UNIVERSITY OF NOTRE DAME

FACILITIES DESIGN AND OPERATIONS

EXTERIOR LIGHTING STANDARD

Date December 21, 2020 Rev. No. 3

Introduction:

This standard is intended to provide direction for architects, engineers, planners, contractors and service personnel with regard to a consistent and comprehensive exterior lighting standard. This standard is applicable to all projects. As a primary goal this standard seeks to meet the requirements set forth for light trespass and night sky access for all projects.

Purpose:

This document addresses standards for exterior lighting used for walkways, roadways, parking lots and other outdoor lighting applications. The intent of this standard is to ensure proper lighting levels, lighting quality, fixture appearance, and overall lighting standardization. Reduction of light trespass from campus, reduction of sky-glow to increase night sky access, improved nighttime visibility through glare reduction and reduced development impact from lighting on nocturnal environments is also addressed as required for LEED compliance and as practical by this standard.

Standard Poles and Fixtures:

Walkways

Typically the University's Campus Standard light pole and fixture will be as currently supplied by Sternberg Vintage Lighting consisting of a 12' cast aluminum pole with

> MS805ALED / 7312TO / 4ARC45T5 / CTA (63 watt LED, 4500K) / Silver Fixture and Dark Bronze Duranodic pole finishes / Clear Textured Acrylic (CTA) lens /solid top fixture

In general fixtures operate at 208 VAC single phase and are spaced nominally 80' on center.

Roadways

The current University standard is a Kim Warp9 WP9L fixture(s) mounted on a 6" round aluminum pole, dark bronze, height from 25-30', distribution and wattage can differ depending on application, typically 132 watt LED and at 100' spacing.

In certain applications the Campus Standard described in the Walkway section is also used for roadways.

In general fixtures operate at 208 VAC single phase and are spaced 80-100' on center.

Parking Lots

The current University standard is a Kim Warp9 WP9L fixture(s) mounted on a 6" round aluminum pole, dark bronze, height from 25-30', distribution and wattage can differ depending on application, typically 132 watt LED and at 100' spacing.

In certain applications the Campus Standard described in the Walkway section is also used for parking lots.

In general fixtures operate at 208 VAC single phase and are spaced 80-100' on center.

Other

Building mounted lighting are discouraged unless absolutely necessary. LED type fixtures are preferred. Decorative entry identification fixtures are acceptable. Wall packs are prohibited.

There is not specific standard fixture, but a variety of Herwig lighting fixtures that have been used including:

128	129	193	218
231	901	902	
A-150	A-227	B-227	B-241
B-543	BG-243		
C-129	C-230	G-166	G-251
G-491	G-492	G-493	G-508
#14 Decco 540			

Systems and Controls

1. Site Lighting systems shall typically be designed based on a three phase lighting circuit with individual fixtures connected uniformly (single phase loads) on each of the three phases of the lighting circuit.

2. 208 V three phase circuits are typical such that a common source also supporting any 120V convenience loads can be provided, while reducing currents and minimizing voltage drop on lighting circuits.

3. Typically 30A circuits are used providing appropriate lighting control configurations.

4. Conduit systems consisting of either 1" or 2" Schedule 40 PVC shall be used based on the largest size practical to enter and exit a given pole base. Typically the Campus Standards are 2" and the other smaller poles are 1".

5. All circuits shall include a ground and a neutral conductor. All empty conduits shall include a pull string.

6. Pole locations that provide a potential for future extension shall include at a minimum at least one spare conduit stubbed for future use.

7. Conduits from pole to pole shall be routed where possible under sidewalks and on the backs of curbs to allow for maximum planting areas for landscape materials.

8. Three-phase electrically held lighting contactors using astronomic time clocks shall be used.

9. Elapsed time meters are to be provided to track hours of operation on each circuit.

10. Light pole bases shall be per UND standard details available from the Utilities Department and shall include proper grounding and reinforcement.

11. Sports lighting applications shall use electrically operated, mechanically latching contactors.

12. Astronomic Clock shall be provided to control the outdoor lights. The University will provide this panel and decide on its location.

