

SILVERMERE LIGHTING

A Division of Silvermere Group



**Providing High-Performance, Energy-
Optimizing Lighting Systems.**

Raise Your Standard of Lighting!

Company Introduction

Silvermere is a group of companies marketing energy-saving infrastructure products to distribution partners and end use customers for projects around the world. Our Lighting Division, based in St. Paul MN USA, offers value-added supply of high-performance LED lighting products, T5HO fluorescent lighting products, and tubular skylights for daylighting, with focus on serving industrial & municipal facilities with intensive lighting requirements. We represent leading American and offshore manufacturers and work with customers to identify lighting objectives and provide products with the right performance features to achieve objectives with maximum effectiveness and efficiency to minimize operating cost, achieving 50-90% reduction in cost of lighting. We offer free lighting assessments and economic evaluations, and supply products suited to each application, ranging from simple bulb replacements to outdoor and hazardous location lighting to color-changing decorative lighting to controlled programmable “smart lighting” systems.



Intro to LED Lighting

Light Emitting Diodes (LEDs) are solid-state digital components that can produce and deliver light with greater energy efficiency than traditional gas-discharge bulbs, last longer and are more environmentally friendly. LED offers much greater versatility, with specifiable light color, directionality, beam angles, distribution patterns and controllability, to suit each lighting requirement with maximum efficiency, and is changing the way lighting is done worldwide. Most municipalities and energy-conscious companies around the world are already switching to LED for many applications.



The Past – gas discharge bulbs

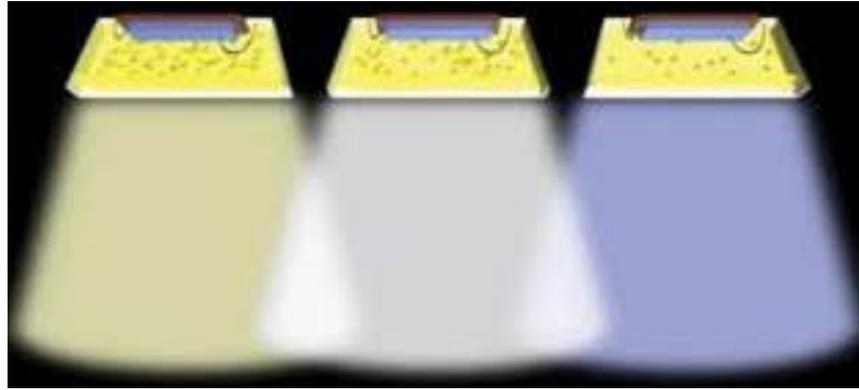


The Future – Light Emitting Diodes

Directionality of LED Lighting



Traditional bulbs: Omnidirectional



LEDs: Directional

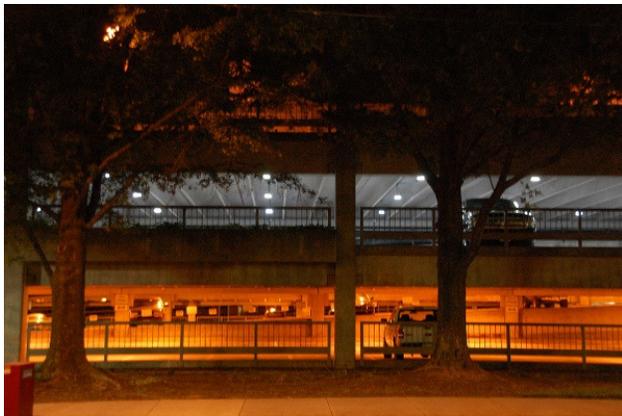
While traditional bulbs emit light omni-directionally, in all directions, each LED emits light in a single direction, allowing much more efficient delivery of light to target areas.

Traditional bulb fixtures must reflect light to the directions desired, causing light loss and more wasted energy. LED maximizes delivery of light to target areas, excelling in directional lighting products such as down-lights, spotlights and billboard lighting. LED is the best for dark-sky compliance, minimizing light loss to the sky or neighboring properties.

