SOLID STATE LIGHTING

PROJECT NAME:

PROJECT TYPE:

Pacifica - BOLLARD

CONTEMPORARY ROUND FORM BOLLARD

PACB

Optical Housing
Contemporary, double strut post-top style bollard. All housing components are heavy wall, low copper aluminum alloy (A356 alloy, <0.2% copper). Removable internal heatsink provides direct mounting of the LED modules and thermal control for long life and efficiency. Bollard Top is removable for LED Module access. Bollard head is removable for electrical and driver access. All hardware is stainless steel.

Shaft & Base
Bollard Shaft is heavy wall extruded 6063-T6 aluminum alloy. Base is heavy cast aluminum. All hardware is stainless steel and tamper resistant. Standard shaft height provides a 42.5" overall height, consult factory for custom heights.

Anchor Bolts
Four 3/8" x 10" x 2" galvanized anchor bolts with couplings, leveling nuts, washers, template, and stainless bolts.

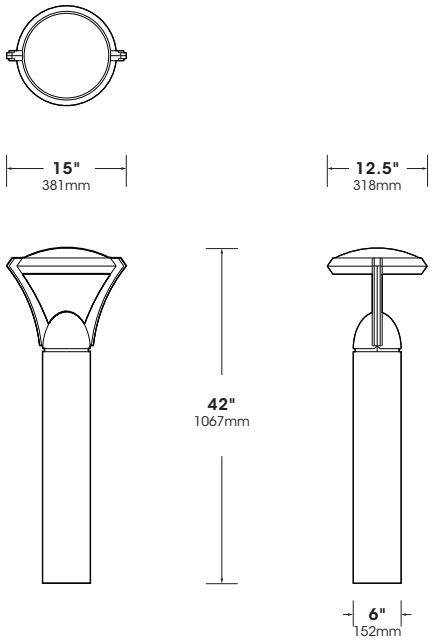
PLED™ Optics
Emitters (LED's) are arrayed on a metal core PCB panel with each emitter located on a copper thermal transfer pad and enclosed by an LED refractor. LED optics completely seal each individual emitter to meet an IP66 rating. In asymmetric distributions, a micro-reflector inside the refractor re-directs the house side emitter output towards the street side, maximizing usable light. Optional house side shields are available that cover each individual optic. Refractors are injection molded H12 acrylic. Each LED refractor is sealed to the PCB over an emitter and all refractors are retained by an aluminum frame. Any one Panel, or group of Panels in a luminaire, have the same optical pattern. LED refractors produce standard site/area distributions. Panels are field replaceable and field rotatable in 90° increments. Quick-disconnects are provided above each panel for fast field replacement. All fixture optical options will provide a "U0" no uplight optical package and is are dark sky friendly.

LED Emitters
LED thermal management is designed to maintain LED operating temperature below 90 °C, well below the manufacturers thermal max of 150 °C for long life, high lumen maintenance and color stability. High Power White LED's are driven between 350mA and 875mA for a maximum output of 2.5 Watts nominal. LED's are available in standard Warm White (2700K & 3000K), Neutral White (4000K), or Cool White (5000K). All Standard LED's have a minimum of 70 CRI. Consult Factory for other LED options. Lumen Maintenance of L93 at 100,000 hours (TM-21 calculated at 6x Test Time).

True Amber LED's TRA-True Amber LED's emit light in the amber spectral bandwidth centered on 585-590nm. True Amber has negligible blue light and is suitable for wildlife.

LED Driver
Constant current electronic with a power factor of >.90 and a minimum operating temperature of -40°F/-40°C. Driver(s) is/are UL and cUL recognized. In-line terminal blocks facilitate wiring between the driver and optical arrays. Drivers accept an input of 120-277V, 50/60Hz or 347V-480V, 50/60Hz. (0 - 10V dimmable driver is standard. Driver has a minimum of 3KV internal surge protection. Luminaire supplied with a separate 20KV surge protector for field installation.

Finish
Polyester powder coat incorporates four step iron phosphate process to pretreat metal surface for maximum adhesion. Top coat is baked at 400°F for maximum hardness and exterior durability.



