Hanover Lantern is committed to producing high quality energy efficient luminaires and to continuous expansion of our LED product line.

COMMUNITY LED LIGHTING

REFRACTIVE

LED

Conserve energy while adding lasting style.

Hanover® LANTERN

Handcrafted in the USA

PHILIPS

LED SOLUTIONS

Design for LED Luminaires is Critical

Hanover Lantern luminaires are engineered with state-of-the-art software and technologies increasing longevity. Every product is designed and tested first with 3-dimensional software to ensure that the LED manufacturer's specifications are met prior to tooling up for production. Not only does this improve speed-to-market, but it also allows engineers to create optimal designs for thermal management which is vital to the life of LEDs.

A simple retrofit "solution" can quickly become more of a problem than a solution unless it is designed properly. Validation of the entire luminaire system design is critical to ensure that the LED manufacturer's junction temperature limit is not exceeded.

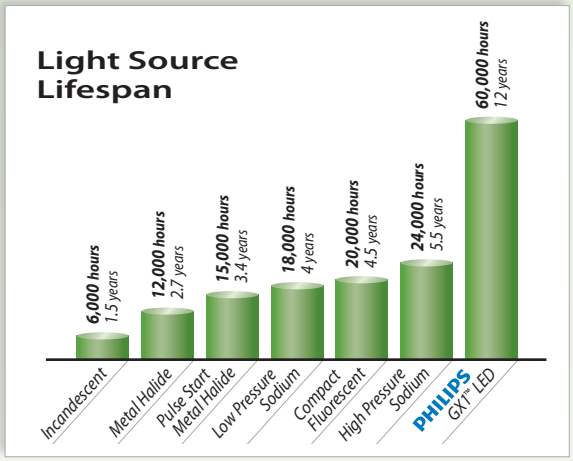
Without proper thermal management, the promises of a long lifespan and delivered lumens from an LED luminaire cannot be achieved and pre-mature failure is eminent. Hanover Lantern LEDs address these issues with innovative heat sinking and thermal management. Designs have been thoroughly tested ensuring the most reliable LED luminaire systems available.

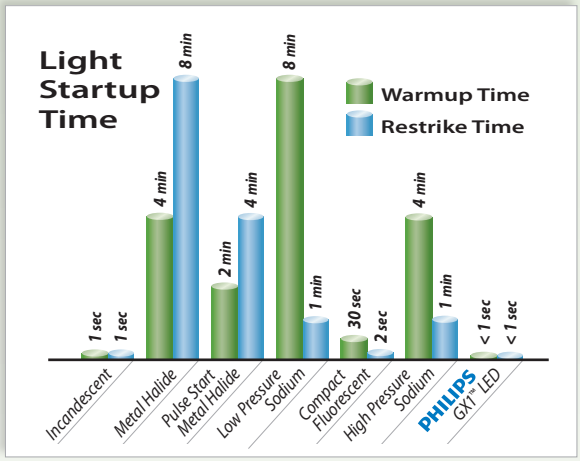
Longevity

With approximately 60,000* hours of operational lifespan *(12 years at 12 hours per night)*, Philips' GX1™ LED far surpasses HPS typical 24,000 hours lifespan and MH's 10,000 - 16,000 hour lifespan.

Since the life is between 3 to 7 times longer, luminaires powered by the Philips' GX1 LED need to be replaced less often than HID luminaires, significantly contributing to reduced maintenance costs.

** at 25°C ambient temperature and 70% lumen maintenance.*





Energy Savings

Saving energy is an important factor to many communities and decision-makers. LED lighting offers the highest energy savings of any lighting source on the market. As a comparison to high-intensity discharge *(HID)* lamps, a major metropolitan city with an installed base of 10,000 metal halide luminaires will save 18.5 million kWh of energy over the course of one year by switching to LED.

"According to the U.S. Dept of Energy, no other lighting technology offers the same potential as LEDs to save energy and enhance lighting quality and reliability."

