

DESCRIPTION

Recessed 3.5" aperture directional luminaire with angle cut shielding reflector utilizing a LED array. Housing is air tight and suitable for 2x8 residential or commercial constructions. Insulation must be kept 3" from top and sides on housing. Housing platform + primary reflector + optical element combination supports various distributions and reflector types providing design flexibility. Use where excellent light control and low aperture brightness are demanded.

SPECIFICATION FEATURES

Frame

Galvanized steel plaster frame with integral bar hanger receivers. Setscrews provide positive horizontal locking. Integral gun sights facilitate the use of guide strings or laser lines. Shipped with overspray protector installed.

Housing

Steel housing painted matte black for visually dark interior. Removable access panels allow splice inspection and service of all electrical components including LED module and driver from below the ceiling thru the aperture. Removable hinged top allow top access. All fasteners are captive.

Bar Hangers

Captive preinstalled bar hangers adjust from 8-1/2" to 24" wide; pass thru feature allows shortening without removal. Captive nail penetrates standard and engineered lumber. Mounting flange levels platform with ceiling. Integral clip attached directly to tee-bar.

Universal Mounting Bracket

Accepts 1/2" EMT, C channel and bar hangers and adjusts 3" vertically from above the ceiling.

Gaskets

Closed cell gaskets achieve restrictive airflow requirements without additional caulking.

Adjustment Mechanism

Dynamic aiming rotates 365°, tilts 45° and locks in position. Angle markings assist in repeatable settings. Translating center beam optics aligns axis of primary reflector with aperture from nadir to 45°.

LED Module

Field replaceable module utilizes Cree® MT-G2 LED array and conforms to Zhaga standards for interchangeability. Proximity phosphors over chip on board LEDs provide a uniform source with high efficiency and no pixilation. Color accuracy within 2 SDCM and optional 90 CRI provides excellent color. Passive cooling achieves L70 at 40,000 hours.

Primary Optic

Borosilicate glass segmented optic with > 95% reflective multi-layer hard coating delivers a highly efficient and uniform beam. Various distributions are available and can be interchanged without tools. Elastomeric glare shield accepts theatrical color filters and diffusion films.

Media

Optional media holder accepts one or two 2 inch [50mm] diameter L series color filters or beam modifying lens. Order media holder, color filters and lens separately.

Lower Reflector

Spun 0.04" thick aluminum angle cut parabolic contour provides 50° room side cutoff and is available in a wide range of specular and semi-specular Alzak® finishes. Light trap eliminates spill light at edge of flange and reflector. Metal trim ring can be removed for painting and can be installed flush mount with optional flush mount collar accessory.

Trim Retention

Retained with two torsion springs holding the flange tightly to the finished ceiling surface and accommodates ceiling thickness from 1/2" - 1" thick. Use optional plaster lip

Catalog #		Type
Project		
Comments		Date
Prepared By		

extender for ceilings up to 2" thick.

Junction Box

(6) 1/2" and (2) 3/4" trade size pry outs positioned to allow straight conduit runs.

Driver

Integral constant current driver provides noise free operation. Continuous, flicker-free 1% dimming, available with 2 or 3 wire phase cut and EcoSystem/DALI digital control interfaces. The DALI option is Fifth Light compatible.

Compliance

Type Non-IC inherently protected and cULus listed for damp locations. Insulation must be kept 3" from top and sides on housing. Restrictive airflow per ASTM-E283. EMI/RFI emissions per FCC 47CFR Part 18 consumer limits. Contains no mercury or lead and RoHS compliant. Photometric testing in accordance with IES LM-79-08. Lumen maintenance projections in accordance with IES LM-80-08 and TM-21-11. Meets California Title 24 residential fixture program and listed on appliance database. Energy Star listed. Zhaga compliant. Meets EMI/RFI emission per FCC 47CFR Part 18 consumer limits at 120V input. Lighting Facts Labeled.

