
Subject: P AUDIO - 15" DRIVER AND BAFFLE DESIGN

Posted by [Eddie Munster](#) on Tue, 22 Aug 2006 02:10:04 GMT

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I am taking a good look at the P Audio BM15CX38 and the open baffle design at the Common Sense audio site. <http://www.commonsenseaudio.com/paudio.html> I like the size (not some massive bassilla) and it sounds like these are excellent drivers. Has anyone tried them? Any experience with these drivers? Some have said that they are only PA drivers while others say that they are similar to old Altec's. Any help would be greatly appreciated. Cheers, Eddie

Subject: Re: P AUDIO - 15" DRIVER AND BAFFLE DESIGN

Posted by [akhilesh](#) on Tue, 22 Aug 2006 11:31:49 GMT

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Look also at Hawthorne audio. They have a 15" driver that is recommended highly by some folks who post here. It's also a lot cheaper. The P audio driver itself is very expensive. Not sure if it's better, never have seen comparisons.-akhilesh

Subject: Re: P AUDIO - 15" DRIVER AND BAFFLE DESIGN

Posted by [FredT](#) on Tue, 22 Aug 2006 12:07:11 GMT

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I have a question. I was under the impression that a relatively high QTS is desirable for an open baffle driver. I looked at the specs for the 15" P Audio drivers recommended for open baffle mounting. The QTS for the BM15CXA is .24, and for the BM15X38 it's .22. These values seem more appropriate for horn or MLTL mounting. Wouldn't open baffle mounting produce weak bass response?

P Audio Drivers T/S Parameters

Subject: How about the T/S specs of the Silver Iris by Hawthorne?

Posted by [akhilesh](#) on Tue, 22 Aug 2006 15:21:46 GMT

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Thanks for ferreting them out, Fred! I was about to look for them and you saved me the trouble. This gives me pause. 0.7 is the magic number for OB (based on my readings, don't ask me why: I don't understand the theory well enough). SSounds like this Q value is not too great. Next, I need to find the Iris driver Q. Wonder what that will be. Maybe Mr. Hawthorne can tell us? -akhilesh

Subject: Eminence Alpha 12 and 15
Posted by [Wayne Parham](#) on Tue, 22 Aug 2006 15:28:47 GMT
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To do a proof of concept, you might check out the large Eminence Alpha's. They have very high Q, so they'll work well on open baffles.

Subject: Re: Eminence Alpha 12 and 15
Posted by [akhilesh](#) on Tue, 22 Aug 2006 16:15:34 GMT
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Thanks Wayne. Good tip. I need ot measure my Univ drivers t see the Qt, since i fear it may be too low. Maybe just keep them in the sealed box. -akhilesh

Subject: Re: How about the T/S specs of the Silver Iris by Hawthorne?
Posted by [FredT](#) on Tue, 22 Aug 2006 18:44:38 GMT
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The Silver Iris QTS is .91. Apparently they had Eminence modify their drivers to make them more suitable for open baffle mounting by increasing the Q. The QTS for the Eminence Beta 12CX is .48Wouldn't it be great if we could get Hawthorne to exhibit at the LSAF next May! I'm confident he would generate some sales from this.

Silver Iris T/S Parameters

Subject: Re: P AUDIO - 15" DRIVER AND BAFFLE DESIGN
Posted by [Jim Griffin](#) on Tue, 22 Aug 2006 21:30:11 GMT
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Fred, Yes, you would need a higher Qts driver or as an alternate very heavy equilization to achieve decent bass from these low Qts drivers. My warning on most of the Common Sense Audio stuff is that their snake oil descriptions usually exceed the capabilities of what they sale. Just because someone offers you an open baffle box with a low Q driver, don't assume that you will get any bass from it. Jim

Subject: I know my input is not wanted here...
Posted by [wunhuanglo](#) on Tue, 22 Aug 2006 22:04:24 GMT
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But look at the Linkwitz Orion - the woofer Qts is 0.17You're on the wrong track, as I tried to advise in my earlier post.

