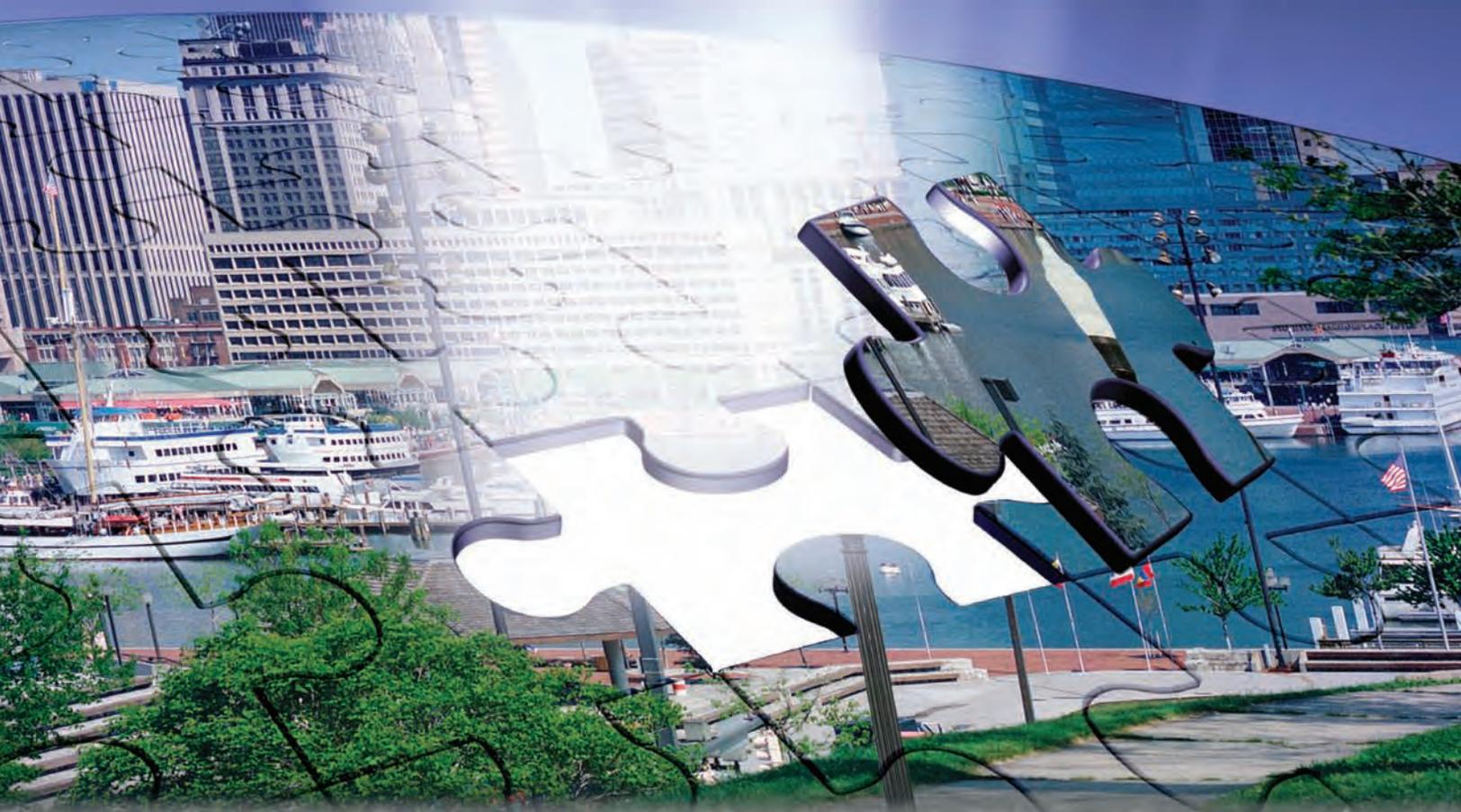


Public Lighting Guide

For Infrastructure and Utility Lighting




HOLOPHANE[®]
LEADER IN LIGHTING SOLUTIONS

HL-2355 7/07

AEL American
Electric
Lighting

experience
lighting's
best.

Public Lighting Guide

Holophane® has a rich history and tradition of providing unparalleled lighting systems for public lighting applications. While one of the key characteristics of Holophane luminaires has been our glass reflector/refractor – every luminaire we offer is also made for longevity and performance.