13. Outdoor lighting controls shall be installed in low profile cabinets and shall include additional convenience power.

14. Outdoor control panels shall include cabinet heat sources to ensure the integrity of the installed components by preventing condensation. Heaters or lights used for heating shall be rated at least twice the circuit voltage (240V heaters connected to 120V or two lamps in series on a 120V circuit) to ensure long life.

15. All underground conduits entering either a low profile outdoor control cabinet or an indoor control cabinet shall be sealed to prevent the entrance of either water or humid air into the cabinets.

16. Additional spare conduits shall be run in consideration of future expansion or changes to an outdoor lighting system.

17. Handholes, pre-cast type such as manufactured by Quazite or an approved equal shall be provided for periodically to support cable pulling, future expansion, or transitioning to multiple loads. Typically, handhole covers are stamped "ELECTRIC"..

18. Exterior lighting systems commonly include periodic pole mounted (interior) convenience outlets, power to security phones, traffic gates and traffic signals. Any telecommunications wiring associated with these devices may also be run in common trenches, but shall be in their own raceway system including appropriate handholes.

19. Poles shall be labeled using the Utilities Department standard numbering system which denotes a pole and fixtures location, source of power and circuiting. Contact the Utilities Department for further details.

LEED Compliance

Environmental Zone Designation:

Upon determination of a project boundary the designer shall determine and designate the environmental zone as defined by IESNA RP-33.

LZ1:	Dark (Park and Rural Settings)
LZ2:	Low (Residential Areas)
LZ3:	Medium (Commercial/Industrial, High Density Residential)
LZ4:	High (Major City Centers, Entertainment Districts)

Establish applicable site boundaries

Once the environmental zone designation has been established, the applicable site boundaries shall be determined as follows per the established environmental zone:

LZ1:	The inner boundary shall coincide with the real campus boundary. The outer boundary shall extend 10' beyond the inner boundary.
LZ2:	The inner boundary shall coincide with the real campus boundary except where the campus abuts a public right of way in which case the inner boundary shall extend to the curb line. The outer boundary shall extend 10' beyond the inner boundary.
LZ3 & LZ4:	The inner boundary shall coincide with the real campus boundary except where the campus abuts a public right of way in which case the inner boundary shall extend to the curb line. The outer boundary shall extend 15' beyond the inner boundary.

For All Zones: Where a single luminaire illuminates the intersection of a campus driveway and a public roadway, the inner boundary shall be extended to the centerline of the public roadway for a length of 2 times the driveway width centered at the centerline of the driveway. The outer boundary shall be extended 10' (15' for LZ3 or LZ4) beyond the inner boundary.

Light Pollution – Sky Glow

A site lumen calculation shall be conducted to verify that the maximum sky glow threshold, based on the environmental zone designation. The sky glow thresholds by zone are summarized as follows.

LZ1:	0%
LZ2:	2%
LZ3:	5%
LZ4:	10%

Light Pollution – Light Trespass

Once the preliminary exterior lighting design has been completed and if required to demonstrate LEED compliance a photometric analysis shall be prepared to confirm that the horizontal and vertical illuminance thresholds at the inner and outer boundaries, relative to the established environmental zone designation are not exceeded. This analysis should exclude lighting for athletic play areas. Illuminance thresholds by zone designation are as follows:

LZ1: Inner boundary: 0.01 horizontal and vertical footcandles

LZ2: Inner boundary: 0.10 horizontal and vertical footcandles
Outer boundary: 0.01 horizontal footcandles

LZ3: Inner boundary: 0.20 horizontal and vertical footcandles
Outer boundary: 0.01 horizontal footcandles

LZ4: Inner boundary: 0.60 horizontal and vertical footcandles
Outer boundary: 0.01 horizontal footcandles

For projects with athletic play area lighting, conduct a separate photometric analysis which includes such lighting to confirm that the horizontal and vertical illuminance thresholds at the inner and outer boundaries, relative to the established environmental zone as summarized below, are not exceeded.

