

JUNO LIGHTING GROUP

New Energy Codes Challenge National Retailer

Pacific Sunwear, a leading mall-based specialty retailer with more than 1,000 locations nationwide focuses on everyday casual apparel, accessories and footwear designed to meet the lifestyle needs of active teens and young adults. The branding efforts of the retail store locations include extensive track lighting. PacSun's displays need to be easily moved, replaced, and redesigned and the flexibility offered by track lighting accommodates these changes. PacSun converted to high-efficiency Ceramic Metal Halide track fixtures in their stores and were frustrated that even though they upgraded to a very energy efficient solution, they still were not able to comply with current energy codes.

Lighting Control & Design Case Study



PacSun Outlet, Riverside, CA



The SilverBullet™ allows PacSun to keep their track lighting

Wattage Limits on Track Lighting

Because new energy codes throughout the United States place a mandatory limit on lighting density, track lighting now has an additional burden: an automatic VA (wattage) calculation per linear foot of track. ASHRAE 90.1, the basis for many municipal energy codes around the country, assigns 30-watts per linear foot of track. California's Title 24 code assigns 45-watts and other more stringent codes, such as Washington State and Oregon assign up to 70-watts per linear foot.

Lighting Design Exceeds Code

Using California Title 24's 45-watt per linear foot calculation, the initial design wattage for the track lighting calculated to over 35,000 watts, an enormous exaggeration above the actual planned wattage. In fact, the PacSun stores were designed using high-efficiency Ceramic Metal Halide track fixtures and each store was projected to consume only 7000-watts per store and 8.75-watts per linear foot of track.

Regulations Force Redesign Concerns

Because of the energy codes, PacSun was faced with re-thinking their store design for some states and eliminating a large portion of their track lighting – particularly in California – detracting from their successful lighting plan, while increasing design costs and

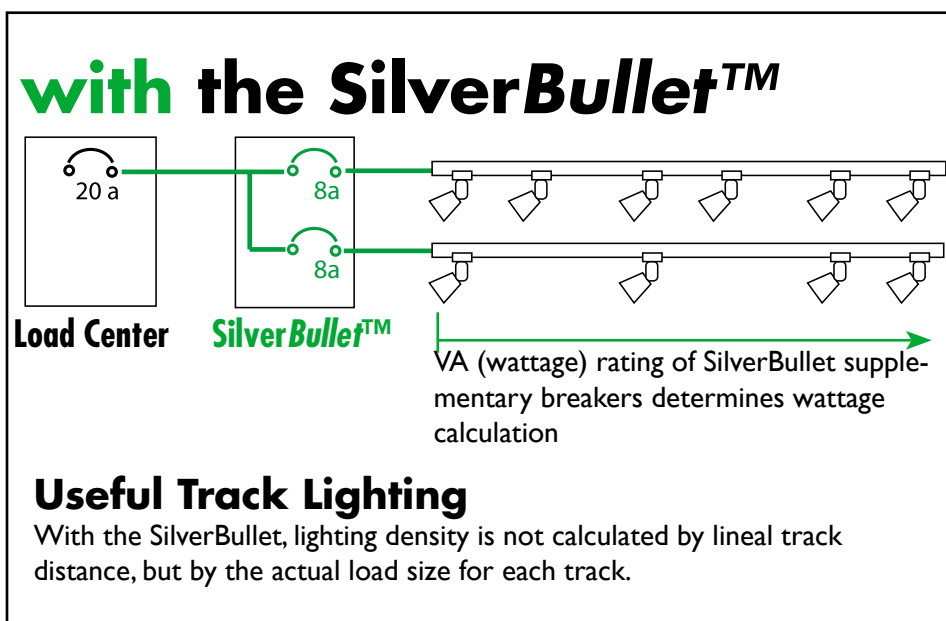
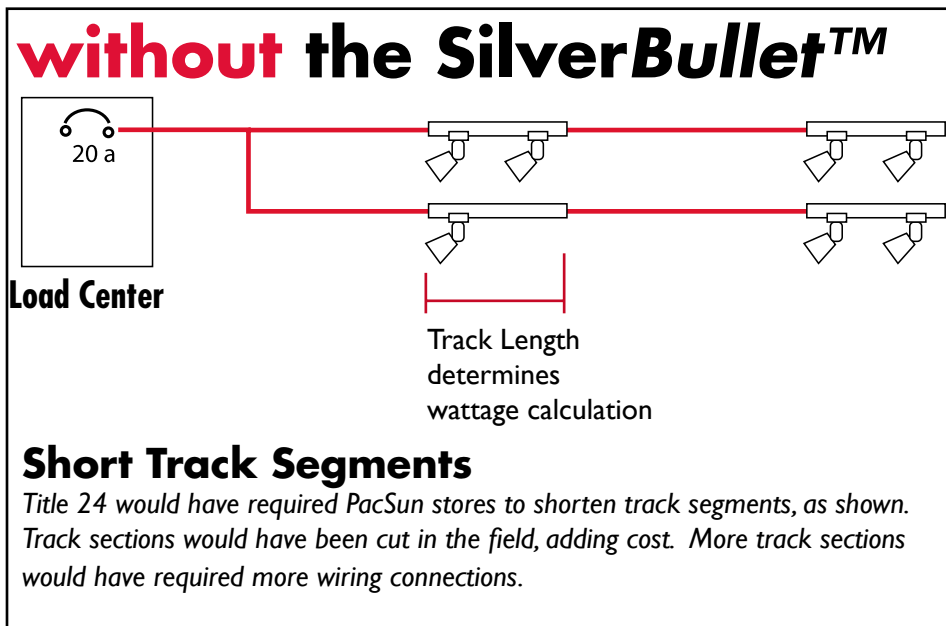


The SilverBullet™^{ca}

One manufacturer proposed installing a current limiter at the electrical feed of each run of track. This solution only reduced the load to about 18,000 watts, required significant redesign, added additional installation costs, created serious maintenance concerns and forced difficult choices of what to illuminate.

