

Tech Solutions E-guide Series • 2016

# A Guide to Selecting Video Display Technology

PRESENTED BY



AVTECHNOLOGY

**WINNER**  
**BEST SHOW**

InfoComm 2016

**LASER**

SOUND & VIDEO  
CONTRACTOR

**WINNER**  
**BEST SHOW**

InfoComm 2016



**DIGITAL**  
**PROJECTION**

# LEADERS IN LAMP-FREE PROJECTION

- 20,000 - 60,000 hours of illumination
- Laser or LED light source
- WUXGA or 4K
- No lamp changes
- No recalibration in multi-channel environments



The Visionaries Choice  
[www.digitalprojection.com/laser](http://www.digitalprojection.com/laser)



Photo courtesy of Church of the Highlands, Birmingham, Ala.

# A Guide to Selecting Video Display Technology

In today's church, ask any tech team member:: a picture is worth a lot of work. *By Carolyn Heinze*

**THERE'S NO QUESTION** that there are a lot of options out there when it comes to video display technology—so many that sometimes it's hard to figure out where to start. What's more, as prevalent as it is in our lives, video is complex, and it's not just about the technology; it's also about your space, how you wish to apply it, and what you can realistically and successfully accomplish with your budget.

## Laser vs. lamps

One relatively recent development is the advent of laser projectors, eliminating the need to change bulbs, which is expensive. Because they're low maintenance, they're often popular in facilities where projectors must be located in hard-to-reach areas.

Passion Community Church (PCC) in Powhatan, Va., has four campuses—two perma-

“Laser projectors might cost more now, but if we’re not having to replace lamps, **it’ll actually end up being cheaper** after the first two years than having to worry about replacing lamps.”:

**Ben Dillenback**, Technical Director, Passion Community Church, Powhatan, VA

ment facilities, and two that meet in schools—as well as a presence online. The church is embarking on a video projector upgrade for its 600-seat main broadcast campus in Powhatan, and Ben Dillenback, technical director, says that he and his team are conducting a cost benefit analysis that takes into consideration how long the projectors run on any given week, and therefore how often lamp replacements are required. “We’re going to have three screens going in our room, so that means each projector has two lamps a piece, and they’ve all got to be pretty close in brightness, so they’ve all got to be replaced at the same time,” he says. “Laser projectors might cost

more now, but if we’re not having to replace lamps, it’ll actually end up being cheaper after the first two years than having to worry about replacing lamps.”

Noise is also something to think about, he reports: “If your projectors are lower to the ceiling and closer to the congregation, if they’re putting off a lot of volume, the people who sit right underneath those projectors—you will hear from them.” Consequently, Dillenback and his team are examining the dB levels of the projectors they’re looking into.

Scottsdale Bible Church in Scottsdale, Ariz., has five adult worship environments, four spaces for students, as well as classrooms,

## ADJ Lighting AV6X

The AV6X is the next generation of ADJ’s popular, and groundbreakingly affordable, AV6 video panels. The new AV6X offers higher quality LEDs for better color consistency and a darker black masking for higher contrast, with a 6mm pixel pitch at a 96x96 resolution at 1200 NITS. The AV6X helps presenters connect better with their congregation with clear, concise and custom content. Churches can display live and recorded videos, inspirational text and images, such as quotes, song lyrics, stained glass windows photos or magnificent earthscapes. ADJ offers all the accessories associated with video panels, such as video processors, rigging bars, connector cables and computer software.

[www.adj.com/av6x](http://www.adj.com/av6x)



“We’re running [four laser projectors] at 80% of their output to make them last longer.” : :

**Nick Palomo**, Production Director, Scottsdale Bible Church, Scottsdale, AZ

all of which incorporate video. Right now, the church has four Panasonic laser projectors in two of its spaces, and Nick Palomo, production director, says that he and his team are happy with their performance. At the same time, he notes they have a shelf life that’s dictated by how many hours they’re in operation, and at what intensity at you run the laser. “We’re running them at 80% of their output to make them last longer,” he explains. “So I have to take into account: am I buying a bright enough laser projector that I can run at a less intense output in order for it to last longer?” He says

that some churches may want to purchase laser projectors that are a little brighter than necessary for this reason.

### Sizing up LEDs

Houses of worship are increasingly exploring LED walls as a video display option because, in some cases, they are more cost-effective than a large projector setup, which would require expensive bulb replacements.

