

KarbonCobra LED Streetlight Series

KC1 Specification Data Sheet

Project Wiscondin DOT QPL Listing
Type Type A LED Roadway Luminaire
Catalog No. KC1-36A-MV-40K7-t3R-GY-P13-WL-SC



Luminaire Data

Weight 7.7 lbs [3.5kg]

EPA 0.37 ft²

Ordering Information

Sample Catalog No.: KC1-36A-MV-30K7-T2R-DB1-CF-P5-SP2-PS-WL1-BBL-PT6

KC1	36A	MV	40K7	t#r	GY	P13-WL-SC
Product	LED Code	Voltage	Color Temp CRI	Optical Distribution	Finish*	Performance Code
KC1 KarbonCobra Size 1	36 A 36 LEDs Gen-A	MV 120-277Vac HV 347-480Vac	22K7 2200K, 70CRI 27K7 2700K, 70CRI 30K7 3000K, 70CRI 40K7 4000K, 70CRI 50K7 5000K, 70CRI 30K8¹ 3000K, 80CRI 40K8¹ 4000K, 80CRI 50K8¹ 5000K, 80CRI	T2R Type-2(regular) T2F Type-2(forward) T3R Type-3(regular) T3F Type-3(forward) T4R Type-4(regular) T4F Type-4(forward) T5 Type-5	BK Black DB1 Dark Bronze (RAL8019) GY Gray CF² Coastal Finish	P1 to P20 (see Page 3, 4 for details)

New Features

- 7 Pin Control Ready Receptacle Standard.
- Luminaire-level IP54 rating optional.
- Up to 20 Performance Codes.
- Full dimming capability with PS, up to 2000+ output options.
- Up to 50°C rating.
- Die-cast aluminum ADC1 housing.
- Single Hand door release, tool free.
- Improved Optical Performance with more distribution options.
- Standard 3-position straight terminal block.

Driver & Control Options	General Options
Driver Options (0-10V driver standard) D4i³ DALI D4i Driver	Surge (10kV/5kA, Fail-to-On Surge Protection Device standard) LSSP2 20kV/10kA Extreme Surge, Fail-to-Off SP2 20kV/10kA Extreme Surge, Fail-to-On
Receptacle Options (ANSI 7-PIN Control Ready Receptacle standard.) ⁴ LPGR No Receptacle On Top of the luminaire TLR4U³ D4i DALI 4-PIN Twist Lock Receptacle (Top) TLR4L³ D4i DALI 4-PIN Twist Lock Receptacle (Bottom)	Wattage Label WL Wattage Label, ANSI C136.15-2015 compliant WL1 Wattage Label, ANSI C136.15-2020 compliant
Control Options LLPC⁵ Long Life Photocell PS⁶ Field Adjustable Performance Selector SC⁵ Shorting Cap ZMSL2¹⁰ Zhaga Book 18 Motion Sensor w/ L2 Lens ZMSL7¹⁰ Zhaga Book 18 Motion Sensor w/ L7 Lens	Shields* CSS Cul-De-Sac Shield, Snap-On (factory installed) FSS Front Side Shield, Snap-On (factory installed) HSS House Side Shield, Snap-On (factory installed) VHS 80 Degree Cutoff Shield, Snap-On (factory installed) Other BBL Bubble level (inside of the housing) DSC Optional Door Safety Cable DFXXX⁸ Double Fuse ('XXX' = specify 208, 240, 480V) IP54⁷ Luminaire level IP54 rating PTX⁹ 12 AWG Three-Wire Pigtail with Length in Feet ('X' = specify length 3, 6, 10) RWG Rubber Wildlife Guard SFXXX⁸ Single Fuse ('XXX' = specify 120, 277, 347V)

General Accessories*
Shields* CSSKC1 Cul-De-Sac Shield, Snap-On* FSSKC1 Front Side Shield, Snap-On* HSSKC1 House Side Shield, Snap-On* VHSKC1 80 Degree Cutoff Shield, Snap-On*
Mounting Brackets (Specify finish)** PTB Pole Top Tenon Horizontal Arm Bracket PTB2 Pole Top Tenon Horizontal Arm Bracket (2@180°) RPB Round Pole Horizontal Arm Bracket SPB Square Pole Horizontal Arm Bracket WB Wall Horizontal Arm Bracket
Other** BSK Bird Deterrent Spider Kit LLPCMV Long Life Photocontrol MV LLPCHV Long Life Photocontrol HV

*Unless specified for field installation, Shields are shipped installed.
**All Mounting and Other Accessories are ordered & shipped separately, not to be included in the luminaire's catalog number.

