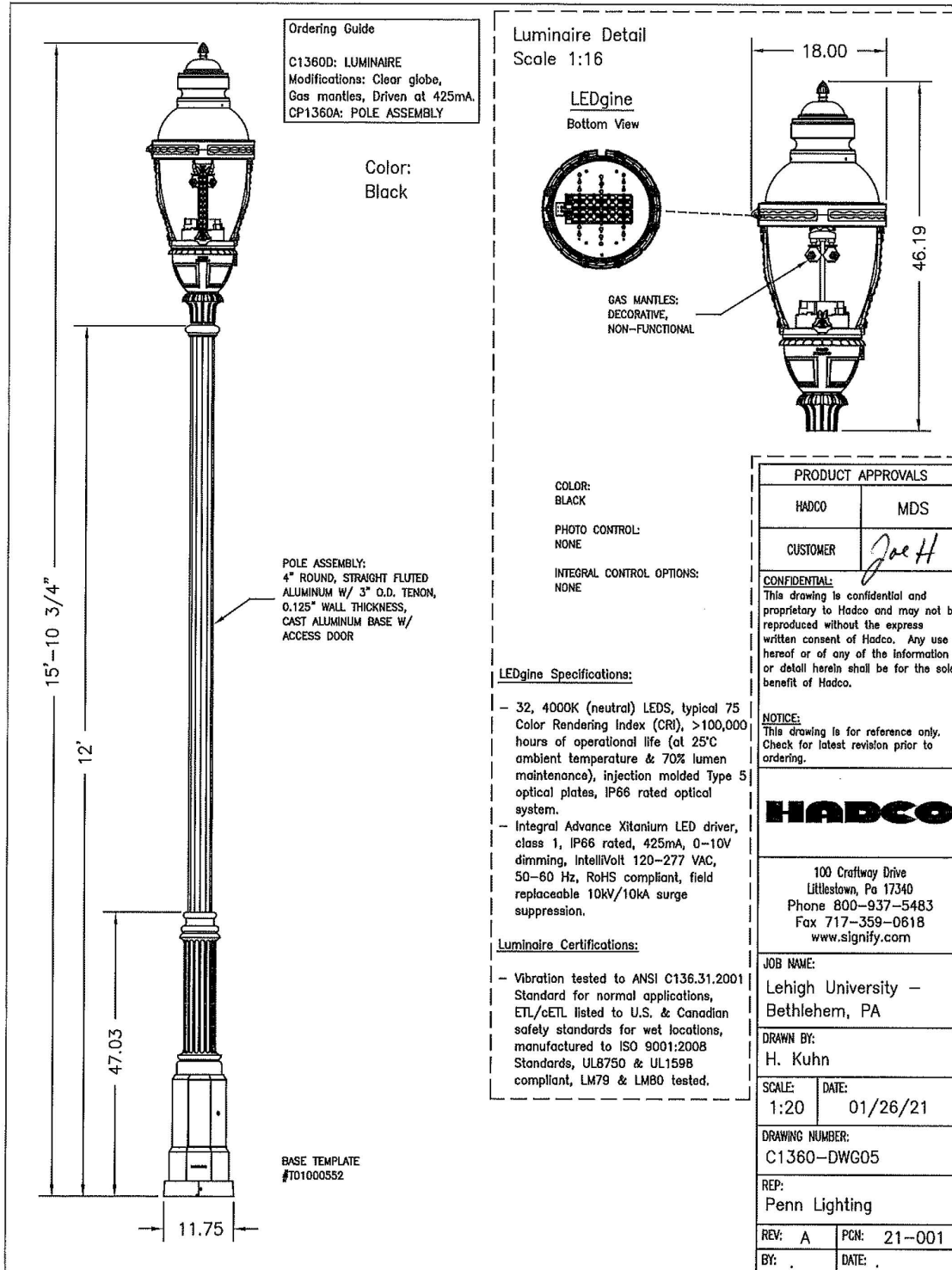

PART 1: GENERAL

- 1.01 The purpose of this standard is to outline the criteria to be used in designing new exterior lighting on campus in order to create a safe and visually cohesive lighted environment in accordance with the Lehigh University Academic Lighting Master Plan Executive Summary and Residential Lighting Master Plan Executive Summary prepared by The Lighting Practice in 2014.
- 1.02 References for Illuminance Recommendations
- A. The required illuminance levels included in this standard are from the following IESNA Guidelines:
- 1) IESNA Lighting Handbook, 10th Edition
 - 2) IESNA Recommended Practice RP-33-99, Lighting for Exterior Environments
 - 3) IESNA Recommended Practice RP-8-00, Roadway Lighting
 - 4) IESNA G-1-03 Guideline for Security Lighting for People, Property, and Public Spaces
 - 5) IESNA Recommended Practice RP-3-13, American National Standard Practice on Lighting for Educational Facilities
- 1.03 References for Light Trespass and Uplight Control Recommendations
- A. The required light trespass and uplight control criteria included in this standard are based upon the following guidelines:
- 1) The Joint IDA (International Dark Sky) – IES (Illuminating Engineering Society) Model Lighting Ordinance (MLO) with User’s Guide, June 15, 2011

PART 2: PRODUCTS

- 2.01 The following light fixtures are currently being used for new lighting projects on campus. Contact Facilities Services and Campus Planning and Projects to confirm which of these lights should be used for new projects based upon the campus setting and to obtain additional design parameters, including existing electrical service information.
- A. LED Victorian Style Fixture:
1. Hadco
 2. Alternate to be used only where an existing PennGlobe fixture is to be replaced in kind: PennGlobe Newport 1000 Luminaire with Boston Fluted Post
- B. LED Roadway Fixtures:
1. Luminoso LED Lighting LRL Series Area Light to be used within Asa Packer Campus
 2. Note: The Wattage, Photocell, Finish, and Pattern are location specific. Standard features are 120/277 volt and 4000K.
- C. LED Parking Lot Fixture: Kim Lighting Altitude 96
- D. LED Residential Fixture: Beacon Lighting La Jolla

EXAMPLE of Victorian Fixture



EXAMPLE of ALTERNATE Victorian Style Fixture (Distribution Type varies per actual location)

The Legendary Name in Street Lighting

THE PENNSYLVANIA GLOBE GASLIGHT CO.
300 Shaw Road North Branford CT 06471
Tel: 203 484 7749 Fax: 203 484 7758
www.PennGlobe.com

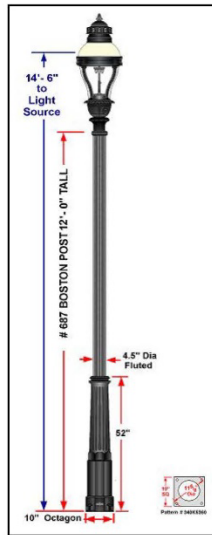
MADE IN CT

PennGLOBE
MANUFACTURING SMART LIGHTING SOLUTIONS

SPECIFICATION DWG# 077-8803-F660-P687
LEHIGH UNIVERSITY

PROJECT #077-8803

DATE: 11/20/14
SO# xxxxxx



PRIMARY LIGHT SOURCE:
PennSTAR® LED

PLATFORM:
PLANNUS

WATTS:
20W / 40W

VOLTAGE: AUTONSENSE
120V-277V

DOME/GLOBE:
WHITE ALUMINUM DOME
CLEAR ACRYLIC GLOBE
POLE HEIGHT:
12' OAL
CONFIGURATION/MATL:
BOLT DOWN
ACCESS DOOR
ALUMINUM CONSTRUCTION

BOLT COVER:
(4) SMALL INDIVIDUAL

OPTIONS:
BETHLEHEM HISTORIC VENT
WITH FINIAL
CLEAR MANTLES

FINISH:
BLACK 1003X LT

QUANTITY:
(XX)

APPROVED BY: _____
DATE: _____

STOCK NUMBER	DESCRIPTION
F660-GX919-LH925-3 (Type III) F660-GX919-LH925-5 (Type V)	NEWPORT 1000 LUMINAIRE—40W LED
F660-GX919-LH922-3 (Type III) F660-GX919-LH922-5 (Type V)	NEWPORT 1000 LUMINAIRE—20W LED
P687-W1221-1000	BOSTON FLUTED POST

PREPARED BY: M. Stonier

The information contained in this drawing is the sole property of The Pennsylvania Globe Gaslight Co. Any reproduction in part or as a whole without the written permission of The Pennsylvania Globe Gaslight Co. is prohibited and may be subject to legal restriction or sanction. The information contained is privileged and confidential and may be protected from disclosure.