(Architectural SSL; p.37; Nov. 2008)

Low Maintenance

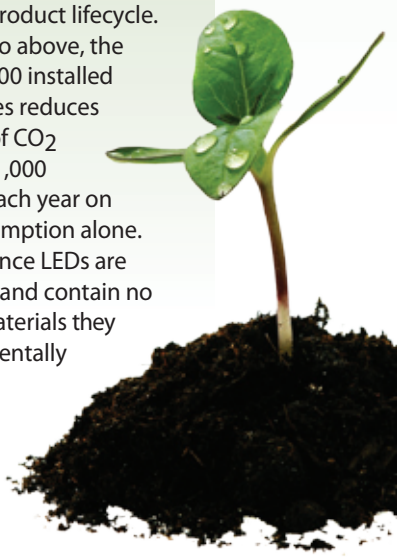
A major factor in the total cost of ownership *(TCO)* of luminaires is the maintenance cost. LEDs can last for over 12 years *(at least 60,000 hours at 70% lumen maintenance)* compared to HID which has a significantly shorter lifespan, therefore a maintenance crew must be sent to re-lamp the HID luminaires as many as three times before a properly designed LED system needs to be replaced.

"With a 10- to 15-year lifetime that is at least triple that of current technologies, the maintenance advantages alone offer a street-smart argument for transitioning to LED-based systems."

(Philips; White Paper: Street Lighting)

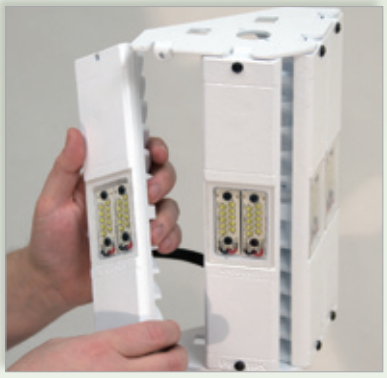
Green Environment

What does Green really mean? Many think of it in terms of the degree to which we are preserving our planet. One way to accomplish this is to reduce our "carbon footprint". The carbon footprint is thought of as the amount of carbon dioxide *(CO_2)* and greenhouse gasses released into the atmosphere by human activity or a product lifecycle. In the scenario above, the city with 10,000 installed LED luminaires reduces the amount of CO_2 emitted by 11,000 metric tons each year on energy consumption alone. In addition, since LEDs are mercury-free and contain no hazardous materials they are environmentally safe and recyclable.



Asymmetric or Symmetric?

When you have the Philips' GX1™ LED from Hanover Lantern in your refractive luminaires, you have both options.



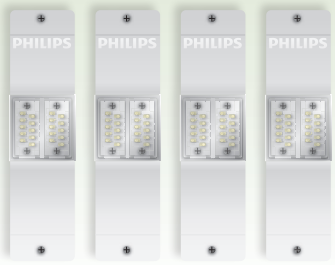
The patent-pending design of the Opt-Adjust™ system offers the ultimate in versatility. With this design one Philips' GX1™ LED system can be quickly converted from symmetric to asymmetric distribution or vice-versa. Simply remove four screws, move two LED bars to the open locations and replace the screws. Tabs lock the light bars at their proper position to ensure optimum optical performance.

LED CONFIGURATIONS

PHILIPS GX1™ LED Specifications

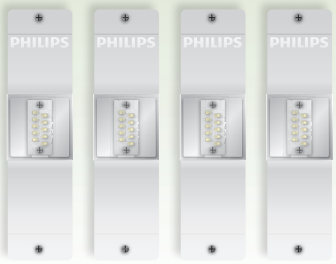
Higher Output *(80 LEDs)*

Comparable to 175W MH
Approximately 5500 initial delivered lumens.
100 watts power consumption.
Maximum input current draw 2A.



Lower Output *(40 LEDs)*

Comparable to 100W MH
Approximately 3000 initial delivered lumens.
50 watts power consumption.
Maximum input current draw 1A.



- 100 lumen-per-watt Lumiled LED devices on aluminum core PCB.
- Patent pending, cast aluminum heat sink design.
- Sealed, clear acrylic lens; IP66 rated.
- Symmetric & asymmetric distribution patterns *(field adjustable)*.
- 3000K, 4000K & 5000K color temperature *(CCT)*.
- Min. 70 color rendering index *(CRI)*.
- Approximately 60,000* hours of operational life.
- Operating temperature range: -40°C to +50°C.
- Smart Select™ electronic driver 120 - 277 VAC; 50 - 60 Hz; auto-sensing.
- ETL listed.
- 5 year limited warranty.
- 6KV surge protection.