Subject: Re: P AUDIO - 15" DRIVER AND BAFFLE DESIGN
Posted by [Jim Griffin](#) on Tue, 22 Aug 2006 23:58:23 GMT
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Eddie,Let me suggest that you consider the Hawthorne drivers referenced below as they are superior for an open baffle application vs. the P Audio drivers. If I was doing this design, I would use Martin J. King's worksheets (he has a current set that models either one or two open baffle woofers). That approach would get you out of the mystic realm into the objective space of how your project would really work. Plus it will beat the Common Sense Audio approach by miles.Jim

MJK Open Baffle Project

Subject: Re: I know my input is not wanted here...
Posted by [Jim Griffin](#) on Wed, 23 Aug 2006 00:05:06 GMT
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Dr. Linkwitz's Orion is meant to be used with his dedicated Orion analog crossover/equalizer processor which is part of his design. Thus he accounts for the low Qts of the drivers. With a processor you can EQ the drivers to achieve what you want but that takes more hardware, multiple channel amplifiers, etc. I'm assuming that Eddie wants to avoid that approach.

Subject: Re: I know my input is not wanted here...
Posted by [FredT](#) on Wed, 23 Aug 2006 11:50:44 GMT
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Sorry you felt compelled to assign that subject to your response, but I know how you feel. That's how I feel whenever I suggest we listen to a "budget" component at the meetings of a certain audio club:)In response to your comment, I may be on a different branch of the right track rather than on the wrong track. As Jim points out, equalization can compensate for the bass rolloff of low QTS drivers in open baffle designs (and in sealed enclosures too), giving you the gift of extended

bass response without the group delay and other disadvantages of a ported box. Good idea if you're using multiple high quality woofers, like those in the Orion, that can handle the extra power needed to drive them at low frequencies. I was looking at some drivers in WinISD, using a 1,000 sq ft "sealed" box to mimic an open baffle. The Eminence Delta 15LF, with a .58 QTS has an F3 of about 51hz - not too bad. The Silver Iris, with its .98 QTS is an even better candidate. Its bass rolloff begins at a much lower frequency than the Delta LF, which would provide more midbass punch, and its F3 is about 35hz. So now I'm beginning to understand why hurdy gurdyman is so enthusiastic about the Silver Iris driver.

Subject: Well, see, it's this way....

Posted by [wunhuanglo](#) on Wed, 23 Aug 2006 21:42:52 GMT

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Eddie asked a question as if sound quality mattered. On that basis I responded as I did. It is my premise (true or not, it's mine) that despite what WinISD might say a high Qts driver is providing the impression of extended base response by flapping in the breeze. It is not providing an accurate representation of the input signal. As I noted in my original post (assuming that sound quality was important) if you want to go the OB route you have to be prepared to EQ and it's almost mandatory to bi-amp to get the needed degree of driver control. OTOH, if your primary concerns are (personally) satisfying reproduction at minimum investment and not fidelity (which is a matter of personal preference) then I would agree that a high Qts driver is the way to go. But I would also contend that concerns as to how Driver A compares with prized classic Driver B should not be among your criteria for driver selection.

Subject: Re: P AUDIO - 15" DRIVER AND BAFFLE DESIGN

Posted by [Retsel](#) on Mon, 28 Aug 2006 21:25:50 GMT

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The point to using low Q drivers is that they are substantially damped leading to lower distortion. What follows is that the higher frequencies of the drivers need to be rolled off so that the sound is flat. The bass below some typical value, such as 150 hz, would be reproduced by a woofer/subwoofer, which helps to reduce dopler distortion. Retsel

Subject: Re: Well, see, it's this way....

Posted by [hurdy_gurdyman](#) on Wed, 30 Aug 2006 17:10:53 GMT

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Hate to disagree with you, but I must. I've been using the Hawthorne Silver Iris 15 OB Coaxial

driver now for many months. This high Q driver sounds fantastic with no eq of any kind, driven by a modest PP tube amp (22 watts triode). The baffle need be only about 22 inches wide, no wings needed. Bass is flat to just below 50 Hz with usable output to about 40 Hz. Mids are reproduced in a pleasing and natural fashion. It'll play loud and have lots of impact. I heard one in a much larger room than mine and the sound was as good as anything I've ever heard. Just a simple narrow baffle with the driver installed. Quick and inexpensive, one amp and no eq. Before this, I used vintage high Q EV drivers in OB. Sounded great down to the 80 Hz baffle cut-off. Nobody would ever call any of these drivers slow or distorted. The sound was very good, and the cost downright cheap! Dave

Subject: Re: Well, see, it's this way....

