

raise the bar



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Albeo™ LED Luminaires for high- and low-bay environments



imagination at work

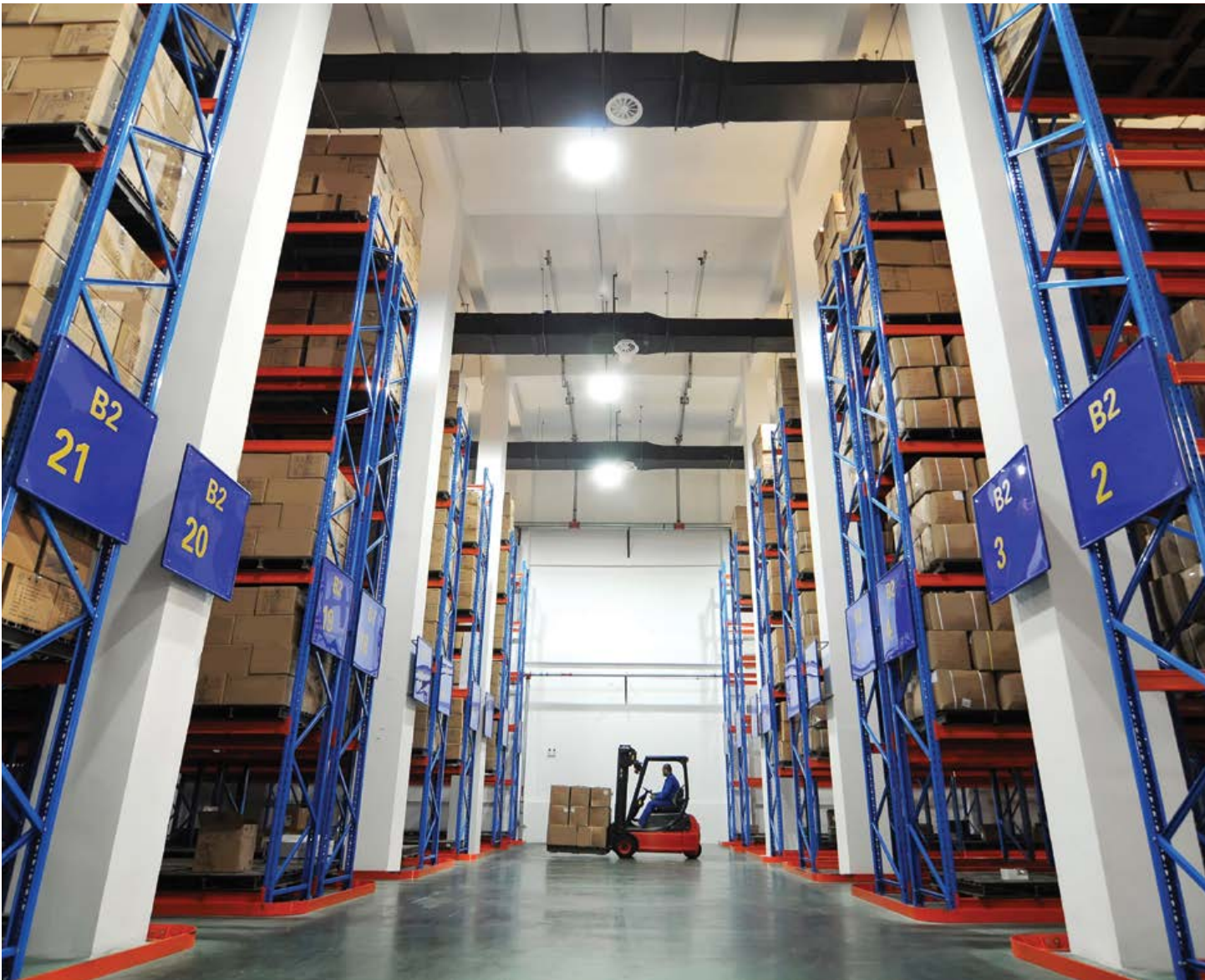
out with the old

Today's lighting landscape is constantly changing. At GE, we're creating newer, more efficient lighting solutions.

