A greener, more efficient future

Philips Industrial Lighting

PHILIPS

sense and simplicity

Who is Philips?

As a leader in healthcare and consumer lifestyles and the global leader in the lighting, Philips is spearheading innovative and environmentally progressive solutions for today's manufacturing facilities.

For a century and counting, Philips has been the foremost provider of lighting technologies, enabling new and more efficient uses of light that can transform our world both visually and practically.

We're proud to be a global leader in sustainability, too—we strive toward the ideal of meeting the needs of the present generation without compromising the ability of future generations to meet their own needs.

Like you, Philips takes the customer's needs as the starting point for industrial lighting solutions. Our in depth knowledge of industrial lighting means providing flexibility to meet the specific needs of the user.

The Philips family of products delivers complete lighting solutions—from components and modules, to lamps, luminaires, and integrated systems—bringing you the utmost in quality, simplicity and innovations.

Competi

At Philips Lighting, we work with you to put industrial facilities in a better position to drive performance.

ng for the future

Manufacturers and industrial leaders face mounting challenges in today's economic environment. Increased competition from outsourcing, Just-In-Time inventory demands, heightened government regulations and shrinking operations budgets are only a few of the issues testing industry. The pressure is on for Industrial facilities to perform better and more reliably to meet their quality targets, customer expectations—and financial goals.

To compete, manufacturing executives are looking for an edge. They need creative ways to improve operational efficiencies and boost productivity. They want to be "greener," too, and of course, new techniques and systems can't sacrifice employee safety or the integrity of environmental standards. Improving conservation, reducing pollution and raising quality are integral to high-performance manufacturing.

Better lighting is a valuable tool for brightening industrial prospects. New, efficient lamps and lighting systems offer immediate ways to improve output while reducing maintenance costs and cutting energy use.

For more than 100 years, Philips has been providing products uniquely suited to improving industrial performance—from advanced fixtures and controls to energy efficient lighting. Let our expertise in industrial lighting help you see a greener, more efficient future.

Getting down to b

To be a leader in today's competitive environment, industrial leaders need to focus on the importance of performance, well-being and sustainability to address the critical issues of productivity, safety and their profitability. Lighting can support these three key factors and help you transform your facility in meaningful and innovative ways.

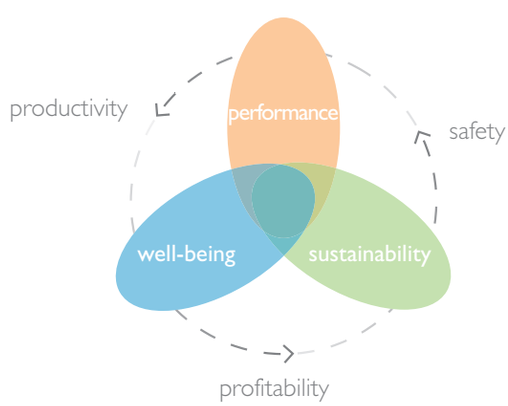
Today's industrial and distribution facilities must be responsive and profitable. Properly illuminated workspaces help drive the efficiencies and solutions vital to manufacturing executives.

- **Productivity:** Enhance worker motivation and increase productivity
- **Workplace Safety:** Create environments to minimize hazards
- **Profitability:** Control facility operational costs and overhead

Performance: High performance facilities are critical to achieving the necessary productivity required to remain competitive in today's economy. An effective, well-illuminated environment can positively impact employee performance and support your operational objectives.

Well-being: Workplace safety is only the minimum: Comfortable, bright facilities promote alertness and motivation, that can help keep workers in the right frame of mind, and present a welcoming space to greet customers.

Sustainability: Employing systems that reduce a facility's environmental impact builds a positive image and saves dollars on energy use and maintenance. Philips lighting products offer some of the highest efficiencies and longest life spans of any available today. We're committed to innovative solutions for reducing your carbon "footprint" and waste—while remaining cost-effective.



Choosing the right lighting solution can help achieve the desired mix of performance, well-being and sustainability.

