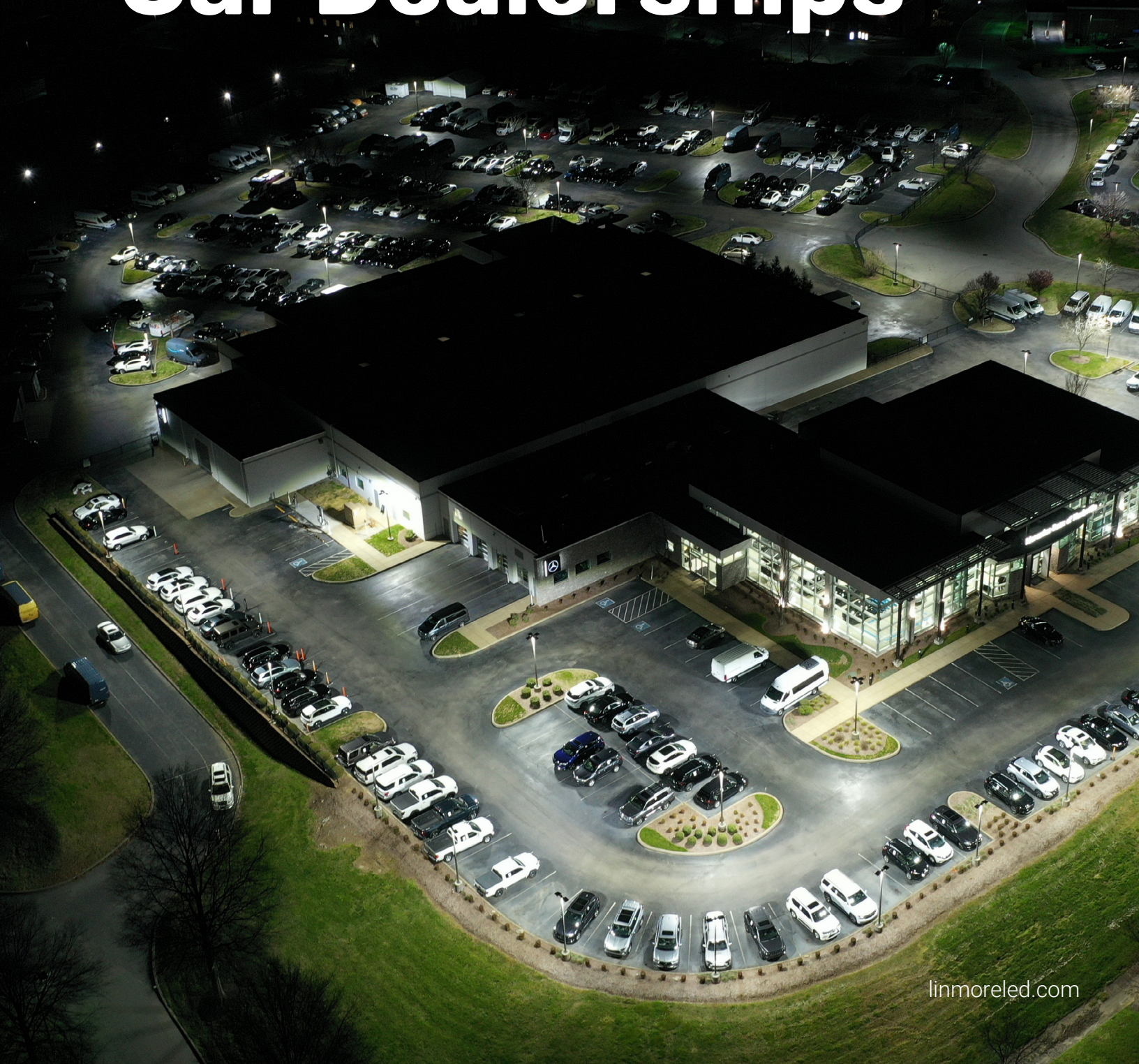


LED lighting for **Car Dealerships**



LED Lighting Upgrades

The 3 aspects auto dealerships have been missing from LED lighting upgrades

The LED Lighting Revolution has been going for about 10 years. As with any maturing technology, much has changed over that time. Costs have come down, performance has gone up, and the manufacturer landscape has shaken out. Early adopters of LED have been underwhelmed by “color shifting” (where white light shifts to blue, purple, or other colors), lumen/output depreciation, low hour failures, and lack of parts to maintain the asset. Many manufacturers rushed products to market to seize on high early adoption rates.

Even poorly made LED lighting works for a while, but the disappointments will materialize within a couple of years. In many electricity utility areas, rebates helped offset the cost of LED upgrades which further accelerated the revolution. If you

have poorly performing LED lighting, or are looking to upgrade for the first time, this article is a guide to get the most out of your LED lighting investment in 2022 and avoid some common pitfalls.

This article is a guide to get the most out of your LED lighting investment and avoid some common pitfalls.

functionality. However, something beyond a mechanical time clock must control the light fixture to realize its potential benefits.



By: Paul Chamberlain
President & CEO of Linmore LED Labs

WIRELESS CONTROLS

The typical lighting control used by an auto dealer is a mechanical time clock that turns lights “on” at dusk and “off” at dawn. While “on,” lights are operating at 100% output even though during most of those hours, there are no customers or employees on site. LED technology opens endless possibilities of functionality due to its dimming



Wireless controls are now affordable and deliver a new level of savings and functionality. Generally, upgrading from legacy technologies to LED yields a 50% energy savings. Wireless controls can generate an other 75% savings! How? Unlike legacy technology, LED lighting can be dimmed when full output is not needed and controlled by wireless motion sensors unlocking many opportunities for savings. For example, after business hours, lot lighting can be dimmed since there are not any customers or employees on the lot at that time. With motion sensors, if someone enters the lot (desired or undesired) the sensor can restore the light level to full output, then again dim the lights back down after motion is not detected for a specified time. For undesired visitors, many will leave the lot believing that the change to full brightness means that they are being watched providing a security enhancement.

Only a wireless control system can unleash these benefits. And because the system is wireless, there

are no costly running of wires all over the property. If you have already decided to go LED, the additional investment for wireless controls is an easy one. The savings to cost ratio is absolutely compelling. In fact, the ROI for the wireless controls is better than the lighting!

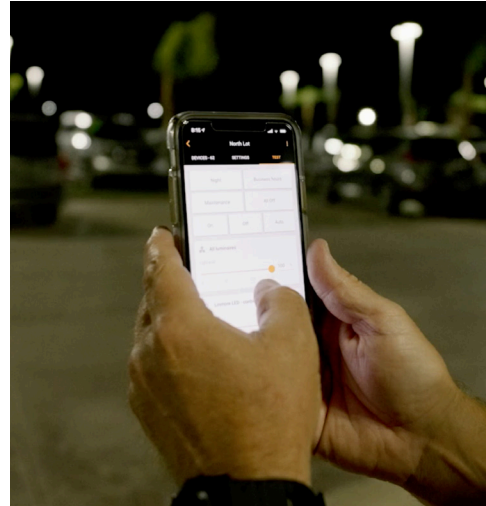
MAINTAINABILITY

Dealerships that have already upgraded to LED have learned that, unlike legacy technologies, LED lighting is generally unable to be maintained. For many, that might be a head-scratching awakening. Legacy technologies, like metal halide or fluorescent, had standardized components across all fixture manufacturers. You could buy replacement lamps and ballasts from any electrical supply business, and even home improvement retailers.

With LED, the lighting modules and drivers (the two common fail points) are not standardized. In fact, electrical supply businesses do not stock any LED parts because the lighting modules are completely custom to

each manufacturer's fixture and the drivers must align many specifications to the needs of the lighting modules. Given that about 90% of LED lighting is made in China with unique components not on US shelves, LED lighting is effectively not able to be serviced.

