

Church Production Magazine

OCTOBER 2006

Magazine

WFX ISSUE

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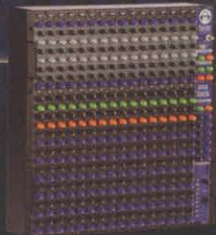
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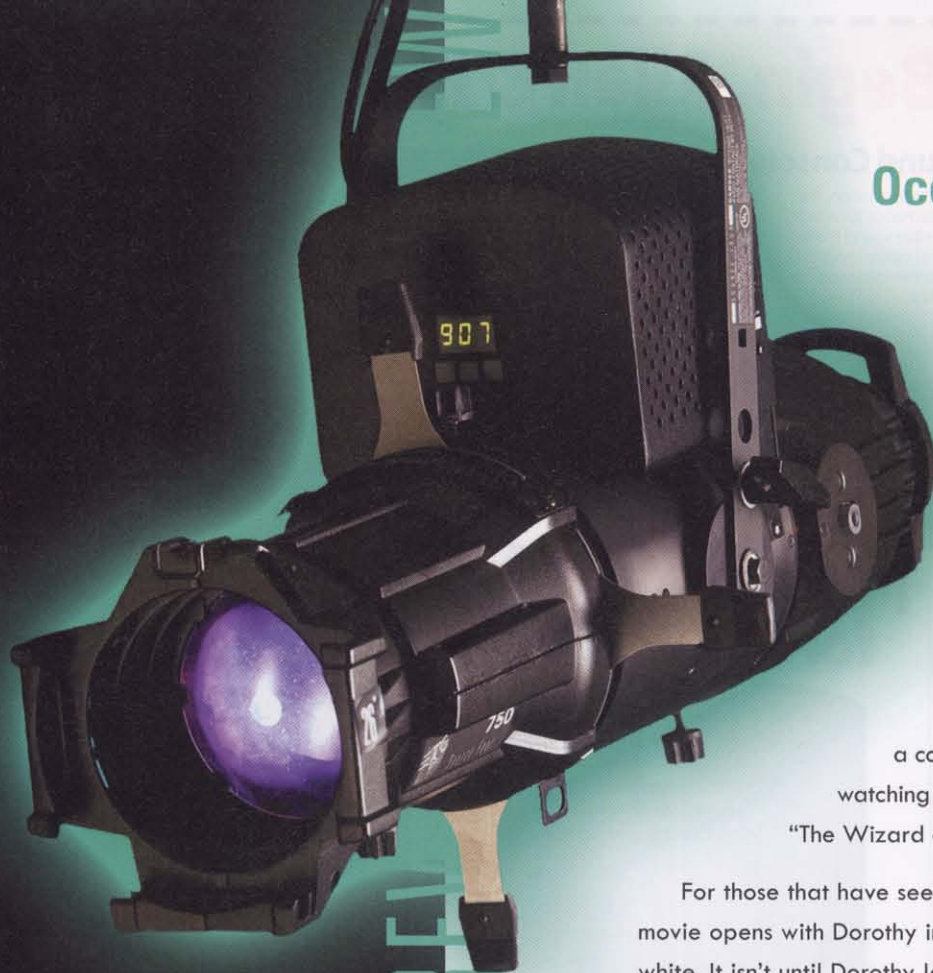
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Congo Lighting Controller



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MixBack System



OCEAN OPTICS
SeaChanger Color Engine



Ocean Optics

SeaChanger Color Engine

I love color. Maybe that is a strange statement, but I am glad that I don't live in a black and white world.

As a child I had no desire to watch the old black and white movies when they were played on TV. They were in black and white — what's the point when we have a color TV? As such I almost missed out on watching one of the greatest movies of all time, "The Wizard of Oz."

For those that have seen the movie you remember that the movie opens with Dorothy in Kansas, which is shot in black and white. It isn't until Dorothy lands in Oz that the movie switches to being shot in color.

Luckily for me, my father kept telling me to just watch the movie and see what happens. When the movie switched from black and white to color I was delighted. The movie came alive adding to the impact of the epic story.

Today many churches are moving from the world of "black and white" production and adding a whole new world of color to the epic stories of the Bible by utilizing color changers in their lighting systems.

One company making a product that is answering the call for epic color is Ocean Optics, based in Largo, Florida. Their product, the SeaChanger Color Engine, fits very nicely in a church production environment.

The SeaChanger Color Engine is a color mixing system that installs into an Electronic Theater Controls (ETC) Source Four Ellipsoidal to make a full color mixing lighting fixture.

