



# K109 CAMBRIDGE - LED ACORN

The K109 Cambridge is an updated version of the historical acorn style globe that has its roots in the early days of North American street lighting. Updated to modern performance standards, this acorn luminaire is classic and extremely efficient.

PROJECT: \_\_\_\_\_

PREPARED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

## PRODUCT SPECIFICATIONS

### LED ENGINE

Light engine shall be an array of 36 or 42 solid state Cree X-Series high power LEDs (light emitting diodes) mounted to a multi-sided, vertical heat sink of highly conductive aluminum. The LED emitters are mounted to removable circuit boards such that they are in full thermal contact with the vertical heat sink. The vertical heat sink is open at the bottom and vented at the top to provide appropriate dynamic airflow cooling for the LED array. The emitters are arranged in various patterns on each face of the vertical heat sink to provide the required light distribution.

### OPTICS

The LED arrays include optical baffles constructed of optical grade ABS plastic with a vacuum metallized reflective surface or clear acrylic precision refractors over each diode. Both optical options are designed to efficiently control light distribution in IESNA Type IV & V for the B3 and Type III & V for the R1.

### LUMINAIRE CONSTRUCTION

All K109 Cambridge cast components (including optional ring and struts) shall consist of a heavy grade A319 cast aluminum. The main body, or capital, acts as an enclosure for the driver assembly and is of adequate thickness to give sufficient structural rigidity. The capital shall have an opening at the base tenon body to allow the luminaire to be mounted to a tenon of 3-1/2" maximum diameter. The luminaire shall be locked in place by means of heavy duty, stainless steel set-screws.

### GLOBE ASSEMBLY

The protective globe shall be molded of either; rippled polycarbonate Miles Makrolon GP/OP Thermoplastic Polymer, or equivalent, or rippled acrylic Acrylite Plus Acrylic Polymer, or equivalent, having a minimum thickness of 0.125".

The globe assembly is a self-contained unit consisting of the globe, rugged cast locking ring, and the LED light engine and optical control. The LED light engine

is of a modular design, and is able to be quickly removed from the globe assembly. The globe assembly is secured to the main housing by means of a spring-tensioned, twist-locking Rotolock™ unit to allow tool-less removal of the globe, while maintaining a secure seal between the globe assembly and the main body of the luminaire, making the K109 Cambridge suitable for an outdoor environment.

High performance protection against water or dust particle ingress is available by means of a non-porous, closed-cell silicon rubber o-ring gasket which is highly efficient in sealing against particle ingress over a wide temperature range (-40°F to 310°F).

### DRIVER

The LED universal dimmable driver will be class 2 and capable of 120 - 277V or 347 - 480V input voltage, greater than 0.9 power factor, less than 20% total harmonic distortion. The case temperature of the driver can range from -40°C up to 70°C. Each LED system comes with a standard surge protection designed to withstand up to 20kV/10kA of transient line surge as per IEEE C62.41.2 C High. An in-line ferrite choke is utilized to provide protection against EFT's. The driver assembly will be mounted on a heavy duty fabricated galvanized steel bracket to allow complete tool-less maintenance.

### PHOTOMETRICS

Fixtures are tested to IESNA LM79 specifications. These reports are available upon request.

### CHROMATICITY

High output LEDs come standard at 3000K & 4000K (+/- 300K) with a minimum nominal 70 CRI. Additional CCT emitters are available upon request.

### LUMEN MAINTENANCE

Reported (TM21) and Calculated (L70) reports are available upon request with a minimum calculated value of 100,000 hrs.

### WIRING

All internal wiring and connections

shall be completed so that it will be necessary only to attach the incoming supply connectors to Mate-N-Lok connectors or to a terminal block. Mate-N-Lok shall be certified for 600V operation. Internal wire connectors shall be crimp connector only and rated at 1000V and 150°C. All wiring to be CSA certified and/or UL listed, type SFF-2, SEWF-2, or SEW-2 No. 14 gauge, 150°C, 600V, and color coded for the required voltage.

### THERMALS

Fixtures tested by a DOE sanctioned test facility to determine the maximum in-situ solder-point or junction-point temperatures of the LED emitters. This report is available upon request.