New Current Limiting Panel Wins Instant CEC Approval

According to Juno Trac Business Unit Manager Michael McCown: "The California Energy Commission originally agreed to allow us to do several test stores to prove out our concept of placing a current limiting panel between the main load center and the track lighting. After seeing the success of the first PacSun Riverside store, they immediately approved the sub-panel approach as a Title 24 compliant solution."



Two National Firms in Partnership

To solve this problem, PacSun called on the expertise of their local Juno Lighting Group National Account Manager Mike Dwyer. Juno in turn partnered with California-based lighting control manufacturer Lighting Control and Design.

Working around the clock to meet a nearly impossible schedule, the two companies developed a sub-branch current limiting electrical panel to provide a practical, cost-effective code compliant solution to the problem.

Juno and LC&D then worked closely with the California Energy Commission to get early acceptance to avoid delaying the store opening.

Lighting Control & Design

Wattage Reduced by 75%

According to Cory Meier of Ericksen, Ellison & Associates, PacSun's electrical engineering firm in St. Paul, MN: "The sub-branch current limiting electrical panel as proposed by Juno and LC&D met California Title 24 requirements and was able to reduce the wattage calculation to 8,000 watts – a reduction of over 75% – and retained the lighting flexibility that PacSun needed to accommodate frequent store changeovers."

Lower Installation Costs

Cory added: "The sub-panel approach also provided major additional benefits for PacSun:

- Eliminated a costly/time consuming lighting re-design for their California stores;
- Significantly lowered the installation costs by eliminating the need to field cut tracks to shorter lengths and install additional junction boxes to feed an increased number of shorter runs of track;
- Eliminated maintenance concerns over nuisance tripping of circuit breakers placed on individual runs of track."

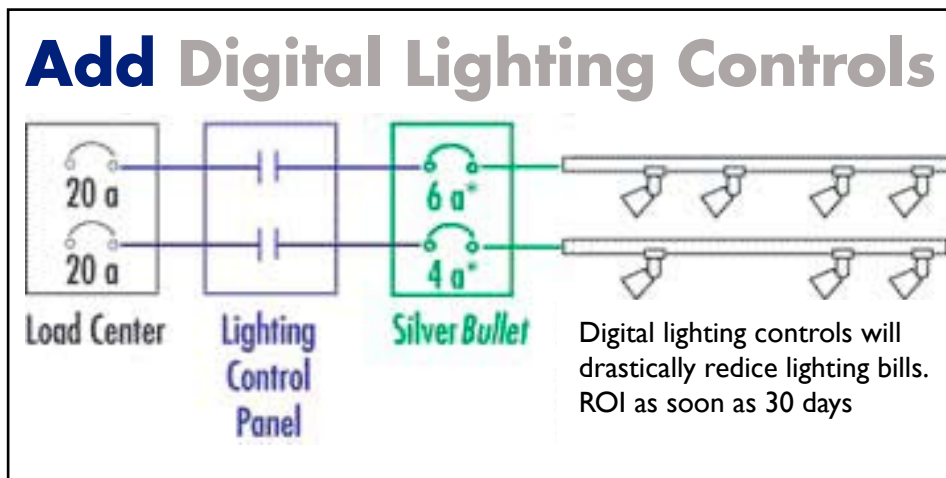
Products Meet ASHRAE Requirements

The sub-branch current limiting panel is being marketed by both Juno Lighting Group and LC&D under an exclusive supply agreement.

Juno will be marketing the panel under the trade name REGULITER. LC&D's product will be marketed under the trade name SilverBullet. Both manufacturers' current limiting sub-panel are UL Listed to be placed in-line between the branch circuit breaker and the track mounted lighting. They are approved by the California Energy Commission and meet the latest proposed requirements of ASHRAE 90.1-2004, which is shortly expected to be issued by ASHRAE in the form of an addendum to Section 9.1.4 of the code.

Digital Controls Save Energy

The GR 2400 digital lighting and HVAC control system from LC&D reduces energy use for PacSun and other specialty retailers by about 35% with typical ROI under 30 days in new onstruction. The ideal system consists of the SilverBullet for track lighting and the GR 2400 system for energy controls.



Juno Lighting Group

www.junolightinggroup.com

Juno Lighting Group is a leader in the design and manufacture of commercial and residential lighting fixtures. Since its founding in 1976, the Company has established itself as a preferred lighting supplier by providing high quality and well designed products, superior customer service, timely delivery, outstanding technical support and product training.

Lighting Control & Design

www.lightingcontrols.com

Founded in 1987 as a result of the demand for a user-friendly lighting control system from building owners and the engineering community. LC&D manufactures simple, yet flexible and scalable controls for applications ranging from parking lots and retail stores to high-rise buildings. A wide breadth of products can incorporate functions as diverse as dimming interfaces, building automation interfaces and digital thermostats all within a single system.

Lighting Control & Design

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