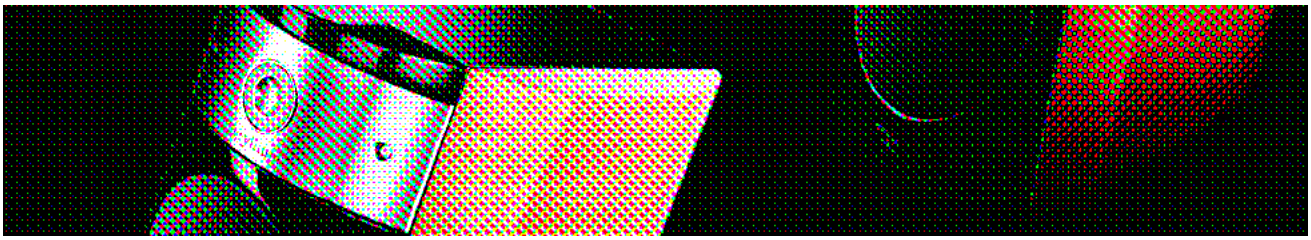


Four Quality Stand-Mounts

MARTIN COLLOMS ASSESSES FOUR HIGH QUALITY COMPACT SPEAKERS FROM GURU, FOCAL, OPERA AND SONUS FABER

HIFICRITIC SEPTEMBER / OCTOBER 2008

Opera Callas

Italian loudspeaker maker Opera might be seen as a counterpoint to Sonus Faber, as both are based in the Veneto province of North East Italy, in the hinterland behind Venice. Opera shares a factory just outside Treviso with sister company Unison Research, best known for its considerable variety of single-ended valve amplifiers. A previous Callas mini monitor had a conventional two-way driver line-up, but this new version is a larger, more costly and complex affair with multiple tweeters.

Priced at £2,195 in cherry or mahogany and £2,349 in piano black, the deep transparent gloss lacquer on the 30mm thick side panels is certainly eye catching, looking more like glass than paint. Once unpacked you cannot miss the distinctive driver formation, with tweeters placed above and below the central bass/mid driver, and three more on the back, the latter protected by perforated steel grilles for safe handling of the enclosures. The underlying idea was pioneered in a larger floorstanding model. According to Opera the purpose is: “to create at home the emotion and pleasure of listening to music: to provide a musical, focused, three dimensional soundstage with the correct timbre, dynamics and detail – and to do this with no sense of listening fatigue”. Every speaker ought to perform like this, so assuming that for now that such a goal is possible, how does Opera go about achieving it? It calls the tweeter arrays a ‘doublet’ and a ‘triplet’ and endows them with particular directional properties by controlling the phase and frequency drive to the individual units. The front pair operate in parallel at lower frequencies, usefully improving power handling in view of the low specified 1.5kHz crossover point, while above about 5kHz the upper tweeter is rolled off to allow the radiated beam to be directed upwards, this ‘lobe’ driven by the lower main tweeter. This is said to increase the sensation of image height. All three front drivers are operative from about 800Hz to 2 kHz, and in this range the vertical radiation angle is narrowed due to the overall height of this composite source. The rear triplet operates from about 2 kHz and creates a laterally dispersed, secondary output to direct more upper frequency energy into the back of the soundfield. The idea is to supplement the falling off-axis behaviour seen with a conventional design by adding some degree of omni directionality. This idea was explored in some depth by Dick Shahinian (see *CRITIC Vol2 No3*, Shahinian *Compass* review). There is good evidence that, all things being equal, a more uniform off-axis and sound ‘power’ response does result a more natural and spacious sound, while the much vaunted axial ‘reference’ frequency response rarely defines the sound of a speaker, no matter how uniform it looks. Intended for free space location half a metre or more from nearby walls, the Callas is specified as a below average 86dB sensitivity and a 4ohm impedance (3.2ohm minimum), so a reasonably powerful, current capable amplifier is indicated: power handling of up to 250W short term is quoted. A frequency response is given as 32Hz to 25 kHz, albeit with no specified limits. The Norwegian SEAS drivers include a 125mm (5in) chassis bass/mid driver with cast magnesium cone with a long throw, oversize 38mm voice coil and an Excel series magnet assembly. This acts as a pure piston over the intended operating range, while the tweeters are soft dome types, with 25mm Sonotex polymer pre-coated fabric diaphragms, neodymium magnets and damped rear chambers. Much work has gone into the cabinet build, which is a combination of marine plywood and 30mm, 40mm and 60mm thick MDF panels. The sides are solid wood. Dimensions are 23x37.5x34cm (14.8x9x13.4in) (wxhxd). The bass reflex loading ports are located on the rear panel to make any higher frequency contributions less

