

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: P1192027

Luminaire Tested: **LDA6A15950D010TE LARL20NF 6LAL1 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: P1192027
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26268)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A15950D010TE LARL20NF 6LAL1 30° Tilt
Description: PORTFOLIO 6" Lensed Adjustable, Self-flange Trim Ring, 20° Narrow Flood Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

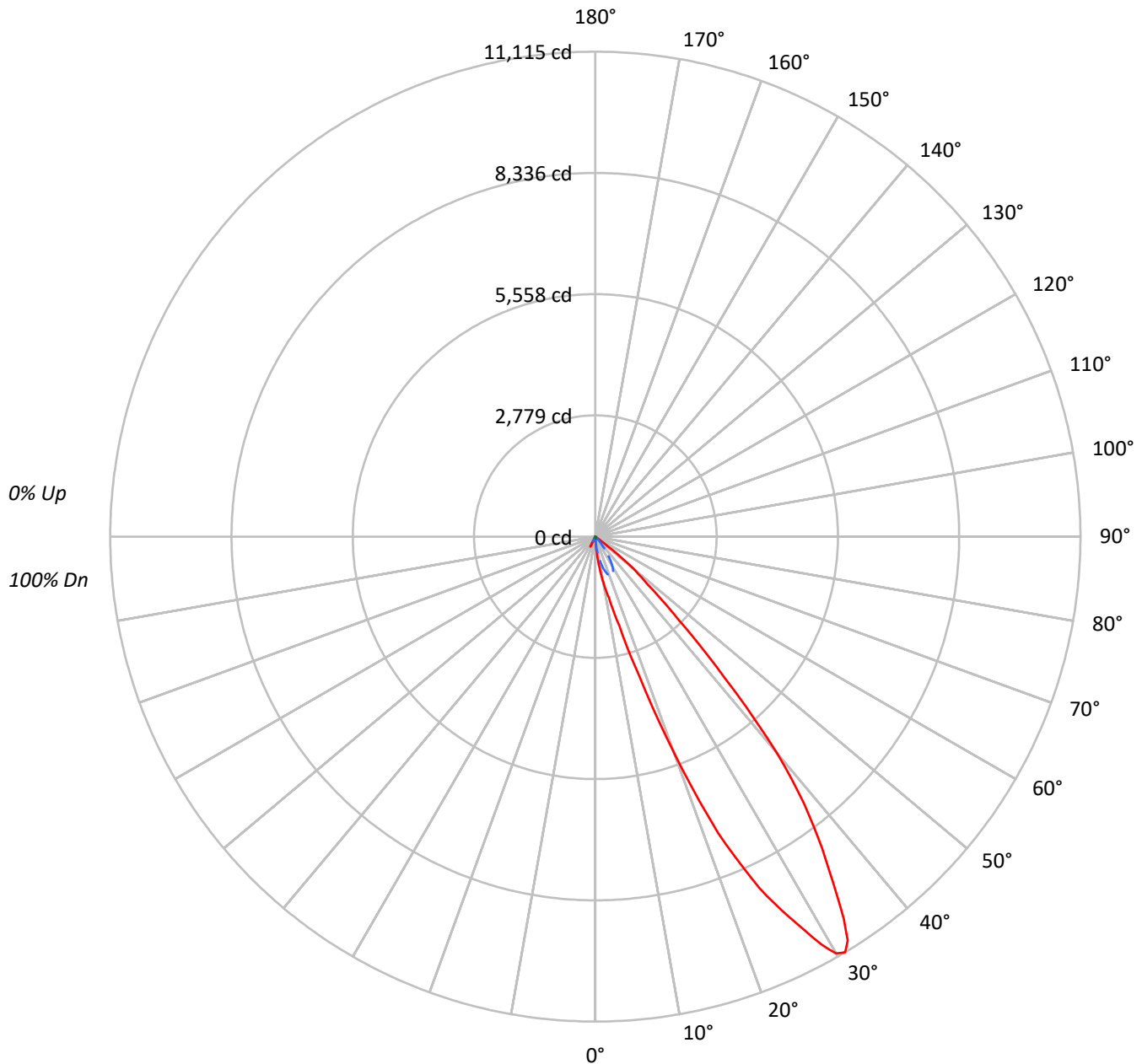
Lumens per Lamp: N/A
Luminaire Lumens: 1693.2 lumens
Efficiency: N/A
Efficacy: 82.6 lumens/watt
Spacing Criteria (0/90/45): 2.7 / 0.43 / 1.35
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