Catalog No: LUMINAIRE: F660-GX919-LH922-3
POLE: P687-W1221-1000

Lamp Type: LEDs BY MANUFACTURER

EXAMPLE of Luminoso LED Lighting LRL Series Area Light



Project		Date
Type		
Model		

LRL Series LED Area Light
Features
Construction:

- Heavy-duty cast aluminum housing and removable door 3G vibration rated to ensure strength of construction and longevity in application.
- Housing is completely sealed against moisture and environmental contaminants.

Optics:

- Available in IES Type II, III, IV, distributions.
- Offered Standard in 3000K 3500K 4000K and 5000K (+/- 275K) CCT and minimum 70 CRI.
- Scalable Lumen Packages from 6,100 to 20,000 Lumens replaces up to 400W Metal Halide.
- Optics is precisely designed to shape the distribution, maximizing efficiency and application spacing.

Electrical:

- Standard drivers feature electronic universal voltage (120-277V 50/60Hz), 347V 60Hz or 480V 60Hz operation.
- Standard 1-10V dimming and 10kV/10kA common- and differential- mode surge protection available.
- Greater than 0.9 power factor, less than 20% harmonic distortion, and is suitable for operation in -40°C to 45°C ambient environments.
- LED drivers mount to die-cast aluminum back housing for optimal heat sinking, operation efficacy, and prolonged life.

Controls:

- Optional Photocell

Ambient Temperature:

- Ambient operating temperature -40°F to 113°F

Lifespan:

- Estimated 100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.


Finish:

ORDER INFORMATION

EXAMPLE: LRL-150W-Y-50K-3M-21-SV



Series	Wattage	Voltage	CCT	Optics	Mount	Photocell	Finish
LRL	45W	Y = 120-277V	30K = 3000K	3M	21 = Direct Arm Mount	Blank=None	BK=Black
	70W	HV = 347-480V	35K = 3500K	4M		PC=120-277V	BZ=Bronze
	100W*		40K = 4000K	5M		PC3=348V	SV=Silver
	110W*		50K = 5000K			PC4=480V	WH=Whit
	150W						

Enter configuration:

** Special Order

* Note for 100W/110W: The 100W operates at 120-277V, the 110W operates at 347/480V.

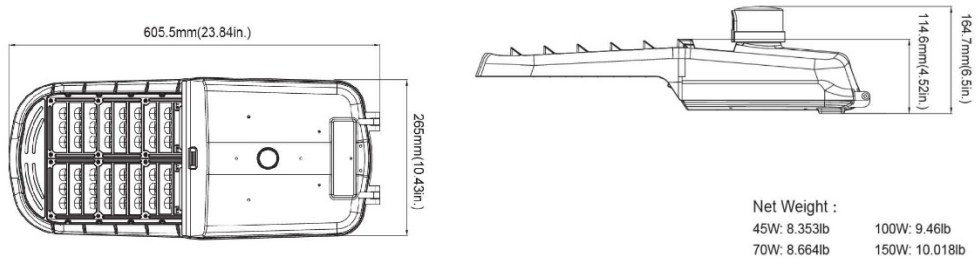
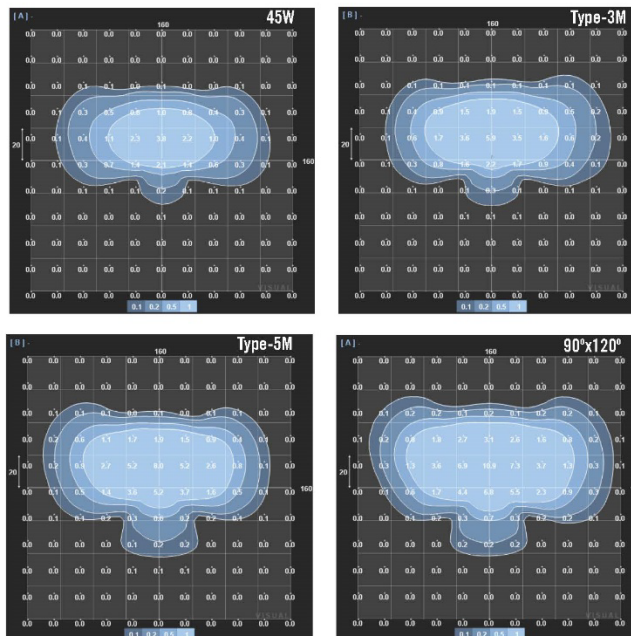


EXAMPLE of Luminoso LED Lighting LRL Series Area Light - Continued

LRL Series Performance Data / Dimensions


PERFORMANCE DATA

WATTS	VOLTAGE	DIST. TYPE	CRI	LUMENS (3000K)	LPW (3000K)	LUMENS (3500K)	LUMENS (3500K)	LUMENS (4000K)	LUMENS (4000K)	LUMENS (5000K)	LUMENS (5000K)
45W	120-277V / 347-480V	3	70	6,100	136 Lm/W	6,200	138 Lm/W	6,300	140 Lm/W	6,350	141 Lm/W
70W	120-277V / 347-480V	3	70	9,200	131 Lm/W	9,200	131 Lm/W	9,300	133 Lm/W	9,400	134 Lm/W
100W	120-277V	3	70	13,000	130 Lm/W	13,200	132 Lm/W	13,600	136 Lm/W	13,800	138 Lm/W
110W	347-480V	3	70	14,000	127 Lm/W	14,200	129 Lm/W	14,500	132 Lm/W	14,700	134 Lm/W
150W	120-277V / 347-480V	3	70	19,500	130 Lm/W	19,600	131 Lm/W	19,800	132 Lm/W	20,000	133 Lm/W

Dimensions

Photometric Data


EXAMPLE of Kim Altitude Fixture (Distribution Type, Voltage and Pole Height varies per actual location)


ALT96

ALTITUDE™ LED

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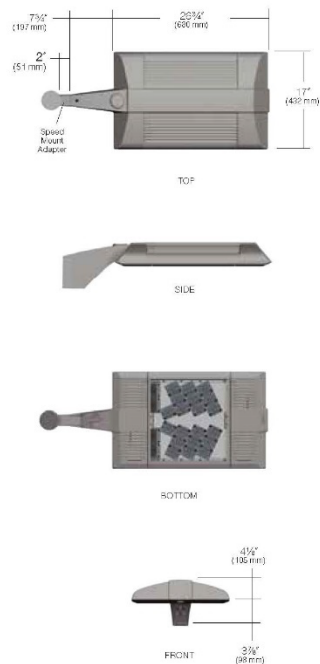
Type:
Job:
Catalog number:
Approvals:

Mfg.	Fixture	Electrical Module	Finish	Options

See page 2 See pages 3-5

Date:
Page: 1 of 6
Ordering Example: 1SA/ALT3P35/06L5K277/WH/A26
 Select pole from Kim's Arms and Poles Selection Guide. If pole is provided by others indicate O.D. for arm fitting.

Specifications

 ALT96
 Approx. Wt. = 30 lbs.


Housing: One piece, low copper, aluminum extrusion is mechanically secured with stainless steel fasteners to low copper aluminum die-cast electrical compartment and end cap. The electrical compartment includes an integral support arm for mounting directly to a surface mount pole adaptor or a horizontal slipfitter. A solid barrier wall separates the optical and electrical compartment for thermal control. Electrical compartment and end cap covers are securely fastened with two hinges and a single latch at each cover. One piece silicone gaskets seal the compartments at the barrier surface.

Optical Module: The high performance optic utilizes the IP66 rated PicoPrism™ technology securely attached to internal heat sink modules producing incredible uniformity and visual comfort. This PicoPrism optic utilizes a canted prism lens aimed toward the task and spreads horizontally to produce high lumen output as well as great uniformity. All the optical modules are fastened to the body of the luminaire across the center as well as around the perimeter.

Electrical Compartment: Available in voltages from 120V through 480V @ 50/60Hz. Class 2 output with power factor >0.9 at full load in accordance with the National Electrical Code, ANSI/NFPA 70. Integral 10kV surge suppression protection standard. To address inrush current, slow blow fuse or type C/D breaker should be used. All electronic components are UL and CSA recognized and mounted directly to a driver tray for maximum heat dissipation and modularity. Module includes a driver, LifeShield® temperature control device and surge protector. Driver is rated for -40°C starting and has a 0-10V dimming interface for multi-level illumination options. All electronic components are IP66 rated. 347V and 480V currents may have a step-down transformer.

