

Wide Essential Home Theatre Resource

ISSUE 120 on newsstands soon! SURSCRIRE TODAY!

NEWSLETTER

April 2007 • Volume 2, Issue 11 • The Official FREE Newsletter Of Widescreen Review Magazine

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WELCOME!

It's hard to believe that *Widescreen Review* has been publishing our monthly Newsletter for almost a year now, but here it is, Issue 11, so it must be so. In this month you will find the ongoing archived seven-part series written by John Dunlavy from Issue 60, May 2002, "Loudspeaker Accuracy: How Enclosure Design Affects The Music, Part 3." In addition, Danny Richelieu reports on a Road Show that he recently attended—Digital Projection was hosted by Stewart Filmscreen®. And, of course, we feature our monthly Coming Soon...To A Retailer Near You and Studio Scoop.

Gary Reber

Editor-In-Chief, Widescreen Review

COMING SOON TO NEWSSTANDS

Here's a sneak peek into what's coming in Issue 120, May 2007 of *Widescreen Review*:

- "JVC® DLA-RS1U 1080p D-ILA® Front Projector" By Grea Rogers
- "Sony KDS-R70XBR2 70-Inch SXRD™ Television" By Mike Marks
- "Sony PlayStation" 3 Blu-ray Disc-Powered Gaming Station" By Mike Marks
- "ExactPower UltraPure Symmetrical Wideband AC Power Conditioner" By Doug Blackburn
- "HP SLC3760N MediaSmart LCD HDTV" By Mike Marks
- "Display Technologies Part I: Orientation" By Lancelot Braithwaite
- "Optimum Performance Home Theatre Structural Design, Part II" By Gary Reber
- Over 40 Blu-ray Disc, HD DVD, and DVD picture and sound quality reviews
- And more...

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 By Jack Kelley



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Win a Home Theatre Contest





loaded with useful features, a superb menu system, plenty of inputs, great performance, and gives outstanding value. This projector offers incredible value and is extremely refined..."

Doug Blackburn, Editor, Widescreen Review Magazine

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Rules And Conditions For Contest:

- 1.) How To Enter: Win A Home Theatre Contest begins at 12:00 AM on March 12, 2007 and ends May 31, 2007 at 11:59 PM Pacific Time. To enter online go to www.WidescreenReview.com, click on the short survey. To enter by mail, print out the questionnaire, complete the questions in writing and mail to: Win A Home Theatre; c/o Widescreen Review, 27845 Commerce Center Drive, Temecula, CA 92590. Online and mail-in entries must be received by 11:59 PM PST, May 31, 2007. Limit one entry per person, per household, and per email address, regardless of method of entry. An e-mail address may only be used by one (1) entrant. Subsequent attempts made by the same individual to enter by using multiple e-mail addresses or otherwise will be disqualified. Entry will be declared by the authorized account holder of the e-mail address submitted at time of entry. By entering, entrants acknowledge compliance with these official rules including all eligibility requirements. ALL QUESTIONS MUST BE COMPLETED before submitting entries. Incomplete entries will be eliminated.
- 2.) Selection of Winner: On or about June 3, 2007, one (1) winner will be selected in a random drawling that will be conducted among all eligible entries received during the Promotion Period. The odds of winning the prize will depend on the number of eligible entries received. Winner will be notified by telephone.
- 3.) Eligibility And Conditions: Contest open only to legal residents of the 50 United States (and the District of Columbia), 18 years of age or older. Void where prohibited. Employees of Sanyo, Da-Lite*, and Widescreen Review, their immediate families, and their respected affiliates, including advertising and promotion agencies, are not permitted. All federal, state, and local taxes are the sole responsibility of the winner. Please allow 6-8 weeks for delivery of prizes. No substitution, cash alternative, or transfer of prize is permitted.
- 4.) Name Of Winner: The name of winner will be posted on or about June 3, 2007 at www.widescreenreview.com.