Working to attain the lighting objectives associated with the vast array of available outdoor applications, Holophane has developed luminaires with high performance optics that

address required lighting levels, uniformity and environmental issues, while minimizing the number of poles and luminaires used to illuminate the space.

Our comprehensive product line allows Holophane to recommend ideal solutions for effectively all exterior lighting applications.



For over half a century, American Electric Lighting® has been recognized for high quality and reliability in outdoor, utility and infrastructure lighting.

American Electric Lighting products include luminaires for roadway, industrial, commercial, area lighting, security, flood, and decorative applications. Dark To Light has been a large part of our success by offering top-of-the-line photocontrols.



By remaining focused on the products that are dedicated to utilities and municipalities, our goal is to continue to provide the superior design, quality and reliability that our customers demand.



ONE TEAM - MULTIPLE SOLUTIONS!

By combining efforts, Holophane and AEL present a thorough product selection that offers superior lighting performance, elegant design, durability, and ease of installation and maintenance.

Along with a widespread portfolio of products that provide long-term value to the end user, Holophane and AEL provide a complete solution to your lighting needs through additional services not found with any our competitors. Not only do we offer access to our fully engaged and factory trained sales force, but you, the customer, are invited take part in product training similar to what they receive.



WHAT THIS MEANS FOR YOU...

With this collective approach of expanded products and services, Holophane and American Electric Lighting present a clear resolution to most any lighting application.

The following information will guide you through our complete offering from municipal street lighting to infrastructure, and highway applications as well as our industry leading services.



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FIVE KEY ELEMENTS

We realize that not every customer has the same needs. Whether you need to light a stretch of highway with several hundred standardized fixtures, or your project is a sea port that requires a minimal number of poles, yet a maximum amount of light, Holophane and American Electric Lighting can put together a blend of products to fit your needs.



STANDARDIZATION FOR UTILITY CUSTOMERS

Understanding that utility lighting lease programs often require products and services that are modified to a repeatable specific requirement, our manufacturing capabilities produce products that perform as reliably on day 3,000 as they do on day one.



CUSTOMIZATION FOR INFRASTRUCTURE CUSTOMERS

The need for customized products creates an exciting environment. We're glad to be part of this process and will start out by working with you to understand your needs, and then present a unique product offering to meet your specific request.



SALES FORCE

Our specialized and focused sales force, combined with independent representatives that specialize in the utility market, provides significant value to customers in this space. Each sales representative receives extensive product line, technical and design training. This organization is unique to the lighting industry and is highly valued by our customers for its experience and technical skills.

As a result of their training and experience in designing lighting systems, our sales representatives are able to provide lighting solutions tailored to meet the needs of your project.



EDUCATION

Our outdoor lighting education seminars are instrumental to helping you learn about your lighting purchases. We hold numerous courses each year on subjects that range from roadway lighting to energy management. Also, our sales representatives regularly conduct seminars at the local level with customers, engineers, and specifiers.



PRODUCTS AND SERVICES

Along with a variety of products for most every outdoor lighting application, Holophane and AEL also provide a broad range of services and help-tools to assist you in lighting your given applications.

The Beam Team, a collection of highly skilled lighting experts, will work with you on large jobs to ensure that your project meets your timelines and expectations.

With programs such as Envision and Visual, you can virtually create an accurately scaled model of the product(s) selected, or review a comprehensive analysis of the luminaires chosen.



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ROAM™

Remote Operations Asset Management (ROAM) is a revolutionary wireless monitoring solution that is specifically designed to address the complexity and cost of owning and operating an outdoor lighting system. ROAM addresses the total life cycle of ownership and operation including on-going maintenance, material utilization, resource optimization and vendor performance.



BACKWARD COMPATIBILITY

ROAM uses an *intelligent photocontrol* with an embedded wireless communication chip. The photocontrol is backward compatible with light fixtures featuring a locking type receptacle. Installing the ROAM photocontrol is as simple as removing the existing photocontrol and replacing it with a ROAM-enabled intelligent photocontrol. During installation, crews activate individual ROAM photocontrols, triggering the assignment of a GPS coordinate so that fixture location is recorded in the system. During activation, key fixture attributes such as lamp type and wattage can also be captured, supporting improved asset management and maintenance efficiencies.