1. 80CRI option only available in 3000K, 4000K & 5000K CCTs and may have longer lead times (contact factory).
2. Specify the CF Option for coastal installation. See warranty for details.
3. Not available with 'HV' Voltage option. 'TLR4U' & 'TLR4L' twist lock receptacle option requires 'D4i' DALI driver option to be selected.
4. ANSI 7-PIN Control Ready Receptacle (standard), is compatible with 'LLPC', 'PS', 'SC', and Networked Lighting Controls (NLC) nodes (by LEOTEK or others).
5. 'LLPC' & 'SC' do not ship installed, included w/ luminaire.
6. 'PS' Field Adjustable Performance Selector enables field adjustable light output dimming control from the specified Performance Code (see table on pg.5 for details).
7. When 'IP54' is specified, 'RWG' will be included.
8. For single or double fusing, 'XXX' must specify required voltage.
9. 'PTX' option, 'X' must specify pigtail length in feet.
10. 'ZMSL2', or 'ZMSL7' Zhaga Book 18 motion sensor option require both "D4i" DALI driver option and 'TLR4L' D4i DALI 4-PIN twist lock receptacle (bottom) to be selected. Top receptacle for use with wireless DALI control node (by LEOTEK or others).

Luminaire Specifications

Housing & Construction

Die-cast aluminum ADC1 housing with universal two-bolt slip fitter mounts to 1-1/4" to 2" (1-5/8" to 2-3/8" O.D. diameter mast arm. One-piece aluminum housing provides passive heat-sinking of the LEDs and has upper surfaces that shed precipitation. Mounting provisions meet 3G vibration per ANSI C136.31 Normal Application, Bridge & Overpass by independent lab. Mounting has leveling adjustment from $\pm 5^\circ$ in 2.5° steps. All hardware is stainless steel. Electrical components are accessed without tools via die cast aluminum door with one stainless steel quick release latch. Provided standard with removable polycarbonate wildlife guard. For additional protection, optional rubber wildlife guard (RWG) which conforms snugly to the mast arm is offered. All exposed hardware and fasteners are corrosion resistant stainless-steel. Entire luminaire is IP54 rated if "IP54" option is specified.

Light Emitting Diodes

Hi-flux/Hi-power white LEDs produce a minimum of 90% of initial lumen output at 60,000 hours of life based on IES TM21 (at 25°C) LEDs are tested in accordance with IES LM-80 testing procedures. IES TM21 lumen maintenance life projection is based on 6X the duration of the LED's IES LM-80 performance data. LED correlated color temperature options of 2200K, 2700K, 3000K, 4000K, or 5000K @ 70CRI or 80CRI (2200K and 2700K are 70CRI only). LEDs are 100% mercury and lead free.

Power Supply

IP66 rated power power with high power factor of > 0.90. Auto sensing universal AC input from 120 to 277VAC (MV model) and 347 to 480VAC (HV mode) rated for both line to line and line to neutral applications. Maximum THD rating of 20%. Class 1 or Class 2. Built-in overheating protection mechanism will reduce drive current to LEDs and electrical components if the driver experiences unusual internal overheating situation. Built-in short circuit, voltage overload, and current overload protection with automatic recovery after correction.

Optical Systems

All micro-lens optical systems produce IESNA Type 2, Type 3, Type 4, or Type 5 distributions and are fully sealed to maintain an IP66 rating. Luminaire produces 0% total lumens above 90° (BUG Rating, U=0). Optional house side shield (HSS) cuts light off at 1/2 mounting height behind luminaire. Front side shield (FSS) cuts light off at approximately one mounting height in front of the luminaire (street side). Cul-de-sac shield (CSS) provides back and side light control for end of cul-de-sac applications. 80 degree cutoff shield (VHS) eliminates very high angle light above 80 degrees from luminaire. All shields are field installable without tools. (see 'Ordering Information' for details). **For ComfortEnhanced low glare solution, please refer to KarbonCobra ComfortEnhanced specification data sheet.**

Photometry

Luminaires photometry are tested by certified independent testing laboratories in accordance with IES LM-79 testing procedures.

Electrical

Rated life of electrical components is 100,000 hours. Standard 0-10V dimmable drivers use an isolated power supply with 6kV integral surge standard. Power supply features a minimum power factor of 0.90 and <20% Total Harmonic Distortion (THD). EMC meets or exceeds FCC CFR Part 15. Optional DALI D4i certified LED drivers also available, which complies with IEC 62386 and ANSI C137.4 and DiIA. Standard 3-position straight terminal block accommodates 6 to 16 AWG wire. Standard surge protection (10kV/5kA) complies with IEEE/ANSI C62.41 and ANSI C136.2-2015. Optional 'SP2' and 'LSSP2' provides (20kV/10kA) extreme level surge protection.