audible. Connection is via heavy duty gold-plated binding posts, for 4mm plugs, wire or spades.

Sound Quality

Unquestionably this speaker has a distinctive sound, of a kind which could be the answer to your prayers if you are so disposed. This is because it creates the impression of a much larger loudspeaker located further away in a larger room. It sounds undeniably spacious because the reverberant sound contribution from the recording is rather greater than usual, and the front soundstage retreats from its usual place between or slightly forward of the speakers, to a position well behind the plane of the enclosures. Orchestral perspectives are altered: for example, cellos are strong, but violins are pushed back, and double basses lack tune playing and a sense of urgency.
The bass is a bit soft, changes character with level, and is not very tight or percussive. Jazz and classical material fared better than rock, though the overall effect was rather quiet and gentle, tempos seemed slowed, and the sound was rather too relaxed for some listeners. It did not sound all that dynamic: it was more gentle and flowing than upbeat and involving. The quality of stereo and tonal balance varied somewhat for quite small changes in vertical angle /listener head height, so image focus was not particularly stable. Coloration was relatively low, but the part of the midrange that helps contribute crisp dynamics – for a sense of projection and natural perspective – seems somewhat depressed. Interestingly different from the norm, listeners found it pleasant but not all that involving. Vocal articulation was below average, and we needed to play rather louder than usual to reveal the usual amount of detail in familiar material.

Lab Report

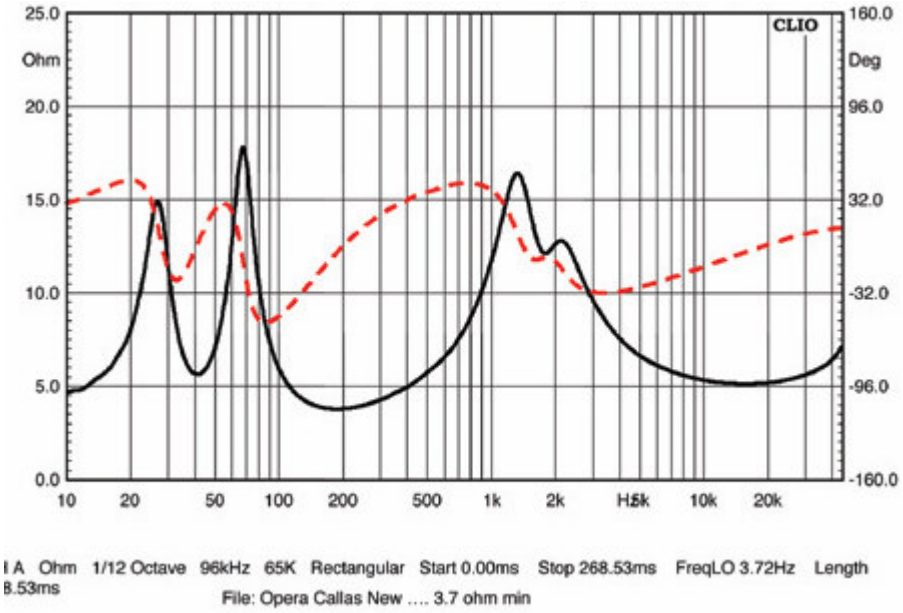
Power sine wave testing revealed some discontinuity at around 370Hz, possibly a residual surround mode, and some narrow-band channel imbalance was heard around 600Hz. At lower frequencies a pipe like sound came from the small, long reflex ports, which emitted some chuffing above a few watts and below 100Hz. The reflex tuning was set quite low at 43.3Hz, and despite the port noise, the bass driver is very powerful and sustained 12W on sinewave right down to 35Hz. I tried plugging the ports and the bass was essentially as good, sustained more power, and obviously had no chuffing or pipe noises. Take your pick according to room balance placement and preference. The port whistled quite strongly at 700Hz, with the measured nearfield level at this frequency as loud as the port's bass output itself. Sensitivity was below average at 85dB/W, so it is just as well that the speaker can take plenty of power. **HIFICRITIC** SEPTEMBER / OCTOBER 2008 With care a 200W amplifier can be used, generating a maximum level of about 102 dB for a stereo pair. The impedance measurement rates it as a barely average amplifier load, with a 3.7ohm minimum and a 5ohm mean. Fortunately each of those five HF units operate at a relatively low level and do not load the amplifier too much, while the phase of impedance is quite small (see impedance graph). The well engineered enclosure showed little free panel resonance.
The waterfall mapping of energy decay with frequency (see graph) shows good clearing at the back,
and good continuity between mid and treble, though the latter result varies greatly with microphone azimuth. Ignoring minor measurement reflections, the decay result is quite good and the usual metal cone resonance is well suppressed. Judging the forward frequency responses is complicated by the additional tweeters, which add upper frequency energy to the sound heard in the room. Onaxis output is uniform to 4kHz and then slopes down by 5dB to 20kHz. The above-axis output has a series of 5dB interference dips, while there are more problems at 15 degrees below axis, dominated by a 10dB dip at 2.8kHz. Further evidence of the erratic vertical azimuth behaviour is seen in the dashed curve on the response set for just 5 degrees below axis, and here the errors are further compounded by putting the grille in place. This very uneven response will tend to cause imaging difficulties, with weaker stereo focus and a distinct change in timbre. Provided the vertical axis sweet spot is found, the 30 degree and 45 degree lateral off-axis curves are very promising. While treble output has fallen away more rapidly than usual above 6 kHz for 60 degrees off-axis, this loss will be counterbalanced by output from the rear mounted tweeters. As can be seen in the room spatial average shown below, this is quite extended and is more uniform at higher frequencies than one might have expected.

