

“AMAZING ...

Paradigm deserves to take a bow.”

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“If you’re looking for a stylish and technically sophisticated surround-sound package that doesn’t skimp on home-theater’s thrills and chills, Paradigm has some speakers for you.”

by Tom Noursaine

SUMMARY

- Beautiful and well built.
- Intelligent system design.
- Full and rich front stage.
- Clear and precise dialogue.
- The LCR-450 is a timbre match for the Eclipse/BP.
- Excellent ambience from the high-value ADP-150.
- The PS-1200 sub is an amazing performer for the price.
- A winning Home Theater speaker package.

Thanks to Home Theater, speaker design is enjoying a renaissance of spectacular proportions. And the benefits are coming full circle: As better speakers proliferate, the technology required to improve performance from ever more accommodating speaker designs trickles down to more affordable products.

Eclipse/BP



Paradigm, a Canadian speaker manufacturer, has done exceedingly well here, employing a vertically integrated corporate structure that turns out high-quality speakers with excellent construction quality. The company makes cones, faceplates, cabinets, subwoofer amplifiers, and the machine tooling required to produce their proprietary cast woofer baskets in addition to assembling raw drivers. Their approach is a good one, as I found out while testing an upscale Home Theater package assembled from some of their best products.

The system Paradigm sent me includes two Eclipse/BP bipolar main speakers, one LCR-450, which can serve as a main speaker but would handle center-channel duties here, two ADP-150 dipolar surround speakers, and one PS-1200 powered subwoofer. All of our test samples were

finished in black vinyl (other finishes include white and oak); the tall and sleek Eclipse/BP just plain looks hot. The mains, center, and surrounds come with a 5-year warranty, the powered subwoofer with a 1-year warranty.

"The speakers in this set are well built, look great, and sound very, very good."

Clearly, this system isn't inexpensive; it's intended for people who are looking for truly high-quality surround-sound performance. And though the speakers in this package are sold separately, they're a good match for one another in a Home Theater system.

"... the tall and sleek Eclipse/BP just plain looks hot ... as with every Paradigm speaker I've tested, the speakers in this package work impeccably."

The bipolar Eclipse/BP employs identical driver arrays on its front and rear panels; each of these panels includes an 8-inch woofer and a 1-inch dome tweeter. The extremely slim cabinet, which measures 50 x 10 x 17 inches (h/w/d) and weighs 95 pounds, is a ported, bass-reflex design; solid internal bracing keeps it inert, so unwanted resonances shouldn't be a problem. Specs include a frequency response of 18 to 20,000 Hz ± 2 dB, power handling of 15 to 300 watts, and sensitivity of 90 dB SPL. Gold-plated five-way binding posts allow biwiring or biamplification.

The bipolar nature of the Eclipse/BP means that its front and rear drivers operate in polarity; when the front woofer moves

outward, for example, the rear woofer moves outward simultaneously. The sound produced by the rear drivers reflects off the wall behind the speaker and then floods into the room, creating a special sense of spaciousness. Dipolar speakers work in similar fashion, but there's one important difference: Their driver arrays work with opposite polarity—when a front woofer is moving outward, the rear woofer is moving inward. This creates spaciousness, too, but it also cancels low frequencies (starting at about 100 Hz) and creates a null (an acoustic dead-spot) to either side of the cabinet. The Eclipse/BP is designed to sound spacious without canceling bass or creating a null.

"... spectacularly flat ... the Eclipse/BP mains sounded exceptionally full and strong ... the sound was impressively wide and spacious ..."

The LCR-450 plants a 1-inch dome tweeter between two 6.5-inch woofers on the speaker's front panel. The largish cabinet stands 8 x 21 x 11-1/2 inches (h/w/d) and weighs 25 pounds. Specs include a frequency response of 45 to 20,000 Hz ± 2 dB, power handling of 15 to 175 watts, and sensitivity of 90 dB SPL. As with the Eclipse/BP, gold-plated binding posts welcome all types of connections.

Producing precise and intelligible dialogue should be the primary goal of any center speaker, and the LCR-450 takes the conventional, time-honored approach to delivering the goods: Its three drivers all move in unison, and the sound waves created by their backward motion are absorbed by the cabinet. In short, sound from the LCR-450 radiates directly at the listener. Like the Eclipse/BP, the dipolar ADP-150 has identical driver arrays on its front and rear panels. In this case, each of these panels has one 5.25-inch woofer and one 0.75-inch dome tweeter. The speaker stands 10-1/2 x 8-3/4 x 6-1/2 inches (h/w/d) and weighs 12 pounds. Connections are made through spring clips, and hardware for wall-mounting is supplied. Specs include a frequency response of

65 to 20,000 Hz ± 2 dB, power handling of 15 to 100 watts, and sensitivity of 89 dB SPL.

"... The LCR-450 also did an exemplary job ... the dialogue produced – was extremely intelligible and matched in timbre – front-stage sound cues were sharp and precise ..."

As mentioned, the ADP-150's dipolar nature means that its front and rear driver arrays operate with opposite polarity to enhance spaciousness, which is the primary goal of a surround speaker. Also as mentioned, dipolar speakers cancel low frequencies below about 100 Hz and create a null. The idea behind the null is to prevent listeners from identifying the speaker as the source of the sounds they're hearing; a dipolar speaker accomplishes this by directing sound up and down the room's side walls and planting the listener within the null. And the low-frequency rolloff really isn't a problem for a surround speaker, because the surround signals delivered by a Dolby Pro Logic decoder are rolled off at 100 Hz; it shouldn't be a problem with Dolby Surround AC-3, either, even though its surround channels are full-range—a subwoofer or two should do a fine job of covering the territory below 100 Hz.