Field Adjustability

Optional Performance Selector 'PS' is an integral 8-step fixed position dial allowing field adjustable lumen and wattage dimming control for added project and design versatility to meet installation specific requirements. The specified Performance Code provides maximum lumen output and will be factory set when the 'PS' option is selected. Only compatible KarbonCobra standard 0-10V drivers. Not compatible with 'D4i' DALI driver option.

Controls

Standard ANSI C136.41 7-wire controls ready receptacle is compatible with shorting cap (SC), photocell (LLPCMV/LLPCHV), wireless control module/node by others and LEOTEK's smart lighting control solutions (contact factory for details and availability). All 7-wire photocontrol receptacles have tool-less rotatable bases with a positive lock to not allow for over-rotation and possible damage to the receptacle. Optional DALI D4i driver configurations are also available for added controllability and design flexibility. DALI compatible 'TLR4U' and 'TLR4L' 4-PIN twist lock receptacle options available (wireless DALI control nodes or sensors by others).

Quality Control

Every luminaire is assembled in the USA and is performance tested before and after a 2-hour burn-in period.

Finish

Housing receives a fade and abrasion resistant polyester powder coat finish with 3.0 mil nominal thickness. Finish tested to withstand 5000 hours in salt spray exposure per ASTM B117 and Coastal Finish per ASTM G85. Finish tested 500 hours in UV exposure per ASTM G154 and meets ASTM D523 gloss retention.

Listings/Ratings/Labels

Luminaires are UL listed for use in wet locations in the United States and Canada. IP54 rating is optional. Luminaires are qualified to operate at ambient temperatures of -40°C to 50°C (-40°F to 122°F), some performance codes are qualified to operate at ambient temperatures of -40°C to 40°C (-40°F to 104°F), see details on page 3 and page 4.

Warranty

10-year limited warranty is standard on luminaire and components. See LEOTEK.com for warranty details, terms and conditions.

Standards

Luminaire complies with: ANSI: C136.2, C136.3, C136.10, C136.13, C136.15, C136.22, C136.31, C136.35, C136.37, C136.41, C62.41, C78.377, C82.77 Other: FCC 47 CFR, IEC 60598, ROHS II, UL 1449, UL 1598.

Vandal Resistance

Housing and optics rated to IK10.

Color Specifications

Order Code	Color	RAL #	Pantone Equivalent
GY	Gray	7040	429C
BK	Black	9004	BLACK 6C
DB1	Dark Bronze	8019	412

TM21 Lumen Maintenance per IEC TM21-11 Calculation

Model Number	50,000 Hours	60,000 Hours	80,000 hours	100,000 Hours
KC1 36A (P1-P19)	93%	92%	90%	88%
KC1 36A (P20)	92%	91%	89%	87%

Nominal Performance Data 2200K (22K7) (2R optic, 70CRI, standard IK10 rated lens)

All data shown is nominal. Normal tolerance +/- 10% due to factors that include distribution type, LED bin variance and ambient temperatures.

LED Code	Performance Code	System Wattage (W)	Delivered Lumens (Lm) ¹	Efficacy (Lm/W)	WL ² /WL1 ³ Label Wattage	WL1 ³ Label Lumen
36A	P1	15	2158	144	20	2,000
	P2	20	2871	144	20	3,000
	P3	26	3778	145	30	4,000
	P4	30	4379	146	30	4,000
	P5	35	4970	142	40	5,000
	P6	39	5557	142	40	6,000
	P7	44	6137	139	40	6,000
	P8	49	6714	137	50	7,000
	P9	55	7418	135	60	7,000
	P10	59	8005	136	60	8,000
	P11	64	8564	134	60	9,000
	P12	68	9100	134	70	9,000
	P13	72	9617	134	70	10,000
	P14	77	10120	131	80	10,000
	P15	81	10611	131	80	11,000
	P16	85	11097	131	90	11,000

Nominal Performance Data 2700K (27K7) (2R optic, 70CRI, standard IK10 rated lens)

All data shown is nominal. Normal tolerance +/- 10% due to factors that include distribution type, LED bin variance and ambient temperatures.

