

Terms Used to Discuss Lights

These are general layman's definitions utilized by Lighting Task Force (LTF)

AASHTO - The American Association of State Highway Transportation Officials. They set standards that DDOT follows.

Bug Rating – from the Joint International Dark Sky (IDA) & Illuminating Engineering Society (IES) Model Lighting Ordinance, link: http://ies.org/pdf/mlo/mlo_final_june2011.pdf

Uplight – amount of light shining upward towards the sky

Backlight – amount of light trespass behind pole (opposite area intended to be lit)

Glare (frontlight) - amount of light shining in front of fixture at 60 – 90 degree angle

Generally the higher the Bug Rating, the more uplight, backlight & glare you have.

CCT - Correlated Color Temperature. The higher the number, the cooler the lamp color will appear.

2700- Standard Incandescents

4000- Metal halide (stadiums and car dealerships use these)

5000- LEDs (minimum considered by DDOT)

5600- noon sun

Distribution – the places a light shines on the ground.

Type I – an elongated oval

Type II – a semicircular pattern, with the flat part where the pole is and the “rainbow” going forward. DDOT specified Type II distributions for the alley lights in the Green Alley.

Light trespass – "Unwanted light that causes annoyance, discomfort, distraction, or a reduction in visibility."

Lumens – measures the light output of a LED or incandescent bulb. This counts lights going in all directions.

Lux – the amount of light at a certain point (say on a person in an alley or street). 1 Lux is the amount of light that you get from 1 candle on 1 square meter of surface, 1 meter away from the candle. 2 Lux is the amount of light from 2 candles, on 1 square meter of surface, 1 meter away.

Watts – the amount of energy used by a bulb. LEDs have much lower wattage for more light than incandescent or High Pressure Sodium bulbs (the strong yellow ones).

Terms used to discuss roads

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Classification	In Chevy Chase	Daily Traffic Volume	AASHTO min(lux)
Principal Arterial	Military- Nebraska to Rock Creek Nebraska Ave Connecticut Ave	Over 15,000	12-Commercial 9- Intermediate 6- Residential
Minor Arterials	Military – 33 rd St/Nebraska to Western; Western Avenue; Reno Road	8-15,000	5- Residential
Collector	Wise Road Oregon Ave Utah Ave 27 th St Nevada Ave McKinley St Fessenden (Ct to Wisconsin)	2-8000	4- Residential
Local Streets	All others not specified	< 2000	3- Residential
Alleys	All unless otherwise specified	Minimal	2- Residential
Interstates/ Freeways	n/a	On WTOP	12-Commercial 9- Intermediate 6- Residential

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Terms used to discuss perception of brightness

Photopic vs. Scotopic vision – how much light the eyes perceive using just cones (as in daylight) vs. using cones and rods (as in dim light). Using photopic lumens can underestimate the light intensity by ignoring the impact on the rod cells.

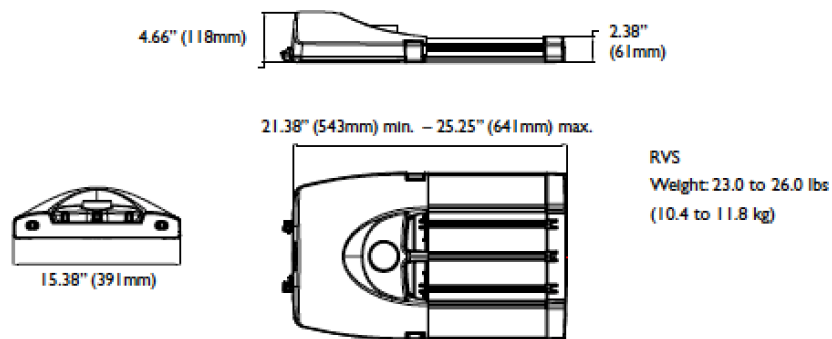
Type of light	Wattage	Standard photopic lumens	Pupil lumens (what the eye perceives)	Change
Low Pressure Sodium	250	32500	7475	75% less
High Pressure Sodium	250	27500	17,050	30% less
Metal Halide	400	36000	53640	50% more
LED	15	2100	3990	90% more

