

UR20 - Post Top

ARCHITECTURAL AREA/SITE

DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

FEATURES

- 20" size in single/dual arm post top, pole and wall mount
- High performance optics up to 16,874 delivered lumens
- Elegant form factor
- Diffusion lens option
- UL/cUL listed for wet locations, IP66 and 4G/1.5G vibration rated



3000K and warmer CCTs only

CONTROL TECHNOLOGY



LIGHT GRID⁺

SPECIFICATIONS

CONSTRUCTION

- Low copper aluminum alloy die-casting is designed as one-piece.
- Molded silicone gasket throughout insures the sealing between the two compartments and provides ingress protection.
- All external fasteners are stainless steel.
- Cover is secured to Lens frame by the latch and hinge.

OPTICS

- LEDs mount to a metal printed circuit board assembly (MCPCB).
- Optical lenses are clear injection molded PMMA acrylic.
- Optional Backlight Control on each LED module to completely control unwanted backlight.
- Optional fixture finish optical surfaces will not exceed BUG ratings of the standard white finish.

LENS

- Standard lens (CLR) IK08
- Clear Polycarbonate Lens (CP) IK10

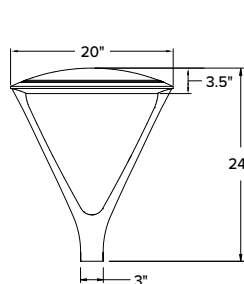
INSTALLATION

- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.

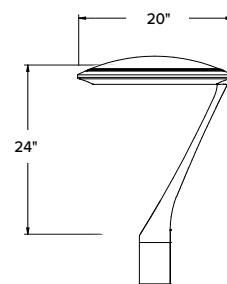
ELECTRICAL

- Universal voltage, 120 through 277V with a $\pm 10\%$ tolerance. Driver is Underwriters Laboratories listed.
- High voltage configurations, 347/480. Driver has a 0-10V dimming interface for multi-level illumination options. Driver is Underwriters Laboratories listed.
- "Thermal Shield", secondary side, thermistor provides protection for the sustainable life of LED module and electronic components
- Drivers shall have greater than a 0.9 power factor, less than 20% harmonic distortion, and be suitable for operation in -40°C to 40°C ambient environments.
- Luminaire shall be capable of operating at 100% brightness in a 40°C environment. Both driver and optical array have integral thermal protection that will dim the luminaire upon detection of temperatures in excess of 85°C.
- Surge protection: 10,000k in parallel, 20,000k in series
- Wiring: No. 18AWM rated 105°C, wet rating.

OuroTM



FM33



FMSA33/PTSA23
FMSA34, PTSA24, PTSA34

	Weight	EPA
UR20	35 lbs / 15.8 kg	0.512 ft. ²

CONTROLS

7PR

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

Standard customer operation modes:

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

(Specifications continued on page 5)

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ORDERING GUIDE

Example: UR20-24L-25-3K8-3-L-UNV-FMSA33-BLT-7PR-BC

CATALOG #

HOUSING

UR20						
Model	LED Engine	CCT/CRI	Distribution	Rotation	Voltage	
UR20	Ouro	No Lens or Clear Lens	AM ^{1,2} Amber, 595nm	No Lens or Clear Lens	(Blank) Blank for no rotation	UNV 120-277V
		24L-25 3,000 lm	27K8 2700K, 80 CRI	FR Type 1/Front Row		347 347V
		24L-65 7,000 lm	3K7 3000K, 70 CRI	2 Type II	L ⁴ Optic rotation left	480 480V
		56L-75 10,000 lm	3K8 3000K, 80 CRI	3 Type III	R ⁴ Optic rotation right	Consult factory
		56L-110 15,000 lm	35K8 3500K, 80 CRI	4 Type IV		
		56L-140 17,000 lm	3K9 3000K, 90 CRI	4W Type IV Wide		
		HDL - High Diffusion Lens	4K7 4000K, 70 CRI	5QM ³ Type V Square Medium		
		28L-30 3,000 lm	4K8 4000K, 80 CRI	5QN ³ Type V Square Narrow		
		28L-70 7,000 lm	5K7 5000K, 70 CRI	5R ³ Type V Rectangular		
		68L-80 9,000 lm	Consult factory for other CCTs and CRIs	5W ³ Type V Wide (Round)		
		68L-115 13,000 lm		HDL - High Diffusion Lens		
		68L-150 15,000 lm		3 Type III/Asymmetric		
				5W ³ Type V/Symmetric		