http://www.widescreenreview.com/contest

Coming Soon FULLON To A Retailer Near You

Tricia Spears



Bowers & Wilkins VM-6 loudspeakers

Bowers & Wilkins (B&W) has introduced the **VM-6** two-way, ported, wallor stand-mount loudspeakers. The wall bracket and tabletop stand are first wired with loudspeaker cables and then the loudspeaker is slid into the bracket or stand to provide contact for the audio signals. Featuring a

one-inch aluminum dome Nautilus™ tweeter with tapered-tube technology and a five-inch Kevlar® cone bass/midrange driver that delivers solid bass down to 49 Hz, the loudspeakers are available in black, pearl white, and silver finishes with complementary grill cloths. The VM-6 loudspeakers are now available for \$450 each.

Bowers & Wilkins

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www.bwspeakers.com

KEF® America first introduced its Reference loudspeakers in 1977. The company has now announced their Next-Generation **Reference Series** line of loudspeakers, with nine models available in a wide variety of finish options. The latest generation Uni-Q® technology delivers improved stereo imaging, and the ultra-low distortion bass drivers are said to deliver fabulous imaging over a commanding soundstage. With improved low-frequency response and customization with a two-position bass control, the new four-position HF/SHF level adjustment affords the flexibility to optimize the balance of a specific system and environment. The line includes four bookshelf models—**201.2**



KEF Reference Series 207.2

(\$2,500 each), **203.2** (\$4,000 each), **205.2** (\$5,500 each), and **207.2** (\$10,000 each); two center channels—**202.2** (\$3,000 and \$3,750 each, depending on finish) and **204.2** (\$4,500 each); a surround loudspeaker—Model **206.2** (\$3,750 each); and two powered subwoofers—**208** (\$5,000 each) and **209** (\$9,000 each).

KEF® America

732 683 2356

www.kef.com



Wavecor loudspeakers

While **Wavecor Ltd.** is located in China, the key people behind the company are of Danish origin with a long history in the Danish loudspeaker industry. Specializing in high-quality loudspeaker units for the industry and for private do-it-yourself hobbyists, Wavecor has announced its first lines

of loudspeakers with some very interesting products, including a high-end 30mm dome tweeter with neodymium-magnet woofers. Besides the range of standard products that Wavecor offers, the company welcomes customers' special requirements—custom-designed products with guaranteed exclusivity.

Wavecor Ltd. +86 (20) 61943288

www.wavecor.com

Classé Audio has combined two concepts into a single "reference" disc player in its CDP-502. The single component accepts audio CDs, DVD-Video, DVD-Audio, and



Classe Audio CDP-502

numerous optical disc variants. The slot-loading TEAC® DVD-ROM mechanism provides superior disc-handling characteristics, reliability, and control flexibility. On the video side, the CDP-502 is able to scale output to all HDTV formats up to and including 1080p via its HDMI digital-video output. The video DSP also incorporates extensive digital processing to reduce troublesome "mosquito noise" and adaptively controls color and contrast ratios and improves chroma transient performance. Employing an elegantly curved, aluminum industrial design and front-panel color touch-screen, the CDP-502 comes with a backlit wireless remote and includes CAN-busports for inter-Classé-component communications and RS-232 interfacing for integration into media and whole-house control systems. The CDP-502 is available for \$8,500.

Classé Audio 514 636 6384 www.classeaudio.com

With over ten years of experience in building electronic componentry for some of the best-known consumer product manufacturers in the country, **Lift It** television, monitor, and projector lifts are engineered to function "intelligently" using proprietary microprocessors and controls. The company's latest innovations in their electronics package



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Black Rhodium New Prelude

New Prelude is part of the new range of high-performance audio and home theatre cables engineered by Black Rhodium. With their capacity of being able to reduce impact-induced noise voltages that can occur when sound is transmitted via audio cables, it is said that you will experience a much clearer rendition of your favorite tunes

when using New Prelude audio interconnects. With silver-plated copper conductors for cleaner and mid- and high-frequencies, advanced instrument cable design techniques to reduce microphonic noise, and an attractive green finish, the New Prelude cable pairs are twisted together for extra clarity of sound.

