FIELD TESTING

Projecting A Positive Image

An Explanation Of Equipment Choices For Boardroom And Presentation Environments, Part 1

by Wayne Dolnick

[*Editor's note: The results of this real-world battery of tests yielded so much information that* SCN *will be continuing the saga in our next issue.*]

Making a good first impression is of utmost importance in the presentation environment, whether it's during a national sales meeting, educational road trip, trade show, or international marketing presentation. But wherever the location and whatever the desired result, I have a few suggestions for the equipment and software you have at the ready. In the past, I have stressed the importance of being prepared for these meetings, seminars, presentations, and have waited until now to highlight and review some very important tools you will need. We started this series on presentation options and industry tools with the September issue of *Systems Contractor News*, and this month we'll continue to take testing out of the laboratory and into the real world of applications.

I know you already know it all. Get a portable projector, load a few files into a pre-configured PowerPoint and you are ready to run. Microsoft's PowerPoint is great, but did you know that Adobe has a program that will not just put polish on your presentation, but if you are ready, put a "spit-shine" on your work. If you just need a few slides, could care less about audio, image quality is not pressing, and don't need to add music, sound effects, timing, or want to marry audio and video, then Adobe's Premiere Pro 1.5 is not for you. But on the other hand, if you are reading this, you are that much closer to learning about new options and actual results of purpose-designed tests.

PART ONE: THE TEST BED

We have two electric projection screens from Da-Lite, one from Draper, almost a dozen assorted LCD and DLP projectors, a digital pre/processor by Lexicon, monitors from Genelec, M-Audio and Mackie, computer peripherals from Plextor, Western Digital, CMS and others, plus PowerPoint and Adobe's Photoshop and Premiere Pro, Sencore's group of tools, audio testing by EAW's Smaartlive and finally control via a new universal remote by Logitech. Yes, you read correctly, this piece is *all encompassing*.

To simulate in the field use by a "road-warrior" and the set-up of smaller to small-mid-size boardrooms, I viewed images from as close as 8 feet to a maximum of 13 feet, which in most cases would center a room up to 30 or so feet in length holding approximately up to 25 people within an oval table setting or up to 30-plus people in a "U" table setting. If the same projectors were used in an off-site room of the same length of 30 feet by 30 feet wide, attendance could increase to approximately 35-plus people.

Everything was viewed on a Draper 84-inch diagonal, remotely controlled video screen of 4:3 (NTSC) sizing in a matte white fabric finish (1.0 gain), a comparable 96-inch diagonal model from Da-Lite constructed of a high-contrast matte-white fabric (1.1 gain), as well as a Da-Lite matte-white finished electrically controlled 90-inch diagonal screen in a 16:9 (HDTV) format. All AV was run through the amply optioned Lexicon MC-12B digital processor, using custom built (by *moi*), balanced audio and video cables from Mogami and Canare. A video test of assorted images was assembled on my laptop and output to all units in testing. Included was a set of Excel spreadsheets that included 50 rows up and down, and columns A-S across using an Ariel type face sized to a maxi-

Da-Lite's Contour

mum of 11-point. Also included were a 1.2MB PDF with strong vertical and horizontal lines and colors, a multi-imaged, multi-paged PowerPoint presentation with a heavy emphasis on color photos, plus moving image files, created in-house via Adobe Premiere Pro 1.5 and Photoshop CS2.

PART TWO: TEST PROCEDURE

My first projector tested, adjusted, and retested was a Hitachi CP-X1250. I ran a composite video feed (Canare cable) directly out of the Lexicon MC-12, which in turn was fed the DVD file and outputting audio to a set of three Genelec 8030 studio monitors. The image was projected on the Draper Salara Plug&Play first. The result, well, to listen to the DVD through the MC-12B with Genelec 8030 transducers, all the while viewing Jane Monheit (*Live at the Rainbow Room*, N-Coded Music/Warlock Records) on an 84-inch Draper video screen 11 feet away, with an included remote to automatically lower and raise the screen was akin to sitting at the best table the Rainbow Room and watching the concert live. After the awe sunk in, and I remembered that I was starting a review, I changed inputs to RGB on the Hitachi CP-X1250. The change, if you haven't done this yourself, was simply outstanding. We all look at specs, read the numbers and hear the marketing hype, but in this case going from a composite signal the result was really visible! As I stated above, every unit ran through the same battery of visual tests and most through pre and post adjustment via the Sencore VideoPro and CP5000 Color Analyzer tools, with initial observations always starting with factory settings.