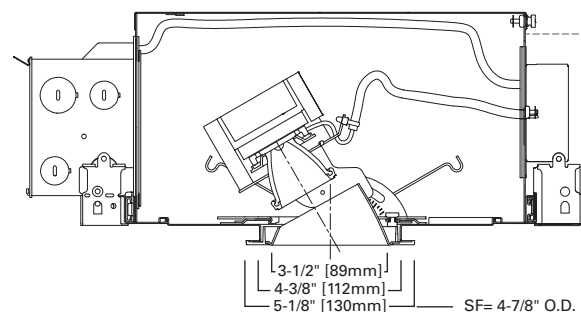
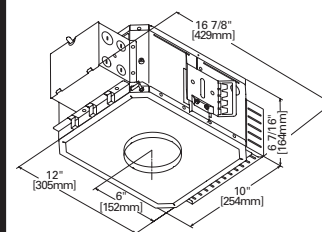
Warranty

5 year warranty.



PN3LED12 E3AA, E3AA20

LED Directional Angle Cut and
Shallow Angle Cut
3.5" Aperture
1,200 Lumen Series



E Driver Option		
Input Voltage	120V	277V
Input Current (A)	0.16	0.08
Input Power (W)	19.5	20
Inrush Current (A)	0.24	0.5
THD: ≤ 20%		
PF: ≥ 0.90		
T Ambient: -20 to +40°C		
T Plenum: +65°C Max.		
Sound Rating: Class A		
E010 Driver Option		
Input Voltage	120V	277V
Input Current (A)	0.17	0.08
Input Power (W)	20	20.7
Inrush Current (A)	0.7	1.21
THD: ≤ 20%		
PF: ≥ 0.90		
T Ambient: -20 to +40°C		
T Plenum: +65°C Max.		
Sound Rating: Class A		



Zhaga
powered by **fifthlight**
Cooper Lighting Solutions is a founding member of the Zhaga Consortium

ORDERING INFORMATION

Complete luminaire consists of a housing platform and optical element. Housing platform can be ordered without primary optic. Order primary optics separately.

