

# SOLID STATE LIGHTING

PROJECT NAME: \_\_\_\_\_

PROJECT TYPE: \_\_\_\_\_

# BEYOND<sup>®</sup> - PLED

## 4-SIDED CONTEMPORARY BOLLARD

### Housing and Riser

Top housing and base components cast from corrosion resistant low copper aluminum (A356 alloy, <0.2% copper). Minimum wall thickness is .188". Vertical Struts are extruded 6063-T5 Aluminum. All Hardware is Stainless Steel. Tamper resistant hardware used on top access and base hand hole

### Anchorage

Integrated 5/8" thick baseplate is circumferentially welded into base housing. Four 1/2" x 12" x 2" galvanized steel anchor bolts and hardware provided.

### 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. No lens (NL) and all flat lens options will provide "U0" no uplight optical packages that are Dark Sky friendly.

### Lenses

Optional lenses are high impact, UV stable acrylic. CA clear flat acrylic lens for impact resistance and high lumen output. AL Ambiance flat lens for high glare reduction. CPA Clear Prismatic drop down conical Lens for slight glare reduction and aesthetics. CWA White Prismatic drop down lens for high glare reduction and aesthetic.

### LED Emitters

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 Neutral White (4000K), Cool White (5000K), or Warm White (2700K & 3000K). All Standard LED's have a minimum of 70 CRI. Consult Factory for other LED options. Lumen Maintenance of L94 at 60,000 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 20KV surge protector for field installation.)

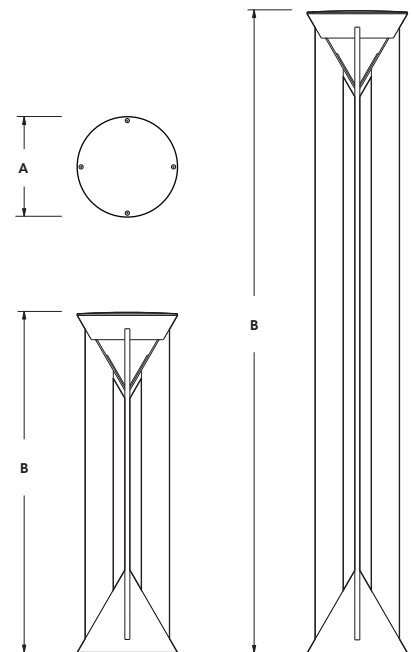
### Finish

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.



### BYB

FIXTURE	A	B
<b>BYB42</b>	12.5" 324mm	42" 1067mm
<b>BYB80</b>	12.5" 324mm	80" 2032mm

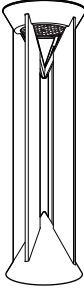
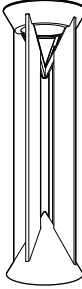
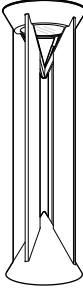
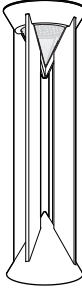
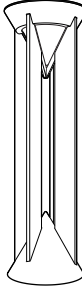
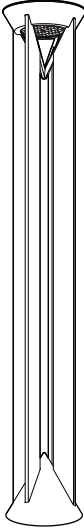
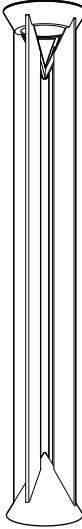
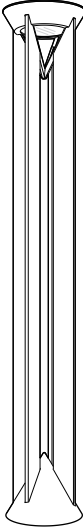
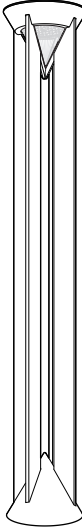
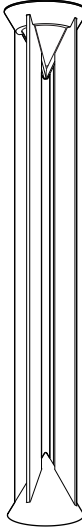


2023115

# BYB SERIES - PLED

## PRODUCT CONFIGURATIONS













### EPA & WEIGHT

No Lens	w/ Flat Clear Acrylic Lens	w/ Ambiance Low Luminescence Lens	w/ Conical Clear Prismatic Acrylic Lens	w/ Conical White Acrylic Lens
 <p data-bbox="99 825 253 884"><b>BYB42-NL</b> Max Weight = 38 lbs 20 LED Max</p>	 <p data-bbox="418 825 573 884"><b>BYB42-CA</b> Max Weight = 38 lbs 20 LED Max</p>	 <p data-bbox="699 825 854 884"><b>BYB42-AL</b> Max Weight = 38 lbs 20 LED Max</p>	 <p data-bbox="987 825 1141 884"><b>BYB42-PCA</b> Max Weight = 38 lbs 20 LED Max</p>	 <p data-bbox="1274 825 1429 884"><b>BYB42-PWA</b> Max Weight = 38 lbs 20 LED Max</p>
 <p data-bbox="99 1673 253 1732"><b>BYB80-NL</b> Max Weight = 46 lbs 20 LED Max</p>	 <p data-bbox="418 1673 573 1732"><b>BYB80-CA</b> Max Weight = 46 lbs 20 LED Max</p>	 <p data-bbox="699 1673 854 1732"><b>BYB80-AL</b> Max Weight = 46 lbs 20 LED Max</p>	 <p data-bbox="987 1673 1141 1732"><b>BYB80-PCA</b> Max Weight = 46 lbs 20 LED Max</p>	 <p data-bbox="1274 1673 1429 1732"><b>BYB80-PWA</b> Max Weight = 46 lbs 20 LED Max</p>

# BYB SERIES - PLED

## ORDERING INFORMATION

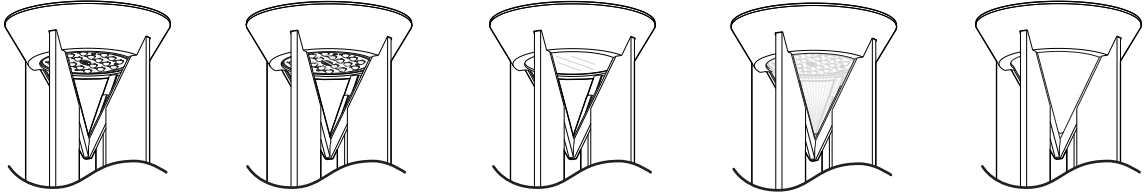
Spec/Order Example: BYB42/PLED-III/20LED-525mA/40K/UNV/RUST-S/PWA