Spec. Sheet

Project name	Washington DC	Type	135 Watt Equivalent - R Version		
Date	1-8-13	Prepared by	David Baum		
RVS	110W64LED4K-R	LE2 or LE3	UNIV	RC-API	GY3
Luminaire	Lamp	Optical system	Voltage	Options	Finish

RoadView LED R Series

RVS



Lamps

LUMINAIRE PERFORMANCE DATA (Nominal 4000K CCT)												
Lamp	LEDs	Drive Current	Luminaire Lumens*	System Watts	Max. system current (amps)	Weight		Length		EPA		
						lb.	kg.	in.	mm.	sq. ft.	sq. m.	
35W32LED4KR	32	350	3670	37	0.36	23	10.4	21.38	543	0.53	0.049	
55W32LED4KR	32	530	5303	56	0.54	23	10.4	21.38	543	0.53	0.049	
72W32LED4KR	32	700	6507	73	0.72	23	10.4	21.38	543	0.53	0.049	
55W48LED4KR	48	350	5469	53	0.54	23	10.4	21.38	543	0.53	0.049	
80W48LED4KR	48	530	7903	81	0.82	23	10.4	21.38	543	0.53	0.049	
108W48LED4KR	48	700	9694	105	1.08	23	10.4	21.38	543	0.53	0.049	
70W64LED4KR	64	350	6947	68	0.72	26	11.8	25.25	641	0.60	0.056	
110W64LED4KR	64	530	10039	104	1.09	26	11.8	25.25	641	0.60	0.056	
90W80LED4KR	80	350	8409	85	0.90	26	11.8	25.25	641	0.60	0.056	
135W80LED4KR	80	530	12152	129	1.36	26	11.8	25.25	641	0.60	0.056	

**For Type II distribution. See photometric files for other distributions plus updated information*



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Optical systems / LED **To Be Specified** Voltage

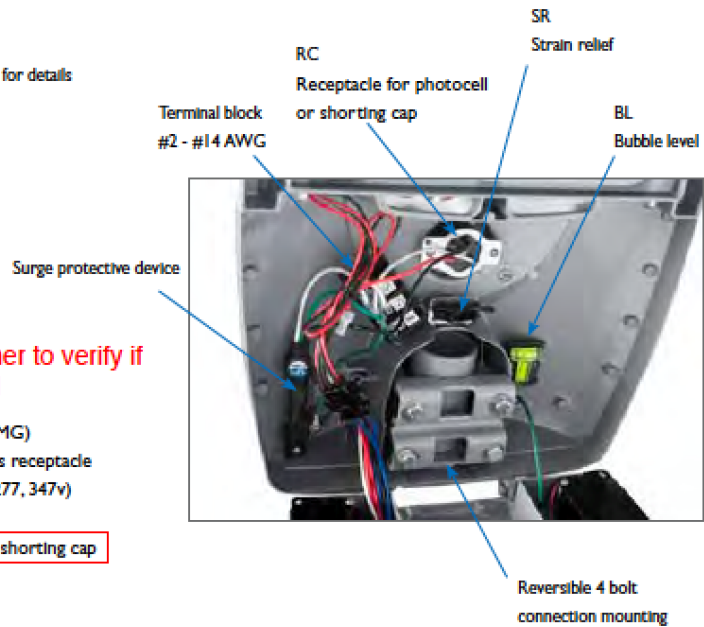
LE2	TYPE II / Asymmetrical distribution	UNIV (120-277)	347	480
LE3	TYPE III / Asymmetrical distribution			
LE4	TYPE IV / Asymmetrical distribution			

Driver options**

AST	Driver pre-programmed with progressive lamp starting*
CDMG	Dynadimmer standard dimming program*
CDMGP	Dynadimmer custom dimming program*
CLO	Constant Light Output, driver pre-programmed to achieve the same light intensity for the duration of the lifespan of the lamp*
DALI	Driver compatible with DALI control systems*
DMG	Dimmable driver 0-10 volt
OTL	Over The Life, driver pre-programmed to signal the end of lamp life*
OVR	Dynadimmer override function for use with motion detector or other switching device

*Only available with 120 - 277 volts.

