SITE/ROADWAY

OTS

SERIES

OTS

Outdoor Tube System

70 - 400 Watt

KIM LIGHTING

OTS

Outdoor Tube System

The Outdoor Tube System is a familiar signature Kim product. Its ultra-clean design, accomplished by unifying the pole and fixture head, produces a striking aesthetic. It is a design that blends into the background with ease, or becomes a focal point if desired.

A Modern Classic, the OTS series provides excellent performance in a compact profile. It has proven itself with a solid track record of applications on a global scale. The OTS is truly a world-class design. The reason for such outstanding success is that it is one of the best engineered designs in outdoor lighting. It is simple to install, easy to maintain, and extremely durable. It simply weathers design trends as well as it does the elements, with the grace of a true classic.

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KIM LIGHTING

SITE / AREA
PARKING STRUCTURE
ROADWAY
ARCHITECTURAL FLOOD
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LANDSCAPE

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HUBBELL®

Hubbell Lighting, Inc.

Printed in U.S.A.
Version 10/11

Kim Theory of Relativity

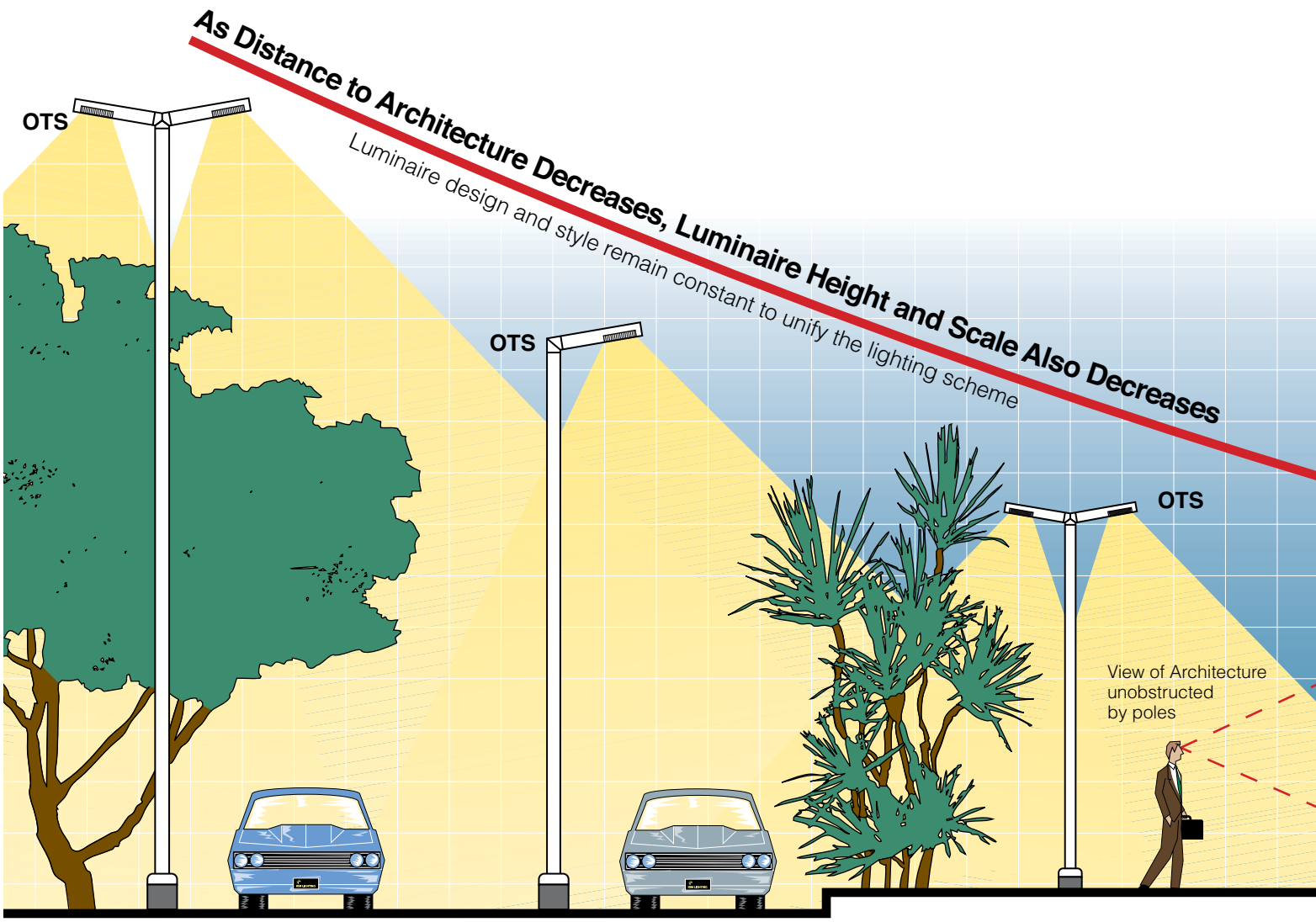
The Relationship of Outdoor Lighting to Site and Architecture

OTS Outdoor Tube System

OTS Outdoor Tube System

SL Site Lightforms

LTV Lightvault®



SITE / ROADWAY ZONE

Parking lots and roadways require luminaires on 20′ - 30′ poles to efficiently light these large areas. Therefore, this lighting becomes dominant, and sets the design and style for all other lighting as you progress towards the building.

PEDESTRIAN ZONE

As you leave the parking lot and transition to pedestrian areas, poles should decrease in height to 10′ - 16′. In addition, luminaires should decrease in scale, and can have more decorative features to be appreciated at the pedestrian level.