LZ1: Inner boundary: 0.10 horizontal and vertical footcandles
Outer boundary: 0.01 horizontal footcandles

LZ2: Inner boundary: 0.30 horizontal and vertical footcandles
Outer boundary: 0.01 horizontal footcandles

LZ3: Inner boundary: 0.80 horizontal and vertical footcandles
Outer boundary: 0.01 horizontal footcandles

LZ4: Inner boundary: 1.50 horizontal and vertical footcandles
Outer boundary: 0.01 horizontal footcandles

All sports lighting that is publicly controlled shall include automatic features prohibiting operation during daylight hours and to provide for a specific shutdown time. Specific shutdown times shall be dependent of the application and use. User initiation during periods when lighting is permitted to be used shall require manual initiation and will provide a fixed duration of lighting without reinitiating the control system to avoid extended illumination without use. Typically 90 minutes of service per initiation will be provided with shutdown of systems typically occurring at 12 AM. For facilities used for events or under the exclusive control of authorized personnel either the controls will include override features to avoid event disruptions or they will have no automatic shutdown controls.

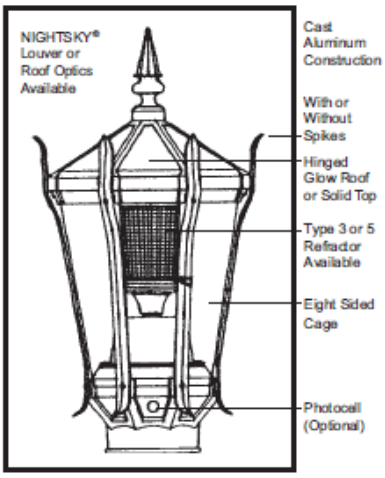
Lighting Power Density

Once the preliminary exterior lighting design has been completed, a lighting power density analysis shall be performed in accordance with ASHRAE 90.1-2007 Section 9 to confirm that the tradable and non-tradable lighting power densities are compliant with the maximum levels established by table 9.4.5 within the standard.

Compliance

Once the preliminary exterior lighting design has been completed, the design may be finalized only if compliance with the Light Pollution (sky glow and light trespass) and the Lighting Power Density requirements is met.

MS805A/MS805AO MS805B/MS805BO MAIN STREET SERIES SPECIFICATIONS



EPA = 2.46 (ft²)
WEIGHT = 38 LBS

GENERAL

The MS805 Main Street series is a modern replica of a popularly styled octagonal fixture, available with (A) or without (B) decorative spikes. It shall be appointed with a cast aluminum 6 1/2" decorative spiked finial.

FITTER

The fitter shall be heavy wall cast aluminum, 356 alloy for high tensile strength. It shall have an inside diameter opening to attach to 3", 4", 5", 6" or 7" pole or tenon. When ordered with a Sternberg pole, the fitter shall be set screwed to the pole top or tenon.

BALLAST HOUSING

The ballast housing shall be heavy wall cast aluminum, 356 alloy for high tensile strength and to ensure high capacity heat sinking of ballast temperatures. Keeping the ballast cooler and ensuring long life. The ballast mounting plate shall be cast aluminum and provide tool-less removal from the housing using 2 ea finger latches.

ELECTRICAL

Fixture shall be U.L. or E.T.L. listed in U.S. and Canada. H.I.D. ballasts shall be high power factor with lamp starting down to –30 degrees C. Medium base and mogul base porcelain sockets are 4KV rated. The ballast/socket assembly shall be pre-wired when ballast is located in the fitter. All compact fluorescent (PL) ballasts shall be instant start electronic with a starting temperature of down to 0 degrees F. They shall have a 4-pin socket to accept quad or triple tube lamps. Ballasts shall be DOE EISA compliant.

FIXTURE HOUSING

The MS805A fixture shall be 17 1/2" wide (19" on the diagonal) and 38" tall (with 3" tenon). The MS805B fixture shall be 16" wide (17" on the diagonal) and 38" tall (with 3" tenon). It shall be made of heavy wall cast aluminum, 356 alloy and the lens panels shall be made of vandal resistant acrylic, available in clear (CA), clear seeded (CSA), clear textured (CTA), prismatic acrylic (PA) and white acrylic (WA). The roof can be solid or lensed for up-light.