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Increased performance, better efficiency

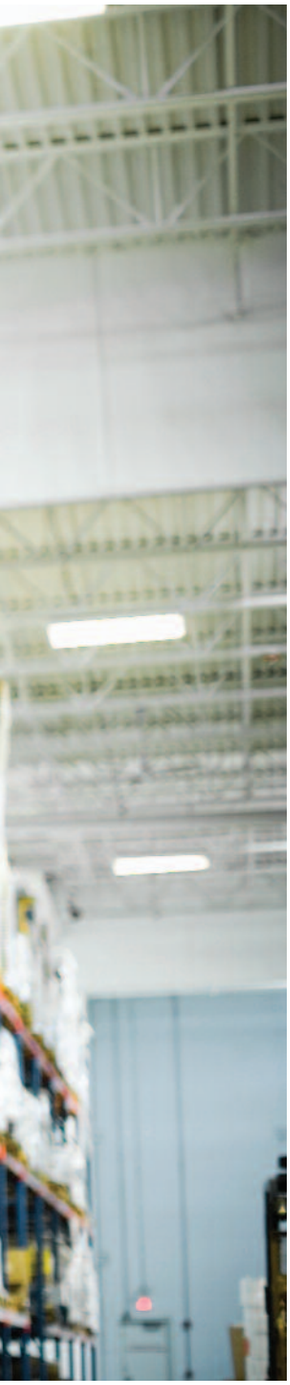
Lighting the path

A DISTRACTED WORKER CAN COST A LOT

"If poorly designed lighting distracts the average occupant (worker) for only 1% of the time, this is equivalent to a $5 per square foot annual loss."[1]

1. "Office Lighting KnowHow", Northeast Energy Efficiency Partnerships.Inc., 12/2/08. <http://www.designlights.org/downloads/OfficeArchLighting02.pdf>

to productivity



As operations directors and manufacturing executives seek higher levels of output and quality—often in the face of shrinking resources—they demand better performance from every link in the supply chain. Lighting can play a key role. Better work environments can elevate worker motivation and increase their productivity. And by reducing energy loads and waste, new energy efficient lamps and fixtures can help companies' save money on energy and maintenance.

Lighting not only makes spaces desirable by enhancing the visual environment, but also by making a space more flexible. A more flexible space can lead to more efficient workers.

Philips lighting solutions for the industrial marketplace can help you meet those expectations, reducing costs while driving quality and efficiency.

Performance: Visual appeal is one way that lighting improves workplace effectiveness. Comfortable, welcoming workplaces motivate workers to be more effective for longer periods of time. Properly illuminated spaces are likely to improve performance which can lead to increased productivity.

Well-being: Satisfying worker's physical needs through a uniform, balanced visual environment can pay off in increased productivity. By offering a workplace that meets the individual needs of workers, you signal that what they do is important, boosting morale and output. Flexible lighting solutions that provide comfortable general lighting, and bright, glare-free task lighting mean more comfortable employees who can perform their best—with fewer production errors.

Philips MasterColor® Ceramic Metal Halide Pulse Start lamps are a better value than quartz metal halide, with longer life, higher lumen maintenance, and energy efficiency.

Philips Energy Advantage T5 HO 49W Linear Fluorescent lamps provide high energy savings of 5 watts with no sacrifice in lumens, and they install into existing ballasts.

Lighting the way

Making the workplace sa

Like any workplace, a modern production facility must make the most of its skilled employees—and keep them safe, productive and loyal. Manufacturing executives know that a spotless safety record is the first requirement for a state-of-the-art industrial facility, and that it can also be their best profit center.

A properly illuminated environment can help reduce production errors, and adaptable lighting systems ensure the right light is available for specific tasks—even when production cells are reconfigured. With lighting solutions that fit the tasks at hand, the quality of output can improve so that production errors and accidents may drop. "Other benefits of well designed industrial lighting include reduced eye fatigue and headaches, which keep workers alert on the job."[1]

Lighting solutions from Philips offer long lamp life and reliable lumen maintenance, meaning more consistent conditions on the production floor.