Configuring LED panels, however, requires a bit of thought because LED modules generally come in ratios other than 16:9. Jason



# UNLEASH YOUR CREATIVE FREEDOM

## EVHD VIDEO SCREENS BY ELATION PROFESSIONAL



MULTIPLE PIXEL PITCH MODELS – SAME PANEL SIZE DESIGN

### EVHD Series

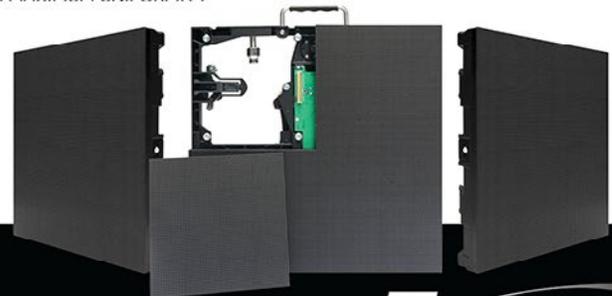
- SERVICEABLE FROM BOTH FRONT AND BACK
- 14-BIT GRAYSCALE AT 3840HZ
- IDEAL FOR BROADCAST APPLICATIONS
- FOR GREATER CREATIVE APPLICATIONS
- PIXEL BY PIXEL COLOR CALIBRATION FOR MAXIMUM UNIFORMITY

**EVHD2** 2.8 MM PIXEL (SPECIAL ORDER)  
FULL HD 66 PANELS – 11W X 6H – 18’\*W X 10’\*H\*

**EVHD3** 3.9 MM PIXEL  
FULL HD 120 PANELS = 15W X 8H = 18’\*W X 13’\*H\*

**EVHD5** 5.9 MM PIXEL  
FULL HD 264 PANELS = 22W X 12H = 36’\*W X 20’\*H\*

\*SCREEN SIZE / RESOLUTION APPROXIMATIONS FOR 16X9 ASPECT RATIO I-MAG SCREENS



PUSH YOUR VISION TO THE LEADING EDGE.

WORLD HEADQUARTERS (USA)  
www.elationlighting.com  
info@elationlighting.com  
+1.323.582.3322

ELATION PROFESSIONAL EUROPE  
info@elationlighting.eu  
+31 45 546 85 66



McKelvey, LEED AP and consultant at Idibri, an acoustical, AV, and theatrical design firm based in Addison, Texas, advises churches who can't achieve a true 16:9 ratio to procure panels that are 16:9:5 or 16:10—a number greater than nine—so that the top and bottom of IMAG images, for example, aren't cropped off.

At the same time, McKelvey touts this technology for the creative possibilities it offers: "You really can look at them as creative blocks," he says. "They can be put in any configuration, any number. You could think of them as Scrabble pieces and literally lay them out however you want." He warns that this type of application will require special processing to ensure that images appear as they should. "If you have several 10-foot by three-foot sideways, rotated displays that look like a checkerboard, and they're all over the stage, you've got to have a way to man-

## Digital Projection E-Vision Laser 8500

The **E-Vision Laser 8500** delivers incredible brightness at 8,500 lumens via long-life laser illumination, geometry correction and edge blending, and lens memory presets. All while expecting over 20,000 hours of illumination performance from the laser-phosphor source. Additionally, the Laser 8500 delivers nearly unlimited tilt capabilities, which gives users an unprecedented amount of installation flexibility. Venues can feature imagery positioned vertically, horizontally, and almost everything in between, without degrading the light source lifespan.



[www.digitalprojection.com/laser](http://www.digitalprojection.com/laser)

# CONNECT WITH YOUR CONGREGATION

CLEAR, CONCISE  
& CUSTOM CONTENT  
AV SERIES VIDEO WALLS



pure LIGHTING EXCITEMENT

### AV6X (NEW)

- 6MM PIXEL PITCH
- 96 X 96 RESOLUTION
- HIGH CONTRAST
- 1200 NITS

### AV3 (NEW)

- 3.91MM PIXEL PITCH
- 128 X 128 RESOLUTION
- HIGH CONTRAST
- 1000 NITS

### ACCESSORIES:

- FLIGHT CASES
- VIDEO PROCESSORS
- RIGGING BARS
- CABLES & CLAMPS

### DISPLAY:

- LIVE & RECORDED VIDEO
- INSPIRING TEXT & IMAGES
- SONG LYRICS & MORE

[www.adj.com](http://www.adj.com)

Los Angeles, USA • Miami, USA  
Netherlands • Mexico

@americandj



facebook.com/americandj





## Elation EVHD Series Screens

**EVHD Series screens** consist of a lightweight, durable, die-cast aluminum frame and a modular front-maintenance design, allowing for easy installation and service. Features include a seamless bezel-free design, no fan metal cooling structure, pixel-by-pixel calibration for optimized color rendering, uniformity and brightness, an ultra-wide viewing angle, and lockable curve adjustments for smooth convex or concave designs, providing easy solutions for creative high-resolution video designs.