### FINISH

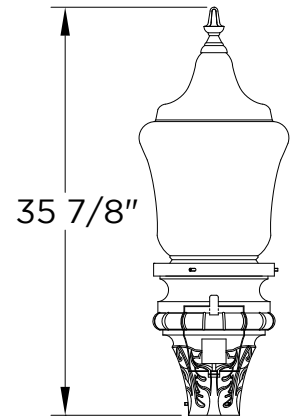
Housing is finished with a 13 step KingCoat™ SuperDurable polyester TGIC powder coat. Standard colors include strobe white, brown metal, marina blue, gate gray, Chicago bronze, standard gold, standard black, federal green and rain forest. Please see our website for a complete list of colors. RAL and custom color matches are available.

### MISCELLANEOUS

All exterior hardware and fasteners, wholly or partly exposed, shall be stainless steel alloy. All internal fasteners are stainless steel or zinc coated steel. All remaining internal hardware is stainless steel, aluminum alloy, or zinc coated steel.

### WARRANTY

The K109 Cambridge LED luminaire comes with a 7 year limited warranty.



### CERTIFICATION:

CSA US Listed  
Suitable for wet locations  
ISO 9001  
IP66  
ARRA Compliant  
LM79 / LM80 Compliant

### DRIVER INFO:

>0.9 Power Factor  
<20% Total Harmonic Distortion  
120 - 277V & 347 - 480V  
-40°C Min. Case Temperature  
70°C Max. Case Temperature  
Surge Protection: ANSI C136.2  
extreme level 20kV/10kA

### EPA:

0.98 sq. ft.

### FIXTURE WEIGHT:

34 lb



# POWER & LUMENS

## K109 CAMBRIDGE - LED ACORN



Test Voltage: 120V  
 Nominal Color Temperature: 3000K & 4000K<sup>1</sup>  
 1036 Engine Series: 36 Emitters (40 - 75W)  
 1054 Engine Series: 54 Emitters (100W)  
 LED Engine + Driver Rated Life = 100,000 hrs<sup>2</sup>

To learn more about the B3 Optic, please see the B3 Optic Information Sheet

Photometric Test Report Number	Decorative Option	Color Temperature	IES Distribution	Nominal Watts	Engine Series	Delivered Lumens <sup>3</sup>	Efficacy (LM/W) <sup>3</sup>	mA @ Emitter	Driver Output Current	BUG Rating	HID Equivalent <sup>4</sup>
0100NB3AR4X04030XXJ	Open	3000	Type IV	40	1036	3905	103.0	333	2000	-	50-70
0100NB3AR4X04040XXH	Open	4000	Type IV	40	1036	4053	102	333	2000	1-3-3	50-70
0100NB3AR5X04030XXB	Open	3000	Type V	40	1036	2324	57.2	333	2000	2-3-2	50-70
0100NB3AR5X04040XXA	Open	4000	Type V	40	1036	2897	70	333	2000	2-3-2	50-70
0100SB3AR4X04030XXJ	SST	3000	Type IV	40	1036	3117	83.1	333	2000	1-3-3	50-70
0100SB3AR4X04040XXA	SST	4000	Type IV	40	1036	2890	71.4	333	2000	1-3-2	50-70
0100SB3AR5X04030XXJ	SST	3000	Type V	40	1036	3555	92.3	333	2000	-	50-70
0100SB3AR5X04040XXA	SST	4000	Type V	40	1036	2816	70.2	333	2000	2-3-2	50-70
0100NB3AR4X06030XXJ	Open	3000	Type IV	60	1036	6178	103.1	500	3000	-	70-100
0100NB3AR4X06040XXH	Open	4000	Type IV	60	1036	5884	102	500	3000	1-3-3	70-100
0100NB3AR5X06030XXB	Open	3000	Type V	60	1036	3286	53.4	500	3000	2-3-2	70-100
0100NB3AR5X06040XXH	Open	4000	Type V	60	1036	6231	105	500	3000	3-3-3	70-100
0100SB3AR4X06030XXJ	SST	3000	Type IV	60	1036	4530	79.6	500	3000	1-3-3	70-100
0100SB3AR4X06040XXA	SST	4000	Type IV	60	1036	4093	66.8	500	3000	1-3-3	70-100
0100SB3AR5X06030XXB	SST	3000	Type V	60	1036	3278	53.3	500	3000	2-3-2	70-100
0100SB3AR5X06040XXA	SST	4000	Type V	60	1036	4022	65.5	500	3000	2-3-2	70-100
0100NB3AR4X07530XXJ	Open	3000	Type IV	75	1036	7540	94.8	667	4000	-	100-150
0100NB3AR4X07540XXH	Open	4000	Type IV	75	1036	7733	98	667	4000	1-3-4	100-150
0100NB3AR5X07530XXB	Open	3000	Type V	75	1036	3837	50.5	667	4000	2-3-2	100-150
0100NB3AR5X07540XXH	Open	4000	Type V	75	1036	7644	102	667	4000	3-3-3	100-150
0100SB3AR4X07530XXJ	SST	3000	Type IV	75	1036	6017	76	667	4000	1-3-3	100-150
0100SB3AR4X07540XXH	SST	4000	Type IV	75	1036	6876	92	667	4000	1-3-3	100-150
0100SB3AR5X07530XXB	SST	3000	Type V	75	1036	3802	50.1	667	4000	2-3-2	100-150
0100SB3AR5X07540XXA	SST	4000	Type V	75	1036	4746	62.6	667	4000	3-3-3	100-150