Posted by [Manualblock](#) on Wed, 30 Aug 2006 23:45:27 GMT

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I may have to try this speaker. I like the sound of that post. I was waiting to see if the sparkle wore off for you Dave; it seems not.

Subject: Re: Well, see, it's this way....

Posted by [hurdy_gurdyman](#) on Thu, 31 Aug 2006 02:55:09 GMT

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manualblock, My enthusiasm is higher than ever. I visited Darrel Hawthorne and listened to his set-up. He has bigger room designed for music listening. The sound was incredible! I have never heard a better sounding home system. Everything was so natural. I'm seriously looking at ways to make a better listening environment at home, now. I'm also going to make a wingless baffle. The Silver Iris doesn't need the wings. The high Q drivers sound their cleanest with narrow wingless baffles. Dave

Subject: Re: Well, see, it's this way....

Posted by [DanTheMan](#) on Thu, 31 Aug 2006 07:26:13 GMT

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I've owned the silver iris for 5-6 months now and it seems even more amazing than at first. It reminds me of the way classic Tannoys sound--but much cheaper! I have to worst electronics I have ever owned, but the best music reproduction I have ever had. They are warm not muddy, dynamic, and give you a sense of proper weight. I recorded a concert I recently attended, and I couldn't believe how close the sound was to the sound I had just heard. I suspect the biggest difference was probably from the recording device. The high to low frequency balance was perfect,

the dynamics were just slightly compressed. I did have a really cheap minimicrophone and recording on minidisc. I would expect the dynamics to get compressed. I am using a cheap, chinese made guitar amp that i bought brand new for \$100 for all amplification duties. My source is a sony portable cd player with a wimpy headphone amp. It just doesn't good dynamics, but this speaker is still the most dynamic I've ever owned. If you want great sound on the cheap, I suggest you try them out. Anyone can build a box for this thing. all i used was a jigsaw, lots of clamps and glue, paint, sandpaper, and clearcoat. I listen to it hours on end. no listener fatigue!

Subject: Re: Well, see, it's this way....

Posted by [Martin](#) on Thu, 31 Aug 2006 13:04:06 GMT

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Dave,I have not heard the Silver Iris but I have now changed the woofers in my Lowther OB system to the Eminence Alpha A15 which has a Qts of about 1.2, I updated my site to reflect this yesterday. I think these Eminence drivers are very close (if not the same) to the Silver Iris 15 inch driver. The bass is as you describe, deeper and warmer compared to the lower Qts Dayton drivers I was using before and could easily support a smaller baffle. With my big baffle the bass goes very low for an OB system.The one difference in the Silver Iris and my system is the location of the crossover point. I am rolling the Eminence drivers out at 200 Hz using a 12 dB/octave filter. Obviously the Silver Iris uses the woofer to a much higher frequency which may or may not be a concern. I will have to play with my active crossover to see how things work crossing over higher. Would you happen to know at what frequency the Silver Iris corsses to the coaxial horn tweeter? But based on my experience with the Eminence Alpha driver, I bet the Silver Iris sounds very good in a "smaller" OB at a great price point.Martin

Subject: Re: Well, see, it's this way....

Posted by [hurdy_gurdyman](#) on Thu, 31 Aug 2006 13:20:33 GMT

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Martin,The SI driver has a frame like the Alpha, but everything else is different. The cone is covered in concentric rings from one edge to the other. The Qts is around 0.9. The XO point is around 2500Hz, give or take a few.The original speaker that Darrel Hawthorne done his experimenting with was an Alpha. The results were so good that he worked with Eminence to develop a coaxial driver with all the strong points of the Alpha but even better suited for OB coaxial use. The engineers at Eminence came up with the present Siver Iris, which seems to be a great OB speaker. Those that have the original XO really need to get the new one to really hear what these drivers can do. The original XO had some serious problems. It was not an Eminence design, BTW, but from an independant company.I'm keeping my SI for a long time. Dave

Subject: Re: Well, see, it's this way....