I also first observed images of Jane Monheit at a further distance of 22 feet on the 84-inch diagonal 4:3 formatted, matte-white Draper Salara Plug&Play, connected via RGB cables, and was seriously blown away by the quality of the image. The 1250 was just plain comfortable to watch, with images that were sharply defined and no smearing of the colors. Could it get better, I wondered out loud to my assistant, and would graphics and text documents change my mind?

This is where the full strength of the Sencore tools were applied and why it became crystal clear that no self respecting installer, contractor, or end-user should permit a final sign-off on an installation before the setup is calibrated with the assistance of these tools. While the greatness of being human is that we all possess just about the finest tools in our built-in senses, we still need guides to reference, and the Sencore VideoPro VP403 provides those needed, and more. Essentially, what the Sencore VP403 does is generate various video tests, via a full range

of video signals from the most basic NTSC and PAL all the way through 'S,' Y Pb Pr component, RGBHV, VESA/Mac and RF in SDTV ranging from 420i/29 right through and including every possible signal up to HDTV 1080s23. Oh, and the plethora of output jacks on the back of the unit, combined with the included cables, adapters and jumpers allows for the connection to any, and I mean any projection source; cathode ray, front LCD, plasma, MAC, composite, component, RGB, 'S,' HDTV/VESA, DVI-I, DVI-A, VGA HD-15, BNC, RCA, USB, RS232 and even audio.

OK, I know you want the nitty-gritty, so I'll get right into the test procedure:

• Brightness levels, via a 100 IRE generated Raster signal

• Pluge test to set black level, check DC restoration (black clamping) via internal pluge pattern of 4 concentric boxes ranging from fixed black to 7.5IRE (NTSC), black and 10 IRE

• Overscan test to check geometry of the units display; keystone, pincushion and linearity

• Multiburst test which checks the unit's ability to display sharply defined stripes, at equal brightness all the way through to the format's full resolution

• Decoder check and decoder adjustment for color control and setting of primary colors

• Crosshatch and converge tests to check color convergence

• Focus—thousands of "E"s and "M"s allow for precise tuning

The testing order as recommended by Wendall Hanson, Sencore application engineer, over at Sencore's extremely helpful customer service center was as follows: brightness (black level), contrast (white level), sharpness, tint, color and re-check and reset, if needed.

Now at this point you should be thinking or asking how you reference these test patterns to a standard that you could validate to your client or for your edification. Well that is why the Sencore ColorPro 5000 was invented. Essentially what the Color-Pro 5000 does is analyze the colors and the temperature of the light levels of the image, utilizing the power of your computer in conjunction with the algorithms built into its purpose-designed software. Then, through the application of one of either of the two supplied light-measuring "eyes," it reports what is currently output and what needs to be adjusted, where and how. This is an invaluable tool that tells you how much of any of the

three primary colors need to be raised or lowered and if your source device is running too hot (bright) or not hot enough. Pre-configure to 6500 degrees light output or any amount you choose, the unit will analyze to that standard. It can record it to a file, with the name of the job, project info, unit info and full IRE reporting from 10 IRE on up. Would I say this is an essential tool for the road-warrior or 10-man office? No, but for larger installation firms or in-house AV techs with more than one system to balance, then I would most definitely recommend you invest in this device so that the Excel spreadsheets and the colorful charts all the middle managers have so diligently prepared to impress their respective bosses are legible and not colored irregularly.

Do you need this ColorPro 5000 if you are intending to purchase a VP403 or other generator? The answer here is a resounding yes. What good is it to generate an image if you can't verify whether what you are

Lexicon's MC-12B digital processor

adjusting is right? Yes you can adjust the pluge level, but at what temperature are you making adjustments? And color changes, well if you know in your head what perfect red, green and blue is, then Pantone has a job for you.