Quality of Light

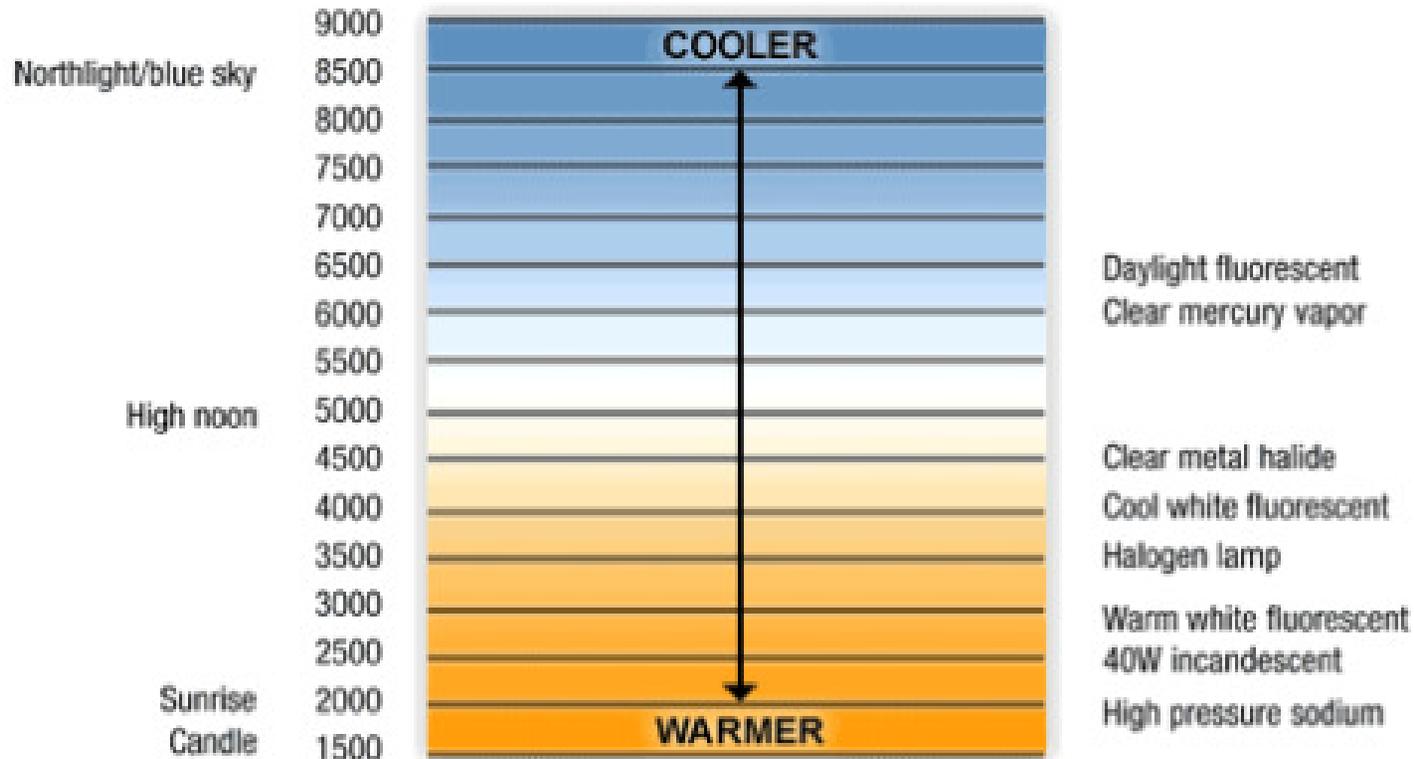


The above tunnel is converting from high-pressure sodium (HPS) bulbs (left), to LED (right). The HPS bulbs emit low-quality light with poor color rendering. The LEDs emit daylight quality white light providing better visibility and safety using 60% less energy. As you can see, the difference is like night and day!