U.L. Listed for Wet Location

BABA COMPLIANT

2023081

U.S. Pole Company Inc
An Employee Owned Company
660 West Avenue O, Palmdale, CA 93551
Phone (661) 233-2000 www.usaltg.com

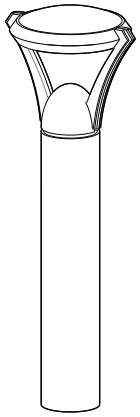
MADE IN THE USA

U.S. ARCHITECTURAL LIGHTING

PACB SERIES - PLED

PRODUCT CONFIGURATIONS

EPA & WEIGHT



PACB
Max Weight = 22 lbs
20 LED

PLED™ MODULE

20 LED Module

ORDERING INFORMATION

Spec/Order Example: PACB/PLED-IV/20LED-350mA/347/Rust/DF+V

Luminaire	Optics	LED Mode	Voltage	Finish	Options

Luminaire

☐ **PACB**

Optics

PLED™ Distribution Type

- ☐ **PLED-II**
- ☐ **PLED-II-FR**
- ☐ **PLED-III**
- ☐ **PLED-III-W**
- ☐ **PLED-IV**
- ☐ **PLED-IV-FT**
- ☐ **PLED-V-SQ-N**
- ☐ **PLED-V-SQ-M**
- ☐ **PLED-V-SQ-W**

LED

# of LEDs	Drive Current	Color Temp - CCT
☐ **20LED**	☐ **175mA**	☐ **27K** (2700K)
	☐ **350mA**	☐ **30K** (3000K)
		☐ **40K** (4000K)
		☐ **50K** (5000K)
		☐ **TRA** True Amber

NOTES:
1 - Consult factory for other CCT, CRI, & Drive Current options

Voltage

- ☐ **UNV** (120-277)
- ☐ **347**
- ☐ **480**

Finish

Standard Textured Finish

- ☐ Black **RAL-9005-T**
- ☐ White **RAL-9003-T**
- ☐ Grey **RAL-7004-T**
- ☐ Dark Bronze **RAL-8019-T**
- ☐ Green **RAL-6005-T**

Premium Finishes

- ☐ Rust
- ☐ Patina Copper **PC**

For smooth finish replace suffix "T" with suffix "S" (Example: RAL-9500-S)

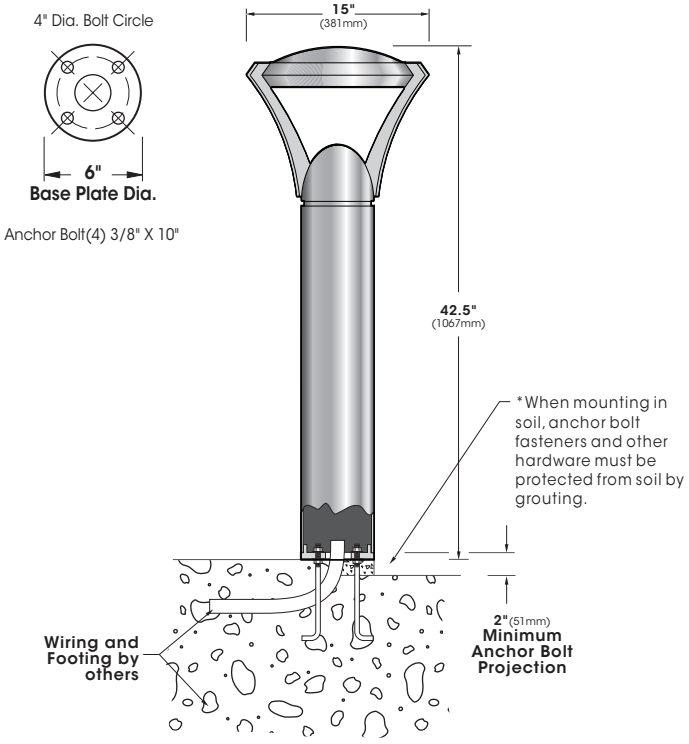
Consult factor for custom colors

Options

- ☐ Clear Acrylic Lens **CA**
- ☐ Internal House Side Shield incl. LED Count (Example: HS-PLED/48) **HS-PLED**
- ☐ High-Low Dimming for Switch by Others/Select Levels 50/100 or 25/100 (Example: HLSW/25) **HLSW**
- ☐ Photo Cell + Voltage (Example: PC120V) **PC+V**
- ☐ Single Fuse (Example: SF277V) **SF+V**
- ☐ Double Fuse (Example: DF240V) **DF+V**