AFL Architectural Floodlight

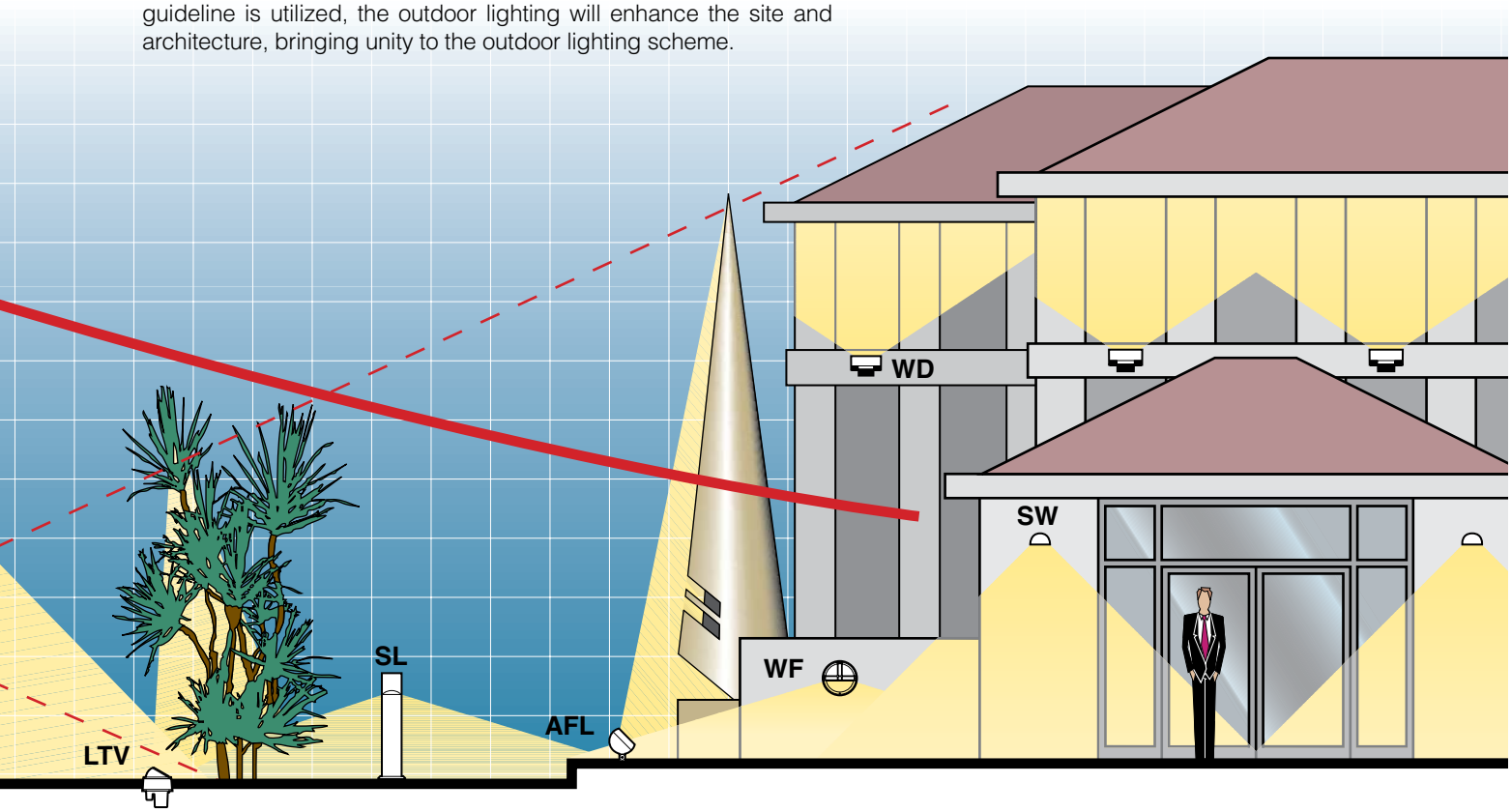
WF Wall Forms®

SW Site Wallforms

WD Wall Director®

KIM THEORY OF RELATIVITY

The purpose of this guideline is to bring a cohesive look to outdoor lighting, maximizing lighting efficiency while preserving the architectural experience. Simply stated, the Kim Theory of Relativity says “Poles belong in parking lots. And, once you leave the parking lot, the outdoor lighting should become less and less conspicuous until it becomes an integral part of the architecture.” In addition, the luminaire style and geometry should remain consistent. If this guideline is utilized, the outdoor lighting will enhance the site and architecture, bringing unity to the outdoor lighting scheme.



LANDSCAPE / PATH ZONE

Near the building, luminaires should begin to disappear, blending into the landscape and hardscape elements.

BUILDING / PERIMETER ZONE

No pole mounted luminaires should ever be used near the building, as they will dominate the architecture. The only exception would be the use of decorative luminaires to delineate entrances to the structure. Building mounted, architecturally compatible fixtures should be almost invisible.

Distinction / Versatility

Distinction

The rehabilitation of downtown areas is a growing commitment throughout America. The Outdoor Tube System can be a major contributor to these efforts by providing increased illumination for safety and security, with reduced power consumption. In addition, the Outdoor Tube System gives the city distinction along with an image of quality and progressiveness. At night, a high degree of visual security is established by the controlled fixture brightness, which defines a well-illuminated area for business, shopping, or recreation.

Versatility

The Outdoor Tube System is being successfully used on a wide variety of applications ranging from parking lots to roadways, parking structures and railroad stations. These applications represent a diversity of architectural style to which the OTS has become an integral design element. This versatility is a testimony to the basic design parameters of the OTS: simplicity, clean detailing, quality construction, and performance lighting. Through proper selection of color and height, the Outdoor Tube System can be a bold design statement, or an almost invisible blend with surrounding architecture and landscape.

