

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: P1212750

Luminaire Tested: **LDA4A15950D010TE 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: P1212750
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: LDA4A15950D010TE 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 / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

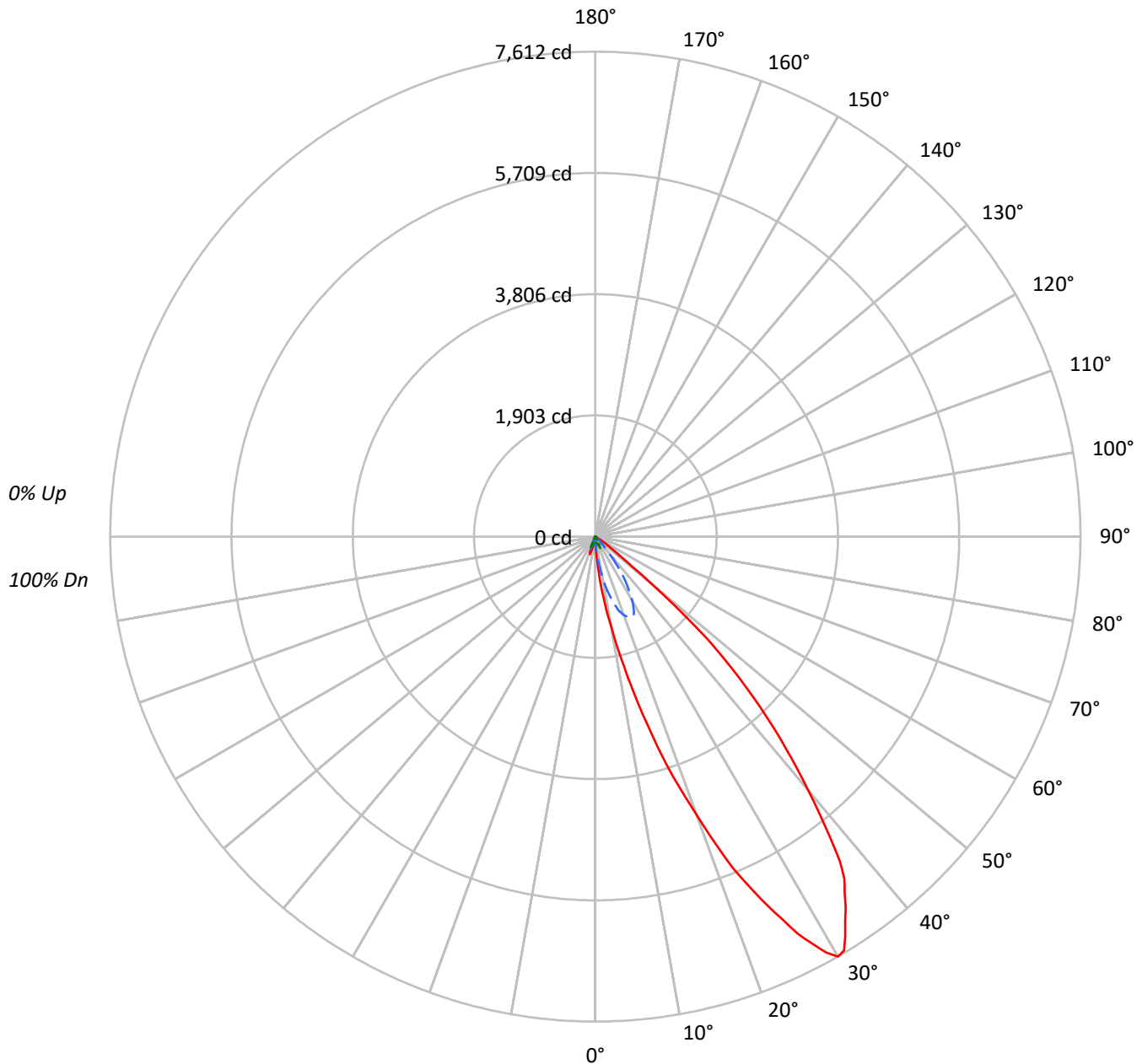
Lumens per Lamp: N/A
Luminaire Lumens: 1763.1 lumens
Efficiency: N/A
Efficacy: 86.4 lumens/watt
Spacing Criteria (0/90/45): 2.56 / 1.01 / 1.3
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 20.4
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