LED Code	Performance Code	System Wattage (W)	Delivered Lumens (Lm) ¹	Efficacy (Lm/W)	WL ² /WL1 ³ Label Wattage	WL1 ³ Label Lumen
36A	P1	15	2314	154	20	2,000
	P2	20	3078	154	20	3,000
	P3	26	4052	156	30	4,000
	P4	30	4696	157	30	5,000
	P5	35	5329	152	40	5,000
	P6	39	5958	153	40	6,000
	P7	44	6580	150	40	7,000
	P8	49	7199	147	50	7,000
	P9	55	7955	145	60	8,000
	P10	59	8583	145	60	8,000
	P11	64	9183	143	60	9,000
	P12	68	9758	143	70	10,000
	P13	72	10312	143	70	10,000
	P14	77	10851	141	80	11,000
	P15	81	11378	140	80	11,000
	P16	85	11899	140	90	12,000
	P17	90	12418	138	90	12,000
	P18	95	12938	136	100	13,000
	P19	100	13466	135	100	13,000

Notes:

1. Nominal lumens. Normal tolerance $\pm$ 10% due to factors including distribution type, LED bin variance, and ambient temperatures
2. WL- Wattage Label, ANSI C136.15-2015 compliant.
Wattage- is rounded to the nearest value multiples of 10.
3. WL1- Wattage Label, ANSI C136.15-2020 compliant:
Wattage- is rounded to the nearest value multiples of 10.
Lumens- is rounded to the nearest value multiples of 1,000 lumens. (up to 24,000 lumens).
4. Maximum LED drive current is 500mA.

Nominal Performance Data 3000K (30K7) (2R optic, 70CRI, standard IK10 rated lens)

All data shown is nominal. Normal tolerance +/- 10% due to factors that include distribution type, LED bin variance and ambient temperatures.

LED Code	Performance Code	System Wattage (W)	Delivered Lumens (Lm) ¹	Efficacy (Lm/W)	WL ² /WL1 ³ Label Wattage	WL1 ³ Label Lumen
36A	P1	15	2496	166	20	2,000
	P2	20	3320	166	20	3,000
	P3	26	4370	168	30	4,000
	P4	30	5065	169	30	5,000
	P5	35	5748	164	40	6,000
	P6	39	6427	165	40	6,000
	P7	44	7098	161	40	7,000
	P8	49	7766	158	50	8,000
	P9	55	8580	156	60	9,000
	P10	59	9259	157	60	9,000
	P11	64	9905	155	60	10,000
	P12	68	10525	155	70	11,000
	P13	72	11123	154	70	11,000
	P14	77	11705	152	80	12,000
	P15	81	12273	152	80	12,000
	P16	85	12835	151	90	13,000
	P17	90	13394	149	90	13,000
	P18	95	13956	147	100	14,000
	P19	100	14525	145	100	15,000

Nominal Performance Data 4000K (40K7) / 5000K (50K7) (2R optic, 70CRI, standard IK10 rated lens)

All data shown is nominal. Normal tolerance +/- 10% due to factors that include distribution type, LED bin variance and ambient temperatures.

LED Code	Performance Code	System Wattage (W)	Delivered Lumens (Lm) ¹	Efficacy (Lm/W)	WL ² /WL1 ³ Label Wattage	WL1 ³ Label Lumen
36A	P1	15	2600	173	20	3,000
	P2	20	3459	173	20	3,000
	P3	26	4552	175	30	5,000
	P4	30	5276	176	30	5,000
	P5	35	5988	171	40	6,000
	P6	39	6695	172	40	7,000
	P7	44	7393	168	40	7,000
	P8	49	8089	165	50	8,000
	P9	55	8938	163	60	9,000
	P10	59	9644	163	60	10,000
	P11	64	10318	161	60	10,000
	P12	68	10964	161	70	11,000
	P13	72	11587	161	70	12,000
	P14	77	12192	158	80	12,000
	P15	81	12785	158	80	13,000
	P16	85	13370	157	90	13,000
	P17	90	13952	155	90	14,000
	P18	95	14537	153	100	15,000
	P19	100	15130	151	100	15,000
	P20 ⁵	105	15735	150	110	16,000

Notes:

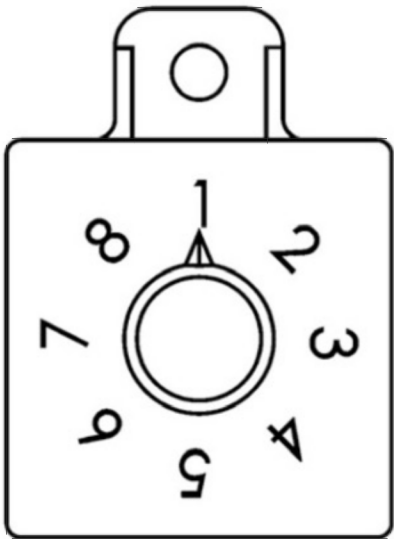
1. Nominal lumens. Normal tolerance $\pm$ 10% due to factors including distribution type, LED bin variance, and ambient temperatures
2. WL- Wattage Label, ANSI C136.15-2015 compliant.
Wattage- is rounded to the nearest value multiples of 10.
3. WL1- Wattage Label, ANSI C136.15-2020 compliant:
Wattage- is rounded to the nearest value multiples of 10.
Lumens- is rounded to the nearest value multiples of 1,000 lumens. (up to 24,000 lumens).
4. Maximum LED drive current is 500mA.
5. Luminaire at this performance code is qualified to operate at ambient temperatures of -40°C to 40°C. (-40°F to 104°F).

Field Adjustable Performance Selector 'PS'

The optional Performance Selector is an integral dial that allows for field adjustable lumen/wattage dimming control for added design versatility. Normal tolerance +/- 5%. 'PS' dial ships from the factory at the maximum 100% output setting #8 which equals the customer specified Performance Code.

PS Position	Lumen Output %	P1 Wattage	P2 Wattage	P3 Wattage	P4 Wattage	P5 Wattage	P6 Wattage	P7 Wattage	P8 Wattage	P9 Wattage	P10 Wattage
8	100%	15	20	26	30	35	39	44	49	55	59
7	90%	14	18	23	27	32	35	40	44	50	53
6	80%	12	16	21	24	28	31	35	39	44	47
5	70%	11	14	18	21	25	27	31	34	39	41
4	60%	9	12	16	18	21	23	26	29	33	35
3	50%	8	10	13	15	18	20	22	25	28	30
2	40%	6	8	10	12	14	16	18	20	22	24
1	30%	5	6	8	9	11	12	13	15	17	18

PS Position	Lumen Output %	P11 Wattage	P12 Wattage	P13 Wattage	P14 Wattage	P15 Wattage	P16 Wattage	P17 Wattage	P18 Wattage	P19 Wattage	P20 Wattage
8	100%	64	68	72	77	81	85	90	95	100	105
7	90%	58	61	65	69	73	77	81	86	90	95
6	80%	51	54	58	62	65	68	72	76	80	84
5	70%	45	48	50	54	57	60	63	67	70	74
4	60%	38	41	43	46	49	51	54	57	60	63
3	50%	32	34	36	39	41	43	45	48	50	53
2	40%	26	27	29	31	32	34	36	38	40	42
1	30%	19	20	22	23	24	26	27	29	30	32



Example of Field Adjustable Selector (PS) and Label.

BUG Ratings: 2200K (22K7)

All data nominal. IES files for all CCTs are available at leotek.com.

Product & LED Code	Performance Code	Type 2R	Type 2F	Type 3R	Type 3F	Type 4R	Type 4F	Type 5
		BUG Rating	BUG Rating	BUG Rating	BUG Rating	BUG Rating	BUG Rating	BUG Rating
36A	P1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G1
	P2	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G1
	P3	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B3-U0-G1
	P4	B1-U0-G1	B1-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B3-U0-G1
	P5	B1-U0-G1	B1-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B3-U0-G1
	P6	B1-U0-G1	B2-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B3-U0-G1
	P7	B1-U0-G2	B2-U0-G2	B1-U0-G2	B2-U0-G2	B1-U0-G2	B1-U0-G2	B3-U0-G1
	P8	B2-U0-G2	B2-U0-G2	B1-U0-G2	B2-U0-G2	B1-U0-G2	B1-U0-G2	B3-U0-G2
	P9	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B1-U0-G2	B2-U0-G3	B3-U0-G2
	P10	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B1-U0-G2	B2-U0-G3	B3-U0-G2
	P11	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B1-U0-G2	B2-U0-G3	B3-U0-G2
	P12	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G2
	P13	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G3	B4-U0-G2
	P14	B2-U0-G2	B2-U0-G3	B2-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P15	B2-U0-G2	B2-U0-G3	B2-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P16	B2-U0-G2	B3-U0-G3	B2-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B4-U0-G2

BUG Ratings: 2700K (27K7)

All data nominal. IES files for all CCTs are available at leotek.com.