Delineation

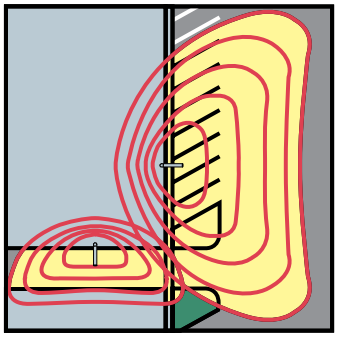
The Outdoor Tube System is a semi-cutoff luminaire providing additional value beyond illumination on the ground. As a roadway, driveway, or pathway luminaire, the OTS visually defines directions and delineates boundaries. It produces more pavement luminance because it projects light at higher angles from the fixture. Whether the application is roadway or parking lot, OTS controlled brightness gives psychological comfort. People entering the lighted area will feel visually secure because the OTS produces additional lighting ambience.

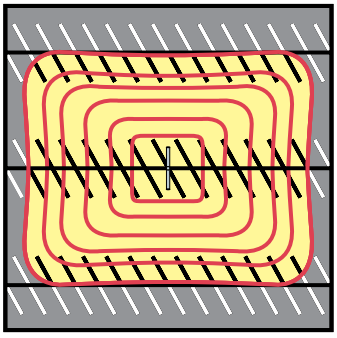
Applications

Parking Lot/Pathways

1A
Single
Mount

2B
Dual
Mount

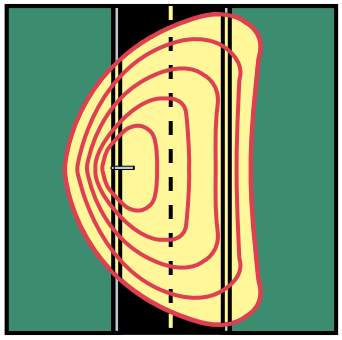




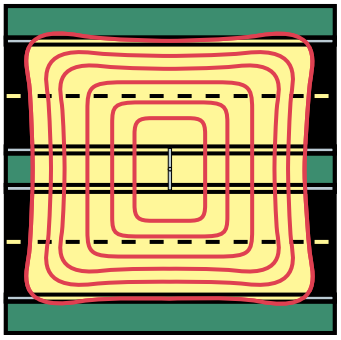
The Outdoor Tube System has been sized and configured to provide efficient lighting, from parking lots to pathways and courtyards. It is available in 6″ diameter. For parking areas a single or dual configuration at 20' to 30' is ideal. As you transition from parking lot to pathway 12' to 16' poles becomes the functional choice. The overall effect is a complete unification of the outdoor lighting scheme, with logical fixture height relative to the areas being lighted.

Roadway

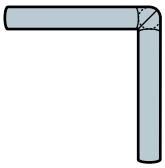
1A
Single
Mount

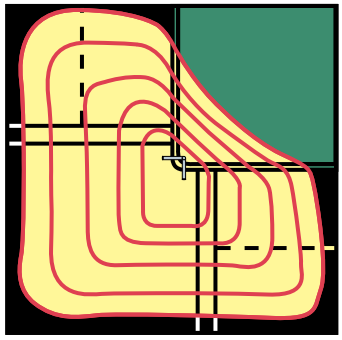


2B
Dual
Mount



2L
Dual
Mount



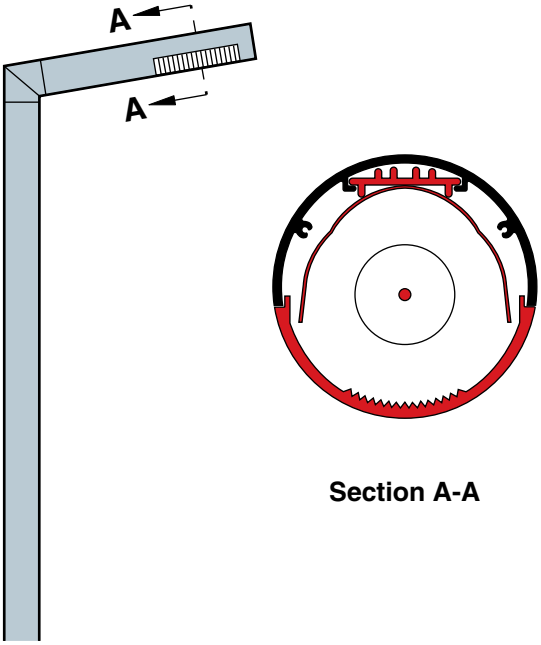


The Outdoor Tube System is an expression of simplicity combined with performance. It includes all the installation and maintenance features required in a roadway lighting system. As a single mount, the OTS provides excellent street lighting from a curbside location. For streets with a median strip, the dual mount provides complete illumination with fewer poles and simplified underground wiring. At intersections, a 2L dual mount lights the corner with increased illumination in the intersection. The Outdoor Tube System will give any city a progressive, forward-looking image.