WIRELESS NETWORK

Once installed, ROAM photocontrols communicate via a wireless transceiver to other intelligent photocontrols within their vicinity, creating a self-configuring, self-healing, and self-optimizing wireless network that exchanges data between photocontrols on an event driven basis. ROAM's self-networking technology is superior to traditional information technology networks, increasing the overall system durability, reliability, and simplicity.



SECURE DATA MANAGEMENT

Lighting data from individual photocontrols travels back to a central collection point or gateway, where information is collected and transmitted to a highly secure Network Operations Center. Lighting data is organized and available to customers 24/7 via secure internet web portal. Reports accessed from the web-based portal show how each light fixture is functioning and provides map-based locations using GPS coordinates captured during activation. The portal also allows users to control lights within their given network using map-based interfaces. This web-based command and control portal is accessible using the internet, preventing the need for integration with existing customer internal IT Systems.



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SECURITY (GENERAL AND HOMELAND)

Security lighting is one of the most practical and effective ways to help prevent crime in or around residential, commercial, industrial, institutional, and military settings.

Holophane has long been known for superior high mast and area lighting products. For decades, we have supplied security lighting to the US Military, Army Corp of Engineers, correctional facilities, transportation departments, and many other government agencies.

When security lighting is required for public safety, physical security, or anti-terrorism force protection measures, Holophane has reliable, cost-effective solutions that you can count on.



ENERGY SAVINGS

Holophane and AEL can help you achieve your energy conservation goals by offering unique products and services to make your energy upgrade projects a success.

We believe that lighting can be energy efficient and environmentally responsible (sustainable) at the same time. We are strongly committed to the concepts of environmental sustainability and to lighting solutions that are good for people and the environment. Sustainable practices reduce pollution and avoid depletion of the earth's finite natural resources.

Many companies believe that becoming sustainable or "Green" will be detrimental to the bottom line. However, by utilizing our solutions to lower the total cost of ownership in either new construction or re-lighting applications, your bottom line as well as your company's operations will remain "Green" for many years to come.



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DEFINING THE SPACE

Outdoor lighting can be complex; and is often met with issues that vary considerably from project to project and from location to location.

Everyone from designers, to specifiers, to government officials and business developers, who are involved with specifying or purchasing outdoor luminaires face pressure to effectively light a given space, yet also be conscious of today's environmental lighting issues.

Although the priority for the following items will change for each project, we can help you reach all your objectives:

- Increased safety and security
- Revitalization
- Commerce
- Inspiration of community spirit
- Cities, towns, boulevards, residences, shopping districts, etc.

Typical outdoor lighting settings include:

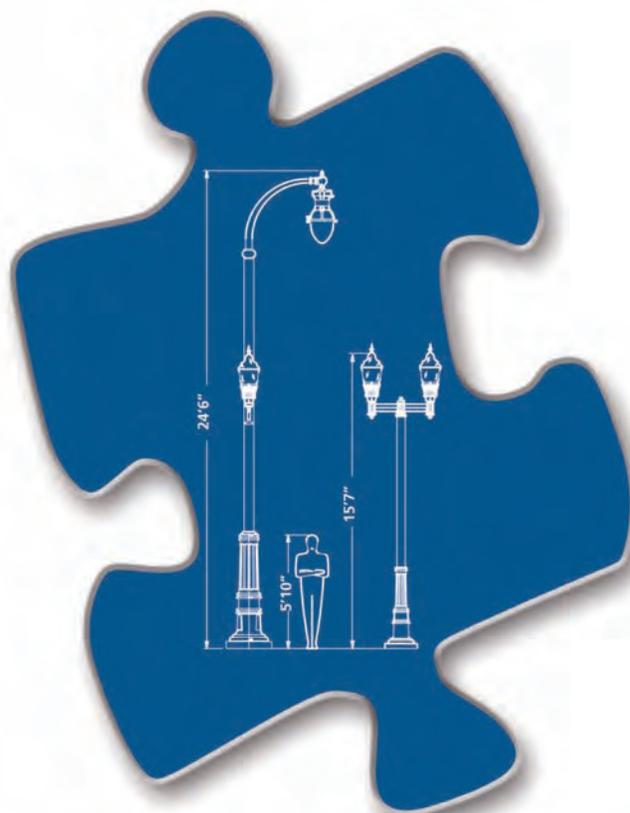
- Residential street lighting
- Public common areas
- City street lighting
- Parking area lighting
- Sports and floodlighting
- Walking and bike path lighting
- Port lighting and security

Holophane and American Electric Lighting have a complete series of products designed to meet the lighting needs of each of these settings.