Support Arm: Die-cast, low copper aluminum with splice access cover and tool-less entry. A die-cast pole adaptor and an internal reinforcing plate are provided with wire strain relief. The arm adaptor is square or circular cut for specified pole size and shape. For field wire connections, a terminal block is mounted in the arm cavity and accessible behind the splice access cover. The block accepts #14 to #8 wire sizes and is factory prewired to the electrical module quick-disconnect plug inside the electrical compartment.

Optional Horizontal Slip-fitter: Cast low copper aluminum with stamped, splice access cover. A die-cast adaptor plate is provided to secure the luminaire to 1-1/4" to 2" IPS pipe size arms. For field wire connections, a terminal block is mounted in the arm cavity and accessible behind the splice access cover. Accepts #14 to #8 wire sizes and is factory prewired to electrical module quick-disconnect plug inside the electrical compartment.

Optional Wall Mount: The Altitude easily mounts to the wall. A cast aluminum mounting plate is attached to the wall over the junction box. Bolt the Speed Mount to the cover plate. Then install the assembly over the mounting plate. Slide the luminaire into place for hands free wiring and finishing.

Finish: Each luminaire receives a fade and abrasion resistant, electrostatically applied, thermally cured, triglycidyl isocyanurate (TGIC) polyester powdercoat finish. Standard colors include (BL) Black, (DB) Dark Bronze, (WH) White, (PS) Platinum Silver, (SG) Stealth Gray, (LG) Light Gray, and (CC) Custom Color (include RAL#).

Listed to: UL 1598 Standard for Luminaires - UL 8750 Standard for Safety for Light Emitting Diode (LED) Equipment for use in Lighting Products and CSA C22.2#250.0 Luminaires, RoHS compliant. Meets Buy American provisions within ARRA. Suitable for wet locations.

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.

KIM LIGHTING RESERVES THE RIGHT TO CHANGE SPECIFICATIONS WITHOUT NOTICE.


 US Patent Numbers D674,960 S and D674,965 S.
 Other Patents Pending.

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Catalog No: LUMINAIRE: 1SA-ALT-2-P-35-96L-4K-120-DB-FGL-A26

POLE: KRS20-5120-SA-DB-BC5

Lamp Type: LEDs BY MANUFACTURER


ALT96

ALTITUDE™ LED


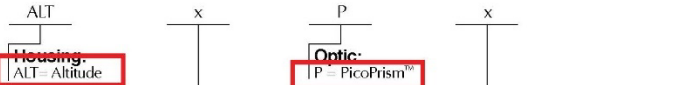
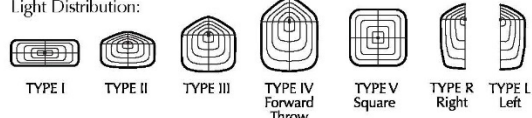
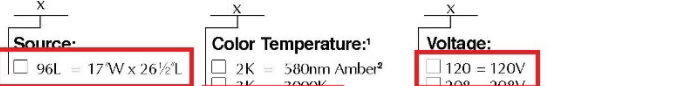

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Type:

Job:

Page: 2 of 6


Standard Features

Mounting 3SY configuration is available for round poles only.	 Cat. No. <input checked="" type="checkbox"/> 1SA <input type="checkbox"/> 2SB <input type="checkbox"/> 2SL <input type="checkbox"/> 3ST <input type="checkbox"/> 3SY <input type="checkbox"/> 4SC <input type="checkbox"/> 1SW EPA (Effective Projected Area) ALT96 0.64 1.28 0.97 1.61 1.61 1.78 n/a
Fixture Cat. No. designates fixture and light distribution.	 Housing: <input checked="" type="checkbox"/> ALT = Altitude <input type="checkbox"/> P = PicoPrism™ Distribution: <input checked="" type="checkbox"/> 1 = Type I <input type="checkbox"/> R = Type R Right <input checked="" type="checkbox"/> 2 = Type II <input type="checkbox"/> L = Type L Left <input type="checkbox"/> 3 = Type III <input type="checkbox"/> 4 = Type IV <input type="checkbox"/> 5 = Type V Current: <input checked="" type="checkbox"/> 35 = 350 mA <input type="checkbox"/> 70 = 700 mA Light Distribution:  TYPE I TYPE II TYPE III TYPE IV Forward Throw TYPE V Square TYPE R Right TYPE L Left
Electrical Module	 Source: <input checked="" type="checkbox"/> 96L = 17"W x 26 1/2"L Color Temperature:¹ <input type="checkbox"/> 2K = 580nm Amber ² <input checked="" type="checkbox"/> 3K = 3000K <input checked="" type="checkbox"/> 4K = 4000K <input type="checkbox"/> 5K = 5000K Voltage: <input checked="" type="checkbox"/> 120 = 120V <input checked="" type="checkbox"/> 200 = 200V <input type="checkbox"/> 240 = 240V <input type="checkbox"/> 277 = 277V <input type="checkbox"/> 347 = 347V <input type="checkbox"/> 480 = 480V ¹ For custom optics and color temperature configurations, contact factory. ² Turtle Friendly.
0-10V Dimming Interface	0-10v Dimming Interface - Driver has 0-10v dimming interface with a range of 10-100%. Is capable with most control systems. Note: Not compatible with current sourcing dimmers. Controls compatible via Gray and Purple dimming leads. Always consult with control company for compatibility. 

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Catalog No: LUMINAIRE: 1SA-ALT-2-P-35-96L-4K-120-DB-FGL-A26

POLE: KRS20-5120-SA-DB-BC5

Lamp Type: LEDs BY MANUFACTURER


ALT96

ALTITUDE™ LED

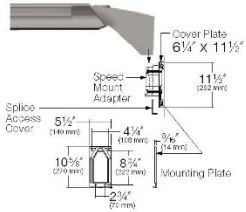


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Type:

Job:

Page: 3 of 6


Optional Features

Finish TGIC powder coat.	Color: Black <input type="checkbox"/> Dark Bronze <input checked="" type="checkbox"/> Stealth Gray <input type="checkbox"/> Platinum Silver <input type="checkbox"/> White <input type="checkbox"/> Custom Color ¹ Cat. No.: <input type="checkbox"/> BL <input checked="" type="checkbox"/> DB <input type="checkbox"/> SG <input type="checkbox"/> PS <input type="checkbox"/> WH <input type="checkbox"/> CC ¹ Custom colors subject to additional charges, minimum quantities and extended lead times. Consult representative. Custom color description: _____
Wall Mounting Cat. No. 1SW Select from Mounting on page 2.	The Altitude™ easily mounts to the wall. A cast aluminum wall bracket is attached to the wall over the junction box. Bolt the Speed Mount to the cover plate. Then install the assembly over the wall mount bracket. Side the luminaire into place for hands free wiring and finishing. 
Fusing (internal only): Cat. No. (see chart at right) <input checked="" type="checkbox"/> No Option	High temperature fuse holders factory installed inside the fixture housing. Fuse is included. Cat. No.: <input type="checkbox"/> SF for 120, 277 and 347 Line Volts <input type="checkbox"/> DF for 208, 240 and 480 Line Volts
Lenses Cat. No. <input checked="" type="checkbox"/> FGL (Glass) <input type="checkbox"/> FPL (Polycarbonate) <input type="checkbox"/> No Option	One-piece flat glass or polycarbonate lens slips into reveal. Extra silicone gasketing will be provided to retain a clear optical compartment. (Only available for 350mA systems). CAUTION: Use only when vandalism is anticipated to be high. 
Neighbor Friendly Optic: Cat. No. <input type="checkbox"/> NFO <input checked="" type="checkbox"/> No Option	Integrated Neighbor Friendly Optic on each PicoPrism™ module to completely control unwanted backlight. Most effective with Type III and IV distributions. 
Warranty	Kim Lighting warrants Altitude™ products ("Product(s)") sold by Kim Lighting to be free from defects in material and workmanship for (i) a period of five (5) years for metal parts, (ii) a period of ten (10) years for exterior housing paint finish(s), (iii) a period of six (6) years for LED Light Engines (PicoPrisms™) and, (iv) a period of five (5) years for LED power components (LED Driver, LifeShield® device), from the date of sale of such goods to the buyer as specified in Kim Lighting shipment documents for each product. Occupancy sensors, Surge Protector, dimmers and relay wiring components are covered by the manufacturer's warranty.

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Catalog No: LUMINAIRE: 1SA-ALT-2-P-35-96L-4K-120-DB-FGL-A26

POLE: KRS20-5120-SA-DB-BC5

Lamp Type: LEDs BY MANUFACTURER


ALT96

ALTITUDE™ LED

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Type:

Job:

Page: 4 of 6


Optional Features
Horizontal Slipfitter Mount

 Cat. No. HSF
 No Option

Replaces standard mounting arm with a cast aluminum fitter to adapt to a horizontal 1 1/4" to 2" pipe-size mounting end (1 5/8" to 2 3/8" OD). The casting has a +/- 5° adjustment to accommodate davit arms that are not horizontal.