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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	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	112	109	106	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91		
2	105	100	95	91	103	98	93	90	95	91	88	91	88	86	89	86	84	82		
3	99	91	85	80	96	89	84	79	87	82	78	84	80	77	82	78	76	74		
4	92	83	76	71	90	82	75	71	79	74	70	77	73	69	75	71	68	66		
5	86	76	69	63	84	75	68	63	73	67	62	71	66	62	69	65	61	60		
6	80	69	62	57	78	68	61	56	67	61	56	65	60	56	64	59	55	53		
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48		
8	70	58	51	46	68	58	51	46	56	50	46	55	49	45	54	49	45	43		
9	65	53	46	41	64	53	46	41	52	46	41	51	45	41	50	45	41	39		
10	61	49	42	38	60	49	42	38	48	42	37	47	41	37	46	41	37	36		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	14419	14419	14419
5°	62627	13583	8246
10°	180583	12249	8943
15°	370001	13510	25859
20°	610419	25137	26200
25°	869550	16032	8778
30°	1084213	7036	3432
35°	1027313	3177	1521
40°	836721	1626	483
45°	586074	890	0
50°	219620	576	0
55°	46794	645	0
60°	8955	493	0
65°	2627	876	0
70°	721	1082	0
75°	0	1430	0
80°	0	2131	0
85°	0	4246	0