Mounting		Fixture Finish	Control Options		Options	Control Accessories
FM33	Flush mt 3.0" OD pole, 3" fixture base	BLS Black Gloss Smooth	7PR-TL	7 pin PCR with twist lock photocontrol	BC ⁹ Back-light Control	WIR-RME-L LightGRID+™ External Fixture Module
FM44	Flush mt 3.6" to 4.0" OD pole, 4" fixture base	BLT Black Matte Textured	7PR-SC	7 pin PCR with shorting cap	SF Single Fuse	SCH-R Occ. Sensor for Round Pole (up to 30' MH)
PT23	3" Post Top mount for 2 3/8" OD x 4" Long Tenon Tenon	DBS Dark Bronze Gloss Smooth	7PR	7 pin PCR, wireless control enabled	DF Double Fuse	SCH-S Occ. Sensor for Square Pole (up to 30' MH)
PT24	4" Post Top mount for 2 3/8" OD T x 4" Long Tenon	DBT Dark Bronze Matte Textured	AD-01 ⁶	AstroDIM: 50% output at midnight	CLR ^{8,9,10} Clear Lens	NXOFM-1R1D-UNV NX 7-Pin Twist-Lock® with NX Networked Wireless Radio, Integral Automatic Dimming Photocell, Integral Single Pole Relay with Dimming, and Bluetooth Programming
PT34	4" Post Top mount for 2 7/8" OD x 4" Long Tenon Tenon	GTT Graphite Matte Textured	AD-02 ⁶	AstroDIM: 50% output midnight to 4 AM	TPL Tamper proof latch	
FMSA33	Solo Arm Post Top Flush Mount 3.0" OD Pole, 3" fixture base	LGS Light Grey Gloss Smooth	AD-03 ⁶	AstroDIM: 50% output 10PM	CP ^{8,9,11} Clear Polycarbonate Lens	
FMSA44	Solo Arm Post Top Flush Mount 3.6" to 4.0" OD Pole, 4" fixture base	LGT Light Grey Matte Textured	AD-04 ⁶	AstroDIM: 50% output 10PM to 4AM	WBFM3 Wall Bracket Arm for FM33 or FMSA33	
PTSA23	3" Solo Arm Post Top Mount for 2-3/8" OD x 4" Long Tenon	PSS Platinum Silver Gloss Smooth	NXW ⁷	NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor	WBFM4 Wall Bracket Arm for FM44 or FMSA44	
PTSA24	4" Solo Arm Post Top Mount for 2-3/8" OD x 4" Long Tenon	VGT Verde Green Matte Textured	WSP-40F-1 ^{6,8}	Dimming Occ. Sensor for up to 40' MH, 120/277/347V	TAFM3 ^{12,13} Twin Arm mount for FM33 or FMSA33	
PTSA34	4" Solo Arm Post Top Mount for 2-7/8" OD x 4" Long Tenon	WHS White Gloss Smooth	WSP-40F-2 ^{6,8}	Dimming Occ. Sensor for up to 40' MH, 208/240V	TAFM4 ^{12,13} Twin Arm mount for FM44 or FMSA44	
		WHT White Matte Textured	WSP-40F-3 ^{6,8}	Dimming Occ. Sensor for up to 40' MH, 480V		
		Color Option	NXWS16F ^{6,7,8}	NX Networked Wireless Enabled Integral NXSMP2-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming		
		CC ⁵ Custom Color	NXWS40F ^{6,7,8}	NX Networked Wireless Enabled Integral NXSMP2-HMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming		

1 Turtle Friendly.

2 Not available with 24L-65 and the 56L-140 configuration of the LED Engine

3 Not available with BC option

4 Not available with 5QM, 5QN, and 5W distributions.

5 Consult factory for custom color, marine and corrosive finish options.

6 Not available with other sensor or wireless control options.

7 Not available with Solo Arm Post Top (FMSA/PTSA)

8 24L and 56L only

9 Not available with HDL option.

10 IK08 rated. Consult factory for details

11 IK10 rated. Consult factory for details

12 Pole requires 2-3/8" x 4" Long tenon

13 Order one for each pair of fixtures per pole.

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ARCHITECTURAL AREA/SITE

OUTDOOR LIGHTING CONTROLS OPTIONS

CONTROLS FUNCTIONALITY

DATE:LOCATION:

TYPE:PROJECT:

CATALOG #:



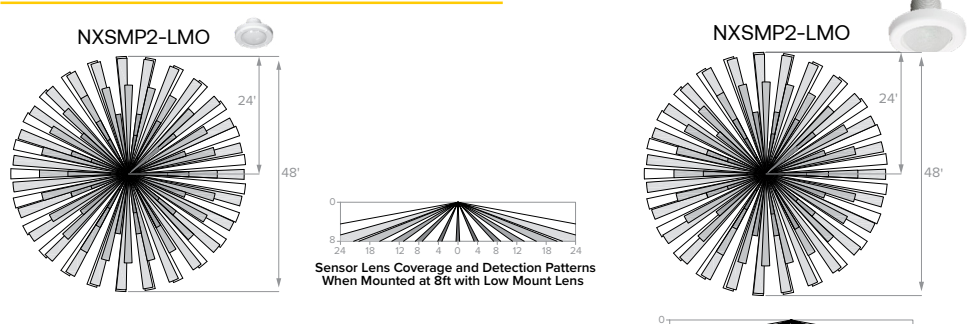
Control Option Ordering Logic & Description		Control Option Functionality									Control Option Components
		Networkable	Grouping	Scheduling	Occupancy/ Motion	Daylight Harvesting	0-10V Dimming	On/Off Control	Bluetooth App Programming	Sensor Height	
NX Wireless	NXOFM1R1D-UNV	✓	✓	✓	Paired with external control	✓	✓	✓	✓	-	 NXOFM1R1D-UNV
	NXW	✓	✓	✓	-	-	✓	✓	✓	-	 NXRM2-H
	NXWS16F	✓	✓	✓	✓	✓	✓	✓	✓	16ft	 NXSMP2-LMO
	NXWS40F	✓	✓	✓	✓	✓	✓	✓	✓	40ft	 NXSMP2-HMO

DEFAULT SETTINGS

NX Wireless	Occupancy Sensor	Enabled
	Occupancy Sensor Sensitivity	7
	Occupancy Sensor Timeout	15 Minutes
	Occupied Dim Level	100%
	Unoccupied Dim Level	0%
	Daylight Sensor	Disabled
	Bluetooth	Enabled
	2.4GHz Wireless Mesh	On
"Passcode Factory Passcode: HubbN3T!"		Enabled

Stand Alone	Occupancy Sensor	Enabled
	Occupancy Sensor Sensitivity	7
	Occupancy Sensor Timeout	8 Minutes
	Occupied Dim Level	100%
	Unoccupied Dim Level	50%
	Daylight Sensor	Disabled

NX WIRELESS COVERAGE PATTERNS



NX LIGHTING CONTROLS FREE APP

CONTROLS TECH SUPPORT 800-888-8006 (7:00 AM - 7:00 PM)


NX LIGHTING
CONTROLS

The NX Lighting Controls App is free to use mobile application for programming both NX Lighting Controls System or Standalone Bluetooth Sensors. The mobile app allows you to configure devices, discover and setup wireless enable luminaires and program NX system settings.

