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## [Service Garage Lighting](#)

This white paper reviews the latest lighting technology and the impact it will have on lighting a service oriented garage. Properly lighting a service garage includes fixtures that provide bright lighting with little shadows with excellent quality color rendition. Excellent color rendition and bright light is extremely important to mechanics and service technicians. They need to be able to see depth and colors to effectively work on vehicles. Bright light levels for this purpose would be considered to be 70+ foot candles at the level the work is to be performed. Excellent color rendition would be 70+ CRI which means the colors being rendered by the light are 70% or better on a color rendering index.



The decision of what type of lighting fixtures to use is in large part based on how clean the service area is. A service area for cars will be much cleaner than a location that services diesel trucks or tractors. In clean service area it is possible

to use open lamps and increase the light output of the lamps with reflectors. If the service area has dirt and/or diesel fumes, open lamps get coated with dirt and reflectors quickly lose their reflective quality. In dirtier environments a fixture with a single lamp that can be easily wiped off or a fixture with enclosed lamps is a superior choice.

Cleaner service garages enable the use of open style fixtures. Appropriate styles are [channel type strip light fixtures](#) or [linear fluorescent high bay fixtures](#) which are similar to strip lights but have 4+ lamps and incorporate the use of reflectors for additional efficacy. Both types of fixtures are a staple in the latest effort to save energy while maintaining light levels. The types of light fixtures that work in dirty environments work in clean too.

Service garages with dirty environments require the use of an enclosed fixture and preferably one that does not rely on a reflector to enhance light levels. An enclosed fixture protects the bulb from losing its light levels. Reflectors are never effective in dirty environments as they do not stay clean and quickly lose their reflective ability, reducing light levels and efficacy. The most frequently used luminaires with an optional lens and no reliance on a reflector are [low bay luminaires](#) or [high bay luminaires](#).

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While the choice of fixture might predetermine the lighting technology, understanding the lighting technology will also influence the choice of fixture. While everybody prefers energy efficient, durable, long lasting lighting technology with great color rendering capabilities, unfortunately it isn't that simple. With each technology there are tradeoffs. Choosing the correct lighting technology is a matter of understanding the limitations and practical function of each technology, as well as the installation cost and annual operating expense. Other important considerations include color rendering, foot candle levels required, glare reduction and maintenance.



There are several technologies to choose from such as Pulse Start Metal Halide (PS-MH), High Pressure Sodium (HPS), Fluorescent, Induction and LED. Each has the potential to impact employee performance, safety, maintenance and energy use over the next 10 or more years. Additionally most current luminaires are far more efficient reducing energy expenses. Changing to new light fixtures may even be subsidized by government or power company rebates.

[Click for information on possible Federal, State & Power company rebates in your state](#)



**High Pressure Sodium (HPS)** is not a great choice for lighting the interior of a service facility. High Pressure Sodium lamps are known for a yellowish orange shade of light that has very poor color rendering. It will be very poor lighting for detail work in maintaining vehicles. Commercial or industrial facilities with little concern for aesthetics may use HPS because it helps minimize replacement costs and provides the most Lumens per watt, but you it is very difficult to do any detail work under HPS.

- **Super high lumen output**
- **Very Long Life of 24,000 hours**
- **Low Color Rendition (CRI)**
- **Operates reliably in wide range of climates**
- **Low Kelvin puts out yellowish orange glow**

HPS may work as an effective low cost option for exterior lighting assuming you are not working or selling outdoors. High pressure sodium does very well in colder climates and has a longer lifespan of about 20,000-24,000 hours.



**Pulse Start Metal Halide** (PS-MH) lighting is one of the most commonly used technologies in service garages. PS-MH is a newer much more efficient version of Metal Halide yielding about 24% more light per watt. PS-MH fixtures give off quality, clear, bright light with excellent color rendering, while being very energy efficient.