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.5	1.4
10°-20°	211.1	12.0
20°-30°	539.4	30.6
30°-40°	624.7	35.4
40°-50°	322.3	18.3
50°-60°	33.3	1.9
60°-70°	3.6	0.2
70°-80°	2.3	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°	775.0	44.0
0°-40°	1399.7	79.4
0°-60°	1755.2	99.6
0°-90°	1763.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1763.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	117	117	117	117	117	
5°	506	263	110	72	67	79
15°	2898	1061	106	141	202	887
25°	6389	1385	118	74	64	2968
35°	6822	758	21	12	10	4178
45°	3360	89	5	3	0	2516
55°	218	13	3	2	0	273
65°	9	3	3	2	0	12
75°	0	2	3	3	0	0
85°	0	2	3	3	0	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°	116.9	116.9	116.9	116.9	116.9	116.9	116.9	116.9	116.9	116.9	116.9
2.5°	201.6	194.5	189.5	191.5	202.5	190.4	191.5	187.3	185.3	183.4	178.3
5°	505.8	485.6	472.6	473.5	444.3	466.4	464.5	447.3	436.3	415.1	403.0
7.5°	949.0	905.6	890.7	885.6	888.7	867.4	858.3	836.2	806.9	768.7	746.5
10°	1441.8	1415.4	1406.4	1390.3	1389.2	1352.0	1329.8	1301.6	1243.2	1189.9	1150.6
12.5°	2100.5	2019.9	2005.8	1975.7	1967.6	1904.0	1857.6	1816.5	1718.7	1648.2	1585.7
15°	2897.5	2832.0	2847.0	2754.4	2729.2	2625.5	2538.8	2450.2	2292.0	2184.1	2073.3
17.5°	3802.1	3718.5	3728.5	3612.6	3404.2	3423.4	3297.4	3175.4	2952.8	2808.7	2637.5
20°	4650.4	4591.0	4595.0	4440.9	4370.3	4178.9	4010.7	3865.6	3569.4	3386.0	3159.4
22.5°	5626.6	5472.5	5443.3	5233.7	5109.8	4852.8	4618.2	4425.7	4067.0	3860.6	3582.5
25°	6389.2	6283.6	6202.9	5955.1	5782.8	5448.4	5176.2	4891.2	4460.0	4231.3	3900.8
26°	6675.4	6575.7	6471.9	6204.8	6011.5	5657.8	5361.7	5055.4	4593.9	4349.2	3989.5
27°	6998.8	6835.5	6710.7	6411.5	6201.8	5830.1	5478.6	5189.4	4695.7	4424.8	4045.9
28°	7227.5	7064.3	6899.0	6573.5	6346.9	5958.1	5592.3	5277.1	4755.2	4461.1	4069.1
29°	7462.2	7288.9	7048.1	6693.5	6446.6	6037.6	5657.8	5320.3	4772.4	4459.1	4057.0
30°	7612.4	7438.1	7126.7	6761.0	6500.1	6070.0	5676.0	5312.2	4745.1	4418.6	4012.7
31°	7577.1	7416.9	7107.7	6768.1	6495.0	6050.8	5642.8	5254.9	4676.6	4347.2	3932.0
32°	7400.8	7264.8	7030.1	6720.8	6439.7	5985.3	5565.2	5164.2	4577.9	4263.5	3834.4
33°	7196.3	7083.4	6921.2	6625.0	6343.0	5886.6	5458.4	5052.4	4464.0	4149.7	3716.5
34°	7025.0	6923.3	6773.1	6496.0	6211.0	5754.5	5323.4	4911.3	4334.1	4015.8	3577.5
35°	6822.5	6729.8	6590.7	6321.8	6027.5	5577.3	5154.1	4748.1	4180.9	3856.4	3416.3
36°	6646.2	6500.1	6359.0	6097.1	5803.9	5362.8	4954.7	4556.8	4007.6	3674.2	3234.9
37°	6373.2	6227.1	6075.9	5828.2	5539.0	5116.8	4733.0	4352.3	3810.2	3537.2	3041.5
38°	5965.1	5897.6	5746.5	5510.8	5241.7	4845.8	4490.3	4119.5	3587.6	3272.2	2836.0
39°	5584.4	5529.0	5381.9	5166.2	4917.4	4554.7	4221.3	3857.6	3336.7	3038.5	2619.3
40°	5196.5	5141.0	5003.0	4808.6	4584.9	4251.4	3935.2	3578.5	3073.8	2797.7	2401.9
42.5°	4277.6	4220.2	4191.0	3992.5	3755.8	3469.8	3176.5	2854.1	2425.0	2198.4	1888.0
45°	3359.8	3307.5	3197.7	3116.0	2904.4	2666.8	2428.0	2165.0	1848.7	1625.0	1334.9
47.5°	2401.9	2376.6	2380.6	2229.6	2028.0	1840.7	1643.1	1405.5	1125.3	844.3	619.6
50°	1144.5	1151.6	1179.8	1074.0	922.8	813.1	696.2	546.0	398.9	313.2	242.8
51°	741.4	749.5	773.8	698.2	588.4	513.8	439.2	354.6	283.1	240.8	192.4
52°	501.8	501.8	506.7	462.5	408.0	365.8	322.4	273.0	220.7	189.5	152.2
53°	376.8	375.9	377.8	348.6	311.3	280.1	249.9	213.6	174.3	148.1	117.8
54°	288.2	287.1	289.1	267.1	240.8	217.6	194.5	167.2	135.0	110.8	88.6
55°	217.6	217.6	220.7	203.5	183.4	165.3	148.1	124.9	99.7	80.6	64.5
57.5°	87.7	87.7	90.6	84.7	75.6	68.5	62.4	53.5	44.4	37.3	30.2
60°	36.3	37.3	38.3	35.4	33.2	31.2	29.2	26.2	23.1	19.1	16.1
61°	27.2	27.2	28.2	26.2	25.3	23.1	22.2	20.2	18.2	15.2	13.0
62°	20.2	20.2	21.1	20.2	19.1	18.2	17.2	16.1	14.0	12.1	10.1
63°	15.2	15.2	16.1	15.2	15.2	14.0	13.0	12.1	11.0	9.0	8.1
64°	12.1	12.1	12.1	11.0	11.0	11.0	10.1	10.1	8.1	7.1	6.1
65°	9.0	9.0	9.0	9.0	8.1	8.1	8.1	7.1	7.1	5.1	5.1
66°	7.1	7.1	7.1	6.1	6.1	6.1	6.1	6.1	5.1	4.0	3.0