Product & LED Code	Performance Code	Type 2R	Type 2F	Type 3R	Type 3F	Type 4R	Type 4F	Type 5
		BUG Rating	BUG Rating	BUG Rating	BUG Rating	BUG Rating	BUG Rating	BUG Rating
36A	P1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G1
	P2	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B2-U0-G1
	P3	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B3-U0-G1
	P4	B1-U0-G1	B1-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B3-U0-G1
	P5	B1-U0-G1	B1-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B3-U0-G1
	P6	B1-U0-G1	B2-U0-G2	B1-U0-G2	B2-U0-G2	B1-U0-G2	B1-U0-G2	B3-U0-G1
	P7	B2-U0-G2	B2-U0-G2	B1-U0-G2	B2-U0-G2	B1-U0-G2	B1-U0-G2	B3-U0-G2
	P8	B2-U0-G2	B2-U0-G2	B1-U0-G2	B2-U0-G2	B1-U0-G2	B1-U0-G3	B3-U0-G2
	P9	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B1-U0-G2	B2-U0-G3	B3-U0-G2
	P10	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B1-U0-G2	B2-U0-G3	B3-U0-G2
	P11	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G2
	P12	B2-U0-G2	B2-U0-G3	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G3	B4-U0-G2
	P13	B2-U0-G2	B2-U0-G3	B2-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P14	B2-U0-G2	B2-U0-G3	B2-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P15	B2-U0-G2	B3-U0-G3	B2-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P16	B2-U0-G2	B3-U0-G3	B2-U0-G2	B3-U0-G3	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P17	B2-U0-G2	B3-U0-G3	B2-U0-G2	B3-U0-G3	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P18	B3-U0-G3	B3-U0-G3	B2-U0-G2	B3-U0-G3	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P19	B3-U0-G3	B3-U0-G3	B2-U0-G2	B3-U0-G3	B2-U0-G3	B2-U0-G3	B4-U0-G2

BUG Ratings: 3000K (30K7)

All data nominal. IES files for all CCTs are available at leotek.com.

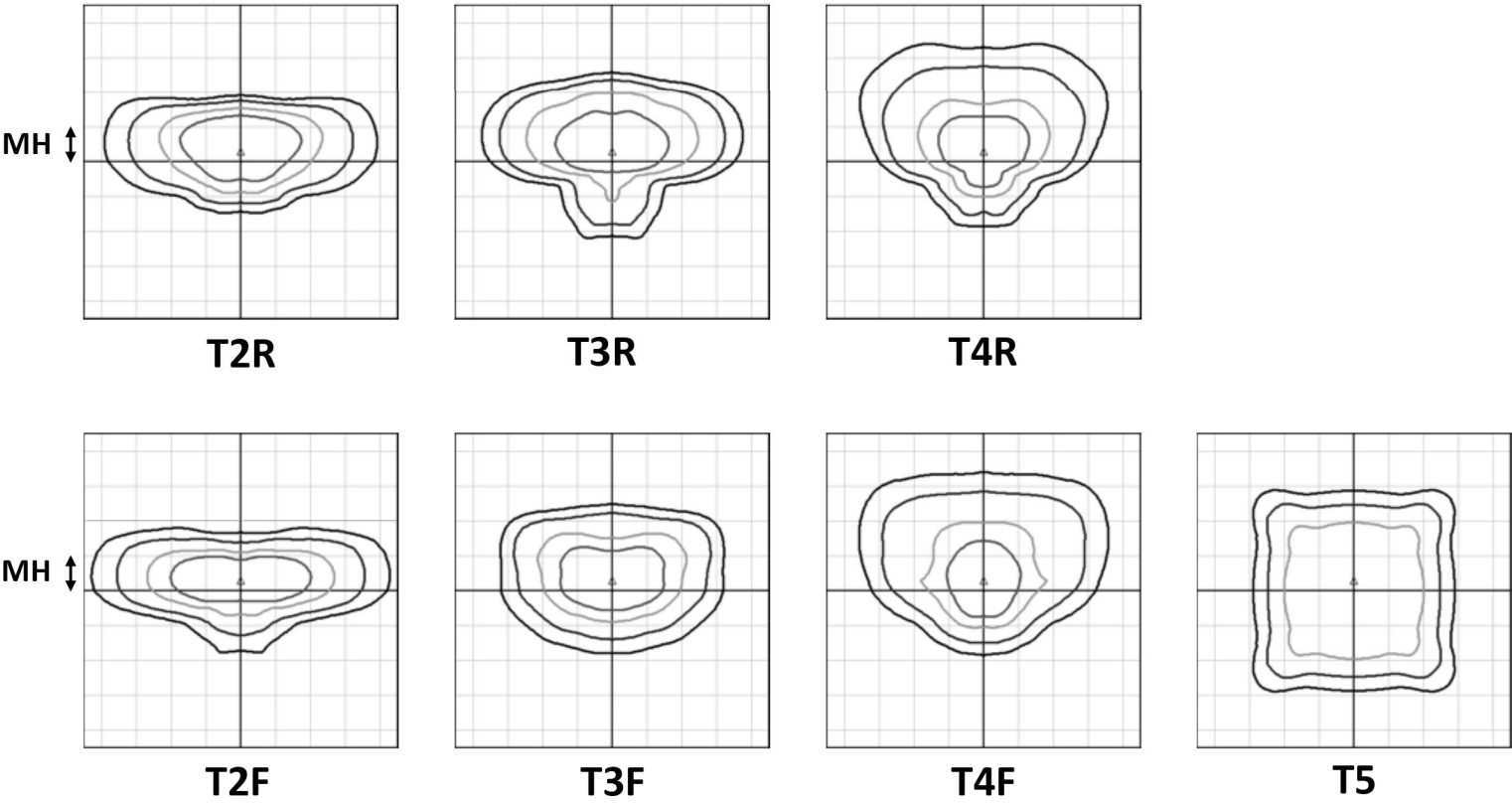
Product & LED Code	Performance Code	Type 2R	Type 2F	Type 3R	Type 3F	Type 4R	Type 4F	Type 5
		BUG Rating	BUG Rating	BUG Rating	BUG Rating	BUG Rating	BUG Rating	BUG Rating
36A	P1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G1
	P2	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B2-U0-G1
	P3	B1-U0-G1	B1-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B3-U0-G1
	P4	B1-U0-G1	B1-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B3-U0-G1
	P5	B1-U0-G1	B2-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B3-U0-G1
	P6	B1-U0-G2	B2-U0-G2	B1-U0-G2	B2-U0-G2	B1-U0-G2	B1-U0-G2	B3-U0-G2
	P7	B2-U0-G2	B2-U0-G2	B1-U0-G2	B2-U0-G2	B1-U0-G2	B1-U0-G3	B3-U0-G2
	P8	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B1-U0-G2	B2-U0-G3	B3-U0-G2
	P9	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B1-U0-G2	B2-U0-G3	B3-U0-G2
	P10	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G2
	P11	B2-U0-G2	B2-U0-G3	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G3	B4-U0-G2
	P12	B2-U0-G2	B2-U0-G3	B2-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P13	B2-U0-G2	B3-U0-G3	B2-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P14	B2-U0-G2	B3-U0-G3	B2-U0-G2	B3-U0-G3	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P15	B2-U0-G2	B3-U0-G3	B2-U0-G2	B3-U0-G3	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P16	B2-U0-G2	B3-U0-G3	B2-U0-G2	B3-U0-G3	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P17	B3-U0-G3	B3-U0-G3	B2-U0-G2	B3-U0-G3	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P18	B3-U0-G3	B3-U0-G3	B2-U0-G2	B3-U0-G3	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P19	B3-U0-G3	B3-U0-G3	B2-U0-G2	B3-U0-G3	B2-U0-G3	B2-U0-G3	B4-U0-G3