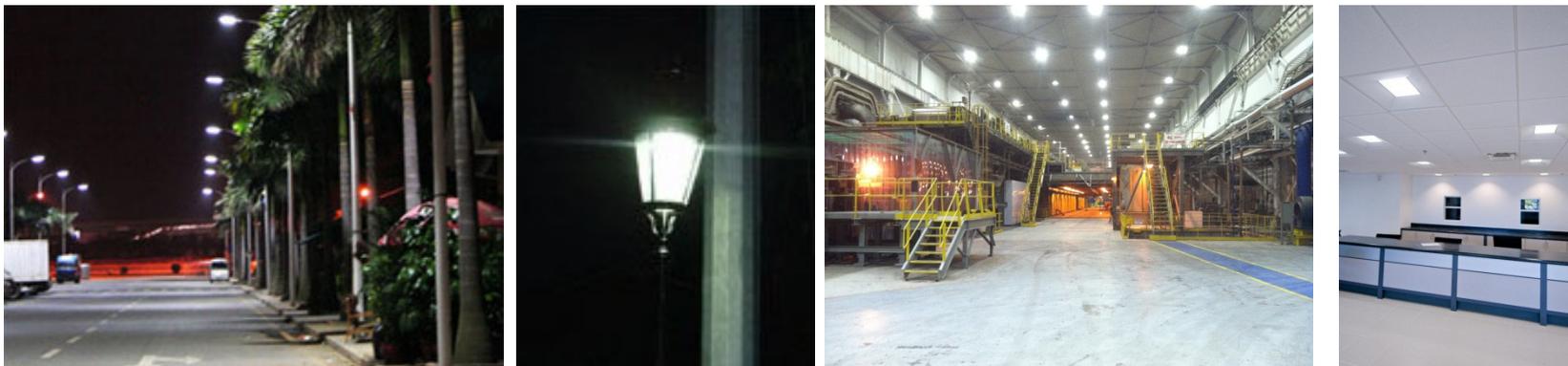
Parking ramp converting from HPS to LED. The upper level with LED has more modern, inviting appearance, improved visibility and better sense of safety & security for visitors, while using 60% less energy. People feel safer and cameras work better in white light.

Color Temperature Chart



Color of light is measured in kelvin. LED is capable of producing nearly any color specified in the visible spectrum. LED can mimic the color of incandescent light, neon light, or daylight-quality pure white light for maximum visibility.

Versatility & Controllability of LED Lighting



LED offers such versatility, they can be used in nearly any lighting application. We can specify the right fixture shape, color of light, intensity, beam angles, electrical connectors and other features to achieve the best performance & efficiency for each application. LED products can be designed for omni-directional output of light to mimic traditional bulbs.

We can further optimize efficiency of energy with “smart lighting” controls such as programmable dimming, occupancy sensors and daylight sensors. Motion-sensor controls are great for outdoor perimeter lighting, providing minimal light when nobody is around, but full power lighting when motion is detected, providing light when needed, and alerting intruders to detection.

Converting Existing Fixtures to LED

Our LED retrofit systems are designed to replace traditional bulbs in existing fixtures, converting the fixtures to LED to reduce energy, maintenance and cost of lighting. Most commercial fixtures can be easily converted to LED using retrofits, including: high-bay, flood, cobra-head, shoebox, post-top, T8 troffers, etc...



Above are examples of commercial fixtures converted from HID bulbs to LED using retrofit kits with 100,000 hour lifespan, reducing electricity consumption over 60%, and maintenance of bulb changing for many years, saving over \$2000 per fixture over the lifespan of the product.

Project Example US Government warehouse retrofit

Silvermere provided an LED retrofit solution for a US Government warehouse in South that their internal security-cleared staff could install into existing high-bay fixtures. The investment achieved payback in under 2 years.



Before: 250w HPS in high bay fixtures. Low quality of light and high heat gain made working conditions uncomfortable.