Horizontal Slipfitter for 1 1/4" to 2" Pipe-Size Mount

Vertical Slipfitter Mounts

 Cat. No. includes Mounting
 Cat. No. (See right)
 No Option

Allows fixture or fixtures with standard mounting arm to mount to a pole with a 2" pipe-size tenon (2 5/8" OD). Minimum 4" tenon length required.

Specify configuration (1SA, 2SB, 2SL, 3ST, 3SY, 4SC) 4" round or square aluminum with flush cap. Finish to match fixture and arm.

NOTE: 3Y only available on round slipfitter.

 Cat. No.
 VSF-1SA
 VSF-2SB
 VSF-2SL
 VSF-3ST
 VSF-3SY
 VSF-4SC


Round

 Cat. No.
 SVSF-1SA
 SVSF-2SB
 SVSF-2SL
 SVSF-3ST
 SVSF-4SC


Square

 Mounting Configuration
 1SA - single arm mount
 2SB - 2 at 180°
 2SL - 2 at 90°
 3ST - 3 at 90°
 3SY - 3 at 120°
 4SC - 4 at 90°

Photocell Receptacle

 Cat. No. A26
 No Option

Fixture supplied with a fully gasketed rotatable receptacle above the electrical compartment for NEMA twist-lock base photocell (By-Others). For multiple fixture pole mountings, one fixture has the receptacle to operate the others.



Receptacle

Time Clock Relay

 Cat. No. TCP
 No Option

Time Clock Relay - An integral relay and dimming circuit is provided at the voltage of the luminaire for contact from a time clock by-others. The Time Clock tells the relay to switch to 50% dim.

Occupancy Sensor up to 16'

 Cat. No. SCL
 No Option

Occupancy Sensor up to 16' - Outdoor occupancy sensor with 0-10v interface dimming control mounts directly to the underside of the luminaire. Wide 360° pattern. Module colors available Black, Gray, and White.

Occupancy Sensor up to 30'

 Cat. No. SCH
 No Option

Occupancy Sensor up to 30' - Outdoor occupancy sensor with 0-10v interface dimming control mounts directly to the underside of the luminaire. Wide 360° pattern. Module colors available Black, Gray, and White.

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Catalog No: LUMINAIRE: 1SA-ALT-2-P-35-96L-4K-120-DB-FGL-A26

POLE: KRS20-5120-SA-DB-BC5

Lamp Type: LEDs BY MANUFACTURER


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 Type:
 Job:

Page: 5 of 6



Optional Features

Round Pole-Mounted Occupancy Sensor up to 16' Cat. No. <input type="checkbox"/> SCL-R <input checked="" type="checkbox"/> No Option	Round Pole Mounted Occupancy Sensor up to 16' - Outdoor occupancy sensor with 0-10v interface dimming control mounts directly to the underside of the luminaire. Wide 360° pattern. Module colors available Black, Gray, and White. Module is cut for round pole mounting. Pole diameter needed. Ordering Example: SCL-R4*/277**/BL*** <small>*Pole Diameter, **Voltage, *** Color</small>
Square Pole-Mounted Occupancy Sensor up to 16' Cat. No. <input type="checkbox"/> SCL-S <input checked="" type="checkbox"/> No Option	Square Pole Mounted Occupancy Sensor up to 16' - Outdoor occupancy sensor with 0-10v interface dimming control mounts directly to the underside of the luminaire. Wide 360° pattern. Module colors available Black, Gray, and White. Module is cut for round pole mounting. Pole diameter needed. Ordering Example: SCL-L/277**/BL*** <small>**Voltage, *** Color</small>
Round Pole-Mounted Occupancy Sensor up to 30' Cat. No. <input type="checkbox"/> SCH-R <input checked="" type="checkbox"/> No Option	Round Pole Mounted Occupancy Sensor up to 30' - Outdoor occupancy sensor with 0-10v interface dimming control mounts directly to the underside of the luminaire. Wide 360° pattern. Module colors available Black, Gray, and White. Module is cut for round pole mounting. Pole diameter needed. Ordering Example: SCH-R4*/277**/BL*** <small>*Pole Diameter, **Voltage, *** Color</small>
Square Pole-Mounted Occupancy Sensor up to 30' Cat. No. <input type="checkbox"/> SCH-S <input checked="" type="checkbox"/> No Option	Square Pole Mounted Occupancy Sensor up to 30' - Outdoor occupancy sensor with 0-10v interface dimming control mounts directly to the underside of the luminaire. Wide 360° pattern. Module colors available Black, Gray, and White. Module is cut for square pole mounting. Ordering Example: SCH-S/277**/BL*** <small>**Voltage, *** Color</small>
Wireless Control Cat. No. <input type="checkbox"/> WH-M <input checked="" type="checkbox"/> No Option	In fixture WiHubb® wireless control module features on/off/variable and step dimming, SNAP protocol mesh network, AES-128 encryption detection, occupancy sensor interface and intuitive, user-friendly software. The most comprehensive and up to date information can be found at http://www.hubbell-automation.com/products/wihubb_infixture_module/ .
Wireless Control Cat. No. <input type="checkbox"/> WSL-M <input checked="" type="checkbox"/> No Option	Hubbell Building Automation's wiSCAPE™ Fixture Module is a bidirectional wireless RF device that allows an individual fixture to be managed, monitored and metered. The wiSCAPE Fixture Modules communicates wirelessly over a robust 2.4GHz ISM (Industrial, Scientific and Medical) certified meshed radio signal. The wiSCAPE Fixture Module drastically simplifies control and automation of projects, especially in retrofit environments and challenges the legacy world of wired-systems. wiSCAPE wireless control technology adapts easily to complex automation situations for quick, simple and economical commissioning.

 Additional information on controls can be found at <http://www.hubbellighting.com/solutions/controls/>

 Catalog No: LUMINAIRE: 1SA-ALT-2-P-35-96L-4K-120-DB-FGL-A26
 POLE: KRS20-5120-SA-DB-BC5
 Lamp Type: LEDs BY MANUFACTURER


ALT96
 ALTITUDE™ LED
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 Type:
 Job:

Page: 6 of 6


Performance Data

Spectroradiometric			
	3000K Average	4200K Average	5100K Average
Correlated Color Temp. CCT (K)	2800K-3175K	3800K-4600K	4600K-5600K
Color Rendering Index (CRI)	≥75	≥70	≥65
Power Factor	>.90	>.90	>.90

Projected Lumen Maintenance		
mA	50,000 hrs	100,000 hrs
350	N/A	N/A
700	93.52%	89.80%

Electrical - Drive Current @350mA		
Volts - AC	Amps - AC	System Watts
120	0.87	104
208	0.50	104
240	0.43	104
277	0.38	104
347	0.30	104
480	0.22	104

Electrical - Drive Current @700mA		
Volts - AC	Amps - AC	System Watts
120	1.87	224
208	1.08	224
240	0.93	224
277	0.81	224
347	0.65	224
480	0.47	224

B.U.G. Rating (TM15) in Lumens where B = Backlight, U = Uplight, G = Glare								
Temperature	TYPE 1	TYPE 2	TYPE 3	TYPE 3 NFO	TYPE 4	TYPE 4 NFO	TYPE 5	TYPE L/R
3000K	N/A	B2 U0 G3	B2 U0 G3	B2 U0 G3	B1 U0 G3	B0 U0 G3	B3 U0 G2	B3 U0 G3
4200K	N/A	B3 U0 G3	B3 U0 G3	B2 U0 G3	B1 U0 G3	B0 U0 G3	B4 U0 G2	B3 U0 G3
5100K	N/A	B3 U0 G3	B3 U0 G3	B3 U0 G3	B1 U0 G3	B0 U0 G3	B4 U0 G2	B3 U0 G3

Absolute Lumens																
Temperature	TYPE 1	TYPE 1 FGL	TYPE 2	TYPE 2 FGL	TYPE 3	TYPE 3 FGL	TYPE 3 NFO	TYPE 3 FGL NFO	TYPE 4	TYPE 4 FGL	TYPE 4 NFO	TYPE 4 FGL NFO	TYPE 5	TYPE 5 FGL	TYPE L/R	TYPE L/R FGL
3000K	N/A	N/A	8113	6430	8191	6492	7006	5533	7669	6078	6723	5329	7906	6266	7980	6325
4200K	N/A	N/A	10367	8352	10467	8432	8951	7211	9800	7895	8591	6921	10103	8139	10196	8214
5100K	N/A	N/A	11268	8784	11377	8869	9730	7685	10652	8304	9338	7280	10981	8560	11083	8640