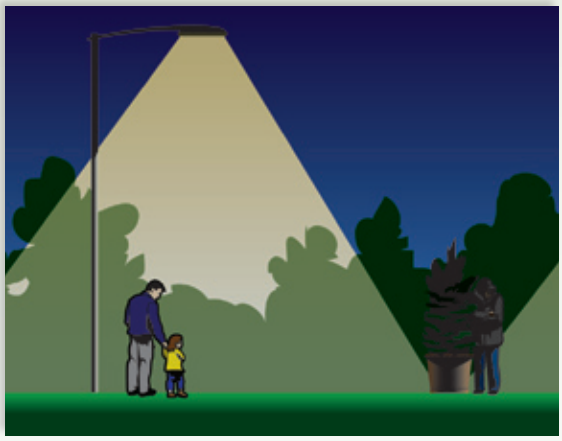
** at 25°C ambient temperature and 70% lumen maintenance.*

Refractive Globe Technologies

Hanover Lantern's superior refractive optics are designed to bend the light from the source and direct it out and down at precise angles for optimal efficiency. In addition, Hanover Lantern's refractive technology incorporates glare control into the design and masks the individual LED components so that there are no visible "dots." The result is a solid-state light source which resembles the aesthetic appeal of traditional lamp sources.

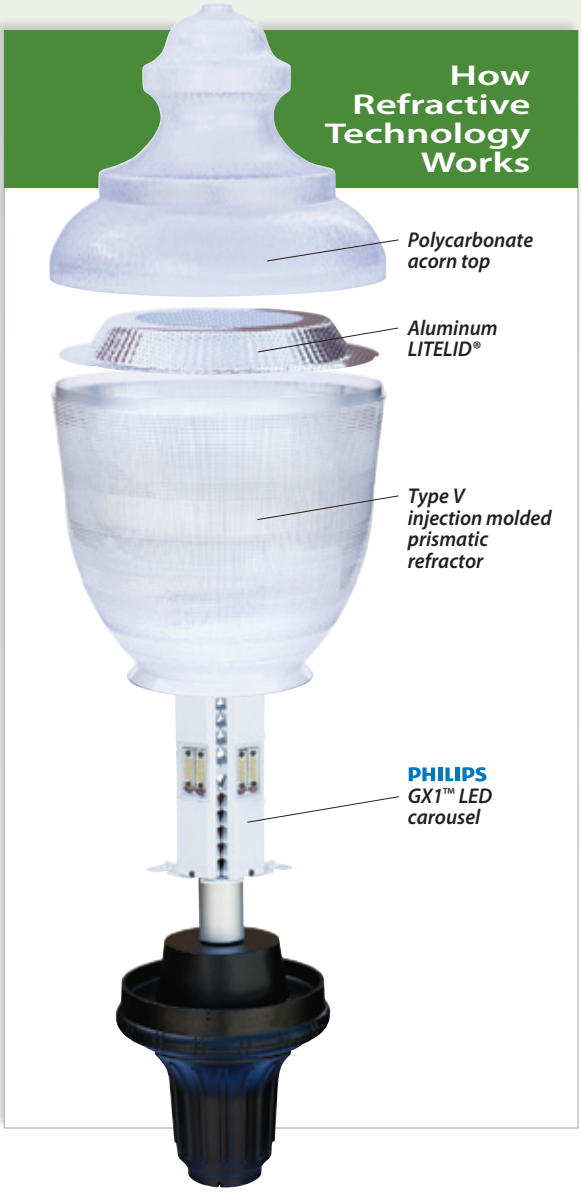
Hanover Lantern's LEDs incorporate the ability to reduce house side illumination without the need for an auxilliary reflector. Patent-pending, adjustable light bars allow for redirection of the light so that it is not wasted.

Safety is a major concern in many communities and is an important factor in the consideration of luminaire selection. Since Hanover Lantern's refractive technology bends the light at proper angles to illuminate vertical surfaces, dark areas are eliminated and the safety of motorists and pedestrians is improved. Compared to higher mounted luminaires, Hanover Lantern's refractive luminaires are typically installed at about twelve to fourteen feet. This allows the luminaire to remain underneath tree canopies so that shadows and hazardous areas are not created.

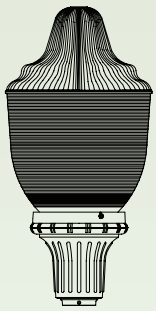


Overhead fixtures project most of their light downward, creating shadows, silhouettes and hot spots.

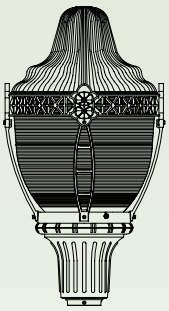
Hanover Lantern's refractive globes light horizontally with lower mounting heights. They create an overlapping pattern of light, leaving no light gaps and reducing shadow areas. The lower mounting height allows for tree canopies overhead.