PART THREE:
SUPPORTING PLAYERS

I started these tests by building up presentations and transferring them to optional devices for use in-house or in the field.

1.) Plextor's PX-TV100U allows the conversion of videotape to DVD.

2.) Premiere Pro 1.5 software from

Adobe is a creation and editing suite for both audio and video that most users with a modicum of computer skills could master. Definitely worth considering.

3.) Adobe's Photoshop CS2 software is a further refinement of the most recognized and used tool in marketing and image production offices throughout the world. This is a must-have software package, and one that will be invaluable in daily use. Integrate with Premiere Pro and import any image, in any conceivable format into the new developing.

4.) Bias makes a product called SoundSoap 2 that will remove hiss, buzz, pops and crackles from any analog source in a few easy steps, al-

	MODEL	SPECIAL NEW FEATURE	RATED CONTRAST & BRIGHTNESS	IMAGE SIZE	NATIVE RESOLUTION
CANON	LV-7245		400:1 (Full) 2500 ANSI lumens	21"- 300"	1024 x 768 pixels XGA Scaled to UXGA 1600 x 1200
	LV-7240		400:1 (Full) 2100 ANSI lumens	21"- 300"	1024 x 768 pixels XGA Scaled to UXGA 1600 x 1200
	LV-X5		400:1 (Full) 1500 ANSI lumens	21"- 300"	1024 x 768 pixels XGA Scaled to UXGA 1600 x 1200
HITACHI	CP-X1250W	Network Control Reverse image for ceiling	800:1 (Full) 4500 ANSI lumens	40"- 500"	1024 dots x 768 lines XGA 1600 x 1200
	CPX-445	DVI + (DVI-D X1250)	500:1 (Full) 3200 ANSI lumens	40"- 300" 1.5 - 1.8:1	1024 dots x 768 lines XGA 1280 x 1024
MITSUBISHI	XD-450U	3yr. NEXT business day replacement unit	2200:1 (Full on/off) 2600 ANSI lumens	40"- 300"	1024 x 768 XGA 1280 x 1024 compressed
	XL-30	3yr. Next business day replacement unit LAN Control (option); Pip Digital 'Expand' zoom	350:1 (Full on/off) 3000 ANSI lumens	40"- 300"	1024 x 768 600V lines 1600 x 1200 compressed
NEC	LT30	3 business day replacement or next day exchange 1st. Yr.	1600:1 (Full) 2600 ANSI lumens	30"- 300"	1024 x 768 SXGA+
	LT35	3 business day replacement or next day exchange 1st. Yr.	1600:1 (Full) 3000 ANSI lumens	30"- 300"	1024 x 768 SXGA+
OPTOMA	EP 719	DVI-D wHDCP	2500:1 (Full on/off) 2000 lumens	24.6"- 300"	1024 x 768 XGA 1400x1050 SXGA
	EP 739	DVI-D-HDCP VGA for loop	2000:1 (Full on/off) 2500 ANSI lumens	24.6"- 246" 3.9' - 32.8' dist.	1024 x 768 XGA
	EP 759	DVI-D-HDCP USB	2000:1 (Full on/off) 3500 ANSI lumens	29.5"- 245" 4.9' - 32.8' dist	1024 x 768 XGA 1600 x 1200 UXGA compressed
PANASONIC	PT-LB20NTU		400:1 (Full) 2000 lumens	33"- 300"	1024 x 768 XGA
	PT-LB30U		400:1 (Full) 3000 lumens	33"- 300"	1024 x 768 XGA
	PT-LB30NTU		400:1 (Full) 3000 lumens	33"- 300"	1024 x 768 XGA
TOSHIBA	TDP-TW300U	DVI input 802.11b/g wireless	2000:1 (Full) 3000 ANSI lumens	40"- 300"	1024 x 768 XGA 1600 x 1200 UXGA

lowing the use of older data within a new corporate promotional or educational DVD.

5.) You know that all this video information you created for your fancy presentations, which might or might not include multiple high-quality audio tracks assembled in Premiere Pro takes up considerable space on your hard drive. If you need to take your dog and pony show on the road, try a portable 80 GB HD that attaches to your computer via a USB 2.0 from Western Digital, called appropriately, the Passport.