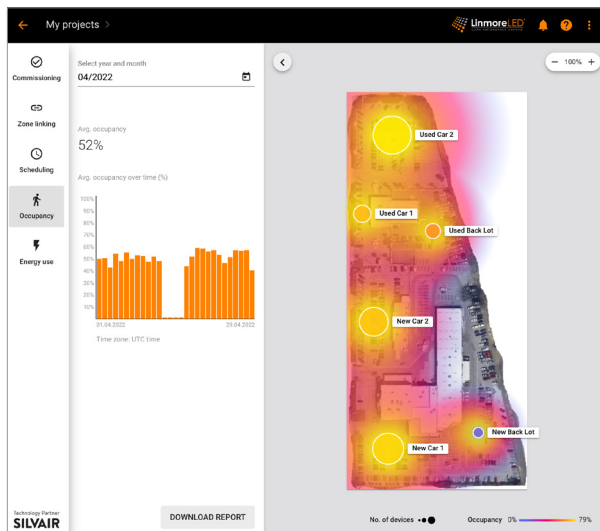
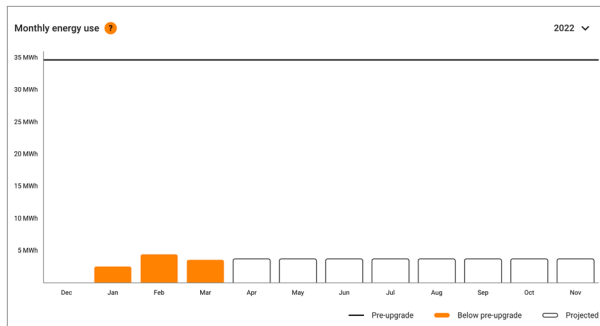
Seek out manufacturers with assembly operations in the US, not just warehouses in the US. If a "manufacturer" only has warehousing in the US, that is a sure sign of an importer, not a manufacturer. When the lighting is assembled in the US, then the parts needed for maintenance, both during and after the warranty period, will be available from the manufacturer in the US. If you do not ask your lighting professional about the LED lighting's country of origin and where replacement parts are stocked, this information is seldom voluntarily provided. Task your providers with this due diligence before you buy to avoid years of frustration.



The thought of getting data from lighting is likely new to you. LED Lighting upgrades are typically sold based on the "promise" of savings and ROI. Ever wondered if you are realizing the savings? Today's LED lighting can provide valuable data like energy consumption and energy savings in dollars. This actionable intelligence provides the verification of your "promised" savings and the validation to upgrade other locations.

Another available data point is called occupancy or heat mapping. Lighting can track human activity around a facility. The data may or may not be valuable to an auto dealer, but think of its value in retail where managers may want to know where shoppers spend their time in a facility. Data driven decisions in lighting haven't been available until recently, but should be sought going forward.

DATA



SUMMARY

LED lighting can offer many benefits to auto dealerships including energy savings, a better customer shopping experience, lower lighting maintenance costs, and improved security. It should be viewed as a long-term asset, one that can be maintained for years, and provide a benefit to your customers. Make sure you are getting everything possible from your investment by asking your lighting professional about "the 3 aspects auto dealerships have been missing from LED lighting upgrades."

SLW



Site Lighter Wall Pack (SLW)

Aesthetics. Efficacy. Performance.

The Site Lighter Wall Pack is a new take on how wall packs can match the design of pole lighting. Based on the visual appeal of Linmore LED's Site Lighter Area Light, this Wall Pack brings flair and interest to wall lighting while creating a unified aesthetic.

Its ultra-high efficacy allows facilities to illuminate near walls with very low energy consumption. When the objective is to maximize value in your exterior lighting with energy savings, and matching aesthetics to your pole lighting, the Site Lighter Wall Pack is the clear choice.

UltraLink Bluetooth® Controls

The lighting industry is going wireless, and the number of ready-to-use products is growing rapidly. To unleash the full potential of smart lighting networks, Linmore LED provides a set of tools with wire-like performance and global interoperability. Enjoy lighting control technology based on the globally interoperable Bluetooth mesh standard. All our solutions are qualified by the Bluetooth SIG, which means your

components will work with qualified Bluetooth mesh devices from other vendors.

WHAT IS BLUETOOTH MESH?

Bluetooth mesh is a global wireless networking standard that expands the capabilities of the Bluetooth radio communication to serve many smart building applications. Enabling large-scale networks consisting of thousands of devices, Bluetooth mesh was

designed with lighting applications in mind. Its network topology and features guarantee full-building coverage, wire-like reliability, and government-grade security. Aside from its unmatched scalability and wire-like reliability, it enables a globally inter-operable ecosystem of products that can work with each other out-of-the-box.





SWITCHES

Switches

Wired and Wireless switches are available to offer manual control for custom zones. No longer do you need to re-wire buildings to manually control lighting in a manner functional to your business.



SENSORS

Sensors

Occupancy / motion and daylight sensors control the assigned fixtures. Sensors can be onboard fixtures or remotely mounted. Multiple strategies of lighting behavior can be set by users for best performance, energy savings, and safety.



BLUETOOTH CONTROLLER

Bluetooth Controller

Fixtures that don't have a sensor onboard are equipped with a Bluetooth controller. Sensors and switches communicate to controllers and tell lights at what level to operate or dim to off. Generally, about 85% of fixtures will have a controller and 15% will have sensors.

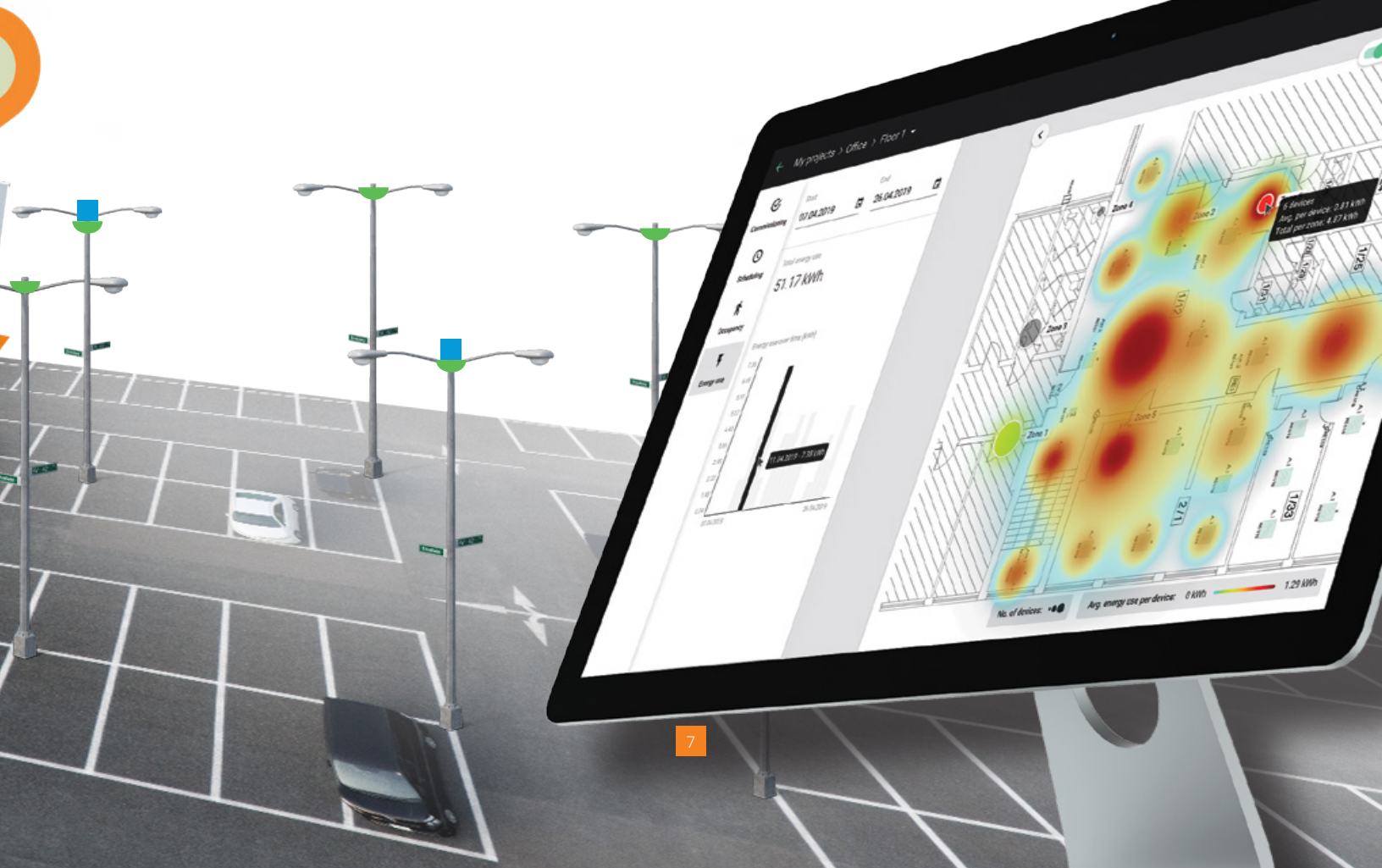


iOS App

The UltraLink iOS app is the tool to operate, control, set up, and make changes to how the system functions. Adjustments are easy and can be made from the app as a facility's needs change over time. Always adaptable.

Technology Partner

SILVAIR



Company



THE POWER OF VALUE

Ace LED is Linmore's value brand. It consists of a selection of fixtures providing good performance and high efficiency.