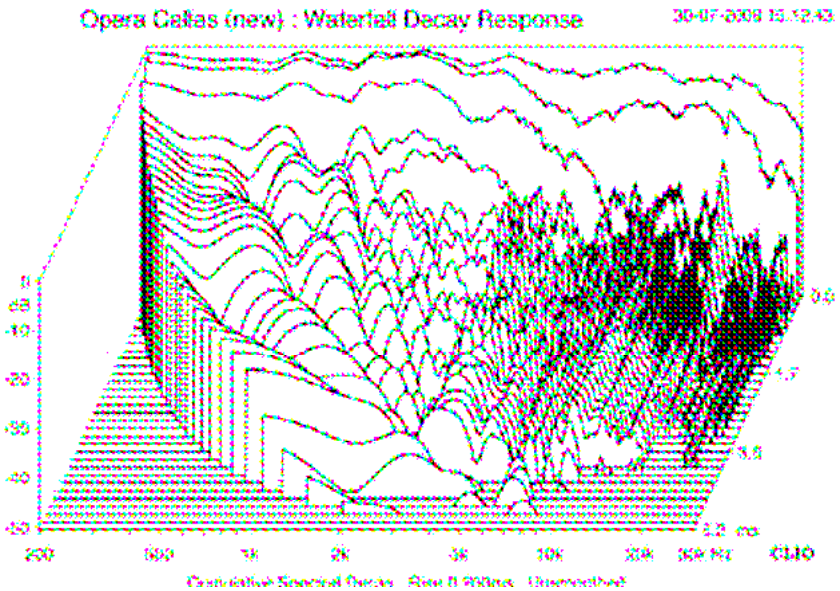
Conclusions

Forsaking conventional design for a new multi-tweeter concept aiming at enhanced spaciousness, in this respect the new *Callas* is notably successful and delivers an interesting alternative sonic experience. The test results were a mixed bag, with fairly low sensitivity, some port distortion in the bass, but good extension and overall power handling. The spatial feature did upset phase consistency on the forward axes, and proved very sensitive to vertical azimuth. The grille should be regarded as purely decorative, as it damages the performance quite severely. Some may well like its firmly laid back image presentation, the airy sounding room acoustic and the enhanced spaciousness, but the consequences also include less stable central focus and distortions of image perspectives. The audibly distant upper midrange makes for a sweet, relaxed sound