Black Rhodium

+44 (0) 1332 342233

www.blackrhodium.co.uk

Digital Projection 2007 Road Show

At Stewart Filmscreen®, In Torrance, California

Digital Projection is in the midst of a nine-city tour of the United States, showing off their current line of home and commercial projector systems. I was lucky enough to catch up with them at Stewart Filmscreen®'s factory in Torrance, California where they showed, among other products, their TITAN 1080p-250, the newest high-end three-chip 1920 x 1080 DLP® projector.

The TITAN 1080p-250 is a single 250-watt lamp design that can produce up to 2,000 lumens with an advertised contrast ratio of 5000:1. The projector features a seven-point color-correction system, a user-selectable "Xenon color mode" for improved color fidelity, and extensive control over gamma, color, and gray scale tracking. The TITAN 1080p-250 can be mated with Digital Projection's new VIP 2000 video processor, which includes two component inputs, two HDMI inputs, and can also be upgraded to include two SDI inputs and an additional two HDMI inputs (for four total). The processor employs "per-pixel," motion-compensated deinterlacing using its Silicon Optix Realta HQV™ chip. In the demonstrations I saw (displayed on Stewart Filmscreen's FireHawk CineCurve 2.35:1 curved screen with motorized masking and Digital Projection's TheaterScope anamorphic lens option), the TITAN 1080p-250 produced a highly dimensional-looking image, with beautifully rendered detail. Digital Projection used 1080p Quicktime videos delivered by some beefy servers as a source. The TITAN 1080p-250 will be available for around \$45,000, and the TheaterScope anamorphic lens option sells for an additional \$12,000. Look to the pages of Widescreen Review for an in-depth review of the TITAN 1080p-250 system soon.

Stewart Filmscreen's impressive demonstration room was filled with many other Digital Projection products, including a single-chip dVision 1080p (\$30,000; reviewed in Issue 109, June 2006) displayed on Stewart's new StarGlas™ 60 rear-projection screen, which is an "ambient light-resistant" screen enclosed by Class II safety-glass, which is non-flammable, scratch- and stain-resistant, and can be cleaned with ease. The combination was impressive, and, with its anti-glare coating, would make for a great outdoor theatre system, built into an outside wall. Digital Projection also displayed an iVision 20 HD (\$7,000) on Stewart's Media Screen (see Issue 100, July 2006 for more) with an Xbox 360 used as the source.

The Road Show continues on through mid-May, visiting the cities listed in the accompanying chart. To register for a city near you, visit www.digitalprojection.com/roadshow. WSR





Digital Projection 2007 Road Show Destinations

Orlando, Florida	March 15, 16
San Francisco, California	March 28, 29
Los Angeles, California	April 4, 5
Dallas, Texas	April 11, 12
Houston, Texas	April 18, 19
Chicago, Illinois	April 25, 26
New York, New York	May 2, 3
Washington, District of Columbia	May 9, 10
Atlanta, Georgia	May 16, 17

Loudspeaker Accuracy How Enclosure Design Affects The Music Part 3

JOHN DUNLAVY

This is the third in a series of articles on the topic "Loudspeaker Accuracy" that I have written for *Widescreen Review* as a quest editorialist.

Enclosure Properties

The three main components of an audiophile loudspeaker are the enclosure, drivers, and crossover network. For a loudspeaker to exhibit truly accurate measurable and audible performance, all three must be treated in an integral manner, with appropriate levels of design consideration given to each and to how they will perform together as a "system."

All too often, loudspeaker enclosures appear to have been designed by devoting more attention to appearance and artistic merit than to the properties required to achieve a high level of accuracy. This, of course, frequently leads to a loudspeaker that looks great, provides a pleasing sound quality, but falls short of delivering truly accurate measurable and audible performance.

Within this article, I will limit my coverage to sealed enclosures because I believe, if properly designed, they provide the potential to yield the most accurate level of reproduction.