Luminaire	Optics	LED Mode	Voltage	Finish	Options						
Luminaire	Optics	LED	Voltage	Finish	Options						
<input type="checkbox"/> BYB42 <input type="checkbox"/> BYB80  Consult Factory for Custom Heights	<p><b>PLED*</b> Distribution Type</p> <p>For NL, PCA, &amp; CA Lens Options:</p> <input type="checkbox"/> PLED-II  <input type="checkbox"/> PLED-II-FR  <input type="checkbox"/> PLED-III-M  <input type="checkbox"/> PLED-III-W  <input type="checkbox"/> PLED-IV  <input type="checkbox"/> PLED-IV-FT  <input type="checkbox"/> PLED-V-SQ-N  <input type="checkbox"/> PLED-V-SQ-M  <input type="checkbox"/> PLED-V-SQ-W   <p>For PWA &amp; AL Lens Options:</p> <input type="checkbox"/> PLED-ASY  <input type="checkbox"/> PLED-ASY-HS (Internal HS)  <input type="checkbox"/> PLED-SYM 	<table border="0"> <tr> <td># of LEDs</td> <td>Drive Current</td> <td>Color Temp - CCT</td> </tr> <tr> <td><input type="checkbox"/> 20LED</td> <td> <input type="checkbox"/> 875mA  <input type="checkbox"/> 700mA  <input type="checkbox"/> 525mA  <input type="checkbox"/> 350mA  <input type="checkbox"/> 175mA                 </td> <td> <input type="checkbox"/> 27K (2700K)  <input type="checkbox"/> 30K (3000K)  <input type="checkbox"/> 40K (4000K)  <input type="checkbox"/> 50K (5000K)   <input type="checkbox"/> TRA<sup>1</sup> True Amber                 </td> </tr> </table> <p><b>NOTES:</b> 1 - TRA available in 350mA &amp; 525mA Drive Currents only Consult factory for other CCT, CRI, &amp; Drive Current options</p>	# of LEDs	Drive Current	Color Temp - CCT	<input type="checkbox"/> 20LED	<input type="checkbox"/> 875mA <input type="checkbox"/> 700mA <input type="checkbox"/> 525mA <input type="checkbox"/> 350mA <input type="checkbox"/> 175mA	<input type="checkbox"/> 27K (2700K) <input type="checkbox"/> 30K (3000K) <input type="checkbox"/> 40K (4000K) <input type="checkbox"/> 50K (5000K)  <input type="checkbox"/> TRA <sup>1</sup> True Amber	<input type="checkbox"/> UNV (120-277) <input type="checkbox"/> 347 <input type="checkbox"/> 480	<p><b>Standard Textured Finish</b></p> <input type="checkbox"/> Black <b>RAL-9005-T</b> <input type="checkbox"/> White <b>RAL-9003-T</b> <input type="checkbox"/> Grey <b>RAL-7004-T</b> <input type="checkbox"/> Dark Bronze <b>RAL-8019-T</b> <input type="checkbox"/> Green <b>RAL-6005-T</b>  <p><b>Premium Finishes</b></p> <input type="checkbox"/> Rust <input type="checkbox"/> Patina Copper <b>PC</b>  <p>For smooth finish replace suffix "T" with suffix "S" (Example: RAL-9500-S) Consult factory for custom colors</p>	<p><b>Lens Options:</b></p> <input type="checkbox"/> Open Frame No Lens <b>NL</b> <input type="checkbox"/> Clear Acrylic (Flat) <b>CA</b> <input type="checkbox"/> Ambiance Lens (Flat) <b>AL</b> <input type="checkbox"/> Prismatic Clear Acrylic Drop Down Conical Lens <b>PCA</b> <input type="checkbox"/> Prismatic White Acrylic Drop Down Conical Lens <b>PWA</b>  <input type="checkbox"/> Internal House Side Shield inc. LED Count (Example: HS-PLED/48) <b>HS-PLED</b> <input type="checkbox"/> High-Low Dimming for Switch by Others/Select Levels 50/100 or 25/100 (Example: HLSW/25) <b>HLSW</b> <input type="checkbox"/> Photo Cell + Voltage (Example: PC120V) <b>PC+V</b> <input type="checkbox"/> Single Fuse (120V, 277V) <b>SF</b> <input type="checkbox"/> Double Fuse (208V, 240V) <b>DF</b>
# of LEDs	Drive Current	Color Temp - CCT									
<input type="checkbox"/> 20LED	<input type="checkbox"/> 875mA <input type="checkbox"/> 700mA <input type="checkbox"/> 525mA <input type="checkbox"/> 350mA <input type="checkbox"/> 175mA	<input type="checkbox"/> 27K (2700K) <input type="checkbox"/> 30K (3000K) <input type="checkbox"/> 40K (4000K) <input type="checkbox"/> 50K (5000K)  <input type="checkbox"/> TRA <sup>1</sup> True Amber									

# BYB SERIES - PLED

## OPTIONS

### Lens Options



Lens	No Lens - NL	Clear Acrylic Flat Lens - CA	Ambiance Acrylic Flat Lens - AL	Prismatic Clear Acrylic Drop Down Lens - PCA	Prismatic White Acrylic Drop Down Lens - PWA
<b>Efficacy</b>	High	High	Medium	High	Medium
<b>Distributions</b>	9 + 6 w/ HS	9 + 6 w/ HS	2 + 1 w/ HS	9 + 6 w/ HS	2+1 w/ HS
<b>Spacing</b>	High	High	Medium	High	Medium
<b>U0 No Uplight<sup>1</sup></b>	Yes	Yes	Yes	No	No
<b>Glare Control<sup>2</sup></b>	Low	Low	High	Medium	High

1 - U0 No Uplight options have optics that meet Dark Sky requirements.

2 - Glare Control is not an issue with the BYB42 mounted at grade as no light emitted will be in the field of view.

### High Low Dimming For Switches (HLSW)

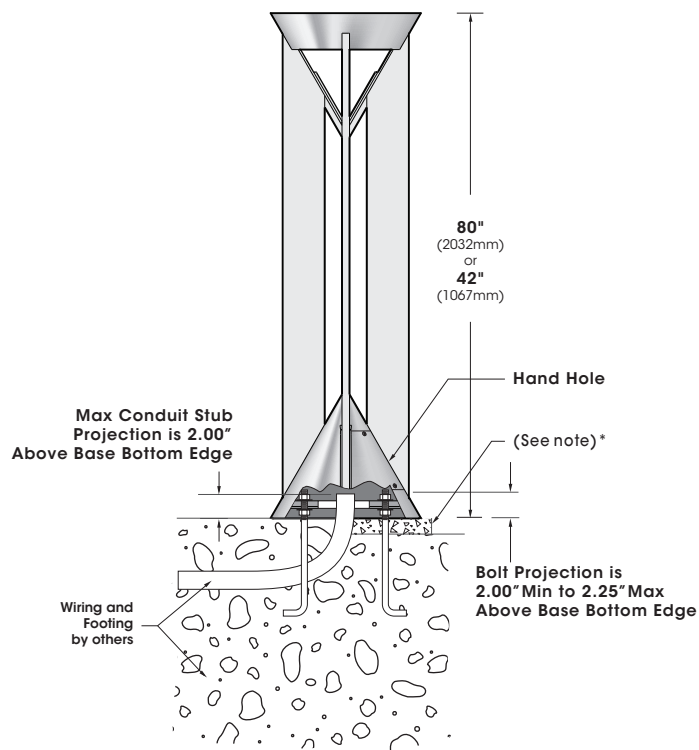
The HLSW is a Small Electronic Switch which Provides High Low Dimming Control Through the LED Driver's 0-10V Control. Switching is Done by Adding a Secondary AC Switched Hot Trigger Line to the HLSW in Addition to the Normal AC Power Line. When the Secondary Trigger Line is Powered, the Fixture will 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

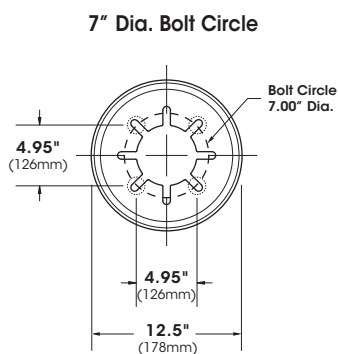
Contact Factory for Wireless and Other Fixture Controls and Recommendations. Most Controls Can be Integrated and Factory Installed.