- **High lumen output**
- **Operate Reliably in wide range of temperatures**
- **Good Color rendition (CRI)**
- **Long life of 20,000 hours**
- **Quicker start up than old style probe start**
- **Great in dirty environments**

PS-MH fixtures give off quality, clear, bright light with excellent color rendering, while being very energy efficient. The cost of PS-MH is slightly higher than HPS and it has a shorter life span of 10,000-15,000 hours, but the light quality is worth the price. Being a point source light, the lamps are easy to clean and additionally can be protected by a glass lens. Pulse Start Metal Halides work very well in colder climates with extreme temperature changes. Pulse Start Metal Halide High bay fixtures are a perfect choice for clean or dirty environments with dust and fumes. Please note that metal halide fixtures should have open rated lamps or use a lens. [Read more](#)



**Electronic HID Lighting or eHid** has just come onto the scene recently. The quality of light is identical in appearance to the above listed Pulse Start Metal Halide. This is one of the most energy-saving innovations in the lighting industry in a long time. The electronic HID ballasts allow precise control of light output that allows energy costs to be reduced by up to 65% while allow lower installation and maintenance costs. The ballast allows lumen output to be maintained above 90% over the lamp life as well as a flicker-free consistent color temperature and uniformity between lamps for exceptional light quality. The compact design combines all of the elements of a traditional HID system into one integrated unit with a small enough size to enable it to be used in many applications including service garages.

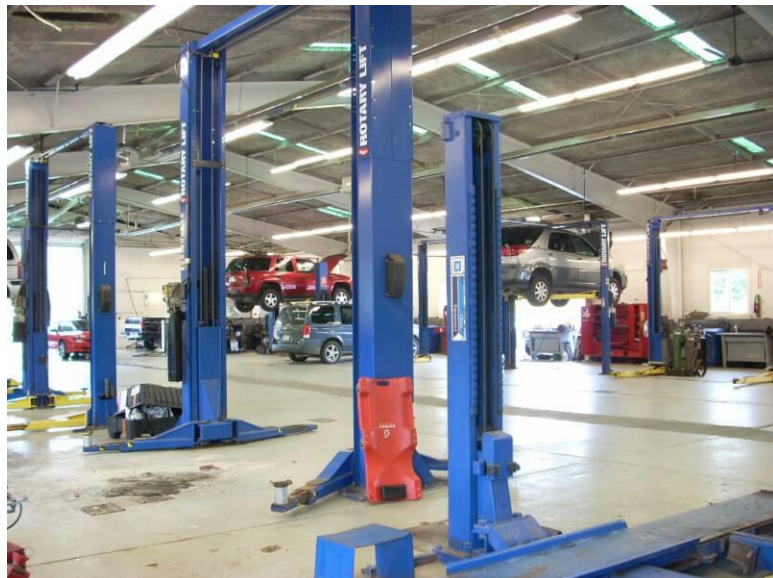
With their energy saving solutions and capability to provide consistent levels of light and color, electronic-ballasted HID fixtures are perfect for both indoor and outdoor environments. The stability provided by the electronic ballast extends the lamp life and dramatically reduces the frequency of lamp replacement, lowering maintenance costs throughout the life cycle of the ballast. Electronic HID ballasts can be connected to a number of standard control devices such as analog dimmers, sensors and timers. This allows digital dimming that can be controlled to accommodate human activity, daylight harvesting, and interactive light systems. These ballasts exceed the requirements of the Energy Independence and Security Act of 2007, which regulates ballast efficiencies for metal halide lamps. Electronic HID ballasted fixtures may qualify for rebates from local utility companies, further offsetting initial replacement costs.