Input Watts (W): 20.5
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



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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		94	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	70		79	74	70			77	72	69			75
5	86	75	68	63	84	74	68	63		72	67	62			71	66	62			69
6	80	69	62	56	78	68	61	56		66	60	56			65	59	55			63
7	74	63	56	50	73	62	55	50		61	55	50			59	54	50			58
8	69	58	50	45	68	57	50	45		56	49	45			55	49	45			54
9	65	53	46	41	63	52	45	41		51	45	40			50	44	40			49
10	60	49	41	37	59	48	41	37		47	41	37			46	40	36			45

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	2100	2100	2100
5°	20366	1849	759
10°	60230	1319	479
15°	119558	897	414
20°	308423	729	578
25°	537533	883	4149
30°	698221	924	2336
35°	625630	395	221
40°	462531	150	0
45°	208285	163	0
50°	93967	179	0
55°	8382	201	0
60°	1020	230	0
65°	428	337	0
70°	337	417	0
75°	0	551	0
80°	0	821	221
85°	0	1635	440



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	15.2	0.9
10°-20°	142.6	8.4
20°-30°	563.0	33.2
30°-40°	679.3	40.1
40°-50°	263.7	15.6
50°-60°	23.2	1.4
60°-70°	2.2	0.1
70°-80°	2.1	0.1
80°-90°	2.0	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°	720.8	42.6
0°-40°	1400.1	82.7
0°-60°	1686.9	99.6
0°-90°	1693.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1693.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	38	38	38	38	38	
5°	370	181	34	16	14	59
15°	2107	797	16	10	7	772
25°	8887	943	15	46	69	4064
35°	9348	480	6	6	3	5746
45°	2687	34	2	1	0	2360
55°	88	4	2	1	0	212
65°	3	3	3	2	0	4
75°	0	3	3	3	0	1
85°	0	3	3	3	1	0
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3
2.5°	120.1	114.2	107.4	110.2	111.6	114.7	112.1	102.2	108.2	103.6	99.6
5°	370.1	363.6	350.9	353.0	349.0	353.7	343.1	322.0	325.9	319.4	302.2
7.5°	721.8	694.2	673.6	675.0	663.0	668.4	648.6	612.2	608.4	574.6	569.4
10°	1082.0	1068.2	1043.7	1040.4	1019.4	1022.0	991.0	942.9	929.7	890.7	868.3
12.5°	1435.7	1412.6	1378.3	1371.0	1336.7	1337.4	1295.1	1241.0	1221.3	1181.1	1149.9
15°	2106.6	2073.8	1995.2	1965.6	1870.4	1856.1	1751.8	1629.1	1569.7	1500.3	1409.3
17.5°	3345.2	3324.0	3170.2	3085.2	2892.6	2701.2	2588.4	2323.0	2168.0	1974.1	1805.9
20°	5286.8	5325.8	5057.2	4867.3	4509.6	4105.8	3820.9	3337.9	3015.2	2680.7	2364.0
22.5°	7352.1	7368.5	7093.3	6856.5	6440.2	5885.4	5228.8	4642.9	4051.6	3477.0	2954.5