B.U.G. Rating (TM15) in Lumens where B = Backlight, U = Uplight, G = Glare								
Temperature	TYPE 1	TYPE 2	TYPE 3	TYPE 3 NFO	TYPE 4	TYPE 4 NFO	TYPE 5	TYPE L/R
3000K	N/A	B3 U0 G3	B3 U0 G3	B3 U0 G3	B1 U0 G3	B1 U0 G4	B4 U0 G2	B4 U0 G4
4200K	N/A	B3 U0 G3	B3 U0 G4	B3 U0 G3	B1 U0 G4	B1 U0 G4	B4 U0 G3	B4 U0 G4
5100K	N/A	B3 U0 G3	B3 U0 G4	B3 U0 G3	B1 U0 G4	B1 U0 G4	B4 U0 G3	B4 U0 G4

Absolute Lumens								
Temperature	TYPE 1	TYPE 2	TYPE 3	TYPE 3 NFO	TYPE 4	TYPE 4 NFO	TYPE 5	TYPE L/R
3000K	N/A	13902	13884	11874	13296	11395	13401	13524
4200K	N/A	17763	17740	15172	16631	14561	17123	17282
5100K	N/A	19308	19283	16491	18467	15827	18612	18784

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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Catalog No: LUMINAIRE: 1SA-ALT-2-P-35-96L-4K-120-DB-FGL-A26

POLE: KRS20-5120-SA-DB-BC5

Lamp Type: LEDs BY MANUFACTURER



KRS

Round Steel Non-Tapered Pole
revision 10/8/08 • krs.pdf

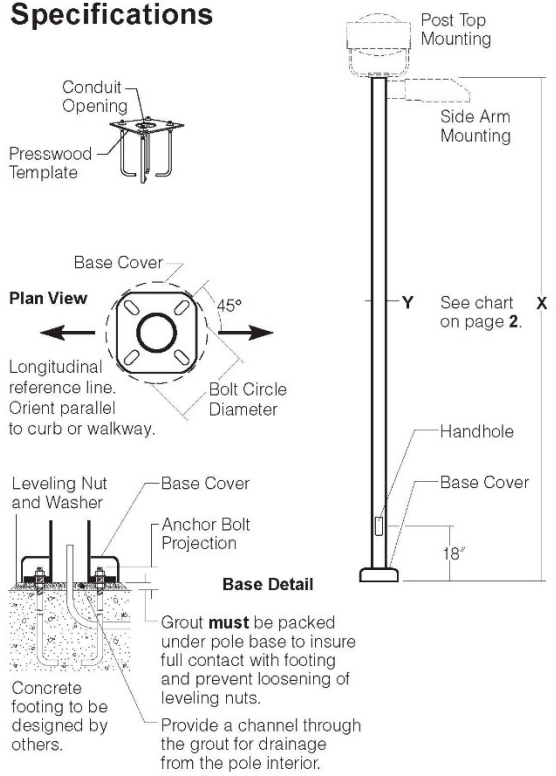
Type:
Job:
Catalog number:

Pole	Mounting	Structural Luminaire Option	Finish	Optional Anchor Bolt Covers	Optional Duplex Receptacle
/	/	/	/	/	/
See page 2		See page 3			

Approvals:

Date:
Page: 1 of 4

Specifications



Pole Construction: One-piece non-tapered round shaft of low carbon steel (ASTM-A500 Grade B, 42,000 PSI min. yield) with one flush-welded vertical seam. Shaft is welded to a flat steel anchor base (ASTM-36, 36,000 PSI min. yield).

Base Cover: Base has a two-piece cast aluminum full cover of 319 alloy, secured by stainless steel screws. Optional anchor bolt covers available (see page 3).

Pole Cap: A flush-sided cast aluminum pole cap is provided for side arm mounted luminaires. A rounded cast aluminum pole cap is provided for twin mounted luminaires (NS only).

Handhole: 18" up from base, with a gasketed cover and ground lug. 2" x 4" handhole provided on poles up to 16'. Reinforced 3" x 6" handhole provided on poles 20' and taller.

Anchor Bolts: Four fully galvanized anchor bolts provided (ASTM-36, 36,000 PSI min. yield), complete with eight galvanized nuts, eight galvanized flat washers, and a presswood template.

Strength: Poles will withstand wind loads as listed in chart (see page 2) when luminaires are mounted per fixture installation instructions.

Finish: Super TGIC thermoset polyester powder coat paint, 2.5 mil nominal thickness. 5 stage steel pretreatment to include phosphoric acid etch, followed by iron phosphate bath and chromate sealer for corrosion resistance. Standard colors are Black, Dark Bronze, Light Gray, Stealth Gray™, Platinum Silver, and White. Custom colors are available.

CAUTION: Installation of poles without luminaire(s) will compromise pole strength. Any accessories attached to pole, or other modifications will compromise pole strength and may result in pole failure.

Maintenance: A regularly scheduled maintenance program must be established to insure the protective paint coating is intact, corrosion or structural damage has not occurred, and anchor bolt nuts are tight. Failure to do so could lead to pole collapse and serious personal injury.



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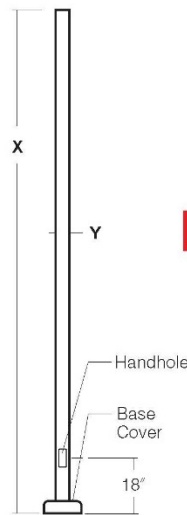


Catalog No: LUMINAIRE: 1SA-ALT-2-P-35-96L-4K-120-DB-FGL-A26
POLE: KRS20-5120-SA-DB-BC5
Lamp Type: LEDs BY MANUFACTURER


KRS
 Round Steel Non-Tapered Pole
 revision 10/8/08 • krs.pdf

 Type:
 Job:

Page: 2 of 4

Standard Features
NOTE: All allowable pole and fixture EPAs are derived from the AASHTO standard. Responsibility lies with the specifier for correct pole selection based on local codes and standards for the job location. (See page 4).


Pole Catalog Number	X	Y	Allowable Pole EPA							Wind Map Steady Wind		
			85	90	100	110	120	130	140	150		
<input type="checkbox"/> KRS10-4120	10'	4" x 11 ga.	21.61	19.07	17.41	14.07	11.53	9.63	8.22	7.09		
<input type="checkbox"/> KRS12-4120	12'	4" x 11 ga.	17.33	15.22	13.84	11.05	8.94	7.28	6.26	5.37		
<input type="checkbox"/> KRS14-4120	14'	4" x 11 ga.	14.18	12.37	11.18	8.79	6.98	5.67	4.78	4.06		
<input type="checkbox"/> KRS16-4120	16'	4" x 11 ga.	11.72	10.13	9.09	7.01	5.42	4.30	3.58	3.01		
<input type="checkbox"/> KRS20-4120	19.5'	4" x 11 ga.	7.77	6.55	5.75	4.13	2.91	2.10	1.65	1.31		
<input type="checkbox"/> KRS20-4180	19.5'	4" x 7 ga.	12.67	10.92	9.77	7.46	5.70	4.48	3.70	3.09		
<input type="checkbox"/> KRS20-5120	19.5'	5" x 11 ga.	13.57	11.62	10.35	8.26	6.73	5.56	4.65	3.93		
<input type="checkbox"/> KRS20-5180	19.5'	5" x 7 ga.	21.60	16.79	16.94	13.71	11.31	9.47	8.02	6.88		
<input type="checkbox"/> KRS25-5120	25'	5" x 11 ga.	8.46	6.97	6.00	4.61	3.63	2.88	2.31	1.87		
<input type="checkbox"/> KRS25-5180	25'	5" x 7 ga.	14.59	12.44	11.03	8.77	7.12	5.86	4.88	4.10		
<input type="checkbox"/> KRS30-5180	30'	5" x 7 ga.	9.84	8.12	6.99	5.37	4.23	3.36	2.70	2.18		

Anchor Base and Bolt Detail

Pole Height	Pole Diameter	Bolt Circle DIA	Anchor Bolt Projection	Anchor Bolts Size	Base Cover Size	Conduit Opening
10'-16'	4"	7"-8½"	3⅝"	¾" x 15" + 3"	11.7⅝" DIA	3" DIA
19.5'	4"	7"-8½"	3⅝"	¾" x 30" + 4"	11.⅞" DIA	3" DIA
19.5' - 30'	5"	7½"-8½"	3⅝"	¾" x 30" + 4"	11.7⅝" DIA	3" DIA

Mounting

Flush Mount
 Post Top
 Side Arm

Plan Views:

Mounting:
 FM
 PT
 SA
 B
 SB
 L
 SL
 T
 ST
 Y
 SY
 C
 SC

NOTE: Allowable Pole EPA for jobsite wind conditions must be equal to or greater than fixture mount EPA. Please refer to Kim luminaire catalog for specific fixture.

