

# AUTOMOTIVE LIGHTING

## Application Guide



Through leading technology and professional services,  
create value to achieve customers.

**MORSTAR**  
LIGHTING



# About Us

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Since 1999, Morstar has been a manufacturer of quality lighting and dedicated to providing certified energy-efficient lighting solutions for commercial use. Our headquarters are located in Livonia, Michigan. We have LED Lighting distribution warehouses in California, Texas and Michigan. Our multiple U.S. distribution centers make ordering and delivering reliable and efficient with abundant stock and established shipping channels. We have direct access to the manufacturing process to insure optimum product design, customization, and reliability. This makes us a leader in distribution and quality control.

Morstar is committed to true innovation by employing the state-of-the-art design and engineering technologies that meets or exceeds international standards of design, quality, performance, and energy efficiency. We have earned the respect of engineers, designers, lighting distributors, architects, project owners and related professionals worldwide. Join us on the path of innovation and brilliance.



Call MORSTAR Lighting today for the ideal energy-efficient lighting solution for your Automotive.

**(877) 977-3732 | [www.morstarlighting.com](http://www.morstarlighting.com)**

# Auto Dealership Lighting Guide



## Because Professional Makes the Difference

For your customers, an automobile dealership is an important visual and emotional experience place for your customers to find suitable models, functions and prices, as well as to complete the entire sales process. The comfortable light environment of the dealer will directly promote the order transaction. Therefore, how to create the best LED lighting space atmosphere for customers and emphasize the brand value of the displayed car is an important issue that dealers need to pay attention to.

Conceptually, the lighting solutions for car dealerships should be conceptually combined with the brand's corporate image guidelines. Because light stimulates emotions and emphasizes the personal brand image established through verbal communication.

Morstar Lighting have already cooperated with some leading LED lighting engineering companies serving auto dealers in North America. These LED engineering companies have very rich professional industry experience. Morstar Lighting will cooperate with these engineering companies to bring you advanced and high-performance LED lighting solutions. Light up the car and serve attentively.





## What benefits can Led bring to you?

### Creating Ambience -

Creating a good light atmosphere can not only improve people's overall well-being, but also encourage reading and enhance people's communication skills. All these factors enhance positive emotions-even if the customer has to wait. In this way, the lounge and waiting area can ensure a good start for follow-up suggestions or sales negotiations. When customers wait to receive the car, their experience becomes more enjoyable.

### Energy Savings -

A switch to LED lighting technology can reduce energy consumption by up to 80%.

### Maintenance Savings -

Re-lamping costs related to materials and labor is substantially reduced with LEDs lasting up to 100,000 hours and backed by the Morstar Lighting 10 Year Limited Warranty.

### Rebates & Incentives -

By replacing inefficient lighting systems with LED, there is a potential to secure utility rebates and tax deductions.

### Safety & Security -

An outdoor LED solution provides excellent lighting and security to deter criminal activity after the dealership closes for the evening.

# Auto Dealership Lighting Guide

We provide a variety of solutions suitable for all your lighting applications.

## Outdoor Parking Lot Lighting

A well-lit light environment is a key factor in shaping customers' perceptions of your dealership and the inventory of vehicles you want to sell after dark. Outdoor lighting can leave a lasting positive impression, from well-lit lighting to bright and safe areas. The right solution can even prevent the light from invading the neighbor's yard, while also providing a warm welcome for customers entering the room.