Apple App: <https://apps.apple.com/us/app/nx-lighting-controls/id962112904>

Google Play: https://play.google.com/store/apps/details?id=io.cordova.NXBTR&hl=en_US&gl=US



Apple App



Google Play

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OUTDOOR LIGHTING CONTROLS OPTIONS

CONTROLS FUNCTIONALITY

Control Option Ordering Logic & Description		Control Option Functionality									Control Option Components	
		Networkable	Grouping	Scheduling	Occupancy/ Motion	Daylight Harvesting	0-10V Dimming	On/Off Control	Bluetooth App Programming	Sensor Height		
Independent	AD	AutoDIM Time of Day Dimming	-	-	✓	-	-	-	✓	-	-	ADT
	7PR	7-Pin Receptacle	-	-	Paired with external control	-	Paired with external control	-	Paired with external control	-	-	7PR
	7PR-SC	7-Pin Receptacle with shorting cap	-	-	-	-	-	-	-	-		7PR-SC
	7PR-TL	7-Pin with photocontrol	-	-	-	-	✓	-	✓	-	-	

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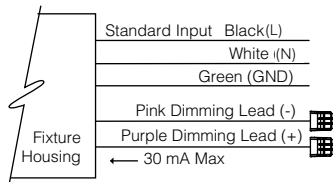
DATE:	LOCATION:
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SPECIFICATIONS (CONTINUED)

CONTROLS (CONTINUED)

DIMMING:

- Dimming range from 100% to 10% through the use of the standard 0-10V interface on the programmable driver.
- Modular wiring harness in the service area provides user access to the dimming circuitry.
- Dimming circuitry compatible with 0-10V, user-defined control devices.
- Optional factory programmed dimming profile.



WIRELESS CONTROLS

LightGRID+™

- LightGRID+™ wireless control modules allow an individual fixture to be managed, monitored and measured. The modules communicate securely over a robust certified meshed radio signal. The LightGRID+™ modules provide on/off/dim control, external device input, alerts and metering.

WIR-RME-L

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

NX LIGHTING CONTROLS

- NX lighting controls platform utilizes a Distributed Network Architecture (DNA) that connects intelligent devices including luminaires, controllers, panels, occupancy sensors, photocells, wall switches and dimmers, creating a system with an unmatched level of reliability, scalability and simplicity

POLE MOUNTED

ROUND POLE-MOUNTED OCCUPANCY

- Sensor up to 30'. Select voltage and finish color.

SCH-R

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

- Ordering Example: SCH-R4⁴/277²/BL³

SQUARE POLE-MOUNTED OCCUPANCY

Sensor up to 30'. Select voltage and finish color.

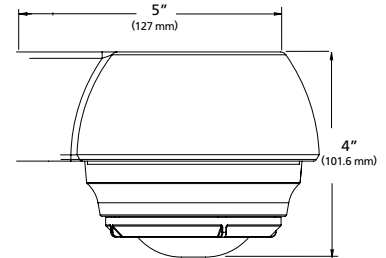
SCH-S

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

- Ordering Example: SCH-S/277²/BL³

ASTRODIM

- AstroDIM provides multi-stage night-time power reduction based on an internal timer referenced to the power on/off time. There is no need for an external control infrastructure. The unit automatically performs a dimming profile based on the predefined scheduled reference to the midpoint, which is calculated based on the power on/off times.



OPTIONAL FUSING:

- SF for 120, 277, and 347 Line volts

CAUTION:

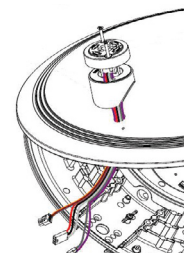
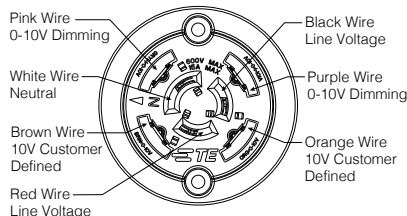
- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.

CERTIFICATIONS AND LISTINGS

- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations and 40°C ambient temperatures
- ANSI C136.31-2010 Vibration tested and compliant 1.5G and 4G reference page 4
- IEC 66262 Mechanical Impact Code IK08, IK10
- IDA approved, 3000K and warmer CCTs only
- IP66 rated
- RoHS compliant

WARRANTY

- 5 year warranty

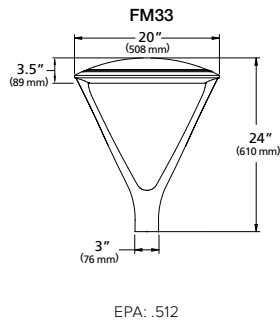


7-Pin receptacle placement

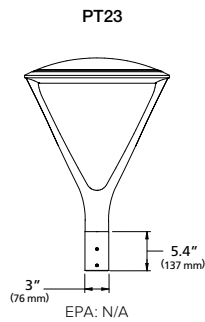
UR20 - Post Top

ARCHITECTURAL AREA/SITE

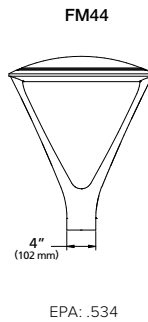
DIMENSIONS



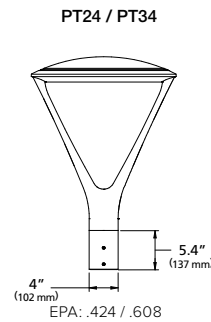
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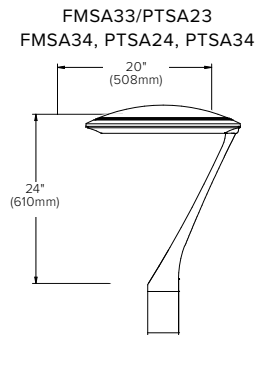
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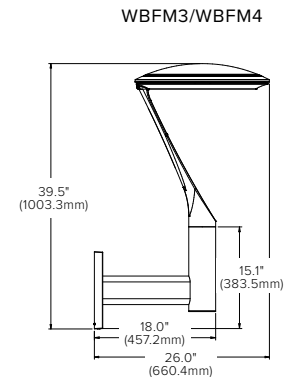
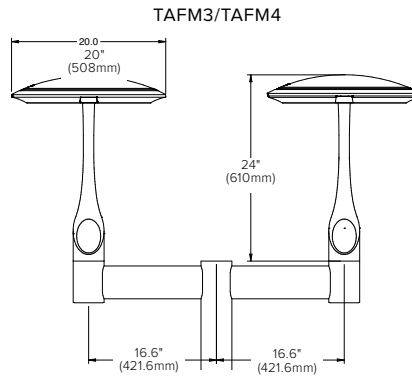
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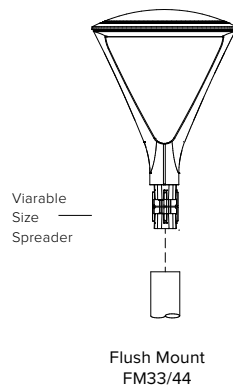
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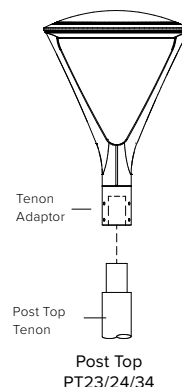
ARM	DIAMETER
FMSA33	3" diameter
FMSA44	4" diameter
PTSA23	3" diameter with Tenon mount
PTSA24	4" diameter with Tenon mount
PTSA34	4" diameter with tenon mount



