

Dunlavy Cantata Review – 2001 by Sensible Sound

Manufacturer: Dunlavy Audio Labs, Inc., P.O. Box 49399, Colorado Springs, CO 80849-9399 Price: \$5000/pr Source: Manufacturer loan

Those of you who have been reading this magazine for a couple of years might remember my review of the Dunlavy SC-II system in issue 70. In that review, I indicated that the two-way SC-II was a terrific performer with most program sources, and that it only needed the assistance of a big subwoofer to move into the genuine, broadbandwidth big leagues. Well, the three-way Dunlavy Cantata may not have a monumental subwoofer, but it does have a pretty solid woofer that essentially turns what at first glance appears to be a somewhat radically altered SC-II into a real killer of a system for use in rooms of moderate, or slightly larger than moderate, size.

The Cantata has the same tweeter as the SC-II (the same Vifa unit is used in all Dunlavy systems, I believe), as well as the same two over/ under-mounted, 6.5-inch (overall diameter), Vifa midrange/bass drivers. However, those drivers now have their outputs augmented by the addition of a potent, 10-inch, Scanspeak woofer mounted down below. The Cantata also has the same elaborate, first-order crossover network covering the transition between the tweeter and the two 6.5-inch drivers.

When I said "somewhat radically altered SC-II" above, I was not implying that earlier system is somehow not aesthetically pleasing to the eye. However, the SC-II is a somewhat tall system (65 inches) that looks even taller by virtue of its slender, 8-inch square design. The Cantata cabinet is shorter (52 inches high) and larger in cross section (12-inches square), and has a partial, oval-shaped grille, rather than the full-length version found on the SC-II, meaning that seen in isolation it looks a bit less imposing, even though it is really a larger system. It also weighs considerably more: 85 pounds vs. 60 pounds.

The cabinet is made of medium-density particle board that varies in thickness from .75 inch to 1.5 inch. Actually, if you do the knuckle-rap test up and down its height you have to be impressed with its solidity. Indeed, the upper section has the resonance quality of a solid block of wood, even though I know that there has to be some space in there to accommodate the requirements of the two mid/bass drivers. The cabinet interior, like that of the SC-II is filled with open-cell foam to control absorption and damping.

Hookups are made on the back, via very elegant gold-plated binding posts that can take bare wires, pins, spade lugs, and banana connectors, both single and double. There are two sets of input jacks: one for the tweeter/midrange section and one for the woofer. They are normally connected together with flat jumpers, but those can be removed if biamping is desired.

The rated sensitivity of the system is 90 dB (1 meter, on axis, with an input of 2.83 volts), and the minimum recommended amplifier power is a modest 40 watts per channel into an 8-ohm load. At frequencies below about 1 kHz, the speaker is more like a 4-ohm load, however, but the impedance deviations are not extreme, and the sensitivity allows for fairly high outputs at modest input levels, and so the system would appear to be an undemanding load for even Circuit City grade receivers.

There is no rated crossover frequency for the midrange/tweeter transition, but after some close-microphone measurements I would judge it to be at about 2.5 kHz. Note that the crossover is a first-order item, with high-pass and low-pass slopes of 6 dB/octave, so there is a lot of overlap.

The woofer of the Cantata dovetails with the rest of the system in a somewhat unusual way. First, it faces downward; the sound emanates from four slots around the bottom of the perimeter. (The cabinet itself is separated from the flat, 14-inch-square base by short standoffs at each corner.) If the woofer were allowed to cross over fairly high up in frequency (say at about 500 Hz), the horn effect caused by the slot loading near the floor boundary could result in a peak in the 300-to-400 Hz range. So, a passive low-pass network consisting of a huge choke applies a 6-dB rolloff above about 80-100 Hz. This absolutely

eliminates any chance of horn-related artifacts in the upper bass.