Commercial and industrial facilities are challenging environments for lighting design. They need to accomplish many goals without sacrificing performance. Longer operating hours, hard-to-reach ceilings, expansive space and expensive maintenance – the costs pile up. While high-intensity discharge (HID) and high-intensity fluorescent lamps have been the solution for years, they waste substantial amounts of light, maintenance man-hours and energy. It's time for the lighting landscape to change again.

Meet Albeo.





simulated images



in with the new – LEDs

In 1962, a GE scientist invented the first visible LED: paving the way for the next generation of lighting solutions. LED fixtures deliver, with better light distribution, increased visual acuity, superior color consistency and optical control. Best of all, their improved fixture efficiency means less wattage, less waste and significantly longer replacement intervals to reduce maintenance costs.

Now you can bring commercial and industrial lighting out of the dark ages and into the bright, white light of LED fixtures with GE Albeo™ LED Luminaires. Designed specifically for high- and low-bay environments, they combine the benefits of LED lighting with the ease of a flexible system that can be customized to fit your exact needs.

make it modular and scalable

Now there's a more efficient solution. Albeo LED Luminaires are built on a modular and scalable platform designed for customization. Its modularity lets you choose the ideal number of light modules, lens type, power source, color temperature, CRI, mounting configuration and integrated controls, while also making repairs simpler and future upgrades easier if the need arises. Albeo's scalability offers a range of options – from 6,350 to 65,350 lumens per fixture, reducing the number of fixtures needed to light your space. You'll save on upfront fixture and installation costs, plus the cost for ongoing maintenance and energy over time.

A smart choice. Albeo LED Luminaires are 30 to 65 percent more energy efficient than fluorescent and HID systems, and deliver a brighter, whiter light with less wattage, less maintenance and less waste.



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SYSTEM CONFIGURATIONS: ALBEO ABH -Series

- 1, 2, 3, 4 and 6 modules
- Light packages available from 6,350 to 65,350 lumens
- Choice of 4000K or 5000K color temperature
- Choice of 70 or 80 CRI
- Precision lenses:
 - 20°
 - 30°
 - 40°
 - 80°
 - 120°
 - 120° Diffused
 - 30° Diffused
- Four mounting options:
 - Chain/cable
 - Rod
 - Pendant
 - Indirect
- Mounting height up to 80 feet
- Energy-saving control options:
 - Motion and occupancy sensors
 - Wireless control and reporting
 - Dimming
 - Daylight harvesting
- 5-year limited system warranty
- Made in the USA with domestic and imported parts



optimize

made with smart technology

GE Albeo LED Luminaires are projected to deliver 100,000 hours at L70, and significantly reduce relamping and maintenance time and costs. A wide operating temperature between -31°F and 131°F means exceptional performance at both extremes – and every temperature in between. While excessive heat buildup can compromise the performance of other lighting systems before their time, an innovative thermal management design and smart technology protect Albeo LED Luminaires and helps extend their life.

1. Robust, cast aluminum heat sink efficiently removes excess heat away from the LED
2. Spacing between light modules allows greater airflow for natural cooling of the fixture
3. Integrated smart card constantly monitors fixture temperature
4. Smart technology automatically dims lights to prevent overheating if maximum temperature limits are reached

▶ DID YOU KNOW?

Utility rebates reduce initial investment and lead to lower costs.

In addition to energy savings, LED fixtures can reduce the overall cost of ownership through rebate incentives, when available. GE will work with you to determine eligibility requirements and to coordinate any local utility rebates you may qualify for.



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make the robust choice

The GE Albeo LED Luminaire offers robust design features for better protection from damage. It starts with break-resistant acrylic optical lenses built to withstand accidental abuse. It includes built-in mounting channels for safe and secure installation. A heavy-duty cast aluminum housing with an integrated heat sink for maximum thermal protection for the LED. And a polyester powder coat finish to withstand use and abuse over the many years it will be in operation.

A fine-tuned lighting system, the Albeo LED Luminaire reduces maintenance and your carbon footprint, paying back your investment in as little as one to four years.