B3 = 3rd Generation Baffled Array

Lens: Acrylic Rippled

Decorative Options: Solid Spun Top (SST) or No Decorative Option (Open)

<sup>1</sup>Color temperature is nominal, please see test report for specific chromaticity information

<sup>2</sup>Contact factory for TM21 information/Driver specification

<sup>3</sup>Due to the continuous advancements in LED technology, luminaire delivered lumen and efficacy is subject to change without notice at the discretion of King Luminaire

<sup>4</sup>Equivalence should always be confirmed by performing a photometric layout, due to the variability of performance requirements and application criteria

# POWER & LUMENS

## K109 CAMBRIDGE - LED ACORN



Test Voltage: 120V  
 Nominal Color Temperature: 3000K & 4000K<sup>1</sup>  
 1042 Engine Series: 42 Emitters (40 - 75W)  
 1063 Engine Series: 63 Emitters (100 - 120W)  
 LED Engine + Driver Rated Life = 100,000 hrs<sup>2</sup>

To learn more about the R1 Optic, please see the R1 Optic Information Sheet

Photometric Test Report Number	Decorative Option	Color Temperature	IES Distribution	Nominal Watts	Engine Series	Delivered Lumens <sup>3</sup>	Efficacy (LM/W) <sup>3</sup>	mA @ Emitter	Driver Output Current	BUG Rating	HID Equivalent <sup>4</sup>
0100NR1AR3X04030XXB	Open	3000	Type III	40	1042	3003	76.4	278	1670	1-3-2	50-70
0100NR1AR3X04040XXA	Open	4000	Type III	40	1042	3676	91.2	278	1670	1-4-2	50-70
In Testing	Open	3000	Type V	40	1042	N/A	N/A	278	1670	N/A	50-70
0100NR1AR5X04040XXA	Open	4000	Type V	40	1042	3428	87	278	1670	2-4-2	50-70
0100SR1AR3X04030XXJ	SST	3000	Type III	40	1042	3831	88.5	278	1670	1-3-3	50-70
0100SR1AR3X04040XXA	SST	4000	Type III	40	1042	3208	81.2	278	1670	1-3-2	50-70
0100SR1AR5X04030XXB	SST	3000	Type V	40	1042	2654	67.5	278	1670	-	50-70
0100SR1AR5X04040XXA	SST	4000	Type V	40	1042	3110	78.3	278	1670	2-3-2	50-70
0100NR1AR3X06030XXB	Open	3000	Type III	60	1042	4181	69.7	417	2500	1-4-2	70-100
0100NR1AR3X06040XXA	Open	4000	Type III	60	1042	5526	85	417	2500	1-4-3	70-100
0100NR1AR5X06030XXB	Open	3000	Type V	60	1042	4434	69.9	417	2500	2-4-2	70-100
0100NR1AR5X06040XXA	Open	4000	Type V	60	1042	5208	81.1	417	2500	2-4-2	70-100
0100SR1AR3X06030XXX	SST	3000	Type III	60	1042	4111	64.3	417	2500	1-4-3	70-100
0100SR1AR3X06040XXA	SST	4000	Type III	60	1042	4905	75.6	417	2500	1-3-3	70-100
0100SR1AR5X06030XXB	SST	3000	Type V	60	1042	3936	62.1	417	2500	2-3-2	70-100
0100SR1AR5X06040XXA	SST	4000	Type V	60	1042	4683	72.8	417	2500	2-3-2	70-100
0100NR1AR3X07530XXJ	Open	3000	Type III	75	1042	6609	88.0	566	3400	-	100-150
0100NR1AR3X07540XXH	Open	4000	Type III	75	1042	7596	100	566	3400	2-5-4	100-150
In Testing	Open	3000	Type V	75	1042	N/A	N/A	566	3400	N/A	100-150
0100NR1AR5X07540XXA	Open	4000	Type V	75	1042	6127	77.2	566	3400	3-4-3	100-150
0100SR1AR3X07530XXB	SST	3000	Type III	75	1042	4672	59.3	566	3400	1-3-3	100-150
0100SR1AR3X07540XXA	SST	4000	Type III	75	1042	5790	71.7	566	3400	2-4-3	100-150
0100SR1AR5X07530XXB	SST	3000	Type V	75	1042	4601	58.8	566	3400	-	100-150
0100SR1AR5X07540XXA	SST	4000	Type V	75	1042	5503	69.3	566	3400	3-3-3	100-150