**Fluorescent Lighting** is a great choice to use in a clean service garage environment. **Linear fluorescent high bay** fixtures work in higher ceiling environments and properly placed will provide the preferred 70+ foot candles. **Fluorescent strip lighting** works in clean environments with lower ceilings and lower light levels might be sufficient. Today's linear fluorescent high bay luminaires and even fluorescent strip lights use T5 or T8 lamps which provide a minimum of 70+ CRI for effective color rendition. Higher CRI is available too. Lamp life is 20,000 hours +. Lumens per watt are typically over 84 with an effective reflector. Best of all, the technology is low cost and proven.

- **One of the most energy efficient lighting technologies**
- **Relatively inexpensive at \$2 to \$5 per lamp**
- **Long life of 20,000+ hours**
- **Superior Color Resolution (CRI)**
- **Instant on-off technology**
- **Can be used with occupancy sensors**

All of this has made linear fluorescent a popular and leading choice in the right locations. In warm climates where ballasts will not be affected by cold weather and extreme temperature drops, service garage lighting with fluorescent fixtures offers both an optimal price point and optimal savings on power costs for companies that want the most economical source of service garage lighting. The disadvantage of fluorescent fixtures is their ineffectiveness in colder climates. Fluorescent works best indoors and in warmer climates.





**Induction Lighting** is a proven technology that is related to the fluorescent lamp. It has no electrode which makes it a virtually maintenance free with a 100,000 hour rated life. That's over 11 years of constant light 24 hours a day, 365 days a year. It is extremely useful in applications where lamp replacement is very expensive and hard to reach places like buildings, airports, tunnels, airports, public garages and many others.

- **One of the more efficient lighting sources today**
- **Longest Life with a mean life of 100,000 hours**
- **Virtually no maintenance required**
- **Excellent Color Rendering (CRI)**
- **Great performance in any climate**

Service oriented garages are a great environment for Induction fixtures because of the design of most induction fixtures are ceiling fixtures with excellent light distribution. [High bay fixtures with induction technology](#) are a great choice. The luminaires provides tremendous lighting with virtually no maintenance. Most existing high bay fixtures can be swapped out on a one for one basis for a [induction high bay luminaire](#) with very little trouble and a relatively short payback period.

Induction lamps and ballasts can also be used in a wide range of existing fixtures in the form of a retrofit kit, adding further flexibility and potentially lower cost for the end user. Induction lighting's light output is not significantly influenced by ambient temperature. Induction lamps can start at very low temperatures.



The light generated is a crisp white light with 80+ CRI, is very reliable and is instant on/off. Induction fixtures can typically provide as much, if not more light than a fixture at more than twice the energy consumption with better quality light. The advantages of the induction can turn into major dollar savings when considering energy savings, maintenance, labor, and replacement lamp cost of existing lighting fixtures. In many cases, the payback in maintenance savings will more than offset the initial cost of the system.

[Learn more about induction lighting](#)



**LED Lighting** fixtures are also low energy, similar to the induction, with good CRI and a long life of 50,000 hours and beyond. The long lifetime and reliability will greatly reduce maintenance costs over the long term. In addition to this, LED's efficiency can reduce energy consumption by up to 50% or more. LED's are available in a number of color temperatures from 'warm' to 'cool' and are easily adaptable to control systems such as motion sensors and photo cells to further reduce electricity consumption. They also do great in colder temperature environments.

- **Extremely efficient**
- **High life (50,000+ hours)**
- **Good Color Rendition (CRI)**
- **Dimmable**

With the introduction of the Super Bright LED's over the last few years, overheating of the LED package has been minimized with a built in heat sink that allows heat dissipation for longer life. Access Fixtures' LED Garage fixtures also incorporate technology that features Xicato LED modules and Xitanium LED drivers. They are both designed to operate about a decade before needing any new components. Both the Xicato LED modules and Xitanium LED drivers are extremely durable, long lasting and forward retrofittable. Forward retrofittable means the LED system is not only repairable, but as LED performance improves, the system is easily upgradeable. New or replacement modules can be easily swapped in and out. This component system also has the capability to disperse the intense directional beam of an LED with optional reflector optics. Light can be dispersed at 20, 40 and 60 degree angles for effective light coverage.