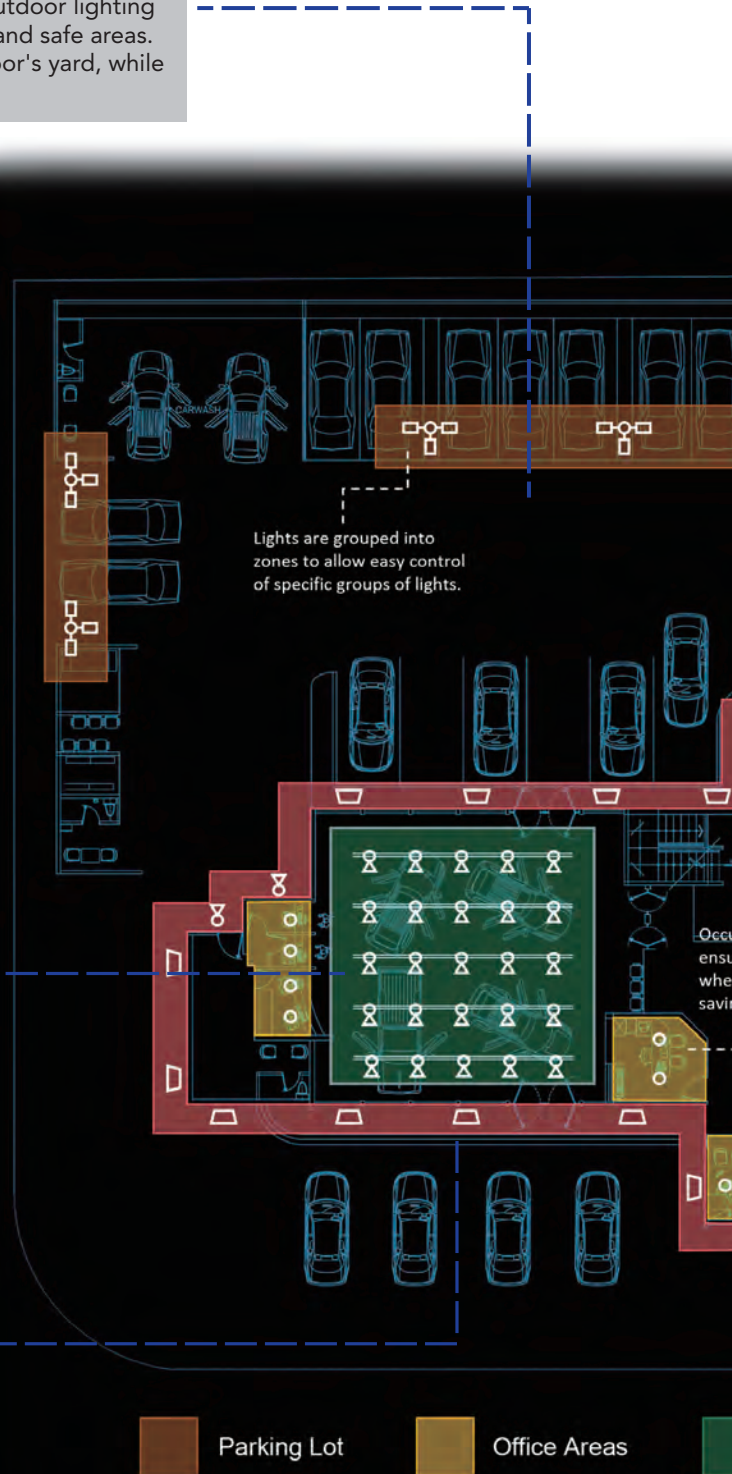
## Showroom Lighting

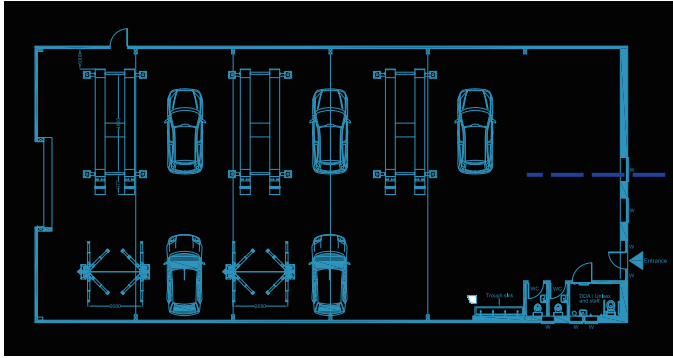
Auto showroom usually becomes a monotonous solution, if only conventional lighting is used. Our eyes need a certain contrast in intensity and light type in order to be able to see and orient the surrounding environment comfortably. We can divide the showroom into several parts and treat them differently to create an atmosphere and enhance key areas.

Beautiful lighting and excellent color rendering make your customers have the confidence to imagine themselves behind the wheel of a new car. Proper showroom lighting can enhance the features and details of your vehicle. The quality and professionalism of the dealer will impress your visitors and further help your customers focus on purchasing decisions.

## Exterior Building Lighting

Building facades and entrance lighting that attract customers are important lighting for customers to identify brands. Bollards, low-water floods, landscapes and wall packs make the packaging more complete, not only satisfying safety lighting, but also providing matching styles and finishes.

