# Holoprofile

Thirty years of contemplation, discovering so much, perhaps too soon, an exotic showered with recognition but always true to one credo:

There are many approaches – but only one solution, and the solution is simple ...MANGER Holoprofile.

*The things we hear…*

We hear more from music recordings today than ever before. So much so that, often, it's hard to believe all that we do hear. Then, with newer, more sophisticated testing and glossier brochures making unprecedented claims and promises, we come along…

Welcome to Mellrichstadt, a small remote town located in the southwestern region of Germany and birthplace to the most fundamental approach to stereophonic reproduction – the all-important concept of "time-coherence."

Our sense of hearing is at least 10 times more powerful than our sense of vision. Moreover, we are capable of hearing sound within a hundredth of a millisecond – 1,000 times faster than the first reception of sound. Furthermore, our ears do not suddenly quit when recognizing dynamic changes in air pressure, which cause the eardrum to oscillate by less than the diameter of a hydrogen atom. Rather, they evaluate each noise at the speed of sound, processing information, which is essential for human survival.

By splitting the progression of the sound pressure into individual zones, which result from the position of its zero-point, and, too, given the type of increase in pressure and the pressure equalization, our hearing is able to determine the location, size, and character of the sound source (Fig.1). So it comes as no surprise, then, that even the smallest change in the sound pressure progression is enough to irritate our hearing.

Therefore, the most important criterion for a good loudspeaker should be a reproduction of the progression of the sound pressure that matches its natural behavior – which, today, is seldom the case (Fig. 2 – 5).

Laboratory measurements have shown that most loudspeaker chassis suffer from mechanical irregularities and, therefore, do not reproduce the input signal correctly and appear as the actual source of the sound, a problem mainly caused by natural vibration behavior.

*The electrical input information (2), the theoretical optimum step response (3), and the step response of a renowned reference loudspeaker in practice (4)…*

*…compared with the MANGER sound transducer (5).*

With absolutely no natural vibration, the MANGER transducer is as unique in its design and engineering as it is in its sound reproducing abilities. Manufactured to exacting specifications, each MANGER transducer is completely made by hand, as there is no modern machinery capable of meeting the technical challenges of the manufacturing process required for the transducers.

Manger Products • Industriestrasse 17 • D-97638 Mellrichstadt • Tel. +49 9776 9816 • Fax +49 9776 5925 • eMail: info@manger-msw.com

*From the best position on earth…*

Regardless of all the progress that has been made in the field of sound reproduction, i.e., stereophonic, one phenomenon has remained unalterable, until now. Namely, the law of the "stereo triangle." The more the listener moves away from his usual listening position, toward the apex of the triangle, the more the stereophonic spatiality is reduced and becomes comparatively flat due to the fuzziness created at the edges of the sound-image.

Therefore, using advanced comprehensive tests and computations, Josef W. Manger, inventor of the MANGER sound transducer and winner of Germany's prestigious Diesel Award for excellence in engineering has succeeded in identifying the causes. His research showed that the more the listener distances himself from the center axis of zero of a loudspeaker chassis, the stronger is the change in the origin of the sound pressure progression (the position of its zero point) and, therefore, the spatial assignment of the signal as well.

> *…"the more the listener distances himself from the center axis of zero of a loudspeaker chassis, the stronger is the change in the origin of the sound pressure progression…"*

This results from a phenomenon that can be attributed to a fault in all loudspeaker chassis. What Manger discovered during his research and development was that all input signal information is already imaged by half of the loudspeaker driver's membrane surface, with the other half only repeating the input signal (like a shadowy counter-image). This peculiarity not only lead to having two loudspeakers at the listening position, but four auditory images (eight with two-way speakers) having to be brought into congruity – a physiological impossibility, and does not occur in nature. Worse, yet, is the fact that the further the listener moves away from the apex of the stereo triangle, the more the auditory images are displaced and spatiality becomes unclear.

The ideal solution, then, is the new MANGER Holoprofile. Mounted directly onto the chassis, the Holoprofile is uniquely engineered to cover half the surface of the membrane while allowing the entire surface to generate the desired sound pressure. Amazingly, the shadowy counter-image is completely faded out.

*Measurements: When using a MANGER Zerobox loudspeaker fitted with the new Holoprofile, the signal remains the same at all measured angles, resulting in superb sound reproduction throughout the listening room.*

This amazing result is just as surprising as it is clear. The listener experiences a holographic reproduction of the music, which was not possible until now. Additionally, all musicians and their instruments can be enjoyed from various angles in the listening room with no loss of information. With the Holoprofile, we can enjoy music's finest nuances, such as a barely perceptible vibrato or the tiny deviations in the intonation, all of which excite and fascinate us.

The recognition and localization of a sound event remains absolutely clear, irrespective of the listening position. In other words, the MANGER Holoprofile spells the end of the "stereo triangle" and is a music-listening experience waiting to be enjoyed.

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