Example: PN3LED12830E RG50SP15 E3AAH

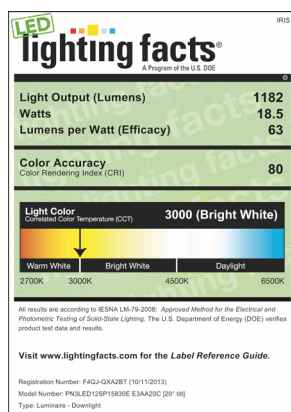
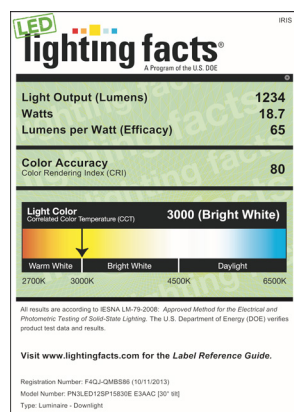
Platform	Lumens ¹	Distribution	Color	Driver
PN3LED				
PN3LED = 3.5" Aperture Non-IC, AT LED Housing Platform	12 = 1,200 Lumens (Nominal)	[Blank] = Omit Primary Optic NSP10 = 10° Beam SP15 = 15° Beam NFL25 = 25° Beam FL40 = 40° Beam	827 = 80 CRI Minimum, 2,700 K CCT 927 = 90 CRI Minimum, 2,700 K CCT 830 = 80 CRI Minimum, 3,000 K CCT 930 = 90 CRI Minimum, 3,000 K CCT 835 = 80 CRI Minimum, 3,500 K CCT 840 = 80 CRI Minimum, 4,000 K CCT	E = 120 – 277V 50/60Hz Leading or Trailing Edge Phase Cut 1% Dimming (phase cut dimming at 120V only) E010 = 120 – 277V 50/60Hz 0 -10V 10% Dimming ED010 = 120 – 277V 50/60Hz 0 -10V 1% Dimming E5LT = 120 – 277V 50/60Hz DALI 1% Dimming EDMX = 120 – 277V 50/60Hz DMX 1% Dimming 1ELTE = 120V 60Hz Leading Edge 1% Dimming, Lutron A-Series EL3D = 120 – 277V 50/60Hz 3-wire and EcoSystem 1% Dimming, Lutron A-Series
Optical Element	Finishes	Options	Accessories	
E3AA				
E3AA = 3.5" Aperture Open Angle Cut Reflector E3AA20 = 3.5" Aperture Shallow Open Angle Cut Reflector	Alzak® Finishes C = Specular Clear H = Semi-Specular Clear G = Gold WMH = Warm Haze WH = Wheat WHH = Wheat Haze GP = Graphite GPH = Graphite Haze K = Cognac KH = Cognac Haze	CC = Chocolate CCH = Chocolate Haze B = Black Painted Finishes MW = Matte White W = Gloss White BB = Black Baffle WB = White Baffle	[Blank] = Metal Trim Ring, Matte White <u>Not available with BB or WB</u> SF = Self Flanged SFWF = Self Flanged, Matte White Flange	
			RG50NSP10 = 10° Beam Glass Reflector, 50mm RG50SP15 = 15° Beam Glass Reflector, 50mm RG50NFL25 = 25° Beam Glass Reflector, 50mm RG50FL40 = 40° Beam Glass Reflector, 50mm RG50MH = Media Holder for two inch [50mm] diameter L series color filters or beam modifying lens. Attaches directly to RG50 series 50mm Reflectors FMC3 = Flush Mount Collar Accessory PLE3 = Plaster Lip Extender for Up to 2" Thick Ceilings ZLM03 = Replacement LED module, see specification sheet for catalog number and performance data	

ENERGY DATA

PN3LED E3AA/E3AA20

1ELTE Driver Option	EL3D Driver Option	E5LT Driver Option	EDMX Driver Option
Input Voltage 120V 277V	Input Voltage 120V 277V	Input Voltage 120V 277V	Input Voltage 120V 277V
Input Current (A) 0.17	Input Current (A) 0.16 0.08	Input Current (A) 0.17 0.08	Input Current (A) 0.17 0.08
Input Power (W) 20.1	Input Power (W) 19.2 19.8	Input Power (W) 19.5 20.2	Input Power (W) 20 21.3
Inrush Current (A) 1.9	Inrush Current (A) 1.9 2	Inrush Current (A) 1.73 1.8	Inrush Current (A) 1.82 1.89
THD: ≤ 20%	THD: ≤ 20%	THD: ≤ 20%	THD: ≤ 20%
PF: ≥ 0.90	PF ≥0.90 ≥0.85	PF ≥0.90 ≥0.85	PF ≥0.90 ≥0.70
T Ambient: -20 to +40°C	T Ambient: -20 to +40°C	T Ambient: -20 to +40°C	T Ambient: -20 to +40°C
T Plenum: +65°C Max.	T Plenum: +65°C Max.	T Plenum: +65°C Max.	T Plenum: +65°C Max.
Sound Rating: Class A	Sound Rating: Class A	Sound Rating: Class A	Sound Rating: Class A

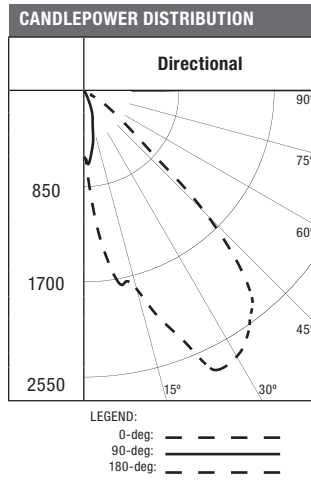
LIGHTING FACTS



Please see LightingFacts.com for a complete listing of products.