25°	8886.7	8839.2	8536.3	8252.0	7813.8	7247.0	6609.0	5826.6	5018.4	4229.3	3463.8
26°	9355.1	9329.4	9025.8	8685.4	8203.1	7627.8	6964.0	6174.3	5320.4	4470.6	3619.6
27°	9789.2	9772.8	9443.5	9064.8	8524.4	7922.0	7227.3	6438.1	5548.8	4657.4	3732.5
28°	10229.3	10210.8	9812.4	9372.9	8785.7	8131.1	7409.4	6614.4	5696.0	4766.9	3779.3
29°	10694.4	10658.9	10149.5	9599.2	8959.8	8253.3	7504.4	6694.8	5746.0	4794.0	3767.4
30°	11030.2	10974.8	10392.9	9742.4	9031.0	8291.6	7514.9	6692.9	5715.0	4738.0	3691.5
31°	11114.8	11058.6	10460.8	9740.4	8979.0	8233.6	7439.0	6599.1	5585.7	4602.0	3563.5
32°	10910.2	10858.7	10288.7	9518.0	8814.1	8093.6	7288.0	6425.6	5385.2	4398.9	3390.0
33°	10453.6	10414.8	9923.2	9225.8	8577.9	7895.0	7071.7	6179.0	5100.2	4140.1	3186.0
34°	9877.7	9849.3	9471.2	8882.0	8278.3	7622.6	6791.2	5853.6	4724.7	3847.2	2963.8
35°	9348.5	9327.3	9021.2	8498.7	7935.9	7285.3	6436.2	5453.1	4338.0	3531.9	2726.2
36°	8839.2	8821.4	8555.4	8069.8	7526.9	6890.1	5989.6	4974.2	3923.1	3204.6	2480.1
37°	8307.4	8291.6	8063.2	7601.4	7067.0	6417.7	5459.1	4464.1	3501.5	2878.0	2227.5
38°	7755.8	7742.6	7533.4	7072.9	6530.7	5840.4	4854.1	3936.9	3090.5	2559.3	2000.4
39°	7140.1	7129.0	6936.4	6453.4	5874.1	5160.2	4231.1	3423.0	2700.5	2249.9	1780.7
40°	6463.3	6448.0	6255.5	5715.7	5130.5	4460.2	3632.8	2951.2	2332.3	1960.9	1587.5
42.5°	4394.2	4377.8	4234.5	3920.5	3356.9	2926.1	2407.5	1975.5	1652.8	1429.1	1236.5
45°	2686.6	2688.7	2613.5	2419.5	2080.3	1840.8	1559.1	1352.5	1207.4	1121.6	987.7
47.5°	1625.1	1625.1	1591.3	1492.5	1340.0	1244.4	1127.6	1031.3	920.5	836.0	690.8
50°	1101.8	1102.5	1051.0	1056.3	954.6	895.3	783.8	666.4	557.4	434.8	310.0
51°	815.5	819.4	772.0	793.8	682.2	632.1	526.4	426.8	330.6	235.6	136.0
52°	498.9	506.1	473.7	493.5	428.9	355.6	269.8	199.3	134.0	93.7	65.3
53°	231.5	237.5	221.1	230.3	192.0	149.8	113.5	92.4	73.8	60.1	44.2
54°	122.7	124.1	118.9	116.1	105.6	93.1	77.3	64.0	50.1	40.2	29.6
55°	87.7	87.7	85.1	82.5	73.8	63.4	51.5	43.5	33.0	26.3	19.2
57.5°	27.0	27.0	27.0	25.8	22.4	19.2	15.1	13.2	10.6	9.9	7.9
60°	9.3	9.3	9.3	8.6	7.9	7.3	6.6	5.9	5.2	5.2	4.7
61°	6.6	6.6	6.6	6.6	5.9	5.9	5.2	4.7	4.0	4.7	4.0
62°	5.2	5.9	5.2	5.2	5.2	4.7	4.0	4.0	3.3	4.0	3.3
63°	4.7	4.7	4.7	4.7	4.0	4.0	3.3	3.3	2.6	3.3	3.3
64°	4.0	4.0	4.0	4.0	3.3	3.3	2.6	2.6	2.1	2.6	2.6
65°	3.3	3.3	3.3	3.3	2.6	2.6	2.6	2.1	2.1	2.6	2.6
66°	2.6	2.6	2.6	2.6	2.6	2.1	2.1	2.1	1.4	2.1	2.1