# BYB SERIES - PLED

## INSTALLATION DETAIL



\*When mounting in soil, anchor bolt fasteners and other hardware must be protected from soil by grouting.



Note: Bollard can be mounted at Standard 0° with Struts Parallel and Perpendicular to curb line or at 45° with Struts at a 45° angle to the curb line.

Anchor Bolts (4) 1/2" X 13 X 2"

# BYB SERIES - PLED

## PHOTOMETRIC DATA GUIDE - LM-80 LUMEN MAINTENANCE

LED Life / Operating Hours	Lumen Depreciation	Lumen Depreciation Scale Factor
60,000 (10x Test Time Calculated)	L94	0.94x
100,000 (Theoretical Calculated)	L92	0.92x
150,000 (Theoretical Calculated)	L89	0.89x

Lumen Depreciation Calculations Done in Accordance With IESNA TM-21 & LM-80 (25°C Ambient)  
**TM-21 6x Test Time Dictates that L94 > 60,000 Hours.**

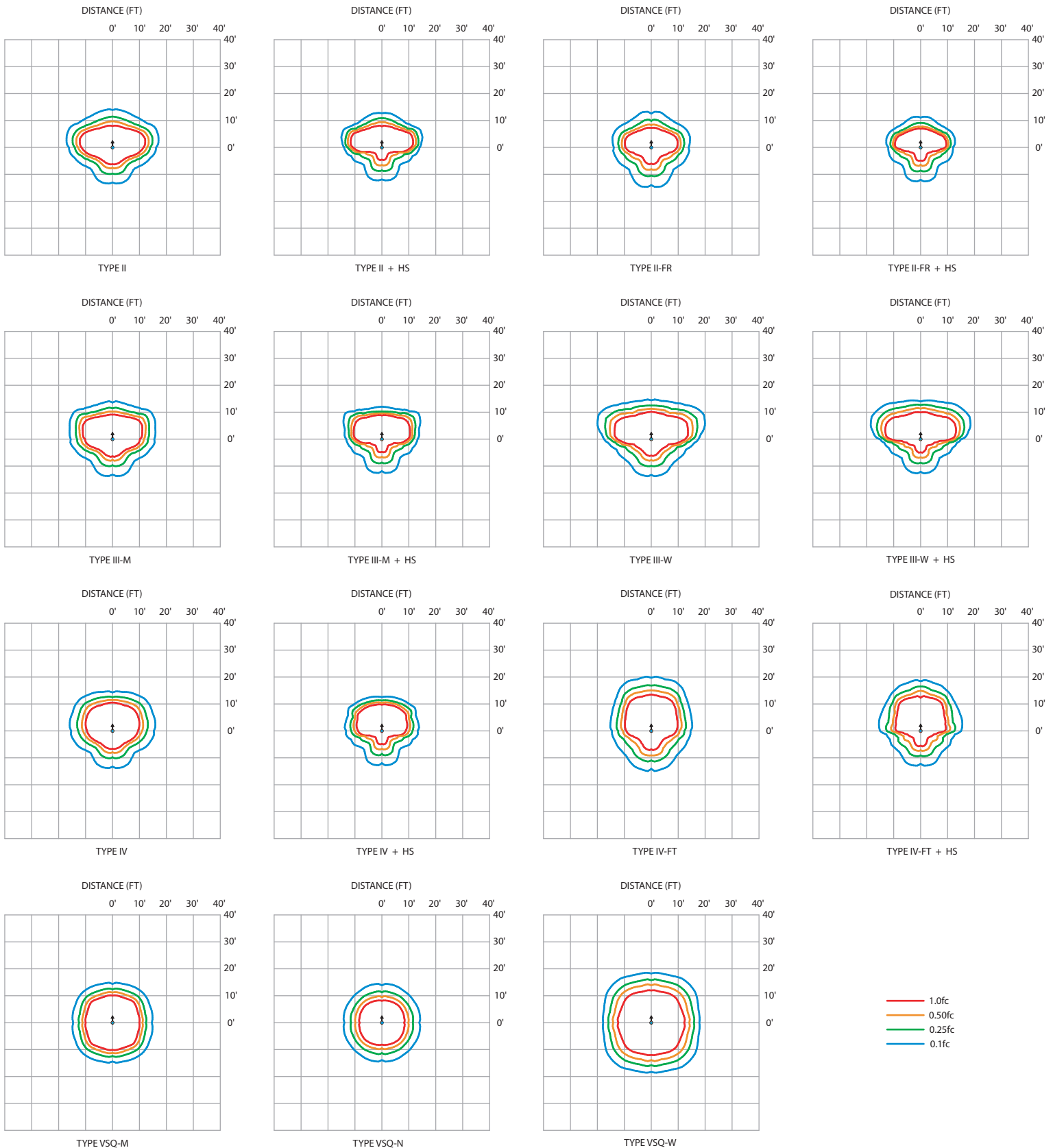
## ELECTRICAL DATA GUIDE - AMPERAGE CHARTS

ELECTRICAL LOAD			CURRENT (A)				
# of LEDs	mA	System Watts	120V	208V	277V	347V	480V
20	175	11.0	0.09	0.05	0.04	0.03	0.02
20	350	22.0	0.18	0.11	0.08	0.06	0.05
20	525	33.0	0.28	0.16	0.12	0.10	0.07
20	700	44.0	0.37	0.21	0.16	0.13	0.09
20	875	55.0	0.46	0.26	0.20	0.16	0.11