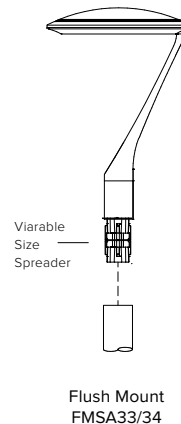
MOUNTING INSTALLATION



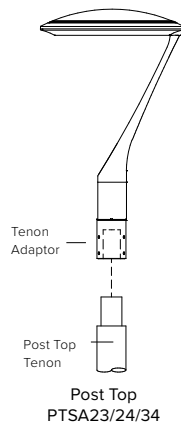
Flush Mount
FM33/44



Post Top
PT23/24/34

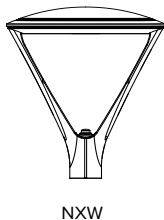


Flush Mount
FMSA33/34

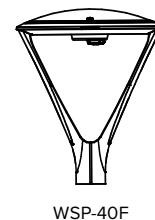


Post Top
PTSA23/24/34

SENSOR PLACEMENT



NXW



WSP-40F

MOUNTING VIBRATION RATINGS

UR 20 Arm		UR28 Arm		UR 20 Post Top		UR 28 Post Top		UR 20 Solo Arm	
Ordering Code	Rating	Ordering Code	Rating	Ordering Code	Rating	Ordering Code	Rating	Ordering Code	Rating
ASQ	4G	ASQ	4G	FM33	4G	FM44	1.5G	FMSA33	1.5G
A34	4G	A34	4G	FM44	1.5G	FM45	1.5G	FMSA44	1.5G
A46	4G	A46	4G	PT23	4G	PT24	1.5G	PTSA23	1.5G
MAF	4G	MAF	4G	PT24	4G	PT34	1.5G	PTSA24	1.5G
				PT34	1.5G	PT25	1.5G	PTSA34	1.5G

For the 4 G test, ANSI C136.31-2010 Vibration is tested to comply with Vibration Test Level 1 Normal Applications, Vibration Test Level 2 Bridge/Overpass Applications, and Vibration Test Level 3

For the 1.5G test, ANSI C136.31-2010 Vibration is tested to comply with Vibration Level 1 Bridge/Overpass Applications

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DELIVERED LUMENS

LEDs #	Lumens Package	Drive Current	Nominal Watts	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
						Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
							B	U	G			B	U	G			B	U	G	
24L	3,000	298mA	25	No lens	FR	2932	0	0	1	115	3119	0	0	1	123	3098	0	0	1	124
					FR-BC	1994	0	0	0	78	2121	0	0	0	83	2107	0	0	0	83
					2	2943	1	0	1	116	3099	1	0	1	122	3110	1	0	1	124
					2-BC	1724	0	0	1	68	1834	0	0	1	72	1822	0	0	1	72
					3	3007	1	0	1	118	3200	1	0	1	126	3178	1	0	1	127
					3-BC	1830	0	0	1	73	1947	0	0	1	78	1934	0	0	1	77
					4	3056	0	0	1	120	3251	0	0	1	128	3229	0	0	1	129
					4-BC	2235	0	0	1	88	2377	0	0	1	93	2362	0	0	1	93
					4W	3171	1	0	1	125	3374	1	0	1	133	3351	1	0	1	134
					4W-BC	1912	0	0	1	75	2034	0	0	1	80	2020	0	0	1	79
					5QM	2931	2	0	1	115	3119	2	0	1	123	3098	2	0	1	124
					5QN	2694	2	0	1	106	2866	2	0	1	113	2847	2	0	1	114
					5R	3054	2	0	2	120	3250	2	0	2	128	3228	2	0	2	129
					5W	3043	2	0	1	120	3237	2	0	1	127	3216	2	0	1	129
				Clear lens	FR	2773	0	0	1	109	2951	0	0	1	116	2930	0	0	1	117
					FR-BC	1886	0	0	1	74	2007	0	0	1	79	1993	0	0	1	78
					2	2784	1	0	1	109	2963	1	0	1	116	2942	1	0	1	118
					2-BC	1631	0	0	1	64	1736	0	0	1	68	1723	0	0	1	67
					3	2845	1	0	1	111	3028	1	0	1	119	3007	1	0	1	120
					3BC	1806	0	0	1	72	1922	0	0	1	77	1909	0	0	1	76
					4	2891	0	0	1	113	3076	0	0	1	120	3055	0	0	1	122
					4-BC	2114	0	0	1	83	2250	0	0	1	88	2234	0	0	1	88
					4W	2999	1	0	1	117	3192	1	0	1	125	3169	1	0	1	127
					4W-BC	1808	0	0	1	71	1924	0	0	1	75	1911	0	0	1	76
					5QM	2773	1	0	1	109	2950	2	0	1	116	2931	2	0	1	117
					5QN	2549	1	0	0	100	2712	2	0	1	106	2693	2	0	1	108
					5R	2890	2	0	2	113	3075	2	0	2	120	3054	2	0	2	122
					5W	2879	2	0	1	113	3064	2	0	1	120	3042	2	0	1	122
28L		298mA	30	HDL lens	3	2816	1	0	1	96	2997	1	0	1	102	3020	1	0	1	101
					5W	2917	1	0	1	100	3105	1	0	1	106	3084	1	0	1	103