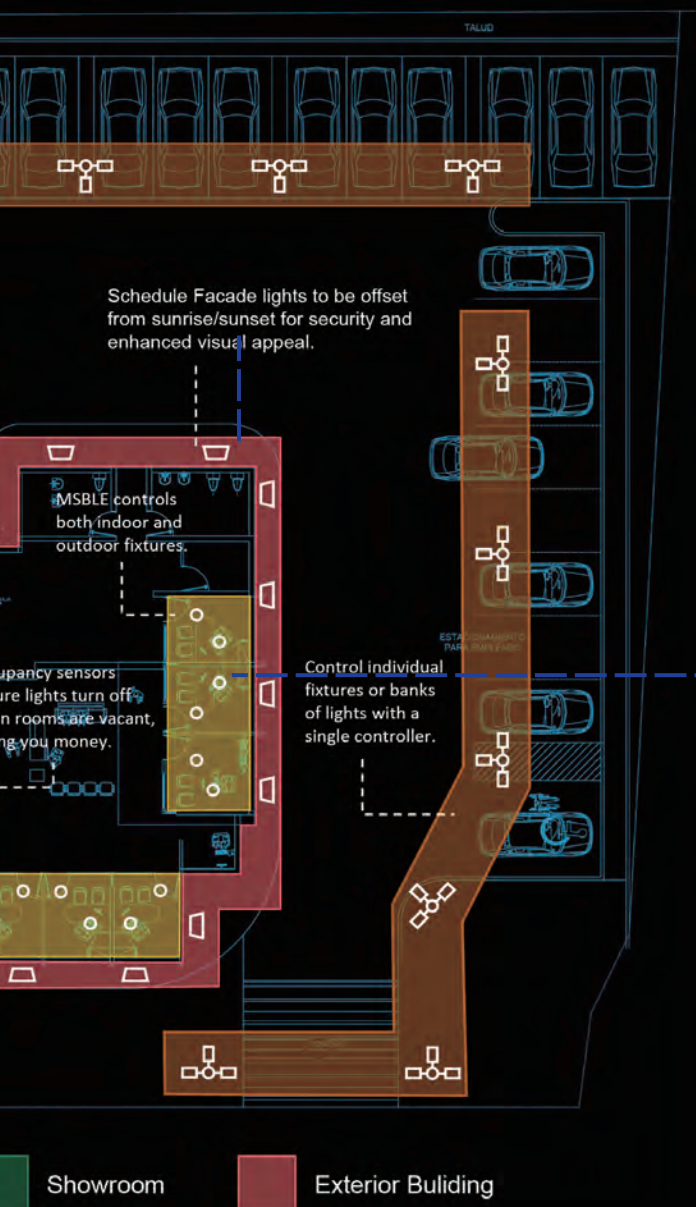




## Service Workshop Lighting

Your service department requires good lighting to help maintain its productivity and help increase your revenues. That means the technicians working in your shops need high-performance lighting to reliably provide superior work that keeps your customers returning to the dealership for oil changes, parts replacements, and other services.

Morstar Lighting high bay and low bay fixtures offer energy-efficient and near maintenance-free lighting for critical activity spaces that require high-efficiency, high-quality general-purpose lighting.



## Cash Desk And office Areas Lighting

Due to the nature of car sales, the cash desk tends to look a bit different than a normal Retail store. To create a pleasant place where you sign the contract and buy your car, you can imitate the light as if it were in a home or another comfortable environment. Try combining many different types of light experiences. From a high performing downlight to a simple linear light. Comfortable light intensity and contrast can bring a more pleasant experience to your customers.