BUG Ratings: 4000K (40K7) / 5000K (50K7)

All data nominal. IES files for all CCTs are available at leotek.com.

Product & LED Code	Performance Code	Type 2R	Type 2F	Type 3R	Type 3F	Type 4R	Type 4F	Type 5
		BUG Rating	BUG Rating	BUG Rating	BUG Rating	BUG Rating	BUG Rating	BUG Rating
36A	P1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G1
	P2	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B2-U0-G1
	P3	B1-U0-G1	B1-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B3-U0-G1
	P4	B1-U0-G1	B1-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B3-U0-G1
	P5	B1-U0-G1	B2-U0-G2	B1-U0-G2	B2-U0-G2	B1-U0-G2	B1-U0-G2	B3-U0-G1
	P6	B2-U0-G2	B2-U0-G2	B1-U0-G2	B2-U0-G2	B1-U0-G2	B1-U0-G2	B3-U0-G2
	P7	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B1-U0-G2	B2-U0-G3	B3-U0-G2
	P8	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B1-U0-G2	B2-U0-G3	B3-U0-G2
	P9	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G2
	P10	B2-U0-G2	B2-U0-G3	B2-U0-G2	B2-U0-G2	B2-U0-G2	B2-U0-G3	B4-U0-G2
	P11	B2-U0-G2	B2-U0-G3	B2-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P12	B2-U0-G2	B3-U0-G3	B2-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P13	B2-U0-G2	B3-U0-G3	B2-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P14	B2-U0-G2	B3-U0-G3	B2-U0-G2	B3-U0-G3	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P15	B2-U0-G2	B3-U0-G3	B2-U0-G2	B3-U0-G3	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P16	B3-U0-G3	B3-U0-G3	B2-U0-G2	B3-U0-G3	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P17	B3-U0-G3	B3-U0-G3	B2-U0-G2	B3-U0-G3	B2-U0-G3	B2-U0-G3	B4-U0-G2
	P18	B3-U0-G3	B3-U0-G3	B2-U0-G2	B3-U0-G3	B2-U0-G3	B2-U0-G3	B4-U0-G3
	P19	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3	B2-U0-G3	B3-U0-G4	B4-U0-G3
	P20	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3	B2-U0-G3	B3-U0-G4	B4-U0-G3