Second, there is no high-pass filtering for the two mid/bass drivers at all. They run full bandwidth, just as they do in the SC-II. This offers up a potential problem, because when really powerful low bass signals are sent to the system those small drivers may be pushed to unhappy limits. However, I should note that with typical program sources, even at fairly high volume levels, they do not get into trouble at all. Remember, in the SC-II they proved to be quite robust, and so they are not about to be stressed out by any situation that the Cantata should encounter.

Indeed, during the somewhat lengthy auditioning of the speakers in my main system, I had a chance to not only listen to music at concert levels but also to expose the Cantatas to some fairly bass-potent DVD movie material, and never once did they complain about their tasks, even when I shunted the low-frequency effects signals to them instead of to my subwoofer.

In the Dunlavy enclosure, those two mid-bass drivers have a natural low-end rolloff that starts at about 80-100 Hz. Because of this, they acoustically match up with the woofer quite well. And also because of the way the mid/bass drivers and the woofer integrate, the Cantata adheres to the phase-coherent principles that Dunlavy is famous for; in this case right down into the mid-bass range.

As with the SC-II, the Cantata has its tweeter recessed some distance into the front panel, and that tweeter is flanked by a liberal amount of felt padding. The result, as also was the case with the SC-II, is a dispersion pattern over its operating range that is more focused and less diffuse what we find with most other 1-inch tweeters. Because of this, the crossover transition to the tweeter from the midrange drivers mounted above and below it does not exhibit the usual, horizontal-angle dip and flare-out. The latter often results when the signals from a largish midrange driver move upward in frequency and are gradually reproduced by a much smaller, better dispersing tweeter.

With the Cantata, as the frequency climbs, the dispersion angle of the midrange drivers does indeed narrow, but when the tweeter comes on line higher up, the usual flare out is minimized. Consequently, unlike some other systems with drivers in those size categories, the Cantata has a narrow dispersion pattern that remains controlled and narrow through the critical crossover range. The speaker beams, while at the same time it does not have an erratic off-axis response at extreme angles.

This allows it to do two things that certain other narrow-dispersion speakers often fail to do: it keeps the power response and direct-field response both relatively uniform and also keeps the signals being directed toward and reflected from adjacent room boundaries both subdued in level and smooth.

Of course, there is more to it than this. One of the primary strong points of the Dunlavy design concept is a flat, smooth, clean, and phase-coherent first-arrival signal. Wide-dispersion speakers with steep crossover slopes can often achieve the first three of those attributes, at least in terms of room/ power response, and they can also deliver a strong degree of soundstage spaciousness, even with recordings that are rather acoustically dry. However, the strong adjacent-boundary reflections such systems trigger will sometimes make it difficult for them to deliver the kind of headphone-like clarity and pinpoint focus that some audio enthusiasts demand.

The Dunlavy speakers are almost in a class by themselves when it comes to delivering a phase-coherent direct-field signal to the sweet spot. Even in a relatively "normal" room that is not extremely well damped, this can result in exemplary clarity and detail.

Also because of its phase coherence and controlled directivity, the Dunlavy speaker line is renowned for its two-channel imaging. The Cantatas, like the SC-IIs, are no exception to the Dunlavy tradition. When set up so that the speakers were about three feet out from the front wall, about ten feet apart, and with

each also at the optimal, Dunlavy-recommended ten feet from the sweet-spot listening position, the central focus and soundstaging were second to no other speakers that I have heard.

Although it was impossible to do fast, side-by-side comparisons between systems to determine imagine precision, as best I could tell both my Allison IC-20 systems and a pair of AR Phantom 8.3 models I also had on hand were simply not able to generate the soundstaging precision that the Cantatas could, provided, as I noted, that the listener made it a point to stick close to the sweet spot.