R1 = 1st Generation Refractive Array

Lens: Acrylic Rippled

Decorative Options: Solid Spun Top (SST) or No Decorative Option (Open)

<sup>1</sup>Color temperature is nominal, please see test report for specific chromaticity information

<sup>2</sup>Contact factory for TM21 information/Driver specification

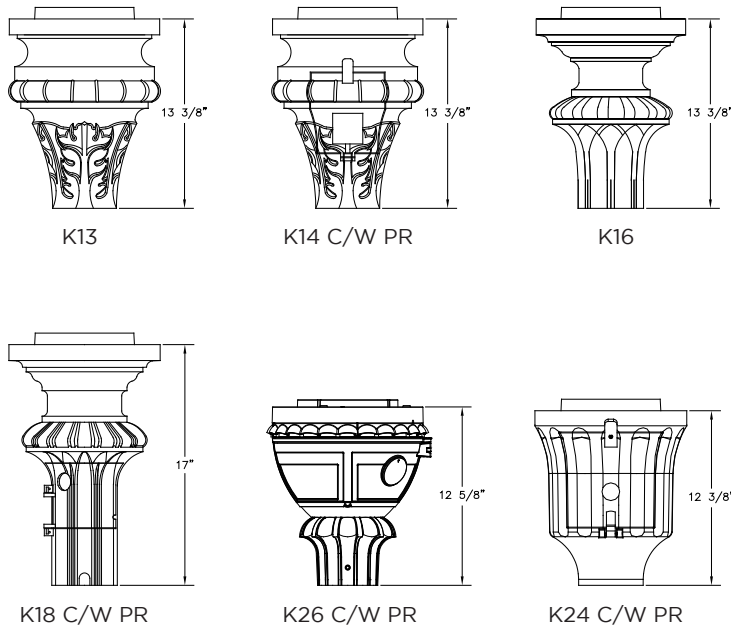
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<sup>4</sup>Equivalence should always be confirmed by performing a photometric layout, due to the variability of performance requirements and application criteria

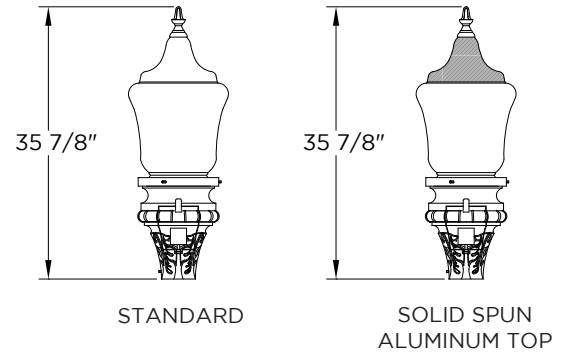
# FIXTURE OPTIONS

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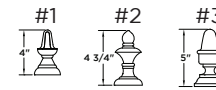
## Capital Options



## Decorative Options



## Finial Options



# HOW TO ORDER