LED technology is definitely on track to become the dominate force in lighting in the next 10 years. With the introduction of simple component type systems, lower costs and an overwhelming amount of interest in saving energy, there will be a huge demand for LED fixtures for all industries, but especially parking garages.

The U.S. Department of Energy is estimating in the next 20 years that adaptation of LED lighting in the U.S. can:

- Reduce electricity demands from lighting by one-third**
- Eliminate 258 million metric tons of carbon emissions**
- Avoid building 40 new power plants**
- Create financial savings that could exceed \$200 billion**

[Learn more about our LED Modules and drivers on our LED learning section of Access Fixtures.](#)

Access Fixture Service Garage Fixtures are all extremely rugged fixtures that have been designed for Commercial and Industrial use and are easy to install. They typically have brackets or templates on the fixture that can be mounted directly to an electrical box allowing one person installations. Many of the High Bay fixtures come with mounting hardware and chains or malleable hooks to hang fixtures from ceiling. All fixtures include everything needed to install and operate including the ballast and lamp. Photo cells and motion detectors are also available on many of the fixtures for additional energy savings.

### The High Bay Fixtures:

#### Standard (HID) High Bay Series 2 through 8:

The Access Fixtures Series 2 through Series 8 are a comprehensive series of standard Pulse Start Metal Halide and High Pressure Sodium Fixtures that vary in size, shapes and wattages, depending on applications and environments. Series 2 and 4 are smaller, more economical fixtures that have a great variety of small to medium wattages available. The series 6 and 8 are typically larger fixtures with higher wattages available for more elevated ceilings. All of the fixtures are great choices with a number of options available, including different styles and sizes of reflectors and refractors.



#### Linear Fluorescent High Bay:

The Access Fixtures Linear Fluorescent High Bay Series are outstanding lighting choices that throw tremendous amounts of light. They come in options of 4 and 6 bulb with either T8 or T5HO bulbs. These are a great choice for a power efficient fixture that provides a lot of lumens with a great price. There are a number of options available including wire guards and occupancy sensors to reduce energy consumption. A good rule of thumb is using the T8 bulbs at heights of 16' or less and the T5HO at heights of 16' or more.



### High Max Fluorescent High Bay:

The Access Fixtures High Max Fluorescent High Bay fixture is another great Fluorescent option that has the same look and style as the traditional HID high bay. This newer Fluorescent bulb has wattage options from 40watts up to 200watts with a number of different color temperatures to give the appearance of a warmer look or a brighter white similar to many larger package stores. Fixtures can be chosen in either an aluminum reflector for a more industrial look or an acrylic refractor that provides a nice amount of light to also blow upwards to give a full lighted appearance. Optional wire guards, cone lenses and additional reflectors are accessories that can be ordered based on different applications.



### Induction High Bay:

The Access Fixtures Induction High Bay is the ultimate in High Bay lighting fixtures. The Induction bulb allows a life of up to 100,000 hours, making them virtually maintenance free. They have a very high color rendering index (CRI) which is extremely important for good vision with mechanics and automotive technicians. The Induction technology uses a fraction of the wattage that a traditional Pulse Start Metal Halide fixture would use. Typically a 200 watt Induction fixture would replace a 400 watt Metal Halide on a one for one basis. These fixtures, similar to the Series 2 through 8, have a number of options available including different styles and sizes of reflectors.