On the other hand, as we shall see up ahead, both the Allison and AR systems (the first somewhat bigger than the Cantata and the second considerably smaller) were fully able to match the Cantatas in terms of midrange and treble balance, blend, and smoothness. The Cantatas sounded a tad, but only a tad, smoother and clearer than the Phantoms (I used the speaker-level hookups of a \$600 Velodyne CT-120 subwoofer to help out the Phantoms in the bottom two octaves, since by themselves they were no bass-range match for either of the bigger systems), but the IC-20 pair, in spite of their extremely wide dispersion and multiple panels and drivers, matched the Dunlavys note-for-note and top-to-bottom in the spectral-balance sweepstakes. Soundstaging differences and imaging precision notwithstanding, it was remarkable how much all three pairs seemed to sound spectrally similar, particularly in the all-important midrange.

In order to better determine just how alike the speakers actually did sound in terms of spectral balance, detail, and transparency, I set up my comparison box and did some quick-switch, A/B face-offs between all three pairs, two at a time. Of course, with the IC-20 systems any comparisons were difficult, by virtue of their needing to be close to the front wall, while both the Dunlavy and AR models could get away with being pulled out and set up side by side. The problem with such comparisons, of course, is that it is impossible to have any pair of speakers occupy the same space as another pair. Hence, while spectral balance can be compared, imaging and soundstaging comparisons are problematic to say the least. Still, with a bit of care and listening-position shifting, and with the pairs set up staggered, so that the angular relationships to the listening position were the same, I did manage to at least be able to get fairly good results with my comparison technique.

While I used a variety of recordings to do both my single-presentation listening sessions and my speaker-pairs comparisons, my standby for the latter to a great extent involved the Delos Engineer's Choice II disc (DE 3512) and the Reference Recordings Minnesota Orchestra Showcase disc (RR-907CD). When using the EC II disc to compare the Cantatas with the AR Phantom 8.3 systems (with the Velodyne CT-120 subwoofer helping the Ars on the bottom end), I noticed that with the guitar tracks the two pairs were surprisingly close, with the Cantatas probably being just a tad richer sounding. On the other hand, with the Brandenburg Concertos excerpt, the quality differences were minuscule, with both systems sounding all but identical during most of the demo passages. There was more of a contrast with the excerpt from the Shostakovich Eighth Symphony, which showed the Cantatas to be a bit more open and three-dimensional sounding, although the Phantom/CT-120 combination, which had a combined total list price of \$2150, sounded a smidgen richer in some parts of the bass range and with the cellos exhibiting a tad more bite.

With excerpts from the Mozart quartet, the sound was again close, but this time with the Cantatas having the slightly richer sound, and with a bit less edginess than the Phantoms. Indeed, in nearly all comparisons, the Phantoms had a bit more upper-midrange brightness than the Cantatas, and this put the AR systems at a slight disadvantage with some music. Oddly enough, while I thought the CT120 went a bit stronger into the bass than the Cantatas with the Shostakovich orchestral material, when it came to a pipe-organ excerpt from Messiaen excerpt (with strong 20-Hz pedals) the Cantatas were the clear winner. Very clean and solid, and clearly able to go deeper than the CT-120 subwoofer.

Finally, the centered solo-vocal segment definitely favored the Cantatas. The smoothness was close, with

the Dunlavys just a tad superior, and with the Phantoms sounding just a bit more lean. Because the systems were staggered in location, it was impossible to rapidly compare centered-up imaging, but it was still easy to tell that the Cantatas were slightly tighter and better focused. The remaining items on the disc, as well as on the Reference Recordings Showcase disc exhibited generally similar results to what I just described, with the Cantatas being the slight leader in nearly all departments, although in some cases it was impossible to assign a winner.

The next comparison involved the Cantatas vs. the Allison IC-20s (I have had these systems for 10 years, and they had a list price of \$5200 in 1991), with the Allisons operating full-bandwidth. As noted previously, unlike with the Phantoms, which allowed me to position the speaker pairs side by side, when comparing the Cantatas to the Allison systems I had to position the former out in front of the IC-20s. Even with them placed so as to not directly block the Allison models, the latter were no doubt at least slightly compromised by the location of a large pair of speakers only a couple of feet out in front of their radiation zone.