PHOTOMETRICS

P3LED E3AA/E3AA20



Test Number	P108912
Platform	PN3LED12 830E
Element	E3AAC RG50FL40
Lumens	1230 Lm
Efficacy	62.7 Lm/W

ZONAL LUMEN SUMMARY

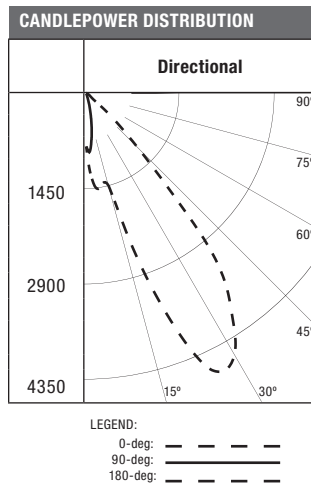
Zone	Lumens	%Fixture
0-30	558	51.4
0-40	875	80.5
0-60	1083	99.7
0-90	1086	100
90-180	0	0
0-180	1086	100

30° HORIZONTAL PLANE						30° VERTICAL PLANE					
	MH	FC	L	W	CB		D	FC	L	W	CB
5.5'	25.3	5.8	4	3.2		5.5'	62.4	3.4	3.4	9.5	
7'	15.6	7.4	5	4		7'	38.5	4.3	4.4	12.1	
8'	12	8.5	5.8	4.6		8'	29.5	4.9	5.2	13.9	
9'	9.4	9.5	6.6	5.2		9'	23.3	5.6	5.8	15.6	
10'	7.7	10.6	7.2	5.8		10'	18.9	6.2	6.4	17.3	
12'	5.3	12.8	8.8	6.9		12'	13.1	7.4	7.8	20.8	

SINGLE UNIT FOOTCANDLES

3' FROM WALL
(Distance From Fixture Along Wall)

DD	●	1'	2'	3'	4'	5'	6'
1'	0	0	0	0.1	0	0	0
2'	14.3	7.8	0	0	0	0	0
3'	56	24.3	7.4	0.1	0	0	0
4'	57.9	42.1	11.6	3.3	0.4	0	0
5'	39.7	32.7	15.9	4	1.5	0.3	0
6'	26.8	22.5	13	5.6	1.7	0.6	0.1
7'	17.3	15.7	9.8	5.3	2.4	0.7	0.2
8'	10.9	11.6	7.1	4.4	2.4	1	0.3
9'	7.4	8	5.2	3.5	2.1	1.1	0.4
10'	5.2	5.3	4	2.7	1.8	1	0.5



Test Number	P108870
Platform	PN3LED12 830E
Element	E3AAC RG50NF25
Lumens	1258 Lm
Efficacy	64.8 Lm/W

ZONAL LUMEN SUMMARY

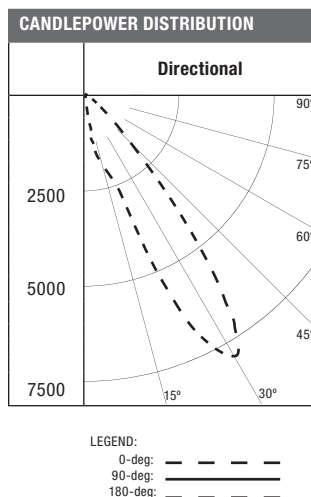
Zone	Lumens	%Fixture
0-30	658	59.2
0-40	1018	91.6
0-60	1110	99.9
0-90	1111	100
90-180	0	0
0-180	1111	100

30° HORIZONTAL PLANE						30° VERTICAL PLANE					
	MH	FC	L	W	CB		D	FC	L	W	CB
5.5'	32.5	7	4	3.2		5.5'	98.4	2.8	2.6	9.5	
7'	20.1	8.9	5	4		7'	60.8	3.6	3.4	12.1	
8'	15.4	10.2	5.8	4.6		8'	46.5	4.1	4	13.9	
9'	12.1	11.4	6.4	5.2		9'	36.8	4.6	4.4	15.6	
10'	9.8	12.7	7.2	5.8		10'	29.8	5.1	5	17.3	
12'	6.8	15.3	8.6	6.9		12'	20.7	6.1	6	20.8	

