

Guide to Incorporating Video Projectors in Your Church

**Getting
Started:
A Check List**



**How to
Shop for a
Projector**

Incorporating Video Projection into Your Church

Here's what to look for in a video projection system that makes your house of worship's message more powerful.

by Steven Castle

NOTHING ENHANCES A CHURCH SERVICE LIKE A GREAT VIDEO PROJECTION SYSTEM. You can project images of the pastor, musicians and the congregation on a big screen for everyone to see. You can also seamlessly relay announcements and instructions to the worshipers. Powerful scriptures and lyrics can appear. Special effects can wow.

Simply put, an effective projection system in a house of worship makes much better worship possible. An image on a big screen can more immediately relay powerful emotional cues to the audience and more effectively convey the messages of a service. It's a tool that is being used more frequently in modern churches today.



Creating a More Powerful Message

At the Revolution Church in Canton, Ga., a projection system featuring a Digital Projection International (DP) E-Vision 1080p 8000 projector and DaLite screen provides a 16-foot-wide HD image above the stage for all in the 750-seat church to see.

It wasn't always this way. Before its new facility was constructed, the church was in a temporary space and used two projectors that focused images on the side walls, which forced audience members to turn their heads and divert their attention from the stage. Church volunteers also had to spend considerable time each week setting up the system.

Now the congregation's attention is on the stage and the big screen above. "People have said how well it connects them to the service," says executive pastor Chad Elliot. "It adds to the overall experience and enhances the message we're trying to communicate. Without it, we



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What to Look For

Projection systems aren't as complicated as many people think. Proper planning and a basic understanding of the capabilities of a system — and what you want to accomplish — can remove much of the complexity of operating a system and enable you to concentrate on delivering the message of your ministry—more powerfully and effectively.

The Revolution Church carefully planned its foray into projection for its new facility, taking the time to consider the key elements to a house of worship system.

Two key factors to consider when choosing a projector are brightness and throw distance, or the distance from the projector to the screen.

Brightness is typically expressed in lumens, and the more light that's in your church, the brighter a projector needs to be — and that means more lumens. Typically, DP recommends about 6,000 lumens to shine a bright enough picture on a screen in a well-lit space. Otherwise, you may need to dim some lights or block windows.

“It's a loaded question when asked how bright a room should be,” says Ken Eagle, training and consultant support manager at DP. “Think about ambient light and stained glass windows. And a lot of times off-angle viewing is greater, to sides or way down low and looking up.”

When you look at brightness, build in a little fudge factor up front, Eagle advises, and get a projector that is about 25 percent brighter than you need. “Once it's installed, the dealer is going to do a calibration to optimize for color, and typically you take some brightness out of the projector,” he says. “No one will complain if it's too bright, but they will if it's not bright enough.”

DP, for one, is committed to DLP (Digital Light Processing) projectors, which are known for their brightness and do not degrade over time, as do LCD projectors. Churches with more than one projector, for example, can have one LCD projector fade in brightness, making for an uneven presentation. That doesn't happen with DLP. DLP projectors come in single-chip and more expensive three-chip configurations, using a chip for red, green and blue colors. Single-chip projectors spin a color wheel to display the colors.

Revolution Church opted for a mid-level DP E-Vision 1080p 8000 projector, which has a single chip but with interchangeable color wheels to achieve either better light or deeper colors. It also provides about 8,000 lumens of brightness, which is about where

Getting Started — A 10+ Point Checklist

- 1** Don't start with a projector! Start with an application. Walk through exactly what you want your service to look like and know the elements you want to use: Image Magnification (IMAG), announcements, direction, hymn lyrics, etc.
- 2** Where will a projection screen go? Above the stage is usually best.
- 3** How big an image do you want? You don't want it too small so people can't read it or so big it overcomes the church.
- 4** Once you know the size of the screen and what you want to do with a projection system, you can get an idea of which projector would work best.
- 5** Where's the best place to mount a projector in front of the screen? Think about ventilation and fan noise.
- 6** Determine the throw distance to the screen and the throw ratio you will need in a lens. The throw ratio is the distance to the screen divided by the screen width.
- 7** Will there be multiple projectors? Will they be synched to show the same things?
- 8** How will the projectors be wired to processors and cameras? Where will that equipment be located? And how will you safely run wires to all locations?
- 9** Know what connections you need, from cameras to processors to projectors.
- 10** Who in your organization will be operating the projection system and the equipment? Is it easy enough for them to operate?
- +** Consider the future. What might you want to do in the future, and is the system you're selecting suitable for upgrading later?



single-chip projectors top out. Elliot says its features and price point made it the church's most desirable option.