Fixtures typically ship within 48 business hours under our QuickShip program, and they are backed by a 5-year warranty.

When the objective is to find quality lighting that meets your budget, let Ace LED fixtures be the ace up your sleeve.

Office / Commercial Lighting



Wattage and CCT Selectable Troffers and Panels from Ace LED

Under the Ace LED brand, Linmore LED has released three new cost-effective products for office and commercial lighting.

These fixtures are made with long-life and high-efficacy LEDs to deliver great energy savings and many years of zero maintenance costs with an L70 LED life of 172,000 hours.

They are wattage and CCT selectable. A pair of switches on the back allows the user to select three output power options and three color temperatures, making them suitable for all indoor applications and preferences.

They are dimmable (0-10V), IoT ready, and can integrate basic on/off/dimming controls and UltraLink Bluetooth controls.

The Ace LED Door Kit (AD1) is a highly efficient LED retrofit kit to upgrade most standard 2x2 or 2x4 recessed troffers.

The Ace LED Panel (AP1) features an aluminum back for heat dissipation and structural rigidity. It has a frosted lens and it is dust resistant, offering zero distance between the back cover and the frame. Available in 1x4, 2x2, and 2x4 sizes.

The Ace LED Troffer (AT1) can be mounted in a standard drop/grid ceiling and also has holes for attaching cables. Its high-quality lens directs the light where it is needed with low-glare. Same as the panel, it is available in 1x4, 2x2, and 2x4 sizes.



Ace LED Door Kit (AD1)

- Up to 125 LPW
- Selectable CCT: 3500K, 4000K, 5000K
- Selectable output power:
 - 2x2: 30/35/40W for 3,750/4,375/5,000 lm
 - 2x4: 30/40/50W for 3,750/5,000/6,250 lm
- Dimmable 0-10V

Ace LED Panel (AP1)

- Up to 125 LPW
- Selectable CCT: 3500K, 4000K, 5000K
- Selectable output power:
 - 1x4: 30/35/40W for 3,750/4,375/5,000 lm
 - 2x2: 30/35/40W for 3,750/4,375/5,000 lm
 - 2x4: 30/40/50W for 3,750/5,000/6,250 lm
- Dimmable 0-10V



Ace LED Troffer (AT1)

- Up to 125 LPW
- Selectable CCT: 3500K, 4000K, 5000K
- Selectable output power:
 - 1x4: 30/35/40W for 3,750/4,375/5,000 lm
 - 2x2: 30/35/40W for 3,750/4,375/5,000 lm
 - 2x4: 30/40/50W for 3,750/5,000/6,250 lm
- Dimmable 0-10V



High Output Troffer

Creating the wow factor in car showrooms

The HT1 is not a normal troffer, it is designed for high ceiling applications that require high lumen output, long life, high quality of light and beautiful aesthetics.

Installing these high output troffers in car dealerships creates an inviting showroom where customers feel at ease, motivating them to stay longer, engage more and examine details, textures and colors.

Compared to the dull, tinted and unnatural light from inferior light sources, the HT1 provides bright illumination with a natural and cleaner appearance.

These fixtures are available in 12,000, 18,000, and 24,000 lumen packages to deliver the perfect brightness and enhanced colors to draw customer's attention and make cars look more attractive.

Equipped with premium LEDs and high quality optics, they deliver the light where it is needed with superior uniformity ratios, minimizing bright spots or shadows.

Its high efficiency and long life, provide great energy savings

and no maintenance for many years. For greater energy savings and smart features, they can integrate basic and advanced controls systems as an option such as sensors for motion and daylight harvesting, UltraLink Bluetooth controls, and building systems integration.

The performance of these light fixtures is guaranteed for 10 years, including lumen maintenance (L70), color temperature, and LED driver.

HT1

High Output Troffer



HT1 features a clean recessed troffer design and high bay performance.



Manufactured in Fresno, CA by Linmore LED, HT1 is available in 2x4 and 4x4 form factors.

Featured Product



Essentials Series

These heavy-duty LED high bays are engineered to deliver the highest performance, versatility, and longest life in the industry.

They excel in all types of applications, including, manufacturing facilities, warehouses, hangars, car maintenance shops, convention centers, indoor sports complexes, heavy industrial and harsh environments.

The Essentials Series are the only LED high bays in the industry with a 10-year guaranteed performance, covering lumen maintenance (L70) and LED drivers.

Their outer light bars are rotatable. They can be set to 0°, 45°, 90° and 135° independently, allowing to optimize the light distribution at any time on the field. This feature provides the highest flexibility for installers and end users to suit the lighting needs of every facility.

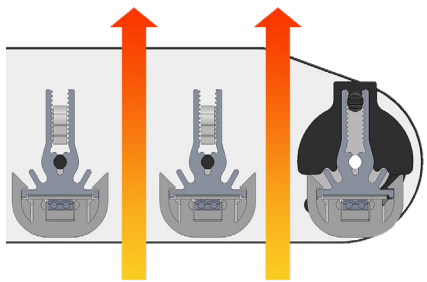
There are three product lines to choose from, ensuring you will have the right high bay for any application.

The Performance Line offers the highest efficacy and longest life for the most demanding commercial and industrial environments and can withstand up to 65°C (149°F) ambient temperatures with its best-in-class thermal design and extruded aluminum heat sinks.

The Standard Line can withstand up to 55°C (131°F) while delivering high efficacy and long life, and includes the highest lumen output option at 73,681 lumens. Lastly, the Value Line offers the lowest cost per lumen with excellent performance for all applications not exceeding 45°C (113°F) ambient temperatures.

Our engineers have redesigned the aluminum heat sinks and wireways to maximize heat dissipation, ensuring the fixture performs at high levels of performance throughout its lifespan. This best-in-class thermal management, coupled with the best components and a myriad of options, ensures our customers get exactly what they need, knowing they have made the right choice when it comes to high bays.

The Essentials Series high bays have a dedicated extruded aluminum heat sink for each LED module. These heat sinks will heat up the air next to them and since there is space between the modules, it allows cool air from underneath to be pulled up and around the heat sink fins. Hot air will then rise away from the fixture, creating conduction as well as natural convection from that natural air flow. This removes heat from the LEDs, which improves their performance and life.



LED drivers are electronic devices that, if not properly cooled by the fixture design, will have its lifetime significantly reduced by high ambient temperatures. This leads to a more frequent need of replacement and therefore, higher maintenance costs.

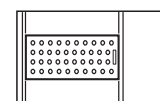
In these high bays, the driver compartment is completely made of aluminum with space around it to allow for vertical airflow and natural convective cooling to keep the LED driver cool. This design allows the driver to operate at a lower temperature, ensuring its life and performance while also reducing future maintenance costs.

Linmore LED is committed to manufacturing in the USA, as such, all Essentials Series fixtures are designed in Dallas, Texas and built in our plant in Fresno, California.

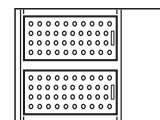


SL1

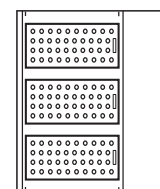
Site Lighter Area Light



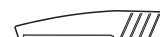
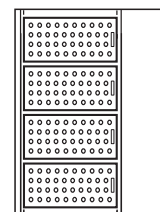
Small (SM)



Medium (MD)



Large (LG)



Extra Large (XL)

The Site Lighter (SL1) is a superior combination of performance, value, form factor, and aesthetics.

The unique housing is made of extruded aluminum, which is exceptional at moving thermal energy; while the rest of the market uses castings or weldments that cannot keep the LEDs as cool as the SL1. Beyond the thermal efficiency of the extruded aluminum housing, the aesthetics are modern and attractive.

Efficacy averages 165 lumens per watt across our models, placing the SL1 in rare space and bringing ultra-low wattages to site lighting. A variety of optic packages direct the light where it is needed. Built to last, the Site

Lighter incorporates Linmore LED drivers for years of sustainable ownership.

The SL1 is backed up by Linmore LED's 10-year performance warranty. Performance of the light fixture is guaranteed for 10 years, including lumen maintenance (L70), color temperature, and LED drivers.

When the objective is to maximize value in your exterior lighting with power, energy savings, and aesthetics, the Linmore LED Site Lighter Area Light is the clear choice.



The Site Lighter Wall Pack (SLW) matches the SL1 fixture design, providing a uniform look throughout the installation.