Classified

Scaled Data Report

Cooper Lighting Solutions Photometric Lab

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CANDELA DISTRIBUTION (continued):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
72.5°	1.4	1.4	1.4	1.4	0.7	0.7	0.7	0.7	0.7	1.4	1.4
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7
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°	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3
2.5°	95.7	89.0	87.7	87.7	73.8	76.5	71.9	68.6	48.2	36.9	27.8
5°	292.3	268.4	258.5	250.0	212.5	209.1	186.1	180.8	64.7	33.6	21.1
7.5°	545.0	508.8	485.6	463.2	402.4	385.9	346.4	336.5	87.7	28.4	16.4
10°	832.6	780.5	740.3	686.9	608.4	574.1	516.0	494.7	106.9	23.7	15.8
12.5°	1103.1	1043.7	988.9	918.4	812.2	757.4	680.9	653.8	114.2	19.8	14.6
15°	1336.7	1257.6	1189.7	1113.7	995.0	925.7	832.0	797.0	108.2	15.8	12.5
17.5°	1632.9	1499.0	1380.9	1274.7	1145.5	1060.9	952.0	895.3	87.7	13.8	11.2
20°	2071.0	1801.2	1593.4	1421.8	1242.3	1137.4	1016.7	948.1	63.4	12.5	11.2
22.5°	2483.4	2098.1	1779.4	1534.1	1292.5	1167.1	1041.8	966.0	44.8	12.5	13.2
25°	2820.0	2321.7	1908.1	1607.9	1320.3	1173.1	1032.6	942.9	34.9	14.6	25.8
26°	2914.2	2377.1	1933.2	1613.9	1316.3	1164.5	1016.7	921.8	31.0	19.8	48.2
27°	2972.9	2402.3	1933.9	1604.6	1301.8	1147.3	993.0	893.4	27.0	30.4	81.1
28°	2984.9	2390.3	1911.4	1578.8	1276.6	1124.2	966.6	859.0	25.1	38.3	92.4
29°	2952.5	2348.2	1870.4	1541.3	1246.3	1096.6	934.9	821.4	21.8	29.1	60.1
30°	2879.9	2278.2	1810.5	1493.0	1214.0	1065.6	896.1	776.7	17.8	14.6	27.0
31°	2771.1	2181.9	1736.5	1436.3	1177.7	1025.9	849.2	726.4	15.1	9.9	15.8
32°	2633.3	2066.5	1654.0	1378.3	1136.8	977.8	794.4	670.3	13.8	7.9	13.2
33°	2474.9	1945.0	1568.9	1319.6	1088.0	920.5	735.6	610.3	12.5	8.6	13.2
34°	2301.9	1821.0	1472.6	1258.2	1031.3	857.8	672.9	539.8	11.2	7.9	9.9
35°	2114.6	1692.3	1386.1	1204.0	967.3	789.7	608.9	479.6	9.9	5.9	6.6
36°	1952.9	1567.0	1302.4	1135.6	897.3	719.8	543.1	415.1	8.6	4.0	4.7
37°	1776.7	1449.6	1224.6	1064.3	822.1	647.9	477.0	350.9	7.9	2.6	4.0
38°	1612.6	1341.4	1146.8	982.4	745.0	575.3	409.7	288.4	7.3	2.6	3.3
39°	1463.4	1243.0	1074.2	895.3	663.7	499.4	341.7	226.3	6.6	2.1	3.3
40°	1335.4	1155.3	987.1	803.7	580.0	424.2	273.8	167.5	5.9	2.1	3.3
42.5°	1086.0	927.1	745.0	568.0	375.3	240.1	122.7	61.4	4.7	2.1	2.6
45°	830.0	659.9	491.6	341.7	193.2	93.1	45.6	33.6	4.0	2.1	2.6
47.5°	539.0	395.8	264.0	149.0	64.7	37.6	23.7	17.2	3.3	2.1	2.6
50°	199.3	110.2	58.0	36.4	25.1	15.8	10.6	9.9	3.3	2.1	2.6
51°	81.8	53.4	36.4	24.4	15.8	11.2	8.6	8.6	3.3	2.1	2.6
52°	48.9	33.6	24.4	17.8	12.0	8.6	6.6	7.3	3.3	2.1	2.6
53°	32.2	23.1	17.8	13.8	9.3	6.6	4.7	5.2	3.3	2.1	2.6
54°	21.8	16.4	13.2	10.6	6.6	5.2	2.6	4.7	2.6	2.1	2.6
55°	15.1	12.0	9.9	7.9	4.7	3.3	2.1	4.0	2.6	2.1	2.6
57.5°	6.6	5.9	5.2	4.7	2.1	1.4	0.7	3.3	2.6	2.1	2.6
60°	4.7	4.0	3.3	3.3	0.7	0.7	0.0	2.6	2.6	2.1	2.6
61°	4.0	3.3	3.3	2.6	0.7	0.7	0.0	2.6	3.3	2.1	2.6
62°	3.3	3.3	2.6	2.6	0.7	0.0	0.0	2.6	3.3	2.1	3.3
63°	2.6	2.6	2.6	2.6	0.7	0.0	0.0	2.6	3.3	2.1	3.3
64°	2.6	2.6	2.6	2.6	0.0	0.0	0.0	2.6	3.3	2.1	3.3
65°	2.6	2.1	2.1	2.1	0.0	0.0	0.0	2.6	3.3	2.6	3.3
66°	2.1	2.1	2.1	2.1	0.0	0.0	0.0	2.6	3.3	2.6	3.3



