

PA7R IMPACT RATED

BOLLARD

FEATURES

- ASTM F3016 S20 Impact Rated
- Elegant form factor blended with Performance Optics
- 44" OAH S20 Impact Rated Illuminated and Non-Illuminated Bollards
- IDA Dark Sky Compliant, No Up-light configuration
- Bluetooth enabled RGBW accent



NU configurations in 3000K and warmer CCTs only

CONTROL TECHNOLOGY



RELATED PRODUCTS

Pavilion Round (standard)

Pavilion Square (standard)

SPECIFICATIONS

CONSTRUCTION

HOUSING:

- Castings are low copper aluminum alloy die-cast
- Gaskets are molded silicone to prevent harmful ingress to the lamp and driver compartments
- Aluminum shaft to slide over 60" steel post that provides strength to resist impact. Steel post is centered utilizing a stress bracket, that allows for even distribution of concrete around the post, and further reinforced by a rebar cage
- Steel Post is a schedule 40 galvanized steel pipe with 6.625" OD
- IP65 rated

SHAFT:

- Aluminum shaft(s) is .125" thick extruded aluminum 6061 alloy
- American Society of Testing and Materials (ASTM) F3016 "Standard Test Method for Surrogate Testing of Vehicle Impact Protective Devices at Low Speeds" S20 Rated, which safely stops a 5,000-lb vehicle impacting the system at up to 20 mph

OPTICS

- LEDs mount to a metal printed circuit board assembly (MCPCB)
- Optical lenses are clear injection molded PMMA acrylic

OPTICS (CONTINUED)

- U0 configurations have an optically clear flat tempered glass lens, all other configurations have either an optically clear or high transmission diffused acrylic lens

INSTALLATION

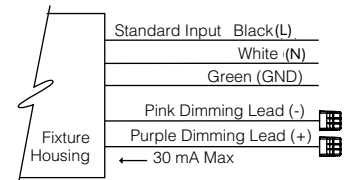
- Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury

ELECTRICAL

- Universal voltage, 120 through 277V with a ±10% tolerance. Driver is Underwriters Laboratories listed
- High voltage configurations, 347/480. Driver is Underwriters Laboratories listed
- "Thermal Shield", secondary side, thermistor provides protection for the sustainable life of LED module and electronic components
- Drivers are 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 is 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

CONTROLS

- Standard fixtures dimming range is from 10% to 100% and be compatible with 0-10V, user-defined, control devices



- Optional motion sensor is capable of detecting motion 360° around the bollard. When no motion is detected for the specified time, the sensor automatically dims to the factory preset levels, reducing the light level accordingly. When motion is detected by the sensor, the bollard will return to full wattage and full light output. Please contact KIM Lighting if project requirements vary from standard configuration

(Specifications continued on page 3)

KEY DATA	
Lumen Range	397–2350
Wattage Range	14–22
Efficacy Range (LPW)	29–108
Reported Life (Hours)	L70/60,000

PA7R IMPACT RATED

BOLLARD

ORDERING GUIDE

Example: PA7R-FT-NU-1-12L-010-5K7-44IRB-S20-BLS-UNV-EM

CATALOG #

HOUSING

PA7R		Top		Optics		Distribution		Light Engine ¹⁴	
PA7R	Pavilion 7" Ø Round	FT	Flat Top	NU	No Up-light	1	Type I	12L-010-AMB	14W, Monochromatic Amber
		CT	Crowned Top ¹	CH	Clear Horizontal Lens	2	Type II	12L-010-3K7	14W (1000 nominal lm), 3000K, 70 CRI
				CL ²	Clear Vertical Lens	3	Type III	12L-010-4K7	14W (1000 nominal lm), 4000K, 70 CRI
				DL ^{2,3}	Diffuse Vertical Lens	3HS	Type III + House side shield	12L-010-5K7	14W (1000 nominal lm), 5000K, 70 CRI
				LV	Louvers	4	Type IV	12L-010-AMB ¹⁰	22W, Monochromatic Amber
				GC	Grille with clear vertical lens	5	Type V	12L-020-3K7	22W (2000 nominal lm), 3000K, 70 CRI
				GD ³	Grille with diffuse vertical lens			12L-020-4K7	22W (2000 nominal lm), 4000K, 70 CRI
				ULB ¹³	Non-Illuminated Bollard (No distribution, no light engine)			12L-020-5K7	22W (2000 nominal lm), 5000K, 70 CRI
									Consult factory for other CCTs (2700K - 6500K) and CRIs (80, 90 CRI)

Body	Fixture Finish	Control Options		Voltage		Options	
44IRB-S20	44" OAH Impact Resistant Base, ASTM F3016 S20 Rated, Aluminum	BLS	Black Gloss Smooth	MW ⁵	Motion sensing (50% dim, 100% output upon detection)	UNV	120-277V
		BLT	Black Matte Textured				120 ⁶
44IRB-B	44" OAH Impact Resistant Blind Bollard (Non-Illuminated), Aluminum	DBS	Dark Bronze Gloss Smooth	NXW	NX Networked Wireless Radio Module NXR2 and Bluetooth Programming, without Sensor	277 ⁶	208-277V
		DBT	Dark Bronze Matte Textured				347 ⁶
For Non-Impact Rated 44" OAH Round Pavilion		GTT	Graphite Matte Textured			480 ⁶	480V
		LGS	Light Grey Gloss Smooth				
		LGT	Light Grey Matte Textured				
		PSS	Platinum Silver Gloss Smooth				
		VGT	Verde Green Matte Textured				
		WHS	White Gloss Smooth				
		WHT	White Matte Textured				
		Color Option					
		CC ¹¹	Custom Color				

1 Adds .6 / 15mm to OAH (over all height).
 2 CL and DL configurations shall be IK04
 3 Only Available with 1 Type I or 5 Type V distributions only.
 5 24" typical coverage area, not available with CH.
 6 Dedicated input voltage, required for MW Motions sensing.
 7 0°C min starting temperature, 90+ minute run time, output equivalent to 12L-010-#K7
 8 Adds +5 watts and 1" / 254mm to overall height.
 9 SF for 120, 277 and 347 input voltage, DF for 208, 240 and 480 input voltage.
 10 Wild life friendly
 11 Consult factory for custom color, marine and corrosive finish options
 12 Not available in Blind Bollard (Non-Illuminated)
 13 If selecting ULB, must select 44IRB-B and vice versa
 14 5-step MacAdam Ellipse Binning standard. Consult factory for 3-step MacAdam Ellipse Binning.