Maintenance made easy:

- 100,000-hour rated life
- Field replaceable modules
- Field upgradeable optics
- No glass to break



PRODUCT INNOVATION
AWARD WINNER

PIA'13



award-winning

We're proud to be the 2013 winners of:

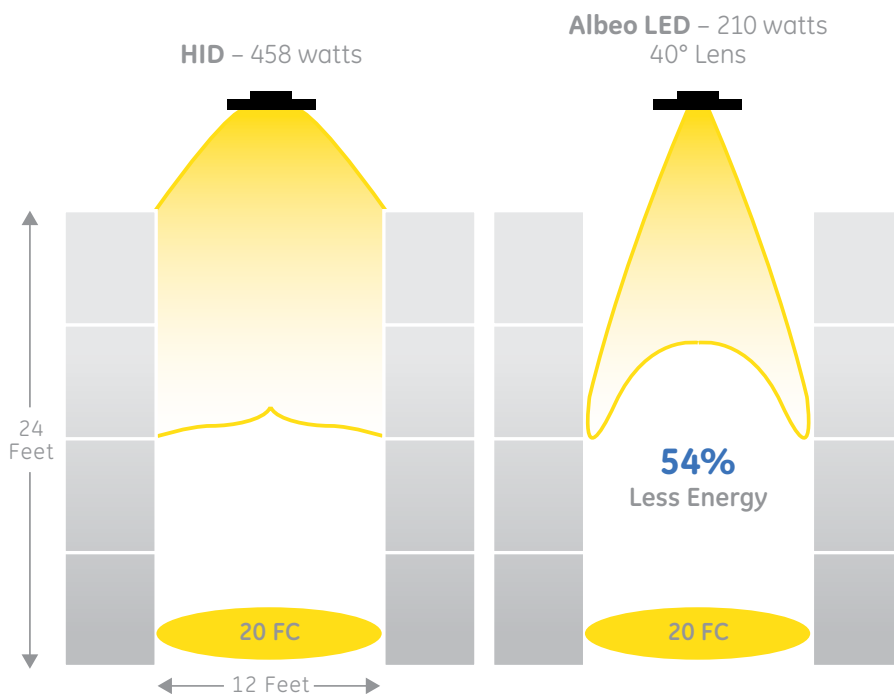
- The U.S. Department of Energy's Next Generation Luminaires™ Solid-State Lighting Design Competition (high- and low-bay industrial lighting)
- *Architectural SSL Magazine* Product Innovation Award (high-bay category)
- *Architectural Products Magazine* Product Innovation Award



It's true. HID systems can provide adequate light for warehouse environments. However, complexity or incompatibility with today's sensors and control technologies makes it difficult to implement energy-saving strategies such as daylight harvesting, motion control and dimming.

Instead, Albeo LED Luminaires are ideal in storage facilities with a mixture of conditioned and unconditioned spaces, open areas and racked aisles, and where ceiling heights range from 20 to 80 feet. Albeo's modular design is scalable to fit a variety of lighting needs, where each fixture can be matched with precision optics that provide up to 65,350 lumens of light only where it's needed, and do it more effectively and efficiently than HID.

Customize Albeo fixtures to fit any need. Fine-tune the lumen output to reduce waste when renovating existing spaces or to reduce the number of fixtures needed in new construction, saving energy and upfront fixture costs. Then add integrated controls for even greater energy savings overall.



A typical HID fixture uses 458 watts to produce an average of 20 foot candles on the racked aisle floor, where the Albeo LED fixture with a 40° lens uses only 210 watts to provide the equivalent amount of light. A 54% energy savings. Unlike HIDs, which waste light and energy, GE Albeo LED fixtures can be matched with precision lenses to more efficiently deliver the right amount of light, just where it's needed.



In cold storage environments, HID and fluorescent fixtures are often left on continuously, due to cold temperature or warmup/restrike challenges. Unfortunately, it's a practice that wastes energy, shortens lamp life and increases maintenance costs.