The first thing that you notice when you remove the SeaChanger from the box is how well-built the SeaChanger is. Manufactured

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It's not instantaneous; however, the trade-off for the slower changer speed is a truly silent color-mixing system. To me the silence of the color-mixing system is worth the slower changer speed.

out of machined aluminum with glass optical lenses and glass color mixing vanes, the SeaChanger is manufactured to very precise tolerances in Ocean Optics' own manufacturing plant.

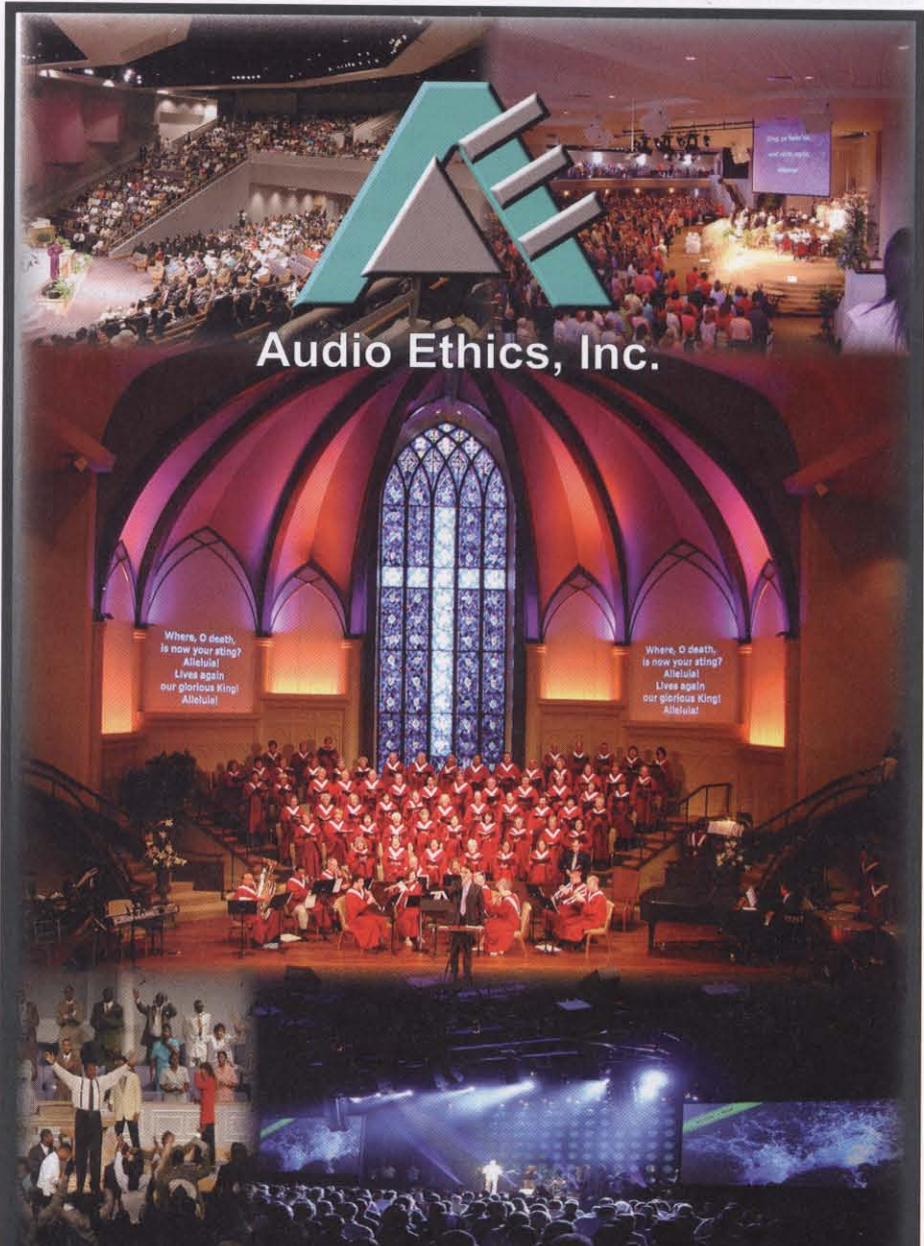
Setup is straightforward. You install the SeaChanger by splitting an ETC Source Four Ellipsoidal between the reflector assembly and the main body of the fixture. Once you have the reflector and body apart you reassemble the fixture by connecting the reflector to the back of the SeaChanger and the fixture body to the front of the SeaChanger.