†See luminaire drilling requirements in specific Kim luminaire catalog.

Structural Luminaires Only - Examples

- TS:** Single Tension for small and large Structural - KRS20-5120B-TS
- TD:** Double Tension for small and large Structural - KRS20-5120B-TD
- TR:** Truss for small and large Structural - KRS20-5120B-TR
- XTS:** Single Tension for 1000W Structural - KRS20-5120B-XTS
- XTD:** Double Tension for 1000W Structural - KRS20-5120B-XTD
- XTR:** Truss for 1000W Structural - KRS20-5120B-XTR



Catalog No: LUMINAIRE: 1SA-ALT-2-P-35-96L-4K-120-DB-FGL-A26

POLE: KRS20-5120-SA-DB-BC5

Lamp Type: LEDs BY MANUFACTURER




KRS
 Round Steel Non-Tapered Pole
 revision 10/8/08 • krs.pdf

Type:
 Job:

Page: 3 of 4

Standard and Optional Features

<p>Finish Super TGIC powder coat paint over an iron phosphate bath, chromate sealed metal pretreatment.</p>	<p>Color: Black <input type="checkbox"/> Dark Bronze <input checked="" type="checkbox"/> Light Gray <input type="checkbox"/> Stealth Gray™ <input type="checkbox"/> Platinum Silver <input type="checkbox"/> White <input type="checkbox"/> Custom Color¹</p> <p>Cat. No.: <input type="checkbox"/> BL <input checked="" type="checkbox"/> DB <input type="checkbox"/> LG <input type="checkbox"/> SG <input type="checkbox"/> PS <input type="checkbox"/> WH <input type="checkbox"/> CC</p> <p>¹Custom color subject to additional charges, minimum quantities and extended lead times. Consult representative. Custom color description: _____</p>
<p>Optional Anchor Bolt Covers Cat. No. <input type="checkbox"/> BC4 <input checked="" type="checkbox"/> BC5 <input type="checkbox"/> No Option</p>	<p>(Full base cover is standard.) Four cast aluminum anchor bolt covers finished to match pole, fastened to base with stainless steel screws. 4' pole Bolt Covers (BC4) 5' pole Bolt Covers (BC5)</p> 
<p>Optional Duplex Receptacle Cat. No. <input type="checkbox"/> DR <input checked="" type="checkbox"/> DR-GFI <input type="checkbox"/> No Option</p>	<p>Mounted opposite the handhole, at 22 1/2" from base of pole, in a cast aluminum box that is internally welded and sealed with a gasketed self-closing cover and locking bracket. Duplex Receptacle (DR) rated 20A., 125V. Duplex Receptacle with Ground Fault Circuit Interrupter (DR-GFI) rated 20A., 125V.</p>



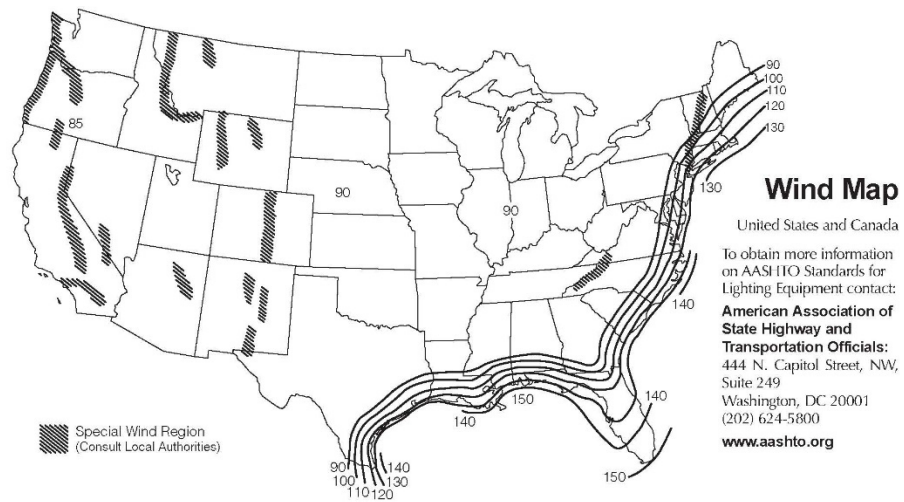
Catalog No: LUMINAIRE: 1SA-ALT-2-P-35-96L-4K-120-DB-FGL-A26
 POLE: KRS20-5120-SA-DB-BC5
 Lamp Type: LEDs BY MANUFACTURER



KRS
Round Steel Non-Tapered Pole
revision 10/8/08 • krs.pdf

Type:
Job:

Page: 4 of 4



NOTES:

- Values are based on 50 year mean recurrence interval 30' above grade.
- Hawaii has an **105 mph** wind velocity.
- Puerto Rico has a **125 mph** wind velocity.
- Caution must be exercised in determining wind velocities in special wind areas such as:
 - Mountainous Regions
 - Areas surrounding the Great Lakes or other large bodies of water or open land.
 - Areas subject to extreme wind conditions, such as hurricanes, typhoons, cyclones, and tornadoes.
 - Areas adjacent to airports.
 - Any specific area with a known or suspected abnormally high intermittent wind condition caused by geography, adjacent structures, or other specific local conditions that may not be recorded in National Weather Service records.
- Allowable pole EPA for jobsite wind conditions must be equal to or greater than fixture EPA. Responsibility lies with the specifier for correct pole selection based on AASHTO wind map and job location.
- The Wind Map is intended only as a general guide. Always consult local authorities to determine maximum wind velocities, gusting and unique wind conditions for each specific application.
- **CAUTION:** Wind speeds and listed EPAs are for ground mounted installations. Poles mounted on structures (such as bridges and buildings) must consider vibration and coefficient of height factors beyond this general guide. Consult AASHTO standards.
- Extreme Wind Events: Hurricanes, Typhoons, Cyclones, or Tornadoes expose poles to flying debris, wind shear, and other unpredictable aerodynamic forces not indicated by the wind velocity ratings.
- Pole Strength Limited Warranty: Standard, unmodified Kim lighting Poles installed as recommended, undamaged by corrosion, or lack of maintenance, shall withstand steady wind conditions as provided on page 2 (Allowable Pole EPA). Installation of poles without luminaires, or attachment of any unauthorized accessories to poles shall void this warranty.

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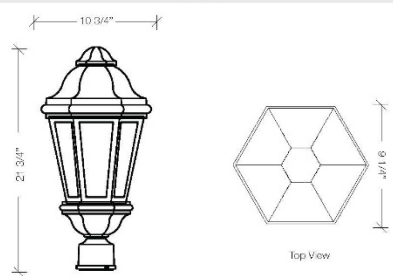
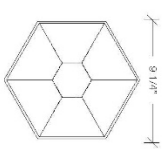
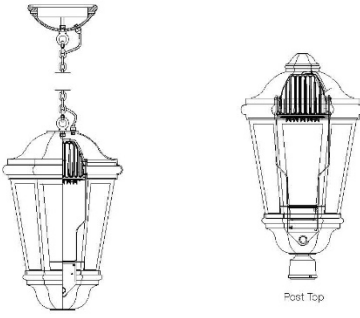
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POLE: KRS20-5120-SA-DB-BC5
Lamp Type: LEDs BY MANUFACTURER

EXAMPLE of Beacon Fixture (Optics and Pole Height varies per actual location)


 Type: _____
 Project Name: _____
 Notes: _____

 rev. 08.13.2014
LAJ20 (LED)
 20" La Jolla Luminaire
Max Weight: 20.0 lbs
Max EPA: 1.01 sq ft

Sample	LAJ20	PC	24NB-27	5K	UNV	DIR3	PEC	PT	BBT
Ordering									
	A	B	C	D	E	F	G	H	I

