



## Capelo Technology Validation Test

**Purpose of Test:** To test the impact of Capelo technology in reducing distortion in loudspeakers.

**Date of Test:** 21<sup>st</sup> April 2017

**Test conditions:** To test loudspeakers with and without Capelo technology.

### Measurement setup.

The measurements were performed indoors at the Lorantz Factory having an open area of 500 sq meters. We tested a quad array of sealed loudspeaker cabinets fitted with Fosgate 12 inch, 4 ohm drivers. The loudspeakers were position on the floor radiating upward. The enclosures had a total internal volume of 100 liters. The array was driven by a four channel amplifier either directly (Reference setup) or via a signal conditioner/processor inserted at the amplifier input (Capelo set-up). This equipment was supplied and set up by the client under our observation. The Bruel and Kjaer test microphone was positioned at 30cm above the array and on the geometrical center. During all the tests the driving amplifier, loudspeaker position and microphone position remained unchanged.

**Reference set-up:** A signal source is fed through a buffer directly to a multichannel amplifier driving multiple drivers in the compound loudspeaker.

**Capelo set-up:** A Capelo circuit is inserted at signal level into the Reference system.

### Test Equipment

#### Microphone

Bruel and Kjaer 4133 microphone S/N 119754, sensitivity calibrated with Bruel and Kjaer 4230 microphone SPL calibrator.

#### Microphone Preamplifier

Bruel Kjaer 2619 preamplifier and Bruel Kjaer 2608 measuring amplifier.

#### Software

Room EQ Wizard (REW) software, operating at a fixed sine wave excitation signal with FFT spectrum analysis.

#### Sound Card

Sound Blaster model SB0460 running at 24-bit/96kHz quality.

**Location:** Inside Lorantz factory floor area 500 sq meters.

**Test runs:** 20 Hz and 30 Hz tones selected to be well below cut-off so as to show up harmonic distortion. This was a one-off test with no adjustments to find the most favorable outcome.

**Test Results:** The primary harmonics were reduced as follows:

Frequency of test	20 Hz	30 Hz
Reduction of 2 <sup>nd</sup> harmonic with Capelo	21 dB	20 dB
Reduction of 3 <sup>rd</sup> harmonic with Capelo	18 dB	19 dB

Refer to FFT charts below for more detail.

**Statement of verification:** This is to confirm the test was carried out professionally and accurately and the results are valid.

Tests performed by: Michail Barabasz – for more info visit <http://www.audioxpress.com/article/michail-barabasz-to-speak-at-the-loudspeaker-sourcing-show-2016>

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