PA7R IMPACT RATED

BOLLARD

SPECIFICATIONS CONT'D

WIRELESS CONTROLS

BLUETOOTH:

- The Integral module will enable the adjustment of the Luminous Accent to dim or change color to the desired setting when paired with Current Lighting RGBW Remote App via cellular/tablet device
- The integral module is compatible with Bluetooth Low Energy (BLE) or Bluetooth Smart mobile devices operating on iOS8 or Android Gingerbread operating systems or newer
- Mobile App, dimming range from 0% to 100% through the use of RGBW app (available on IOS and Android)
- Color selection and adjustment
- Camera function for color matching
- Intensity slider for dimming/ramping up
- Save and rename up to 10 presets
- Group and rename fixtures
- Fixture is password protected, refer to instructions to set unique password

DMX:

- 6 wires: Red (DMX+), Brown (DMX-), Yellow (DMX Ground), Black (Line Voltage), White (common), and Green (Ground)
- Single DMX universe with six slots/addresses of virtual control which are pre-programmed at the factory:
- DMX slot/address 1 = red
- DMX slot/address 2 = green
- DMX slot/address 3 = blue
- DMX slot/address 4 = white
- Fully DMX RDM compatible
- Mobile App specification in additional information section

NX

- Luminaires enabled with NX Lighting Controls wireless radios create an intelligent mesh network with the interior controls. Groups are dimmed via an astronomical time clock and schedules can be updated at any time with the Bluetooth® commissioning app.

OPTIONAL BACKUP BATTERY

- Integral battery backup provides emergency path of egress lighting for the required 90 minutes for 0°C ambient environments

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
- ASTM Standard F3016/F3016M for Surrogate Testing of Protective Device at Low Speed - S20 Crash Rated
- IP65 Rated
- IEC 66262 Mechanical Impact Code IK10
- IDA approved, 3000K and warmer CCTs only
- RoHS compliant

WARRANTY

- 5 year warranty

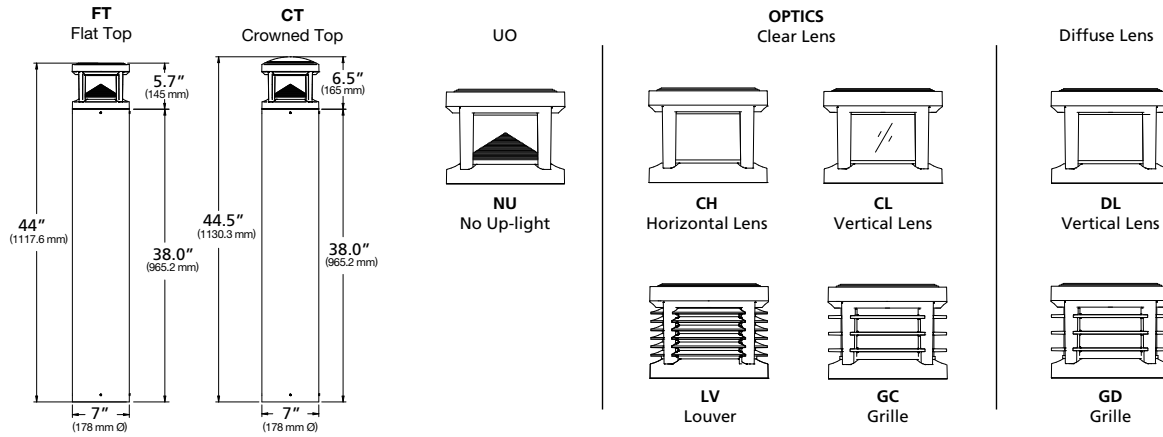


The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Kim Lighting is under license. Other trademarks and trade names are those of their respective owners. Apple, the Apple logo, iPad, iPhone, and iPod Touch are trademarks of Apple Inc., registered in the U.S. and other countries. App Store is a service mark of Apple Inc. Google Play is a trademark of Google Inc.

PA7R IMPACT RATED

BOLLARD

DIMENSIONS



DELIVERED LUMENS

Drive Current	LEDs #	Nominal Watts	Nominal Lumens	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	
550mA	12L	22	2,000	NU UO Optics	1	1044	0	0	0	48	1136	0	0	0	52	1164	0	0	0	54
					2	1199	0	0	0	55	1305	0	0	0	60	1336	0	0	0	62
					3	1128	0	0	1	52	1228	0	0	1	57	1257	0	0	1	58
					3HS	953	0	0	0	44	1037	0	0	0	48	1062	0	0	1	49
					4	1362	0	0	0	63	1482	0	0	1	68	1518	0	0	1	70
					5	1265	1	0	0	58	1377	1	0	0	63	1410	1	0	0	65
				CH Clear Horizontal Lens	1	1778	0	3	1	82	1935	0	3	1	89	1981	0	3	1	91
					2	1711	1	3	1	79	1862	1	3	1	86	1906	1	3	1	88
					3	1643	1	3	1	76	1788	1	3	1	82	1831	1	3	1	84
					3HS	1443	0	3	1	66	1570	0	3	1	72	1608	0	3	1	74
					4	1731	0	3	1	80	1884	0	3	1	87	1929	0	3	1	89
					5	1841	1	3	1	85	2003	1	3	1	92	2051	1	3	1	95
				CL Clear Vertical Lens	1	1852	0	4	1	85	2016	1	4	1	93	2064	1	4	1	95
					2	1984	1	3	1	91	2159	1	3	1	99	2211	1	3	1	102
					3	2062	1	3	1	95	2244	1	3	1	103	2298	1	3	1	106
					3HS	1665	0	3	1	77	1811	0	3	1	83	1855	0	3	1	85
					4	2055	0	3	1	95	2236	1	3	1	103	2290	1	3	1	106
					5	2109	1	3	1	97	2295	1	3	1	106	2350	1	3	1	108

PA7R IMPACT RATED

BOLLARD

DELIVERED LUMENS (CONTINUED)

Drive Current	LEDs #	Nominal Watts	Nominal Lumens	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					
550mA	12L	22	2,000	DL Diffused Vertical Lens	1	1639	1	3	2	76	1783	1	3	2	82	1826	1	3	2	84				
					5	1721	1	3	2	79	1873	1	3	2	86	1918	1	3	2	88				
				LV External Louvers	1	746	0	3	1	34	811	1	3	1	37	831	1	3	1	38				
					2	814	1	3	1	37	885	1	3	1	41	907	1	3	1	42				
					3	838	1	3	1	39	912	1	3	1	42	934	1	3	1	43				
					3HS	605	0	3	1	28	658	0	3	1	30	674	0	3	1	31				
					4	879	0	3	1	41	956	1	3	1	44	979	1	3	1	45				
				GC Grill with Clear Lens	5	888	1	3	1	41	966	1	3	1	45	989	1	3	1	46				
					1	1038	0	3	1	48	1130	0	3	1	52	1157	0	3	1	53				
					2	1021	0	3	1	47	1111	1	3	1	51	1138	1	3	1	52				
					3	1024	0	3	1	47	1114	1	3	1	51	1141	1	3	1	53				
					3HS	854	0	3	1	39	930	0	3	1	43	952	0	3	1	44				
					4	1109	0	3	1	51	1207	0	3	1	56	1236	0	3	1	57				
				GD Grill with Diffused Lens	5	1037	1	3	1	48	1128	1	3	1	52	1155	1	3	1	53				
					1	1036	0	3	1	48	1127	1	3	2	52	1154	1	3	2	53				
									5	953	1	3	1	44	1037	1	3	1	48	1062	1	3	1	49

PA7R IMPACT RATED

BOLLARD

DELIVERED LUMENS (CONTINUED)