Posted by [Manualblock](#) on Thu, 31 Aug 2006 16:37:14 GMT

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Thanks to the both of you for the response. It is unquestionable that an OB is a positive design. As a point of interest many years ago there was an article in the old Audio pamphlet that described a guy tearing the back and sides off his KLH speakers and using them as OB's. Some of us tried it and were amazed. My issue is the lack of space for large horns so if you love horns but have no space then the next best thing looks to be OB.

Subject: Re: Well, see, it's this way....

Posted by [Martin](#) on Thu, 31 Aug 2006 21:41:11 GMT

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I am really impressed with the Eminence drivers, those guys really know what they are doing with respect to design, manufacturing, and quality control. If the Silver Iris is a customized driver, I bet it is terrific.

Subject: Re: Well, see, it's this way....

Posted by [DanTheMan](#) on Fri, 01 Sep 2006 05:03:23 GMT

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That's pretty much how I see it. The silver Iris is both though. Horn tweeter/open baffle woofer. Neutral, uncolored, dynamic, proper weight and balance with everything I've thrown at them--from Mozart to The White Stripes to Charlie Patton. All of them better rendered than I've ever heard before at any cost. I'm sure there are better speakers out there, but I'll never know. For the first time in my history, I am happy with my sound system. Did I mention I've spent under \$400.00 on everything I own that results in music reproduction--and I'm happy. I've had stereos that I have spent many thousands of dollars on (Klipsch, Dynaudio, Scan-Speak, Harmon Kardon, NAD, Sony ES, I even own an old Sansui, and many others), and all of them have done something that I could not tolerate until I bought this one. There is a part of me that wants to spend money on getting another speaker so I can have stereo sound and I sweet amp, but I'm afraid I'll mess up this thing I have now. I don't want to change a thing. I listen to my entire CD collection now. It's that good.

Subject: Re: Well, see, it's this way....

Posted by [Manualblock](#) on Fri, 01 Sep 2006 13:07:24 GMT

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Charlie Patton was such an underrated player. I think RJ took from him. Although to be fair they all did. Your point is well taken. We all know much of this infatuation with audio has nothing to do with listening to music. Its axiomatic; if your equipment cost more than your music collection; well; that says it all. I don't pay much attention to a reveiwer unless he is a muscician; I know Dave is one and you sound knowledgeable about music so thanks for the input.I would take a lot of things with a grain of salt; but I know this is one design that works well.

Subject: Re: Well, see, it's this way....

Posted by [DanTheMan](#) on Sun, 03 Sep 2006 08:49:13 GMT

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I do play guitar and piano, but I don't know if I would consider myself a musician. I have a lot of experience producing music though, and best I can tell these speakers do a great job of reproducing it. I even use them to play clean fingerstyle riffs through. There are probably more transparent speakers, ones with more extension in both directions, even more dynamic ones, but these just sound right. I am considering getting the updated crossover, but they only sell them by the pair and I'm already happy with them. Still, it would be interesting to hear how much the new crossovers really are an improvement. I bet HG Dave did a superb job with lots of listening tests. He's the reason I bought the speaker in the first place--and he was absolutely correct. That might be the only regret I have with these speakers--I wish I had more! I'll probably end up getting the 10"ers in stereo then buy a nice receiver to play them through. I have nice SACD player that I only use for DVDs--what a waist! hmm

Subject: Re: Well, see, it's this way....

Posted by [hurdy_gurdyman](#) on Sun, 03 Sep 2006 12:46:13 GMT

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Dan,Have you tried contacting Darrel about a single XO? I'm pretty sure he'd sell you one.Dave

Subject: Re: Well, see, it's this way....

Posted by [DanTheMan](#) on Mon, 04 Sep 2006 21:49:03 GMT

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No I haven't, but i bet he would. I will contact him soon.