You complete the SeaChanger assembly by removing the fixture-hanging yoke from the ETC Source Four Ellipsoidal and replacing it on the SeaChanger. This is done because the addition of the SeaChanger changes the length of the fixture as well as the weight and center of gravity. This re-balances the fixture and allows for an easy focus.

Although Ocean Optics says the installation of the SeaChanger doesn't require any tools, I found having a Phillips screwdriver made it much easier to get the Source Four apart and install the color engine. However, in my experience, removal of the Source Four yoke requires a wrench, which although not technically part of the SeaChanger installation, really needs to be done to make the SeaChanger practical to use.

Once the SeaChanger is installed on the Source Four, you need to provide the unit with power from a standard

115-volt outlet and DMX data from your console via a five-pin XLR DMX data cable. Upon power up the unit



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will calibrate its color wheels and it is ready for you to address and use.

DMX addressing is done via a touchpad and LED display on the unit or via an RDM-compliant console. This control panel also allows for executing several different test functions.

The SeaChanger I tested required six channels of DMX. There was one channel each for the Cyan flag, Magenta flag, Yellow flag, and the Extreme Green flag as well as a control channel and a speed channel. If you had a lot of SeaChangers and a small console, having enough control channels could become an issue.

For my test I controlled the SeaChanger with a small 24-channel conventional console and the operation was very straightforward. For basic control you simply change the channel levels on your lighting console to change the color.

On my console I programmed 10 different color cues into the console with different fade rates. I then ran through the cues. As I did this I found that the SeaChanger is not a lightning-fast color mixing system. It is not able to bump colors like some moving lights or gel

string-based color changers as it takes a second to a second and a half or so to change colors running at full speed. It's not instantaneous; however, the trade-off for the slower changer speed is a truly silent color-mixing system. To me the silence of the color-mixing system is worth the slower changer speed.

The other issue I found in my testing is that when doing cross-fades longer than five seconds you can see the stepper motors stepping if you don't use the speed channel. This really isn't a problem, just one of those things that you need to be aware of while programming. When you use the speed channel you can get very long smooth color cross-fades without seeing the stepping of the motors.

As far as light quality I found the color changing to be very smooth with very few of the typical funky color mixing intermediate colors that you can get with most CMY (cyan, magenta, yellow) subtractive color mixing systems. The colors I was able to mix were very rich and I was able to match many of my favorite gel colors including my favorite blues, ambers, pinks, reds, and lavenders. This

is due to the hexachromic color mixing system that the SeaChanger uses.

One thing that surprised me was how much of a difference the extreme green color vane made when mixing colors. I figured it would only make a difference when mixing greens and maybe some blues, but it actually helped when mixing lavenders and other pastel colors.

Because of the quality of the optics there are no noticeable optical distortions introduced into the Source Four Optics due to the use of the SeaChanger. In fact you can use all of your standard Source Four accessories. I tested the SeaChanger with both metal and glass gobos as well as an iris kit with no noticeable variations from a stock Source Four without a SeaChanger.

I also tested the unit with both a 575-watt and a 750-watt lamp. Naturally the color you mix with the changer will greatly affect the amount of output you get from the fixture, but I found the SeaChanger had a respectable output with a 575-watt lamp even when mixing darker colors. This is a great thing if your building is power challenged, but if it isn't I would recommend using the 750-watt lamp so you can take advantage of all the punch the SeaChanger has to offer.

I think that the SeaChanger is a great choice for the church market. The SeaChanger is well built, is completely silent in operation, it has good light output and has excellent color mixing capabilities. The things that I thought

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"I finally had a chance this week to take a few hours and play with the system. WOW! I played virtually every type of music thought it... I have to say... it's THE first system I've used that everything sounds good on without a single EQ change. I probably sat in 14 different places throughout the room and it sounded exactly the same in every seat... no peaks or dips in the response and the coverage was super even. The only way I can think to describe the stuff is "Big Studio Monitors" Adam Kane of BC Sound

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could be improved upon were the high DMX channel count, the required use of the speed channel, and the slow maximum wheel speed. Apparently there were others who thought the same thing, and Ocean Optics has responded.

Starting in September of this year Ocean Optics will begin shipping an updated version of the SeaChanger. This version will have all of the same color mixing features as the SeaChanger that I reviewed, but will only use four channels of DMX instead of the original six. This means that there is now one channel each for the Cyan flag, Magenta flag, Yellow flag, and the Extreme Green flag.

According to Ocean Optics the SeaChangers firmware has been re-written to provide smooth color mixing at any speed. This allows the SeaChanger to bump color as it has increased the speed of the wheels full range of travel from one and a half seconds to three tenths of a second all while remaining silent. Also since the speed of the color change is now under direct control of the changes from the lighting console and not a speed channel, it simplifies the programming needed to control the SeaChanger.