# Auto Dealership Lighting Guide

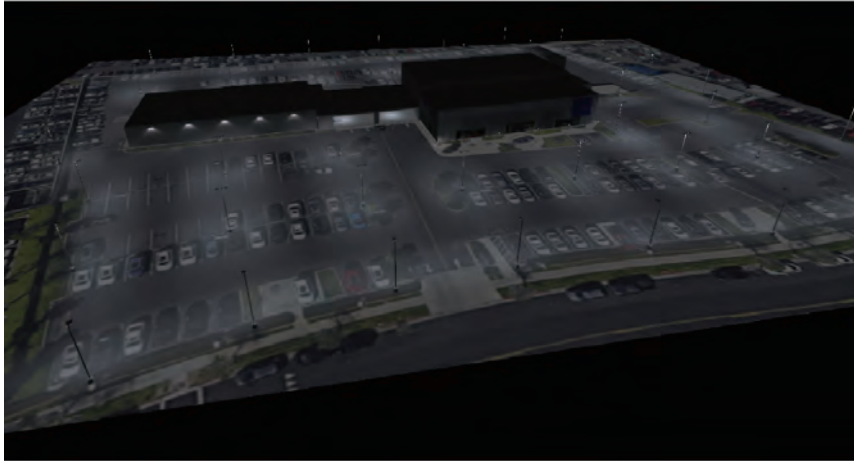
## Outdoor Parking Lot

The below un-altered photographs of "Before" and "After" installations demonstrate LEDs superior characteristics of lighting. LED performance provides better visual acuity and better uniformity which is all achieved while using less energy. Morstar Lighting's LED fixtures integrate the latest LED advancements and deliver optical performance that can perform as well as, and in most cases, better than traditional HID fixtures.

The following shows the comparison effect of a car dealership parking lot area before and after renovation:

The parking area was lit with 400w HPS fixtures mounted in double configuration at 28 feet. These fixtures were replaced with Morstar Lighting's 200w fixtures on the existing poles. The results included energy-savings of 55% over HPS, improved overall uniformity and a safely illuminated parking area.

### Before with HID



HID System	HID Wattage	HID Life Hours <sup>1</sup>
150w PSMH	185	15,000
250w PSMH	283	15,000
320w PSMH	361	20,000
400w PSMH	459	20,000
100w HPS	130	24,000
250w HPS	295	24,000
400w HPS	464	24,000

### After with LED



LED wattage <sup>2</sup>	LED life Hours <sup>3</sup>	Savings
75	60,000	60%
150	60,000	47%
200	60,000	45%
200	60,000	56%
75	60,000	43%
150	60,000	50%
200	60,000	57%

**NOTE:**

1. Hours of life based on 50% mortality.
2. Actual wattage should be confirmed with site specific lighting calculations.
3. LED hours of life based on 70% of initial illumination.

# HID/LED Energy & Maintenance Comparison

## Annual Energy Costs

Luminaire	400 MH HID Shoebox	LED Parking Lot
Cost Per KWH	\$0.10	
Operating Hrs / Day	12	12
Fixture Qty	100	100
Input Watts per fixture	460	200
Annual Hours On per fixture	4380	4380
Annual KW	201,480	87,600
Annual Energy Costs	\$20,148	\$8,760
Annual operation savings with new LED system		\$11,388

## Annual Maintenance Costs

Expected Relamp & Maintenance Costs Per Luminaire (parts, labor, disposal, and lift rental per instance)	\$150	LED Area Light
Lamp Life (rated hrs)	20,000	60,000
Expected Lamp Life In Years Given Annual Operating Hours	4.57	13.7
Percentage of Lamp Life Consumed Each Year	22%	7%
Annualized Maintenance Costs (per luminaire)	\$32.85	\$0.0
Annualized Maintenance Costs (entire site)	\$3,285	\$0.0
End Of Lamp Life Maintenance Cost (entire site)	\$15,012.45	\$0.0
Annual maintenance savings with new LED system		\$3,285

## Annual Energy & Maintenance Summary

Annualized Energy Costs (entire site)	\$20,148	\$8,760
Annualized Maintenance Costs (entire site)	\$3,285	\$0
Total Annualized Cost	\$23,433	\$8,760
Estimated annual savings		\$14,673

## Save more time while saving energy

On-site and area lighting usually brings the greatest energy consumption to car dealers. Using Morstar Lighting products can greatly reduce the power required to illuminate your location. Morstar lighting can recoup the cost in the shortest time, while also helping your venues and vehicles look clear, colorful, and attract guests. Our LED lights can help you create a charming appearance and provide your customers with a sense of security through correctly oriented light.



# Auto Dealership Lighting Guide

## Products Solution For Parking Lot Lighting



### 700A Series Area Light

Morstar Lighting 700A series parking lot lights perfectly integrate performance, value and aesthetics. A variety of light distribution modes can be provided to meet various outdoor lighting needs such as roads, parking lots and other vast outdoor areas. Compared with traditional fixtures, the service life is longer and the energy consumption is lower, which can save a lot of electricity and maintenance costs.

- 5 Types of Mounting Brackets, Easy to Install
- High Quality UL Drivers 100-277Vac, 277-480V
- Distribution Optional: Type III, Type IV, Type V
- High Performance Chips, 130lm/W & 150lm/W, 100,000 Hrs
- Surge Protection 10KA
- IP rating IP66.



