

Shedding Some Light...

Pathway Lighting's Newsletter - September / October 2020

welcome to our newsletter

This issue will focus on three topics: Product news; tech information from our Engineering Department, and fun facts about one of our staff.

what's up at Pathway

We are super stoked! Our HL Series cylinders are installed in the newly completed Allegiant Stadium in Las Vegas - the new home for the Raiders!

BIG THANKS to our rep, Nevada Lighting, for getting our fixtures specified!



this issue

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In-Ceiling Remote Driver **p.3**

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DMX Dimming for LED Lighting

By Russell Budzilek, Director of Engineering

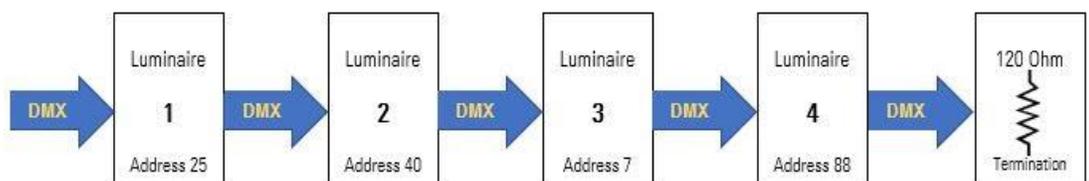
A variety of dimming technologies are available today for LED light fixtures. These technologies can be broken up into analog and digital methods. Analog methods are forward/reverse phase dimming and 0-10V dimming. Digital methods include DMX, DALI, and certain proprietary systems such as Lutron's Ecosystem. At Pathway Lighting, we have found that most of our customers prefer Digital Multiplex (DMX) technology. This brief article will discuss the basics of DMX technology.

DMX is a digital means for controlling the dimming level for single-color luminaires and/or the absolute color of tunable white and RGBW color luminaires. The luminaires must be 'DMX enabled' with regard to the communication interface. Every luminaire is assigned an identification number known as

an 'address'. This concept is similar to every component in a computer network having a unique IP address. For multicolor luminaires, more than one address may be assigned to control different functions. There are a total of 512 DMX addresses available, typically identified numerically as 0-511.

In a typical DMX Network Architecture (Figure 1), each fixture is given a unique address although it is allowable for the same address to be used for multiple fixtures. Fixtures with the same address will respond simultaneously to DMX commands. Notice how the DMX signal is daisy chained from fixture to fixture. Each luminaire receives the entire set of commands for all addresses but only obeys the commands for its particular address.

Figure 1. Typical DMX Network Architecture



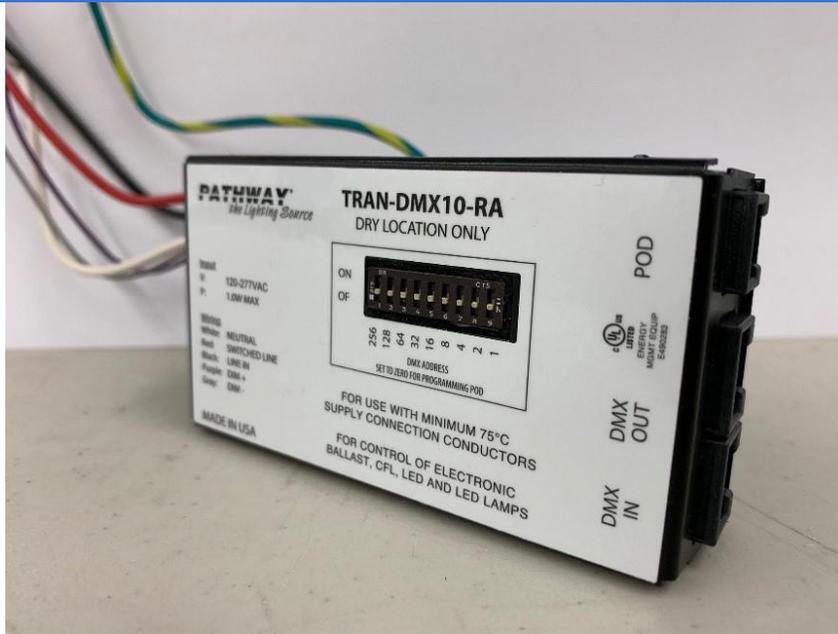


Figure 2.
Pathway Lighting's
DMX Translator

At the end of the daisy chain, a 120 ohm termination is required to minimize electrical noise (due to reflections back from the end of the chain.) This architecture can be repeated for multiple daisy chains of fixtures driven by the DMX controller. Typically, the maximum number of fixtures in a single daisy chain is 32.

The current DMX standard (DMX512-A) provides for 256 discrete levels of dimming from zero to 100% brightness. Although the dimming levels are discrete, there are enough levels for the dimming to appear smooth and continuous.

DMX-enabled luminaires can be one of two primary types: 1.) a 'dumb' receiver that simply obeys the DMX commands (one-way communication), or 2.) an RDM DMX-enabled device (two-way communication.) Remote Device Management (RDM) permits changing DMX addresses from the DMX controller without physical access to the fixture, as well as other remote diagnostic capabilities. In a standard DMX one-way communication fixture, the address is set manually via switches located on the fixture.