Key Features

Lumen output: 8,500 to 62,000 lm

Power consumption: 50 to 400W

Efficacy: Up to 174 LPW

Ambient temp: up to 55°C (130°F)

Input voltage: 100-277V / 200-480V

Control options: 0-10V, motion sensors, Avi-on networked controls, or UltraLink SIG Bluetooth®

Construction: Extruded aluminum

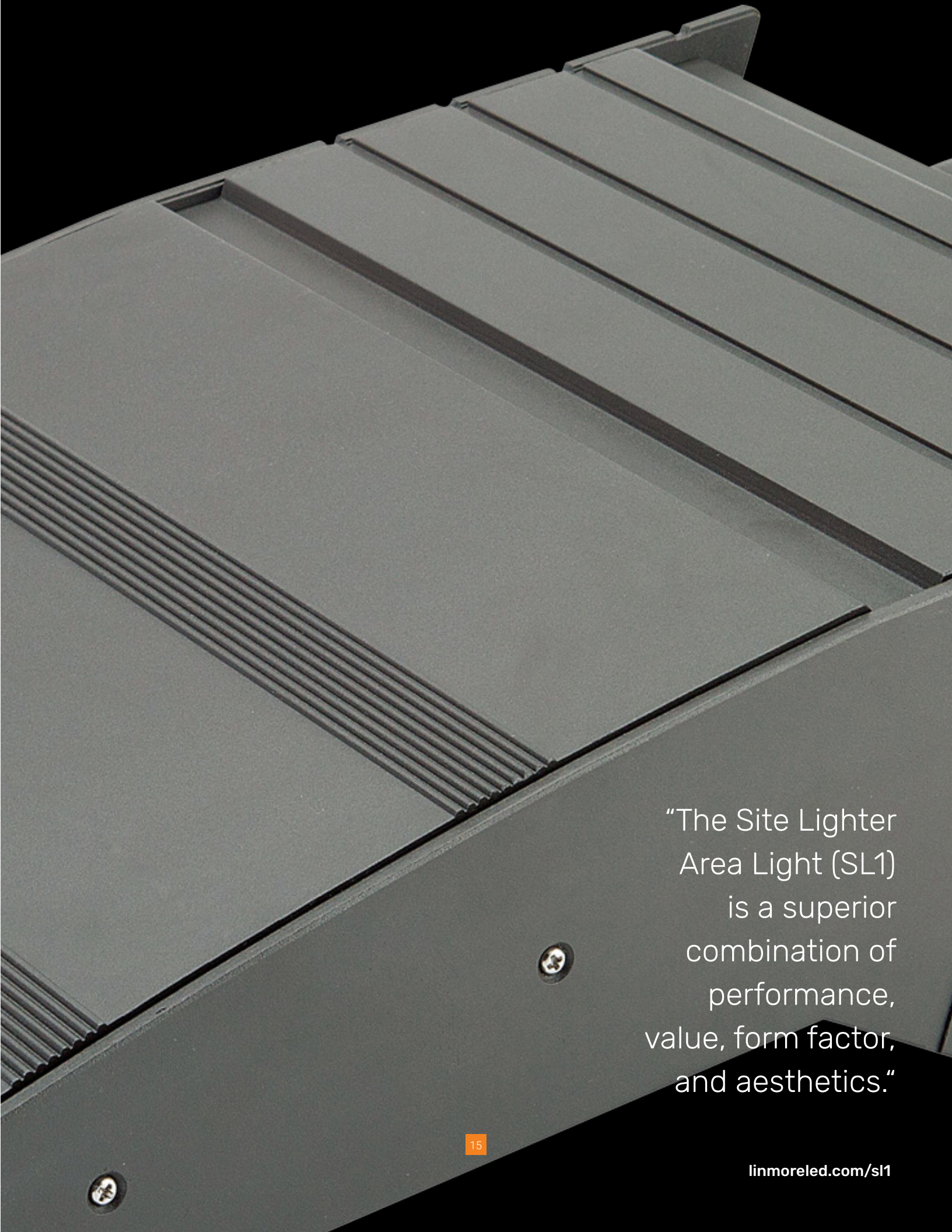
Colors: Bronze, white, or black (custom colors available)

Optics: Type 2, 3, 4, 5, Front Row (left, right), Flood (35° and 60°)

Mounting: U.S. Patented Rapid Mount Bracket, Slip Fitter, Straight Arm, or Trunnion Bracket

Expected life: > 150,000 hrs

Warranty: 10 years, including driver



“The Site Lighter
Area Light (SL1)
is a superior
combination of
performance,
value, form factor,
and aesthetics.”

Installing SL1 Made Easy

Brackets, tenons, and adapters to mount SL1 in most applications.



Rapid Mount Bracket

U.S. Patent No. 10,845,039

Reduces installation time by 50%

When Linmore LED heard from contractors and installers how they were mounting the SL1 fixtures to existing poles, the company saw a great opportunity to make their life easier.

After a few iterations, extensive testing, and feedback collection, Linmore LED released - and

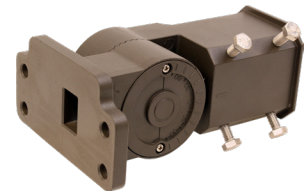
patented - the Rapid Mount Bracket (RMB).

The RMB is a universal bracket with an innovative design that allows to install SL1 fixtures to round or square poles without having to drill new holes, cutting installation time in half.



Straight Arm

A fixed bracket used for **horizontal** applications. Accommodates a single fixture horizontally mounted and bolts to **square poles or walls**.



Slip Fitter

A knuckle adapter with an **adjustable angle** for vertical and horizontal applications. Accommodates a single fixture to **round pipes** with no greater than 2 1/2" outer diameter.



Trunion Bracket

A yoke bracket for unique applications. Accommodates a single fixture mounting to **variety of surfaces at any angle**.

“What I appreciate as a contractor with the Rapid Mount Bracket is the ease of installation. I think Linmore LED really takes us into consideration when they designed their product; it makes our job easier, we can do it faster, and more efficient”.

Steve Valencia, installer at Waveform Electric Solutions



Tenons



LL-SL1-A1
For use with 4" and larger square poles or flat surfaces.



LL-SL1-A2
For use with round poles.



LL-SL1-A3
For use with flat surfaces including walls and floors.



LL-SL1-A4
For use with walls.



LL-SL1-A10
To add a round pipe, creating unique options for fixture placement.

Adapters



A



B



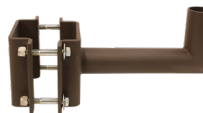
C



D



E



F

A. LL-SL1-A5 Converts mounting 4" square pole to 2 3/8" O.D. vertical mount.

B. LL-SL1-A6 Converts mounting 5" square pole to 2 3/8" O.D. vertical mount.

C. LL-SL1-A18 Converts mounting 6" square pole to 2 3/8" O.D. vertical mount.

D. LL-SL1-A7 Converts mounting 4" round pole to 2 3/8" O.D. vertical mount.

E. LL-SL1-A14 Bracket reduces from 3" pole to 2 3/8" O.D.

F. LL-SL1-A17 For use with 4"-5" square poles to provide a round vertical pipe for mounting SL1 fixtures with a Slip Fitter Bracket at a position on the pole that is not the top.

Lighting Project

Mercedes-Benz of Nashville



Benz



Site Lighter Area Light (SL1)



WATCH VIDEO



Lighting Project

Irvine BMW

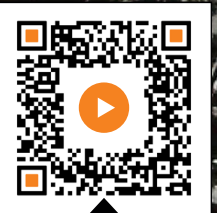
"This is our third facility using Linmore LED and UltraLink. We are averaging 90% energy savings across the facilities and will continue to implement this system across our entire auto group. The light levels and security improvement have been incredible."

Lee Crecelius - VP of Facilities at Shelly Automotive Group.