When you port an enclosure, it is no longer able to reproduce bass transients with accurate time domain properties. As a consequence, the transient properties of such a loudspeaker are degraded. Many loudspeaker designers may disagree with this but, as a string bass player for over thirty-some years, I am very sensitive to the reproduction accuracy of bass transients. Ported designs distort the impulse and step response of the woofer, which many designers believe detracts from the accuracy of bass reproduction. This inaccuracy can be seen from the distorted shape visible in a measurement of a loudspeaker's step response.

Among the properties of an enclosure that I believe are most important for achieving measurably and audibly accurate performance are:

- 1. Proper overall dimensions, internal volume, and correct height-to-width-to-depth ratios to attain the desired low-frequency bandwidth
- 2. A vertically symmetrical array of drivers (woofer-midrange-tweeter-midrange-woofer) is required to achieve a symmetrical radiation pattern in the vertical plane and reduce the amplitude level of floor reflections.
- 3. Precise time-domain (path) alignment of all drivers is required to obtain accurate reproduction of complex musical and other transients (at the normal on-axis listening distance of 10 feet).
- 4. All drivers should be symmetrically located with respect to enclosure edges along a common vertical axis to achieve a symmetrical radiation pattern in both the vertical and horizontal planes. Otherwise, significant peaks and valleys will be created in the horizontal and/or vertical radiation patterns of the loudspeaker.
- 5. Use of adequately thick enclosure walls to ensure a high degree of rigidity and reduction of resonances. The enclosure walls should be made of a reasonably dense material of appropriate thickness (minimum 3/4 inch). Medium Density Fiberboard (MDF), while not possessing totally ideal properties, is well established among loudspeaker designers and has earned a good reputation for providing excellent performance at an affordable price.
- 6. The use of efficient acoustical absorbing material located between the drivers and the external enclosure edges to minimize the effects of "edge diffraction" (reradiation from enclosure edges). Merely "rounding the edges" of an enclosure usually does little to reduce the audible and measurable effects of diffraction or reflections from enclosure edges and protruding driver flanges/edges. Some loudspeaker designers have succeeded in mitigating the diffraction problem by locating the midrange and tweeter drivers on the front baffle surface in an asymmetrical manner so that the distance from the center of a driver to each of the enclosure edges is not divisible into any of the other distances by a "whole num-

- ber" (integer). While this "solution" may result in a reasonably smooth curve of onaxis frequency response, the off-axis frequency response is usually riddled with peaks and valleys, and the directivity patterns become asymmetrical (with lobes at undesirable angles), often no more than a few degrees off-axis.
- 7. Separate, individually-sealed, rigidly-constructed, internal enclosures for the woofer, bass, midrange, and tweeter drivers is necessary to prevent physical/acoustical interaction between drivers operating over different frequency ranges.
- 8. Sufficient internal volume within the woofer and/or bass sections to achieve the intended low-frequency performance. At bass frequencies, a certain volume in the enclosure combined with a driver having an appropriate resonant frequency and "Q" properties is required to yield overall the most accurate performance.

Proper enclosure design requires that the designer gives attention to the free-air resonance of the drivers and their "Q," along with the resonance and "Q" of the enclosure. System resonance is a function of the combination of the resonance frequency of the driver and the resonance frequency of the enclosure. Resonance is that frequency of a system at which the reactive component goes from a positive value through zero to a negative value. At the frequency at which the reactive component goes through zero defines the resonance frequency of the drivers and/or the system, i.e., the driver(s) plus its enclosure. It really doesn't matter how esoteric the drivers used in a loudspeaker system are. What does matter is that the drivers are selected for their measurably accurate performance within their frequency response range and their properties are suitably matched to the properties of the enclosure.

- 9. Sufficient internal bracing and stiffness to prevent "modes" (maximum and minimum sound pressure levels) from developing along enclosure walls.
- 10. Use of efficient acoustical absorbing material within the interior chambers of the

enclosure housing the woofer, bass, and midrange drivers, in a quantity adequate for achieving proper "damping" of internal standing waves.