DMX-enabled luminaires are notably more expensive than analog-dimmed luminaires but possess extreme flexibility. Pathway Lighting has a vast selection of 0-10V analog-dimmed downlights, pendants, and cylinders and offers a unique lower-cost DMX solution with a proprietary device called a DMX Translator (see Figure 2). This device receives digital DMX input commands and 'translates' these commands to a 0-10V analog dimming signal. In this manner, just about any of Pathway's 0-10V-controlled fixtures can be made DMX enabled.

The DMX translator design allows up to 10 luminaires requiring the same DMX address to be simultaneously controlled from a single translator, thereby reducing DMX fixture costs dramatically. Only the master fixture is DMX enabled, while the others are basic 0-10V fixtures that mimic the operation of the master fixture.

Contrary to some misconceptions, the DMX translator approach is not a work-around technology; it offers full DMX-512A dimming functionality. It also provides power on/off control via an onboard power relay. ❖

Gen II DMX translator

An intelligent, user-friendly technology that converts DMX input into a 0-10V signal.

Now you can use DMX control systems with Pathway Lighting's entire line of LED fixtures powered by a driver compatible with 0-10V dimming.

Gen II DMX Translator advanced features: onboard power relay, 256 dimming levels, easy address programming, CAT5/6 cable interconnect, programmable DMX fail mode; full range of addresses, 0-10V dimming output.

Optional DMX Programmer available for added convenience and safety.

For more information about the Pathway's DMX Translator, please refer to the [Gen II DMX Translator](#) brochure or contact our knowledgeable sales staff.

low-voltage fixtures



decorative pendants



cylinders



high bay / low bay

IRD

in-ceiling
remote driver
power supply for
low-voltage fixtures



Remodel Style
Series IRDRM
[Spec Sheet](#)

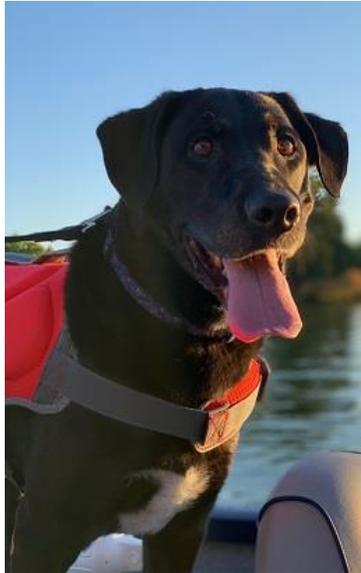


New Construction Style
Series IRD
[Spec Sheet](#)



FEATURES & BENEFITS

- ✓ Prolongs driver life span. Because the driver is located in the ceiling, it is not subject to the heat that is generated by the LED board.
- ✓ Slim .25" depth ceiling canopy is aesthetically pleasing.
- ✓ Available in surface, pendant stem, and cable-hung mounting styles. Not suitable for wall-mounted products.
- ✓ Heavy-gauge galvanized steel support provides secure mounting platform for electrical components. Allows up to 1.5" ceiling thickness.
- ✓ Low-voltage lighting fixtures are specified and published.



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Get to Know – Mike Henderson

Mike has been recently promoted to Vice President, Sales. In his two years tenure at Pathway, he has imparted his knowledge to us on the history of Moonshine (his grandfather was a Ridge Runner), what it's like to be a true southern gentleman, Tennessee football, and his memoirs of Graceland. Here are some fun facts about Mike:

Hobby you could never give up: Fishing! I like all kinds. Always a challenge and adventure. Trout, bass, walleye, crappie, smallmouth, striper, deep sea. Always enjoy being outside and fishing with my daughter, Rachel, and my Labrador, Buddy. It's a great family sport.

What's the longest travel delay you've ever experienced? Driving, but mostly creeping and sliding, for 17 straight hours during an ice storm while travelling through Georgia.

What do you like to do in your spare time: Love to work in my yard. I found out early on that I was a horrible golfer. Ball was always wet or out of bounds, so I took that as a sign, and stuck with fishing and landscaping. Landscaping is a creative outlet much like lighting.

What's one thing no one knows about you? Most know my faith is very important to me. They probably don't know that I directed adult choir at church for seven years. I enjoy singing very much.

Favorite season: Definitely spring, because nothing is dead in my yard yet.

Most prized collection: Art projects my daughter has done over the years are priceless to me.



If you won the lottery, the first thing you'd buy would be: A place next to a river in Montana, "where the phone doesn't ring!" Nothing like being able to enjoy the great outdoors!

If you had to be trapped in a movie for a day, it would be: A River Runs Through It. (No surprise here.)

The best thing about my first car: Nobody else had one! It was a 1971 AMX Javelin. Back then, there was no Ebay or Amazon, so I spent a lot of time in junkyards searching for parts. I later realized that was probably the reason no one else had one. Ha Ha Ha!

One of my favorite things to do is: Cookouts with family and friends. I grill year round. Nothing better than family, steak and fresh-caught fish, and Elvis playing in the background!