DETAILS		A. MODEL	I. COLOR
		LAJ20 La Jolla 20"	BBT basic black textured
		B. LENS OPTIONS AC acrylic, clear AF acrylic, frosted AS acrylic, seeded AW acrylic, white PC polycarbonate, clear PF polycarbonate, frosted	BMT black matte textured WHT white textured MBT metallic bronze textured BZT bronze textured DBT dark bronze textured GYS gray smooth DPS dark platinum smooth GNT green textured MST metallic silver textured MTT metallic titanium textured OWI old world iron RAL _____
MOUNTING OPTIONS 		C. ENGINE-WATTS 24NB-27 27 Watts - LED array	D. CCT - COLOR TEMP 3K 3000K 4K 4000K 5K 5000K (std.)
		E. VOLTAGE UNV 120-277V	
		F. OPTICS DIR2 direct, type II DIR3 direct, type III DIR4 direct, type IV DIR5 direct, type V	
		G. ELECTRICAL OPTIONS PEC photocell, button	
		H. MOUNTING OPTIONS PT post top PM pendant mount *	

* consult factory

2041 58th Avenue Circle East Bradenton, fl 34203 Phone: (800) 345-4928 Fax: (941) 751-5535 ORDERING


 Catalog No: LUMINAIRE: LAJ20-AS-24NB-27-4K-UNV-DIR3-PEC-PT-BBT
 POLE: VAN4-S-8-4G-TN-BBT
 Lamp Type: LEDs BY MANUFACTURER



rev. 08.13.2014
LAJ20 (LED)
20" La Jolla Luminaire
Max Weight: 20.0 lbs
Max EPA: 1.01 sq ft

Housing: All cast aluminum parts shall be low copper alloy A356. All extruded aluminum parts shall be alloy 6061-T6, 6063-T5 or equal.

Construction: The upper chamber/lid shall be topped by a decorative cast aluminum finish/cap and mechanically fastened to the optical chamber. The cast multi-sided cage shall accommodate UV stabilized acrylic or polycarbonate lenses (side panels) which shall be sealed for weather tight operation. The electrical chamber/filter shall be aluminum, decorative filter designed to accommodate the ballast assembly and shall mount to 3 OD x 3" H lenon and secured by three stainless steel set screws.

Fasteners: All fasteners shall be Corrosion Resistant. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, available at additional cost).

Finish: Finish shall be a Beacote V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermcoat super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D622 and resists surface impacts of up to 180 inch-pound.

Bezel Optical System: Each luminaire is supplied with an optical one piece cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel. The cartridge is held together with internal brass standoffis soldered to the board so that it can be field replaced as a one piece optical system. Two-piece silicone and polycarbonate foam gasket ensures a weather-proof seal around each individual LED and allows the luminaire to be rated for high-pressure hose down applications. The optical cartridge is secured to the extruded housing with fasteners and a heat pad to ensure thermal conductivity. The optics are held in place without the use of adhesives and the complete assembly is gasketed for high pressure hose down cleaning. The cartridge assembly is available in various lighting distributions using a specially designed acrylic optical lens over each LED.

Power Supply/Driver Requirements: UL, UL1310, Class 2 and UL48 compliant.

Color Rendering Index (CRI): Luminaire shall have a minimum CRI of 87 at 5000K.

Operating Environment: Shall be able to operate normally in ambient temperatures from -40°C to 40°C

LifeShield™ Circuit: Thermal circuit shall protect the luminaire from excessive temperature by interfacing with its 0-10V dimmable drivers to reduce drive current as necessary. The factory-preset temperature limits shall be designed to ensure maximum hours of operation to assure L70 rated lumen maintenance. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range in recognition of the effect of reduced current on the internal temperature and longevity of the LEDs and other components. A luminaire equipped with the device may be reliably operated in any ambient temperature up to 55°C (131°F). The thermal circuit will allow higher maximum Wattages than would be permissible on an unregulated luminaire (if some variation in light output is permissible), without risk of premature LED failure. Operation shall be smooth and unnoticeable to the eye. Thermal circuit shall directly measure the temperature at the LED solder point.

Thermal circuit shall consist of surface mounted components mounted on the LED engine (printed circuit board). For maximum simplicity and reliability, the device shall have no dedicated enclosure, circuit board, wiring harness, gaskets, or hardware. Device shall have no moving parts, and shall operate entirely at low voltage (NEC Class 2). The device shall be located in an area of the luminaire that is protected from the elements.

Thermal circuit shall be designed to "fall on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers.

Device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.). The device will effectively control the solder point temperature as needed; otherwise it will allow the other control device(s) to function unimpeded.

Surge Protector: The on-board surge protector shall be a UL recognized component for the United States and Canada and have a surge current rating of 20,000 Amos using the industry standard 8/20 µSec wave. The LSP shall have a clamping voltage of 825V and surge rating of 540J. The case shall be a high-temperature, flame resistant plastic enclosure.

Electrical: Luminaires are equipped with LED driver(s) that accept 90 through 305

VAC, 50 Hz to 60 Hz (UNV). Power factor is .92 at full load. All electrical components are rated at 50,000 hours at full load and 25°C ambient conditions per MIL-217F Notice 2. All driver components supplied are component-to-component wiring within the luminaire will carry no more than 80% of rated current and is listed by UL for use at 600VAC at 50°C or higher. Plug disconnects are listed by UL for use at 600 VAC, 15A or higher.

Agency Certification: The luminaire shall bear an NRTL label and be marked suitable for wet locations.

Limited Warranty: Beacon luminaires feature a 5 year limited warranty. Beacon LED luminaires with LED arrays feature a 5 year limited warranty covering the LED arrays. LED drivers are covered by a 5 year limited warranty. PIR sensors carry a 5 year limited warranty from the sensor manufacturer. See Warranty information on www.beaconproducts.com for complete details and exclusions.

Due to our continued efforts to improve our products, product specifications are subject to change without notice.

2041 58th Avenue Circle East Bradenton, fl 34203 Phone: (800) 345-4928 Fax: (941) 751-5535

SPECIFICATION



Catalog No: LUMINAIRE: LAJ20-AS-24NB-27-4K-UNV-DIR3-PEC-PT-BBT

POLE: VAN4-S-8-4G-TN-BBT

Lamp Type: LEDs BY MANUFACTURER

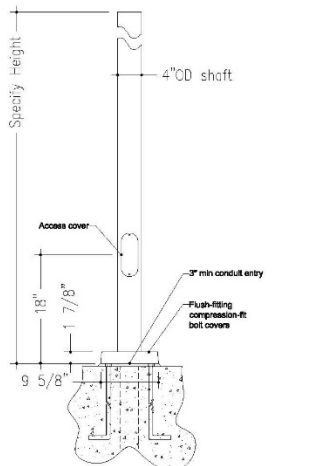


Type: _____
 Project Name: _____
 Notes: _____

rev. 02.20.2014
4" VANDAL RESISTANT
 Poles & Bases


Sample	VAN4	S	8	4G	OT	GFI-IU	BST
Ordering	A	B	C	D	E	F	G

DETAILS

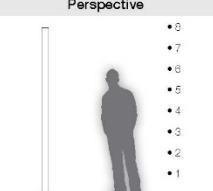


Bolt Circle

6.394" bolt circle



Perspective



A. MODEL

VAN4 24" Vandal Resistant

B. PROFILE

S smooth
F fluted

C. HEIGHT

6 6'
8 8'
10 10'
12 12'
OTHER _____

D. SHAFT

4G Ø4", .125" wall thickness (S) (F)
4M Ø4", .188" wall thickness (S) (F)
4P Ø4", .226" wall thickness (S)

E. POLE TOP

OT open top
ARC ecorr finish
BAL ball finish
TN tenon
OTHER _____

F. OPTIONS

GFI-IU 20AMP GFI receptacle
OTHER _____

G. COLOR

BBT basic black textured
BMT black matte textured
WHT white textured
MBT metallic bronze textured
BZT bronze textured
DBT dark bronze textured
GYS gray smooth
DPS dark platinum smooth
GNT green textured
MST metallic silver textured
MTT metallic titanium textured
OWI old world iron
RAL _____

Due to our continued efforts to improve our products, product specifications are subject to change without notice.

Construction: All cast aluminum parts shall be low copper alloy A356. All extruded aluminum parts shall be alloy 6061-T6, 6063-T5 or equal. Standard fluted shaft profile shall be 16 flat flutes for 3"OD and 12 flat flutes for 4", 5", & 6"OD.

Base Covers: require specification of smooth or fluted shafts of the size required to meet wind load requirements

Vibration Dampeners: Vibration dampener pads shall be provided when required by customer or deemed necessary by Beacon Products. Please consult factory for bridge mounted applications.