Nevertheless, the comparisons were again revealing. With the guitar tracks on the EC II disc the sound was more alike than different, with the IC-20s maybe a bit leaner. With the Brandenburg excerpt the IC-20s were just as clean, with the Cantatas a bit richer in the midbass. With the Shostakovich excerpt the IC-20s seemed a tad cleaner and more spacious, but also more distant. With the Mozart quartet material the cellos were better defined with the Cantatas, with the IC-20s a bit more spacious and three-dimensional. With the deep pedal notes on the Messiaen excerpt, the IC-20s were just a bit stronger with the 20-Hz segments, but both systems sounded equally clean. Neither were able to approach the abilities of either my Velodyne F1800RII or Hsu TN1220 subwoofers with this material, or with the even, more potent pedal notes on the demo-grade recording of Mendelssohn's Organ Works (Argo 414 420).

With the solo-vocal segment on the EC II disc, the articulation and spectral balance were tied. The Cantatas were more tightly focused in the center, but the IC-20s appeared to have a more stage-like, somewhat distant realism, although much of an advantage either system might have would depend upon where the listener would sit in a good hall, and just how good that hall might be. Interestingly, both the IC-20s and the Cantatas exhibited roughly equal image shifting when listening from away from the center axis, and both therefore had a less stable center image when listening from off axis than the Waveform MC satellites I reviewed some time back.

In all the comparisons the IC-20s exhibited a wider soundstage than the Cantatas, provided that both systems were placed similar distances apart. However, the Cantatas could compensate for this by simply placing them outboard from the IC-20s, which also allowed me to more accurately compare their sweet-spot imaging. Placing the Cantatas so wide apart did require that the listener stick extremely close to the center of the listening couch, which was not the case with the more close-together Allison systems, which still could simulate a soundstage as wide as the Dunlavy units.

To be truthful, I rather preferred the Dunlavys a bit closer together. That way, the imaging was more focused clear across the soundstage, and smaller-scaled works took on an intimacy that slightly surpassed what the more broad-staged IC-20s could deliver. The reality with both systems is that each excelled in different areas, and a really serious audio buff would want to have both pairs in two different rooms, so as to be able to satisfy a variety of listening needs. Well, let's face it, there is no perfect speaker.

Of course, with some recordings either speaker would be superb. At the time I was auditioning both I had an urge to listen to my excellent recording of Handel's Music For Royal Fireworks (Novalis 150 102) and both systems were absolutely superb at dealing with this wonderfully recorded material. I had also tried this music with the AR Phantoms, and felt that they were a bit leaner sounding than either the Cantatas or the IC-20s, although the imaging and soundstaging was still excellent.

I also exposed the Cantatas to my usual low-bass, maximum-output tests. With subwoofers, I normally position a unit in the left-front corner of my main listening room, about 17 feet from a microphone set up at the listening couch, just to the left of center. With conventional systems, I will place both of them against or in front of the 22-foot main wall, and the systems will be anywhere from 12 to 14 feet from the microphone. Bass signals are fed to both systems together, so that their outputs will add coherently at the lowest frequencies, just as they would with most music or home-theater sources.

At 31.5 Hz, the two Cantatas managed to generate a clean signal all the way up to 102 dB. If pushed harder, I could get a reading of 106 dB. However at that level the small 6.5-inch drivers (which you will remember are not high-pass filtered) were generating some audible distortion, even though the bottom-firing 10-inch drivers in each system appeared to be having no problems at all. At 20 Hz, I got a clean output up to 100 dB, with audible doubling if I pushed to the point where I got 105 dB.

Normally, a woofer or subwoofer (at least a sealed-cabinet design) will be able to generate considerably higher volume levels at 31.5 Hz than at 20 Hz, for obvious reasons that relate to excursion limitations. The reason the Cantata outputs at 31.5 and 20 Hz were so close in level was that at 20 Hz the 6.5-inch drivers were self-attenuated so much that they were not able to generate appreciable distortion. At 31.5 Hz their louder fundamental output capabilities also made their harmonics more audible. Therefore, taking audible distortion into consideration, the system could only play marginally louder at 31.5 Hz than at 20 Hz. Of course, remember that the system would normally not be equally loud at those frequencies, due to the low-bass roll off.