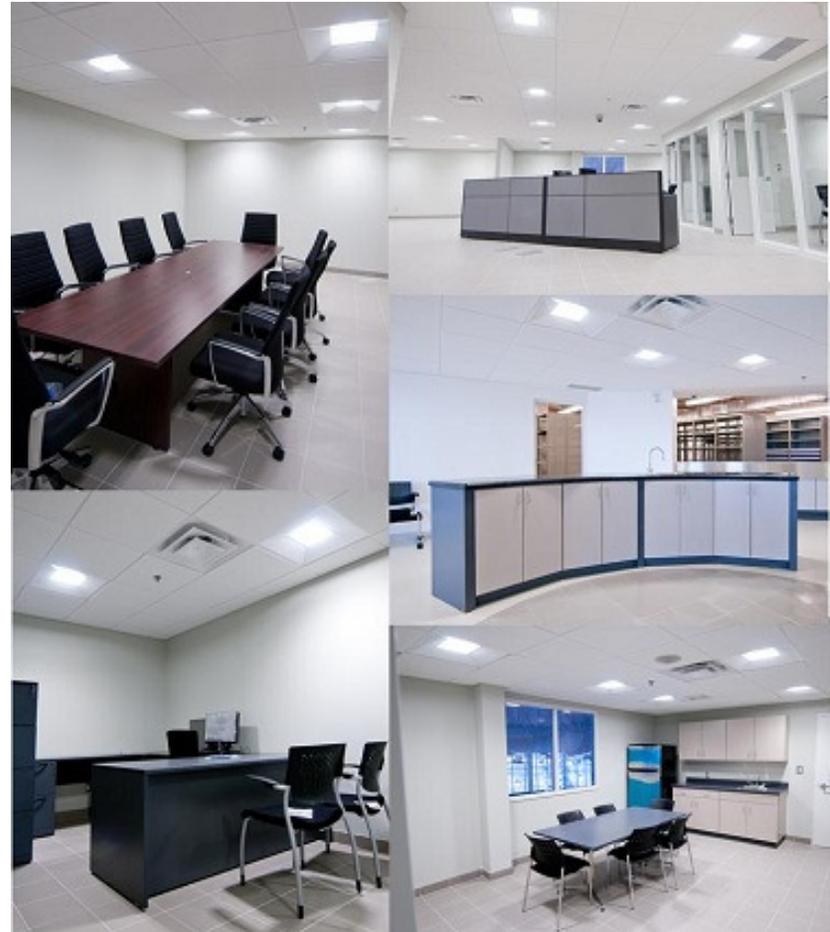


After: Converted to 90w LED in the existing fixtures, resulting in improved quality of light, reduced energy load by 75% (5.3kw), and reduced interior peak temperature by 10 degrees.

See the project press release in LEDs Magazine: <http://ledsmagazine.com/press/33373>

Commercial Interior LED Fixtures

Silvermere offers the highest performance drop-in ceiling lights for suspended grid ceilings, perfect for office or retail environments.



We can achieve above average lighting levels using less than 1 watt/SF, half the energy requirement of fluorescent lighting, providing better illumination and without radiating heat into occupied space, reducing AC load as well.

Designer LED Ceiling Lights



Silvermere can provide a variety of LED ceiling lights with different shapes, sizes and styles to choose from. These can replace recessed cans in existing apertures and with flush lenses to provide better diffusion of light, a more modern look of ceiling integration, lower maintenance, lower heat gain and lower energy. Choose the right ceiling lights to suit your design scheme.

Project Example

Police Station entryway ceiling lights



100w HID Recessed Can



A Police Station in Minnesota replaced ceiling cans & 100w metal halide bulbs above the entrances with 20w LED ceiling lights from Silvermere, designed to fit the existing 8 inch apertures.



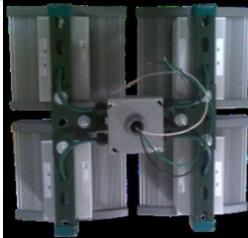
20w LED ceiling light

Energy consumption is reduced 80% and the lighting is better diffused, better quality and lower maintenance.

High-Bay Fixtures



We offer several varieties of high-bay fixtures that are industrial-grade and scalable up to 636 watts capable of replacing 1500 watt HID fixtures 1-for-1.