Drive Current	LEDs #	Nominal Watts	Nominal Lumens	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	
350mA	12L	14	1,000	NU UO Optics	1	749	0	0	0	54	815	0	0	0	59	835	0	0	0	60
					2	860	0	0	0	62	936	0	0	0	67	958	0	0	0	69
					3	809	0	0	0	58	881	0	0	0	63	902	0	0	0	65
					3HS	684	0	0	0	49	744	0	0	0	53	762	0	0	0	55
					4	977	0	0	0	70	1063	0	0	0	76	1089	0	0	0	78
					5	908	1	0	0	65	988	1	0	0	71	1011	1	0	0	73
				CH Clear Horizontal Lens	1	1184	0	3	1	85	1288	0	3	1	92	1319	0	3	1	95
					2	1139	0	3	1	82	1239	0	3	1	89	1269	0	3	1	91
					3	1094	0	3	1	79	1190	0	3	1	85	1219	0	3	1	87
					3HS	960	0	3	1	69	1045	0	3	1	75	1070	0	3	1	77
					4	1152	0	3	1	83	1254	0	3	1	90	1284	0	3	1	92
					5	1225	1	3	1	88	1333	1	3	1	96	1365	1	3	1	98
				CL Clear Vertical Lens	1	1146	0	3	1	82	1247	0	3	1	90	1277	0	3	1	92
					2	1228	0	3	1	88	1336	1	3	1	96	1368	1	3	1	98
					3	1276	0	3	1	92	1389	1	3	1	100	1422	1	3	1	102
					3HS	1030	0	3	1	74	1121	0	3	1	80	1148	0	3	1	82
					4	1272	0	3	1	91	1384	0	3	1	99	1417	0	3	1	102
					5	1305	1	3	1	94	1420	1	3	1	102	1454	1	3	1	104
				DL Diffused Vertical Lens	1	1086	0	3	1	78	1182	0	3	1	85	1210	0	3	1	87
					5	1141	1	3	1	82	1241	1	3	1	89	1271	1	3	1	91

PA7R IMPACT RATED

BOLLARD

DELIVERED LUMENS (CONTINUED)

Drive Current	LEDs #	Nominal Watts	Nominal Lumens	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					
350mA	12L	14	1,000	LV External Louvers	1	489	0	3	1	35	533	0	3	1	38	545	0	3	1	39				
					2	534	0	3	1	38	581	0	3	1	42	595	0	3	1	43				
					3	550	0	3	1	40	599	0	3	1	43	613	0	3	1	44				
					3HS	397	0	3	1	29	432	0	3	1	31	442	0	3	1	32				
					4	577	0	3	1	41	628	0	3	1	45	643	0	3	1	46				
					5	583	1	3	1	42	634	1	3	1	46	649	1	3	1	47				
				GC Grill with Clear Lens	1	843	0	3	1	61	917	0	3	1	66	939	0	3	1	67				
					2	829	0	3	1	60	903	0	3	1	65	924	0	3	1	66				
					3	831	0	3	1	60	905	0	3	1	65	926	0	3	1	67				
					3HS	694	0	3	1	50	755	0	3	1	54	773	0	3	1	56				
					4	901	0	3	1	65	980	0	3	1	70	1004	0	3	1	72				
				GD Grill with Diffused Lens	5	842	1	3	1	60	916	1	3	1	66	938	1	3	1	67				
					1	728	0	3	1	52	792	0	3	1	57	811	0	3	1	58				
									5	782	1	3	1	56	851	1	3	1	61	872	1	3	1	63

PA7R IMPACT RATED

BOLLARD

PHOTOMETRY

PA7R-CH1-12L-020-4K7

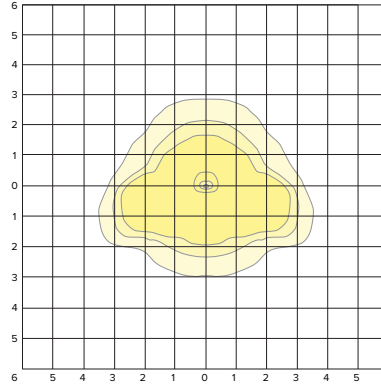
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1935
Watts	22
Efficacy	88.0
IES Type	II
BUG Rating	B0-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1132	81.8%
Downward House Side	251	18.1%
Downward Total	1384	71%
Upward Street Side	348	63%
Upward House Side	205	37%
Upward Total	553	29%
Total Flux	1937	100%

ISOFOOT CANDLE PLOT



PA7R-CH2-12L-020-4K7

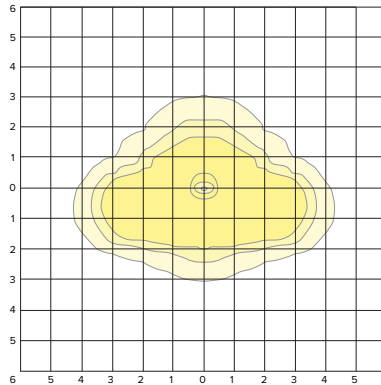
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1862
Watts	22
Efficacy	85.0
IES Type	II
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1176	78.7%
Downward House Side	319	21.3%
Downward Total	1494	80%
Upward Street Side	220	60%
Upward House Side	149	40%
Upward Total	369	20%
Total Flux	1863	100%

ISOFOOT CANDLE PLOT



PA7R-CH3-12L-020-4K7

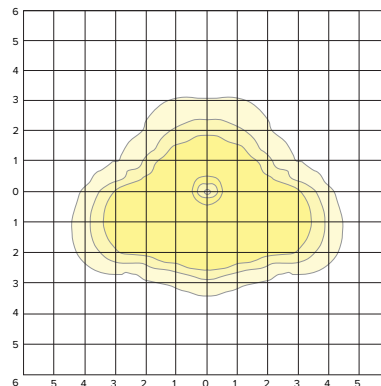
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1788
Watts	21.76
Efficacy	82.0
IES Type	III
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1184	80.3%
Downward House Side	290	19.7%
Downward Total	1474	82%
Upward Street Side	185	59%
Upward House Side	130	41%
Upward Total	315	18%
Total Flux	1789	100%

ISOFOOT CANDLE PLOT



PA7R IMPACT RATED

BOLLARD

PHOTOMETRY

PA7R-CH3HS-12L-020-4K7

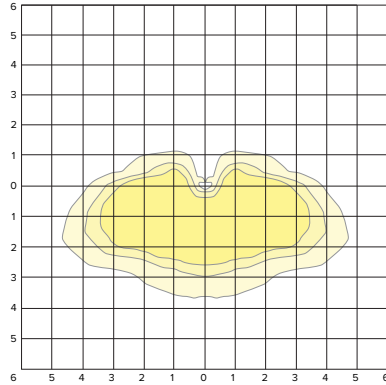
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1570
Watts	21.64
Efficacy	73.0
IES Type	III
BUG Rating	B0-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1187	92.0%
Downward House Side	103	8.0%
Downward Total	1290	82%
Upward Street Side	230	82%
Upward House Side	51	18%
Upward Total	282	18%
Total Flux	1571	100%