Performance: Enabling employees to operate at their best is critical to achieving a high performance manufacturing environment. Effective lighting solutions offering the right light for given tasks is essential to enhancing the overall operations. A lighting upgrade is an investment not only in reducing electricity consumption but also in improving the performance of the building and its occupants.

Well-being: Industrial managers are focused on safety first, and for good reason—the lost production time, government fines, and a company's reputation. Workers need good ambient and task lighting to perform at their best and can benefit from light that renders colors accurately (CRI), increases comfort, and controls glare, a cause of visual fatigue. Philips lighting solutions can create an environment to help minimize hazards like physical injury or damage to machinery and inventory, and increase worker comfort and satisfaction, encouraging them to be at their best.

Philips MasterColor® CDM Elite Medium Wattage lamps provide superior, long-lasting white light for indoor and outdoor use. They provide excellent color rendering (CRI) of 90+ and offer an energy efficient upgrade over traditional systems.

1. Plantservices.com "Adopt New Directions in Industrial Lighting", John L Fetters, CEM, CLEP. 12/23/08 <http://www.plantservices.com/articles/2007/111.html>

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WHAT IS COLOR RENDERING?

Color rendering (CRI) is the ability of a light source to represent colors in objects, and is a relative measurement which rates light sources on a scale of 0–100, the higher the CRI, the more vibrant colors appear (Good = 70–80 CRI, Excellent = 80+CRI). High CRI is essential in industrial settings where it is important that people and objects appear natural, and where visual clarity is important.

Getting down to business

Increasing profitability

Given today's economy and increased competition from foreign competitors and outsourcing, manufacturing executives and plant managers need to do everything they can to protect the bottom line. Even small gains in efficiency can lead to significant savings. Replacing outdated lighting systems with more efficient, environmentally-friendly solutions will reduce energy consumption and maintenance requirements. Working with fewer lamp types and standardizing wattages can reduce complexity, making maintenance more manageable and less costly. Better lighting can improve on-the-job safety and give a kick to process productivity.

Energy is a large component of manufacturing costs, so leading manufacturers look to high-efficiency lighting for a positive impact on the bottom line. Long-life products shrink the costs of maintenance for relamping, meaning fewer interruptions on the production line. Industrial facility managers and operations leaders that embrace high-performance lighting gain an edge over competitors by reducing waste, maintenance costs, and carbon emissions. Most importantly, they make a positive global impact—goodwill that passes on to their customers and investors.

Lighting products from Philips reflect our commitment to innovative solutions that set the stage for economic growth and environmental stewardship.

To help you access your potential savings, our team of lighting experts can perform a Lighting Audit to help you maximize your profits without sacrificing your commitment to quality and a safer workplace.

Lighting T.C.O.O.: The Total Cost of (Lighting) Ownership

Understanding how various lighting choices impact the bottom line is essential for industrial lighting. These elements will affect worker productivity, overhead, energy costs and waste removal. Taken together, it's the total cost of ownership, or T.C.O.O., of lighting.

Four factors drive the total cost of lighting ownership:

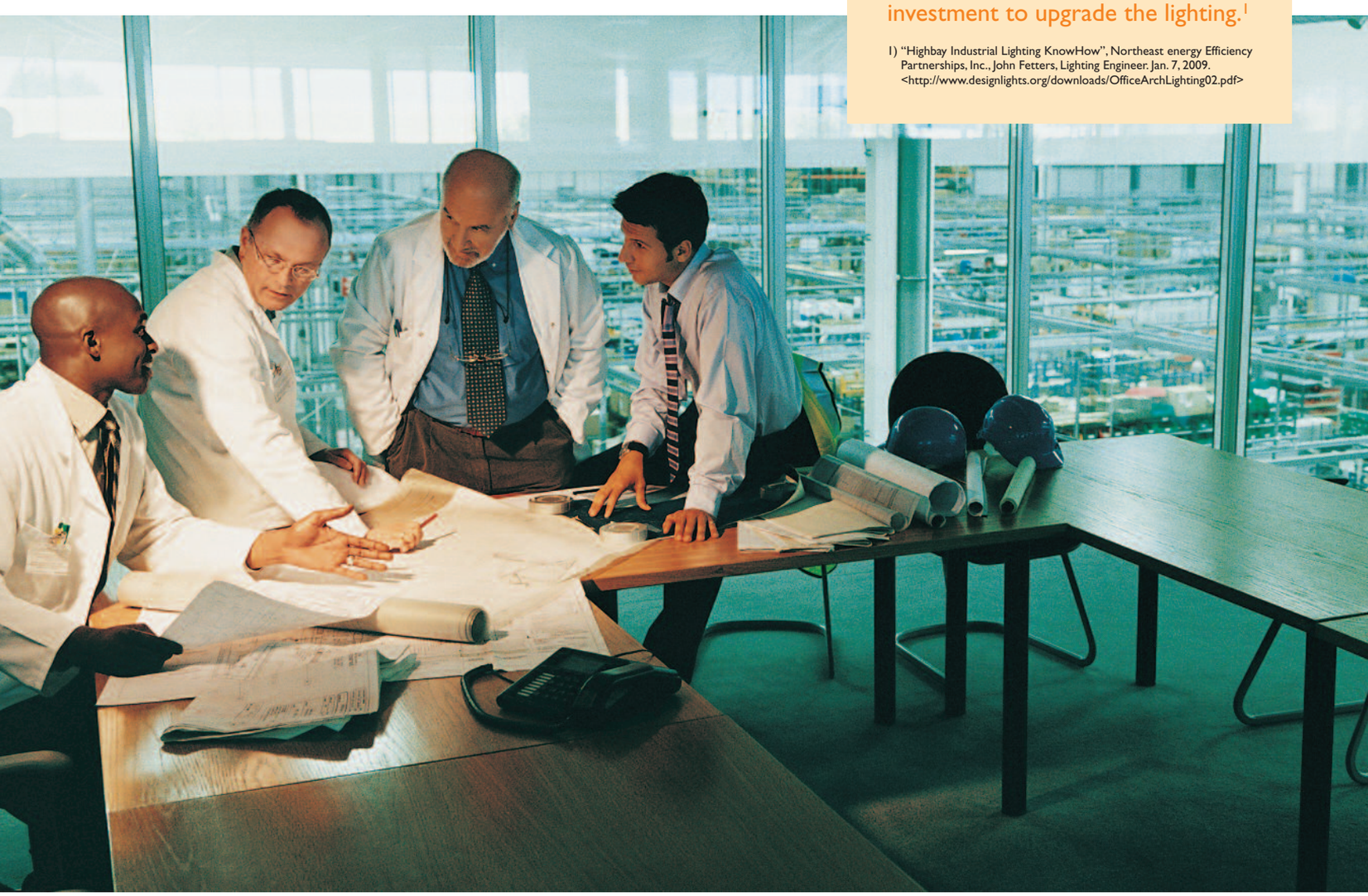
1. Product	The initial purchase cost for the lighting system.	Beyond first cost, compare performance: service life, lumen maintenance, and color rendering and stability.
2. Energy	Annual operating hours multiplied by electrical cost (kWh).	Consider product wattages as well as light output and lamp performance.
3. Maintenance	Includes labor and relamping costs.	Longer-life lamps that maintain color stability and lumen output can reduce maintenance.
4. Disposal	The end-of-life cost, including disposal and recycling of lamps, ballasts and fixtures.	Another area where longer-life lamps benefit industrial facility owners, by reducing waste and cost.

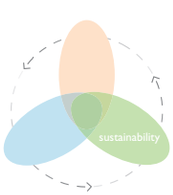
Philips Econ-O-Watt® Metal Halide 360W lamps save 40 watts per lamp versus a 400 watt metal halide and operate on any standard metal halide ballast.