SINGLE UNIT FOOTCANDLES

3' FROM WALL
(Distance From Fixture Along Wall)

DD	●	1'	2'	3'	4'	5'	6'
1'	0.1	0	0	0	0	0	0
2'	0.3	0.3	0.1	0	0	0	0
3'	32.6	10	0.2	0.1	0	0	0
4'	83.8	38.1	8.3	0.1	0	0	0
5'	67.4	45	15.1	1.6	0	0	0
6'	47.3	35	15.2	4.5	0.7	0	0
7'	30.4	24	12.1	4.3	1.7	0.3	0
8'	18.2	16	8.9	3.5	1.7	0.6	0.1
9'	10.8	10.3	6.5	2.8	1.5	0.7	0.2
10'	6.5	6.3	4.9	2.3	1.4	0.6	0.2



Test Number	P108960
Platform	PN3LED12 830E
Element	E3AAC RG50SP15
Lumens	1396 Lm
Efficacy	70.5 Lm/W

ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30	651	52.8
0-40	1103	89.4
0-60	1219	98.8
0-90	1234	100
90-180	0	0
0-180	1234	100

30° HORIZONTAL PLANE						30° VERTICAL PLANE					
	MH	FC	L	W	CB		D	FC	L	W	CB
5.5'	47.2	4.8	2.8	3.2		5.5'	181.2	2.2	1.8	9.5	
7'	29.2	6.1	3.6	4		7'	111.9	2.7	2.4	12.1	
8'	22.3	7	4.2	4.6		8'	85.7	3.1	2.8	13.9	
9'	17.6	7.8	4.8	5.2		9'	67.7	3.6	3	15.6	
10'	14.3	8.8	5.2	5.8		10'	54.8	4	3.4	17.3	
12'	9.9	10.5	6.4	6.9		12'	38.1	4.8	4.2	20.8	

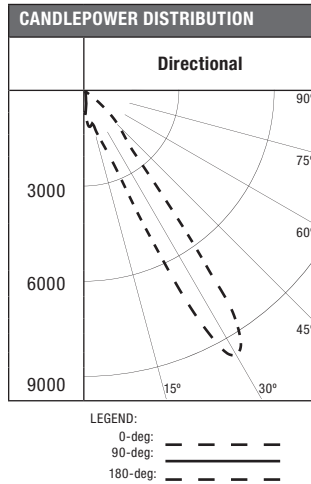
SINGLE UNIT FOOTCANDLES

3' FROM WALL
(Distance From Fixture Along Wall)

DD	●	1'	2'	3'	4'	5'	6'
1'	1.4	0.2	0.1	0.1	0	0	0
2'	3.7	0.1	0.2	0.2	0.2	0	0
3'	39.1	10.4	1.3	0.1	0.1	0.1	0.1
4'	128.1	40.2	9.2	0.1	0	0	0.1
5'	123.5	50.9	14.3	1.1	0.2	0	0
6'	80.2	41.6	14.2	3.6	0.5	0.1	0
7'	44.4	25.9	11.6	3.5	1.4	0.2	0
8'	21.6	15.3	8.1	3	1.4	0.5	0.1
9'	10.5	9.3	5.6	2.4	1.3	0.6	0.1
10'	5.6	5.7	4.1	1.9	1.1	0.5	0.2

PHOTOMETRICS

P3LED E3AA/E3AA20



Test Number	P108984
Platform	PN3LED12 830E
Element	E3AAC RG50NSP10
Lumens	1319 Lm
Efficacy	67.3 Lm/W