Without either appropriately rounded enclosure edges or effective acoustical absorbent materials between the drivers and the enclosure edge, edge defraction will create significant peaks and valleys in the frequency response of the system, along with "ringing" (amplitude variations in the time domain) in the reproduction of musical transients.

While "ported" enclosures are frequently used by some designers to "enhance" the SPL of woofer or bass drivers, it raises the "system Q"—resulting in bass that is often "poorly damped." Indeed, ported enclosures frequently yield what many listeners refer to as "one note bass." (Although such sound quality appeals to many listeners of music that contains mostly "kick drum" bass, it is hardly appropriate for listening to a wide variety of music or soundtracks containing various kinds of bass instruments or sound effects containing complex bass transients.)

Indeed, there are very few (if any) "free lunches" available to designers, as is evident from what competent physics and engineering teach about the properties of loudspeaker enclosures.

The acoustical shortcomings of a poorly-designed enclosure are usually evident from an informed examination of a full set of accurate anechoic chamber measurements that include impulse response, step response, and cumulative spectral decay (waterfall) response. For example, the impulse response of a poorly-designed enclosure will often exhibit a "ringing" characteristic, while the step response will disclose a distorted "leading edge" and undulations along the length of the step. These deficiencies are typically audible to those familiar with the sound of live instruments such as the string bass, cello, drums, etc.

This is why a full set of accurate anechoic chamber measurements (not outdoors and made at the normal listening distance of 10 feet) are so important to audiophiles and others seriously concerned about the true accuracy of their loudspeakers. These should include frequency response, impulse

response, step response, waterfall, and non-linear distortion at various frequencies and SPLs; input impedance; and representative radiation patterns.

In future articles, I will discuss the wide range of different loudspeaker measurements and how each can help audiophiles determine whether a given loudspeaker possesses the potential to yield "true audible accuracy."

About John Dunlavy

John Dunlavy, MAES, FIREE, etc., is a well-known and highly-respected engineer and scientist with a number of patents to his credit, and 40 years at the forefront of audio innovation. John's special interest is loudspeaker accuracy, a notion he's been working on and talking about for decades. Agree or disagree with him, we can all learn something valuable about the world of audio reproduction sitting at John's knee. That's why I've invited him to pen this Guest Editorial column for the next several months to provide us all a "short course" in acoustics and audio reproduction. I'm looking forward to it, as I look forward (as always) to your comments.

Gary Reber, Editor-In-Chief, Widescreen Review

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The Studio Scoop

Rumors, Reports, & Ramblings

Jack Kelley

Buena Vista

Are your drawers getting tight? Too much stuff trying to be crammed into a limited (and seemingly diminishing) space? Well, some studio execs feel your pain, and they are taking some drawer-relieving action in the form of slimmer DVD packaging. For example, Alias: The Complete Second Season (Issue 81, February 2004) took up two valuable inches of drawer space while Season Five (Issue 115, December 2006) only took up a quarter of an inch. You can look for this trend from most all other studios, as, according to The Digital Entertainment Group, DVD sales have flattened, all while rental spending is on the rise, and they feel it is due to limited drawer/shelf space. And if you are ever in the Temecula, California area and want to see drawers in need of some thinner cases, swing by and I'll show you WSR's vault of DVDs, HD DVDs, and BDs. Be warned, how-

DreamWorks

ever, you may have to do a little fil-

Blu-ray Disc and HD DVD as niche businesses? What? "I don't think it's going to become the next platform," said Jeffrey Katzenberg, Chair and

CEO of DreamWorks Animation, at a New York investor's conference. "It is not the next platform. We're not going to go VHS, DVD, HD DVD, or Blu-ray. HD/Blu-ray will be a videophile business." So for those of you hoping to add Shrek to your hi-def collection, you may have to wait longer...and longer. And the next format debate continues on.