# BYB SERIES - PLED

## PHOTOMETRIC DATA GUIDE - ISOFOOTCANDLE PLOTS

### BYB-PLED-NL-20LED-350mA-40K - 42" Height

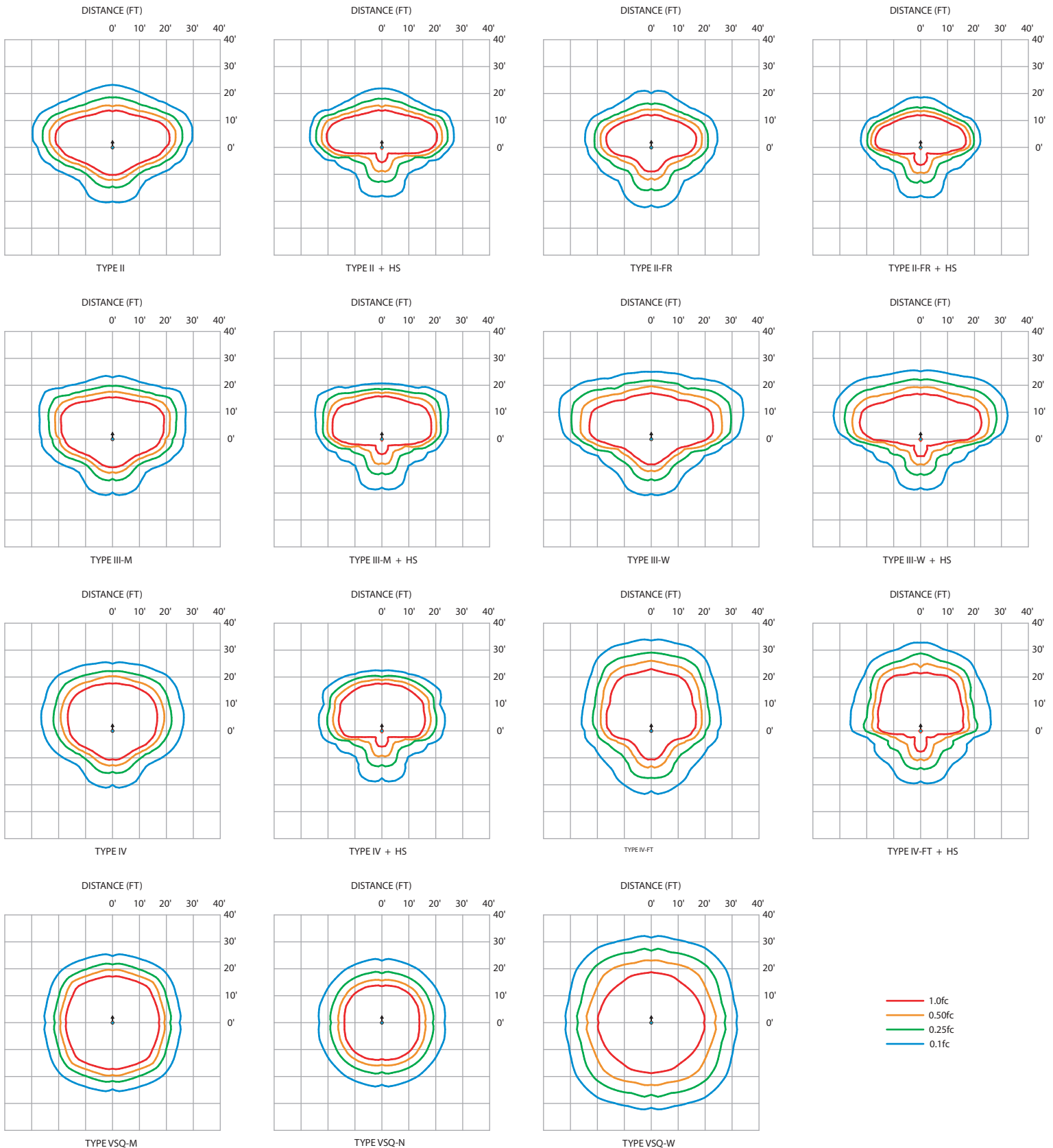


IES File downloads for this product can be found at [www.usalighting.com/downloads/asr.html](http://www.usalighting.com/downloads/asr.html)

# BYB SERIES - PLED

## PHOTOMETRIC DATA GUIDE - ISOFOOTCANDLE PLOTS

### BYB-PLED-NL-20LED-700mA-40K - 80" Height



IES File downloads for this product can be found at [www.usaltg.com/downloads/asr.html](http://www.usaltg.com/downloads/asr.html)