Outstanding Features

Performance

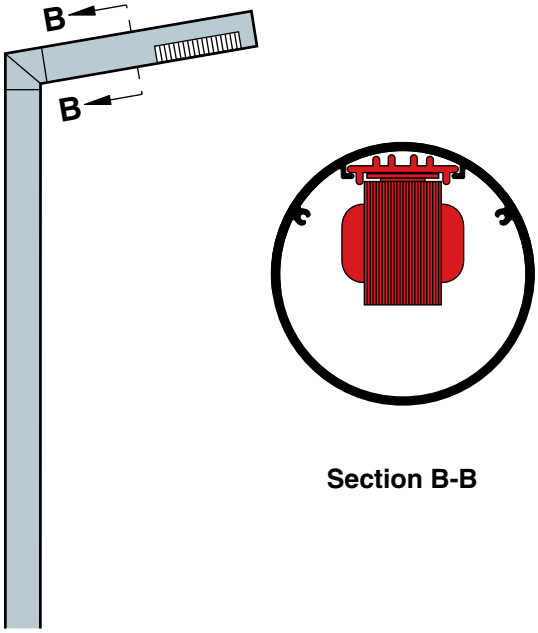
A unique combination of hydroformed reflector with borosilicate glass refractor delivers outstanding performance from the compact OTS optical compartment. A wide longitudinal light distribution produces excellent pole spacing with high pavement luminance. The refractor also controls excessive down light for superb uniformity of illumination. OTS brightness creates lighting ambience resulting in psychological comfort and visual security for people entering the lighted area. The optical chamber is easily accessible by sliding out the master mounting rail.



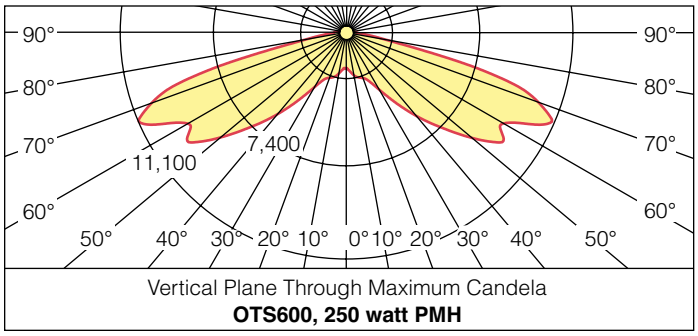
Section A-A

Master Mounting Rail (Optical/Electrical Module)

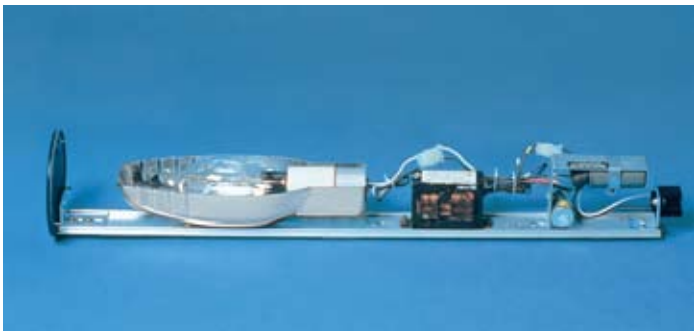
All optical and electrical components are mounted on a single rail extrusion which easily tracks in and out of the fixture. This feature eliminates hinges and latches. For access, the mounting rail is pulled out just far enough to expose the lamp. If the ballast module requires service, the entire rail is pulled from the fixture. A self-contained assembly, the ballast module attaches to the rail with keyhole slots, and is wired using quick-disconnect plugs. Spare ballast modules can be quickly inserted for continuous operation, while inoperative modules are repaired in the shop.

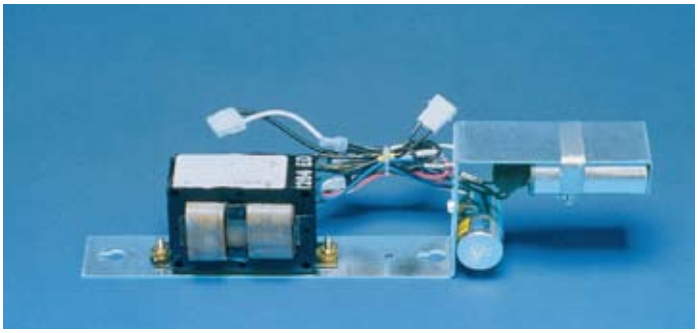


Section B-B



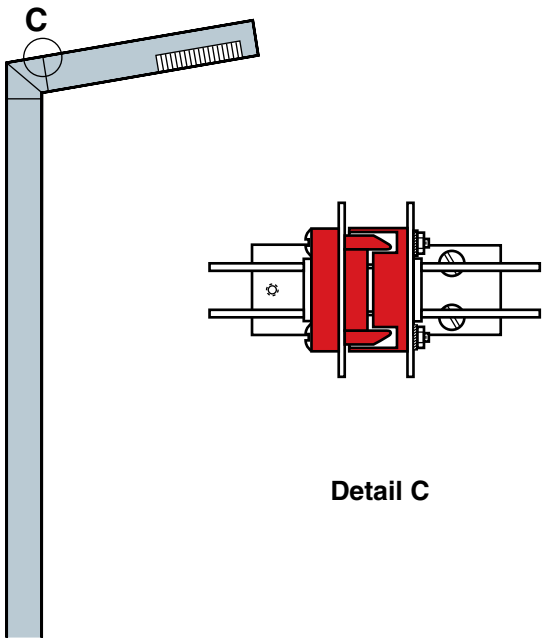
Vertical Plane Through Maximum Candela
OTS600, 250 watt PMH