[www.elationlighting.com/evhd-series](http://www.elationlighting.com/evhd-series)

age that content and create content that will fit the shape. If you just send up a straight-up video signal from ProPresenter, it may look O.K. if [it's] just standard moving images, but if you want something that actually shows a checkerboard pattern on the checkerboard display, then you'll have to format that correctly and have a device that can play back that video and manage those images."

### Considering projector brightness

"Brightness is a big factor; you don't want to get a projector in your room and turn it on and realize that it's so dim that no one can really see [what's being projected]," Dillenback says. If, for example, your house lights are up during services, you must account for that when deciding upon an appropriate lumen range. At PCC, Dillenback says that 7,500 to 8,500 lumens is adequate, because lights are down during services and there is no direct light hitting the screens. "If we were to move

our screens into another location where the light would be hitting them, we would probably have to go towards the 10,000 to 12,000 lumen range."

But Palomo cautions against assessing projectors on lumen counts exclusively. "Sometimes a three-chip DLP projector at 8,000 lumens will look better than a one-chip DLP projector at 10,000 lumens," he says. This is why, in some cases, it's wise to invite manufacturers to your premises for a demonstration.

### Bringing in the experts

It's also a good idea to work with a reputable AV integrator, one that has experience working with churches—especially if you're just starting to incorporate video into your services. Palomo says that a good AV firm will help maximize your video budget, and shed some light on how written equipment specifications actually translate into your environment. "You can't only read the specs on a sheet to figure out what would really help, [because] you might spend \$10,000 more on a projector than what you really need to spend," he says, "and maybe that extra \$10,000 could be spent somewhere else—on a better camera or a better lighting kit to help you get better tes-



... if you're building a new facility, it might pay to go 4K.

testimonial interviews. I really encourage people to seek out professionals that do this; usually they're going to save you money, even if they cost a little bit for consulting."

**Screens: They shouldn't go just anywhere**

A good AV integrator will also know what mistakes not to make, such as purchasing a screen that's inappropriate for a particular space. Palomo points out that some video screen surfaces reflect light at different angles better than others, so it's important to take into account the size and shape of the room in relation to the location and positioning of the display, as well as where the congregation is seated. Screen

placement in relation to the projectors is also paramount to achieving good video: "I've seen a lot of mistakes in placement, which gives you geometric problems, and [some] projectors can't account for those geometric problems, so the image doesn't look proper," he states.

**4K: Are we there yet?**

While 4K promises clearer, crisper images, it also requires churches to invest in new cabling and infrastructure—an expensive endeavor in existing facilities especially. "4K is a great tool, and for video venues or campuses that are primarily watching a message on video, 4K may be a great option in order to increase the realism of the person speaking or giving a



# HDMI Switching over LAN

With RS-232 & IR Extension **Dynamic Virtual Matrix™**

## HHD264



**Distribute up to 64 individual HDMI video sources to over 250 displays**

- Supports SD, HD and Full-HD (1080p@60 Hz) resolutions
- Visually lossless H.264 compression for a crisp 1080p 60Hz video
- User settable streaming bit rate (2 to 18 Mbps)
- Free Windows PC Manager Tool for system-wide config & control
- Dynamically assign the source displayed at each Receiver
- Sender provides HDMI loop out for local monitor

It's ... a good idea to work with a reputable AV integrator, **one that has experience working with churches**—especially if you're just starting to incorporate video into your services.

message, or the content that is being played back," says Kris Rinas, director of production systems at Grace Church in Noblesville, Ind. However, Grace, which is currently running standard HD, isn't considering making the transition to 4K at this time. "If you've got a facility that's already built for standard HD, the cost to go to 4K could be exponentially larger to do that upgrade, and I'm not sure the benefit would necessarily outweigh that cost."

However, if you're building a new facility, it might pay to go 4K. "If you're doing it all from scratch, it may be a good time to consider that and weigh that cost benefit between

standard HD and 4K," Rinas says. The key is doing a proper analysis that balances your actual needs with the "nice-to-haves." As Rinas reports, "I would encourage people to develop a budget that will really work for them, and try to get the newest—not necessarily the latest and greatest—but a new product that you know will last you the next five to 10 years down the road, and then you may be ready for a change at that point, and ready to reevaluate and do the process over again."

Palomo, too, relays that Scottsdale Bible Church isn't ready to adopt the new resolution. "We don't have 4K cameras or 4K content



## Connect and Engage with Your Congregation Using the Latest Display Technology

Share Your World

NEC can help make a big impact on your congregation with video wall displays, send a clear message with laser projection and engage your audience with both video walls and projection.