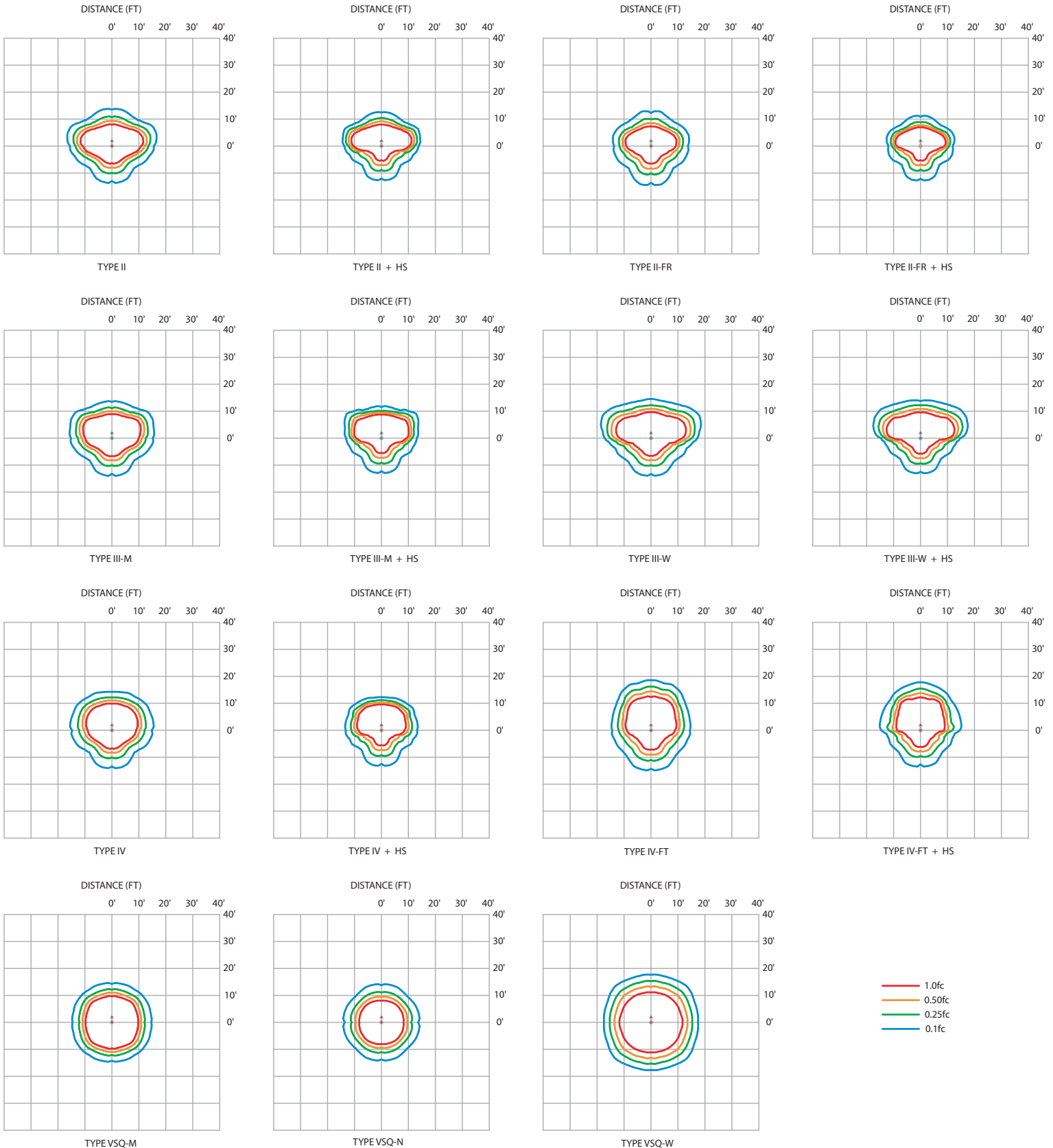




# BYB SERIES - PLED

## PHOTOMETRIC DATA GUIDE - ISOFOOTCANDLE PLOTS

### BYB-PLED-CA-20LED-350mA-40K - 42" Height

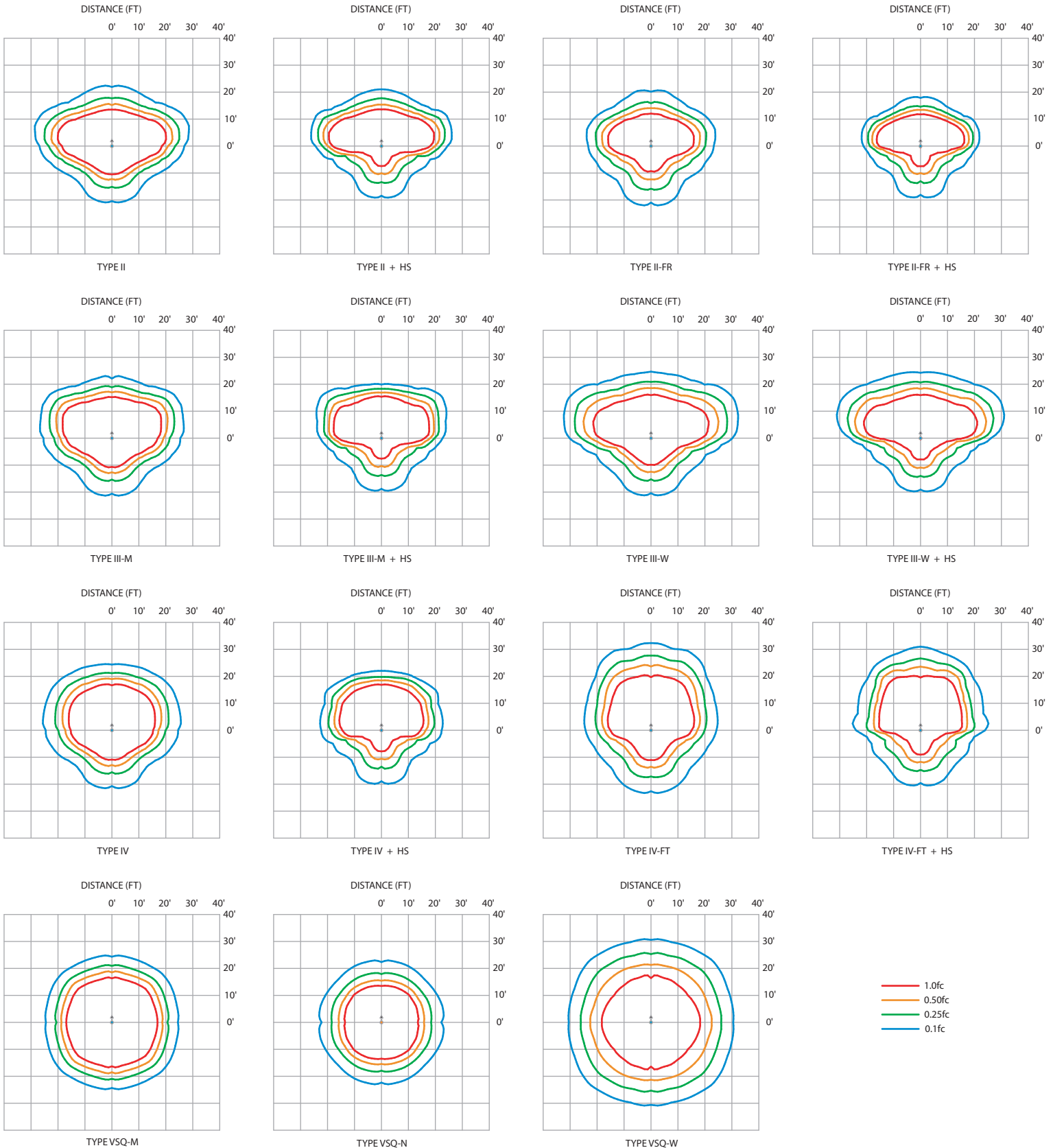


IES File downloads for this product can be found at [www.usalight.com/downloads/asr.html](http://www.usalight.com/downloads/asr.html)