Just the opposite, energy-efficient Albeo LED Luminaires thrive in the cold – performing flawlessly in temperatures down to -31°F . They turn on instantly to full brightness, and when matched with inexpensive controls, they offer on/off, motion sensing and high-low dimming options to save energy while the space is not being used, extending the 100,000-hour life of the LED even further. Better color stability and consistency make packaging and labels easier to see, for improved order accuracy and speed. And solid-state construction means no glass, no mercury and no lead – making them safer to operate in food environments.

SMART FACT

cold storage facilities warm up to LEDs

Imagine how much it costs to run 250 lights in a 100,000 sq. ft. cold storage facility operating 24/7 at .11 kWh. By replacing 465-watt HID fixtures with 200-watt GE Albeo ABH-Series LED fixtures with motion sensing, the facility could cut energy costs by 91 percent per year.

- Albeo's advantages include:
 - Reduced energy costs by 91%
 - Energy savings of \$104,000 annually
 - Reduced energy consumption by 917,290 kWh annually
 - Six times the life span of HIDs, drastically reducing maintenance costs over the life of the fixture



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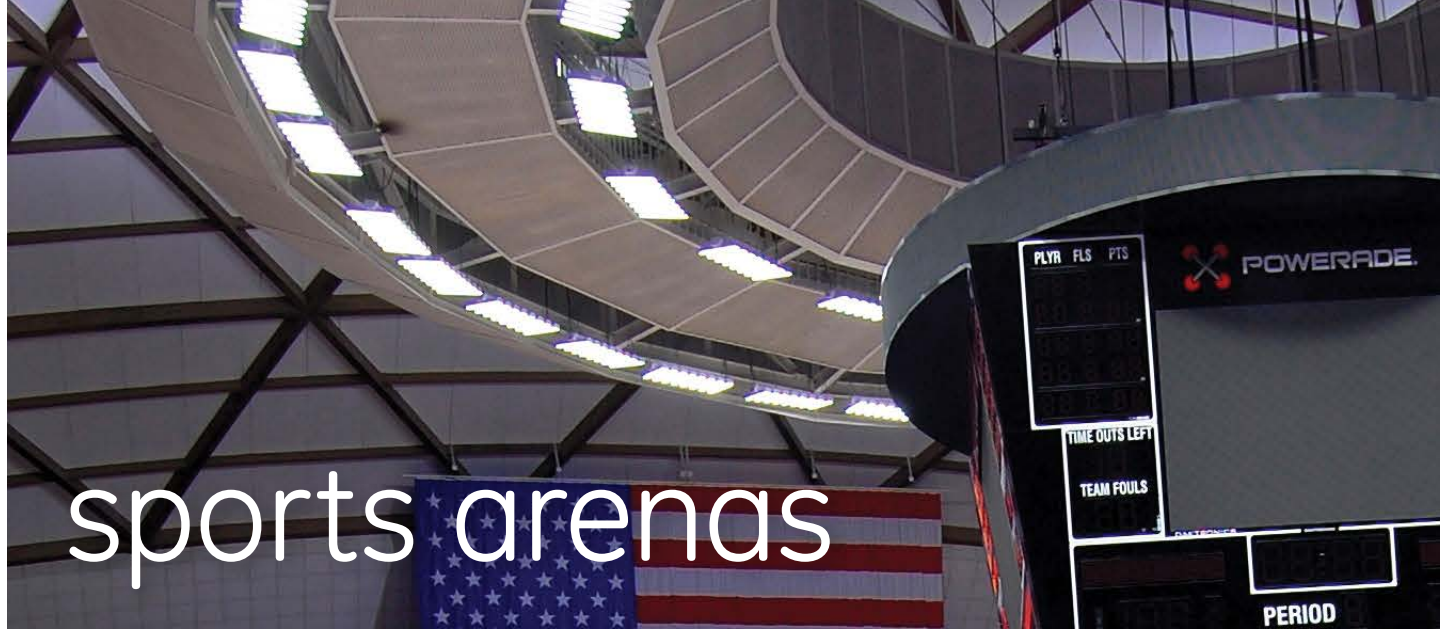


In manufacturing or any 24/7 operation, nothing is more dreaded than downtime. With HID and fluorescent systems' shorter lifetimes, you'll see plenty of it, as more frequent relamping is required. Both systems are susceptible to catastrophic failure in high-vibration environments, due to fragile glass components. And that can lead to disruptions and maintenance concerns. While high ceilings will require more fixtures to light the space, that light can be difficult to control and expensive to maintain.