NORTHEAST ENERGY EFFICIENCY PARTNERSHIPS, INC.

RESEARCH STUDIES SHOW that improvement in productivity as low as 4% justifies doubling the investment to upgrade the lighting.[1]

1) "Highbay Industrial Lighting KnowHow", Northeast energy Efficiency Partnerships, Inc., John Fetters, Lighting Engineer. Jan. 7, 2009. <http://www.designlights.org/downloads/OfficeArchLighting02.pdf>





Sustainability: Going green doesn't have to cost more. You can save money by refitting older T12 lighting systems with new, high-performance long-life T8 lamps and electronic ballasts. Or replace high-wattage T8s with today's lower wattage, energy-efficient T8 lamps—without even changing the ballast. You can further reduce costs by adding long-life lamps to your existing fixtures, a move that extends the relamping cycle, reducing hassles and inventory levels. Sustainable lighting also helps factories with environmental laws, standards like ISO 14000, and management programs like the Dow Jones Sustainability Index.

For optimized system performance, **Philips Energy Advantage T8 25W Fluorescent lamps featuring ALTO II™ Technology and the high-efficiency Optanium® electronic ballast** has the lowest mercury content and is one of the lowest energy-consuming 4-foot T8 systems on the market.

Philips industrial lighting

Lamps	Factors			Applications
	Performance	Well-Being	Sustainability	
T5 High Output Extreme Temperature • Provides extraordinary lumen output in spaces without climate control • Long Life—35,000 hours rated life[1] • 92% lumen maintenance	✔			• Hi-Bay Unconditioned Space • Refrigerated Spaces
Energy Advantage T5 High Output 49W • Save 5 watts over 54W T5s with no sacrifice to light output • Long Life—35,000 hours rated life[1] • 95% lumen maintenance	✔	✔	✔	• Conditioned Mid to High Bay Space
Energy Advantage T8 51W 8ft. Slimline • Energy efficient—Save 8 watts over 59W T8s with comparable light levels • Long Life—30,000 hours rated life • High efficiency—104 lumens per watt		✔	✔	• Mid to High Bay Space • Production Line
Energy Advantage T8 25W Linear Fluorescent • Features ALTO II™ Technology with only 1.7mg of mercury • Operates on any instant Start and Programmed Start Ballast[2] • High energy savings and long life to reduce relamping cycle		✔	✔	• Mid-Bay Space
TuffGuard™ T8 Coated Fluorescent • Features ALTO II™ Technology with only 1.7mg of mercury • Energy efficient and long life		✔	✔	• Food/Beverage Production Refrigerated Coolers Production Line
Energy Advantage CDM 330W • Features AllStart™ Technology • Direct electrical retrofit into existing QMH probe and pulse start system • Open fixture rated, ease of maintenance • Energy savings—up to 18% can be achieved without sacrificing the mean lumen light levels of QMH lamps[3]	✔	✔	✔	• Warehousing • Atriums/Gymnasiums/ Assembly Halls • Train Platforms and Railway Stations • Airports • Wallpack/Floodlight
MasterColor® CDM Protected Pulse Start • Improved lumen maintenance increases time between re-lamping • Superior color stability over life, 90 CRI • Operates on metal halide pulse start ballasts • Patented coil design offers protection for open fixture rating	✔	✔		• Warehousing • Atriums/Gymnasiums/ Assembly Halls • Train Platforms and Railway Stations • Airports
MasterColor® CDM Pulse Start ED23½ • Featuring ALTO Lamp Technology • High energy savings and extra long life to reduce maintenance costs • Lamp to lamp color consistency over life	✔	✔	✔	• Stock Rooms • Wall Pack • Floodlighting • Low Bay
MasterColor® CDM HPS-Retro White™ • Operates on standard HPS ballasts • Simple retrofit for HPS lamps • Excellent color stability, CRI with 80% lumen maintenance • Rated average life of 20,000 hours[1,4] for both vertical (250W & 400W) and horizontal (250W) operation	✔	✔		• High Bay • Warehousing • Manufacturing Facilities
Metal Halide Pulse Start • Up to 25% increase in maintained light output over standard metal halide • Up to 50% faster warm-up and restrike time • Energy efficient, up to 50% increase in life when compared to switch start metal halide (for 175W & 250W versions)	✔		✔	• Warehousing • Atriums/Gymnasiums/ Assembly Halls • Train Platforms and Railway Stations • Airports
Econ-o-watt® 360W Metal Halide Switch Start • Energy efficient, replaces 400W standard metal halide lamps • Operates on standard metal halide ballasts • Same 20,000 hours rated average life as a standard 400W metal halide lamp[1]			✔	• High Bay • Warehousing • Train Platforms and Railway Stations • Airports
Ceramalux® HPS Non-Cycling • Direct replacement for standard HPS lamps, operates on HPS ballasts of similar wattages • Long life, 25% longer life than standard HPS lamps, 30,000 hours rated average life[1] • High lumen maintenance, 90%	✔		✔	• High Bay • Warehousing • Manufacturing Facilities
Ceramalux® HPS Instant Restrike • Operates on standard HPS ballasts • Extra arc tube offers light instantly after momentary power interruption • Long life, 24,000 hours rated average life[1]	✔		✔	• High Bay • Warehousing • Manufacturing Facilities