- * The most convectable surface area in the industry for superior thermal management.
- * 60,000+ hour lifespan. 5 year warranty.
- * Serviceable LED arrays & external power supplies so fixtures never need replacing.
- * ETL & DLC listed, fire rated, IES tested.
- * Over 80 lumens/watt, 85CRI, and daylight-quality white light.
- * Perfect for warehouses, factories, garages, gymnasiums and other wide area interiors.

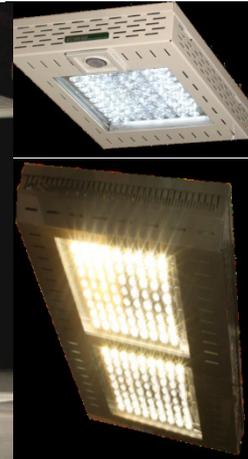
Low-Bay & Canopy Fixtures



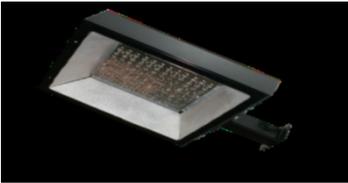
Our low-bay/canopy fixtures are also industrial-grade with superior thermal management & serviceability. Unlike recessed canopy fixtures that trap heat, our fixtures are surface mounted and breathable, allowing air-flow through the fixture & across the heat sink while protecting it from debris, for superior long-term performance. Available in 53-159watts.



Perfect for parking ramps, gas-station canopies, hospital or hotel or restaurant canopies, tunnels and under-bridges.



Parking Lot Fixtures



Our parking lot / wall-wash fixtures are also industrial-grade with superior thermal management, serviceability & breathability, allowing air-flow through the fixture with protection from debris, for superior long-term performance. Available in 53-159watts to replace 100-400watt HID fixtures, and powder-coated fixture housing for durable weatherability.



Street Lighting



The directionality of LED allows **much greater efficacy to the street** than traditional streetlights, with 85% of light delivered directly to the ground, versus 20% of traditional fixtures, minimizing light loss & light pollution, & improving “dark sky” compliance.



The high color temp & high color rendition of LED light is the highest quality of street lighting available. **Better visibility and color perception** allows drivers to better see the road, enhancing safety while lowering cost of lighting.

Post-top lantern/globe retrofits



360 degree post-top retrofits offer easy replacement of traditional bulbs in lantern or globe fixtures.



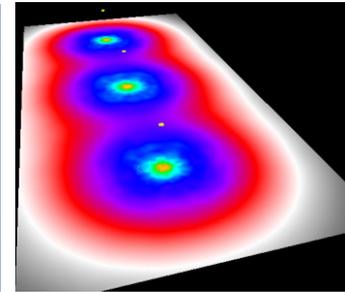
Project Example



The city of St. Paul Minnesota is testing 24w LED post-top retrofits from Silvermere in to replace 70w HPS bulbs in globe fixtures.

High-Bay & High-Mast Retrofits

Made in USA



Silvermere offers the only retrofit system capable of replacing up to 1,000w HID bulbs in existing fixtures. Fan cooled LED engines with power levels of 40-90 watts each have over 100,000 hour lifespan, and up to 4 can be field installed in a single fixture to replace a 1000w HID bulb and ballast reduce to reduce energy over 60%, saving over \$700 per year per fixture. These retrofits are perfect for shoebox, cobra-head, high-bay & high-mast fixtures. Watch a video presentation at: <http://www.youtube.com/watch?v=l49UOelbzYM&list=PL6315CC6C571002A7&index=5>



LUMEN-BLOCKS - MODULAR LED LIGHTING SYSTEM

Silvermere offers a modular industrial LED lighting system that uses standardized, interchangeable and easily field replaceable LED modules. The fixtures never need to be replaced. The modules are IP68 weatherproof and suitable for wet & hazardous locations. Fixtures are available for a wide range of applications including: roads, parking lots, security perimeters, canopies, tunnels, garages and commercial interiors. They can be pole mounted, surface mounted or hung, and are scalable up to 300 watts per fixture, capable of replacing 1,000w HID fixtures. Beam angles are available from 30 degrees to 125 degrees to suit different light distribution needs. This system can standardize lighting components and simplify servicing for all industrial lighting applications.