Main Power Quick-disconnect

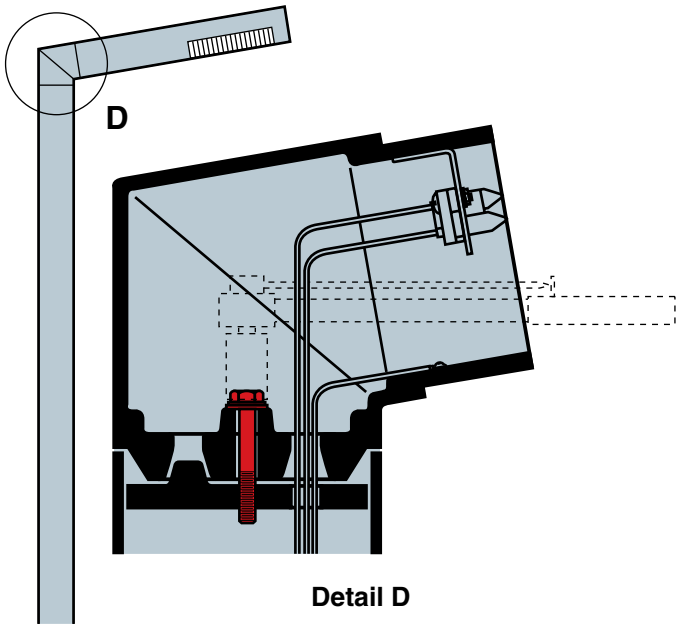
For electrical safety during relamp or ballast module servicing, power is disconnected the instant the master mounting rail is disengaged. The thermoplastic quick-disconnect plugs are self-aligning, mounted on steel brackets, and are rated for 10,000 matings. All components are wired at the factory, with leads from the female portion of the disconnect supplied long enough to reach the pole hand hole. Field splices are required at the hand hole only. The Main Power Quick-disconnect feature also makes initial installation easy because field wire connections inside the fixture are eliminated.



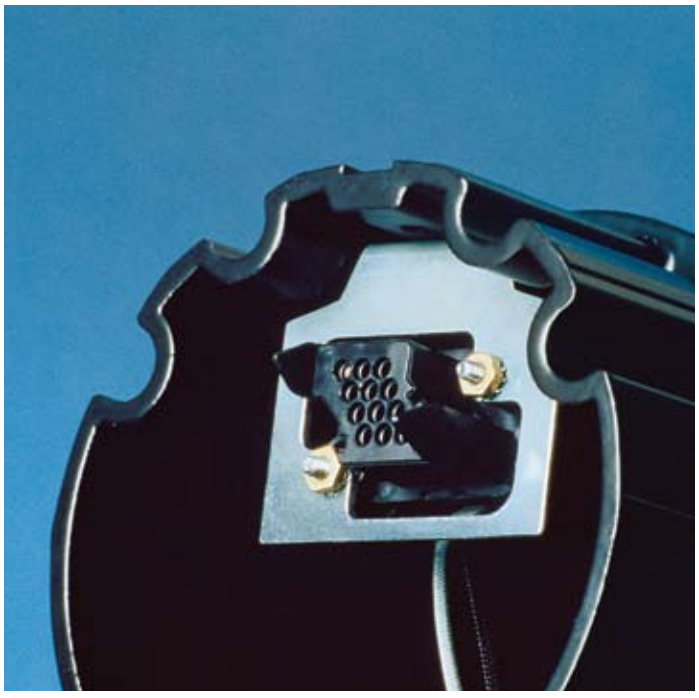
Detail C

Concealed Single Bolt Pole Attachment

Uncompromised strength and clean detailing were design parameters strictly observed in the Outdoor Tube System. The critical fixture-to-pole connection is made using an internal bolt easily accessible through the knuckle. The heavy knuckle casting mates with an internal pole casting to prevent fixture rotation in heavy wind. Once the knuckle casting is secure, fixture tubes are easily mounted using flush allen-head screws. To insure proper orientation of fixtures, pole top casting is factory aligned with the anchor base, and knuckle castings lock in 45° intervals



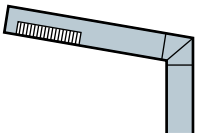
Detail D



Ordering Information

6″ Outdoor Tube System

OTS600
Mogul Base
70 to 400 Watt



Ordering Example:
For Standard Fixture and Pole

Mounting	Fixture		Electrical Module		Finish		Options		Pole	
2B	/	**OTS600**	/	**150HPS277**	/	**BL-P**	/	**A-25**	/	**PBTS12-6186 / BL-P**
1		**2**		**3**		**4**		**5-6**		**7**

See separate Kim Arms & Pole Selection Guide.

1 Mounting:

Plan View:

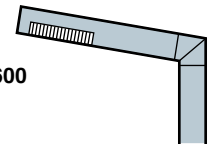
Cat. No.:	**1A**	**2B**	**2L**
EPA:	1.4	2.7	1.7

Consult representative for other mounting options.

2 Fixture:

Cat. No. designates **OTS** fixture diameter.

OTS Fixture:
Cat. No.: **OTS600**



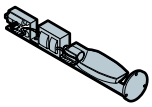
See the **OTS Photometric Catalog** for selection of fixture and mounting configuration based on photometric performance.

3 Electrical Module:

PMH = Pulse Start Metal Halide

HPS = High Pressure Sodium

See lamp and electrical data on pages **16 - 17** for ballast types and characteristics.



70HPS120	**100HPS120**	**150HPS120**	**250HPS120**	**400HPS120**
70HPS208	**100HPS208**	**150HPS208**	**250HPS208**	**400HPS208**
70HPS240	**100HPS240**	**150HPS240**	**250HPS240**	**400HPS240**
70HPS277	**100HPS277**	**150HPS277**	**250HPS277**	**400HPS277**
70HPS347	**100HPS347**	**150HPS347**	**250HPS347**	**400HPS347**
70HPS480	**100HPS480**	**150HPS480**	**250HPS480**	**400HPS480**

175PMH120	**250PMH120**	**320PMH120**	**350PMH120**	**400PMH120**
175PMH208	**250PMH208**	**320PMH208**	**350PMH208**	**400PMH208**
175PMH240	**250PMH240**	**320PMH240**	**350PMH240**	**400PMH240**
175PMH277	**250PMH277**	**320PMH277**	**350PMH277**	**400PMH277**
175PMH347	**250PMH347**	**320PMH347**	**350PMH347**	**400PMH347**
175PMH480	**250PMH480**	**320PMH480**	**350PMH480**	**400PMH480**

4 Finish:

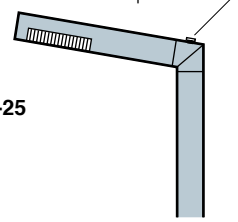
Super TGIC powder coat paint over a Titanated Zirconium conversion coating.