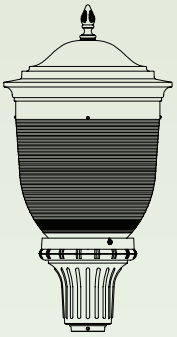
LED Refractive Globe Series



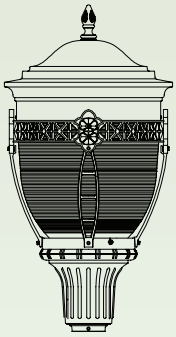
33100LED
H: 32 1/4″
W: 15 13/16″
Fitter: 3″



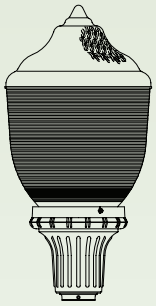
33130LED
H: 32 1/4″
W: 17″
Fitter: 3″



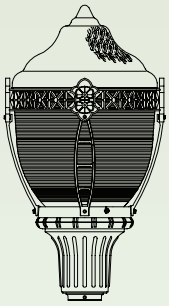
33200LED
with Copper Dome
H: 35 1/4″
W: 18 1/8″
Fitter: 3″



33230LED
with Copper Dome
H: 35 1/4″
W: 18 1/8″
Fitter: 3″



33300LED
H: 31 13/16″
W: 15 13/16″
Fitter: 3″



33330LED
H: 31 13/16″
W: 17″
Fitter: 3″

Available options when configuring your LED refractive globe

finish:
all 23 finishes available

source/lumen:
LM3000
3000 lumens
LM5500
5500 lumens

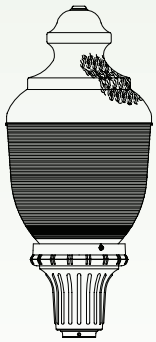
color temp:
CT3000 - *3000K**
CT4000 - *4000K**
CT5000 - *5000K*

* *efficiency loss due to amber lens.*

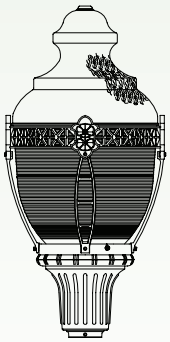
distribution:
ASY - *asymmetric*
SYM - *symmetric*

photo control: (*optional*)
10 - 120V
11 - 208-277V

driver: (*standard*)
120 to 277 VAC input
50-60 HZ auto sensing electronic driver

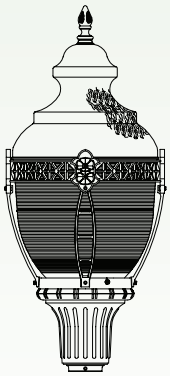


33400LED
H: 35 9/16″
W: 15 13/16″
Fitter: 3″



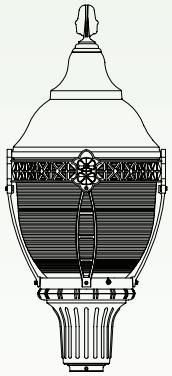
33430LED
H: 35 9/16″
W: 17″
Fitter: 3″

33403LED
H: 39 3/8″
W: 15 13/16″
Fitter: 3″



33432LED
H: 39 3/8″
W: 17″
Fitter: 3″

33500LED
with Spun Aluminum Dome
H: 38 1/2″
W: 16″
Fitter: 3″



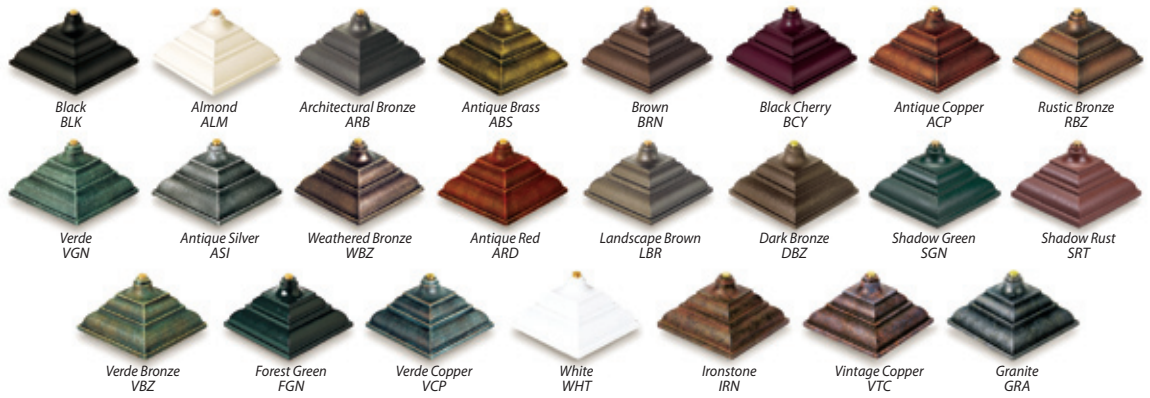
33530LED
with Spun Aluminum Dome
H: 38 1/2″
W: 17″
Fitter: 3″

Ordering Information

To ensure prompt and efficient processing of your order, please follow the sequence in the example shown below.