solutions

Ballasts		Factors			Applications
		Performance	Well-Being	Sustainability	
Optanium® Electronic Ballast • For T8 Flourescents, extends the service cycle, which lowers labor and material costs • Energy efficient, long life system solution			✔	✔	• General Circulation • Stock Room
Centium® Electronic Ballast • For T5 Fluorescents, ideal for use with occupancy sensors • Programmed start for maximizing lamp life • Parallel wiring reduces visible lamp outages • Smaller footprint than traditional ballasts enabling sleek fixture designs			✔	✔	• Perimeter • General Circulation
Systems					
ActiLume Color Changing Lighting Control System • Plug and play controllable dynamic lighting system for design flexibility • Cost effective alternative to LED dynamic lighting solutions • Energy efficient, long life system solution		✔	✔		• Architecture • Perimeter
MasterColor® CDM Elite Medium Wattage System • Powered by eVision® Electronic Ballast, it provides crisp white light in 3000K and 4200K with CRI 90+ • Stable color performance over entire life • New socket design enhances higher optical efficiencies • Energy efficient upgrade over traditional HID systems and fluorescent options		✔	✔	✔	• Warehousing • Atriums/Gymnasiums/ Assembly Halls • Train Platforms and Railway Stations • Airports • Wallpack/Floodlight
T5 VHO Extreme Temperature System • Provides extraordinary lumen output in spaces without climate control • Reduce energy costs—save up to 40 system watts when compared to a standard HID 400W system[5] • 75% Longer lamp life when compared to standard HID 400W system which extends the relamping cycle[6]		✔		✔	• Unconditioned Hi/Very Hi-Bay Spaces • Refrigeration
T8 VHO Extreme Temperature System • Provides extraordinary lumen output in spaces without climate control • Reduce energy costs—save up to 86 system watts when compared to standard HID 400W system[7] • 25% Longer lamp life when compared to standard HID 400W system[8] which extends the relamping cycle		✔		✔	• Unconditioned Hi/Very Hi-Bay Spaces • Refrigeration
LEDs					
AmbientLED™ R20 (NR-63) • Offers LED technology in a narrow flood lamp for indoor applications • Emits virtually no heat and will not fade colors • Lasts 40,000 hours rated average life[1]				✔	• Lobby • Hallways • Conference Rooms • Washrooms
eW® Cove Powercore • Available in two fixed color temperatures: 2800K, 4200K • Mounts directly to flat surfaces in runs of up to 100 linear feet on a single circuit • Extremely energy efficient linear line-voltage with excellent lamp life		✔	✔	✔	• Architecture • Window Display • Perimeter • Elevators
More Products from the Philips Family					
SmarT-Bay™ Fixture • T5 or T8 high bay fluorescent fixture solution • Maximized energy savings with occupancy sensor controls • 36 month warranty period			✔	✔	• High Bay • General Circulation
eW® Blast Powercore • Provides high intensity white flood light rated for outdoor use • Highlights architectural features and provides general site illumination • Mounts directly to a junction box supplied directly by line voltage		✔		✔	• Architecture • Indoor Task Illumination • Perimeter
HID GlowBay™ Fixture • T5 or T8 high bay HID fixture solution • Housing permits full flow-through ventilation for maximum cooling of all components • Provides high vertical footcandle yielding for increased spacing ratio			✔	✔	• High Bay • Corridors • Warehousing • Stockrooms