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CATALOG NUMBER: LDA6A15950D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
72.5°	1.4	1.4	1.4	1.4	0.0	0.0	0.0	2.1	3.3	2.6	4.0
75°	0.7	1.4	1.4	1.4	0.0	0.0	0.0	2.6	3.3	2.6	4.0
77.5°	0.7	1.4	1.4	1.4	0.0	0.0	0.0	2.6	3.3	2.6	4.0
80°	0.7	1.4	1.4	1.4	0.0	0.0	0.0	2.6	3.3	2.6	4.0
82.5°	0.7	1.4	1.4	1.4	0.0	0.0	0.0	2.6	3.3	2.6	4.0
85°	0.7	1.4	1.4	1.4	0.0	0.0	0.0	2.6	3.3	2.6	4.0
87.5°	0.7	1.4	1.4	1.4	0.0	0.0	0.0	2.6	3.3	2.6	4.0
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):

	135°	157.5°	180°
0°	38.3	38.3	38.3
2.5°	23.1	21.1	19.8
5°	16.4	15.1	13.8
7.5°	13.8	12.0	11.2
10°	12.5	9.3	8.6
12.5°	10.6	7.9	7.3
15°	9.9	7.9	7.3
17.5°	9.9	7.9	7.3
20°	10.6	9.9	9.9
22.5°	15.1	16.4	17.2
25°	46.3	59.4	68.6
26°	108.2	162.3	217.7
27°	164.3	239.5	255.4
28°	147.8	171.6	166.9
29°	71.2	80.4	73.3
30°	31.7	37.6	36.9
31°	20.5	23.1	22.4
32°	17.2	15.8	15.1
33°	13.8	11.2	9.3
34°	9.3	7.3	5.9
35°	5.9	4.0	3.3
36°	4.0	2.1	1.4
37°	2.6	1.4	0.7
38°	2.6	0.7	0.0
39°	2.1	0.7	0.0
40°	2.1	0.7	0.0
42.5°	2.1	0.0	0.0
45°	1.4	0.0	0.0
47.5°	1.4	0.0	0.0
50°	2.1	0.7	0.0
51°	2.1	0.0	0.0
52°	2.1	0.0	0.0
53°	1.4	0.0	0.0
54°	1.4	0.0	0.0
55°	1.4	0.0	0.0
57.5°	1.4	0.0	0.0
60°	1.4	0.0	0.0
61°	2.1	0.0	0.0
62°	2.1	0.0	0.0
63°	2.1	0.0	0.0
64°	2.1	0.7	0.0
65°	2.1	0.7	0.0
66°	2.1	0.7	0.0



TEST NUMBER: P1192027

CATALOG NUMBER: LDA6A15950D010TE LARL20NF 6LAL1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	2.6	0.7	0.0
75°	2.6	0.7	0.0
77.5°	2.6	0.7	0.0
80°	2.6	1.4	0.7
82.5°	2.6	1.4	0.7
85°	2.6	1.4	0.7
87.5°	2.6	1.4	0.7
90°	0.0	0.0	0.0

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Scaled Data Report

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



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— 0°-180° - - 45°-225° - - - 90°-270°

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67.5°	2.1	2.1	2.1	2.1	2.1	2.1	1.4	1.4	1.4	2.1	2.1
70°	2.1	2.1	1.4	1.4	1.4	1.4	1.4	0.7	0.7	2.1	2.1

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67.5°	2.1	2.1	2.1	2.1	0.0	0.0	0.0	2.6	3.3	2.6	3.3
70°	2.1	2.1	2.1	2.1	0.0	0.0	0.0	2.6	3.3	2.6	4.0

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67.5°	2.6	0.7	0.0
70°	2.6	0.7	0.0

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(END OF REPORT)