IMPORTANCE OF SCALE

Scale of outdoor lighting equipment is a critical element in determining the visual appeal and ultimate aesthetic success of a streetscape project. The most critical attribute of scale is the luminaire mounting height. Appropriate mounting height, which is directly tied to the system optical performance, in most cases can be determined by desired lighting results and the surrounding architecture within a proposed installation. In addition, items such as arm length, pole/base diameter, and luminaire arrangement/size can visually impact scale. Ultimately, as related to height, an appropriate balance should be placed between the luminaire performance and aesthetic appeal of the light pole assembly.



PEDESTRIAN SCALE:

Luminaire mounting heights - 8-15'

Pedestrian-scale light pole assemblies are used on urban sidewalks, town or village streets (2-3 story buildings), residential neighborhoods, campuses, boulevards, and parking areas.

URBAN SCALE:

Luminaire mounting heights - 15-25'

Urban-scale light pole assemblies are typically recommended for large-scale urban boulevards, parking areas, and multiple lane city streets.

ROADWAY SCALE:

Luminaire mounting heights - 25' and higher

Roadway installations are common for lighting vehicular urban traffic lanes and boulevards, ports, highways, and events.

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LIGHTING FOR PEDESTRIANS

Sufficient vertical illumination is the key component in providing pedestrian security. In order to instill a feeling of comfort and safety, a lighting system must provide portal to portal door-to-door illumination. This will ensure there are not hidden areas where an unidentified person can wait for an unsuspecting passerby. A subtle uplight component will create an open visual environment similar to daylight conditions.

An enhanced visual field in the area created by vertical illumination and a small percentage of uplight will promote desired nighttime activity in the community.

Pedestrian Lighting Goals:

- Safety
- Security
- Commerce
- Public recognition
- Community spirit



Visual is a collection of lighting calculation tools and powerful 3D modeling software that is engineered to simplify the design process and provide comprehensive analysis for lighting projects. A complementary download of this program is available on our Holophane.com website.



LIGHTING FOR ROADWAYS

Darkness increases the chance of vehicular accidents by reducing the ability for motorists to see. It also hides landmarks and environmental cues which help drivers recognize their surroundings. The sharp contrast between objects in the roadway and the roadway surface will provide sufficient visibility for high speed, limited access roadways.

However, a system which illuminates commercial roadways must often perform additional tasks. Motorist must be able to see pedestrians, identify his or her automobile, read signage, and accurately identify their surroundings.

The key lighting element which allows motorists to perform these tasks is positive illumination on vertical surfaces.

Roadway Lighting Goals:

- Safety
- Communication
- Landmarks
- Signage



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RECOMMENDED PRODUCTS

DECORATIVE LIGHTING

Decorative lighting needs not only to perform as expected, but also present a pleasing appearance during the daytime. Following is a compilation of decorative products that satisfy both of these standards.

TYPICAL APPLICATIONS:

City Streets, Parking Lots, Campuses, Plazas, Commercial Developments, Village Squares, Residential Areas, Parks, Walkways.



HOLOPHANE



GranVille®



Washington PostLite®



Octagonal



Prismasphere®



Colonial



GlasWerks® II
Hallbrook®



Tear Drop
with a Skirt



MetroVue®
Urban Yoke

AEL



AVP



American Revolution



245



Marietta



Bainbridge



Lexington

AREA LIGHTING

Area lighting calls for both adequate lighting of the location and consideration of environmental issues such as light trespass and sky glow. These fixtures meet and exceed these challenges and have been designed for ease of installation and maintenance.

TYPICAL APPLICATIONS:

Parking Lots, Roadways, Perimeter Lighting, Transportation Terminals, Shopping Centers, Industrial Sites



HOLOPHANE



Somerset®



PoleStar®
Arched Arm



PoleStar®
Arched Arm, solid



PoleStar®
Linear Arm



PoleStar®
Post Top



MirroStar®

AEL



ASA



AVL



Lux Master



125 (Cutoff)



ACP



75 Series

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ROADWAY LIGHTING

Safety through effective lighting is one of the key concerns when buying roadway lighting. The products listed below provide ample lighting for high traffic areas and situations where pedestrian security is a concern.