Optical Distribution
 (Each square block represents one mounting height, MH)



MH = 30ft

- 0.1 Fc
- 0.2 Fc
- 0.5 Fc
- 1.0 Fc

Motion Sensor (Optional) Specifications*

'ZMSL2', or 'ZMSL7' 4 pin (for Zhaga Book 18 installation) motion sensor option require both "D4i" DALI driver option and 'TLR4L' D4i DALI 4-PIN twist lock receptacle (bottom) to be selected. Top receptacle for use with wireless DALI control node (by LEOTEK or others).

Description

Digital passive infrared luminaire 4-PIN outdoor occupancy sensor provides high/low/off control based on motion detection. Initial setup and subsequent sensor adjustments are made using the iOS or Android Sensor Configuration App (search for Wattstopper Sensor Configuration App) or through compatible DALI devices and outdoor lighting controllers conforming to Zhaga or Dii standards (103 and 303*) remotely. Available with both MV or HV input voltage options.

Operation

Standard factory setting will dim the luminaire to 50% until motion is sensed and then it will power to 100%. When motion is not detected for five minutes, the luminaire will dim back to 50%. Ramp up and fade down times are adjustable, but initially set to NONE. The percent dimming and time durations may be field adjusted using the iOS or Android Sensor Configuration App by Bluetooth* low energy technology commissioning (search for Wattstopper Sensor Configuration App) or through compatible DALI devices and outdoor lighting controllers conforming to Zhaga or DiiA standards (103 and 303**) remotely.

*Devices with Bluetooth 5.0, iPhone 8 and Samsung Galaxy S8 and later devices are recommended for optimal performance.

**DALI 303 features are continually released. Please consult Wattstopper for a list of current features.

Optical System

Multi-cell, multi-tier Fresnel lens with a 360 degree view detects unobstructed motion within one mounting height, up lens configurations for 8-15 ft. ('ZMSL2') or up to 40 ft. ('ZMSL7'). Consult factory for higher mounting height requirements.

Finish

Sensor exterior ring and lens are gray polycarbonate, UV and impact resistant.

Listings/Ratings

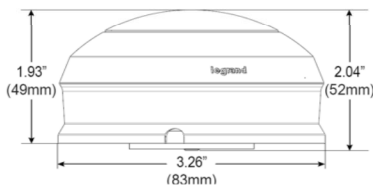
Sensor is UL and cUL listed(E101196), IP65 rated and CE compliant.

Warranty

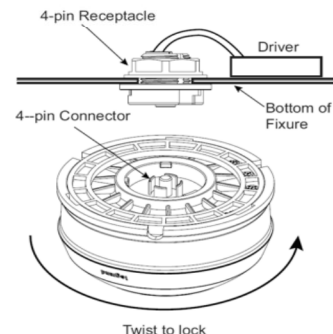
5-year limited warranty on luminaires and components with a motion sensor.

Motion Sensor (Optional) Data

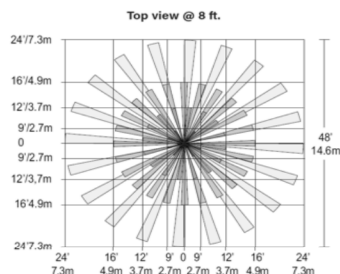
ZMSL2/ZMSL7 Dimensions



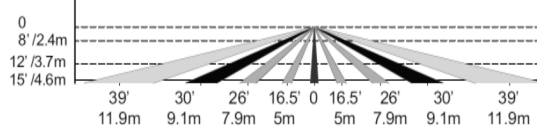
ZMSL2/ZMSL7 Installation



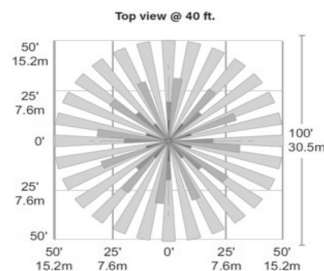
L2 Lens Coverage Top View



L2 Lens Coverage Side View



L7 Lens Coverage Top View



L7 Lens Coverage Side View

