

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P174907

Luminaire Tested: **LDA4A09930D010TE LAR35FL 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P174907
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26217)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A09930D010TE LAR35FL 4LA1 30° Tilt
Description: PORTFOLIO 4" Adjustable Reflector, Self-flanged Trim Ring, 35° Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 815.4 lumens
Efficiency: N/A
Efficacy: 58.9 lumens/watt
Spacing Criteria (0/90/45): 2.3 / 0.86 / 1.17
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

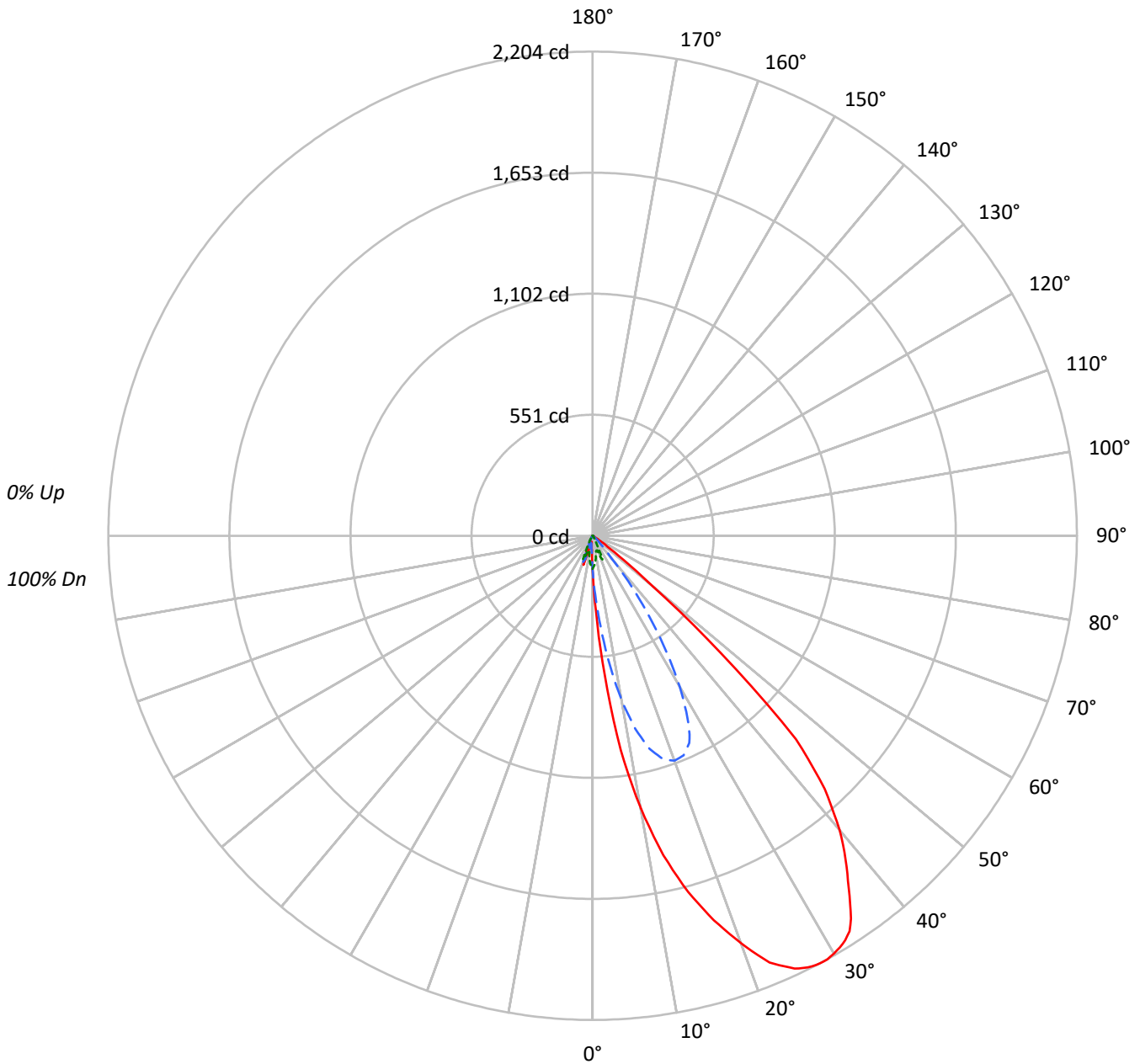
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P174907