Color:	Black	Dark Bronze	Light Gray	Platinum Silver	White	Custom Colors
Cat. No.:	**BL-P**	**DB-P**	**LG-P**	**PS-P**	**WH-P**	**CC-P** Consult representative for custom colors.

5 Optional Photocell Receptacle:

Receptacle provided for NEMA base photocells (by others).

Photocell Receptacle

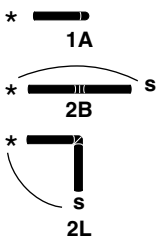


Cat. No.: **A-25**

Mounting:

***** - Fixture with photocell receptacle

s - slave unit(s)



Allowable Wattage per fixture:	70-400W

6 Optional Lens Guard:

Cat. No.: **LG600** For OTS600 fixtures only.

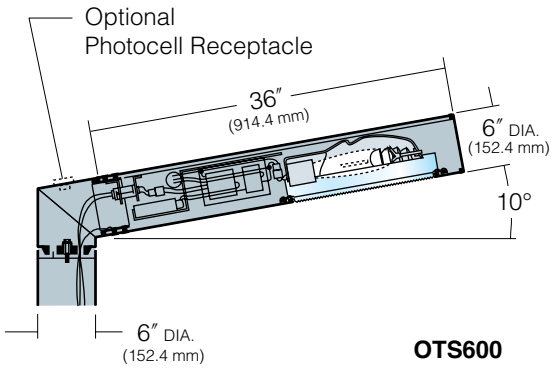
7 Poles:

See Kim Pole Catalog for a complete selection of round poles in aluminum.

Luminaire and Option Specifications

OTS600

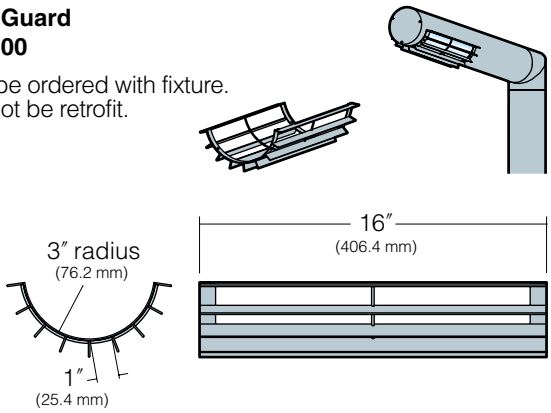
Dimensions



OTS600

Lens Guard
OTS600

Must be ordered with fixture.
May not be retrofit.



Fixture Tube: One-piece extruded aluminum with an internal track for supporting a master mounting rail. Fixture Tube attaches to the knuckle casting using flush, countersunk, socket head screws at top and bottom only. Tube is milled to receive a molded borosilicate glass lens, which is fully gasketed around the perimeter and is retained by internal clips with no exposed fasteners or support frame. Access to the tube interior is through the end.

Optical/Electrical Module: An extruded aluminum master mounting rail which contains the end cap, reflector with socket, ballast module, and male portion of a main power quick-disconnect. Mounting rail tracks in and out of the fixture tube by using the end cap as a handle. End cap is cast aluminum, fully gasketed, and is mounted to the rail extrusion using a slip bracket which permits the cap to be fully gripped as a handle. End cap closes and seals the fixture tube using flush, countersunk, captive allen-head screws.

Reflector Module: One-piece hydroformed aluminum specular Alzak® finish. Reflector is contoured to keep redirected energy to the lamp below lamp manufacturer's limits for optimum service life. All HPS and PMH sockets are mogul base rated 4KV. All MH sockets are pin-oriented mogul base. All socket wires terminate in a quick-disconnect plug for quick attachment to the ballast module.

Electrical Module: All electrical components are UL and CSA recognized. Self-contained sub-assembly attaches to the master mounting rail with keyhole slots. Ballast Module is factory prewired with quick-disconnect plugs for quick attachment to the socket and main power quick-disconnect. All ballasts are high power factor with starting temperatures of -40°F. for HPS and -20°F. for MH lamp modes.

Main Power Quick-disconnect: Provided between the master mounting rail and the knuckle. Quick-disconnect plugs are glass-filled thermoplastic, held in steel brackets, self-aligning, and rated for 10,000 matings. Male portion of plug is mounted to the master mounting rail with wires terminating in a quick-disconnect plug for attachment to the ballast module. Female portion of plug is mounted to the knuckle with wires supplied to the pole hand hole. Power to master mounting rail immediately disconnects when rail is pulled.

Knuckle: One-piece heavy cast aluminum with a single internal bolt for mounting to the pole. Knuckle casting interlocks with an internal pole casting to prevent rotation and allow fixture orientation at 45° intervals. Female portion of main quick-disconnect plug is mounted inside the knuckle with wires supplied to the pole hand hole. A ground wire, attached to the knuckle casting, is also supplied to the hand hole.

Optional Photocell Receptacle: Factory installed and prewired at the top of knuckle, one per pole, and accepts NEMA base photocells (by others).

Optional Lens Guard: Welded 14 gauge stainless steel. Mounting holes provided in housing for stainless steel mounting screws. Field attachment required. Must be ordered with fixture. May not be retrofit. Finished in raw stainless steel. **NOTE:** Recommended for use with clear lamps only. Illuminance is reduced 10%.