PACB SERIES - PLED

INSTALLATION DETAIL



High Low Dimming For Switches (HLSW)
The HLSW is a small Electronic Switch which provides High Low Dimming Control through the LED Driver's 0-10V Control. Switching is done by adding a seconday AC Switched Hot Trigger Line to the HLSW in addition to the normal AC Power Line. When the Secondary Trigger Line is powered, the Fixture will go to 100% dimming. With no power to the Trigger, the Fixture will operate at 50% or 25% dimming. Switches for the Trigger Line can be a normal AC Switch/Breaker or Timed Switch/Breaker.

Wireless and Other Fixture Controls
Contact factory for Wireless and other Fixture Controls and recomendations. Most Controls can be integrated and factory Installed.

PACB SERIES - PLED

PHOTOMETRIC DATA GUIDE - LM-80 LUMEN MAINTENANCE

LED LUMEN MAINTENANCE (350mA to 875mA)		
LED Life / Operating Hours	**Lumen Depreciation**	**Lumen Depreciation Scale Factor**
60,000	L96	0.96x
100,000 (6X LED Test Hrs)	L93	0.93x
150,000 (Theoretical)	L89	0.90x
200,000 (Theoretical)	L86	0.87x

TM-21 6x Test Time Dicatates that L93 > 100,000 Hours.

Lumen Depreciation Calculations Done in Accordance With IESNA TM-21 & LM-80 (25°C Ambient)