Irvine BMW

Site Lighter Area Light (SL1)



WATCH VIDEO

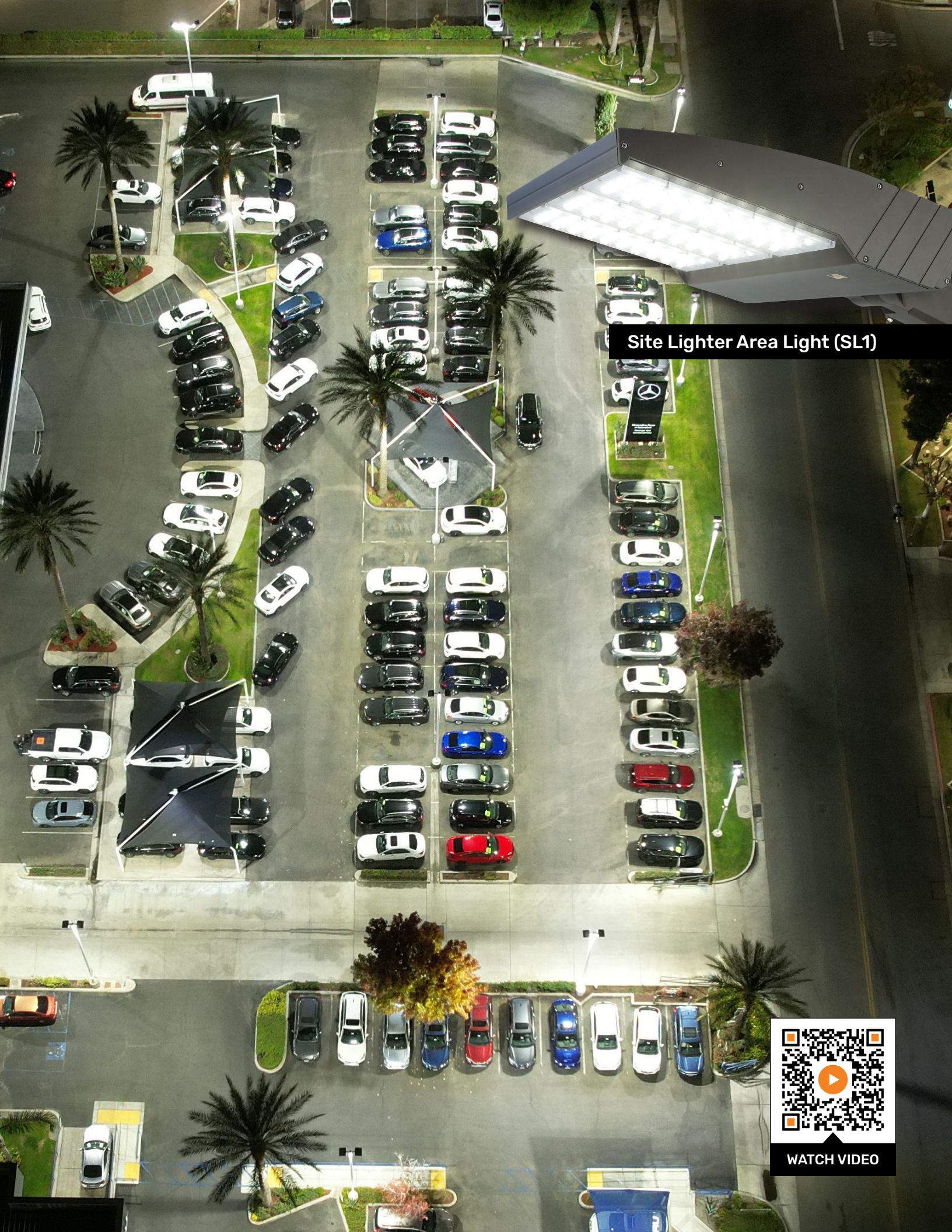


Lighting Project

Sanger Automotive Group

By completing this retrofit, SAG will be reducing their energy usage by approximately 68,470 kWh annually.

This translates to \$11,640 in annual savings, and virtually eliminating maintenance costs for the next two decades.



Site Lighter Area Light (SL1)



WATCH VIDEO

Lighting Project



Site Lighter

Installed Site Lighter (SL1) fixtures with UltraLink wireless controls in all outdoor areas. Lights turn on, off, and dim according to presence detection and defined schedules, saving 90% energy and improving security.



Eliminator High Bay

Service areas were upgraded with Eliminator High Bays (EHB), increasing light levels in all areas, which improved productivity and safety of employees.



Universal Retrofit System

In the office and part areas, the Universal Retrofit System (URS) light bars increased lighting levels while saving 70% energy.



Toyota Car Dealership Saves 90% Energy

North Bakersfield Toyota upgrades existing indoor and outdoor lighting with Linmore LED fixtures and UltraLink wireless controls



OVERVIEW

North Bakersfield Toyota noticed their old lighting installation was fading and they started having issues with uneven and discolored lighting.

“North Bakersfield Toyota was looking to accomplish three things with their LED lighting upgrade project: improve the customer shopping experience and employee experience, to improve sustainability, and to improve security,” said Paul Chamberlain, CEO of Linmore LED.

RESULTS

The lighting upgrade increased light levels between 50 to 100%, depending on the area, increasing productivity and safety of employees. In addition, their energy consumption was reduced by 90% in the outdoor spaces and by 70% inside in the showroom, offices, parts and service departments.

WHY LINMORE LED?

North Bakersfield Toyota was satisfied with the great communication from Linmore LED. The estimates were easy to understand and the benefits were clearly identified from the start of the process. When it came to the installation process, Linmore LED was always on-track with the schedule communicated to the North Bakersfield Toyota team.

Not only does Linmore LED have the end-customer in mind during the process, they also take into consideration the contractor or installer.

“I didn’t feel like I was just ordering something from some random place and hoping that it worked. They stand behind their product. I have no doubts that going forward, we are going to have a great company for the future,” said Pappas.

“We chose Linmore because they are a local company, we’ve had a relationship with them for a long time, and offer a great product built here in California.”

Andy Pappas
GM of North Bakersfield Toyota



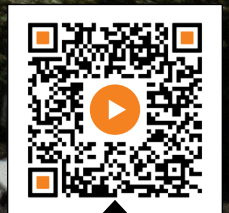
“The time and attention they put into their product, you can see it, you can feel it, you can hear it in their voice when they’re talking to you about their product. And, that made me feel comfortable with buying from them.”

Andy Pappas
GM of North Bakersfield Toyota




TOYOTA
NORTH BAKERSFIELD


SERVICE
EXIT



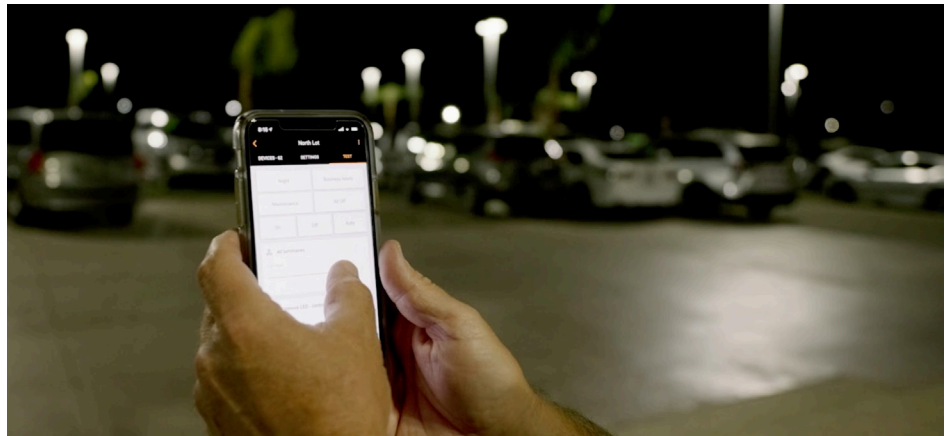
WATCH VIDEO

Lighting Controls



Key features

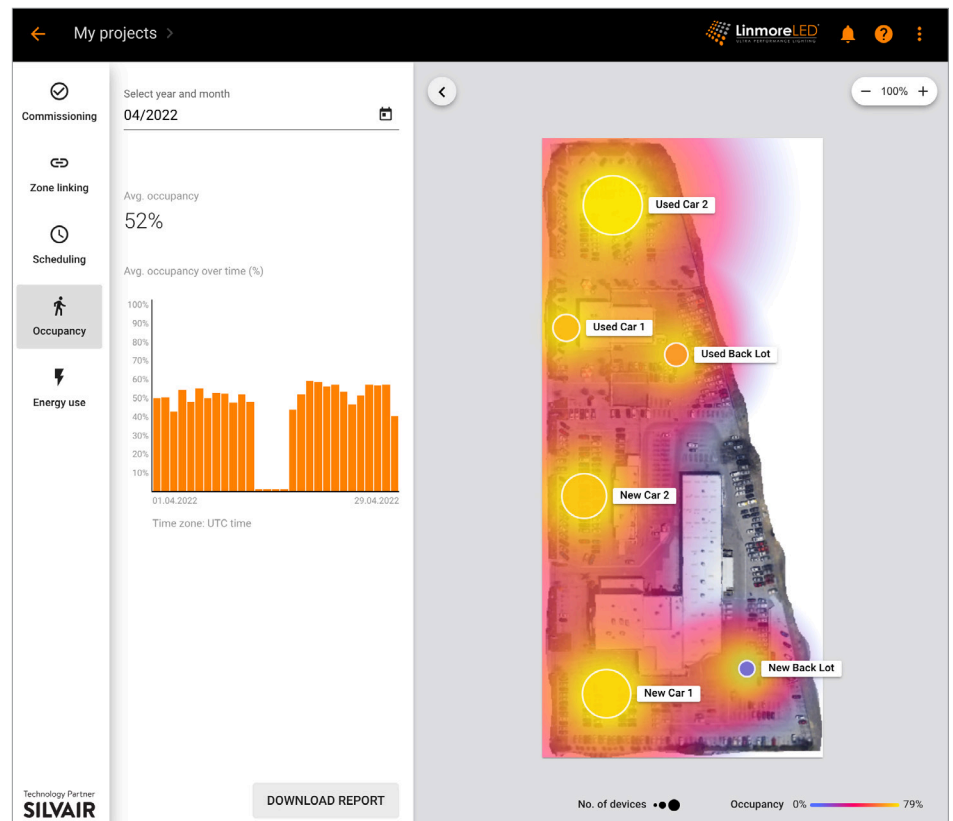
- Energy dashboard
- Heat mapping by occupancy
- Heat mapping by energy
- Scheduling
- Scenes
- Occupancy sensing
- Lighting zones / grouping
- High-end and low-end trim
- Manual control
- Timer switch control
- Vacancy sensing
- Per zone daylight control
- Per fixture daylight control
- Zone linking
- ON power up behavior
- UL 924 compliant functionality