### V Series Area Light

The V series area lights are durable. High luminous efficiency and corrosion resistance. It can also provide reliable lighting in bad weather, and almost no maintenance. Compatible with multi-function clamps, straight arms and trunnion brackets, the installation configuration of this multi-function clamp can be easily adjusted to suit the clamp needs of your area.

- Module lens design, better light distribution
- Smooth housing, simple beauty, glass cover available
- Various installation way
- Light efficiency 135lm/w by using Lumileds LED chips
- Surge Protection 10KA
- IP rating IP66.

## Products Solution For Exterior Building Lighting



### Led Full Cut-off Wall Pack

Light up your outdoor area with LED Full Cut-Off Wall Pack. It is a high efficient lighting solution that provides a long-lasting and energy-saving. The rugged housing offers advanced thermal management and protection against outdoor environments without compromising aesthetics.

- Easy installation
- ETL/cETL/DLC premium certificate
- Wet location rated IP65
- Emergency power 4W & operating time 1.5 hours
- Photocell and motion sensor options
- Type III distribution optics standard/Other optics available by request
- IP rating IP66.



### Led Half Cut-off Wall Pack

Our LED wall mount lights are designed for complete replacement or new constructions, providing high light efficiency and different lens types, including prism glass, high impact polycarbonate or acrylic. You can choose from a variety of surface treatment options such as black, bronze and white, as well as different sizes and color temperatures.

- Non-yellowing prismatic borosilicate glass lens or Pc lens
- Powder coated die cast aluminum housing
- UL and DLC Listed 120-277 VAC I
- Photocell included for dusk-to-dawn operation
- IP rating IP66

## Showroom Lighting

Today people have great awareness and knowledge about the different car brands on the market. They identify with the car they drive and the brand's personality.

A car showroom must first and foremost be able to illuminate a car properly but it should also be a reflection of the brand. The feeling of the showroom, the structure, interior, and lighting should reflect the statement of the brand.

A car's brand can be focused on functionality offering space and a safe car for the big family. The focus can be on being as energy efficient as possible with a reduced carbon footprint or being exclusive and expensive, offering a true driving experience. Regardless, with lighting, we can contribute to the overall impression and increase brand values. When the customers enter a showroom they should recognize and be able to identify the car's brand. To achieve this you need suitable lighting knowledge and the right products and solutions.



The cars on display inside your dealership need to be properly illuminated to showcase the exciting paint and interior options that you have chosen to promote. Don't let insufficient color rendering from poor lighting diminish your customer's car shopping experience. Morstar lighting products of industry-leading efficacy, 90+ CRI, and consistent warm or cool color temperatures.

### Factors to consider for car showroom lighting:

#### Metal and finish

The shiny metallic surface on the cars should create a sparkling light effect. The lighting also needs to recreate the diffuse light from the sky to illuminate the finish of the car. A mixture of these two ideas often results in less glare and fewer unwanted reflections.

#### High ceilings

Luminaires mounted high up means that you will have to use higher wattage and that will lead to high intensity in the light source, increasing the risk of glare. Be sure to aim and cut off the light so that it does not produce unnecessary glare.

#### On-Demand Design

Take the opportunity to stand out with tailor-made retail solutions. We want you to find the exact right solution for your project. We can custom make a lighting solution after your project and demands. It could be creating a special luminaire for the focal points or adapting existing products after your needs.

#### Sustainable Development Plan

The auto dealership is more environmentally aware, focusing on creating sustainable solutions and controls that maximize energy savings. We highlight the importance of thinking sustainable when creating future-proofed lighting solutions.

## MORSTAR Smart Led Control System

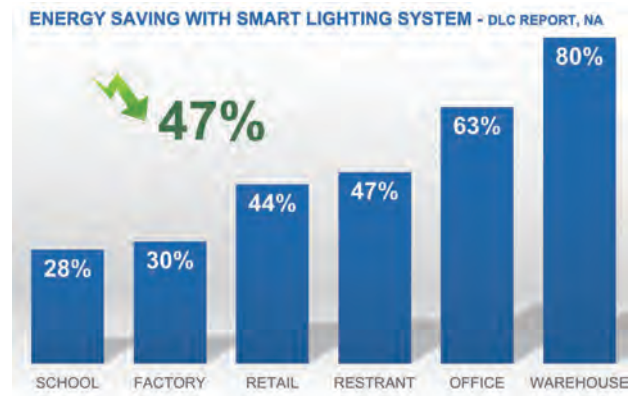
Based On Tuya AI+IoT Platform

Morstar Lighting has launched an innovative wireless control system based on Tuya Bluetooth smart control technology. No gateway, whether it is single-point access or mesh networking access, it will be more secure and faster.