6.) OK, for the naysayer who claims 80GB won't float your boat and why should I have a portable drive that might "disappear," we also tested another Western Digital device that hopefully makes you sit up and take notice. The Dual-Option Media Center and combo external storage unit has a whopping 320 GB of storage.

7.) An essential tool today is a burner and Plextor makes the PX-716UF, a DVD/CD burner and player

that accommodates most of the confusing, non-compatible DVD formats out today. Compatible with R/RW media including Double Layer and Dual Format in up to 16X burning speeds.

PART FOUR: AUDIO
Of course audio has its own, special section. We wouldn't have it any other way. And in a follow-up issue we will give you an in-depth view of this aspect of presentation systems. In short though, this is what we used:

1.) All audio and video was output through the award-winning digital processor from the Harman Specialty Group's Lexicon division called the MC-12B. Quite simply, one of the most neutral in presence controllers I have had the good fortune to listen through.

2.) Going to the top rung of
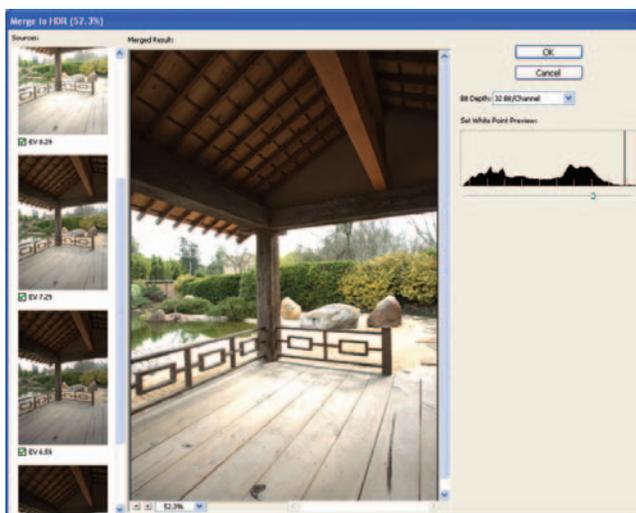
Adobe's Premiere Pro

speakers for sound quality I tried Genelec 8030 monitors for the front section and I actually had to sit-up and take notice of the absoluteness of these units. Whatever goes in, comes out. Refreshingly open.

3.) I auditioned mid-priced offerings from two industry giants in the world of recording. I tested a pair of M-Audio BX8a monitors and a pair of similarly sized drivers from Mackie, the well known HR-824. For worksta-

tion use and assembly of files with a smaller budget I recommend the M-Audio BX8a. If on the other hand, budgets allow for the next step up, with either the inclusion of a DAW, higher quality breakout box, or processor, I would recommend the Mackie HR-824.

PART FIVE: VIDEO TESTING OF FRONT PROJECTORS
After my initial test of the Hitachi CP-X1250, I did something a little unorthodox to allow me to view two screens of the same image simultaneously. I mounted the Da-Lite HDTV formatted matte-white unit directly in front of the Draper Solara matte-white NTSC unit—raising and lowering at will, with the included controls, in an attempt to compare the two. With offset approximately 1.5 inches, at my throw distance of approximately 13 feet, the focus shift was negligible. I repeated my viewing of the Jane Monheit video, with its extremely dramatic, Broadway type of