ISOFOOT CANDLE PLOT



PA7R-CH4-12L-020-4K7

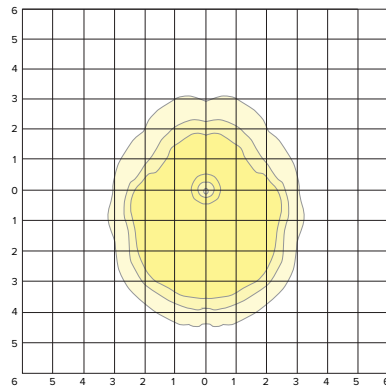
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1884
Watts	21.73
Efficacy	87.0
IES Type	IV
BUG Rating	B0-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1316	84.0%
Downward House Side	250	16.0%
Downward Total	1566	83%
Upward Street Side	184	58%
Upward House Side	136	42%
Upward Total	319	17%
Total Flux	1885	100%

ISOFOOT CANDLE PLOT



PA7R-CH5-12L-020-4K7

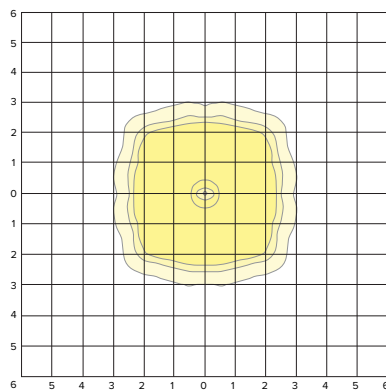
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	2003
Watts	21.73
Efficacy	92.0
IES Type	VS
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	825	50.0%
Downward House Side	825	50.0%
Downward Total	1650	82%
Upward Street Side	177	50%
Upward House Side	177	50%
Upward Total	354	18%
Total Flux	2004	100%

ISOFOOT CANDLE PLOT



PA7R IMPACT RATED

BOLLARD

PHOTOMETRY

PA7R-CL1-12L-020-4K7

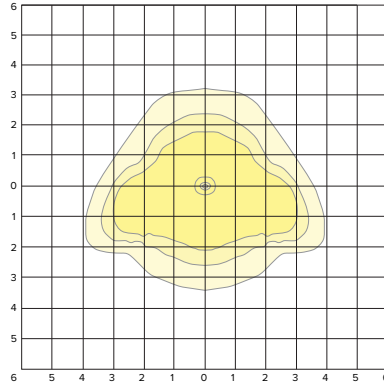
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	2016
Watts	21.7
Efficacy	93.0
IES Type	II
BUG Rating	B1-U4-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1078	77.5%
Downward House Side	312	22.5%
Downward Total	1390	69%
Upward Street Side	373	59%
Upward House Side	254	41%
Upward Total	627	31%
Total Flux	2017	100%

ISOFOOT CANDLE PLOT



PA7R-CL2-12L-020-4K7

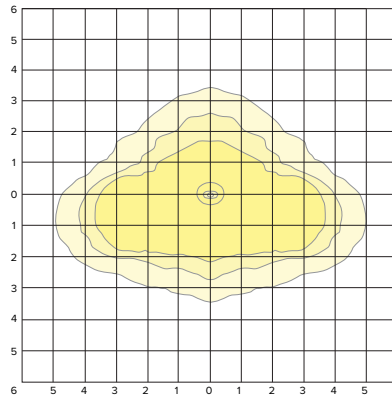
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	2159
Watts	21.69
Efficacy	100.0
IES Type	II
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1325	77.5%
Downward House Side	384	22.5%
Downward Total	1709	79%
Upward Street Side	258	57%
Upward House Side	193	43%
Upward Total	451	21%
Total Flux	2160	100%

ISOFOOT CANDLE PLOT



PA7R-CL3-12L-020-4K7

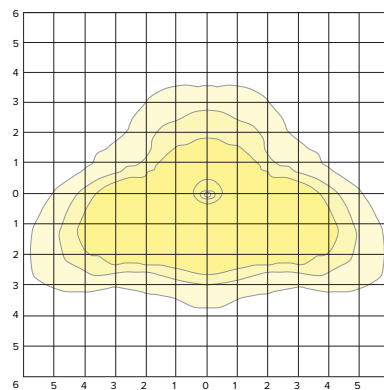
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	2244
Watts	21.72
Efficacy	103.0
IES Type	III
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1472	80.0%
Downward House Side	367	20.0%
Downward Total	1839	82%
Upward Street Side	231	57%
Upward House Side	175	43%
Upward Total	406	18%
Total Flux	2245	100%

ISOFOOT CANDLE PLOT



PA7R IMPACT RATED

BOLLARD

PHOTOMETRY

PA7R-CL3HS-12L-020-4K7

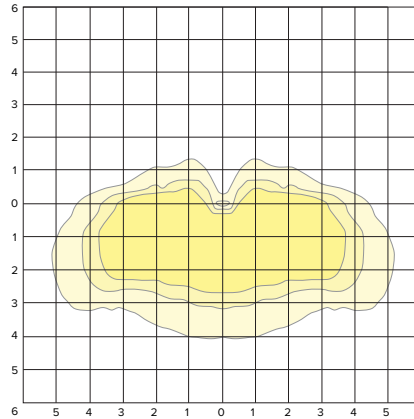
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1811
Watts	21.7
Efficacy	83.0
IES Type	III
BUG Rating	B0-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1361	92.0%
Downward House Side	118	8.0%
Downward Total	1479	82%
Upward Street Side	277	83%
Upward House Side	56	17%
Upward Total	334	18%
Total Flux	1812	100%

ISOFOOT CANDLE PLOT



PA7R-CL4-12L-020-4K7

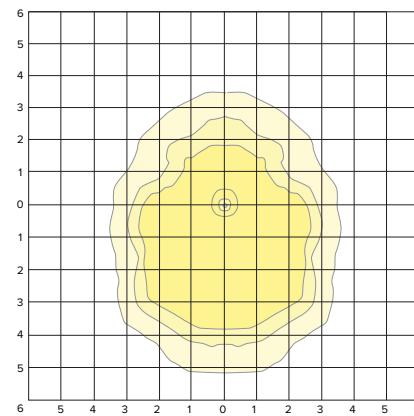
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	2236
Watts	21.71
Efficacy	103.0
IES Type	IV
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1552	84.9%
Downward House Side	275	15.0%
Downward Total	1827	82%
Upward Street Side	230	56%
Upward House Side	180	44%
Upward Total	410	18%
Total Flux	2237	100%

ISOFOOT CANDLE PLOT



PA7R-CL5-12L-020-4K7

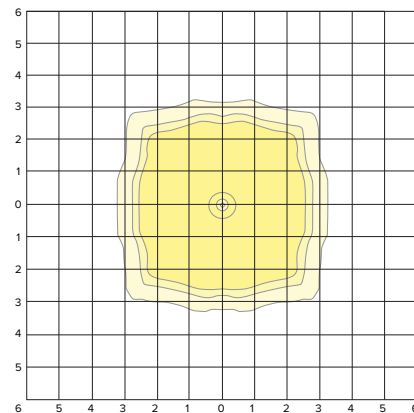
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	2296
Watts	21.75
Efficacy	106.0
IES Type	VS
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	937	50.0%
Downward House Side	937	50.0%
Downward Total	1874	82%
Upward Street Side	211	50%
Upward House Side	211	50%
Upward Total	422	18%
Total Flux	2296	100%