OPTICAL OPTIONS

Refractors shall be 6" diameter borosilicate glass with an I.E.S. Type 3 (RE3) or Type 5 (RE5) distribution. It shall be secured to the socket stem with 3/8" plated steel threaded pipe nipple and rest on a cast aluminum holder with anti-shock gasket. The refractor will be secured to cast holder with a quarter-turn internal aluminum twist ring for ease of maintenance.

The **NIGHTSKY® OPTI-SHIELD® Louver Optic System** (LO) shall be a multi-tier reflector reflector with 7" diameter rings to produce an I.E.S. Cut-off Type 3 or 5 distribution. The Louver Optic System shall be made of highly specular anodized aluminum and shall come standard with medium base socket.

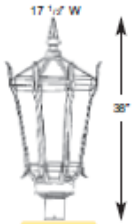
LIST NOS.
MS805A
MS805AO
MS805B
MS805BO
MAIN STREET SERIES

NIGHTSKY® STAR-SHIELD® Roof Optic distributions shall be delivered by hydroformed roof mounted reflector systems which eliminate uplight and provide cut-off. The optional reflector

See LED SECTION for Specifications on MS805A/B LED MAIN ST. SERIES

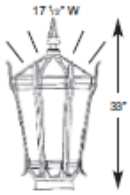
MS805A / MS805AO MS805B / MS805BO MAIN STREET FIXTURES / FITTERS / ARMS PM-WB

FIXTURES / OPTICAL SYSTEMS

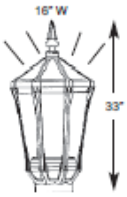


MS805A
With Spikes
Solid Roof

MS805B
Without Spikes
Solid Roof



MS805AO
With Spikes
Lensed Roof



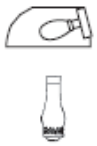
MS805BO
Without Spikes
Lensed Roof

Alzak Disc

RE3
RE5
Refractor

HSS
House Side
Shield

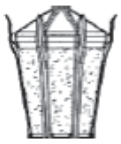
RO
Roof Optics
2, 3 or 5



FHC Frosted
Hurricane
Chimney

LO3
LO5
Louver
Optics

LENSES



CSA
Clear
Seeded
Acrylic

CA
Clear
Acrylic

CTA
Clear
Textured
Acrylic

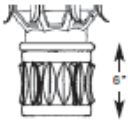
PA
Prismatic
Acrylic

WA
White
Acrylic

FITTERS

/3
Fits 3" poles
or tenons and
arms below

BD/4
Fits 4" poles
or tenons



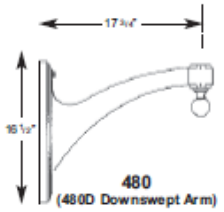
BD/5
Fits 5" poles
or tenons

/6
Fits 6" poles
or tenons

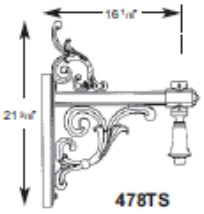
/7
Fits 7" poles
or tenons

ARMS - POST MOUNT (PM) or WALL BRACKETS (WB)

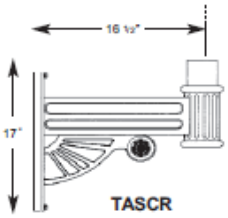
See Arms Section for more information



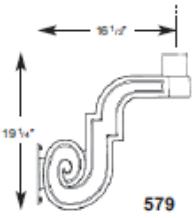
480
(480D Downswept Arm)



478TS



TASCR



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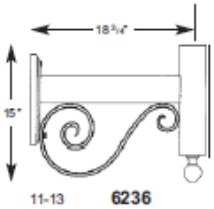
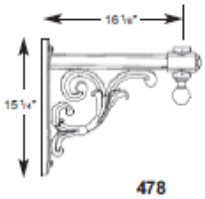


11-13 **6236**



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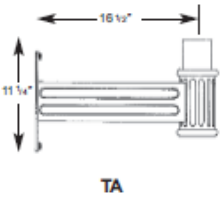
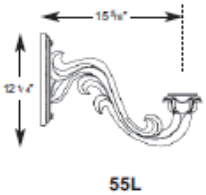
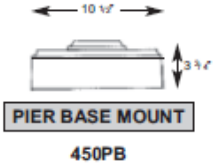