### Cost Savings

Reduce energy bills by utilizing only when needed. Expands the fixture life by running either at lower output or fewer hours, this also reduces the maintenance cost.



### Delivers a robust control network

Morstar's Bluetooth intelligent lighting control systems can achieve point-to-point, group, and many-to-many control of lighting fixtures. The system has scalability, compatibility and two-way high-speed communication data.



Server



Digital remote control



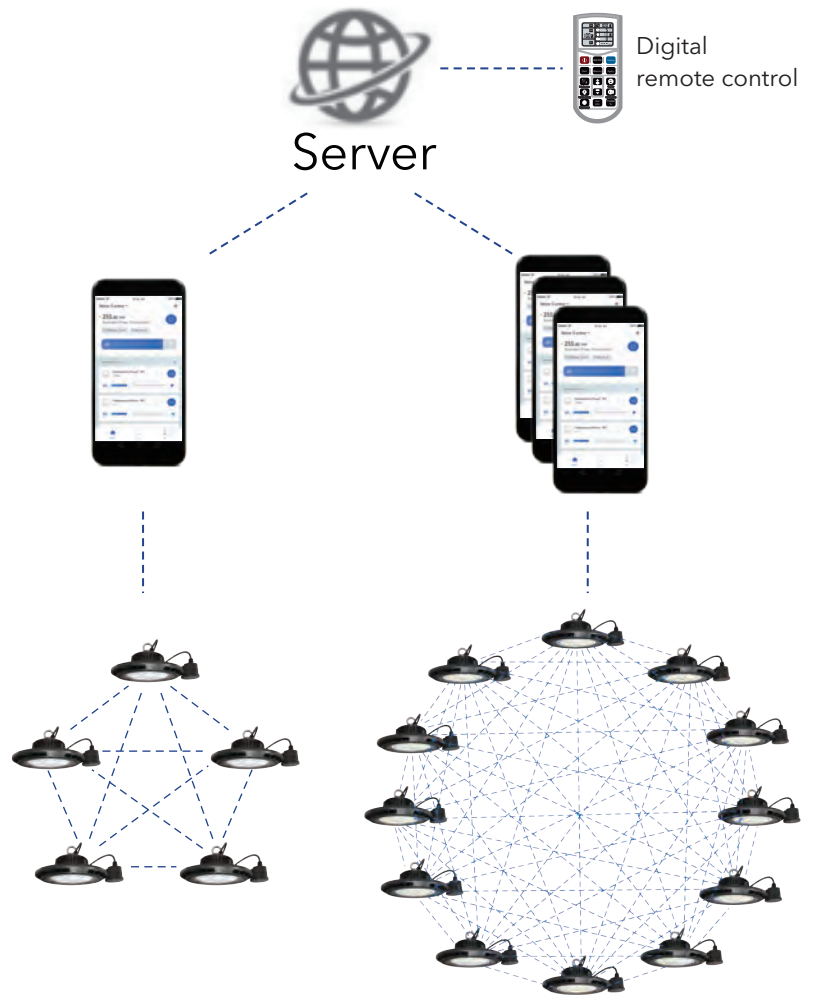
### Faster & Simpler

The lighting controls can be installed and commissioned in hours. No need routers or gateway. Fast, responsive performance and powerful features such as groups, scenes, schedules, and sensor control are easily within reach, even for smaller shops and spaces.

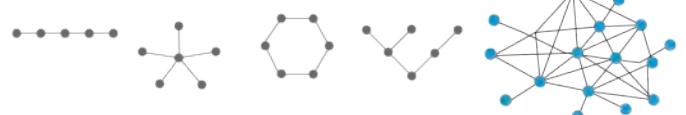


### Secure as well as stable

Bluetooth mesh networks or individual subnets and groups have the security covered by encryption and authentication. All Bluetooth communications are encrypted using two decryption keys: 1) a network key for a specific network, and 2) an application key related to a specific function.