Scaling factors 27K8 = 0.859, 35K8 = 0.906 of 5K7 lumen packages

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DELIVERED LUMENS (CONTINUED)

LEDs #	Lumens Package	Drive Current	Nominal Watts	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
						Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
							B	U	G			B	U	G			B	U	G	
24L	7,000	800mA	65	No lens	FR	6754	1	0	1	104	7187	1	0	1	111	7138	1	0	1	110
					FR-BC	4392	0	0	1	68	4673	0	0	1	72	4641	0	0	1	71
					2	6571	1	0	2	101	6992	1	0	2	108	6944	1	0	2	107
					2-BC	3799	0	0	1	58	4042	0	0	1	62	4014	0	0	1	62
					3	6625	1	0	2	102	7051	1	0	2	108	7002	1	0	2	108
					3BC	4032	0	0	1	62	4291	0	0	1	66	4261	0	0	1	66
					4	6788	1	0	2	104	7223	1	0	2	111	7174	1	0	2	110
					4-BC	4924	0	0	2	76	5239	0	0	2	81	5203	0	0	2	80
					4W	6900	1	0	2	106	7343	1	0	2	113	7291	1	0	2	112
					4W-BC	4212	0	0	2	65	4482	0	0	2	69	4451	0	0	2	68
					5QM	7025	3	0	1	108	7477	3	0	1	115	7425	3	0	1	114
					5QN	6964	3	0	1	107	7410	3	0	1	114	7323	3	0	1	113
					5R	7038	3	0	3	108	7489	3	0	3	115	7437	3	0	3	114
					5W	7011	3	0	2	108	7460	3	0	2	115	7409	3	0	2	114
				Clear lens	FR	6432	1	0	1	97	6844	1	0	1	104	6798	1	0	1	105
					FR-BC	4182	0	0	1	63	4450	0	0	1	67	4420	0	0	1	67
					2	6258	1	0	1	95	6659	1	0	2	101	6613	1	0	2	102
					2-BC	3617	0	0	1	55	3849	0	0	1	58	3823	0	0	1	58
					3	6310	1	0	2	96	6714	1	0	2	102	6668	1	0	2	103
					3-BC	3599	0	0	1	55	3829	0	0	1	59	3803	0	0	1	59
					4	6465	1	0	2	98	6879	1	0	2	104	6832	1	0	2	105
					4-BC	4688	0	0	2	71	4990	0	0	2	76	4955	0	0	2	75
					4W	6572	1	0	2	100	6993	1	0	2	106	6944	1	0	2	107
					4W-BC	4011	0	0	2	61	4268	0	0	2	65	4238	0	0	2	64
					5QM	6691	3	0	1	101	7119	3	0	1	108	7070	3	0	1	109
					5QN	6632	2	0	1	100	7058	3	0	1	107	7009	3	0	1	108
					5R	6702	3	0	3	102	7131	3	0	3	108	7082	3	0	3	109
					5W	6676	3	0	2	101	7104	3	0	2	108	7055	3	0	2	109
28L		700mA	70	HDL lens	3	6047	2	0	2	92	6047	2	0	2	92	6236	2	0	2	89
					5W	6221	2	0	1	94	6619	2	0	1	100	6525	2	0	1	93

Scaling factors 27K8 = 0.859, 35K8 = 0.906 of 5K7 lumen packages

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DELIVERED LUMENS (CONTINUED)

LEDs #	Lumens Package	Drive Current	Nominal Watts	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
						Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
							B	U	G			B	U	G			B	U	G	
56L	10,000	420mA	75	No lens	FR	9315	1	0	1	124	9913	1	0	1	132	9845	1	0	1	131
					FR-BC	6058	0	0	1	81	6445	0	0	1	86	6402	0	0	1	85
					2	9063	2	0	2	120	9644	2	0	2	128	9578	2	0	2	128
					2-BC	5239	0	0	1	70	5575	0	0	1	74	5536	0	0	1	74
					3	9139	2	0	2	125	9725	2	0	2	134	9657	2	0	2	129
					3-BC	5561	0	0	2	74	5877	0	0	2	78	5561	0	0	2	74
					4	9362	1	0	2	124	9362	1	0	2	124	9876	1	0	2	132
					4-BC	6791	0	0	2	90	7226	0	0	2	96	7168	0	0	2	96
					4W	9518	1	0	2	126	10129	1	0	2	135	10058	1	0	2	134
					4W-BC	5809	0	0	2	77	6181	0	0	2	82	6138	0	0	2	82
					5QM	9691	3	0	1	129	10312	3	0	1	137	10240	3	0	1	137
					5QN	9606	3	0	1	128	10222	3	0	1	136	10151	3	0	1	135
					5R	9706	3	0	3	129	10328	3	0	3	137	10258	3	0	3	137
					5W	9669	4	0	2	129	10289	4	0	2	137	10217	4	0	2	136
				Clear lens	FR	8871	1	0	1	117	9760	1	0	1	129	9374	1	0	1	125
					FR-BC	5769	0	0	1	76	6138	0	0	1	81	6096	0	0	1	81
					2	8631	2	0	2	114	9183	2	0	2	121	9121	2	0	2	122
					2-BC	4989	0	0	1	67	5309	0	0	1	71	5272	0	0	1	62
					3	8703	1	0	2	115	9260	2	0	2	122	9197	2	0	2	123
					3-BC	4964	1	0	1	66	5282	1	0	2	70	5245	1	0	2	69
					4	8916	1	0	2	118	9487	1	0	2	125	9423	1	0	2	126
					4-BC	6467	0	0	2	85	6881	0	0	2	91	6834	0	0	2	90
					4W	9065	1	0	2	120	9646	1	0	2	128	9579	1	0	2	128
					4W-BC	5532	0	0	2	74	5887	0	0	2	78	5845	0	0	2	78
					5QM	9228	3	0	1	122	9820	3	0	1	130	9752	3	0	1	130
					5QN	9147	3	0	1	121	9734	3	0	1	129	9668	3	0	1	129
					5R	9244	3	0	3	122	9836	3	0	3	130	9769	3	0	3	130
					5W	9208	4	0	2	122	9798	4	0	2	130	9732	4	0	2	130
68L		350mA	80	HDL lens	3	7853	2	0	2	99	8356	2	0	2	106	8299	2	0	2	104
					5W	8080	2	0	2	102	8684	3	0	2	110	8684	3	0	2	109