LED for fridge & freezer lighting

LED technology is particularly well suited for low temperature applications such as fridge and freezer because LED operates optimally in low temperature environments, maximizing lifespan and performance. LED is far superior to fluorescent lighting for coolers & freezers for the following reasons:



- * Fluorescents perform poorly in cold temperatures, the “warm-up time” & flickering wastes energy. LEDs provide instant-on without flickering.
- Fluorescents contain toxic mercury that might threaten contamination of nearby food if broken. LEDs contain no breakable glass or hazardous materials.
- Fluorescents generate a lot of heat that must be counteracted by refrigeration, resulting in energy waste. LEDs minimize heat gain.
- Fluorescents have short lifespan in freezers. LEDs last beyond 50,000 hours maintenance free.
- Additionally, LED offers better CRI, showing better vividness of color.

LED bulbs

A wide variety of LED bulbs can replace traditional bulbs in standard sockets in all kinds of fixtures.



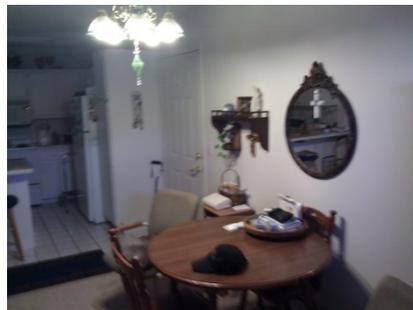
Spotlights: 3-4w with e27, MR16 or GU10 base, replaces 30-40w halogen spotlights



A19 traditional bulb style. 1-10w LED bulbs replace 10-100w incandescent bulbs in standard sockets



PAR30 or PAR38 spotlights or floodlights. 12w replaces 60w incandescent or halogen bulbs. We offer an active cooled 40w PAR30 to replace 100w HID.



We offer a wide variety of shapes, sizes and color temps of LED bulbs to replace traditional bulbs in track-light, chandelier, marquee, pendant, desk-lamp and other socket fixtures. LED bulbs can mimic incandescent bulbs for traditional look but without the energy waste, heat gain and bulb changes. Tell us your LED bulb needs and we can design to suit.



Project example:

Historic building custom bulbs design



The First National Bank Building is one of the tallest in downtown St. Paul and was using over 2,000 decorative 3w CCFL bulbs to line the 1st floor lobby, hallways and elevator bays as accent lighting, appearing as incandescent, an original architectural feature of the building since construction in 1931. Management wanted to switch to LED but keep the historic incandescent look. Silvermere worked closely with building management to design and commission a 1w LED bulb with the right look and color of light to appear as marquee incandescent bulbs, keeping the historic look and accentuating the marble and bronze architecture, while using 60% less energy.



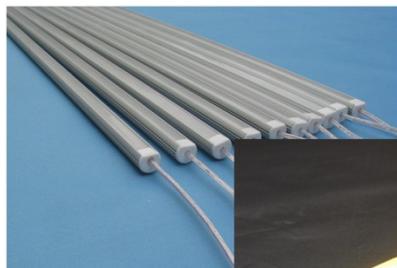
See the project press release in LED's Magazine: <http://ledsmagazine.com/casestudies/38233>

Linear LED fixtures & tube retrofits

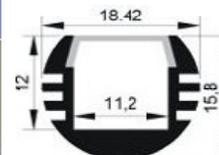
2-5ft LED linear tube lights can replace traditional T8 fluorescent tubes in existing fixtures to reduce energy by 50%. Our 21w 4ft tube replaces 42w fluorescent tubes. LED tubes are well suited for wall wash & fridge applications, and our products can be rotated in-place to get exactly the angle of light desired.



Our LED “line light” is a 4.5ft long, 1 inch wide, 36w linear hanging fixture with a sleek modern look that is perfect for hanging over desks, work stations, lobbies & meeting rooms in office interiors, or retail store isles, checkout counters, and any other applications for hanging fixtures.