KEYSTONE CORRECTION	RATED DB	LENS	WEIGHT	DISPLAY	COMPATIBILITY	RATED LAMP LIFE	WARRANTY	PRICE
Vertical +/- 30 (0) Auto Digital	30dB	F1.7-2.0, f21.6-25.9mm Manual Zoom & Focus	7 lbs	0.7" LCD Polysilicon TFT Active-Matrix	XGA, UXGA (compressed), SXGA (compressed),SVGA,VGA,HDTV	3000	3 yrs. P&L 120 days lamp	$2,499
Vertical +/- 30 (0) Auto	30dB	F1.7-2.0, f21.6-25.9mm Manual Zoom & Focus	7 lbs	0.7" LCD Polysilicon TFT Active-Matrix	XGA, UXGA (compressed), SXGA (compressed), SVGA, VGA, HDTV	3000	3 yrs. P&L 120 days lamp	$1,999
Vertical +/- 30 (0) Auto	28dB	F1.7-2.0, f21.6-25.9mm Manual Zoom & Focus	7 lbs	0.7" LCD Polysilicon TFT Active-Matrix	XGA, UXGA (compressed), SXGA (compressed), SVGA, VGA, HDTV	4000	3 yrs. P&L 120 days lamp	$1,399
Horizontal +/- 5 (0) Digital Vertical +/- 15 (0) Digital	35-39dB	F 1.7-2.4, f 31-46mm Power Zoom	17 lbs	0.99" P-Si Active-Matrix TFT X 3	VGA, SVGA, XGA, SXGA/UGA (compressed), MAC13, MAC16	2000	3 yrs. P&L 90 days lamp	$4,995
Horizontal +/- 5 (0) Digital Vertical +/- 15 (0) Digital	32-37dB	F1.7-2.1, f Manual Zoom	8.59 lbs	0.8" LCD Polysilicon Active Matrix TFT X 3	16:9, VGA, SVGA, XGA, SVGA (compressed), MAC16	2000	3 yrs. P&L 90 days lamp	$3,295
Horizontal & Vertical Digital Adjustment	30-35dB	F 2.4-2.6, f Manual Zoom & Focus	6.5 lbs	0.7" SINGLE DLP 12 ( ) Dbl. Data Rate	VGA-SVGA 640 x 480 1024 x 768; MAC	5000 Low Mode	3 yrs. P&L 90 days lamp	$2,499
Vertical +/- 30 (0)	27dB	F 1.7-2.2, f 37-46mm Manual Zoom & Focus Zoom 1.3:1	5.9 lbs	0.99 LCD Polysilicon 3 X	VGA-UXGA 640x480 1600-1200; MAC	2000 Low Mode	3 yrs. P&L 90 days lamp	$3,000
Yes / Auto	37dB	Manual Zoom/Auto Focus	4.4 lbs	DLP		2000 2500 hr. econ mode	3 yrs. P&L 1yr. lamp or 500 hrs.	$1,795
Yes / Auto	40dB	Manual Zoom/Auto Focus	4.4 lbs	DLP		2000 2500 hr. econ mode	3 yrs. P&L 1yr. lamp or 500 hrs.	$2,195
	28dB	F 2.7-3; f 21.83-23.81mm Manual Zoom & Focus	4.4 lbs	0.55" Dark Chip2 DLP	XGA, SVGA, VGA, VESA, Mac, SXGA	2000/3000 (ECO)	2 yrs. P&L 90 days lamp	
	27dB (ECO)	F 2.4-2.6; f 28.04-35.9mm Manual Zoom & Focus	5.3 lbs	0.7" DDR DLP	XGA, SVGA, VGA, VESA, Mac, SXGA +	3000/5000 (ECO)	2 yrs. P&L	
	28-33dB	F 2.4-2.6; f 28.04-33.6mm Manual Zoom & Focus	7.5 lbs	0.7"DLP	XGA, SVGA, VGA, VESA, Mac, UXGA, SXGA	2000/3000 (ECO)	2 yrs. P&L 90 days lamp	
Yes / Vertical			4.9 lbs	3x.7" LCD	480i, 576i, 480p, 576p, 720p, 1080i	3000	3 yr. projector 90 days lamp	$2,699
Yes / Vertical		3X digital zoom	5.5 lbs	3x.8" LCD	480i, 576i, 480p, 576p, 720p, 1080i	N/A	3 yr. projector 90 days lamp	$3,799
Yes / Vertical		3X digital zoom	5.7 lbs	3x.8" LCD	480i, 576i, 480p, 576p, 720p, 1080i	N/A	3 yr. projector 90 days lamp	$4,299
Yes / Auto H&V +/-45		Motorized Zoom/ Auto Focus	12 lbs	0.7" DMD DLP	Analog & Digital RGB		2 yrs. P&L 90 days lamp	$3,199

Draper's Salara

color saturation in the backdrop and intense black levels, with the extreme close-up of Jane's face, allowing for careful analysis of skin tones.