Lionsgate

Keeping with the family-oriented Little House On The Prairie theme from last month, Lionsgate has entered a three-picture deal with painter Thomas Kinkade.

often referred to as The Painter of Light. Jared Padelecki, of House Of Wax fame (and I use the word "fame" in the loosest of senses), has agreed to play Kinkade, and Peter O'Toole as one of his mentors, with the first film, The Christmas Cottage, which also happens to be the name of one of his paintings, to be released during the holiday season. Personally, I think Who The @#\$% Is Thomas Kinkade? is much more catchy.

MGM

Latin beauty Salma Hayek, along with partner Jose Tamez, have entered into a production agreement with MGM. The newly formed label, Ventanazul, which

triumphantly tasteless, and improbably hilarious." While on the other foot, Kyle Smith in the New York Post begins his review of the movie by writing: "You know those one-joke Saturday Night Live sketches that start to age after six minutes? Blades Of Glory is one joke that lasts 93 minutes." If he's talking old school SNL, we should be okay.

Sony Pictures

Bond. James Bond has done it again. The Blu-ray Disc version of Casino Royale was the first high-definition disc to have

haps, bladed foot), Joe Morgenstern in the

Wall Street Journal calls it. "blissfully silly.

shipped over 100,000 units, according to Video Business, since its March 13 street date. And it did so in just two weeks. Compare that to the 11

months it took for the standard-definition Air Force One to reach the same goal back in

20th Century Fox

For all of you X-Filers out there, I have a bit of good news. Now that creator Chris Carter has

reportedly reached an agreement with Fox concerning syndication profit sharing (or more likely, lack thereof), Mulder and Scully maybe to heading to the big screen for the long-awaited sequel. A nine-year wait. David Duchovny, who plays Mulder, is apparently onboard, but what about Gillian Anderson (Scully)? Well, according to her manager, all she is waiting for is the "delivery of a great script." Not just a good one, a great one. Hmmm...

United Artists

Well, it looks like Tom Cruise and partner Paula Wagner have raised enough capital.



loosely means "blue window" in Spanish, will "develop, produce, and acquire mainstream films that either draw on Latin themes or feature Latin talent, both in front of and behind the camera," according to The Hollywood Reporter.

Paramount

Blades Of Glory cleaned up (again) over the Easter holiday, taking in \$23 million, a healthy \$6 million over the number tworated movie. Meet The Robinsons. Since its release two weeks ago (March 30), Blades has brought in \$67.9 million, even with its mixed reviews... On the one hand (or per-

Continued from page 7...

and Tom has been hired...again. Led by Bryan Singer, Cruise will star in a yet-to-betitled World War II thriller, which is to be based on "actual events involving German generals planning an assassination attempt on Adolph Hitler." Production is slated to begin this summer.

Universal Pictures

If you watch *The Office* (like 90 percent of the people here at *WSR*) and are having Andy (Ed Helms) withdrawals, Universal is looking out for you. They have bought the rights to *A Whole New Hugh*, which will star and was written by Helms, and is to be produced by Judd Apatow (*The 40 Year Old Virgin*). If you need a quicker fix, look for Helms in *Evan Almighty*, which is scheduled for release, according to IMDB, on June 22, 2007. Or June 21, 2007, in Russia. What the...

Warner Bros.

Warner Bros. is going green. Effective the first of this month, all paper wraps, as well as inserts, covering their DVDs, HD DVDs, and BDs will be made with 30 percent post-consumer recycled content. According to their own calculations, here are the projected savings:

- Energy to power 404 homes
- 43.4 million pounds of greenhouse gases
- 53,169 trees
- 19.3 million gallons of water
- 115 garage trucks worth of solid waste

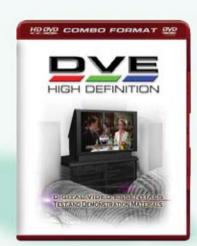
Editor-in-Chief Gary Reber applauds their initiative and hopes all other studios will follow suit. WSR

Contrary to popular opinion, Research/Production Editor Jack Kelley is not responsible for any release date changes, price changes, or any other perceived errors contained within. He can be reached at jack@widescreenreview.com.

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