# BYB SERIES - PLED

## PHOTOMETRIC DATA GUIDE - ISOFOOTCANDLE PLOTS

### BYB-PLED-CA-20LED-700mA-40K - 80" Height



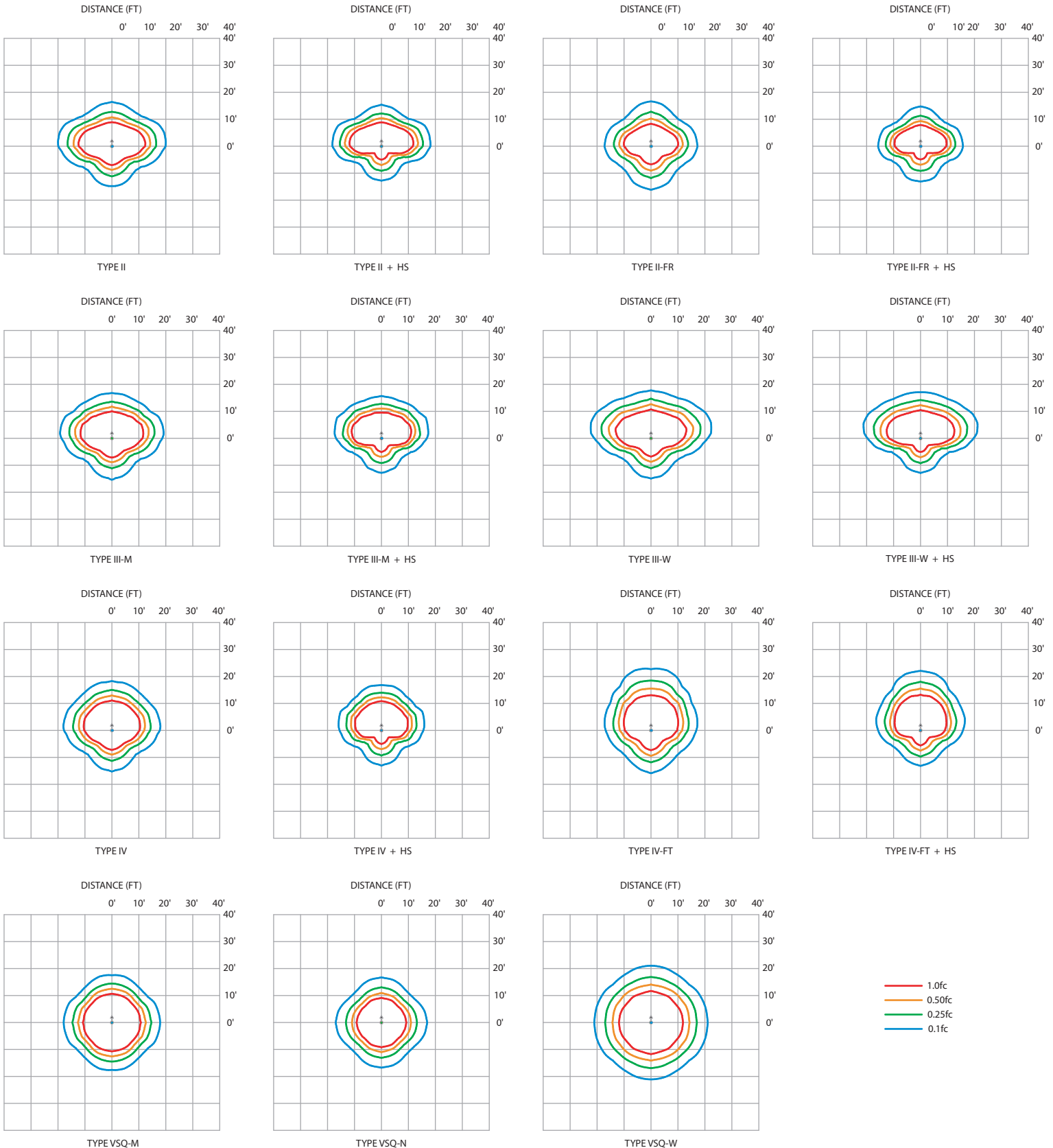
IES File downloads for this product can be found at [www.usaltg.com/downloads/asr.html](http://www.usaltg.com/downloads/asr.html)



# BYB SERIES - PLED

## PHOTOMETRIC DATA GUIDE - ISOFOOTCANDLE PLOTS

### BYB-PLED-PCA-20LED-350mA-40K - 42" Height

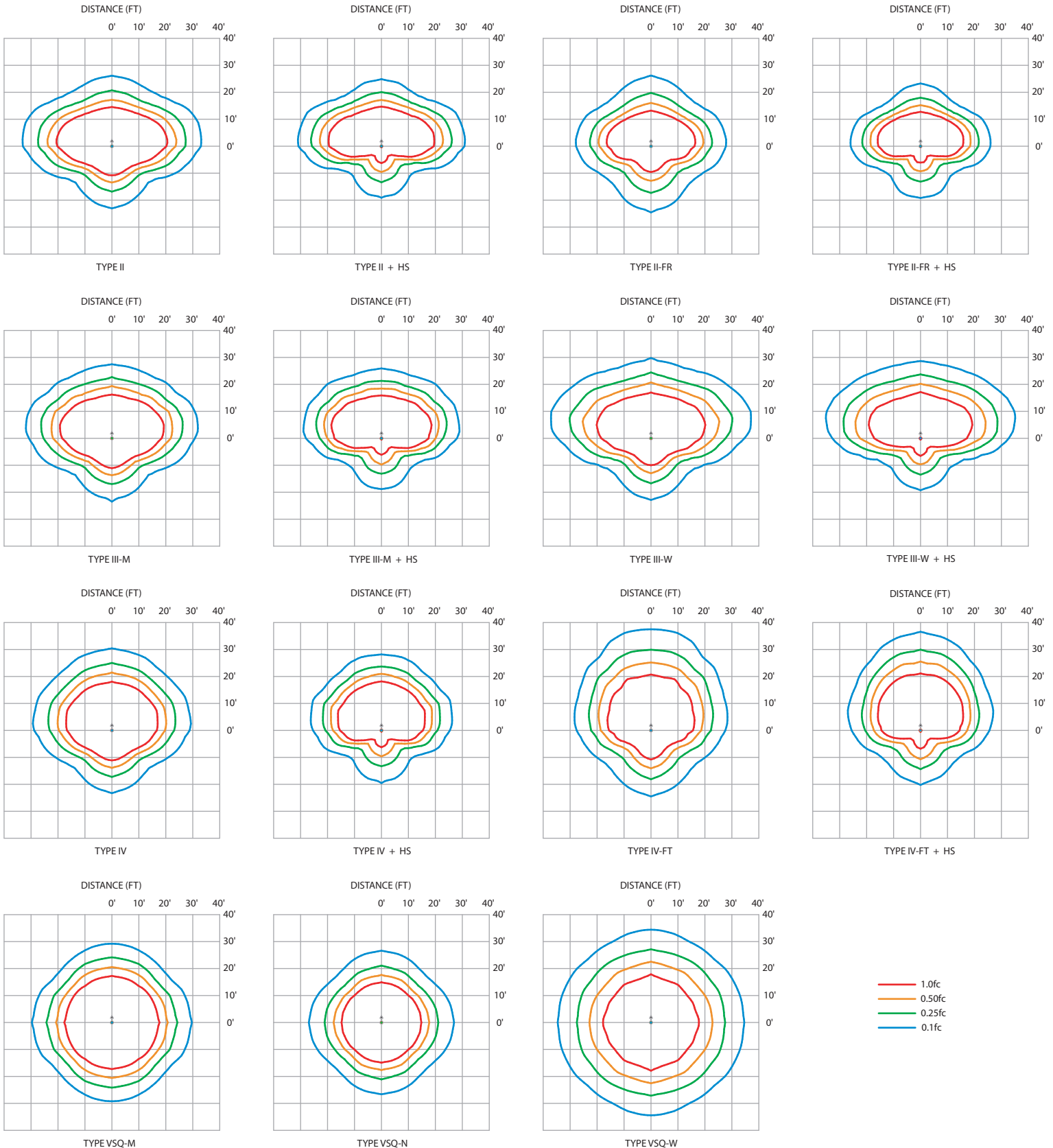


IES File downloads for this product can be found at [www.usalight.com/downloads/asr.html](http://www.usalight.com/downloads/asr.html)