After countless raising and lowering of the screens and finally deciding on having the Draper Salara Plug&Play as an upper image and the Da-Lite Cosmopolitan as the lower half, I concluded that the results were almost identical. I mean about 99 percent the same and if they weren't setup in that fashion, you would never tell them apart in image reproduction.

But that is where the similarities stop. The Da-Lite Cosmopolitan, a larger unit in overall dimensions, was constructed of a much heavier-gauge metal case. Is this relevant? That is for you to decide, but I will say the Draper unit was much sleeker in its overall dimensions and shape. The Draper Salara included a hand-held IR remote for controlling the screen, which as the name implies was plug and play and simple to start using. The Cosmopolitan allowed for the custom wiring (to cable-length needed) of the included toggle switch to suit your needs. Both units are motorized, but implemented in different ways, with a heavier motor in the Da-Lite unit. You need to examine and decide if this is important in your purchasing decision. Both were relatively quiet to operate, the difference being negligible as to a purchasing decision.

With regards to the actual screen material and unit construction, I have to give a slight edge to Da-Lite, which inserted a much heavier metal dowel at the bottom of the screen to stabilize the image. In many cases, this might not mean much, but if HVAC is strong, or doors open and close a lot during meetings, a "moving" image is not what you would want. Again, if this is not an issue, you have to decide what works best for you.

If the primary images are black and white Excel spreadsheets I would recommend both screens. If the images were primarily color video, or moving image in nature, I would give a slight edge to the Da-Lite due to the heavier stabilizing rod at the bottom of the screen and the bottom finish in black versus white on the Draper.

Regarding mounting options, it seems the Da-Lite has more variations and a more secure (in appearance anyway) mount, but in use, I found the Draper to be a snap (pun intended), secure and easy to adjust or remove if needed. My nod for mounting is to the Draper.

At the end of the day, the decision is yours and should be based on your needs, available options, and lastly, price. I will say that with the current crop of LCD and DLP projectors I tested, the matte-white fabric finish with ambient light streaming in was more than ample for daylight use. Everything was clear, legible and defined.

I tested another Da-Lite product, the Contour, and its custom-ordered High-Contrast matte white fabric allowed me to experience another viewing perspective. The outer case is slightly different, with an emphasis on style and offering different finish options. The electrical connections allow for better bench configuration then plugging in to the motor's connector jack. The high-contrast matte white screen finish offered a slightly tighter viewing angle than the matte white, which shouldn't be an issue unless the projected image is in an extremely wide room setting. The main advantage of this material was in the rendering of certain colors and the ability to view data in a room with uncontrollable ambient light.

Viewing was done at three distances: 8 feet 9 inches center, 12 feet center, and 13 feet 6 inches left cen-

ter. The Excel spreadsheet included 23 rows and columns A-Q with Ariel the primary font in 10- and 11-point plus charts. A high-resolution PDF of approximately 2MB was used with heavy vertical and horizontal lines, a PDF of the booth layout for the AES Convention, as well as a PowerPoint of mixed graphics, text and images, plus a short video clip created in Adobe Premiere Pro 1.5 for testing all units. The review chart accompanying this article includes what I think is useful information for making a calculated recommendation or purchasing choice, but here are some notes on the testing process:

Canon LV-X5: Great color on pictures, with the image showing clear reflections visible on the floor of the main room of the Hit Factory in NYC. Ceiling lights had seemingly perfect reflections on the highly polished tongue and groove floor. On the floor layout, booth numbers, while clear,

Western Digital's Media Center

were clearly pixilated and more difficult to read at furthest distance. The Excel chart was legible at all lengths, but pixilated. Good overall performer and adequate for most applications, the Canon LV-X5 would make my list as a contender.

Canon LV-7240: I was able to see an improvement in black levels, or I should say grey levels and deepness of black. This was pronounced on data, with numbers

coming up very sharp. Images of RPG acoustic foam nestled one on top of each other in a matt grey color or took on texture. Without taking anything away from the LV-X5, if you need to delineate textures, fabrics, etc. this unit is a positive step up from the LV-X5. Pixilation of data still remained an issue for me.

Canon LV-7245: Contrast was a tad better than the LV-7240 with colors looking very similar. Brightness was a little stronger, allowed for viewing in more ambient light. Specification numbers aside, I would highly recommend either of the LV-7240 or 7245 Canon units for most small to mid-size board rooms and for any road-warrior who wanted to make a good impression.