** For all programmable options please consult the factory for details



Luminaire options

API	ANSI/NEMA wattage label	Customer to verify if needed
BL	Bubble level	
OSL3W	Motion detector (requires DMG or CDMG)	
PH8	Photoelectric cell, twistlock type includes receptacle	
PH9	Shorting cap for single phase (120, 240, 277, 347v) with receptacle	
RC	Receptacle for a twist-lock photocell or shorting cap	
SR	Strain relief	

Specifications subject to change without notice.
Consult factory for full details.

Finish options

GY3	Gray	BR	Bronze
WH	White	BK	Black

EXP Extrusion painted to match cast housing color selected above (standard extrusion color is anodized aluminum).

Additional colors are available. Consult factory for complete specifications.



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Lamp

Composed of high performance white LEDs. Color temperature of 4000 Kelvin +/- 300 nominal, 73 CRI. Ambient operating temperature range -40°C (-40°F) to +40°C (104°F). L70 lifetime of 100000 hours minimum at 25C ambient (75000 hours for 700mA model with 96 LEDs).

Optical system

Composed of high performance lenses, protected by a flat tempered glass lens. System is rated IP66. Photometric performance is tested according to IES LM-79.

Surge protector

Surge protective device provides all phases protection for line-ground, line-neutral, and neutral-ground in accordance with IEEE / ANSI C62.41.2 C High. Surge rating 10 kV, 10 kA and DOE Model Specification for Roadway Luminaires Elevated requirements per Appendix D. Surge protection is standard for all product models 120-480v.

Driver

Electronic driver, operating range 50-60 Hz. Auto-adjusting to input voltage between 120-277 volt AC, or 347-480 volt AC. Minimum power factor 0.90, max THD 20%. UL recognized component. IP66 rated. Optional dimming (0-10v) and digital driver features available.

Housing

The upper and lower parts of the housing are made of die cast A360 aluminum alloy. The 4-bolt mounting system includes a reversible bracket made of zinc plated steel. Fits on a 1.66" to 2.375" OD by 5" long tenon, fixed by 3/8-16 UNC steel zinc plated bolts. An integral part of the housing permits an adjustment of +/- 5° by steps of 2.5°.

Power door

The housing is complete with a tool-less removable power door including quick disconnects for ease of service. A tool free latch assembly on the power door allows for easy access to the electrical compartment.

Heat sink

The extruded heat sink is made of A6063 aluminum alloy, and is shaped to draw heat away from the LEDs. Product does not use any cooling device with moving parts (has passive cooling device).

LED platform

The LEDGINE LED platform consist of two LED boards with 48, 64, or 80 LUXEON R LEDs each, as required to provide total LEDs from 96 - 160. The LED boards are removable and replaceable.

Wiring

Luminaire wiring is done using a terminal block located inside the housing. Terminal block accepts three wires (#2-14 AWG).

Hardware and seals

All hardware shall be stainless steel or corrosion resistant. All seals and sealing devices are lined with silicone.

Finish

Application of a polyester powder coat paint. (4 mils/100 microns). The chemical composition provides a highly durable UV and salt spray resistant finish in accordance with the ASTM-B117 standard and humidity proof in accordance with the ASTM-D2247 standard. The specially formulated Luminal powder coat finish is available in standard gray. Additional colors are available. Consult factory for complete specifications.

Vibration resistance

Meets the ANSI C136.31-2001 table 2, American National Standard for Roadway Luminaire Vibration specifications for Bridge/overpass applications (3G).

Certifications and Compliance

CSA, UL or cUL ISO 9001-2008. All electrical components are RoHS compliant. Listed on Design Lights Consortium (DLC) Qualified Products List (QPL).



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