EPA (effective projected area): EPA is defined as (projected surface area X drag factor) and measured in ft². Allowable post, luminaire arm, luminaire and accessory EPAs are derived from the most current published AASHTO (American Association of State Highway and Transportation Officials) standard, currently AASHTO 2001 (50yr design life). Customer assumes all responsibility for selecting the appropriate post for installation (consult factory for assistance). Luminaire arm, luminaire and accessory EPA must be equal to or less than allowable EPA of post. Consult a professional engineer for compliance with local codes and standards.

Anchor Bolt: Anchor bolts, sized as required, double hex nuts and flat washers shall be hot dipped galvanized steel. A bolt circle template shall be provided for installation.

Fasteners: All fasteners shall be Corrosion Resistant. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, available at additional cost).

Finish: Finish shall be a Beacote V polyester powder-coat electrostatically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D622 and resists surface impacts of up to 150 inch-pound.

Limited Warranty: Beacon Products warrants its products, to the original purchaser, against defects in materials and workmanship for proper usage for a period of 5 years after date of production, when properly installed, maintained and appropriately specified. See Warranty Information on www.beaconproducts.com for complete details and exclusions.

available EPA Index		AASHTO 2001 wind zones (mpht)							
catalog #	wall thickness	nominal height	90	100	110	120	130	140	150
VAN4S/10/4G	.125"	10'	7.3	5.5	4.3	3.3	2.8	2.3	1.9
VAN4S/12/4G	.125"	12'	5.5	4.0	3.0	2.2	1.8	1.4	1.2
VAN4S/14/4M	.188"	14'	6.8	5.0	3.7	2.9	2.3	1.9	1.6
VAN4S/14/4P	.226"	14'	7.4	5.8	4.3	3.3	2.7	2.3	1.9
VAN4S/16/4M	.188"	16'	5.1	3.8	2.8	1.8	1.5	1.1	0.9
VAN4S/16/4P	.226"	16'	5.8	4.2	3.1	1.2	0.0	0.0	0.0
VAN4S/18/4P	.226"	18'	4.3	3.0	2.0	1.3	1.0	0.7	0.5
VAN4F/10/4G	.125"	10'	8.3	4.8	3.8	2.7	2.0	1.5	1.0
VAN4F/12/4M	.188"	12'	6.5	4.9	3.7	2.8	2.0	1.6	1.1
VAN4F/14/4M	.188"	14'	4.9	3.5	2.5	1.7	1.1	0.7	0.3
VAN4F/16/4M	.188"	16'	3.5	2.3	1.5	0.8	0.3	0.0	0.0

CAUTION: Consult factory for structural approval prior to ordering poles. Warranty void if pole is cut, welded, drilled or otherwise modified outside Beacon factory.

2041 58th Avenue Circle East Bradenton, FL 34203 Phone: (800) 345-4928 Fax: (941) 751-5535 ORDERING



Catalog No: LUMINAIRE: LAJ20-AS-24NB-27-4K-UNV-DIR3-PEC-PT-BBT

POLE: VAN4-S-8-4G-TN-BBT

Lamp Type: LEDs BY MANUFACTURER

PART 3: EXECUTION**3.01 Residential Area Illuminance Standards – To be used around all existing and proposed residential buildings:**

- A. Enhanced Security for Pedestrian Pathways:
 - Average Maintained Horizontal Illuminance: 1.0 FC measured at grade
 - Maximum Contrast Ratio: 4:1 Average to Minimum
 - Average Maintained Vertical Illuminance: 0.5 FC measured at 6-feet above grade

- B. Canopied Primary Building Entries:
 - Average Maintained Horizontal Illuminance: 2.0 FC measured at grade
 - Maximum Contrast Ratio: 2:1 Average to Minimum
 - Average Maintained Vertical Illuminance: 1.0 FC measured at 6-feet above grade

- C. Non-Covered Primary Building Entries:
 - Average Maintained Horizontal Illuminance: 1.0 FC measured at grade
 - Maximum Contrast Ratio: 2:1 Average to Minimum
 - Average Maintained Vertical Illuminance: 1.0 FC measured at 6-feet above grade

- D. Vehicular Drives:
 - Average Maintained Horizontal Illuminance: 0.9 FC measured at grade
 - Maximum Contrast Ratio: 6:1 Average to Minimum

- E. Enhanced Security for Surface Parking Lots:
 - Average Maintained Horizontal Illuminance: 3.0 measured on the pavement
 - Maximum Contrast Ratio: 4:1 Average to Minimum
 - Average Maintained Vertical Illuminance: 0.5 FC measured at 6-feet above grade

3.02 Academic Area Illuminance Standards – To be used around all existing and proposed non-residential buildings:

- A. Pedestrian Pathways:
 - Average Maintained Horizontal Illuminance: 0.5 FC measured at grade
 - Maximum Contrast Ratio: 10:1 Maximum to Minimum

- B. Enhanced Security for Pedestrian Pathways:
 - Average Maintained Horizontal Illuminance: 1.0 FC measured at grade
 - Maximum Contrast Ratio: 4:1 Average to Minimum
 - Average Maintained Vertical Illuminance: 0.5 FC measured at 6-feet above grade

- C. Canopied Primary Building Entries:
 - Average Maintained Horizontal Illuminance: 2.0 FC measured at grade
 - Maximum Contrast Ratio: 2:1 Average to Minimum
 - Average Maintained Vertical Illuminance: 1.0 FC measured at 6-feet above grade

-
- D. Non-Covered Primary Building Entries:
- | | |
|--|---------------------------------------|
| Average Maintained Horizontal Illuminance: | 1.0 FC measured at grade |
| Maximum Contrast Ratio: | 2:1 Average to Minimum |
| Average Maintained Vertical Illuminance: | 1.0 FC measured at 6-feet above grade |
- E. Vehicular Drives:
- | | |
|--|--------------------------|
| Average Maintained Horizontal Illuminance: | 0.9 FC measured at grade |
| Maximum Contrast Ratio: | 6:1 Average to Minimum |
- F. Parking Garage Parking Field:
- | | |
|--|---------------------------------------|
| Minimum Horizontal Illuminance: | 1.0 FC measured at grade |
| Average Maintained Horizontal Illuminance: | 5.0 FC measured at grade |
| Maximum Contrast Ratio: | 10:1 Maximum to Minimum |
| Average Maintained Vertical Illuminance: | 0.5 FC measured at 6-feet above grade |
- G. Parking Garage Vehicular Entry:
- | | |
|--|---|
| Average Maintained Horizontal Illuminance: | 50 FC daytime at grade for first 66 feet
1.0 FC nighttime at grade |
| Maximum Contrast Ratio: | 10:1 Average to Minimum |
| Average Maintained Vertical Illuminance: | 25 FC daytime at 6-feet above grade
0.5 FC nighttime at 6-feet above grade |
- H. Surface Parking Lots and Parking Garage Top Decks:
- | | |
|--|---------------------------------------|
| Average Maintained Horizontal Illuminance: | 1.0 FC measured at grade |
| Maximum Contrast Ratio: | 20:1 Maximum to Minimum |
| Minimum Vertical Illuminance: | 0.1 FC measured at 6-feet above grade |
- I. Enhanced Security for Surface Parking Lots:
- | | |
|--|---------------------------------------|
| Average Maintained Horizontal Illuminance: | 3.0 measured on the pavement |
| Maximum Contrast Ratio: | 4:1 Average to Minimum |
| Average Maintained Vertical Illuminance: | 0.5 FC measured at 6-feet above grade |

3.03 Light Trespass and Uplight Control Standards

- A. All luminaires shall minimize uplight and glare. Backlight shall also be controlled when a luminaire is installed adjacent to property not owned by Lehigh University. The lumen output will be controlled, by default, by putting the following limits on Backlight, Uplight and Glare using the following criteria:

- 1) Backlight, Uplight and Glare Standards for all fraternities and sororities

Lighting Zone 1 Ratings:

Backlight: B3
Uplight: U1
Glare: G1

2) Backlight, Uplight and Glare Standards for all other areas on campus

Lighting Zone 2 Ratings

Backlight: B4
Uplight: U2
Glare: G2

- B. Full cut-off sources should be used for building entries and perimeter lighting.
- C. Fixtures at doorways should not exceed 10W. Building perimeter lighting should not exceed 20W. Wattage requirements may depend on actual application and illuminance requirements.
- D. The use of building and pole mounted floodlights for general area lighting is prohibited.

3.04 Light Sources and Color

- A. High color rendering LED sources with a color temperature of 4000 Kelvin and a minimum color rendering index (CRI) of 70 shall be used.
- B. These white light sources provide better color rendition of skin tones and material colors and easier identification of surroundings and people. White light sources above 4000K can impact the flight routes of migratory birds and the circadian rhythm in animals. LED light sources are preferred due to their long-life and low energy use.