## [The Deluxe VNGL Round Garage Lighter Series:](#)

### [AFVNGL30](#)

These two styles of fixtures are another great choice as a traditional round light fixture for the Service garage. Both fixtures in the VNGL Series offer a heavy duty Die-Cast aluminum housing with a durable clear prismatic polycarbonate lens. The VNGL30 is a ceiling mounted fixture that does a great job of directing light in a more downward angle. (16" Round at the base, 11" at the top, 12 ¼" Tall) The fixture offers High Pressure Sodium, Metal Halide, Fluorescent, Induction and LED lighting options. (Shown with Induction)



### [AFVNGL40](#)

The VNGL40 is the other choice for a round garage lighter. This fixture has more of a conical designed clear prismatic polycarbonate reflector that does a good job of distributing and dispersing light on a more uniform basis all around. (15" at the base, 10 ½" tall) The VNGL40 offers High Pressure Sodium, Metal Halide, Electronic HID, Fluorescent, Induction & LED options.



## [The Linear Fluorescent Light Fixtures](#)

### [Single and Double Channel Fixtures](#)



The Access Fixtures Single/Double Channel linear fluorescent fixtures are great as a standard economical light fixture in a clean service garage. They are available in several different lengths as well as single or double T8 style bulb options.

### [Wrap around Linear Fluorescent Fixtures](#)

The Access Fixture Wrap Around Linear Fluorescent fixture is a similar style to the channel fixture, but has a protective prismatic lens. This fixture is a great option for a smaller type service garage with lower ceilings. Different sizes with different quantities of T8 fluorescent bulbs are available.



### [Access Fixture Wall Packs](#)

Access Fixtures has a wall pack selection of over 30 variations of shapes and sizes that will cover any needs for the exterior garage lighting. Utilize wall packs for all external lighting for security and lighting entrances of the garage. Most wall packs are housed in Die-cast aluminum housings, with aluminum reflectors and heavy duty molded prismatic borosilicate glass lenses. Our wall packs come with a variety of different lamp types including High Pressure Sodium, Metal Halide, Fluorescent, Induction and LED. Wall packs can be outfitted with photocells, motion sensors and battery backup.



## [Area/Flood Fixtures](#)

Access Fixtures also has a comprehensive line of Area/Flood lights that can anything from smaller, more defined areas to larger floods that can through massive amounts of light for large areas. Utilize these fixtures for the exterior of the garage for security and lighting overhead door entrances and exits.

Area/Flood fixtures are housed in Die-Cast aluminum housings with tempered glass lenses. High Pressure Sodium, Metal Halide, Fluorescent, Induction and LED are all options for most of the Area/Floods. Most Area/Floods can be outfitted with photocells, motion sensors and battery backup. They also have several mounting options as well as options for reflectors to give more control of the light.



## [Exit/Emergency Lighting](#)

Access Fixtures provides a large selection of Exit/Emergency lighting products including Basic/Universal Exit Signs & Emergency lighting, Chicago Approved Exit signs & emergency lighting, New York City Approved Exit signs & Emergency lighting, Wet location Exit Signs & emergency lighting, Wireless Self-Luminous Exit Signs and decorative styles with brushed aluminum. These fixtures can be ordered with Self Diagnostic Testing and battery backup.



## Access Fixtures

Visit Access Fixtures at <http://www.AccessFixtures.com> . With 30 years of collective experience, Access Fixtures offers standard and custom lighting fixtures that are long lasting and energy saving. With custom manufacturing capabilities, Access Fixtures can build lighting fixtures to the performance specifications you require and does so at a very competitive price.

Access Fixtures extensive line up of interior and exterior lighting fixtures includes lighting fixtures for sports, commercial, industrial, residential and hospitality applications. Fixture types include [wall packs](#), [area lights](#), [bollards](#), [garage lighters](#), [vandal resistant](#), [exit and emergency](#), [high bay](#), [low bay](#), [linear fluorescent](#), [track lighting](#), [chandeliers](#), and [grow light fixtures](#). Lamp/Ballast types include LED, induction, magnetic ballast and electronic pulse start metal halide (eHID), T5 and T5HO linear fluorescent, T8 linear fluorescent, plug in compact fluorescent, and high pressure sodium. Contact Access Fixtures to discuss the correct long lasting, energy saving solution that best serves your needs.