TA



55L



PIER BASE MOUNT

450PB

KIM LIGHTING

WP9L-LED
WARP9® Large PicoPrism® LED
kl_wp9lpled_spec.pdf

JOB _____ TYPE _____

NOTES _____ APPROVALS _____

FEATURES

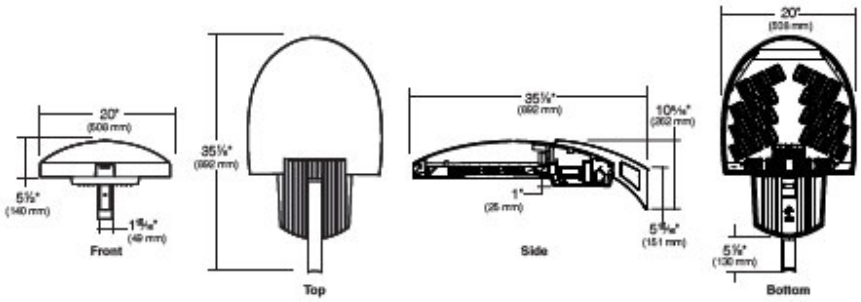
- Full Cutoff PicoPrism technology
- Patented low profile luminaire[1]
- Available in 580nm, 3000K, 4000K and 5000K standard CCT
- Type 1, 2, 3, 4, 5, R, L distributions
- 0-10V dimming drivers standard
- Sealed optical chamber, IP66 certified

Certifications

c UL us LISTED — ida 3000K and warmer CCTs only — BUY AMERICAN SOLUTIONS See Certification Specifications

SPECIFICATIONS

Max. Weight = 50 lbs. EPA .95 for 1SA.
See Configuration for Additional EPAs.



ORDERING CODE

Configuration			EPA
	1SA	1 Arm Side Mt.	.95
	2SB	2 Arm Side Mt.	1.9
	2SL	2 Arm Side Mt.	1.5
	3ST	3 Arm Side Mt.	2.4
	3SY*	3 Arm Side Mt.	2.4
	4SC	4 Arm Side Mt.	2.7
	1W	Single Wall Mt.	n/a
	HSF	Horizontal Slipfitter	n/a

*Available receptacles only. EPA is for fixture only

Fixture

Housing
- WP9L Large, 120 LEDs, 137W for 350mA, 274W for 700mA

Distribution
- 1 Type I
- 2 Type II
- 3 Type III
- 4 Type IV
- 5 Type V
- R Type R, Right
- L Type L, Left

Drive Current
- P35 350mA PicoPrism
- P70 700mA PicoPrism

Electrical Module

Source
- 120L 120 LEDs

Color Temperature[2]
- 2K 580nm[3]
- 3K 3000K
- 4K 4000K
- 5K 5000K

Voltages
- 120 120V
- 208 208V
- 240 240V
- 277 277V
- 347 347V[4]
- 480 480V[4]

Fixture Finish
- BL Black
- DB Dark Bronze
- GT Graphite
- LG Light Gray
- PS Platinum Silver
- TT Titanium
- WH White
- CC Custom Color*

*Consult representative

Photocell Options
- A25-7 7-pin Photocell Receptacle
- A30 120V Button Photocell
- A31 208V Button Photocell
- A32 240V Button Photocell
- A33 277V Button Photocell
- A34 480V Button Photocell
- A35 347V Button Photocell

NFO Option
- NFO Neighbor Friendly Optic*

*Photometry available for Type III/IV. All others, consult factory.

Control Options

Motion
- SCH-R Round Pole Mounted Occupancy Sensor up to 30'
- SCH-S Square Pole Mounted Occupancy Sensor up to 30'

Mounting Options
- VSF Vertical Slipfitter Mount for 2" pipe tenon, (2-3/8" O.D.)
- SVSF Vertical Slipfitter Mount square for 2" pipe tenon, (2-3/8" O.D.)