ZONAL LUMEN SUMMARY

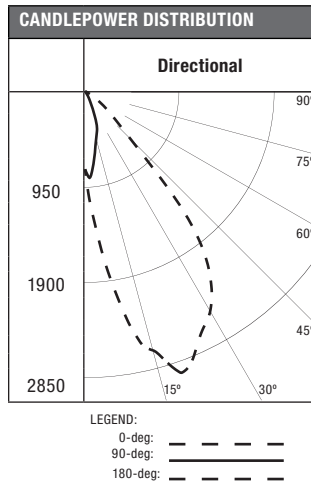
Zone	Lumens	%Fixture
0-30	608	52.2
0-40	1021	87.6
0-60	1155	99.1
0-90	1165	100
90-180	0	0
0-180	1165	100

30° HORIZONTAL PLANE						30° VERTICAL PLANE					
	MH	FC	L	W	CB		D	FC	L	W	CB
5.5'	48.9	4	2.2	3.2		5.5'	218.3	1.5	1.4	9.5	
7'	30.2	5	2.8	4		7'	134.8	1.8	1.8	12.1	
8'	23.1	5.8	3.2	4.6		8'	103.2	2.1	2	13.9	
9'	18.3	6.5	3.6	5.2		9'	81.5	2.5	2.2	15.6	
10'	14.8	7.2	4	5.8		10'	66	2.8	2.4	17.3	
12'	10.3	8.6	4.8	6.9		12'	45.9	3.3	3	20.8	

SINGLE UNIT FOOTCANDLES

3' FROM WALL
(Distance From Fixture Along Wall)

DD	●	1'	2'	3'	4'	5'	6'
1'	0.7	0.2	0.1	0.4	0.2	0.1	0
2'	0.4	0.3	0.2	0	0.1	0	0.1
3'	50.3	18.5	0.1	0	0.1	0	0
4'	99.1	35.5	11.3	0.1	0	0	0
5'	149.4	35	14.1	2.6	0.1	0	0
6'	86.7	26.2	12.2	4.7	1.1	0.1	0
7'	28.8	16.1	8.9	4.4	1.8	0.4	0.1
8'	11.3	11	6.5	3.4	1.8	0.7	0.1
9'	6.6	7.3	5	2.7	1.6	0.7	0.2
10'	4.2	4.7	4	2.2	1.4	0.7	0.2



Test Number	P108558
Platform	PN3LED12 830E
Element	E3AA20 RG50FL40
Lumens	1209 Lm
Efficacy	61.7 Lm/W

ZONAL LUMEN SUMMARY

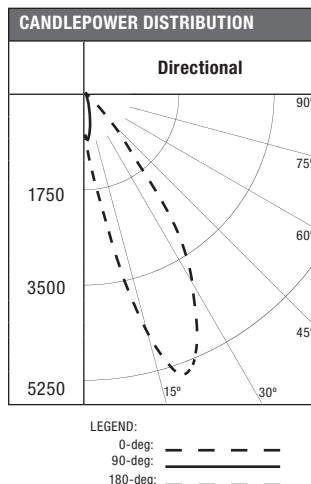
Zone	Lumens	%Fixture
0-30	664	62.1
0-40	948	88.8
0-60	1066	99.9
0-90	1068	100
90-180	0	0
0-180	1068	100

30° HORIZONTAL PLANE						30° VERTICAL PLANE					
	MH	FC	L	W	CB		D	FC	L	W	CB
5.5'	33.7	4.8	3.6	3.2		5.5'	56.1	4	3.6	9.5	
7'	20.8	6.1	4.6	4		7'	34.6	5.1	4.6	12.1	
8'	15.9	7	5.2	4.6		8'	26.5	5.8	5.2	13.9	
9'	12.6	7.9	6	5.2		9'	20.9	6.6	6	15.6	
10'	10.2	8.7	6.6	5.8		10'	17	7.3	6.6	17.3	
12'	7.1	10.5	8	6.9		12'	11.8	8.8	8	20.8	