# BYB SERIES - PLED

## PHOTOMETRIC DATA GUIDE - ISOFOOTCANDLE PLOTS

### BYB-PLED-PCA-20LED-700mA-40K - 80" Height



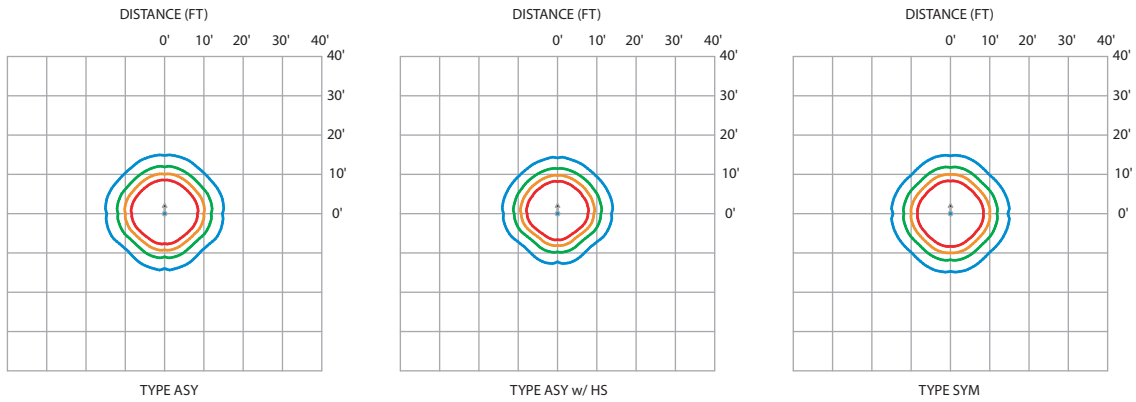
IES File downloads for this product can be found at [www.usaltg.com/downloads/asr.html](http://www.usaltg.com/downloads/asr.html)



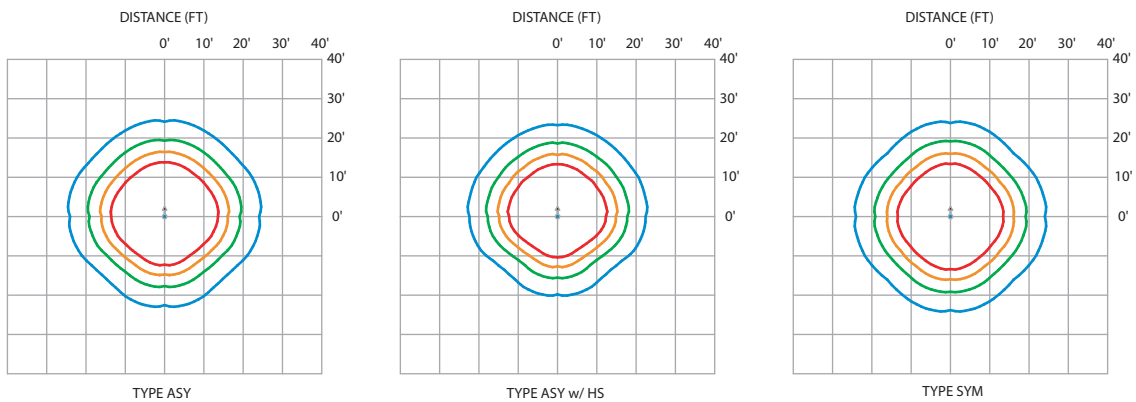
# BYB SERIES - PLED

## PHOTOMETRIC DATA GUIDE - ISOFOOTCANDLE PLOTS

### BYB-PLED-AL-20LED-350mA-40K - 42" Height



### BYB-PLED-AL-20LED-700mA-40K - 80" Height



IES File downloads for this product can be found at [www.usaltg.com/downloads/asr.html](http://www.usaltg.com/downloads/asr.html)



# BYB SERIES - PLED

## PHOTOMETRIC DATA GUIDE - ISOFOOTCANDLE PLOTS

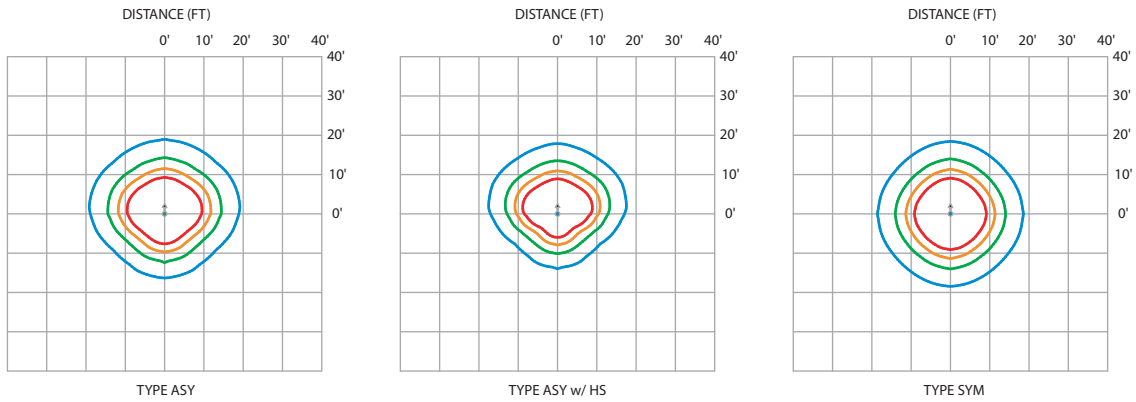
BYB-PLED-AL																			
LED Count	Drive Current (mA)	System Watts	Dist'n Type	27K (2700K - 70CRI)			30K (3000K - 70CRI)			40K (4000K - 70CRI)			50K (5000K - 70CRI)			System Watts	TRA (590nm)		
				LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING	LUMENS	LPW	BUG RATING		LUMENS	LPW	BUG RATING
20	175	11.0	ASY	845	77	B0-U0-G1	912	83	B0-U0-G1	960	87	B1-U0-G1	1008	92	B1-U0-G1	8.5	345	41	B0-U0-G0
			SYM	848	77	B1-U0-G1	915	83	B1-U0-G1	964	88	B1-U0-G1	1012	92	B1-U0-G1		347	41	B0-U0-G0
			ASY-HS	609	55	B0-U0-G0	657	60	B0-U0-G1	692	63	B0-U0-G1	726	66	B0-U0-G1		249	29	B0-U0-G0
20	350	22.0	ASY	1536	70	B1-U0-G1	1658	75	B1-U0-G1	1745	79	B1-U0-G1	1832	83	B1-U0-G1	17.1	569	33	B0-U0-G0
			SYM	1541	70	B1-U0-G1	1664	76	B1-U0-G1	1752	80	B1-U0-G1	1839	84	B1-U0-G1		571	33	B0-U0-G0
			ASY-HS	1107	50	B1-U0-G1	1195	54	B1-U0-G1	1258	57	B1-U0-G1	1320	60	B1-U0-G1		410	24	B0-U0-G0
20	525	33.0	ASY	2212	67	B1-U0-G1	2388	72	B1-U0-G1	2513	76	B1-U0-G1	2639	80	B1-U0-G1	25.8	669	26	B0-U0-G1
			SYM	2220	67	B1-U0-G1	2396	73	B1-U0-G1	2523	76	B1-U0-G1	2648	80	B1-U0-G1		671	26	B0-U0-G1
			ASY-HS	1594	48	B1-U0-G1	1720	52	B1-U0-G1	1811	55	B1-U0-G1	1901	58	B1-U0-G1		482	19	B0-U0-G0
20	700	44.0	ASY	2805	64	B1-U0-G1	3028	69	B1-U0-G1	3187	72	B1-U0-G1	3346	76	B1-U0-G1	N/A	N/A		
			SYM	2815	64	B1-U0-G1	3038	69	B1-U0-G1	3198	73	B1-U0-G1	3358	76	B1-U0-G1				
			ASY-HS	2021	46	B1-U0-G1	2181	50	B1-U0-G1	2296	52	B1-U0-G1	2411	55	B1-U0-G1				
20	875	55.0	ASY	3211	58	B1-U0-G1	3467	63	B1-U0-G1	3649	66	B1-U0-G1	3832	70	B1-U0-G1	N/A	N/A		
			SYM	3223	59	B1-U0-G1	3480	63	B1-U0-G1	3663	67	B2-U0-G1	3846	70	B2-U0-G1				
			ASY-HS	2314	42	B1-U0-G1	2498	45	B1-U0-G1	2629	48	B1-U0-G1	2761	50	B1-U0-G1				