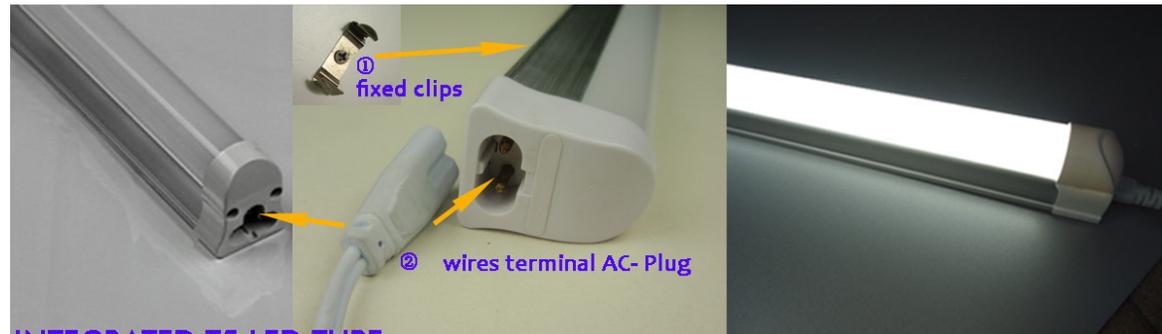


LED line light



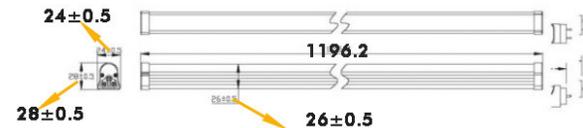
Surface-mounted light bars

Light bars are perfect for ceiling, wall or under-cabinet mounting, great for illuminating closets, bathrooms, hallways, shelves, desks, and other small areas.



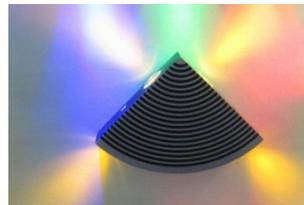
INTEGRATED T5 LED TUBE

4FT -1200MM
20w . 95lm/w . 1900LM. 2850-6500K .
85-265v/Ac . Input current 600mA .
Efficacy 85% . PFC 0.95 .



Our V-shaped corner light bar is sleek and discreet, fitting neatly into corners to illuminate small rooms or task areas.

Decorative LED



Red, Green, Blue or color changing LED bulbs, floodlights, linear lights, sconces, furniture and table lamps can add color, decoration and attention-getting vividness to rooms or building exteriors, perfect for restaurants, hotels, nightclubs, theaters, bridges, fuel station canopies and many other places.

Project Example

Nightclub dance floor



Silvermere provided neon colored and color changing flexible LED rope light for a nightclub in St. Paul Minnesota, adding vivid ambience to the stage & dance floor.



T5HO Fluorescent Lighting

T5HO is the most energy efficient fluorescent lamp, offering up to 80 lumens per watt and up to 40,000 hour lifespan. In many cases, where maintenance of replacing lamps is not costly, and controls are not needed, T5 fluorescent may be the most economical option.

We offer premium-quality, American made T5 fixtures and lamps for indoor area lighting, including vapor tight fixtures, with excellent specular reflectivity and delivery of light.



Why Choose Silvermere as your lighting partner?

- We represent leading American and foreign manufacturers & supply factory direct.
- We work cooperatively with customers to identify the right solutions for each lighting need.
- We offer a wide variety of products with many performance feature options, and we can custom design lighting solutions for specialty applications.
- We are experienced importers & exporters and can deliver to any project site in the world.
- We offer free lighting assessments and economic evaluations.
- We seek long-term partnerships with our customers.

Tell us where you would like to improve lighting & reduce cost!



End-use Customers of Silvermere Lighting have included:



Minneapolis
City of Lakes



Silvermere Lighting – Raise Your Standard of Lighting!

Silvermere Lighting is dedicated to helping commercial & municipal customers worldwide to improve quality of lighting while reducing operating cost. Contact us today for a free lighting assessment or to discuss your lighting needs.



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