

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: P1191425

Luminaire Tested: **LDA4A10927D010TE LAR25NF 4LA1 30° Tilt**

Issue Date: 3/3/2020

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

**Test Information**

Test Method: LM-41-14
Report Number: P1191425
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P25649)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A10927D010TE LAR25NF 4LA1 30° Tilt
Description: PORTFOLIO 4" Adjustable Reflector, Self-flanged Trim Ring, 25°
Narrow Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

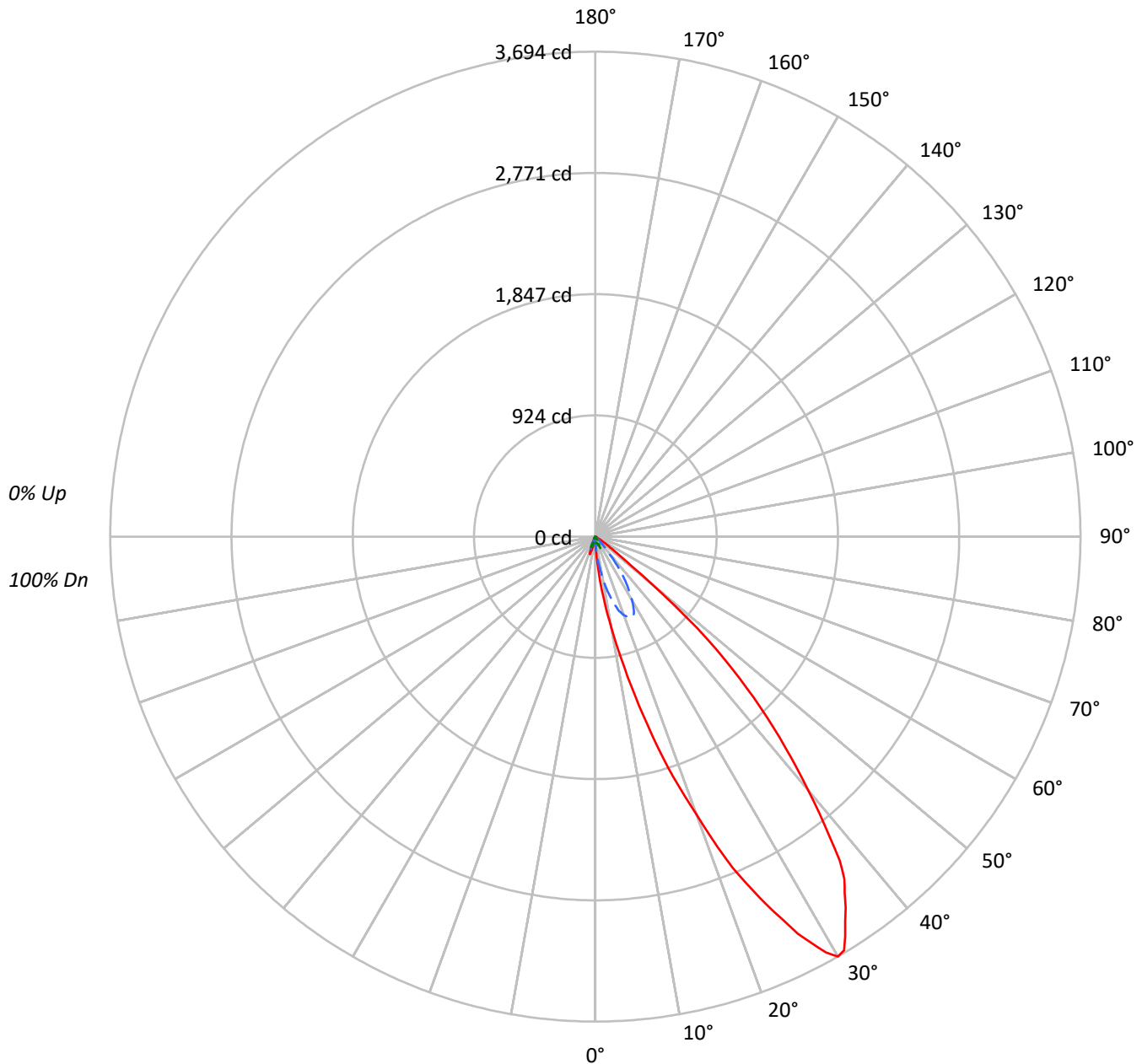
Lumens per Lamp: N/A
Luminaire Lumens: 855.5 lumens
Efficiency: N/A
Efficacy: 69.0 lumens/watt
Spacing Criteria (0/90/45): 2.56 / 1.01 / 1.3
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 12.4
Input Voltage (V): NR
Input Current (Ain): 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