As a point of reference, my IC-20 systems, which have two 10-inch, sealed-cabinet woofer drivers apiece, could cleanly generate 112 and 103 dB at the same 31.5- and 20-Hz frequencies. Some of you may also remember that the pair of ported-design, Waveform MC subwoofers that I reviewed in issue 84 could cleanly hit an impressive 114 dB at 31.5 Hz, although those ported systems rolled off fast below that frequency and could only hit 98 dB cleanly at 20 Hz.

As a further point of reference, both the Hsu TN1220 that I own and reviewed in issue 67 and the Paradigm Servo 15 subwoofer that I reviewed in issue 71 could each cleanly hit 112 dB at 31.5 Hz, and the Velodyne F1800RII that I reviewed in issue 67 could cleanly hit 114. All three of those subs could cleanly hit 110 dB at 20 Hz, considerably surpassing either the Cantatas or the IC-20s, or any other subwoofers or full-range systems I have yet encountered.

I did my, full-bandwidth measurements in the usual manner, using my AudioControl SA-3051 RTA in its 20-second-averaging mode, while slowly moving the measurement microphone over a 1 x 1 x 5 foot area over the couch-located listening position. The idea behind this technique is to minimize standing-wave and reflected hot-spot artifacts.

Even in a variety of speaker locations, I managed to get a group of room-response curves that were impressive, with the worst being +/- 3 dB and the very best being +/- 2 dB from 250 Hz on up to 16 kHz. The maximum deviation with any of those curves was a broad dip near the probably tweeter/ mid crossover point, maxing out between 2 and 2.5 kHz at about -2 dB. That was pretty much it; there were no other peaks or dips, broad or abrupt, to speak of.

Below 250 Hz, the response, as would be the case with any other speakers, was dominated by room modes, and I could change the readings I got simply by relocating the speakers closer to or further from the room boundaries. However, the results at the optimum placement position I found were still impressive. At that location, there was a mild peak at about 80 Hz (the SC-II system I reviewed in issue 70 also had this artifact), with a return to the average midrange level at 63 Hz, and with the response the room-augmented response then rising to a maximum at 31.5 Hz. Below that frequency, the response fell

off rapidly, but it was still slightly above the average midrange level at 25 Hz.

Getting these optimal readings involved placing the speakers so that each was facing the sweet spot, with the driver centers about 66 inches from each side wall and about 31 inches from the front wall. (The measurement to the front wall involved measuring from the front-panel center to the inside cabinet edge and then straight back to the wall, so the backs of the speaker cabinets were actually about 15 inches from that boundary.) The distance from the center of each driver array (the tweeter center) to the floor was always 39 inches, and the distance between each set of driver centers was 135 inches, or a bit more than 11 feet. The front-panel distances to the measurement axis (remember, the microphone was being moved during the cumulative measurement) was about 12 feet.

As I said above, below 250 Hz the response from position, and needless to say from room to room, will vary considerably, no matter what speakers are involved. However, the average response above that frequency should be pretty consistent in a number of different environments, so long as they are not extremely reflective or absorptive. Somewhat after I had the systems in my big system, I moved them to my living-room area and the measurements above 250 Hz in that area were close to identical to what I got in the bigger room.

So, what I am saying is that above 250 Hz, these are going to be extremely flat-responding loudspeaker systems in nearly any home-listening room. Indeed, they easily match my own IC-20 models. What's more, they were a tad flatter than the Waveform MC/MC.1 combination I reviewed in issue 84 and flatter yet than the AR Phantom 8.3 systems I reviewed in issue 82. And as I noted, above 250 Hz, the Cantata curves closely matched those I got when I did the measurements of the Dunlavy SC-II systems a couple of years back.