Side Arm Mount
- 3 3" O.D. Pole
- 3.5 3.5" O.D. Pole
- 4 4" O.D. Pole
- 5 5" O.D. Pole
- 6 6" O.D. Pole
- SQ Square Pole

Control Accessories
- SW7PR[5,6] SiteSync with 7 pin PCR
- SWUSB[†] SiteSync Software on USB
- SWTAB[†] SiteSync Windows® Tablet
- SWBRG[†] SiteSync Wireless Bridge Node
- WIR-RME-L wiSCAPE 7-pin Module
- NXOFM-1R1D-UNV NX 7-pin Module

For Pole Spec Select: http://www.kimlighting.com/products/arms_and_poles/
For Control Spec Select: http://tpss1.com/index.html

[1] US Patent No. D568,521 S. Other patents pending.
[2] For custom optics and color temperature configurations, contact factory.
[3] Turtle friendly. Maximum 500mA drive current for 2K amber option.
[4] 347V & 480V currents may be supplied with step-down transformer.
[5] Not available with other sensor or wireless control options.
[6] Specify group and zone at time of order. See www.hubbelllighting.com/sitesync for more details. Order at least one SiteSync interface accessory SWUSB or SWTAB. Each option contains SiteSync License, GUI, and Bridge Node.

Kim Lighting reserves the right to change specifications without notice.

SiteSync Lighting Control is available from our most popular brands in a broad range of award-winning product families.

† When ordering with SiteSync, one of the following interface options must be chosen and ordered separately. Each option contains the SiteSync License, GUI and Bridge Node.

HUBBELL Lighting

LUMINAIRE PERFORMANCE

Spectroradiometric			
	3000K Average	4000K Average	5000K Average
Color Rendering Index (CRI)	≥75	≥70	≥65
Power Factor	>.90	>.90	>.90

Projected Lumen Maintenance		
mA	50,000 hrs	100,000 hrs
350 mA	94.93%	90.91%
700 mA	92.26%	87.27%

Electrical Drive Current					
350mA			700mA		
Volts - AC	Amps - AC	System Watts	Volts - AC	Amps - AC	System Watts
120	1.14	137	120	2.28	274
208	0.66	137	208	1.32	274
240	0.57	137	240	1.14	274
277	0.49	137	277	0.99	274
347	0.39	137	347	0.79	274
480	0.29	137	480	0.57	274

B.U.G. Rating for 350mA (TM15) In Lumens where B = Backlight, U = Uplight, G = Glare

Temperature	Type I	Type II	Type III	Type III NFO	Type IV	Type IV NFO	Type V	Type L/R
3000K	B4 U0 G4	B3 U0 G3	B3 U0 G3	TBD	B1 U0 G3	B0 U0 G2	B4 U0 G4	B3 U0 G3
4000K	B4 U0 G4	B3 U0 G3	B3 U0 G3	TBD	B1 U0 G3	B0 U0 G3	B4 U0 G4	B3 U0 G3
5000K	B4 U0 G4	B3 U0 G3	B3 U0 G3	TBD	B1 U0 G4	B0 U0 G3	B4 U0 G4	B3 U0 G3

Absolute Lumens for 350mA

Temperature	Type I	Type II	Type III	Type III NFO	Type IV	Type IV NFO	Type V	Type L/R
3000K	11089	10879	10917	TBD	10855	8960	11174	10660
4000K	14038	13772	13820	TBD	13742	11343	14146	13496
5000K	14816	14535	14586	TBD	14503	11972	14930	14243

B.U.G. Rating for 700mA (TM15) In Lumens where B = Backlight, U = Uplight, G = Glare

Temperature	Type I	Type II	Type III	Type III NFO	Type IV	Type IV NFO	Type V	Type L/R
3000K	B4 U0 G4	B4 U0 G4	B3 U0 G3	TBD	B1 U0 G4	B0 U0 G4	B4 U0 G4	B3 U0 G3
4000K	B5 U0 G5	B4 U0 G4	B3 U0 G4	TBD	B1 U0 G4	B1 U0 G4	B5 U0 G5	B4 U0 G4
5000K	B5 U0 G5	B4 U0 G4	B4 U0 G4	TBD	B1 U0 G5	B1 U0 G4	B5 U0 G5	B4 U0 G4

Absolute Lumens for 700mA

Temperature	Type I	Type II	Type III	Type III NFO	Type IV	Type IV NFO	Type V	Type L/R
3000K	18077	17734	17796	TBD	17659	14577	18216	17378
4000K	23176	23645	23728	TBD	23430	19340	24288	22280
5000K	24103	24590	24678	TBD	24429	20165	25259	23171

LED performance and lumen output continues to improve at a rapid pace. Log onto www.kimlighting.com to download the most current photometric files from Kim Lighting's IES File Library.
For custom optics and color temperature configurations, contact factory.