Finish: Super TGIC thermoset polyester powder coat paint, 2.5 mil nominal thickness, applied over a Titanated Zirconium conversion coating; 2500 hour salt spray test endurance rating. Standard colors are Black, Dark Bronze, Light Gray, Platinum Silver, or White. Custom colors are available.

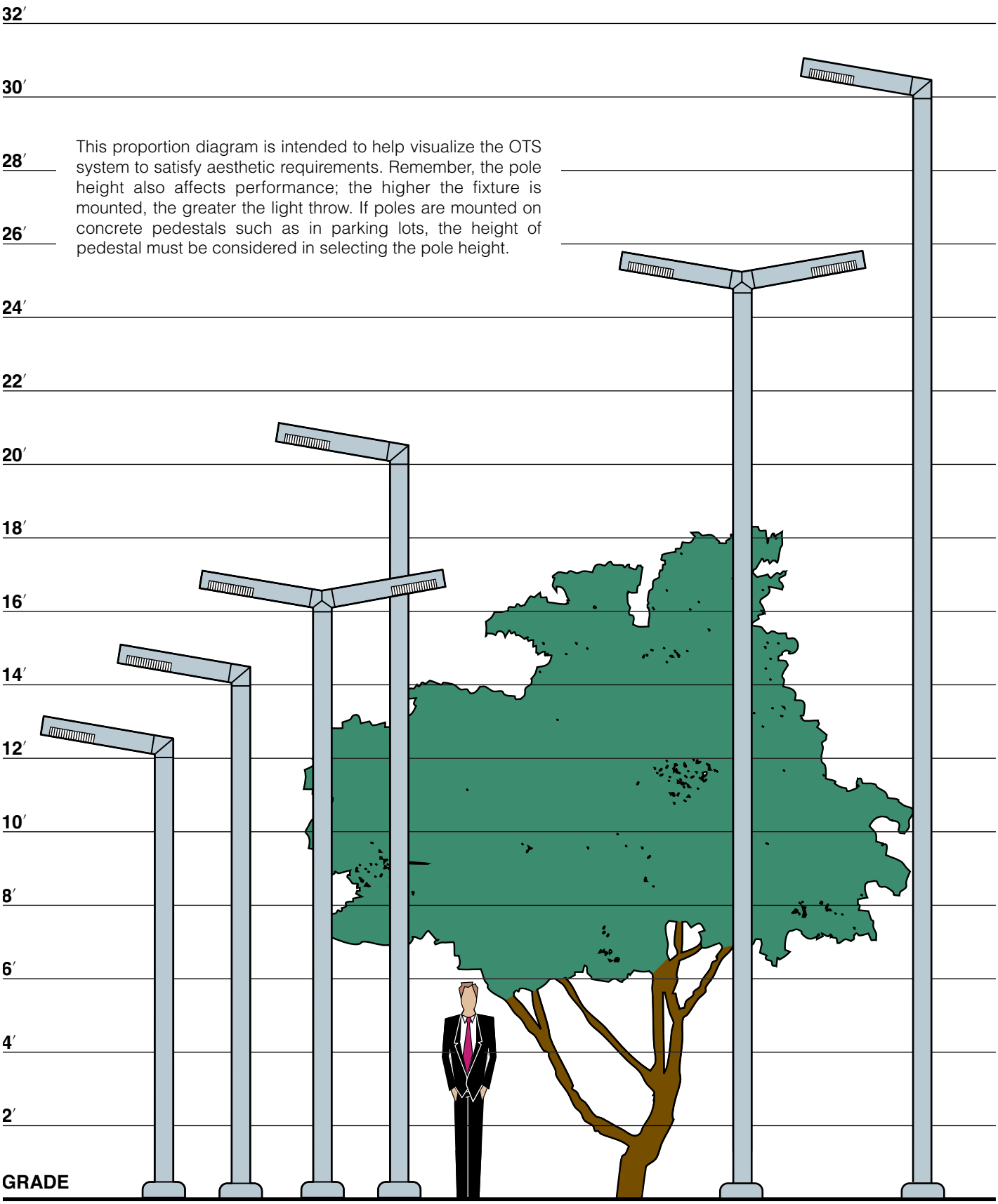
CAUTION: Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.

Listings and Ratings		
UL cUL 1598	4G Vibration[1]	
IP55 Rated	CE	
Co = Cut Off[2]		

[1] 5K Cycle Tested
[2] Dark Sky Legislation Compliant

70 to 400 Watt / 12′ to 30′ Poles

This proportion diagram is intended to help visualize the OTS system to satisfy aesthetic requirements. Remember, the pole height also affects performance; the higher the fixture is mounted, the greater the light throw. If poles are mounted on concrete pedestals such as in parking lots, the height of pedestal must be considered in selecting the pole height.