Subject: Re: Well, see, it's this way....
Posted by [gfederys](#) on Wed, 20 Sep 2006 18:49:05 GMT
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Your baffle is 22" wide, how tall and thick is it? Thanx.

Subject: Re: Well, see, it's this way....
Posted by [hurdy_gurdyman](#) on Wed, 20 Sep 2006 22:45:44 GMT
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The 22" wide baffle doesn't belong to me, but is the one I listened to at Darrel Hawthornes home. It has two inch deep braces on each side and is 36 inches tall. My own baffles are 19 inches wide with 6 inch tapered wings. 36 inches high. I am planning a baffle around 22 inches wide with no wings but will have round tubes on each side for diffraction control. It will be a bit shorter as well. Haven't decided on final height yet. On my present baffles, I have a pair of 15 inch Augies that are biamped. These extend the bass down to a flat 30 Hz. All on the same baffle described above. No eq. Dave

Subject: Re: Well, see, it's this way....
Posted by [gfederys](#) on Thu, 21 Sep 2006 11:42:10 GMT
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Thanx for the information. As soon as I get caught up with present projects, I plan to try this OB business myself to see what all the brew-ha-ha is about. I'm going to start with Fostex 207E's and EV 8MC's. If it starts to sound like it has possibilities, then maybe I'll start spending money. Are the "round tubes" going to be like a frame around the baffle to break up diffraction?

Subject: Re: Well, see, it's this way....
Posted by [hurdy_gurdyman](#) on Thu, 21 Sep 2006 13:50:20 GMT
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>Are the "round tubes" going to be like a frame around the baffle to break up diffraction?

Subject: Re: Eminence Alpha 12 and 15
Posted by [moray james](#) on Mon, 02 Oct 2006 19:46:36 GMT

Had a buddy sim a pair of Eminence Delta 15 LFA in "W" dipole configuration and they should work very well especially considering the cost and size. Does not look like you will need any low EQ with these and they will move a lot of air with not much power. Regards Moray James. PS the Kilomax Pro 18A looks to be killer in this configuration.

Subject: Re: I know my input is not wanted here...
Posted by [Retsel](#) on Thu, 26 Oct 2006 21:14:51 GMT
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The Silver Iris drivers use a stamped frame driver. Using a pair of stamped frame drivers, Linkwitz measured some resonances in the midrange band caused by the stamped frame. It is better to use cast frame drivers OR mount the stamped frame drivers by the magnet. There is no free lunch when it comes to frequency response. If you try to reproduce the lower frequencies with a driver that you are asking to also reproduce the midrange frequencies with, you will muddy up the midrange (it is doppler distortion which is a function of physics). The problem is worse using a high Q driver because of its weaker magnet. Thus, it is much better to keep the lower frequencies (below 100 hz) out of the midrange driver and biamp to keep those frequencies out of the amp as well. Linkwitz tried many drivers and concluded that OB sound is best with drivers with a Q of 0.4 to 0.5. It is a function of damping (even though that Linkwitz used SS amps, not tube amps). I am sure that the Silver Iris drivers sound good, but if your goal is only good sound, then you're done (and you may not care about the midrange distortion, which is fine too). But if you are after great sound, then you really need to be looking elsewhere. Retsel

Subject: Re: How about the T/S specs of the Silver Iris by Hawthorne?
Posted by [FredT](#) on Thu, 26 Oct 2006 23:41:07 GMT
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Lots of good discussion here about the Silver Iris OB speaker. Hurdy Gurdyman, who owns a pair, says they're great. Others, who have not heard the Silver Iris, are skeptical based on their theoretical knowledge of high Q OB speakers' behavior. I suspect these are speakers that would not test well, especially at high levels with bass rich program material, but which sound very appealing at moderate levels. Only an audition will tell, so who's going to bring a pair to the Lone Star Audio Fest next May? Regarding the stamped versus cast frame, cast is better, but it's also more expensive. The Silver Iris with a cast frame would be quite a bit more expensive, and out of the reach of people who are now enjoying it.
