



# FLAT Driver Units

## FLAT Speaker Technology



FLAT C-90

Fs: 27Hz  
Sensitivity: 95dB/1m  
Impedance: 8 ohms



※写真はシルバーです。

FLAT S

Freq.Resp.: 40Hz ~ 19,000Hz  
Sensitivity: 95dB/1m  
Impedance: 8 ohms



FAL AMT S

Fs: 1200Hz  
Freq.Resp: 1200Hz ~ 27KHz  
Impedance Characteristics:  
Flat  
Size: 115x90x85mm

### FAL FLAT C and FLAT S Full Range Drivers: Flat Impedance over full range

It is ideal to design a diaphragm with a material being light in weight, strong, and containing air within it. However, most conventional speakers have diaphragms containing no air, though weight- and strength-wise they are acceptable.

FAL FLAT speaker diaphragm contains air most in the world. To let air be contained more, the diaphragm has thickness of 4mm and equally contains air like in a honeycomb structure as employed in an aircraft. The air contained in the diaphragm functions to cancel consonant peculiar to the material to reproduce music, resulting in overall well balanced reproduction free of mannerism.

Magnetic circuit structure is also designed with FAL original technology. Its biggest feature is that the magnet sits at right angle against the diaphragm. By the nature of the magnetic circuit structure, voice coil nucleates to allow its movement vertically but not horizontally. Therefore, impedance characteristics show flatter response, and result in super sound balance.

The supporting edge is double structured so as not to twist the long diaphragm. Herewith, its spirality has been lessened to 10%. Current version introduces a synthetic skin for the edge to secure semi-permanent life.

When magnetism is weak, the diaphragm runs out of magnetic field and becomes hard to be damped. When damping is not effective, sound resolution is beyond our control. FAL FLAT speakers feature powerful neodymium magnet N45 to achieve perfect damping by controlling useless movements of the voice coil. Thanks to such technologies, realistic and vivid reproduction of texture of each musical instrument is now possible.

### FAL Original Air Motion Transformer (AMT S) small type Mid and high range driver

FAL has succeeded in fulfillment of originally inventor Dr. Oscar Heil's fundamentals on plenty harmonics, surer and more magnificent sound, and transparency.

Unlike conventional speakers, AMT system inhales and compresses air, and emits it like a jet engine. Namely the least kinetic energy assures highly efficient and perfect mid and high range. No other system can approach the ideal reproduction. Adoptions of N45 neodymium magnet and high grade diaphragm have made the dream more realistic.

Technical Principle: More powerful but light weight elements placed within magnetic field are formed in pleated sheet like the accordion. The pleats face and pull at each other, when a signal current flows in the conductor area on each pleat, compress the air inside, and emit. Since it is pleat structured, a single diaphragm naturally emits the equal sound forward and backward for the best sound presence. Namely the element moves not as a diaphragm but just supports the motion of conductive area, which helps the air directly drive the air (Air Motion). This means this driver has actually no diaphragm so assures no transmission loss and distortion, and has superb transient response. As the result, initial rise time is 20% of conventional dynamic speakers, and it precisely converts audio signal from an amplifier to air energy so that not only the texture of each musical instrument but reverberation elements can be precisely reproduced. Its transient response best matches FAL FLAT-C and FLAT-S engines. Further, AMT's dynamic range is quite wide so it also demonstrates the distinguished playback of digital music.