Although I have not tested this new version of the SeaChanger, I think that the changes can only be a positive improvement to an already good product and I applaud Ocean Optics for listening to their customers and changing accordingly.

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With a manufacturer's retail price of \$1,995, the SeaChanger seems a bit pricey at first glance, but when

you factor in the solid construction that makes the unit very low maintenance and that the glass dichroic color wheels

mean there are no gel strings to replace during the life of the unit, as well as there being no power supplies and special power cable to purchase since the power supply is built in, the price moves more into line with other color changing systems.

If you feel your are stuck in a rut and are looking to move from the world of "black and white" production to a new world of color, the Ocean Optics SeaChanger is definitely a color changer worth purchasing.

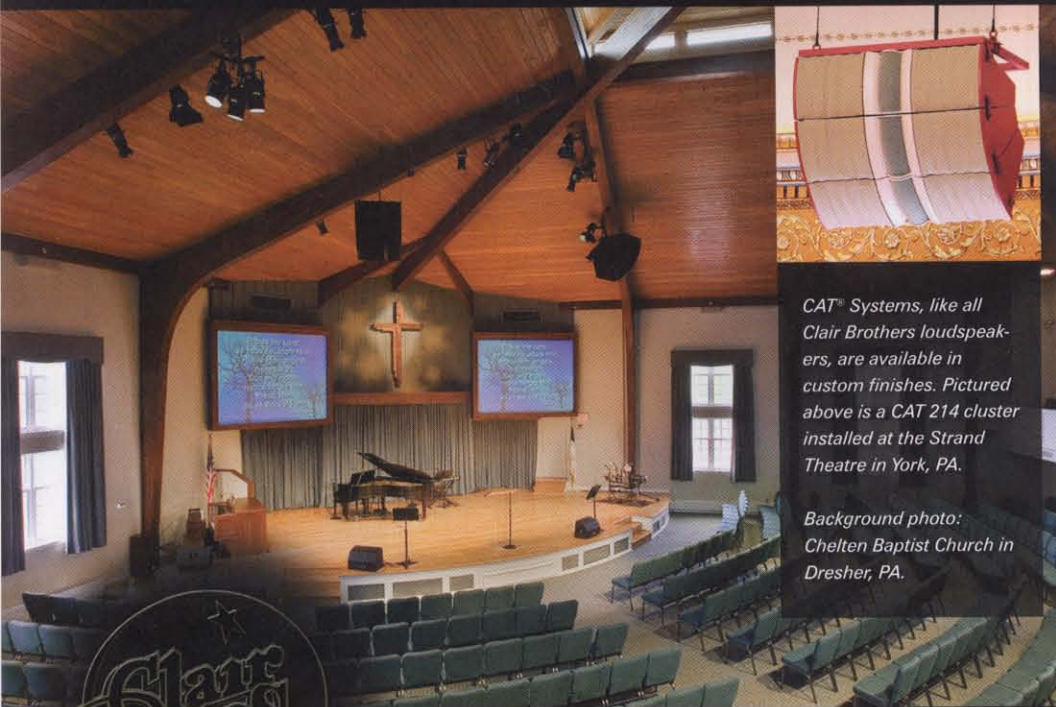
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CAT[®] Systems, like all Clair Brothers loudspeakers, are available in custom finishes. Pictured above is a CAT 214 cluster installed at the Strand Theatre in York, PA.

Background photo: Chelton Baptist Church in Dresher, PA.



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SeaChanger Color Engine
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— END —

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Experience Color in a Glorious New Light

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The SeaChanger Color Engine is a CYMG color changer for ETC Source Four® Ellipsoidals. Its novel xG Extreme Green color filter increases the color gamut to include deep blues, reds and greens never thought possible by dichroic color mixing. Indeed, SeaChanger allows you to control the color, intensity and saturation of worship facility lighting to remarkable levels of precision.

What's more, SeaChanger's patented processes yield the most robust and highest transmission dichroics available — filters so hardened they are essentially ceramic in nature. These properties offer great resistance to heat and humidity, eliminating the need for noisy cooling fans and the maintenance headaches associated with gel scrollers. In addition, SeaChanger is both simple and efficient: it has an internal power supply and offers both DMX control and RDM capability, and installs within seconds, without tools.

- Dichroic Color Changer with Hexachromic Color Mixing
- Silent, Fan-free Operation
- Simple Installation & Low Maintenance
- Seamless Color Transitions, with No Swipes

SEACHANGER


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