ISOFOOT CANDLE PLOT



PA7R IMPACT RATED

BOLLARD

PHOTOMETRY

PA7R-DL1-12L-020-4K7

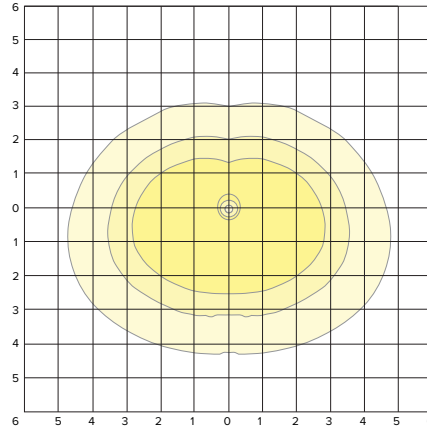
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1783
Watts	21.74
Efficacy	82.0
IES Type	IV
BUG Rating	B1-U3-G2
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	746	66.2%
Downward House Side	381	33.8%
Downward Total	1127	63%
Upward Street Side	408	62%
Upward House Side	248	38%
Upward Total	657	37%
Total Flux	1784	100%

ISOFOOT CANDLE PLOT



PA7R-DL5-12L-020-4K7

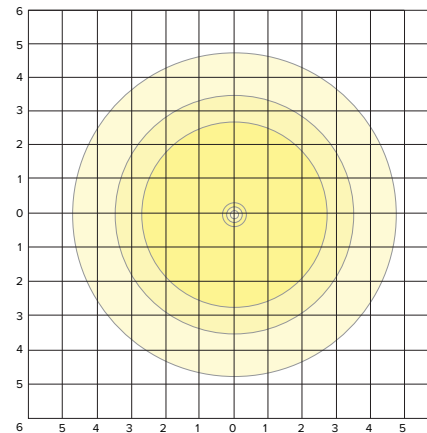
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1873
Watts	21.75
Efficacy	86.0
IES Type	VS
BUG Rating	B1-U3-G2
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	656	50.0%
Downward House Side	656	50.0%
Downward Total	1313	70%
Upward Street Side	281	50%
Upward House Side	281	50%
Upward Total	561	30%
Total Flux	1874	100%

ISOFOOT CANDLE PLOT



PA7R-GC1-12L-020-4K7

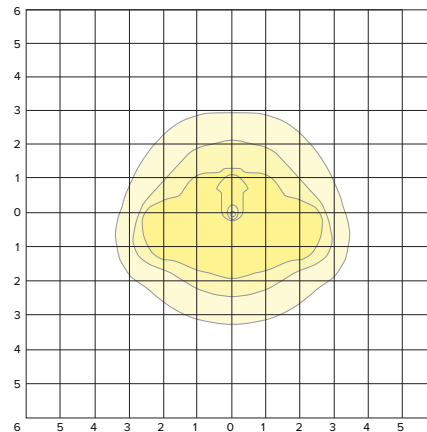
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1130
Watts	21.73
Efficacy	52.0
IES Type	II
BUG Rating	B0-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	434	67.6%
Downward House Side	208	32.4%
Downward Total	642	57%
Upward Street Side	298	61%
Upward House Side	191	39%
Upward Total	489	43%
Total Flux	1131	100%

ISOFOOT CANDLE PLOT



PA7R IMPACT RATED

BOLLARD

PHOTOMETRY

PA7R-GC2-12L-020-4K7

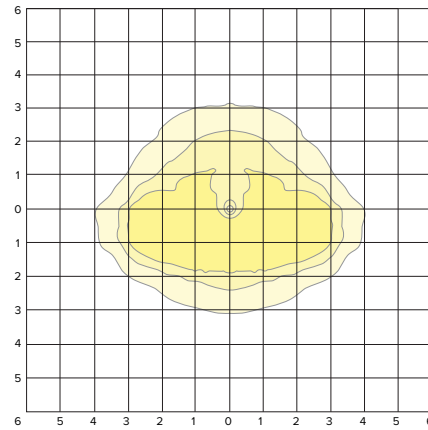
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1111
Watts	21.59
Efficacy	51.0
IES Type	II
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	488	68.3%
Downward House Side	227	31.7%
Downward Total	715	64%
Upward Street Side	238	60%
Upward House Side	159	40%
Upward Total	397	36%
Total Flux	1112	100%

ISOFOOT CANDLE PLOT



PA7R-GC3-12L-020-4K7

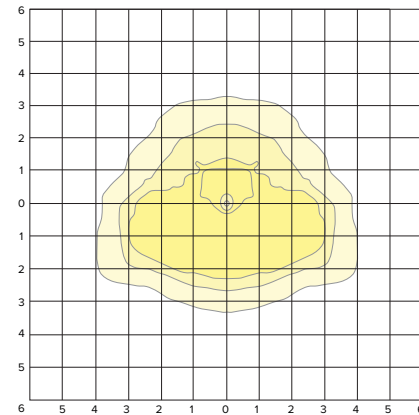
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1114
Watts	21.7
Efficacy	51.0
IES Type	II
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	513	69.8%
Downward House Side	221	30.1%
Downward Total	735	66%
Upward Street Side	234	62%
Upward House Side	146	38%
Upward Total	380	34%
Total Flux	1114	100%

ISOFOOT CANDLE PLOT



PA7R-GC3HS-12L-020-4K7

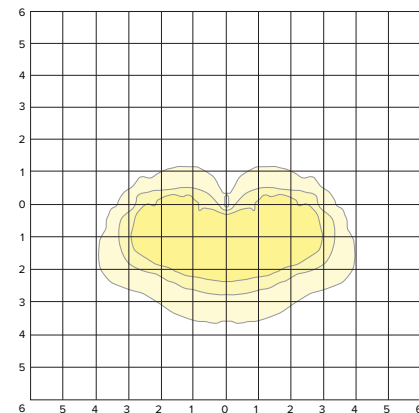
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	930
Watts	21.59
Efficacy	43.0
IES Type	III
BUG Rating	B0-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	533	87.1%
Downward House Side	79	12.8%
Downward Total	612	66%
Upward Street Side	265	83%
Upward House Side	54	17%
Upward Total	319	34%
Total Flux	931	100%

ISOFOOT CANDLE PLOT



PA7R IMPACT RATED

BOLLARD

PHOTOMETRY

PA7R-GC4-12L-020-4K7

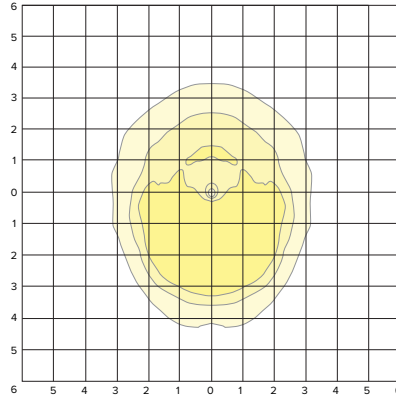
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1207
Watts	21.59
Efficacy	56.0
IES Type	IV
BUG Rating	B0-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	591	74.2%
Downward House Side	205	25.8%
Downward Total	796	66%
Upward Street Side	267	65%
Upward House Side	146	35%
Upward Total	412	34%
Total Flux	1208	100%