My detailed analyses of the Cantatas and the comparing and measuring sessions lasted on and off for about four weeks. In addition, I had the systems installed in my main-room installation as the primary left/right channel speakers for an additional three weeks. (Having the Cantatas on hand allowed me to have the deteriorating foam surrounds on the woofers in my 10-year-old IC-20 systems replaced, and the task took longer than I thought it would.) During that time, I listened to a variety of program sources, some old and some quite new.

Among the newer releases I listened to was *The English Connection* (ASV GAU 213), a wonderful series of pieces by Henry Purcell, William Lawes, and others, played by the Bell'Arte Antiqua. On the Cantatas, the wonderful mid-distance perspective, blend, and soundstage came across marvelously. Interestingly, while the Cantatas are notable for their focus and ability to not generate strong side-wall reflections, the use of my Yamaha DSP-A1 processor, which powers wide-dispersion front-effects speakers, in addition to wide-dispersion surround speakers further to the rear, resulted in both pinpoint imaging and focus, and a terrific sense of live-music stage depth. It may be that the Cantatas are ideal speakers for use with surround-processor and surround-speaker combinations of this kind.

Another trio of releases that came across marvelously with the Cantatas were *Restless Spirits* (Koch 7503), songs by Poulenc, Purcell, Bolcom, and others, sung by Dora Ohrenstein; Vincent Bambaro's *Wind Quartets* (MDG 301 1009), performed by the Consortium Classicum; and Florence Price's *Mississippi River Suite, The Oak, and Third Symphony* (Koch 7518) as performed by The Woman's Philharmonic.

The Price works were analytic and detailed (recorded at Skywalker Sound), and the Cantatas revealed every nuance. As with the ASV release noted previously, this material benefited tremendously by the application of surround ambiance by my Yamaha processor. Again, the Cantatas almost seemed designed to deal with music like this, combined with ambiance-synthesizing DSP. Remarkable.

The Gambaro material was a revelation on the Cantatas. The recording itself is spacious, with a surround-like ambiance, and the speakers absolutely reveled with this material. The solo vocals by Dora Ohrenstein on the third disc were terrific as reproduced on the Cantatas, provided, of course that the listener confine themselves to the centered-up sweet spot. Otherwise, the centered image would tend to shift a bit toward the closer speaker. From the sweet spot, the Cantatas not only showed off the excellently recorded vocals, but also highlighted the fine integration of those vocals into the instrumental accompaniment and realistic sense of live-music hall space.

The Cantatas are in their element with intimate music, and one recording that showed off this ability was Telemann's Harpsichord Overtures (CPO 999 645), as performed by Harald Hoeren. From the well-focused sweet spot, the instrument was superbly reproduced, while the sense of space around it was dealt with quite well. Harpsichord music enthusiasts will probably find the Cantata to be a very serious contender in this price category.

The Cantatas are not just for "highfalutin" classical music, however. I had a chance to listen to Dave Friesen's and Gary Versace's new jazz release, *With You On My Mind* (Summit 290) and the results were as good as what I got with the classical materials. Friesen is serious enough about his music to have engineered this release himself, and the result was a degree of detail and depth that the Cantatas highlighted to near perfection.

Finally, I had a chance to listen to both Stravinsky's *Symphony in C* and his *Histoire du Soldat*, and *Concertino for 12 Instruments* (Koch 7504), and the results were as revealing as one could ask for. The two pieces were recorded in different halls, and the Cantatas highlighted the subtle differences, while at the same time they revealed the detailed, spacious, and smooth delivery created by the Philharmonia Orchestra in both locations. I was particularly impressed by the way the Cantatas revealed the exquisite detail in the *Concertino* piece.

Overall, I would have to say that the Cantatas are sensational performers in their price category. They did the job with a variety of program sources, and when positioned for optimum imaging and soundstaging, they are equal to anything else I have listened to in those very important areas.

This is not to say that they sound the same as some of the other fine systems I have auditioned, but they certainly are as short of defects as anything else I have heard, at any price. Topping off their positive attributes, we have their ability to be very compatible with top-grade surround processing and multiple, properly positioned surround speakers. -HF