Build a deeper connection with your audience with one manufacturer – NEC Display Solutions!

To learn more visit, [www.necdisplay.com/HOW\\_CP](http://www.necdisplay.com/HOW_CP)

to push in our regular environment, so we're not even really thinking of 4K yet," he says. He notes that 4K does show promise in applications like environmental projection, or when integrated with sets, but that as far as image magnification (IMAG) goes, it will probably be a few years before the church starts thinking about making the shift.

While AV technology in general has become more affordable for churches, it still requires a significant investment. If your budget is limited, you may not be able to do elaborate video elements well, and Palomo believes that if this is the case, it's best to keep it simple. "You have to have good video projection for it to look good and not create a communication barrier," he says. "I've served in a lot of smaller churches that can't afford great projection, and when you play a video in that environment it falls flat because it doesn't look good." If you can't afford a quality projector, it might be better to limit what content you do display, to things like song lyrics. "I've been to some churches that don't have money for proper-looking projectors, so basically all they're doing is [displaying] white text and that comes through nicely—they're not trying to do a ton of video elements."

### Model first, purchase after

Prior to diving into the purchasing process, it's valuable to have a good idea of how this equipment can be placed in your space. Before Scott-

"I've been to some churches that don't have money for proper-looking projectors, so basically all they're doing is [displaying] white text, and that comes through nicely—they're not trying to do a ton of video elements.":

**Nick Palomo**

Production Director  
Scottsdale Bible Church, Scottsdale, AZ

sdale Bible Church starts buying equipment, Palomo reports that he and his team will model the space in question using a tool like SketchUp. He says that not only does this enable them to determine things like required screen size and positioning, it also helps them communicate with church leadership. "It's something that all churches can do," he says, "at least to be able to show whoever gives the financial approval that you've thought this through."

### Remember your main mission

While technology assists churches to do ministry, Rinas reminds us that church is about church—not technology. "The No. 1 thing that

## Hall Research HHD264

The **HHD264** is a family of HDMI over LAN senders (encoders) and receivers (decoders) that utilize the latest H.264 encoding with user-definable bit-rates to distribute multiple full HD video signals on the local area network (LAN) with unparalleled clarity and performance. The devices also extend IR control and bi-directional RS-232 communication. Users can dynamically assign the source displayed at each receiver and send up to 64 different HDMI sources to over 250 displays. Includes a free Windows PC Manager Tool software providing system-wide control.



<http://hallresearch.com/page/products/HHD264-R>



“I would encourage people to develop a budget that will really work for them, and **try to get the newest—not necessarily the latest and greatest**—but a new product that you know will last you the next five to 10 years down the road.”:

**Kris Rinas**, Director of Production Systems, Grace Church, Noblesville, IN

we don't do is we don't buy technology for the sake of technology; we buy technology to support what we do as a part of ministry,” he says. “We want people to walk away at the end of a service and say, ‘That was a great service,’ or ‘That really impacted me,’ instead of saying, ‘Wow, how cool was that background?’ or ‘How neat was their video display?’ We want it to be holistic, as part of the experience of them being at church and being in the presence of God vs. coming for the technology.”

CAROLYN HEINZE is a freelance writer/editor.

**For more on:**

- ▶ **Grace Church**  
[www.gracechurch.us](http://www.gracechurch.us)
- ▶ **Idibri**  
[www.idibri.com](http://www.idibri.com)
- ▶ **Passion Community Church (PCC)**  
[www.pccwired.net](http://www.pccwired.net)
- ▶ **Scottsdale Bible Church**  
[www.scottsdalebible.com](http://www.scottsdalebible.com)
- ▶ **SketchUp**  
[www.sketchup.com](http://www.sketchup.com)

**NEC NP-PX803UL**

**Think about church projection technology** in a whole new light with NEC Display Solution's single-chip DLP 8,000-lumen projector combined with a laser light source delivering 20,000 hours of virtually maintenance-free life. A longer life span and sealed optical engine allow the projector to be used for extended periods of time, including applications running 24x7. The NP-PX803UL can be tailored to fit many needs thanks to the ability to rotate the projector 360 degrees, use it in portrait applications and to adjust picture controls and geometry. The constant brightness mode feature helps create a stable brightness over time without degrading the image, and when used in conjunction with the edge blending feature, ensuring a uniform picture over the life of the projector.

[www.necdisplay.com](http://www.necdisplay.com)



© Production Media Inc.  
Church Production Magazine and Church Designer are published by Production Media Inc.

**Church Production™**  
MAGAZINE  
[www.churchproduction.com](http://www.churchproduction.com)



**Church Designer™**  
[www.designerpub.com](http://www.designerpub.com)