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Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab

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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					10
RW	70	50	30	10	70	50	30	10		50	30	10			50	30	10			50
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111			106	106	106			102
1	112	109	106	104	110	107	104	102		103	101	99			99	97	96			96
2	105	100	95	91	103	98	93	90		95	91	88			91	88	86			89
3	99	91	85	80	96	89	84	79		87	82	78			84	80	77			82
4	92	83	76	71	90	82	75	71		79	74	70			77	73	69			75
5	86	76	69	63	84	75	68	63		73	67	62			71	66	62			69
6	80	69	62	57	78	68	61	56		67	61	56			65	60	56			64
7	75	63	56	51	73	63	56	51		61	55	50			60	54	50			59
8	70	58	51	46	68	57	51	46		56	50	46			55	49	45			54
9	65	53	46	41	64	53	46	41		52	46	41			51	45	41			50
10	61	49	42	38	60	49	42	37		48	42	37			47	41	37			46

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	6994	6994	6994
5°	30397	6587	3987
10°	87611	5937	4334
15°	179516	6551	12540
20°	296179	12194	12706
25°	421927	7785	4260
30°	526069	3404	1666
35°	498456	1551	723
40°	405986	773	242
45°	284385	419	0
50°	106577	288	0
55°	22709	323	0
60°	4342	247	0
65°	1313	438	0
70°	361	541	0
75°	0	715	0
80°	0	1065	0
85°	0	2123	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	11.9	1.4
10°-20°	102.5	12.0
20°-30°	261.7	30.6
30°-40°	303.1	35.4
40°-50°	156.4	18.3
50°-60°	16.1	1.9
60°-70°	1.8	0.2
70°-80°	1.1	0.1
80°-90°	1.0	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°	376.0	44.0
0°-40°	679.1	79.4
0°-60°	851.7	99.5
0°-90°	855.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	855.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	57	57	57	57	57	
5°	246	128	53	35	32	38
15°	1406	515	51	68	98	430
25°	3100	672	57	36	31	1440
35°	3310	368	10	6	5	2027
45°	1630	43	2	2	0	1221
55°	106	6	2	1	0	132
65°	4	2	2	1	0	6
75°	0	1	2	2	0	0
85°	0	1	2	2	0	0
90°	0	0	0	0	0	