Throw Distance and Throw Ratio

You'll also need to know the throw distance of the projector, or the distance from the projector to the screen, and calculate the throw ratio to determine the proper lens to use. The throw ratio is simply the distance between the projector and screen divided by the width of screen.

That was a lesson the Revolution Church learned, when just a few days before the opening its new facility, the location of the screen was moved forward so it wouldn't interfere with a speaker. Because of that, it required a different lens for the projector. One was shipped in time for the church's first service the new venue, but it was a close call.

Many projectors will have lens options. Lower-end projectors often have manually adjustable lenses, while mid- to higher-end units have motorized lens options. Lens shift features allow picture adjustment if a projector has to be mounted off-center to the screen.

DIY or Pro Installation?

Executive pastor Chad Elliot of the Revolution Church in Canton, Ga., has an audio/video background, formerly working with Cornerstone Media. And a member of the church works for Digital Projection, which was chosen as the projector supplier. So there was no need for a professional installation company, right?

Wrong.

"I wouldn't do it without someone there with us to help make those decisions," says Elliot. "The Revolution Church worked with the NewGround Group to help them select and install the projection system in their church. "Having a company and consulting firm there with us to help make decisions and do research on the system was really helpful. I didn't have to step out of our ministry to do that," he says.

"Houses of worship typically have A/V teams, but many times they're run by volunteers, so having simple setup is really important," says Ken Eagle of DP. "It's really good to have someone involved to help you out."

Processing and Connections

Also, look at what video processing comes with a projector. Processing often determines the difference between a lower-priced and higher-performance projectors.

More upgrades from good to better projectors include manual or motorized lenses, generally better optics and the ability to perform special effects like edge blending two different images to form a larger one. Other upgrades include warping images to fit curved surfaces and mapping to produce light-show effects like those you may see in sports arenas and on some building exteriors.

Be sure to know what connections you'll require, especially if you are using cameras for IMAG (Image Magnification). HD-SDI and the newer 3G-SDI interfaces for uncompressed digital video transmission are typical.

Also check for latency, which is a delay in live action to what is shown on screen. Eagle says latency of more than a frame per second will start to be noticeable. You don't want a pastor waving his arms on stage and that not showing on the big screen until later.

Higher screen gains, a measurement of the amount of light reflected by the screen, are typically used in well-lit environments, but be careful if you have a wide seating area, as a higher-gain screen can limit the viewing angle.

The screen is an important part of the system and should be chosen in conjunction with the projector and any cameras and video processing equipment. "It's important to pick a system as a whole and be able to communicate the way you want to," concludes the Revolution Church's Elliot.



DP Projector Options: Good, Better Best

GOOD

M-Vision

- > \$6,995 - \$13,995 + lens
- > Single-chip DLP
- > Up to 5500 lumens light output, which in some cases may not be enough
- > Mechanical lens adjustments
- > NOTE: You'll give up a few nice features.

BETTER

E-Vision

- > \$3,995 - \$15,995 + lens
- > Up to 8000 lumens
- > Single-chip DLP
- > For regular to large church venues
- > Interchangeable color wheels for increase light output or enhanced color depth
- > NOTE: Good brightness for the price.

BEST

HIGHlite

- > \$22,995 - \$31,995 + lens
- > Three-chip DLP
- > Up to 8000 lumens brightness
- > Some dual-lamp models for lamp backup
- > Better contrast and color, better lens optics
- > NOTE: For when image quality and color accuracy are important.