ISOFOOT CANDLE PLOT



PA7R-GC5-12L-020-4K7

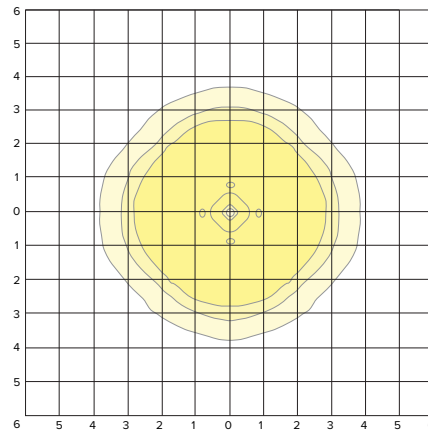
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1128
Watts	21.59
Efficacy	52.0
IES Type	VS
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	382	50.0%
Downward House Side	382	50.0%
Downward Total	764	68%
Upward Street Side	183	50%
Upward House Side	183	50%
Upward Total	365	32%
Total Flux	1129	100%

ISOFOOT CANDLE PLOT



PA7R-GD1-12L-020-4K7

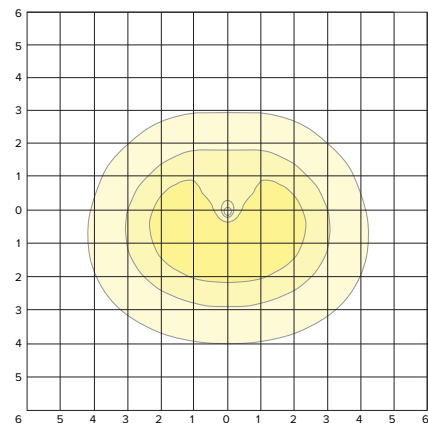
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1127
Watts	21.71
Efficacy	51.9
IES Type	IV
BUG Rating	B1-U3-G2
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	407	62.8%
Downward House Side	241	37.2%
Downward Total	648	57%
Upward Street Side	287	60%
Upward House Side	193	40%
Upward Total	479	43%
Total Flux	1127	100%

ISOFOOT CANDLE PLOT



PA7R IMPACT RATED

BOLLARD

PHOTOMETRY

PA7R-GD5-12L-020-4K7

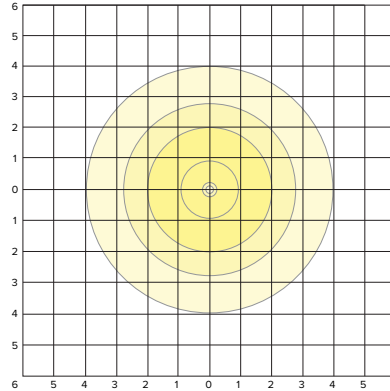
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1037
Watts	21.6
Efficacy	48.0
IES Type	VS
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	309	50.0%
Downward House Side	309	50.0%
Downward Total	618	60%
Upward Street Side	210	50%
Upward House Side	210	50%
Upward Total	420	40%
Total Flux	1038	100%

ISOFOOT CANDLE PLOT



PA7R-LV1-12L-020-4K7

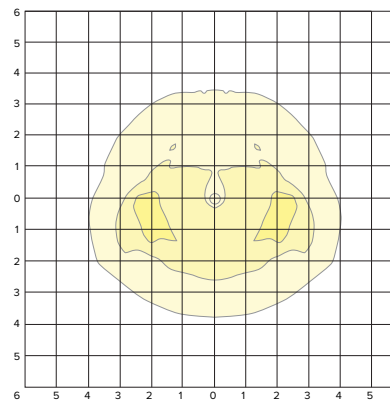
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	811
Watts	21.73
Efficacy	37.0
IES Type	II
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	303	57.7%
Downward House Side	222	42.2%
Downward Total	526	65%
Upward Street Side	160	56%
Upward House Side	126	44%
Upward Total	286	35%
Total Flux	812	100%

ISOFOOT CANDLE PLOT



PA7R-LV2-12L-020-4K7

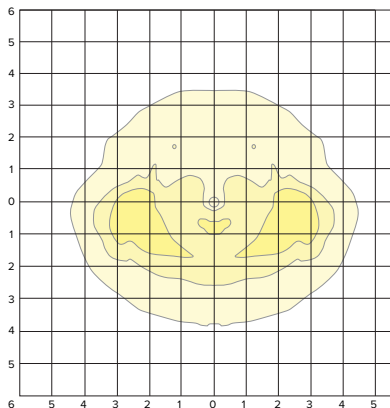
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	885
Watts	21.68
Efficacy	41.0
IES Type	II
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	378	61.9%
Downward House Side	233	38.1%
Downward Total	611	69%
Upward Street Side	158	58%
Upward House Side	116	42%
Upward Total	274	31%
Total Flux	885	100%

ISOFOOT CANDLE PLOT



PA7R IMPACT RATED

BOLLARD

PHOTOMETRY

PA7R-LV3-12L-020-4K7

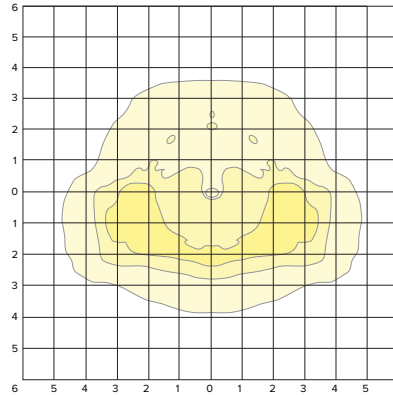
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	912
Watts	21.69
Efficacy	42.0
IES Type	III
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	414	63.7%
Downward House Side	233	35.8%
Downward Total	650	71%
Upward Street Side	154	59%
Upward House Side	109	41%
Upward Total	263	29%
Total Flux	913	100%

ISOFOOT CANDLE PLOT



PA7R-LV3HS-12L-020-4K7

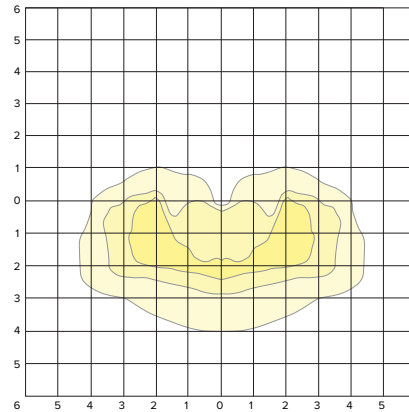
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	658
Watts	21.69
Efficacy	30.0
IES Type	III
BUG Rating	B0-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	383	82.5%
Downward House Side	81	17.5%
Downward Total	464	71%
Upward Street Side	155	80%
Upward House Side	39	20%
Upward Total	194	29%
Total Flux	658	100%