Scaling factors 27K8 = 0.859, 35K8 = 0.906 of 5K7 lumen packages

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DELIVERED LUMENS (CONTINUED)

LEDs #	Lumens Package	Drive Current	Nominal Watts	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
						Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
							B	U	G			B	U	G			B	U	G	
56L	15,000	600mA	110	No lens	FR	13533	1	0	1	125	14399	1	0	2	133	14301	1	0	2	130
					FR-BC	8799	1	0	1	81	9363	1	0	1	86	9300	1	0	1	85
					2	13165	2	0	2	121	14009	2	0	2	129	13913	2	0	2	126
					2-BC	7611	1	0	2	70	8098	1	0	2	75	8042	1	0	2	74
					3	13275	2	0	3	122	14126	2	0	3	130	14030	2	0	3	128
					3-BC	8079	1	0	2	73	8596	1	0	2	78	8538	1	0	2	78
					4	13601	1	0	3	125	14472	1	0	3	133	14373	1	0	3	131
					4-BC	9865	1	0	2	91	10497	1	0	3	97	10425	1	0	3	96
					4W	13827	2	0	3	127	14713	2	0	3	136	14611	2	0	3	133
					4W-BC	8437	0	0	2	78	8978	0	0	2	83	8916	0	0	2	82
					5QM	14077	4	0	2	130	14979	4	0	2	138	14876	4	0	2	135
					5QN	13953	4	0	1	129	14848	4	0	1	137	14747	4	0	1	134
					5R	14100	4	0	4	130	15004	4	0	4	138	14901	4	0	4	135
					5W	14046	4	0	2	129	14946	4	0	2	138	14844	4	0	3	135
				Clear lens	FR	12803	1	0	1	118	13624	1	0	1	126	13531	1	0	1	123
					FR-BC	9298	1	0	1	86	8325	1	0	1	77	8798	1	0	1	81
					2	12455	2	0	2	115	13254	2	0	2	123	13164	2	0	2	120
					2-BC	7200	1	0	1	67	7661	1	0	2	71	7610	1	0	2	70
					3	12560	2	0	3	116	13365	2	0	3	124	13273	2	0	3	121
					3-BC	7163	1	0	2	65	7622	1	0	2	69	7570	1	0	2	69
					4	12868	1	0	3	119	13692	1	0	3	127	13599	1	0	3	124
					4-BC	9333	1	0	2	86	9931	1	0	2	92	9864	1	0	2	90
					4W	13081	2	0	3	121	13920	2	0	3	129	13823	2	0	3	126
					4W-BC	7983	0	0	2	74	8495	0	0	2	79	8436	0	0	2	78
					5QM	13318	3	0	2	123	14172	4	0	2	131	14075	4	0	2	128
					5QN	13202	3	0	1	122	14048	4	0	1	130	13951	4	0	1	127
					5R	13341	4	0	4	123	14195	4	0	4	131	14099	4	0	4	128
					5W	13290	4	0	2	123	14141	4	0	2	131	14044	4	0	2	128
68L		500mA	115	HDL lens	3	11577	2	0	2	102	12320	2	0	2	109	12236	2	0	2	106
					5W	11912	3	0	2	105	12676	3	0	2	112	12588	3	0	2	109

Scaling factors 27K8 = 0.859, 35K8 = 0.906 of 5K7 lumen packages

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DELIVERED LUMENS (CONTINUED)

LEDs #	Lumens Package	Drive Current	Nominal Watts	Lens Options	Distribution	3000K 70CRI					4000K 70CRI					5000K 70CRI				
						Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w	Lumen	BUG Rating			lm/w
							B	U	G			B	U	G			B	U	G	
56L	17,000	750mA	140	No lens	FR	15323	2	0	2	111	16306	2	0	2	118	16194	2	0	2	116
					FR-BC	9964	1	0	1	72	10603	1	0	1	77	10530	1	0	1	76
					2	14897	2	0	2	108	15852	2	0	2	115	15743	2	0	2	112
					2-BC	8618	1	0	2	63	9169	1	0	2	67	9107	1	0	2	66
					3	15032	2	0	3	109	15996	2	0	3	116	15886	2	0	3	113
					3-BC	9147	1	0	2	65	9733	1	0	2	70	9667	1	0	2	69
					4	15400	1	0	3	112	16387	1	0	4	119	16275	1	0	4	116
					4-BC	11170	1	0	3	81	11886	1	0	3	86	11804	1	0	3	86
					4W	15656	2	0	3	114	16660	2	0	4	121	16544	2	0	4	118
					4W-BC	9554	0	0	2	69	10166	0	0	2	74	10095	0	0	2	73
					5QM	15939	4	0	2	116	16962	4	0	2	123	16845	4	0	2	120
					5QN	15801	4	0	1	115	16813	4	0	1	122	16698	4	0	1	119
					5R	15966	4	0	4	116	16990	4	0	4	123	16874	4	0	4	121
					5W	15906	4	0	3	115	16925	4	0	3	123	16808	4	0	3	120
				Clear lens	FR	14541	1	0	2	105	15473	2	0	2	111	15367	2	0	2	110
					FR-BC	9456	1	0	1	68	10061	1	0	1	72	9993	1	0	1	72
					2	14146	2	0	2	102	15053	2	0	2	108	14950	2	0	2	107
					2-BC	8178	1	0	2	59	8702	1	0	2	63	8642	1	0	2	62
					3	14265	2	0	3	103	15179	2	0	3	109	15076	2	0	3	108
					3BC	8136	1	0	2	58	8657	1	0	2	62	8598	1	0	2	61
					4	14614	1	0	3	105	15551	1	0	3	112	15445	1	0	3	110
					4-BC	10600	1	0	3	76	11279	1	0	3	81	11203	1	0	3	81
					4W	14858	2	0	3	107	15811	2	0	3	114	15700	2	0	3	112
					4W-BC	9067	0	0	2	65	9649	0	0	2	70	9581	0	0	2	69
					5QM	15126	4	0	2	109	16095	4	0	2	116	15985	4	0	2	114
					5QN	14994	4	0	1	108	15955	4	0	1	115	15846	4	0	1	113
					5R	15152	4	0	4	109	16122	4	0	4	116	16012	4	0	4	114
					5W	15094	4	0	3	109	16061	4	0	3	116	15951	4	0	3	114
68L		625mA	150	HDL lens	3	13240	2	0	2	89	13992	3	0	3	95	13897	3	0	3	93
					5W	13623	3	0	2	92	14396	3	0	2	97	14298	3	0	2	95