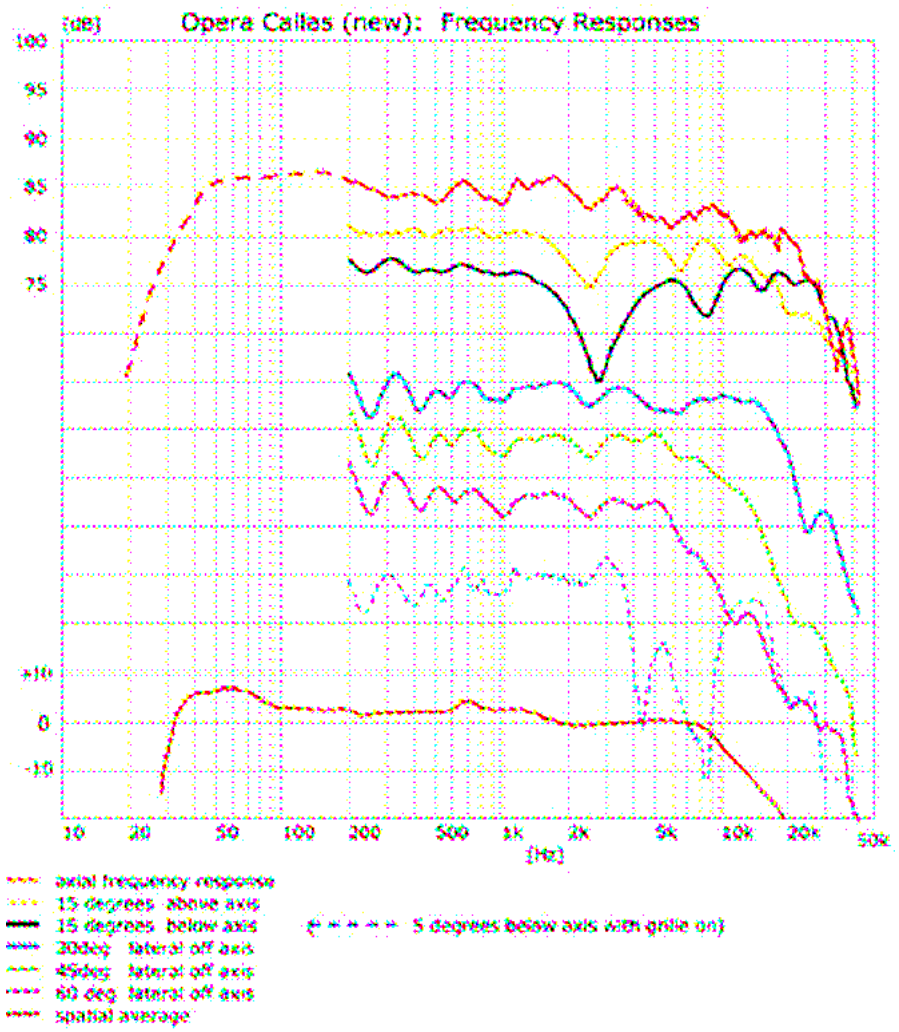
but for rock and jazz the percussion lines lost impact and drive, softening dynamics. This design's originality is unquestioned, but while its sonic individuality must be a matter of personal taste, it can't be considered an unqualified success.

Opera Callas Impedance and Phase of Impedance (red)





Opera Callas (new) Frequency Responses


(dB)
Opera Callas (new): Frequency Responses
100
95
90
85
80
75
+10
0
-10
10
20
50
100
200
500
1k
2k
5k
10k
20k
50k
(Hz)
axial frequency response
15 degrees above axis
15 degrees below axis
20deg lateral off axis
45deg lateral off axis
60 deg lateral off axis
spatial average
5 degrees below axis with grille on)