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SPECIFICATIONS

Housing:

- Extruded low copper aluminum main body.
- Die-cast low copper aluminum electrical gear compartment.
- Stainless steel hardware.
- Die cast wall separates the optical and electrical compartment acting as thermal barrier.
- Electrical gear compartment doors are fastened with two hinges and a latch made of stainless steel.
- Silicone gaskets seal the compartments at the barrier surface.

Optical Module:

- PicoPrism® refractors (enclosed LED PCBs for IP66 rating) aimed toward the task and spreads horizontally to produce great uniformity.
- Type I, II, III, IV, V, L (left), and R (right) standard distributions. Custom available.
- 3000K, 4000K, 5000K standard CCT. Amber and custom available.
- IP66 certified.
- Die-cast, low copper aluminum heat sink modules provide thermal transfer at PCB level.
- Anodized aluminum carrier plate and heat sink modules.

Neighbor Friendly Optic

- Optional integrated Neighbor Friendly Optic on each LED module to completely control unwanted backlight. Most effective with Type III and IV distibutions.

Electrical Characteristics:

- Pre-assembled, aluminum gear tray.
- 120V through 480V @ 50/60Hz.
- Class 2, 350mA or 700mA
- Power Factor = >.90
- National Electrical Code, ANSI/NFPA 70.
- 10kV surge suppression.
- Thermal shield thermal control.
- -30c starting driver.
- 0-10V dimming interface.
- All electronic components are IP66 rated.
- Electronic components are UL and/or CSA recognized.
- Standard programmable driver for variable drive current settings from 350mA to 700mA.

Dimming:

- 10% to 100% dimming by the use of standard 0-10V interface driver.
- To activate the dimming system, a wiring harness is supplied and attached to the DIM Port (DIM IN) on the thermal shield protection system. This port allows the 0-10V interface to bypass the thermal shield and control the driver.
- The thermal shield works in conjunction with the control system to assure that overheating will not harm the LEDs.
- The wiring harness is connected with the use of the Purple lead as the positive (+) and the Grey lead as the negative (-) to an available control signal (by others).

Support Arm:

- Die-cast, low copper aluminum support arm for direct pole mount.
- Die-cast aluminum tool-less entry splice access cover.
- Terminal block is mounted in the arm cavity and accepts #14 to #8 wire sizes.
- Prewired to electrical module with quick-disconnect plugs located inside the electrical compartment.
- Optional cast, low copper aluminum horizontal slip-fitter with adaptor plate to secure the luminaire to 1-1/4" to 2" IPS pipe size arms.
- Optional cast aluminum wall mount plate assembly. Attaches to the wall over the junction box. Luminaire attaches to the wall plate with a square cut Speed Mount.

Finish:

- Fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) polyester powdercoat.
- Standard colors include (BL) Black, (DB) Dark Bronze, (GT) Graphite, (WH) White, (PS) Platinum Silver, (LG) Light Gray, (TT) Titanium, and (CC) Custom Color (include RAL#).

Fusing:

SF for 120, 277 and 347 Line Volts
DF for 208, 240 and 480 Line Volts.

- High temperature fuse holders factory installed inside the fixture housing. Fuse is included.

Certifications and Listings:

- UL 1598 Standard for wet locations for Luminaires.
- UL 8750 Standard for Safety for Light Emitting Diode (LED) Equipment for use in Lighting Products.
- IP66 certified.
- CSA C22.2#250.0 Luminaires.
- ANSI C136.31-2010 3G Vibration tested and compliant.
- RoHS compliant.
- This product qualifies as a "designated country construction material" per FAR 52.225-11 Buy American-Construction Materials under Trade Agreements effective 6/06/2020. See Buy American Solutions.
- IDA approved, 3000K and warmer CCTs only.

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.