Speaking of subwoofers, the PS-1200 employs a 12-inch woofer, a fourth-order bandpass cabinet that measures 19-3/4 x 17 x 21 inches (h/w/d) and weighs 70 pounds, a built-in power amp that's rated at 130 watts, and an adjustable active crossover. It switches on automatically when you turn on your system, and there's a continuously adjustable phase control. The active crossover can be used to set the sub's high-frequency limit anywhere between 50 and 150 Hz with a slope of 18 dB per octave. In addition, an active crossover is supplied for setting the low-frequency limit of a pair of main speakers; this crossover's cutoff point is 80 Hz, its slope 18 dB per octave. The sub is spec'd with a frequency response of 24 to 150 Hz ± 2 dB.



LCR-450

"The PS-1200 powered subwoofer is a downright amazing performer ... The system delivered 110.6 dB ... that's damn loud, and it did it without any artifacts or unwelcome noises."

As with every Paradigm speaker I've tested, the speakers in this package work impeccably in a technical sense. The Eclipse/BP had a half-power point of a deep 25 Hz in my living room—that's terrific for a speaker that employs a pair of 8-inch woofers. Frequency response both on and 30-degrees-off axis was spectacularly flat (± 2.6 dB) from 25 to 20,000 Hz—except for a huge, 15-dB notch centered at 170 Hz (probably a function of the main axis of the front drivers being almost exactly halfway between my room's floor and ceiling). The Eclipse/BP is tuned to 22 Hz and presents an easy amplifier load; minimum impedance was 11 ohms at 176 Hz. Sensitivity measured 88.4 dB SPL when the system was driven with 2.8 volts of full bandwidth pink noise.

The LCR-450 also did an exemplary job. On-axis frequency response ran ± 3.4 dB from the 160 Hz half-power point to 20,000 Hz; 30 degrees off axis, the deviation dropped to ± 1.8 dB, and this performance remained stable at about 45 degrees off axis except for a 7-dB notch between 600 and 2,500 Hz. Sensitivity measured 88.4 dB SPL, and impedance was never lower than an easy-to-drive 16 ohms at 163 Hz. The sealed cabinet is tuned to 74 Hz.

The ADP-150's sealed cabinet is tuned to 59 Hz, and impedance reached 3.6 ohms at 210 Hz. Sensitivity measured 85 dB SPL, so I made a mental note to set the surrounds' level about 3 dB above that of the mains and center during setup. Frequency-response measurements from the listening position revealed solid response (± 3.4 dB) from 200 to 7,000 Hz.



ADP-150

The PS-1200 powered subwoofer is a downright amazing performer. The in-room half-power-point was a low 26.6 Hz, and this sub delivered 25 Hz at 91.4 dB SPL with an acceptable 10 percent THD; maximum SPL with a limit of 10 percent THD tallied 108.7 dB at 40 Hz. Frequency response, taken with an average output of 85 dB SPL and the active crossover set to 80 Hz, was 26.6 to 80 Hz ± 3.1 dB. The crossover and level controls worked smoothly, with fairly linear action.

"The ADP-150 surrounds delivered an ambient field that stretched all the way around my couch and linked up with the front stage — effects moved smoothly and precisely in tandem with the front-stage action, with no distracting jumps or shifts in timbre ..."

Setup was straightforward. The only points worth making, in fact, are that the ADP-150s need to be set 3 dB above the mains and center to keep them in balance, and that it's imperative to mount the dipoles on walls that are to the sides of the main listening position. You'll get the best performance if they're mounted 5 to 6 feet above the horizontal plane created by the ears of seated listeners. The subwoofer should also be placed in a corner, and an 80 to 100 Hz low-pass cutoff for it will work fine; unless you like lots of bass, I'd recommend using the sub's high-pass crossover, too. I ran the Paradigm package primarily as a Home Theater surround system driven by my reference system, AC-3-encoded laser-discs, and Yamaha's DDP-1 AC-3 decoder, though I also listened to some stereo CDs. Movie soundtracks were exhilarating: The Eclipse/BP mains sounded exceptionally full and strong even when filtered by the PS-1200's high-pass crossover. The dialogue produced by the LCR-450 was extremely intelligible and matched in timbre to the Eclipse/BPs; front-stage sound cues were sharp and precise. The ADP-150 surrounds delivered an ambient field that stretched all the way around my couch and linked up with the front stage

created by the Eclipse/BPs and LCR-450; effects moved smoothly and precisely in tandem with the front-stage action, with no distracting jumps or shifts in timbre. And the PS-1200 rumbled convincingly when cued by the soundtracks. The system delivered 110.6 dB SPL when the CIA bombs the Columbian mansion in *Clear and Present Danger*—that's damn loud, and it did it without any artifacts or unwelcome noises.

The Eclipse/BPs also did a nice job with music in stereo; the sound was impressively wide and spacious. The 170 Hz notch colored vocals and made the image somewhat vague, however, though it might not appear at all (or so severely) in other rooms. Dialing in the LCR-450 center channel filled things in and made the image solid.

Paradigm deserves to take a bow. The speakers in this set are well built, look great, and sound very, very good. And the ADP-150 surround and the amazing PS-1200 powered sub score extra points in the value category. If you're looking for a stylish and technically sophisticated surround-sound package that doesn't skimp on home-theater's thrills and chills, Paradigm has some speakers for you.



PS-1200