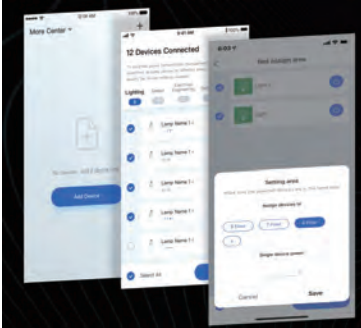


Bluetooth Mesh





MORSTAR's smart lighting solution we provide enables customers to monitor the operation and maintenance needs of all devices through a graphic user interface. With built-in reporting and system insights, businesses are able to identify and implement strategies to reduce operation and maintenance costs.



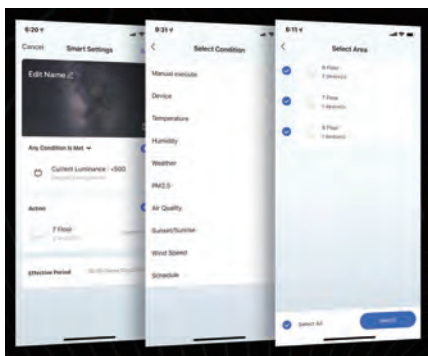
### App Adding Multiple Devices

- Automatically nearby devices in pairing mode and adds them.
- Quickly assign new devices to areas and groups.
- Multiple device types available, including lighting fixtures, wall switches, sensors, remote controllers etc.
- Create scenes to automatically control devices using sensors, switches and other criteria.
- Control other types of devices including security, HVAC, etc.
- Control multiple protocols in one app.



### App Devices Management and Control

- Control all of the devices in a building, floor, group etc. at once.
- Shortcut buttons to change power, brightness, CCT and color.
- Classify the devices by categories.
- Calculation of energy usage by day, month and year based on entered wattage. Power meters available for the most accurate power consumption.
- Calculation of the total use time of each device and replacement reminders.
- Alarm for abnormal conditions.
- All group and device status displayed



### App Scene and Automation

- Create automations based on multiple trigger types including sensors, switches, schedules, and settings of other devices.
- Set the effective time of the scene.
- Receive a push notification when a scene is activated.
- Create multiple conditions to trigger scenes. Control multiple devices and areas at once.
- Can be used to implement energy-saving strategies and to calculate the results.
- Preset scenes and actions for circadian rhythms.

**For more cool features, please download the app to experience**

All the functions can be setting through the APP



Please let us know if you need other functions for different scenarios. Thank you!

# Auto Dealership Lighting Guide

## Products Solution For Showroom Lighting



### W700 Series Track Light

Compared with traditional ceramic metal halide lamps, our high-quality track lights can save nearly 50% of energy, and the luminous efficiency exceeds 90lm/W Provides high color reproduction capability up to CRI95. Mainly used in shops and retail departments that require precise and variable accent lighting.

- Interchangeable Beam: narrow, spot and flood degree
- CAMETA anti-glare design and with shielding angle to reduce wide beam angle glare lights
- High efficacy: CREE/Luminus COB LED chip, up to 114LPW
- Dimmable: compatible with most of the dimmers in the market
- Integral driver, isolated circuit, 350°(H) and 90°(V) adjustable
- Passive cooling achieved by innovative thermal design
- Rich accessories to create different lighting effect.



### Commercial DownLight

The downlight is designed with a deep anti-glare structure and emits even light. At the same time, the 3 CCT adjustable Traic Dimmable and power adjustable technology, which can reduce the pressure on inventory to the greatest extent. A variety of beam angles are available, easy to install and no need to match additional housing.

- Universally compatible with 6" housings, Deep anti-glare design
- Select Drive & Fixed Output light engines
- Standard High CRI 80 with CRI 90
- 100-277V AC perfect dimming of Triac or 0-10V Dimming
- 3 CCT adjustable Traic Dimmable and power adjustable technology
- Multiple light engine reflector & beam options
- Fast & Easy Installation, Save labor cost
- Junction Box: Included, install directly in Insulated Ceilings (IC) without any thermal housing.

## Office Areas Lighting

Applications and Tasks		Recommended Maintained Illuminance Targets (ftc)
LCD or LED Devices		30
Hand Written Work	Pencil	30/50
	Ballpoint	30/40
Computer Screen	CSA /ISO Type I/II	30/40
	CSA /ISO Type III	15/7.5

### LED Troffer Smart Series



AirTunes LED Troffer delivers soft, glare-free, ambient lighting in popular center-basket design. The center-basket LED troffer is a low-profile design that offers a clean, versatile style and volumetric distribution. Compared with traditional light sources, the slim profile appearance and high-efficiency LED light engine can save energy and reduce maintenance costs, making it an ideal choice for new buildings. Provides a series of dark slots, which can be used in conjunction with MORSTAR Bluetooth APP to control.