TEST NUMBER: P1191425

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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7
2.5°	97.8	94.4	92.0	92.9	98.2	92.3	92.9	90.9	89.9	88.9	86.5
5°	245.5	235.6	229.3	229.8	215.5	226.3	225.3	217.0	211.7	201.4	195.5
7.5°	460.5	439.4	432.2	429.6	431.2	420.8	416.5	405.7	391.6	373.0	362.3
10°	699.5	686.8	682.5	674.6	674.1	656.0	645.3	631.5	603.2	577.3	558.3
12.5°	1019.3	980.2	973.3	958.6	954.7	923.9	901.4	881.4	833.9	799.8	769.5
15°	1405.8	1374.1	1381.5	1336.4	1324.3	1273.9	1231.8	1188.8	1112.1	1059.8	1006.0
17.5°	1844.9	1804.3	1809.2	1752.9	1651.8	1661.1	1600.0	1540.9	1432.8	1362.9	1279.7
20°	2256.4	2227.7	2229.6	2154.8	2120.5	2027.7	1946.0	1875.7	1731.9	1643.0	1533.0
22.5°	2730.2	2655.4	2641.1	2539.5	2479.4	2354.8	2240.8	2147.4	1973.4	1873.2	1738.3
25°	3100.2	3048.8	3009.7	2889.5	2805.9	2643.7	2511.6	2373.3	2164.1	2053.2	1892.8
26°	3239.0	3190.6	3140.3	3010.8	2916.9	2745.3	2601.6	2453.0	2229.1	2110.3	1935.8
27°	3395.9	3316.7	3256.1	3111.0	3009.2	2828.9	2658.3	2517.9	2278.5	2146.9	1963.1
28°	3506.9	3427.7	3347.5	3189.6	3079.7	2891.0	2713.5	2560.5	2307.3	2164.6	1974.4
29°	3620.8	3536.7	3419.9	3247.8	3128.1	2929.6	2745.3	2581.5	2315.7	2163.6	1968.6
30°	3693.6	3609.0	3458.0	3280.5	3153.9	2945.3	2754.1	2577.7	2302.4	2144.0	1947.1
31°	3676.6	3598.9	3448.7	3284.0	3151.5	2936.0	2737.9	2549.8	2269.2	2109.3	1908.0
32°	3591.0	3525.0	3411.1	3261.1	3124.6	2904.1	2700.4	2505.7	2221.3	2068.7	1860.6
33°	3491.7	3437.0	3358.2	3214.6	3077.8	2856.3	2648.5	2451.5	2166.0	2013.5	1803.4
34°	3408.7	3359.3	3286.4	3152.0	3013.7	2792.2	2583.0	2383.1	2103.0	1948.5	1735.9
35°	3310.3	3265.4	3198.0	3067.4	2924.7	2706.2	2500.9	2303.8	2028.7	1871.3	1657.7
36°	3224.9	3153.9	3085.5	2958.4	2816.1	2602.0	2404.1	2211.0	1944.6	1782.7	1569.6
37°	3092.4	3021.5	2948.2	2828.0	2687.6	2482.8	2296.6	2111.8	1848.7	1716.3	1475.8
38°	2894.3	2861.6	2788.4	2674.0	2543.4	2351.3	2178.7	1998.9	1740.7	1587.7	1376.0
39°	2709.6	2682.8	2611.3	2506.7	2386.0	2210.1	2048.2	1871.8	1619.1	1474.4	1270.9
40°	2521.4	2494.5	2427.5	2333.3	2224.7	2062.8	1909.4	1736.4	1491.4	1357.4	1165.4
42.5°	2075.6	2047.7	2033.5	1937.2	1822.4	1683.5	1541.2	1384.8	1176.7	1066.6	916.1
45°	1630.3	1604.8	1551.6	1511.9	1409.3	1294.0	1178.1	1050.5	897.0	788.5	647.7
47.5°	1165.4	1153.1	1155.2	1081.8	984.0	893.2	797.2	682.0	546.1	409.6	300.6
50°	555.4	558.8	572.4	521.1	447.7	394.5	337.8	264.9	193.6	152.1	117.8
51°	359.8	363.7	375.4	338.8	285.4	249.3	213.1	172.1	137.3	116.8	93.4
52°	243.4	243.4	245.8	224.4	197.9	177.4	156.4	132.5	107.0	92.0	73.9
53°	182.8	182.3	183.3	169.2	151.1	135.9	121.3	103.7	84.6	71.8	57.2
54°	139.9	139.3	140.2	129.5	116.8	105.6	94.4	81.1	65.5	53.8	43.1
55°	105.6	105.6	107.0	98.7	88.9	80.1	71.8	60.6	48.4	39.1	31.3
57.5°	42.5	42.5	43.9	41.0	36.7	33.2	30.3	25.9	21.5	18.1	14.6
60°	17.6	18.1	18.6	17.1	16.2	15.2	14.1	12.7	11.2	9.3	7.8
61°	13.2	13.2	13.6	12.7	12.2	11.2	10.7	9.8	8.8	7.4	6.4
62°	9.8	9.8	10.3	9.8	9.3	8.8	8.3	7.8	6.9	5.9	4.8
63°	7.4	7.4	7.8	7.4	7.4	6.9	6.4	5.9	5.3	4.5	3.9
64°	5.9	5.9	5.9	5.3	5.3	5.3	4.8	4.8	3.9	3.4	2.9
65°	4.5	4.5	4.5	4.5	3.9	3.9	3.9	3.4	3.4	2.4	2.4
66°	3.4	3.4	3.4	2.9	2.9	2.9	2.9	2.9	2.4	1.9	1.5