ISOFOOT CANDLE PLOT



PA7R-LV4-12L-020-4K7

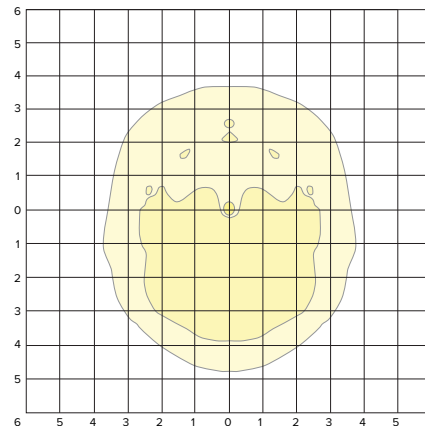
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	956
Watts	21.69
Efficacy	44.0
IES Type	IV
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	454	67.5%
Downward House Side	219	32.5%
Downward Total	673	70%
Upward Street Side	176	62%
Upward House Side	107	38%
Upward Total	283	30%
Total Flux	956	100%

ISOFOOT CANDLE PLOT



PA7R IMPACT RATED

BOLLARD

PHOTOMETRY

PA7R-LV5-12L-020-4K7

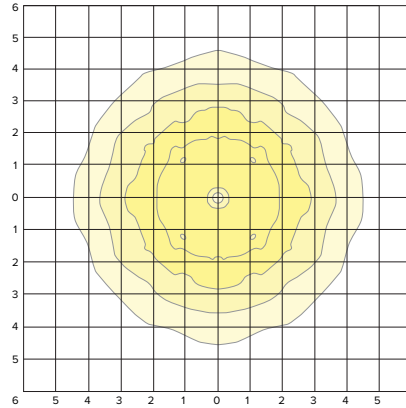
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	966
Watts	21.7
Efficacy	45.0
IES Type	VS
BUG Rating	B1-U3-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	354	50.0%
Downward House Side	354	50.0%
Downward Total	708	73%
Upward Street Side	129	50%
Upward House Side	129	50%
Upward Total	259	27%
Total Flux	967	100%

ISOFOOT CANDLE PLOT



PA7R-NU1-12L-020-4K7

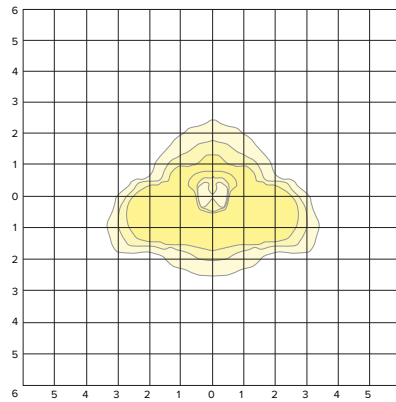
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1136
Watts	21.75
Efficacy	52.0
IES Type	I
BUG Rating	B0-U0-G0
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	986	86.7%
Downward House Side	151	13.3%
Downward Total	1137	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	1137	100%

ISOFOOT CANDLE PLOT



PA7R-NU2-12L-020-4K7

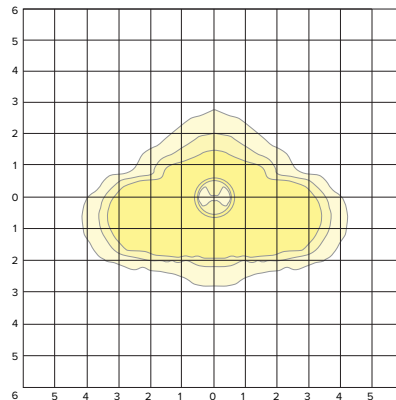
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1305
Watts	21.74
Efficacy	60.0
IES Type	II
BUG Rating	B0-U0-G0
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1073	82.2%
Downward House Side	233	17.8%
Downward Total	1306	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	1306	100%

ISOFOOT CANDLE PLOT



PA7R IMPACT RATED

BOLLARD

PHOTOMETRY

PA7R-NU3-12L-020-4K7

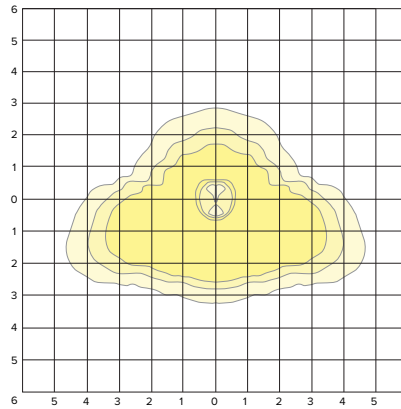
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1228
Watts	21.76
Efficacy	56.0
IES Type	III
BUG Rating	B0-U0-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1035	84.3%
Downward House Side	194	15.8%
Downward Total	1228	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	1228	100%

ISOFOOT CANDLE PLOT



PA7R-NU3HS-12L-020-4K7

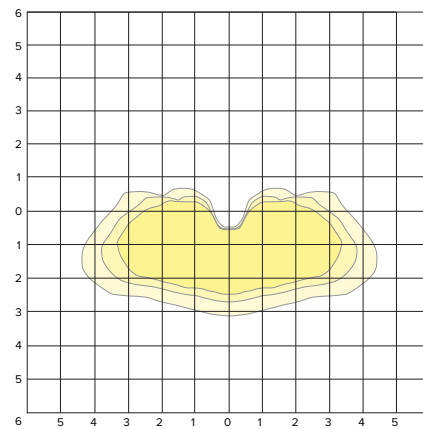
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1037
Watts	21.74
Efficacy	48.0
IES Type	III
BUG Rating	B0-U0-G0
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	987	95.1%
Downward House Side	51	4.9%
Downward Total	1038	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	1038	100%

ISOFOOT CANDLE PLOT



PA7R-NU4-12L-020-4K7

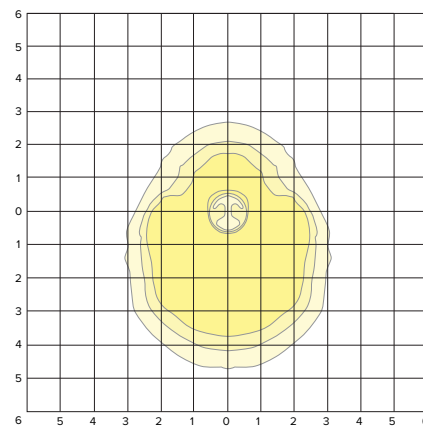
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1482
Watts	21.67
Efficacy	68.0
IES Type	IV
BUG Rating	B0-U0-G1
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1318	88.9%
Downward House Side	164	11.1%
Downward Total	1483	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	1483	100%

ISOFOOT CANDLE PLOT



PA7R IMPACT RATED

BOLLARD

PHOTOMETRY(CONTINUED)