CATALOG NUMBER: LDA4A09930D010TE LAR35FL 4LA1 30° Tilt

Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	113	110	107	104	110	107	105	103	103	101	99	100	98	96	96	95	94	92					92			
2	106	101	96	92	104	99	95	91	96	92	89	92	90	87	90	87	85	84					84			
3	100	92	87	82	98	91	86	81	88	84	80	86	82	79	83	80	78	76					76			
4	93	85	78	74	92	84	78	73	81	76	72	79	75	71	77	74	70	69					69			
5	88	78	71	66	86	77	71	66	75	70	65	73	68	65	72	67	64	62					62			
6	82	72	65	60	81	71	64	60	69	64	59	68	63	59	66	62	58	57					57			
7	77	66	59	54	76	66	59	54	64	58	54	63	58	54	62	57	53	52					52			
8	72	61	54	50	71	61	54	49	59	54	49	58	53	49	57	52	49	47					47			
9	68	57	50	45	67	56	50	45	55	49	45	54	49	45	53	48	45	43					43			
10	64	53	46	42	63	52	46	42	51	46	41	51	45	41	50	45	41	40					40			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	18675	18675	18675
5°	78438	15626	5770
10°	157575	10746	3494
15°	214339	8722	7879
20°	259045	13244	14623
25°	295847	7866	4069
30°	312813	3703	1880
35°	307689	1641	708
40°	281569	805	193
45°	228390	401	0
50°	67719	230	0
55°	12279	258	0
60°	2294	296	0
65°	555	350	0
70°	144	433	0
75°	0	572	0
80°	0	1137	0
85°	0	2264	0



TEST NUMBER: P174907

CATALOG NUMBER: LDA4A09930D010TE LAR35FL 4LA1 30° Tilt

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	27.5	3.4
10°-20°	142.4	17.5
20°-30°	249.4	30.6
30°-40°	250.5	30.7
40°-50°	131.9	16.2
50°-60°	11.0	1.3
60°-70°	1.1	0.1
70°-80°	0.8	0.1
80°-90°	0.8	0.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	419.3	51.4
0°-40°	669.8	82.1
0°-60°	812.7	99.7
0°-90°	815.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	815.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	151	151	151	151	151	
5°	634	414	126	58	47	81
15°	1678	1005	68	46	62	479
25°	2174	1040	58	33	30	995
35°	2043	452	11	6	5	1263
45°	1309	47	2	1	0	897
55°	57	5	1	0	0	86
65°	2	1	1	1	0	3
75°	0	1	1	1	0	0
85°	0	1	2	1	0	0
90°	0	0	0	0	0	



