the top with the ULTRA components (the two-way system costs about EUR 4,000) last year, they launched the „pursuer system“ under the Plutonium label. The Reference series doesn't count since it currently only features tweeters. The previous Plutonium-SQ system is now also almost ten years old, so action was needed. The result is an ensemble of speakers with a high-quality appearance. In our test, we have a three-way system with a 6.5" woofer, an 8" midrange speaker, and a tweeter. There are currently no passive crossovers, and we don't miss them because, in the digital age, a DSP takes over this job.

The three drivers are new developments and have nothing in common with their predecessors. Baskets, cones, motors, everything is new. The GZPT 28SQ tweeter is the most recognizable as a typical relative of other Ground Zero tweeters. This is simply because the people from Egmatung have their distinctive style of tweeter construction. The GZPT 28SQ also relies on a large 28mm silk dome tweeter with a hand-applied coating. The tweeter is also the only one of the trio to be manufactured in Germany. The grille is held in place magnetically, making it easy to remove. The body is made of polished stainless steel and is very heavy and solid. The mounting depth is 35 millimeters, nine due to the terminal alone. The terminal is exceedingly stable and offers plenty of space for a short-circuit-proof connection. Of course, the case houses a rear chamber connected to the volume under the dome via holes and filled with damping material.

Like the GZPK 165SQ-C woofer, the GZPM 80SQ midrange driver relies on a ceramic cone. This is nothing unusual at Ground Zero, but the cones themselves are a novelty. The base material is aluminum, electrochemically coated with a ceramic layer. This results in a sandwich diaphragm in which the ceramic coatings grant an enormous hardness but still have a certain amount of damping due to the sandwich construction. This is to achieve a perfectly „piston-like“ behavior typical of stiff diaphragms but with relatively little „hard“ resonance above the working range. The woofer has a new, picture-perfect aluminum die-cast frame with generous vents that point downward.

The tweeter, with its large rear chamber, is easily recognizable as a typical Ground Zero

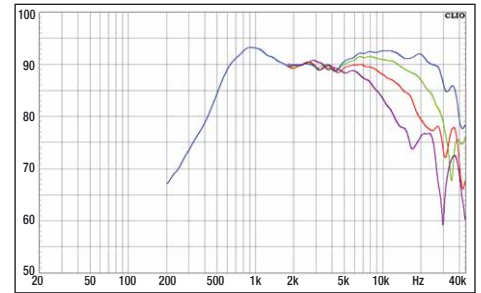
The woofer features a wide spider and a large 38 mm voice coil

The midrange driver uses a full neodymium motor with a strong magnetic ring

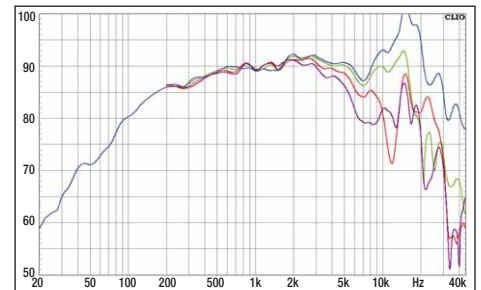


Meanwhile, the spider is pleased with a wide support circle that provides it with optimal working conditions. The relatively large voice coil has a diameter of 1.5 in, which is good for power handling. The motor does not work with neodymium as in the ULTRA and Uranium 165s, but not ferrite as in the Nuclear, either. Here we are dealing with a hybrid motor. In this case, that means that both a ferrite and a neodymium ring are used. From a purely external perspective, this does not save any significant volume or mounting depth. Still, using two magnets allows the magnetic field in the air gap to be amplified and, above all, linearized, which is good for distortion behavior, among other things. The midrange driver has a similar cone to the woofer, except that the 80 uses a soft rubber dust cap instead of a hard-polypropylene cap like the 165. The small one also has a well-ventilated cast frame and just as high-quality terminals, which are even bent in the 80 and, therefore, for once, do not interfere with the installation. The motor of the GZPM 80SQ uses neodymium, of course, because a compact design has priority here. And we are talking about a full-fledged motor with a thick neodymium ring instead of a small neodymium pill inside the coil. The coil is

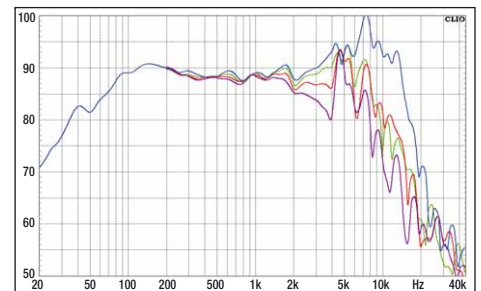
A large 29 mm fabric dome comes to light under the magnetically mounted grille



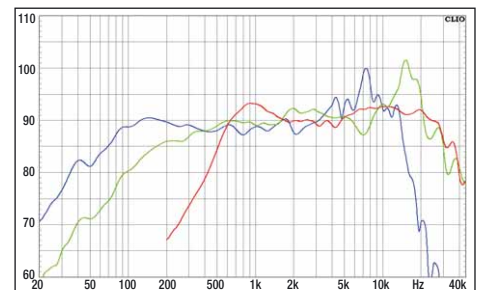
The GZPT 28SQ offers the best performance from 1 kHz, so you can't blame it for "only" running up to 20 kHz.