The lighting upgrade included UltraLink Bluetooth wireless controls to further increase the energy reduction and add flexibility and smart features to the LED fixtures.

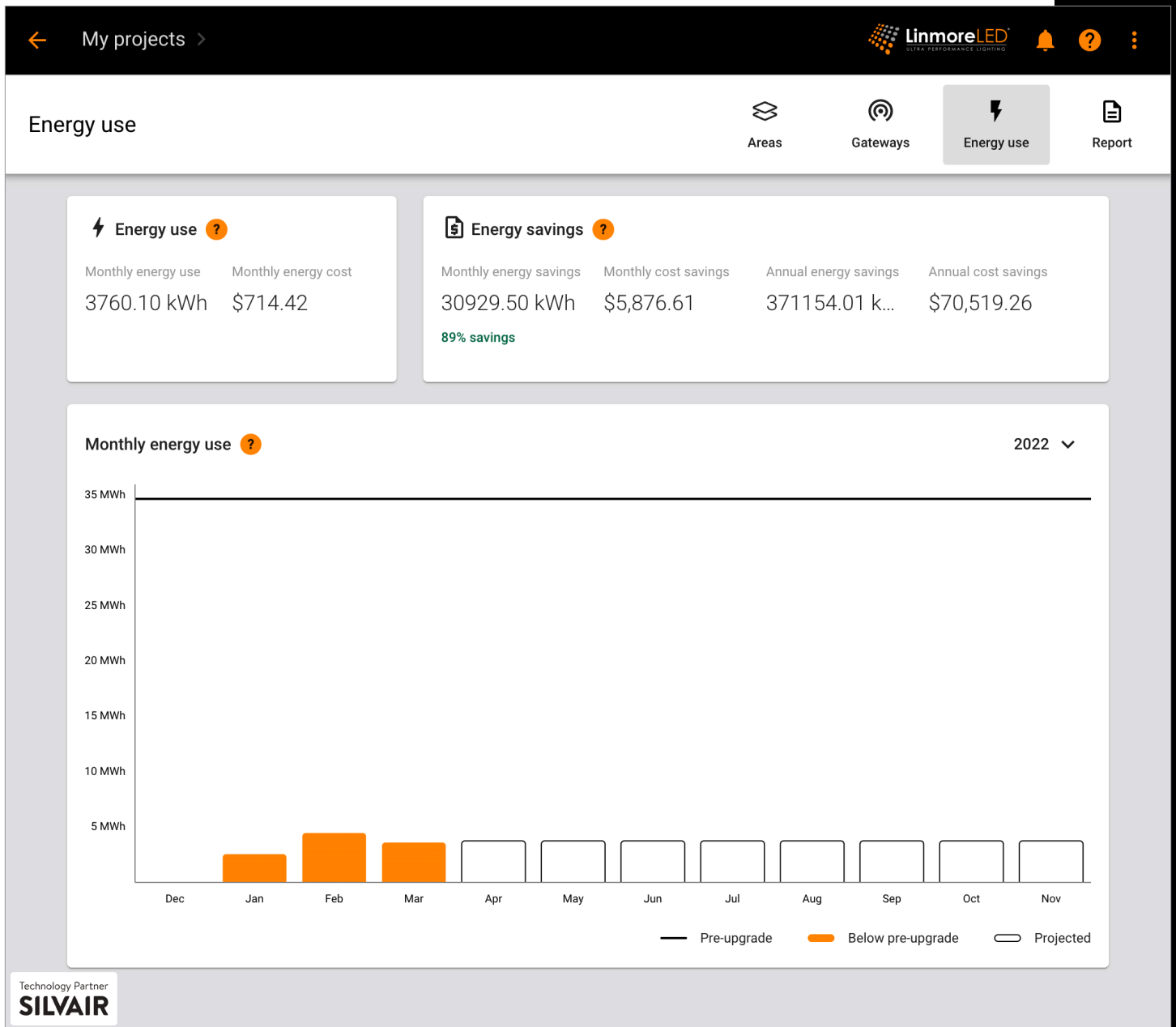
All car dealerships have persistent safety issues and concerns about the safety of their employees and cars, especially in outdoor areas.

At sunset, all outdoor lighting automatically comes on at 100%. Using the time schedule, lights will then turn to a motion control system 30 minutes after business hours. During this time, lights dim by 85% and when motion is detected, the entire zone pops on to 100%, startling and deterring unwanted visitors.



Energy Dashboard

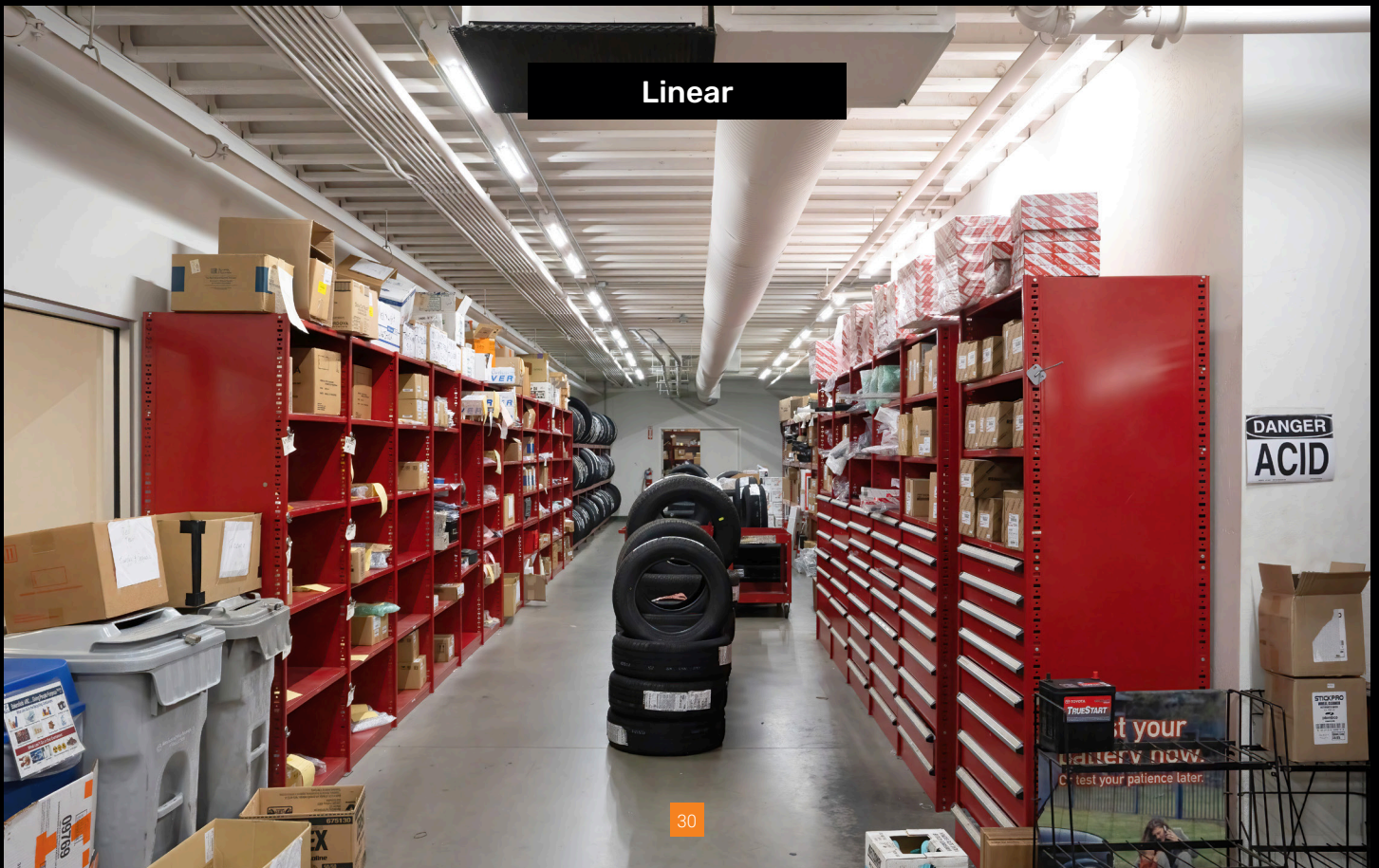
North Bakersfield Toyota



Troffer



Linear




High Bay



Canopy





“The time and attention they put into their product, you can see it, you can feel it, you can hear it in their voice when they’re talking to you about their product. And, that made me feel comfortable with buying from them.”