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TEST NUMBER: P1212750

CATALOG NUMBER: LDA4A15950D010TE 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	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
75°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
80°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0
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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	116.9	116.9	116.9	116.9	116.9	116.9	116.9	116.9	116.9	116.9	116.9
2.5°	180.4	179.3	169.2	169.2	173.3	167.2	164.2	157.1	135.0	114.9	96.7
5°	398.9	387.9	353.6	343.5	342.5	314.3	298.3	262.9	154.1	109.7	83.7
7.5°	736.4	703.1	644.7	613.5	575.2	553.1	513.8	453.4	175.2	102.9	75.6
10°	1089.0	1051.8	965.1	909.8	880.6	808.9	743.6	660.9	196.5	97.8	74.6
12.5°	1493.0	1409.4	1326.8	1228.1	1140.5	1076.9	968.2	871.5	210.6	96.7	81.5
15°	1930.3	1825.5	1684.5	1551.5	1427.5	1336.9	1190.8	1060.8	215.6	105.8	106.8
17.5°	2419.9	2223.4	2019.9	1838.5	1668.4	1546.4	1365.1	1212.0	212.6	129.9	170.4
20°	2878.3	2617.4	2341.2	2089.5	1848.7	1690.5	1481.0	1314.7	213.6	191.5	229.7
22.5°	3242.0	2924.6	2588.1	2280.8	1975.7	1786.2	1557.6	1369.2	239.8	204.5	156.1
25°	3510.0	3136.2	2750.3	2396.8	2075.4	1862.7	1611.9	1385.3	223.6	117.8	88.6
26°	3581.4	3187.7	2780.6	2413.9	2087.4	1862.7	1603.8	1368.1	193.4	93.7	73.6
27°	3621.8	3210.8	2785.6	2405.8	2072.4	1841.6	1574.6	1333.8	158.1	78.5	62.4
28°	3626.9	3200.7	2760.4	2372.7	2030.0	1796.3	1522.2	1281.5	130.9	66.6	51.4
29°	3599.6	3163.4	2712.1	2317.2	1965.6	1729.7	1450.8	1216.9	111.9	57.4	43.3
30°	3542.2	3097.8	2638.6	2242.6	1882.0	1649.2	1367.1	1145.5	97.8	49.4	36.3
31°	3459.7	3008.3	2559.0	2153.9	1794.3	1568.6	1288.6	1073.0	86.6	41.3	30.2
32°	3352.9	2902.4	2456.2	2058.3	1715.7	1492.1	1213.0	999.4	77.6	35.4	25.3
33°	3233.9	2782.6	2344.4	1958.5	1640.1	1413.5	1133.4	921.9	69.5	29.2	21.1
34°	3096.9	2650.5	2225.4	1858.8	1559.6	1326.8	1047.8	842.3	60.4	24.1	18.2
35°	2940.7	2503.5	2097.5	1768.0	1469.8	1233.1	958.2	757.6	53.5	21.1	15.2
36°	2771.6	2350.4	1968.6	1664.4	1373.2	1135.4	863.4	671.9	46.4	18.2	13.0
37°	2594.2	2191.3	1839.7	1546.4	1266.4	1031.6	765.6	579.3	40.2	15.2	11.0
38°	2406.8	2031.0	1714.8	1434.7	1153.6	919.9	666.0	477.5	35.4	13.0	10.1
39°	2215.3	1872.8	1590.8	1311.6	1037.7	810.0	570.2	370.8	31.2	11.0	9.0
40°	2028.0	1723.8	1459.7	1177.7	921.9	702.1	477.5	273.0	27.2	10.1	7.1
42.5°	1606.0	1323.7	1047.8	785.8	642.7	445.3	264.9	143.1	19.1	7.1	5.1
45°	1050.7	782.8	565.1	382.7	332.4	188.3	122.9	88.6	14.0	5.1	4.0
47.5°	435.2	317.4	220.7	159.1	129.0	100.7	78.5	57.4	10.1	4.0	4.0
50°	191.5	151.2	119.8	93.7	81.5	65.5	50.3	35.4	6.1	3.0	3.0
51°	153.2	122.0	93.7	74.6	66.6	53.5	41.3	28.2	6.1	3.0	3.0
52°	120.8	94.7	73.6	57.4	53.5	43.3	34.3	23.1	5.1	3.0	3.0
53°	92.8	71.4	55.4	45.3	42.2	35.4	28.2	19.1	4.0	3.0	3.0
54°	68.5	54.5	43.3	35.4	34.3	28.2	23.1	16.1	4.0	3.0	3.0
55°	50.3	42.2	33.2	28.2	27.2	23.1	19.1	13.0	4.0	3.0	3.0
57.5°	26.2	22.2	18.2	16.1	16.1	15.2	13.0	8.1	3.0	2.0	3.0
60°	14.0	12.1	10.1	9.0	11.0	10.1	9.0	5.1	3.0	2.0	3.0
61°	11.0	10.1	8.1	7.1	9.0	8.1	8.1	4.0	3.0	3.0	3.0
62°	9.0	8.1	7.1	6.1	8.1	7.1	7.1	4.0	3.0	3.0	3.0
63°	7.1	6.1	5.1	5.1	7.1	7.1	6.1	3.0	3.0	3.0	3.0
64°	5.1	5.1	4.0	4.0	6.1	6.1	5.1	3.0	3.0	3.0	3.0
65°	4.0	4.0	3.0	3.0	5.1	5.1	5.1	3.0	3.0	3.0	3.0
66°	3.0	3.0	3.0	2.0	4.0	5.1	5.1	2.0	3.0	3.0	3.0