TYPICAL APPLICATIONS:

Roadways, Residential Streets, Storage Areas, Parking Lots, Campuses, Parks



HOLOPHANE



Mongoose®
Vertical Tenon



Mongoose®
Architectural Arm



Mongoose®
Drop Glass



Tear Drop
Esplanade®



Pechina®
Arm Mount

AEL



115



Corvus



413



325 (flat glass)



DuraStar™



Interstate II (775)

INFRASTRUCTURE LIGHTING

These products tackle the difficult task of lighting large roadway and infrastructure areas. As with the rest of the Holophane products, they are designed with the highest quality of materials to ensure long life in the toughest of environments.

TYPICAL APPLICATIONS:

Bridges, Parking Garages, Sports, Highway/Interchanges, Airports/Seaports, Rail Yards, Security Lighting, Storage Facilities, Water Treatment Facilities



HOLOPHANE



HMS High Mast Systems



LMS



Refractopack®



Prismbeam® II



Predator®



As the leader in outdoor lighting, Holophane is always looking for ways to better serve our customers. With that in mind, we've created an internal group of project managers known as the Beam Team.

This team will work with you to define and negotiate a project schedule that will meet your timeline. Along with one internal point of contact and weekly order status reporting, they will also coordinate site visits and a post project review to ensure your satisfaction.

BEAM TEAM
Holophane Custom Lighting Solutions

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PHOTOCONTROLS

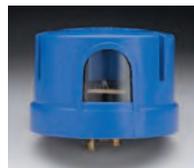
Dark To Light is known as the industry leader in providing high quality, cost effective electronic photocontrols to utility and municipal customers. Built with reliable electronic circuitry to reduce day burners, DTL photocontrols help you save energy during peak periods and reduce overall maintenance cost.

TYPICAL APPLICATIONS:

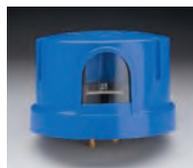
Roadways, Area Lighting, Floodlights, Security, Residential Areas



DX



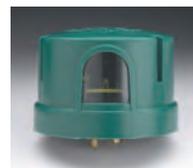
DUX



D7790



DD



DPN

POLES

Pole selection is very important when making a luminaire selection. Not only are height and spacing important, but the fixture wind loading ability needs to be taken into consideration. Our poles are available in a variety of heights and offer structural longevity to match our products.

SiteLink® is a modular pole system that is available in a variety of shapes and finishes which allow components to easily lock into place via a revolutionary track system.

TYPICAL APPLICATIONS:

Roadways, Area Lighting, Floodlights, Security, Residential Areas

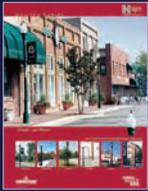


SiteLink

Basic Roadway Poles

Decorative Cast Aluminum or Iron and Steel

Choose from the available Holophane Lighting Guides to help you get started in finding the right solutions for a variety of market and/or industry applications. Our guides offer information on residential settings, college and university campuses, and how outdoor lighting impacts the environment.



HL-2233
Utility Series



HL-2192
GranVille



HL-2205
Decorative
Product Catalog



1315.33
ACP



1315.34
AVP Valiant



1315.36
Corvus



HL-2135
Pechina



HL-2151
Designer Series
Product Catalog



HL-2161
Infrastructure
Product Catalog



1315.36
ASA



AEL2006-2
DTL



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HoloPhane, S.A. de C.V., Apartado Postal No.
986, Naucalpan de Juarez, 53000 Edo. de
Mexico

Contact your local HoloPhane factory sales representative for application assistance, and computer-aided design and cost studies. For information on other HoloPhane products and systems, call the Inside Sales Service Department at 740-345-9631. In Canada call 905-707-5830 or fax 905-707-5695.

Limited Warranty and Limitation of Liability Refer to the HoloPhane limited material warranty and limitation of liability on this product, which are published in the "Terms and Conditions" section of the current Buyers Guide, and is available from your local HoloPhane sales representative.

Visit our web site at www.holophane.com



Luminaires may utilize fluorescent or high intensity discharge sources that contain small amounts of mercury. New disposal labeling for these lamps includes the mercury identifier shown on the right to indicate that the lamp contains mercury and should be disposed of in accordance with local requirements.



Information sources regarding lamp recycling and disposal are included on the packaging of most mercury-containing lamps and also can be located at www.lamprecycle.org.