The midrange driver has plenty of characteristic SPL. Its cone resonance only occurs at 15 kHz and is thus very nicely shifted to high frequencies



The GZPK 165SQ-C runs perfectly up to a solid 3 kHz. Above that, resonances become apparent, especially at 4.7 kHz, which are inconspicuous on the axis, but at 30° and 45° are even louder than on the axis.



The three drivers match nicely with their characteristic SPL. They overlap each other quite well so that crossover design will not be an issue

Three vents instead of one pole piece ventilation ventilate the midrange driver's motor



The frame and terminals are beautifully made. Under the chrome cap hides a hybrid motor with ferrite and neodymium

only 19 millimeters in diameter, enough for such a small driver and good for a low moving mass. The motor is protected with a metal cap, whose appearance is probably not yet final since our test object is the golden sample for production release.

Measurements and Sound

We immediately notice that the hybrid drive of the GZPK 165SQ-C is very effective from the high Bxl product, which reflects the magnetic flux density and the wire length in the air gap. Likewise, we attest to the 6.5 „s above-average 89 dB at 1 W. The frequency response is flawless up to 3 kHz, except for a slight dip at 1.8 kHz. Below 4 kHz, there is almost no distortion, even at significantly increased levels. The 165 plays not only extremely clean but also very level-stable. Above 4 kHz, the cone becomes noticeable with resonance phenomena and somewhat delayed decay - a price you must pay. The GZPM 80SQ midrange driver, one of the rare drivers that work almost perfectly, shows that it can be done even better. It runs up to 6 kHz, and the cone resonances only appear at 15 kHz, well above the working range. Distortions are almost non-existent. Even at extreme SPLs, the distortion stays below 0.5% - wow! At low frequencies, the midrange also behaves exemplary. With a 100 Hz resonance frequency and negligible distortion, you can use it from 200 Hz. As always, a little higher is better for the maximum level. There are no surprises with the tweeter. The GZPT 28SQ does its job exceptionally well, as expected. With its resonant frequency of 790 Hz, it delivers full SPL already at 1 kHz. It can be used from 1.5 kHz and belongs to the broader-band twee-

ters. At the top end, it is still enough for just about 20 kHz; here, the large dome exchanges a HiRes-like upper cutoff frequency for better performance in the lower frequency range. You don't have to worry about distortions with fabric domes anyway, also not with the GZPT 28SQ.

Regarding the sound, the three-way set belongs to the honest, high-resolution representatives. The Ground Zeros play straightforwardly and firmly, giving breathtaking insights into the recording. Here, a lot comes to light that is lost with other speakers. It pays to play top-notch program material; then the sun rises when the Ground Zeros conjure up lifelike music on the stage. The bass can hammer ultra-precisely and pounds out loose, dust-dry bass drums. Both male and female voices sound authentic and aren't glossed over. The listener always has the impression that everything sounds as it should. When necessary, it becomes exceptionally dynamic, for example, with percussion, but guitars also come across as almost brutal at full SPL. In contrast, the fabric tweeter always adds beautiful details to the soundscape, ultimately removing any harshness. This works splendidly and is fun on the highest audiophile level.

Conclusion

It may sound strange to budget-minded readers, but these Ground Zero components offer fantastic value for money. The GZPK 165SQ-C, GZPM 80 SQ, and GZPT 28SQ are the perfect choice for those who like their sound high-end and dynamic.

Elmar Michels



GZPK 165SQ-C/GZPM 80SQ-C/GZPT 28SQ

Price	um 1.500 Euro
Contact	Ground Zero, Egmatting
Hotline	08095 873830
Internet	www.ground-zero-audio.com

Rating

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

Specifications

Basket diameter	165 mm
Mounting diameter	144 mm
Mounting depth	70 mm
Magnet diameter	98 mm
Basket diameter mid	94 mm
Mounting depth mid	41 mm
Membrane tw	28 mm
Casing tw	48 mm
Highest xo freq. wf/mid	3/7k Hz
Lowest xo freq. mit/tw	200/1,6k Hz
xo freq. used	-
Grilles	• / • / •
Others	-
Nominal impedance	4 Ohm
DC resistance Rdc	3,29 Ohm
Coil inductivity Le	0,20 mH
Coil diameter	38 mm
Membrane surface	127 cm ²
Resonance frequency fs	47 Hz
Mechanical Q-Factor Qms	5,81
Electrical Q-factor Qes	0,47
Overall Q-factor Qts	0,44
Equivalent volume Vas	18,4 l
Moved mass Mms	14,1 g
Rms	0,71 kg/s
Cms	0,82 mm/N
B x l	5,37 Tm
SPL 2 V, 1 m	89 dB
Recommended power	50 - 200 W

GZPK 165SQ-C/GZPM 80SQ-C/GZPT 28SQ

Absolute Top Class 1,1

CAR & HiFi 4/23

Price-Performance: very good

"Outstanding measurement results and audiophile-dynamic sound."