TEST NUMBER: P1191425

CATALOG NUMBER: LDA4A10927D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
72.5°	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
75°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
77.5°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
80°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5
82.5°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5
85°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5
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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7
2.5°	87.5	87.0	82.2	82.2	84.1	81.1	79.7	76.3	65.5	55.8	46.9
5°	193.6	188.3	171.6	166.7	166.2	152.5	144.7	127.6	74.8	53.2	40.6
7.5°	357.3	341.2	312.8	297.7	279.1	268.4	249.3	220.0	85.1	49.8	36.7
10°	528.5	510.4	468.4	441.5	427.2	392.6	360.7	320.7	95.3	47.4	36.2
12.5°	724.5	683.9	643.8	595.9	553.3	522.6	469.8	422.9	102.2	46.9	39.6
15°	936.6	885.8	817.4	752.8	692.7	648.7	577.8	514.7	104.6	51.3	51.8
17.5°	1174.1	1078.9	980.2	892.1	809.5	750.4	662.4	588.1	103.2	63.1	82.7
20°	1396.7	1270.1	1136.1	1013.9	897.0	820.3	718.6	637.9	103.7	92.9	111.5
22.5°	1573.1	1419.1	1255.8	1106.8	958.6	866.7	755.7	664.4	116.3	99.2	75.8
25°	1703.1	1521.7	1334.5	1162.9	1007.0	903.9	782.1	672.2	108.5	57.2	43.1
26°	1737.8	1546.7	1349.2	1171.2	1012.9	903.9	778.3	663.9	93.9	45.5	35.7
27°	1757.4	1557.9	1351.6	1167.4	1005.5	893.5	764.0	647.2	76.8	38.1	30.3
28°	1759.8	1553.1	1339.3	1151.2	985.0	871.6	738.6	621.8	63.6	32.2	25.0
29°	1746.6	1535.0	1315.9	1124.3	953.7	839.3	703.9	590.5	54.3	27.9	21.0
30°	1718.8	1503.2	1280.2	1088.2	913.2	800.2	663.4	555.9	47.4	23.9	17.6
31°	1678.7	1459.7	1241.7	1045.1	870.6	761.1	625.3	520.6	42.0	20.0	14.6
32°	1626.8	1408.4	1191.7	998.7	832.5	724.0	588.6	484.9	37.7	17.1	12.2
33°	1569.1	1350.2	1137.5	950.3	795.8	685.8	549.9	447.3	33.8	14.1	10.3
34°	1502.6	1286.1	1079.9	901.9	756.7	643.8	508.4	408.6	29.3	11.7	8.8
35°	1426.9	1214.8	1017.7	857.9	713.2	598.3	464.9	367.6	25.9	10.3	7.4
36°	1344.8	1140.5	955.2	807.6	666.3	550.9	418.9	326.1	22.5	8.8	6.4
37°	1258.7	1063.2	892.6	750.4	614.5	500.6	371.6	281.1	19.6	7.4	5.3
38°	1167.8	985.5	832.0	696.1	559.7	446.3	323.2	231.7	17.1	6.4	4.8
39°	1074.9	908.7	771.9	636.5	503.5	393.1	276.7	179.9	15.2	5.3	4.5
40°	984.0	836.3	708.3	571.4	447.3	340.7	231.7	132.5	13.2	4.8	3.4
42.5°	779.2	642.4	508.4	381.2	311.8	216.0	128.5	69.4	9.3	3.4	2.4
45°	509.9	379.8	274.2	185.7	161.3	91.5	59.6	43.1	6.9	2.4	1.9
47.5°	211.2	154.0	107.0	77.2	62.5	48.9	38.1	27.9	4.8	1.9	1.9
50°	92.9	73.4	58.2	45.5	39.6	31.7	24.5	17.1	2.9	1.5	1.5
51°	74.3	59.1	45.5	36.2	32.2	25.9	20.0	13.6	2.9	1.5	1.5
52°	58.7	46.0	35.7	27.9	25.9	21.0	16.6	11.2	2.4	1.5	1.5
53°	45.0	34.6	26.9	22.0	20.5	17.1	13.6	9.3	1.9	1.5	1.5
54°	33.2	26.4	21.0	17.1	16.6	13.6	11.2	7.8	1.9	1.5	1.5
55°	24.5	20.5	16.2	13.6	13.2	11.2	9.3	6.4	1.9	1.5	1.5
57.5°	12.7	10.7	8.8	7.8	7.8	7.4	6.4	3.9	1.5	1.0	1.5
60°	6.9	5.9	4.8	4.5	5.3	4.8	4.5	2.4	1.5	1.0	1.5
61°	5.3	4.8	3.9	3.4	4.5	3.9	3.9	1.9	1.5	1.5	1.5
62°	4.5	3.9	3.4	2.9	3.9	3.4	3.4	1.9	1.5	1.5	1.5
63°	3.4	2.9	2.4	2.4	3.4	3.4	2.9	1.5	1.5	1.5	1.5
64°	2.4	2.4	1.9	1.9	2.9	2.9	2.4	1.5	1.5	1.5	1.5
65°	1.9	1.9	1.5	1.5	2.4	2.4	2.4	1.5	1.5	1.5	1.5
66°	1.5	1.5	1.5	1.0	1.9	2.4	2.4	1.0	1.5	1.5	1.5