Lamp and Electrical Guide

Lamp	Lamp Watts	ANSI Ballast Type	Life (Hours)	Initial Lumens	Voltage	Operating Amps.	Open Circuit	Starting Amps.	Max. Amps.
HIGH PRESSURE SODIUM									
70HPS E-23½ Clear Mogul Base	70	S-62	24000+	6300	120	0.82	1.40	0.09	1.40
					208	0.48	0.83	0.50	0.83
					240	0.41	0.72	0.44	0.72
					277	0.36	0.62	0.35	0.62
					347	0.30	0.55	0.30	0.55
					480	0.21	0.36	0.21	0.36
100HPS E-23½ Clear Mogul Base	100	S-54	24000+	9500	120	1.14	2.20	0.80	2.20
					208	0.66	1.40	0.55	1.40
					240	0.57	1.10	0.41	1.10
					277	0.49	0.95	0.35	0.95
					347	0.39	0.70	0.45	0.70
					480	0.29	0.55	0.35	0.55
150HPS E-23½ Clear Mogul Base	150	S-55	24000+	16000	120	1.66	3.00	1.95	3.00
					208	0.96	1.65	1.10	1.65
					240	0.83	1.45	0.95	1.45
					277	0.72	1.25	0.88	1.25
					347	0.56	0.92	0.52	0.92
					480	0.42	0.70	0.50	0.70
250HPS E-18 Clear Mogul Base	250	S-50	24000+	28500	120	2.50	1.70	1.65	2.50
					208	1.50	1.00	0.95	1.50
					240	1.30	0.85	0.80	1.30
					277	1.10	0.75	0.70	1.10
					347	0.93	0.70	0.60	0.93
					480	0.63	0.45	0.40	0.63
400HPS E-18 Clear Mogul Base	400	S-51	24000+	50000	120	3.80	2.00	3.30	3.80
					208	2.20	1.20	1.80	2.20
					240	1.90	0.95	1.50	1.90
					277	1.70	0.85	1.40	1.70
					347	1.32	0.70	1.00	1.32
					480	0.97	0.55	0.75	0.97
PULSE START METAL HALIDE [2]									
175PMH ED-17 Clear Mogul Base	175	M-152	15000+	16600	120	1.90	1.00	1.00	1.90
					208	1.05	0.60	0.60	1.05
					240	0.95	0.50	0.50	0.95
					277	0.80	0.45	0.45	0.80
					347	0.65	0.35	0.35	0.65
					480	0.50	0.25	0.25	0.50
250PMH ED-28 Clear Mogul Base	250	M-138 M-153	11000+	23600	120	2.50	1.40	2.30	2.50
					208	1.45	0.80	1.30	1.45
					240	1.25	0.70	1.15	1.25
					277	1.10	0.60	1.00	1.10
					347	0.90	0.70	0.75	0.90
					480	0.62	0.62	0.32	0.62
320PMH BT-28 Clear Mogul Base	320	M-132 M-154 M-170	20000+	30000	120	3.25	2.30	1.80	3.25
					208	1.90	1.35	1.05	1.90
					240	1.65	1.15	0.90	1.65
					277	1.40	1.00	0.80	1.40
					347	1.10	0.80	0.70	1.10
					480	0.80	0.60	0.45	0.80

Lamp	Lamp Watts	ANSI Ballast Type	Life (Hours)	Initial Lumens [1]	Voltage	Operating Amps.	Open Circuit	Starting Amps.	Max. Amps.
PULSE START METAL HALIDE [2]									
350PMH					120	3.40	2.20	2.20	3.40
BT-28 Clear	350	M-131	20000+	33000	208	2.00	1.30	1.30	2.00
Mogul Base		M-171			240	2.00	1.10	1.10	2.00
					277	2.00	1.00	1.00	2.00
					347	2.00	0.80	0.85	2.00
					480	2.00	0.60	0.60	2.00
400PMH					120	4.00	2.00	3.50	4.00
BT-37 Clear	400	M-135	15000+	40000	208	2.30	1.15	2.00	2.30
Mogul Base		M-155			240	2.00	1.00	1.75	2.00
		M-172			277	1.75	0.85	1.50	1.75
					347	1.40	0.70	1.20	1.40
					480	1.00	0.55	0.90	1.00

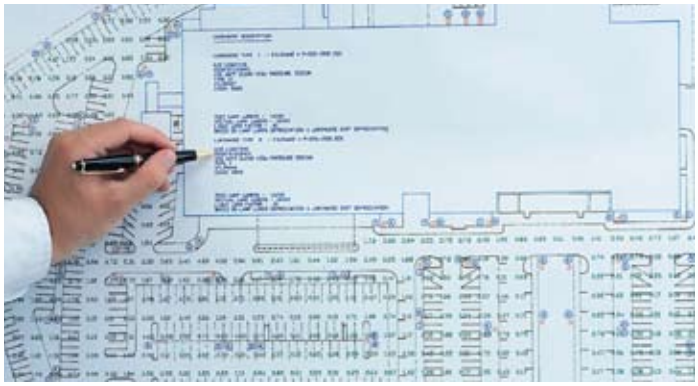
1 All initial lumen values shown may vary, from one manufacturer to another. Consult lamp manufacturer's data for exact lumen and life data.
2 Data provided is extracted from Venture Uni-Form product information.

NOTE: For lamp/ballast information outside of the U.S.A. and Canada, please consult your local Kim representative.

WARNING: All fixtures must be grounded in accordance with local codes or the National Electrical Code. Failure to do so may result in serious personal injury.

Lamps by others.

Application Engineering Services



Applications Assistance

Kim Lighting utilizes the latest computer technology and software to provide specifiers with reliable evaluations of lighting system performance.

Kim can analyze a proposed luminaire layout or provide recommendations based on performance criteria.

Hard copies of plans can be sent directly to the Kim Applications Department via fax, express or regular mail. Any .dwg or .dxf file can be transmitted via modem or email **(kim.apps@kimlighting.com)**, or placed on diskette, CD ROM or Zip disk, and forwarded to Kim Lighting c/o Kim Apps.

Photometric Files

Kim photometric files are available free in both electronic and hard copy format.

Electronic photometric files include .pdf file format pages for printing and .ies files for use in lighting calculation software. The complete .ies / .pdf library is available on CD ROM and on the internet at **www.kimlighting.com.**

OTS

Outdoor Tube System

Because of a continuing product improvement program, Kim Lighting reserves the right to change specifications without notice.

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Let us know by visiting our web site at:
www.kimlighting.com

Your input is valuable to us.

KIM LIGHTING

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