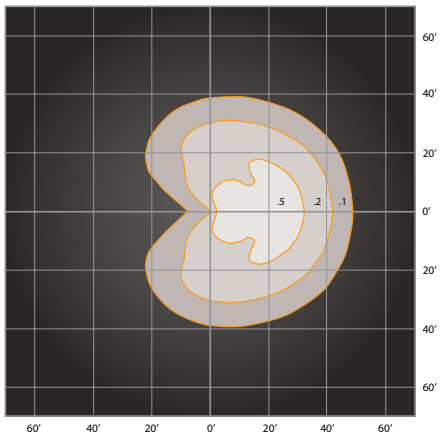
33400LED	BLK	LM5500	CT5000	ASY	10
model	finish	source/lumens	color temp	distribution	photo control (*optional*)

NanoCoat™ Finish Options

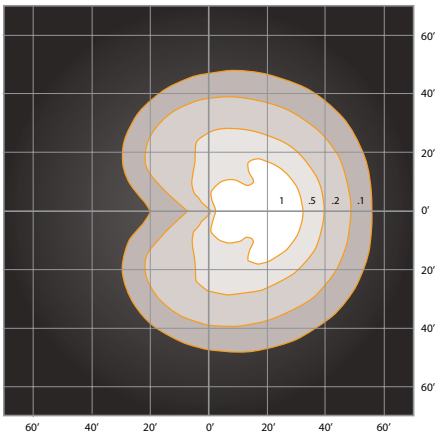


LED Photometrics

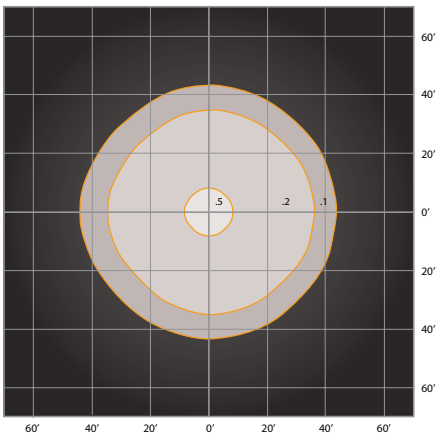
Asymmetric LED Refractive
LM3000, CT5000 *(10′ mounting height)*



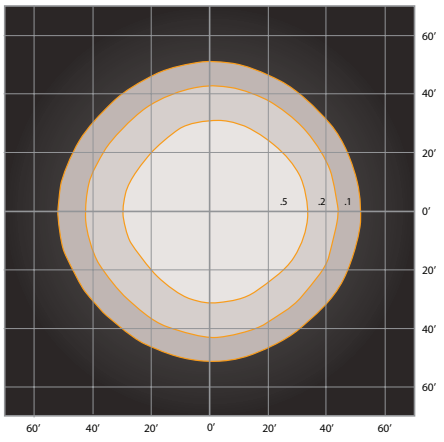
Asymmetric LED Refractive
LM5500, CT5000 *(10′ mounting height)*



Symmetric LED Refractive
LM3000, CT5000 *(10′ mounting height)*



Symmetric LED Refractive
LM5500, CT5000 *(10′ mounting height)*



COMMUNITY LED LIGHTING

Hanover quality that lasts

FIVE YEAR LIMITED WARRANTY

Hanover Lantern warrants its products against defects in material and workmanship. Without charge, Hanover Lantern will either repair or replace (Hanover Lantern reserves the right to decide between repair or replacement) any properly installed Hanover Lantern product that fails under normal operating conditions within five years from the date of shipment, provided it is returned to the factory, transportation prepaid, and our inspection determines it to be defective under the terms of this warranty.

The warranty covers only equipment manufactured by Hanover Lantern and does not extend to transportation, installation or replacement charges; nor does it apply to any equipment of another manufacturer used in conjunction with Hanover Lantern equipment.

No other warranty, expressed or implied, exists beyond that included in this statement.

Hanover® LANTERN

Handcrafted in the USA

Hanover Lantern is a Philips group brand

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