WARRANTY:

- For full warranty see http://www.hubbelllighting.com/resources/warranty

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CONTROLS

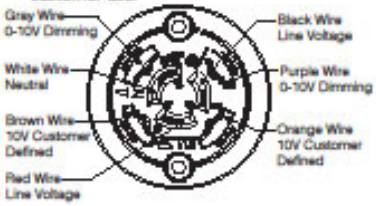
Photocell Receptacle

A25-7

Fully gasketed and wired 7-pin receptacle option. Easy access location above the electrical compartment. 7-pin construction allows for a user-defined interface and provides a controlled definition of operational performance. ANSI twist-lock control module by-others.

Standard customer operation modes:

1. Traditional on/off photoelectric control.
2. 5-pin wireless photoelectric control for added dimming feature.
3. 7-pin wireless photoelectric control for dimming and additional I/O connections for customer use.



Button Photocell

A30 for 120V, **A31** for 208V, **A32** for 240V, **A33** for 277V, **A35** for 347V, **A34** for 480V,

Photocell is factory installed inside the housing with a fully gasketed sensor on the side wall. For multiple fixture mountings, one fixture is supplied with a photocell to operate the others.

Wireless Controls

wISCAPE™

Hubbell Control Solution's wISCAPE™ wireless control modules allow an individual fixture to managed, monitored and measured. The modules communicate securely over a robust certified meshed radio signal. The wISCAPE modules provide on/off/dim control, external device input, alerts and metering.

WIR-RMI-IO

wISCAPE Internal Module, 120-480V, 1000ft range (LOS), 3 Digital Inputs/1 Analog Input, 2 Outputs.

WIR-RME-L

wISCAPE External Module,120-480V, 1000ft range (LOS), Internal Photocell, 1 Digital Input, Compatible with the A-25-7H option

SiteSync™[1]

SiteSync™ wireless control system for reduction in energy and maintenance cost while optimizing light quality 24/7. See ordering information or visit www.hubbelllighting.com/products/sitesync for more details.

Pole Mounted

Round Pole-Mounted Occupancy Sensor up to 30'

SCH-R

Round Pole-Mounted Occupancy Sensor: up to 30' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCH-R4[4]/277[2]/BL[3]

Square Pole-Mounted Occupancy Sensor up to 30'

SCH-S

Square Pole-Mounted Occupancy Sensor: up to 30' - an outdoor occupancy sensor with 0-10V interface dimming control that mounts directly to the pole. Wide 360° pattern. Module colors are available in Black, Gray, and White. Module is cut for round pole mounting. Pole diameter is needed upon order. Poles to be drilled in the field will be provided with installation instructions.

Ordering Example: SCH-S/277[2]/BL[3]

SCP

The SCP is a photo-control with motion sensing accessory thats mounts to the side of any new or existing 3"-5" round or square straight pole. The SCP enables any pole mounted luminaire in excess of 75 watts, to meet California Title 24 requirements with integral 20KV/10KA surge protection for added reliability and serviceability.

For more detail:

http://www.aal.net/products/sensor_control_programmable

[1]PRECOMMISSIONED SITESYNC ORDERING INFORMATION: When ordering a fixture with the SiteSync lighting control option, additional information will be required to complete the order. The SiteSync Commissioning Form or alternate schedule information must be completed. This form includes Project location, Group information, and Operating schedules. For more detailed information please visit www.HubbellLighting.com/products/sitesync or contact Hubbell Lighting tech support at (800) 345-4928.

SiteSync fixtures with occupancy sensor (SWPM) require the mounting height of the fixture for selection of the lens.

Examples:

SiteSync only : ALT3/P70/60L/3KU/MPS/US/SWP

SiteSync with Motion Control: ALT3/P70/60L/3KU/MPS/US/SWPM-20F

MOB ORDERING INFORMATION: When ordering a fixture with a dimming occupancy sensor option (MOB), please specify the appropriate information. These settings are specified in the ordering as shown in the example below.

ALT3/P70/60L/3KU/MPS/US/MOB - 1 to 30 min - 33%or 50% - 7' / DBT

High to Dim Delay — Low Level — Mounting Height (ft.)

[2]Voltage, [3]Color, [4]Pole Diameter

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