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CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
72.5°	1.0	1.0	1.0	1.0	3.0	4.0	4.0	2.0	3.0	3.0	3.0
75°	1.0	1.0	1.0	1.0	3.0	4.0	4.0	2.0	3.0	3.0	3.0
77.5°	1.0	1.0	1.0	1.0	3.0	4.0	4.0	2.0	3.0	3.0	4.0
80°	1.0	1.0	1.0	1.0	3.0	4.0	4.0	2.0	3.0	3.0	4.0
82.5°	1.0	1.0	1.0	1.0	3.0	4.0	4.0	2.0	3.0	3.0	4.0
85°	1.0	1.0	1.0	1.0	3.0	4.0	4.0	2.0	3.0	3.0	4.0
87.5°	1.0	1.0	1.0	1.0	3.0	4.0	4.0	2.0	3.0	3.0	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°	116.9	116.9	116.9
2.5°	87.7	82.7	81.5
5°	72.5	67.5	66.6
7.5°	66.6	62.4	61.4
10°	68.5	69.5	71.4
12.5°	87.7	96.7	104.8
15°	141.1	177.3	202.5
17.5°	245.8	272.0	289.1
20°	215.6	198.4	199.6
22.5°	120.8	108.8	107.7
25°	73.6	66.6	64.5
26°	61.4	55.4	53.5
27°	50.3	45.3	43.3
28°	41.3	37.3	36.3
29°	35.4	30.2	29.2
30°	29.2	25.3	24.1
31°	24.1	21.1	20.2
32°	21.1	18.2	16.1
33°	17.2	15.2	14.0
34°	15.2	12.1	11.0
35°	12.1	10.1	10.1
36°	11.0	9.0	8.1
37°	9.0	7.1	7.1
38°	8.1	6.1	5.1
39°	7.1	5.1	4.0
40°	6.1	4.0	3.0
42.5°	4.0	2.0	1.0
45°	3.0	1.0	0.0
47.5°	2.0	1.0	0.0
50°	2.0	0.0	0.0
51°	2.0	0.0	0.0
52°	2.0	0.0	0.0
53°	2.0	0.0	0.0
54°	2.0	0.0	0.0
55°	2.0	0.0	0.0
57.5°	2.0	0.0	0.0
60°	2.0	0.0	0.0
61°	2.0	0.0	0.0
62°	2.0	0.0	0.0
63°	2.0	1.0	0.0
64°	2.0	1.0	0.0
65°	2.0	1.0	0.0
66°	2.0	1.0	0.0



TEST NUMBER: P1212750

CATALOG NUMBER: LDA4A15950D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	3.0	1.0	0.0
75°	3.0	1.0	0.0
77.5°	3.0	1.0	0.0
80°	3.0	1.0	0.0
82.5°	3.0	1.0	0.0
85°	3.0	1.0	0.0
87.5°	2.0	1.0	0.0
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°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	2.0
70°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0

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67.5°	2.0	2.0	2.0	2.0	4.0	4.0	4.0	2.0	3.0	3.0	3.0
70°	1.0	1.0	1.0	2.0	3.0	4.0	4.0	2.0	3.0	3.0	3.0

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67.5°	2.0	1.0	0.0
70°	2.0	1.0	0.0

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(END OF REPORT)