SINGLE UNIT FOOTCANDLES

3' FROM WALL
(Distance From Fixture Along Wall)

DD	●	1'	2'	3'	4'	5'	6'
1'	0	0	0.1	0	0	0	0
2'	6.7	0.7	0	0	0	0	0
3'	22.2	13.5	4.5	0	0	0	0
4'	48.5	31.9	7.7	2.2	0.2	0	0
5'	38	30.2	14	3.6	1	0.2	0
6'	26.8	22.7	13.1	5.1	1.6	0.4	0.1
7'	19.5	16.1	10.6	5.4	2.2	0.7	0.2
8'	14.3	11.6	8.2	4.8	2.5	1	0.3
9'	10.3	8.7	6.2	4.1	2.3	1.2	0.5
10'	7.3	6.7	4.7	3.3	2.1	1.1	0.6



Test Number	P108552
Platform	PN3LED12 830E
Element	E3AA20 RG50NFL25
Lumens	1182 Lm
Efficacy	60.3 Lm/W

ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30	771	73.8
0-40	1014	97.1
0-60	1044	99.9
0-90	1044	100
90-180	0	0
0-180	1044	100

30° HORIZONTAL PLANE						30° VERTICAL PLANE					
	MH	FC	L	W	CB		D	FC	L	W	CB
5.5'	54.4	4.1	2.8	3.2		5.5'	88	3.3	2.6	9.5	
7'	33.6	5.2	3.6	4		7'	54.4	4.3	3.4	12.1	
8'	25.7	6	4	4.6		8'	41.6	4.9	4	13.9	
9'	20.3	6.8	4.6	5.2		9'	32.9	5.5	4.4	15.6	
10'	16.4	7.5	5	5.8		10'	26.6	6.2	5	17.3	
12'	11.4	8.9	6.2	6.9		12'	18.5	7.4	6	20.8	

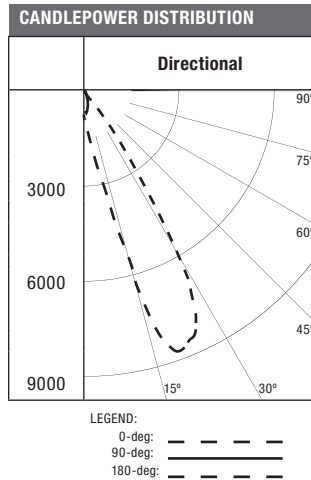
SINGLE UNIT FOOTCANDLES

3' FROM WALL
(Distance From Fixture Along Wall)

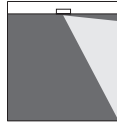
DD	●	1'	2'	3'	4'	5'	6'
1'	0.1	0	0	0	0	0	0
2'	0.4	0.2	0	0	0	0	0
3'	7.6	0.6	0.2	0	0	0	0
4'	41.8	21.4	1.3	0.1	0	0	0
5'	55.9	34	9.8	0.2	0	0	0
6'	45.1	33.2	10.3	3.2	0.1	0	0
7'	34.9	26	10	4.2	1.2	0.1	0
8'	26	19.3	8.9	3.7	1.7	0.4	0
9'	18.8	14.1	7.3	3.2	1.7	0.6	0.1
10'	13.3	10.3	5.7	2.7	1.5	0.7	0.2

PHOTOMETRICS

P3LED E3AA/E3AA20



Test Number	P108546
Platform	PN3LED12 830E
Element	E3AA20 RG50SP15
Lumens	1338 Lm
Efficacy	68.3 Lm/W