Andy Pappas
GM of North Bakersfield Toyota



Dan's Auto Center

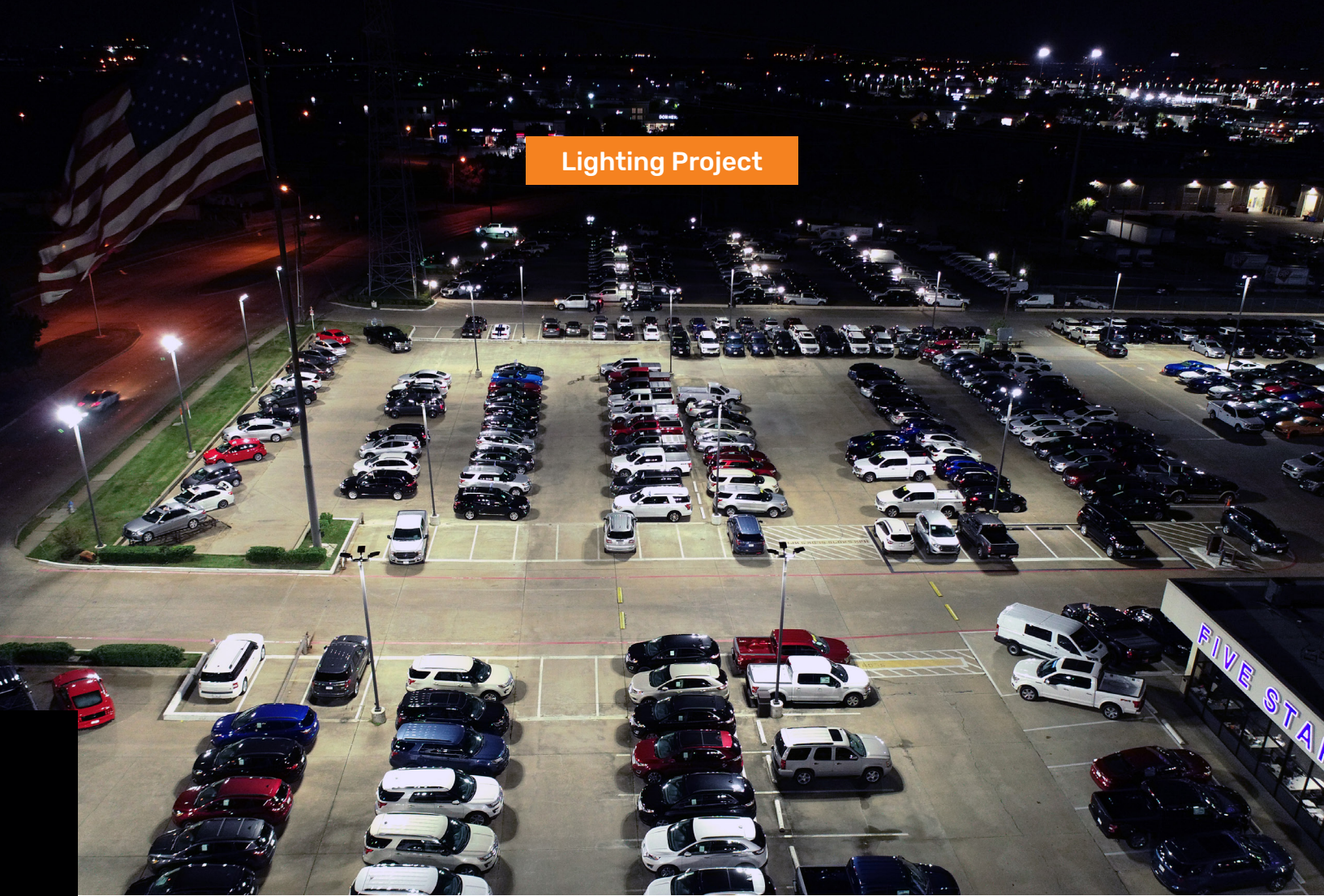
Dan's Auto Center replaced fluorescent tube high bays with URS bars, reducing their energy consumption by 49%. Light levels quadrupled, increasing from 26 to 106 foot-candles, improving visibility and safety of employees while reducing the operating costs of the auto service facility.

URS Light Bar

The URS is the ultimate retrofit system for a variety of linear fluorescent light fixtures. Each URS is comprised of a patented aluminum extrusion, a high-efficacy set of LEDs, and an external dimmable driver. The URS is offered in two nominal lengths, 2' & 4', to retrofit the most popular installed housing.



Lighting Project



Sam Pack's Five Star Ford

Sam Pack's Five Star Ford Plano is a car dealership owned by the prestigious Sam Pack's Auto Group in Dallas, TX. Upgrading to Linmore LED lighting displaced 297,417 kWh of energy per year and reduced the carbon footprint of the automotive dealership.

RESULTS

\$30,046

ANNUAL ENERGY SAVINGS

80%

ENERGY REDUCTION

25%

BRIGHTER



Site Lighter Area Light (SL1)

The lighting upgrade consisted of replacing 86 - 1000W metal halide lamps with 86 - 200W Site Lighters in the parking lot.

Lighting Project



LODI Toyota

Location: Lodi, California

Developed by: True North LED

Lodi Toyota replaced 40 T5 high bays with the same number of CH2 high bays in the shop areas, reducing electrical consumption by 47%.

Outdoors they replaced 146 HID fixtures with 134 SL1 LED fixtures, achieving 72% energy savings. The increased lumen output from the upgrade increased safety and productivity of guests and employees.



LODI Toyota

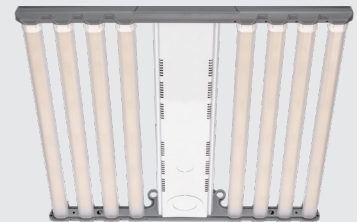


Installed Fixtures



Site Lighter

The SL1 is a superior combination of performance, value, and form factor. The unique housing is made of extruded aluminum, which is exceptional at moving thermal energy. The SL1 aesthetics are modern and attractive.



Commercial High Bay

The CH2 high bay has features customers value the most: quality, reliability, compact size and performance in a cost-effective design. The CH2 takes our award-winning technology from the Essentials Series and puts it into a more value-centered platform.

RESULTS

\$43,624
ANNUAL PROFIT

286,176 kWh
ENERGY REDUCTION

3 year
PAYBACK



We Are Linmore LED

We are a vertically integrated lighting manufacturer focused on developing ultra-performance LED fixtures and wireless communication solutions.

At the time we came together we were concerned with where the lighting industry was going. We had been in the industry for about 15 years and experienced the evolution of lighting moving from legacy technologies of fluorescent and metal halide to LED.

When that transition happened, we saw the lighting industry go from American companies manufacturing and assembling locally, to companies primarily importing and supporting the industry out of Asia.

As a result of that transition, we noticed a decline in quality across the lighting industry, and the opportunity to create Linmore LED, an American lighting company focused on developing and manufacturing high performance LED lighting solutions with the end-user satisfaction in mind.

Linmore LED has two facilities in the United States, we are headquartered in Fresno, California with 120,000 square feet of assembly and warehouse space, and Dallas, Texas is our design and innovation hub. In that facility we house our team of engineers, our technical

support staff and our marketing department.

One of our values at Linmore LED is that we are committed to American jobs in lighting. That gives greater quality control and allows us to provide flexibility in our designs to meet our customers needs.

One of our values at
Linmore LED is that
we are committed to
American jobs in
lighting.