Contrast that with the Albeo LED Luminaire, offering three times the life of fluorescents and six times the life of HIDs, significantly reducing maintenance and downtime costs. Albeo's rugged construction is highly resistant to vibration and includes no glass components that can break. Even at 100,000 hours, Albeo will still deliver ample light at 70 percent of initial output.

Albeo's exceptional optical control allows you to aim the light where it's needed; eliminating waste and reducing energy consumption by 30 to 65 percent compared to fluorescent and HID systems. Even more, when you factor in savings from dimming, daylight harvesting, motion sensors and other integrated controls.



sports arenas

When it comes to sporting venues, HID systems simply can't compete. They can't be turned on and off quickly, and aren't easily compatible with control systems that allow for the customized lighting design required in multipurpose spaces. Their short life spans mean more frequent maintenance, which can be difficult with high ceilings. Plus, they produce a poorer quality of light with little uniformity – yet, use a significant amount of energy to do so.

Your GE team has a smarter solution with Albeo LED Luminaires. They instantly illuminate and can be easily paired with controllers to add dimming capabilities. That gives you maximum flexibility to create the perfect ambiance, special effects and entertainment values needed during game time and halftime, along with the other events taking place in today's multiuse arenas.

Albeo fixtures offer precision optics and better uniformity, plus can save 30 to 65 percent on energy costs over HID. With their longer 100,000-hour life span, they can significantly reduce maintenance costs too. As a modular and scalable lighting system, Albeo lets you customize each fixture based on lumens, color quality, optical control and your own installation needs – so there is always just the right amount of light, without waste. And that makes Albeo a win-win solution for arenas, hockey rinks, gyms, coliseums, convention centers and other mixed-use facilities.

WEBER STATE UNIVERSITY

Weber State University makes a smart choice

The Weber State University Dee Events center replaced 100 HID fixtures at 1,000-1,600 watts each with 80 GE Albeo ABH-Series LED high-bay lighting fixtures at just 600 watts each. Operating an average of 4,000 hours annually at .12 kWh – they are expected to save 70 percent on energy consumption every year.

- 70% savings in annual energy use
- \$40,000 in energy savings per year
- 382,000 fewer kWh use
- 200 foot candles, double NCAA requirements
- Increased the ability for special effects because the LEDs instantly illuminate, and can be dimmed and adjusted in nine zones throughout the arena.

Albeo LED fixtures will substantially reduce maintenance costs and headaches over the life of the fixture when compared to the much shorter life span of HID's.



The numbers speak for themselves

Picture a 500,000 sq. ft. warehouse facility, with both open areas and racked aisles. It's buzzing with 1,250 HID fixtures, operating 14 hours/day, 6 days/week at .11 kWh.

That's a pretty hefty bill.

Now, imagine replacing every outdated HID fixture with an energy-efficient Albeo LED fixture, and adding motion sensors for racked aisle areas. With the amazing efficiency of Albeo LED high-bay luminaires, you'd see a remarkable difference in operational costs, plus significantly reduced operation time – with no effect on your productivity.



Make the switch—it's the easiest calculation you will make.

Albeo LED High-Bay ROI

Albeo LED ROI / Simple payback example - warehouse application

	HID	ALBEO LED	SAVINGS
Annual energy costs	\$277,177	\$57,099	\$220,078
Annual maintenance costs	\$26,186	\$-	\$26,186
Total annual savings			\$246,264

	PROJECT COST	ANNUAL SAVINGS	= PAYBACK PERIOD (YEARS)
Without utility rebate	\$726,250	\$246,264	2.9
With utility rebate	\$601,250	\$246,264	2.4

ENVIRONMENTAL BENEFITS		
Annual energy reduction	2,000,708 kWh	79% ↓
Annual CO ₂ reduction	2,801,000 lbs	
	Equal to planting 382 acres of trees	 Equal to removing 267 cars from the road annually

- Additional tax savings through EPAC
- No money down with GE financing



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