TEST NUMBER: P174907

CATALOG NUMBER: LDA4A09930D010TE LAR35FL 4LA1 30° Tilt

CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
0°	151.4	151.4	151.4	151.4	151.4	151.4	151.4	151.4	151.4	151.4	151.4
2.5°	343.5	343.9	344.3	347.0	340.8	339.3	336.5	332.7	319.9	267.1	201.5
5°	633.5	638.2	637.0	633.1	623.4	618.0	609.8	601.3	566.3	414.2	250.0
7.5°	984.4	993.3	991.4	985.6	969.3	961.9	941.3	930.1	877.3	588.1	286.1
10°	1258.1	1281.8	1282.1	1276.7	1252.3	1241.8	1220.4	1200.2	1133.5	758.5	302.8
12.5°	1489.4	1489.8	1508.1	1503.8	1475.5	1470.8	1452.9	1422.7	1352.4	900.6	302.8
15°	1678.5	1704.1	1699.8	1695.2	1665.3	1659.1	1642.0	1614.0	1532.1	1004.6	288.0
17.5°	1834.5	1857.4	1850.8	1845.8	1815.9	1802.3	1783.7	1750.3	1660.2	1066.3	257.4
20°	1973.5	1995.2	1982.0	1973.1	1933.1	1916.4	1889.2	1850.8	1748.0	1089.2	221.6
22.5°	2103.1	2126.0	2109.3	2096.9	2045.3	2013.1	1974.6	1926.1	1805.0	1081.8	202.6
25°	2173.8	2203.7	2187.8	2178.0	2128.7	2091.1	2040.2	1977.7	1837.6	1040.3	152.6
26°	2189.3	2220.7	2205.6	2197.1	2147.0	2107.0	2052.7	1987.1	1840.3	1006.1	117.6
27°	2200.2	2235.1	2217.6	2206.8	2155.1	2112.4	2055.8	1987.5	1836.1	960.0	93.6
28°	2204.4	2242.9	2221.5	2208.3	2154.8	2108.2	2048.0	1978.9	1824.8	906.8	79.6
29°	2204.1	2246.0	2221.1	2206.8	2149.7	2098.1	2036.4	1966.9	1809.3	851.3	71.8
30°	2196.3	2242.1	2217.3	2199.0	2137.7	2082.2	2019.7	1950.2	1791.8	790.7	64.0
31°	2185.8	2232.8	2206.8	2184.3	2117.9	2057.7	1996.4	1927.7	1768.5	725.9	58.6
32°	2170.7	2217.6	2188.9	2159.4	2089.9	2027.0	1968.0	1901.3	1740.2	657.6	52.0
33°	2146.6	2188.1	2154.8	2120.6	2051.1	1992.1	1936.2	1870.6	1708.0	586.5	45.0
34°	2102.7	2139.2	2104.7	2070.1	2008.0	1953.3	1899.7	1834.5	1670.3	520.9	38.8
35°	2043.4	2074.4	2043.4	2014.2	1959.5	1908.7	1857.4	1793.8	1624.9	451.8	33.4
36°	1982.8	2010.0	1981.2	1958.3	1905.9	1860.5	1812.8	1746.8	1573.7	386.2	29.5
37°	1926.1	1950.6	1924.2	1901.3	1856.3	1810.1	1762.7	1695.2	1517.0	323.3	24.5
38°	1869.8	1891.6	1869.1	1843.4	1801.9	1754.9	1707.2	1638.1	1453.7	264.0	21.0
39°	1811.2	1829.1	1807.3	1781.3	1739.0	1692.4	1643.5	1572.1	1381.1	202.2	18.2
40°	1748.7	1765.4	1738.6	1715.3	1673.0	1625.3	1575.2	1501.1	1302.3	135.5	15.5
42.5°	1564.0	1574.0	1551.5	1519.3	1477.0	1424.6	1364.0	1281.0	1050.4	71.4	10.9
45°	1309.3	1311.3	1293.8	1235.2	1178.5	1097.4	1006.9	882.3	610.6	46.6	7.0
47.5°	790.3	785.7	758.1	708.0	655.2	569.5	484.8	399.0	237.2	27.2	4.7
50°	352.9	347.4	333.8	307.8	277.2	245.3	207.7	175.8	115.3	14.8	3.1
51°	255.8	251.1	241.1	221.3	198.7	176.2	150.2	128.5	86.2	12.0	2.7
52°	179.7	177.0	170.0	156.0	143.6	126.2	108.3	94.7	64.8	9.7	1.9
53°	125.4	123.4	119.2	109.9	102.5	89.7	78.4	67.5	47.0	7.8	1.9
54°	85.0	83.8	81.1	74.9	68.7	61.7	53.6	47.4	33.0	6.2	1.6
55°	57.1	56.3	54.0	50.9	47.4	43.1	37.7	33.0	23.3	5.0	1.2
57.5°	21.0	21.0	20.2	19.0	17.9	16.7	15.1	13.6	10.9	3.1	1.2
60°	9.3	8.9	8.9	8.5	8.2	7.8	7.4	6.6	5.4	1.9	1.2
61°	7.0	7.0	6.6	6.2	6.2	5.8	5.4	5.0	4.3	1.6	1.2
62°	5.0	5.0	5.0	4.7	4.7	4.3	4.3	3.9	3.1	1.2	1.2
63°	3.9	3.9	3.9	3.5	3.5	3.5	3.1	3.1	2.3	1.2	1.2
64°	2.7	2.7	2.7	2.7	2.7	2.7	2.3	2.3	1.9	0.8	1.2
65°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.6	0.8	1.2
66°	1.6	1.6	1.6	1.6	1.6	1.6	1.2	1.2	1.2	0.8	1.2



