LED lighting at Scale Rails

For years the club used several forms of incandescent lighting for the layout. Over the years the cost to operate and maintain grew. In addition to rising costs the quality of light was inconsistent and resulted in shadows.

Objectives

1. Close in the top of the display for a more museum look.
2. Have consistent light levels over the display.
3. Easily adjust light levels and dusk to dawn capabilities for future.
4. Reduce power and AC needs.
5. Reduce maintenance costs.
6. Select a system that scales to cover the two main HO layout levels, HO staging and the Hon3 peninsula.

Going green

We decided on Warm White LED strip lights for the HO/Hon3 layouts. We selected LED rope lighting for staging. You may know dimming LED's requires a PWM controller.

We selected an entry level DMX lighting control system. The basic parts are a 12VDC 30-amp supply connecting to a non-flicker free driver. The drivers are run by a small standalone controller, setup the controller via a PC.

We selected LE brand strip lights so we can always buy spares.

On the lower level the distance from the light to the layout is the same. The 3/16" panels, mostly 3' wide, were painted a very light blue with 6" light spacing. Max load per channel 2.5 amps. Each strip was super glued every 6" on alternating sides. We used white wire to connect the strip and a single Euro connector to the Driver. 56 panels.

The upper level uses 2'x4' ceiling grid material to support the panels. We used Masonite to cover the fronts. Panels are about 12" above the bottom of the front Masonite to reduce seeing the light panels, about 30" from the layout). 78 panels.

The Hon3 layout used 12 panels hung from the ceiling grid. The challenge with the Hon3 layout was the huge range in distance from the panels to the different track levels. Each panel is a work of art.

We used a great deal of 16/18 gauge wire to connect the panels to the drivers. We did buy a simple light meter for testing.

Project complete

1.5 years of work, 156 channels, 80,000 LED's, near perfect light levels running at 50%, lower bills, you see everything (good and bad). Total cost $7000.

Next pictures are before the valenances were installed.


EXIT