



December 2004 Issue, Lead story on Ceramic ST

Lights, Camera, Action! Michigan Television Installs a New, Energy-Efficient Lighting System

Amy L. Slingerland

Designing the lighting for a television studio used to be a lot simpler. In the early days of television, the only concern was how to get a quantity of light delivered to the right spot in the studio. Today, the concerns go beyond lighting and into the realm of energy conservation. As carbon-based energy sources become scarcer and energy costs continue to increase, and as environmental concerns become more critical, the issue of energy conservation will continue to add complexity to the design and implementation of television lighting systems.

Michigan Television—the public television station for Michigan since 1980—recently moved into new studios in the new William S. White Building at the University of Michigan—Flint, requiring them to bring in a new lighting system. While the building was finished more than two years ago, funding only became available this year to soundproof the studios and install curtains, a hard cyc and a DMX-controlled lighting system. The university mandated that the new system be energy-efficient to keep maintenance costs to a minimum. Illinois-based Roscor consulted on the project and provided the equipment, including DeSisti CST 25 Fresnels, which use Philips Ceramic ST 250 HR lamps.

“In this particular instance, the client, with whom we’d been doing business for many years, approached us and asked us if we could help them figure out what they needed to do in these studios,” says Roscor sales rep Bob Zeichner. “This encompassed some consulting services that we provided to them to do a needs-analysis and identify what kinds of acoustic treatment these rooms would require, and what sorts of lighting options were appropriate to meet their objectives.”

Mike Saunders, Michigan Television operations supervisor, explains, “The university asked us to keep the lights as efficient as possible, to keep their electrical bills down, as well as the bills for the air conditioning. So we were looking for fluorescent lighting, which is the most efficient lighting, and DeSisti was the only one that could supply not only fluorescents but other types of lighting sources. I’ve seen and used their lights before in another studio and was pretty impressed with their lighting system.”

Zeichner continues, “Given those objectives and the kind of productions the client wanted to be able to do, I started to search around to see which available products might make sense. Fluorescent fixtures have been around for some time, so it was a fair assumption that some of the base lighting would be in the form of fluorescents. But fluorescent fixtures typically do not, by themselves, make for very dramatic lighting, so I knew that I was going to need some focusing Fresnels. I had some previous experience with CD fixtures that DeSisti had made, so I approached DeSisti to find out if these would be suitable for this application. They made me aware of the Philips CST technology and the fact that they were about to release a new fixture similar in concept to the CDs but with the ability to add a mechanical douser. This is basically an iris diaphragm that is remotely controllable using a standard DMX link between the dimming console and the fixture. It was very attractive because it would allow me to provide them with dimming, focusing Fresnels that use 250-watt globes that would put out a good amount of light vs. heat. It seemed like a great fit: a combination of those along with fluorescents for base lights just made a tremendous amount of sense, and that’s why we recommended them.”

Richard Scott of Philips Lighting talks about the development of its CST technology: "The problem, historically, in the entertainment industry was that everybody wanted the efficiency of a gas discharge lamp, which is roughly four times the efficiency of a halogen lamp, but wanted the halogen color, 3200K, and they need the high color rendering, 90-plus CRI, to render colors properly. We were able to do that in gas discharge at 5600K, but nobody had done it successfully with 3200K. We've done that with the Ceramic ST 250 HR. It's a 3200K source, a 250-watt lamp that gives you approximately the output of a 1,000-watt halogen lamp. It consumes 25% of the energy and produces 75% less heat. This lamp is also hot restrikeable." The lamp also has an average life of 4,000 hours, which helps save on maintenance costs.

"DeSisti Lighting Italy worked with Philips in the R&D phase for the CST lamp," says Frank Kosuda, general manager of DeSisti USA. "The only negative characteristic for CST discharge lamps is that they are non-dimmable. This restricts the fixture's use in various television and theatrical applications. To combat this problem, DeSisti developed a patented douser that is fixed with the housing of the Fresnel and travels with the socket assembly. The dousing system is DMX or manually controlled and acts as a 'dimmer' from zero to 100%. Due to the fixing within the housing behind the Fresnel lens there are no striations in the light field." The fixture was introduced at LDI 2003. The douser for the Fresnel was introduced at NAB 2004. Other installations include the kitchen set at QVC studios and Star TV in Hong Kong.

Subcontractors on the project included Ranck Electric, which was responsible for the electrical wiring and installation of ETC Sensor SR48 and SR24 dimmer racks and an Express 48/96 console in each studio. Installation of acoustical panels was by Integrated Interiors; installation of hard cyc, curtains and track, and lowering of lighting grid, Don Weaver; project consulting, project management and equipment sales, Roscor Corp. "They all did a wonderful job," Zeichner comments. "We were very pleased with the work of the subcontractors and I think the client is pretty pleased too.

"I'm sure it took longer than everybody would have liked, but it got done the right way," Zeichner continues. "The biggest headache was that the grid was too high off the studio floor, and in order to make the system work properly, it had to be lowered. When a grid is already installed, it's not a good thing to discover that you have to lower it. But the rigger, Don Weaver, who was subcontracted by DeSisti, did a wonderful job of getting that problem taken care of. At the end of the day, they have lighting equipment that allows their lighting directors to do what they want to do, and the whole thing was done using the least amount of power and generating the least amount of heat possible. Those objectives were all very well met."

"We're really happy with the fluorescent lights. We've never used them before. I love the soft light they give. And we really like the new CST 25 Fresnels," Saunders says. "We use them not only in the studio, but we have also taken them out on a few remotes. Since they only use 250 watts you can plug them into any wall outlet and not have to worry about blowing a breaker, and they put out a lot of light. They're very rugged, and I can't think of any faults to them, except that when they're in the grid you have to be careful that you don't try to use a fader with it. These don't work like our old Fresnels, where you could just fade it up and leave it halfway. We've had people try to do that and you run in there and say, 'Don't do that! You're going to burn it up!' But they work fine. They put out a lot of very nice white light, and we're impressed with them. The initial cost of the fixture is more, but it runs a lot more efficiently, the bulb lasts a lot longer, so it's saving us money in the long run."

"Most end users are very interested in the product," says Kosuda. "The highest level of interest is coming from local news, 24-hour studio facilities, professional video and existing facilities where HVAC and power are an issue. Lighting designers have shown a great interest in the product because the CST fixture offers a great solution for various professional lighting applications where tungsten lighting is not the best option. The trend for lighting designers, especially in news facilities, is to mix tungsten and fluorescent lighting. With the CST Fresnels now available, traditional three-point lighting can be used with the Fresnels as both front and back lights and the fluorescents as a fill and or set light."

It took a long six months to complete the acoustic work, lower the lighting grid and install the new dimming system and lighting fixtures, but Saunders is happy with the end result. "It's taken longer than I thought to get it done, but it's gone a lot smoother than I thought it would. I'm impressed with the lights, and people that see our look now are impressed too."

As cost pressures and legislation continue to emphasize energy efficiency, look to manufacturers to continue to find ways to maximize the conversion of energy from electricity to light. Permanent installations, in particular, will be the object of scrutiny both from owners who want to contain costs and from environmentalists who want more green solutions.