TEST NUMBER: P1191425

CATALOG NUMBER: LDA4A10927D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
72.5°	0.5	0.5	0.5	0.5	1.5	1.9	1.9	1.0	1.5	1.5	1.5
75°	0.5	0.5	0.5	0.5	1.5	1.9	1.9	1.0	1.5	1.5	1.5
77.5°	0.5	0.5	0.5	0.5	1.5	1.9	1.9	1.0	1.5	1.5	1.9
80°	0.5	0.5	0.5	0.5	1.5	1.9	1.9	1.0	1.5	1.5	1.9
82.5°	0.5	0.5	0.5	0.5	1.5	1.9	1.9	1.0	1.5	1.5	1.9
85°	0.5	0.5	0.5	0.5	1.5	1.9	1.9	1.0	1.5	1.5	1.9
87.5°	0.5	0.5	0.5	0.5	1.5	1.9	1.9	1.0	1.5	1.5	1.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P1191425

CATALOG NUMBER: LDA4A10927D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	56.7	56.7	56.7
2.5°	42.5	40.1	39.6
5°	35.2	32.7	32.2
7.5°	32.2	30.3	29.8
10°	33.2	33.8	34.6
12.5°	42.5	46.9	50.8
15°	68.4	86.0	98.2
17.5°	119.2	132.0	140.2
20°	104.6	96.3	96.8
22.5°	58.7	52.7	52.4
25°	35.7	32.2	31.3
26°	29.8	26.9	25.9
27°	24.5	22.0	21.0
28°	20.0	18.1	17.6
29°	17.1	14.6	14.1
30°	14.1	12.2	11.7
31°	11.7	10.3	9.8
32°	10.3	8.8	7.8
33°	8.3	7.4	6.9
34°	7.4	5.9	5.3
35°	5.9	4.8	4.8
36°	5.3	4.5	3.9
37°	4.5	3.4	3.4
38°	3.9	2.9	2.4
39°	3.4	2.4	1.9
40°	2.9	1.9	1.5
42.5°	1.9	1.0	0.5
45°	1.5	0.5	0.0
47.5°	1.0	0.5	0.0
50°	1.0	0.0	0.0
51°	1.0	0.0	0.0
52°	1.0	0.0	0.0
53°	1.0	0.0	0.0
54°	1.0	0.0	0.0
55°	1.0	0.0	0.0
57.5°	1.0	0.0	0.0
60°	1.0	0.0	0.0
61°	1.0	0.0	0.0
62°	1.0	0.0	0.0
63°	1.0	0.5	0.0
64°	1.0	0.5	0.0
65°	1.0	0.5	0.0
66°	1.0	0.5	0.0



TEST NUMBER: P1191425

CATALOG NUMBER: LDA4A10927D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.5	0.5	0.0
75°	1.5	0.5	0.0
77.5°	1.5	0.5	0.0
80°	1.5	0.5	0.0
82.5°	1.5	0.5	0.0
85°	1.5	0.5	0.0
87.5°	1.0	0.5	0.0
90°	0.0	0.0	0.0

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Scaled Data Report

Cooper Lighting Solutions Photometric Lab

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— 0°-180° - - 45°-225° - - - 90°-270°

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67.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5	1.0
70°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.5	0.5

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67.5°	1.0	1.0	1.0	1.0	1.9	1.9	1.9	1.0	1.5	1.5	1.5
70°	0.5	0.5	0.5	1.0	1.5	1.9	1.9	1.0	1.5	1.5	1.5

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67.5°	1.0	0.5	0.0
70°	1.0	0.5	0.0

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(END OF REPORT)