1) The rated average life is the length of operation (in hours) at which point an average of 50% of the lamps will still be operational and 50% will not.
2) Starting voltage should be equal to or greater than 550V. These lamps are not recommended for use where the temperature in fixture is below 70˚F. Striations may occur where air movement is present in fixture. For best operation, use ballast with anti-striation circuitry.
3) 330W CDM lamp with AllStart™ as compared to a standard 400W QMH lamp.
4) The 400W Horizontal Operation Lamp has a Rated Average Life of 15,000 hours.
5) 4568 system watts (MH400/U) - 418 system watts (T5 VHO) = 40 system watts.
6) 35,000 hours rated average life (T5 VHO at 12 hours per start) compared to 20,000 hours rated average life (MH400/U at 13 hours per start).
7) 458 system watts (MH400/U - 372 system watts (T8 VHO) = 86 system watts.
8) 25,000 rated average life (T8VHO at 12 hours per start) compared to 20,000 rated average life (MH400/U at 13 hours per start).

Why Philips

At Philips, we pride ourselves on producing tomorrow's products today. Just like you, we value lighting solutions that are flexible enough to fit the needs of each unique user, while sustaining our environment.

Customized Solutions

We are committed to working together with you to create effective and efficient environments. Whether you're planning an entirely new lighting design or just need an audit of your existing manufacturing facility, our team of applications lighting experts will work with you to create a solution that is tailored to your unique needs.

Always in Touch

Whether your facilities are scattered across the country or represent a single plant or warehouse, a Philips representative nearby can answer questions about lighting. That representative will help you design and implement solutions to meet your most pressing needs.

A visit to a Philips Lighting Application Center can bring those solutions to life. Each Center hosts demonstrations and workshops where customers can acquaint themselves with the latest in industrial lighting technologies.

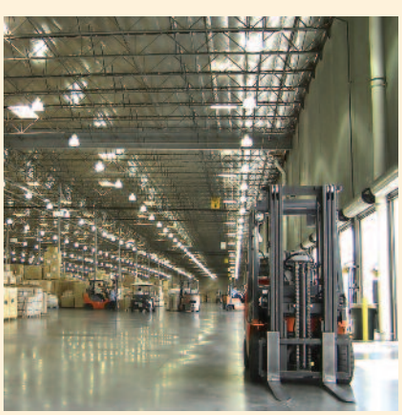
Our network of national distributors can address all your re-lamping and re-ballasting needs, while our national accounts team ensures that your facilities receives premium services.

One Partner, Many Solutions

Philips leads the global lighting market as a pace setter in the industry, as well as the best partner to do business with, and as a responsible corporate citizen contributing to the sustainability of society at large. We can offer integrated solutions that draw upon capabilities from across the entire Philips group—from defibrillators and coffee-makers, to the most advanced televisions and accessories. All are part of our drive to help build world-class, cost-effective industrial facilities.

Only Philips delivers a full portfolio of solutions, providing our customers the luxury and the flexibility that comes with choice, and the confidence that comes from partnering with an industry innovator.

Philips—delivering your lighting solutions



Luminaires
featuring Stonco

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Lamps and Ballasts
featuring Philips Lighting Company and Philips Lighting Electronics

PHILIPS

sense and simplicity

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