Scaling factors 27K8 = 0.859, 35K8 = 0.906 of 5K7 lumen packages

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PHOTOMETRY

UR20-56L-140-4K7-FR-PT

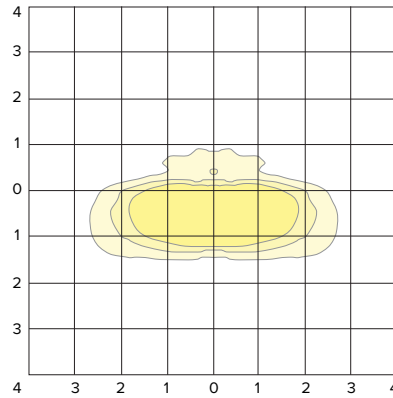
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	16306
Watts	140
Efficacy	116.5
IES Type	II
BUG Rating	B2-U0-G2
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	14198	87.1%
Downward House Side	2108	12.9%
Downward Total	16306	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	16306	100%

ISOFOOT CANDLE PLOT



UR20-56L-140-4K7-2-PT

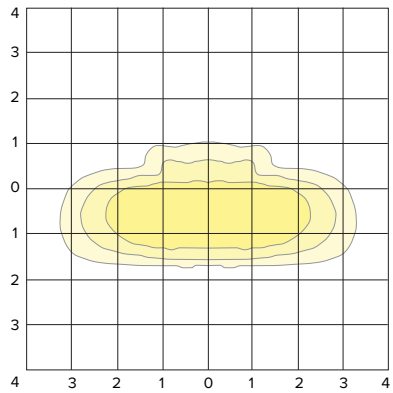
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	15852
Watts	140
Efficacy	113.2
IES Type	II
BUG Rating	B2-U0-G2
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	12851	81.1%
Downward House Side	3001	18.9%
Downward Total	15852	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	15852	100%

ISOFOOT CANDLE PLOT



UR20-56L-140-4K7-3-PT

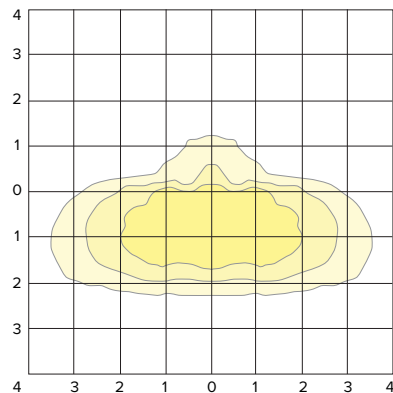
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	15996
Watts	140
Efficacy	114.3
IES Type	III
BUG Rating	B2-U0-G3
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	13422	83.9%
Downward House Side	2574	16.1%
Downward Total	15996	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	15996	100%

ISOFOOT CANDLE PLOT



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PHOTOMETRY

UR20-56L-140-4K7-4-PT

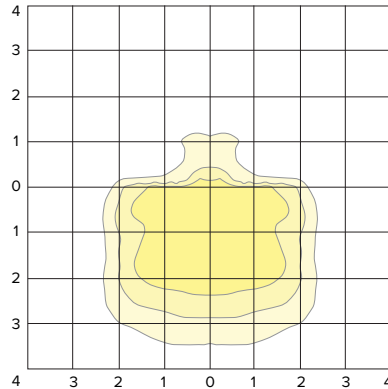
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	16387
Watts	140
Efficacy	117.1
IES Type	IV
BUG Rating	B1-U0-G4
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	14697	89.7%
Downward House Side	1690	10.3%
Downward Total	16387	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	16387	100%

ISOFOOT CANDLE PLOT



UR20-56L-140-4K7-4W-PT

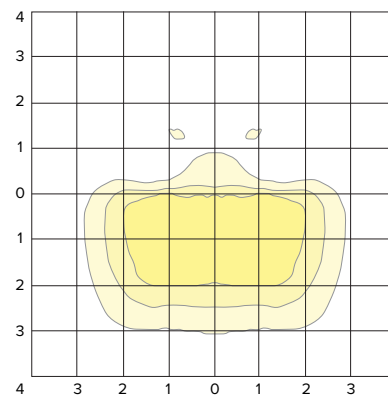
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	16660
Watts	138
Efficacy	120.7
IES Type	IV
BUG Rating	B2-U0-G4
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	14955	89.8%
Downward House Side	1705	10.2%
Downward Total	16660	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	16660	100%

ISOFOOT CANDLE PLOT



UR20-56L-140-4K7-5QM-PT

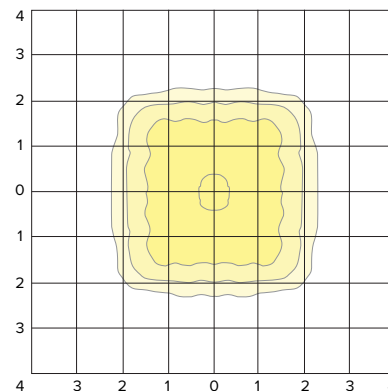
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	16962
Watts	140
Efficacy	121.2
IES Type	VS
BUG Rating	B4-U0-G2
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	8481	50.0%
Downward House Side	8481	50.0%
Downward Total	16962	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	16962	100%