We have developed and trained a very talented group of assemblers at our facility in Fresno; we train people across of all our product lines so they can be versatile within our plant. Our product line at Linmore LED focuses on commercial and industrial



facilities. Our lighting fits into three categories: office lighting, high bay lighting and outdoor parking lot lighting.

Those three categories make up the bulk of lighting that commercial and industrial facilities have on their campuses and where they can get more energy savings out of LED fixtures. To further increase energy savings, we developed our own line of wireless controls, called UltraLink.

We see the future of lighting being an infrastructure piece within facilities to create communications and data streams of information that they can use to improve their operations; and UltraLink is the key to opening up that data.

For years the cost of controls have been so high that most facilities had to bypass adding controls to their lighting upgrade. But today, the costs have come down so much and the benefits are so great, that facilities get excited about being able to add this to their package.



Our vision at Linmore LED is to be every commercial and industrial facility's first choice in lighting solutions based on performance, reliability, and customer support.



One constant aspect with our customers is that things are always evolving, and with previous lighting technologies the lighting could not adapt as facilities change. Wireless controls have the potential and the ability to adapt lighting to new space layouts. We see facilities in an area today doing assembly and manufacturing and tomorrow that area becomes racked for storage and they have moved to a different part of the plant. Wireless controls allow us to come back to a facility and adjust light levels and the control of the lighting to adapt to that facility's changing environment underneath the light fixtures.

When we design our products we focus on three aspects: efficacy, thermal management, and optics.

Efficacy starts with selecting the best LED diodes available in the world to illuminate in our products. Efficacy means how many lumens you get from a diode per watt of energy consumed, and we select the best ones available.

We also use proprietary extrusion heat sinks. Linmore LED has many patents on the design of extrusions both in light bars and high bays that have proven to be effective in moving thermal energy away from LED diodes, extending longevity and allowing us to offer lumen maintenance warranties to our customers.

Lastly, we focus on optics in our product design. Other manufacturers often omit optics when designing products but they are extremely important as they bend,

shape, and direct light where it needs to be utilized, and that is how you use the least amount of energy to get the light levels desired for each application.

When companies are thinking about a lighting upgrade, we understand and appreciate that they have hundreds of choices from around the world and we need to make ourselves different at Linmore LED, so we have focused on total cost of ownership. Anybody can build a cheap light fixture, a cheap retrofit kit, and plenty of companies already do that. But what plenty of companies do not do is deliver their customers a solid solution that is going to give them longevity, lack of hassle once they own the lighting, and the lowest total cost over the next 10 or 20 years after it is installed.

Our approach to sales is through education; we believe a well-educated buyer is the best buyer that we could have. Our sales team have years of experience to provide information and advice to prospects. On our website, linmoreled.com, we have educational videos, installation videos, product guides, and other resources to help our customers make the most educated decisions.

Our vision at Linmore LED is to be every commercial and industrial facility's first choice in lighting solutions based on performance, reliability, and customer support.

Our mission is to build and develop the highest performing LED product line in the world. At Linmore LED we are proud to be the lighting partner you can trust.



2014

When it all started

Linmore LED was formed in Fresno, CA to bring high performance and longevity to LED lighting solutions to the market. With that purpose, our first product, the URS was born.



2016

Moved to a new facility

Moved to a 50,000 sq. ft. facility to expand production capacity.



2017

Launched LiFi

Linmore LED became the first company in the world to offer LiFi from a linear light source.



2018

Launched Ace LED

Our value brand, offering a selection of LED fixtures providing good performance and high efficiency at an affordable price.

Launched Site Lighter

The SL1 quickly grabbed market attention due to its exclusive full-fixture extruded aluminum design, yielding a pricing, performance, and warranty package not found elsewhere.



2019

Bluetooth mesh controls

Partnered with Silvar and designed our own Bluetooth wireless fixture controller.



2020

Launched UltraLink

An intelligent lighting control system using Bluetooth communications.

Launched LaaS

Lumens as a Subscription (LaaS) is an agreement that includes a new lumen supply system, installation, and maintenance for 10 years.



2021

Acquired Flex Lighting Solutions

Increased capacity with the addition of 40 factory workers and 80,000 sq. ft. of manufacturing space in Fresno to bring production of Essentials, CH2, HT1 and all other FLS products to the USA. Opened a showroom and an engineering / design hub in Dallas, TX.



2022

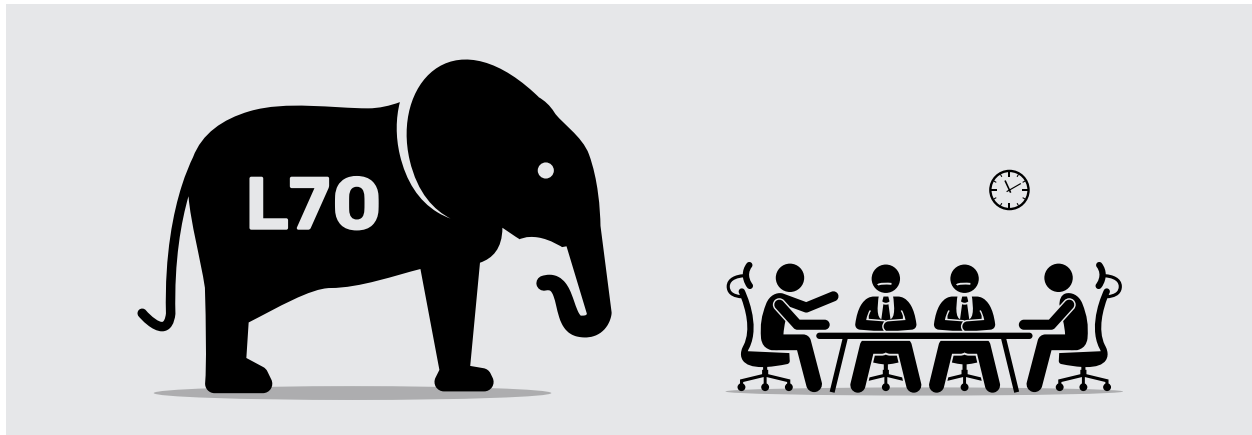
Printed circuit board assembly operations

Added 35,000 sq. ft. with a clean room and a PCBA line in Fresno.

Launched Essentials 5

The latest generation of the multi-awarded Essentials Series sets a new record for performance in high bay lighting in lumens per watt.

When LED Lights Reach End of Life, What Do We Do with Them?



While we all expect LED lights to last longer than the traditional light sources they are replacing, the inevitable replacement day will arrive. When an LED fixture is producing 70 percent of its initial output (L70), you need to have a plan for disposal. Since LED lights are electronic devices categorized as e-waste, simply throwing them in a landfill will not be allowed in most jurisdictions.

It is ironic to think that a technology widely promoted for its environmental benefits, may cause new environmental concerns. The replacement of recyclable fluorescent tubes with non-recyclable LED tubes as a “green solution” is also ironic. Any company with a sustainability program will be well advised to have a plan in place before the inevitable disposal day comes.

Unfortunately, the criteria influencing LED purchasing decisions may be in direct conflict with environmental and sustainability goals. The goal to purchase the least

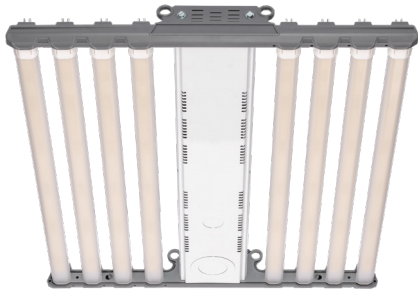
expensive LED lighting causes most LED manufacturers to use lower cost materials, which have little to no recycling value and result in shorter lifespans. Sheet metal and plastic have replaced aluminum in many LED fixtures in order to achieve the lowest bid. The cost savings achieved on bid day may end up being eclipsed by replacing fixtures and disposal fees. An attractive ROI that does not include disposal fees may end up being a negative ROI.

To align purchasing goals with sustainability goals, select premium LED fixtures that provide guaranteed light levels and are designed to put off the day of inevitability as long as possible.



By: Wade Johnson
Director of Sales at Linmore LED

CH2



Commercial High Bay (CH2)

Reliability. Versatility. Performance.

The new CH2 high bay is a range of commercial LED high bay fixtures with features customers value the most: quality, reliability, compact size and performance in a cost-effective design. The CH2 takes our award-winning technology from the Essentials Series and puts it into a more value-centered platform.

Models available with 2, 4, 6, and 8 LED modules to deliver a lumen range from 6,000 to 37,000 lumens, up to 173 lumens per watt and an ultra-long life up to 180,000 hours (L70 via TM-21).



LinmoreLED[®]

ULTRA PERFORMANCE LIGHTING

Linmore LED Labs, Inc.

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