ZONAL LUMEN SUMMARY

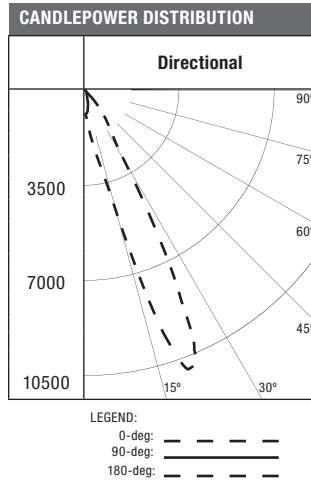
Zone	Lumens	%Fixture
0-30	899	76.1
0-40	1139	96.4
0-60	1172	99.2
0-90	1182	100
90-180	0	0
0-180	1182	100

30° HORIZONTAL PLANE						30° VERTICAL PLANE					
	MH	FC	L	W	CB		D	FC	L	W	CB
5.5'	80.6	3.7	2.2	3.2		5.5'	153	2.5	2	9.5	
7'	49.8	4.7	3	4		7'	94.5	3.3	2.6	12.1	
8'	38.1	5.4	3.4	4.6		8'	72.3	3.8	2.8	13.9	
9'	30.1	6	3.8	5.2		9'	57.1	4.3	3.2	15.6	
10'	24.4	6.7	4.2	5.8		10'	46.3	4.7	3.6	17.3	
12'	16.9	8.1	5.2	6.9		12'	32.1	5.7	4.4	20.8	

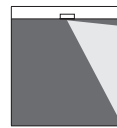
SINGLE UNIT FOOTCANDLES

3' FROM WALL
(Distance From Fixture Along Wall)

DD	●	1'	2'	3'	4'	5'	6'
1'	0.5	0.3	0.1	0	0.1	0.1	0
2'	0	0	0	0	0.1	0	0
3'	6.7	3.3	0	0	0	0	0
4'	38.8	20.6	2.1	0.1	0	0	0
5'	78.6	31.7	9	0.9	0.1	0	0
6'	78.9	40.1	10.1	2.4	0.4	0.1	0
7'	58.6	36.5	9.6	3.8	0.9	0.2	0
8'	42.4	27.4	8.4	3.4	1.6	0.3	0
9'	29.3	18.8	6.9	3.1	1.5	0.6	0.1
10'	19	12.7	5.4	2.7	1.4	0.6	0.2



Test Number	P108540
Platform	PN3LED12 830E
Element	E3AA20 RG50NSP10
Lumens	1305 Lm
Efficacy	66.2 Lm/W



ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30	917	79.5
0-40	1106	95.9
0-60	1138	98.7
0-90	1153	100
90-180	0	0
0-180	1153	100

30° HORIZONTAL PLANE						30° VERTICAL PLANE					
	MH	FC	L	W	CB		D	FC	L	W	CB
5.5'	102.6	2.7	1.8	3.2		5.5'	175.4	1.9	1.4	9.5	
7'	63.3	3.5	2.2	4		7'	108.3	2.4	2	12.1	
8'	48.5	4	2.6	4.6		8'	82.9	2.7	2.2	13.9	
9'	38.3	4.5	2.8	5.2		9'	65.5	3.1	2.4	15.6	
10'	31	5.1	3.2	5.8		10'	53.1	3.5	2.8	17.3	
12'	21.6	6.1	3.8	6.9		12'	36.9	4.1	3.4	20.8	

SINGLE UNIT FOOTCANDLES

3' FROM WALL
(Distance From Fixture Along Wall)

DD	●	1'	2'	3'	4'	5'	6'
1'	0	0	0.5	0.1	0	0.1	0
2'	1.5	0.2	0.1	0.3	0.1	0.1	0
3'	2.1	0.4	0.4	0.1	0.2	0	0.1
4'	31	18	1.2	0.1	0.2	0.1	0.1
5'	36.1	21.8	9.3	0	0	0.1	0.1
6'	68.8	23.5	9.9	3	0.1	0	0
7'	70.2	27.3	9.5	4.5	1.2	0	0
8'	53.1	24.8	7.7	4.1	2	0.4	0
9'	37.3	17.9	6.1	3.5	1.9	0.8	0.1
10'	23	11.6	4.7	3	1.7	0.9	0.3