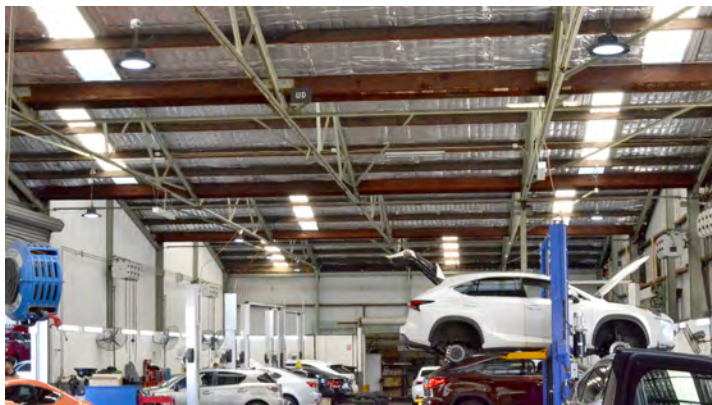
PIR sensor and Daylight sensor are embedded into LED troffer light's surface. smart APP on your phone, then remote control can be achieved. switch, you can dim up or down, turn on or off, adjust scenes adjustable brightness. Enjoy the light as you like!



- Long-life LEDs, coupled with high-efficiency drivers, provide superior quality of illumination for extended service life
- Excellent luminaire efficacy provides significant energy savings Power efficiency up to 88%
- To ensure trouble-free operation, protection is provided against output over-current, output over-voltage
- Short circuit. LED boards are easily accessible from below
- Options: CCT+Power Adjustable; APP Smart control :Bluetooth /daylight+PIR sensor

## Service Workshop Lighting

Create safe and productive workspaces that technicians need for an optimal working environment with Morstar High Bay LED fixtures. These lighting solutions produce efficient environmentally friendly illumination that energizes the workspace.



Your service department requires good lighting to help maintain its productivity and help increase your revenues. That means the technicians working in your shops need high-performance lighting to reliably provide superior work that keeps your customers returning to the dealership for oil changes, parts replacements, and other services. Morstar LED High bay and low-bay fixtures offer energy-efficient and near maintenance-free lighting for critical activity spaces that require high-efficiency, high-quality general-purpose lighting.

## Products Solution For Service Workshop Lighting



### Linear High Bay

The LED linear high bay light is an ideal choice for high-performance, long-life replacement of HID and linear fluorescent high bay lights. Various color temperatures and light uniformity will ensure comfortable and safe conditions, So as to maximize the productivity of each application site.

- Input voltage: 120V-277V, 100V-347V, 347-480V
- Power factor: > 0.95, THD: < 20%
- 1-10V dimming standard, Flicker-free
- Samsung Led chip lifetime: L70 > 100,000 hours, CRI > 82
- Environmental working temperature: -20°C / -4°F to 50°C / 122°F
- UL certification 1598: suitable for dry and humid places
- 4000K / 5000K provides crisp and invigorating lighting resembling daylight for warehouses, stadiums, and industries, etc
- V-hook and chain mounting accessories included.



### UFO High Bay

MORSTAR UFO high bay light combines long life and excellent efficacy of up to 150LPW. It is a cost-effective solution that can save energy and maintenance costs to the greatest extent. Fast start-up, easy installation and sturdy structure design make it suitable for various application requirements.

- Fins design, advective holes and grooves in each fin, good for heat dissipation
- The wide input voltage range AC100-277V & AC277V-480V(1-10V light)
- Sosen electronic driver, 2835 Samsung as light source
- Professional light distribution technique, high light reflectivity reflectors, 110/90/60 beam angle available; The lens pass rate is over 90%
- Light weight and small size, save about half shipping costs.



# Let Us Help

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MORSTAR Lighting is happy to help you with a one-stop lighting scene solution. We will create more value for you to provide more possibilities.



**Custom Lighting Design**



**Integration Services**



**inventory & shipping**



**Lighting Controls**



Call MORSTAR Lighting today for the ideal energy-efficient lighting solution for your Automotive.

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