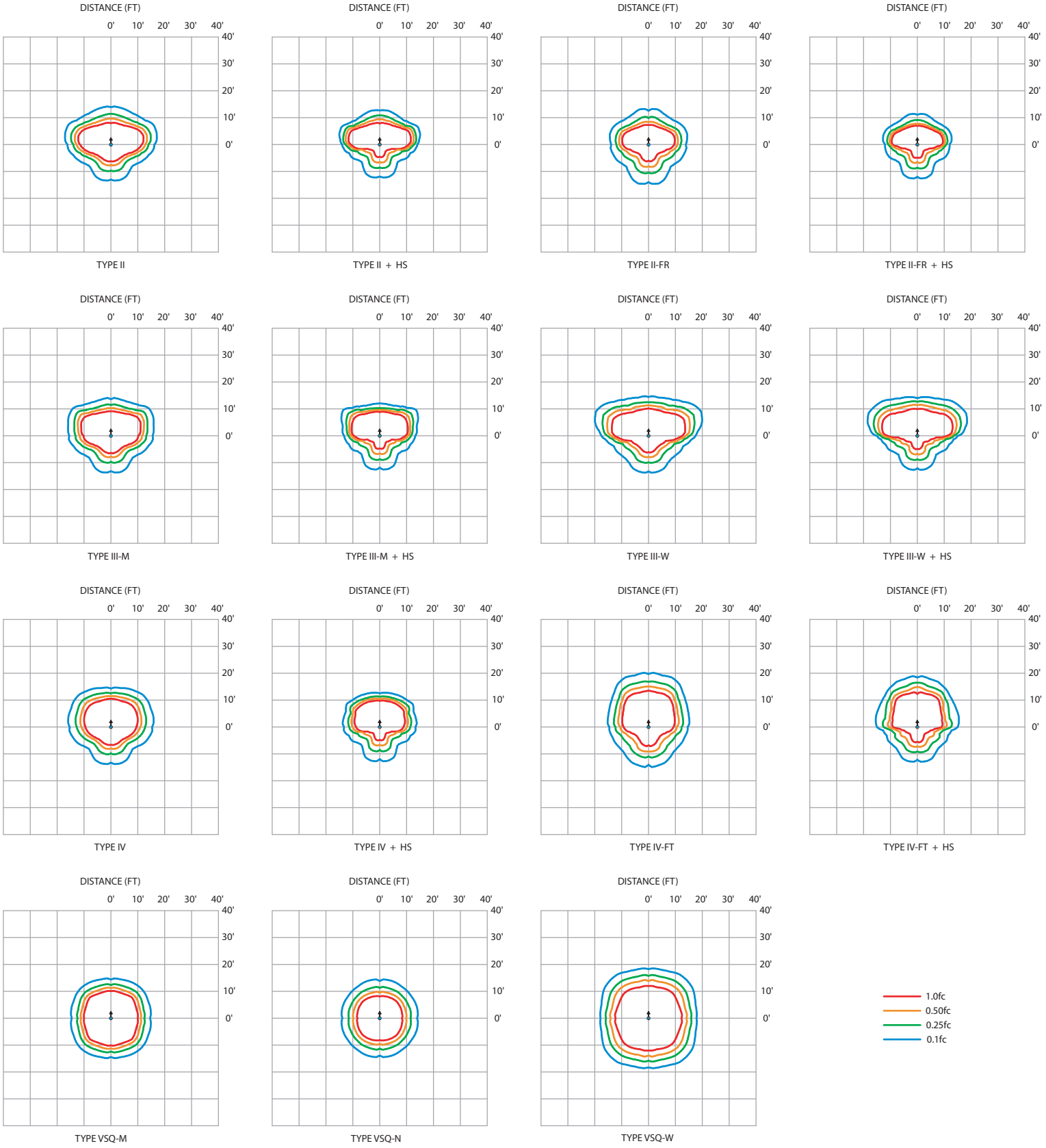
ELECTRICAL DATA GUIDE - AMPERAGE CHART

# of LEDs	mA	System Watts	120V	208V	277V	347V	480V
20	175	11.7	0.10	0.06	0.04	0.03	0.02
20	350	23.6	0.20	0.11	0.09	0.07	0.05

PACB SERIES - PLED

PHOTOMETRIC DATA GUIDE - ISOFOOTCANDLE PLOTS

PACB-20LED-350mA-40K - 42" Height



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PACB SERIES - PLED

PHOTOMETRIC DATA GUIDE - LUMEN TABLES (PACB-PLED)