PA7R-NU5-12L-020-4K7

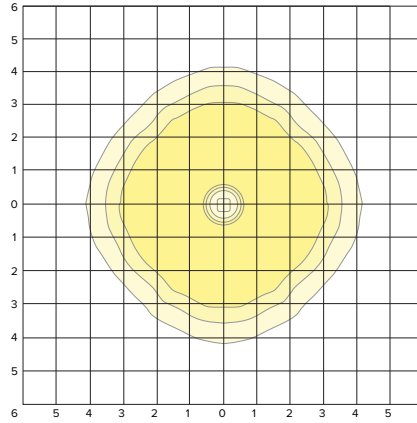
LUMINAIRE DATA

Description	4000K, 70CRI
Delivered Lumens	1377
Watts	21.68
Efficacy	63.0
IES Type	VS
BUG Rating	B1-U0-G0
Mounting Height	3.5 ft
Grid Scale	6 ft

ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	689	50.0%
Downward House Side	689	50.0%
Downward Total	1377	100%
Upward Street Side	0	0%
Upward House Side	0	0%
Upward Total	0	0%
Total Flux	1377	100%

ISOFOOT CANDLE PLOT

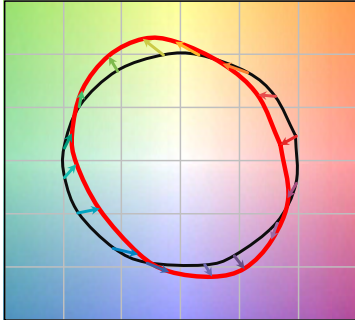


PA7R IMPACT RATED

BOLLARD

TM-30 DATA

COLOR VECTOR GRAPHIC

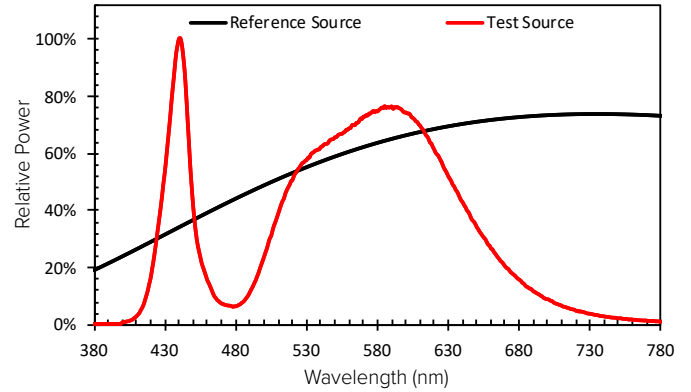


— Reference Illuminant — Test Source

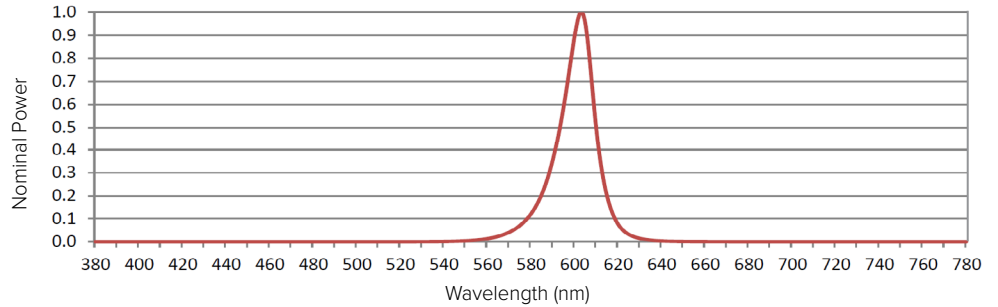
TEST SOURCE

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

SPECTRAL POWER DISTRIBUTION COMPARISON



AMBER SPECTRAL POWER DISTRIBUTION



ELECTRICAL DATA

# LED	Electrical											Dimming					
	System Watts	Drive Current	Line Voltage		Amps AC						Min. Power Factor	Max THD (%)	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
12	22	550mA	120-480	50/60	0.18	0.11	0.09	0.08	0.06	0.05	>0.9	20	10% to 100%	0mA	1mA	0V	10V
14	350mA	0.12			0.07	0.06	0.05	0.04	0.03								

TM-21 Lifetime Calculation - Projected Lumen Maintenance (25°C / 77°C) & (40°C / 104°C)						
Hours	0	25,000	36,000	50,000	100,000	Reported L70
Projected Lumen Maintenance	100%	98%	97%	95%	90%	60khrs

CRI Lumen Multiplier 80 and 90 CRI		
CCT	80 CRI	90 CRI
2700K	0.859	0.655
3000K	0.9119	0.7033
3500K	0.906	0.732
4000K	0.8941	0.734
5000K	0.879	0.7712
Scaling factor of 5000K 70CRI lumen packages		

PA7R IMPACT RATED

BOLLARD

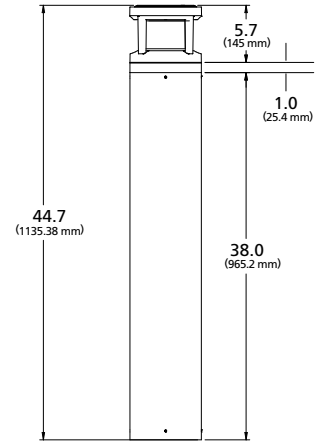
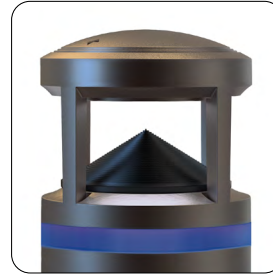
ADDITIONAL INFORMATION

LUMINOUS ACCENT:

- The Luminous Accent option adds an additional 1" / 25.4mm to the overall fixture height and may be controlled via wired DMX RDM or Bluetooth wireless. The Luminous Accent shall be IK08.

HUBBELL LIGHTING RGBW REMOTE APP

- The Hubbell Lighting RGBW Remote application may be downloaded free of charge from the Apple App Store or Google Play.
- Color selection and adjustment.
- Camera function for color matching.
- Intensity slider for dimming/ramping up.
- Save and rename up to 10 presets.
- Group and rename fixtures.
- Fixture is password protected, refer to instructions to set unique password.



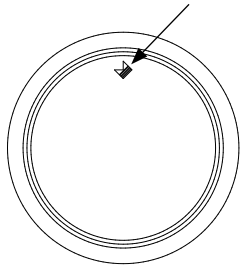
MOUNTING

ALUMINUM BODY

- Once attached to base mounting plate, fixture may be rotated 20° in either direction and secured with set screws at base of the bollard body. KIM Lighting logo indicates 'street side' output. Once installed on the impact post, fixture may be rotated 360 degrees and secured with set screw

Street Side

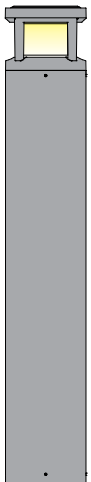
Kim Lighting Logo



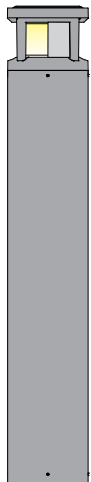
Top View

SHIELDING

- HS configurations feature factory installed 180° shield(s) that may also be installed in the field for any Optic configuration.



HS Front View



HS Side View



HS Back View