ISOFOOT CANDLE PLOT



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PHOTOMETRY

UR20-56L-140-4K7-5QN-PT

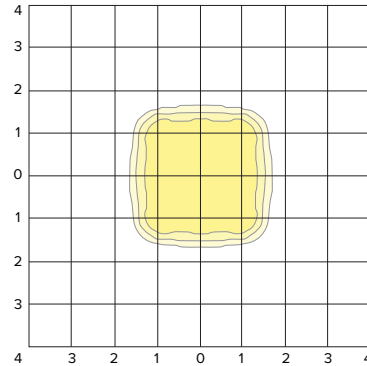
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	16813
Watts	140
Efficacy	120.1
IES Type	VS
BUG Rating	B4-U0-G1
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	8407	50.0%
Downward House Side	8407	50.0%
Downward Total	16813	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	16813	100%

ISOFOOT CANDLE PLOT



UR20-56L-140-4K7-5R-PT

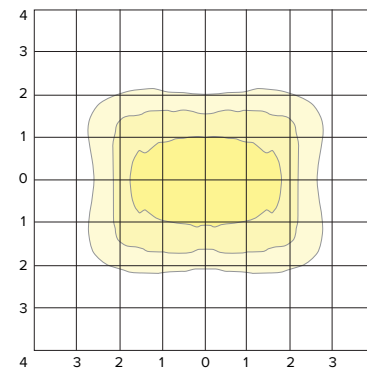
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	16990
Watts	140
Efficacy	121.4
IES Type	III
BUG Rating	B4-U0-G4
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	8495	50.0%
Downward House Side	8495	50.0%
Downward Total	16990	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	16990	100%

ISOFOOT CANDLE PLOT



UR20-56L-140-4K7-5W-PT

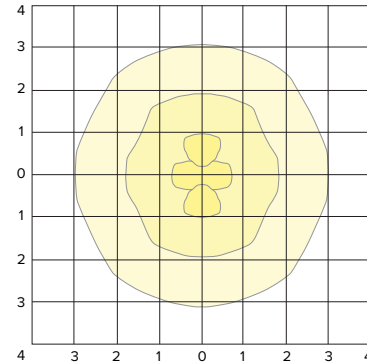
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	16925
Watts	140
Efficacy	120.9
IES Type	VS
BUG Rating	B4-U0-G3
Mounting Height	30 ft
Grid Scale	30 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	8463	50.0%
Downward House Side	8463	50.0%
Downward Total	16925	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	16925	100%

ISOFOOT CANDLE PLOT

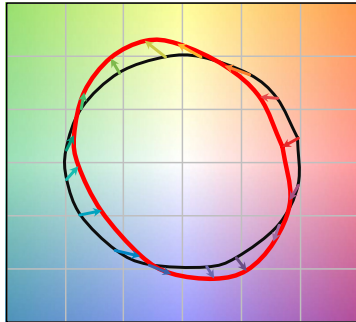


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ARCHITECTURAL AREA/SITE

TM-30 DATA

COLOR VECTOR GRAPHIC

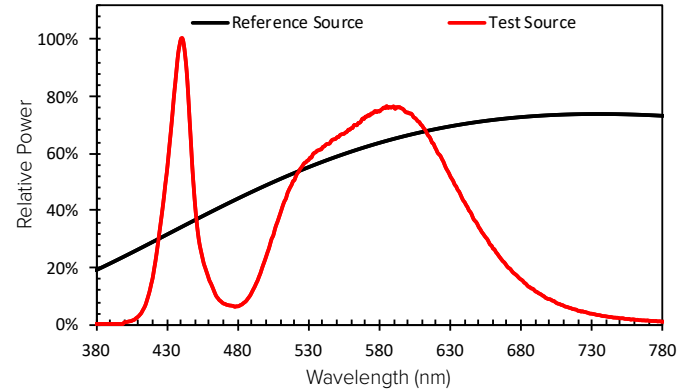


— Reference Illuminant — Test Source

TEST SOURCE

R _f	68
R _a	99
CCT(K)	3947
D _{uv}	0.0004
x	0.3831
y	0.3793
CIE R _a	72

SPECTRAL POWER DISTRIBUTION COMPARISON



ELECTRICAL DATA

Drive Current	LED Count	System Watts	Line Voltage		Amps AC						Min. Power Factor	Max THD (%)	Dimming				
													Dimming Range	Source current out of 0-10V		Absolute voltage range on 0-10V (+)	
			VAC	Hz	120	208	240	277	347	480				Min	Max	Min	Max
298mA	24	25	120-480	50/60	0.21	0.12	0.10	0.09	0.07	0.05	>0.9	20	10% to 100%	0mA	1mA	0V	10V
298mA	28	30			0.25	0.14	0.13	0.11	0.09	0.06							
800mA	24	65			0.54	0.31	0.27	0.23	0.19	0.14							
700mA	28	70			0.58	0.34	0.29	0.25	0.20	0.15							
420mA	56	75			0.63	0.36	0.31	0.27	0.22	0.16							
350mA	68	80			0.67	0.38	0.33	0.29	0.23	0.17							
600mA	56	110			0.92	0.53	0.46	0.40	0.32	0.23							
500mA	68	115			0.96	0.55	0.48	0.42	0.33	0.24							
850mA	56	140			1.17	0.67	0.58	0.51	0.40	0.29							
675mA	68	150			1.25	0.72	0.63	0.54	0.43	0.31							

TM-21 Lifetime Calculation - Projected Lumen Maintenance (25°C / 77°C)

Ambient Temp.	0	25,000	36,000	50,000	100,000	Reported L70
25°C / 77°F	100%	97%	95%	93%	87%	60khrs

CRI Lumen Multiplier

CCT	Amber	70 CRI	80 CRI	90 CRI
Amber	0.1727s	—	—	—
2700K	—	—	0.859	—
3000K	—	1	0.9119	0.7033
3500K	—	—	0.906	—
4000K	—	1	0.8941	0.734
5000K	—	1	0.879	0.7712