PACB-PLED																		
LED Count	Drive Current (mA)	System Watts	Dist'n Type	27K (2700K - 70CRI)			30K (3000K - 70CRI)			40K (4000K - 70CRI)			50K (5000K - 70CRI)			System Watts	TRA (590nm)		
				LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING		LUMENS	LPW	BUG RATING
20	175	11.7	II	1626	139	B1-U0-G1	1697	145	B1-U0-G1	1767	151	B1-U0-G1	1838	157	B1-U0-G1	9.0	636	71	B0-U0-G0
			II-FR	1637	140	B1-U0-G0	1708	146	B1-U0-G0	1780	152	B1-U0-G0	1851	158	B1-U0-G0		641	71	B0-U0-G0
			III-M	1655	141	B1-U0-G1	1727	148	B1-U0-G1	1799	154	B1-U0-G1	1871	160	B1-U0-G1		647	72	B0-U0-G0
			III-W	1536	131	B0-U0-G1	1603	137	B0-U0-G1	1670	143	B0-U0-G1	1737	148	B1-U0-G1		601	67	B0-U0-G1
			IV	1642	140	B1-U0-G1	1714	146	B1-U0-G1	1785	153	B1-U0-G1	1856	159	B1-U0-G1		643	71	B0-U0-G0
			IV-FT	1496	128	B0-U0-G1	1561	133	B0-U0-G1	1626	139	B1-U0-G1	1691	145	B1-U0-G1		585	65	B0-U0-G1
			VSQ-N	1717	147	B1-U0-G0	1791	153	B1-U0-G0	1866	159	B1-U0-G0	1941	166	B1-U0-G0		672	75	B0-U0-G0
			VSQ-M	1683	144	B1-U0-G0	1757	150	B1-U0-G0	1830	156	B1-U0-G0	1903	163	B1-U0-G0		659	73	B1-U0-G0
			ASY	1643	140	B1-U0-G1	1714	147	B2-U0-G1	1786	153	B2-U0-G1	1857	159	B2-U0-G1		643	71	B1-U0-G1
			II-HS	1190	102	B0-U0-G0	1242	106	B0-U0-G0	1293	111	B0-U0-G0	1345	115	B0-U0-G0		465	52	B0-U0-G0
			II-FR-HS	1211	103	B0-U0-G0	1263	108	B0-U0-G0	1316	112	B0-U0-G0	1368	117	B0-U0-G0		473	53	B0-U0-G0
			III-M-HS	1204	103	B0-U0-G0	1256	107	B0-U0-G0	1308	112	B0-U0-G0	1360	116	B0-U0-G0		471	52	B0-U0-G0
			III-W-HS	1178	101	B0-U0-G1	1229	105	B0-U0-G1	1280	109	B0-U0-G1	1332	114	B0-U0-G1		461	51	B0-U0-G1
			IV-HS	1243	106	B0-U0-G0	1297	111	B0-U0-G0	1351	115	B0-U0-G0	1405	120	B0-U0-G0		486	54	B0-U0-G0
			IV-FT-HS	1175	100	B0-U0-G1	1226	105	B0-U0-G1	1277	109	B0-U0-G1	1328	114	B0-U0-G1		460	51	B0-U0-G1
20	350	23.6	II	3152	134	B1-U0-G1	3288	139	B1-U0-G1	3426	145	B1-U0-G1	3563	151	B1-U0-G1	18.2	1096	60	B0-U0-G0
			II-FR	3173	134	B1-U0-G1	3311	140	B1-U0-G1	3449	146	B1-U0-G1	3587	152	B1-U0-G1		1104	61	B0-U0-G0
			III-M	3207	136	B1-U0-G1	3346	142	B1-U0-G1	3486	148	B1-U0-G1	3625	154	B1-U0-G1		1115	61	B0-U0-G0
			III-W	2978	126	B1-U0-G1	3107	132	B1-U0-G1	3237	137	B1-U0-G1	3366	143	B1-U0-G1		1036	57	B0-U0-G1
			IV	3183	135	B1-U0-G1	3321	141	B1-U0-G1	3459	147	B1-U0-G1	3598	152	B1-U0-G1		1107	61	B0-U0-G0
			IV-FT	2899	123	B1-U0-G1	3025	128	B1-U0-G1	3151	134	B1-U0-G1	3277	139	B1-U0-G1		1008	55	B0-U0-G1
			VSQ-N	3327	141	B2-U0-G0	3472	147	B2-U0-G0	3616	153	B2-U0-G0	3761	159	B2-U0-G0		1157	64	B1-U0-G0
			VSQ-M	3262	138	B2-U0-G1	3404	144	B2-U0-G1	3546	150	B2-U0-G1	3688	156	B2-U0-G1		1135	62	B1-U0-G0
			VSQ-W	3184	135	B2-U0-G1	3322	141	B2-U0-G1	3461	147	B3-U0-G1	3600	153	B3-U0-G1		1108	61	B1-U0-G1
			II-HS	2305	98	B0-U0-G1	2405	102	B0-U0-G1	2505	106	B0-U0-G1	2606	110	B0-U0-G1		802	44	B0-U0-G0
			II-FR-HS	2345	99	B0-U0-G0	2447	104	B0-U0-G0	2549	108	B0-U0-G0	2651	112	B0-U0-G0		816	45	B0-U0-G0
			III-M-HS	2332	99	B0-U0-G1	2433	103	B0-U0-G1	2535	107	B0-U0-G1	2636	112	B0-U0-G1		811	45	B0-U0-G0
			III-W-HS	2282	97	B0-U0-G1	2382	101	B0-U0-G1	2481	105	B0-U0-G1	2580	109	B0-U0-G1		794	44	B0-U0-G1
			IV-HS	2409	102	B0-U0-G1	2513	106	B0-U0-G1	2618	111	B0-U0-G1	2722	115	B0-U0-G1		838	46	B0-U0-G0
			IV-FT-HS	2277	96	B0-U0-G1	2376	101	B0-U0-G1	2475	105	B0-U0-G1	2574	109	B0-U0-G1		792	44	B0-U0-G1

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