IES File downloads for this product can be found at [www.usaltg.com/downloads/asr.html](http://www.usaltg.com/downloads/asr.html)

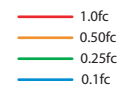
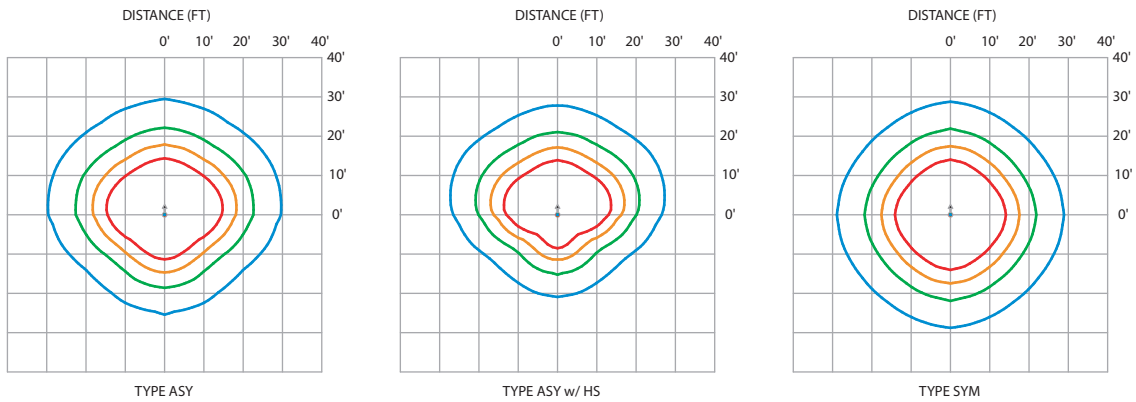
# BYB SERIES - PLED

## PHOTOMETRIC DATA GUIDE - ISOFOOTCANDLE PLOTS

### BYB-PLED-PWA-20LED-350mA-40K - 42" Height



### BYB-PLED-PWA-20LED-700mA-40K - 80" Height



IES File downloads for this product can be found at [www.usaltg.com/downloads/asr.html](http://www.usaltg.com/downloads/asr.html)

# BYB SERIES - PLED

## PHOTOMETRIC DATA GUIDE - ISOFOOTCANDLE PLOTS

BYB-PLED-PWA																			
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	11.0	ASY	863	78	B0-U3-G1	932	85	B0-U3-G1	980	89	B0-U3-G1	1029	94	B0-U3-G1	8.5	353	42	B0-U2-G1
			SYM	869	79	B1-U3-G1	938	85	B1-U3-G1	987	90	B1-U3-G1	1035	94	B1-U3-G1		355	42	B0-U2-G1
			ASY-HS	624	57	B0-U3-G1	673	61	B0-U3-G1	709	64	B0-U3-G1	744	68	B0-U3-G1		255	30	B0-U2-G1
20	350	22.0	ASY	1569	71	B1-U3-G1	1694	77	B1-U3-G1	1783	81	B1-U3-G2	1872	85	B1-U3-G2	17.1	581	34	B0-U3-G1
			SYM	1578	72	B1-U3-G1	1704	77	B1-U3-G1	1793	82	B1-U3-G1	1883	86	B1-U3-G1		585	34	B0-U3-G1
			ASY-HS	1134	52	B0-U3-G1	1224	56	B0-U3-G1	1289	59	B0-U3-G1	1353	61	B1-U3-G1		420	25	B0-U2-G1
20	525	33.0	ASY	2260	68	B1-U3-G2	2439	74	B1-U3-G2	2567	78	B1-U3-G2	2695	82	B1-U3-G2	25.8	683	26	B0-U3-G1
			SYM	2273	69	B1-U3-G2	2453	74	B1-U3-G2	2582	78	B1-U3-G2	2711	82	B1-U3-G2		687	27	B0-U3-G1
			ASY-HS	1633	49	B1-U3-G2	1762	53	B1-U3-G2	1855	56	B1-U3-G2	1948	59	B1-U3-G2		494	19	B0-U2-G1
20	700	44.0	ASY	2865	65	B1-U3-G2	3093	70	B1-U3-G2	3256	74	B1-U3-G2	3418	78	B1-U3-G2	N/A	N/A		
			SYM	2882	65	B1-U3-G2	3111	71	B1-U3-G2	3274	74	B1-U3-G2	3437	78	B1-U3-G2				
			ASY-HS	2071	47	B1-U3-G2	2235	51	B1-U3-G2	2353	53	B1-U3-G2	2470	56	B1-U3-G2				
20	875	55.0	ASY	3280	60	B1-U3-G2	3541	64	B1-U3-G2	3728	68	B1-U3-G2	3914	71	B1-U3-G3	N/A	N/A		
			SYM	3300	60	B1-U3-G2	3562	65	B2-U3-G2	3750	68	B2-U3-G2	3937	72	B2-U3-G2				
			ASY-HS	2371	43	B1-U3-G2	2559	47	B1-U3-G2	2694	49	B1-U3-G2	2829	51	B1-U3-G2				

IES File downloads for this product can be found at [www.usaltg.com/downloads/asr.html](http://www.usaltg.com/downloads/asr.html)