All Canon projectors listed included a full complement of cables, portable traveling cases and carried the same unit dimensions.

Hitachi CP-X445: Powering the unit up confirms on-screen that you are projecting 1024 x 768 at 60Hz (as did all Hitachi units tested). The PDF of the AES floor was much brighter than that produced by the Canon units. In this case, the spec doesn't lie. I still had trouble with the booth numbers, but slightly less pixilated, and sharper edges on the lines. When I briefly increased image size from 84 inches diagonal NTSC to 92 inches HDTV, the image obviously was larger, but not more legible. Contrast seemed to be slightly better on Canon LV-7245, but very close. The CP-X445 displayed slightly warmer colors and a brighter overall image when viewing video and photos. Great performer for the road-warrior or the boardroom manager.
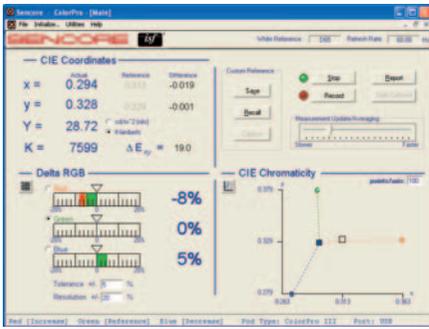
Mitsubishi XL30U: At 9 feet, a much cleaner image of the floor plan, but still slight pixilation on numbers within the Excel charts and files.

Mitsubishi's XL30U

Sencore's CP5000 main window

With a rendered Adobe Photoshop image, colors were nice and balanced, in fact more even than projectors up to this point. When viewing another recording studio, the RPG Skyline reflective panels on the ceiling took on a new dimension, with sharp defined lines. With the nestled foam, air pockets between layers became visible, even though they only amounted to what might have been a 32nd of an inch. At 10 feet I would have to say viewing data on the Mitsubishi XL30U and the Hitachi CPX-445, is very similar. At 13 feet and beyond, I found the Hitachi CPX-445 to have a slight edge for viewing graphics, but the Mitsubishi XL30U is better for watching corporate videos. The Mitsubishi XL30U offers a good balance of features, performance and function in a slightly larger case.

Hitachi CP-X1250: Besides a full complement of jacks, the unit has real-world performance advantages, including a brighter picture, higher contrast, and more uniform colors. The unit has less pixilation than the Canon 7245, a slightly sharper image with more contrast than the Mitsubishi XL30U. Though flesh tones and uniform colors were better in the XL30. The CP-X1250 had the loudest fan of the bunch, and while it didn't bother me at first, it started to grab my attention. I highly recommend this unit for any midsize room needing a multi-use projector. With the built-in magnifier to emphasize a section of an image, and the included laser pointer built into the remote, pointing to the desired booth on the floor plan is simple.

The sole DLP test unit was provided by Mitsubishi, which I will, in brief, describe below. More DLP units will be reviewed in the very near future.

Mitsubishi XD450U: Wow, the colors came out! The black levels appeared to be outstanding but the contrast seemed to be better on the LCD units tested. A slide of an acoustic panel provided by RPG Acoustics allowed for the minute "hair" of the fabric to be visible on the Hitachi CP-X1250 and the Mitsubishi XL30U, but not quite as defined with the XD450U. If you wanted

an overall performer, with exceptional color control and your predominant usage was video playback, I would lean towards the Mitsubishi XD450U, price aside.

Finally I would like to point out what may be obvious to some reading this: I did not adjust the units prior to these tests to optimize performance. This will occur

in my next phase of testing. Hopefully this information will help you to make an informative decision.

» **Adobe...**www.adobe.com
» **Canon...**www.canon.com
» **CMS...**www.cmsproducts.com
» **Da-Lite...**www.dalite.com
» **Draper...**www.draper.com
» **EAW...**www.eaw.com
» **Genelec...**www.genelec.com

» **Hitachi...**www.hitachi.us
» **Lexicon...**www.lexicon.com
» **Logitech...**www.logitech.com
» **Mackie...**www.mackie.com
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