TEST NUMBER: P174907

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CANDELA DISTRIBUTION (continued):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
72.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	1.2
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.8	1.2
77.5°	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.8	1.2
80°	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.8	1.2
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.8	1.2
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.8	1.2
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.8	1.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
0°	151.4	151.4	151.4	151.4	151.4
2.5°	139.4	97.4	77.6	70.3	67.9
5°	126.2	73.0	57.8	49.7	46.6
7.5°	106.0	60.2	43.5	36.1	33.8
10°	85.8	49.7	35.3	29.5	27.9
12.5°	73.4	43.1	33.0	30.7	30.7
15°	68.3	45.4	45.8	55.1	61.7
17.5°	70.3	71.0	111.0	135.1	139.4
20°	100.9	127.7	126.5	114.9	111.4
22.5°	116.8	84.2	63.7	52.4	50.5
25°	57.8	38.4	33.0	30.3	29.9
26°	43.9	32.2	28.7	27.2	26.4
27°	36.5	28.3	25.6	23.7	22.9
28°	32.6	25.2	22.1	20.2	19.4
29°	29.5	21.7	18.6	16.7	16.3
30°	26.0	18.2	15.5	13.6	13.2
31°	22.1	15.1	12.4	11.3	10.5
32°	18.6	12.4	10.1	8.9	8.2
33°	15.5	10.1	8.5	7.4	6.6
34°	13.2	8.5	7.0	5.8	5.4
35°	10.9	7.0	5.8	5.0	4.7
36°	9.3	6.2	4.7	3.9	3.5
37°	8.2	5.0	3.9	3.1	3.1
38°	7.0	4.3	3.5	2.3	2.3
39°	5.8	3.5	2.7	1.9	1.9
40°	5.0	3.1	2.3	1.6	1.2
42.5°	3.5	1.9	1.6	0.8	0.4
45°	2.3	1.6	0.8	0.4	0.0
47.5°	1.6	1.2	0.8	0.4	0.0
50°	1.2	1.2	0.8	0.0	0.0
51°	1.2	0.8	0.8	0.0	0.0
52°	1.2	0.8	0.4	0.0	0.0
53°	1.2	0.8	0.4	0.0	0.0
54°	1.2	0.8	0.4	0.0	0.0
55°	1.2	0.8	0.4	0.0	0.0
57.5°	1.2	0.8	0.4	0.0	0.0
60°	1.2	0.8	0.8	0.0	0.0
61°	1.2	1.2	0.8	0.0	0.0
62°	1.2	1.2	0.8	0.0	0.0
63°	1.2	1.2	0.8	0.0	0.0
64°	1.2	1.2	0.8	0.4	0.0
65°	1.2	1.2	0.8	0.4	0.0
66°	1.2	1.2	0.8	0.4	0.0



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CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
72.5°	1.2	1.2	0.8	0.4	0.0
75°	1.2	1.2	0.8	0.4	0.0
77.5°	1.6	1.2	0.8	0.4	0.0
80°	1.6	1.2	0.8	0.4	0.0
82.5°	1.6	1.2	0.8	0.4	0.0
85°	1.6	1.2	0.8	0.4	0.0
87.5°	1.6	1.2	0.8	0.4	0.0
90°	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270°







67.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.2
70°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	1.2





67.5°	1.2	1.2	0.8	0.4	0.0
70°	1.2	1.2	0.8	0.4	0.0



(END OF REPORT)