

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: P1191623

Luminaire Tested: **LDA4A20930D010TE 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: P1191623
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: LDA4A20930D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

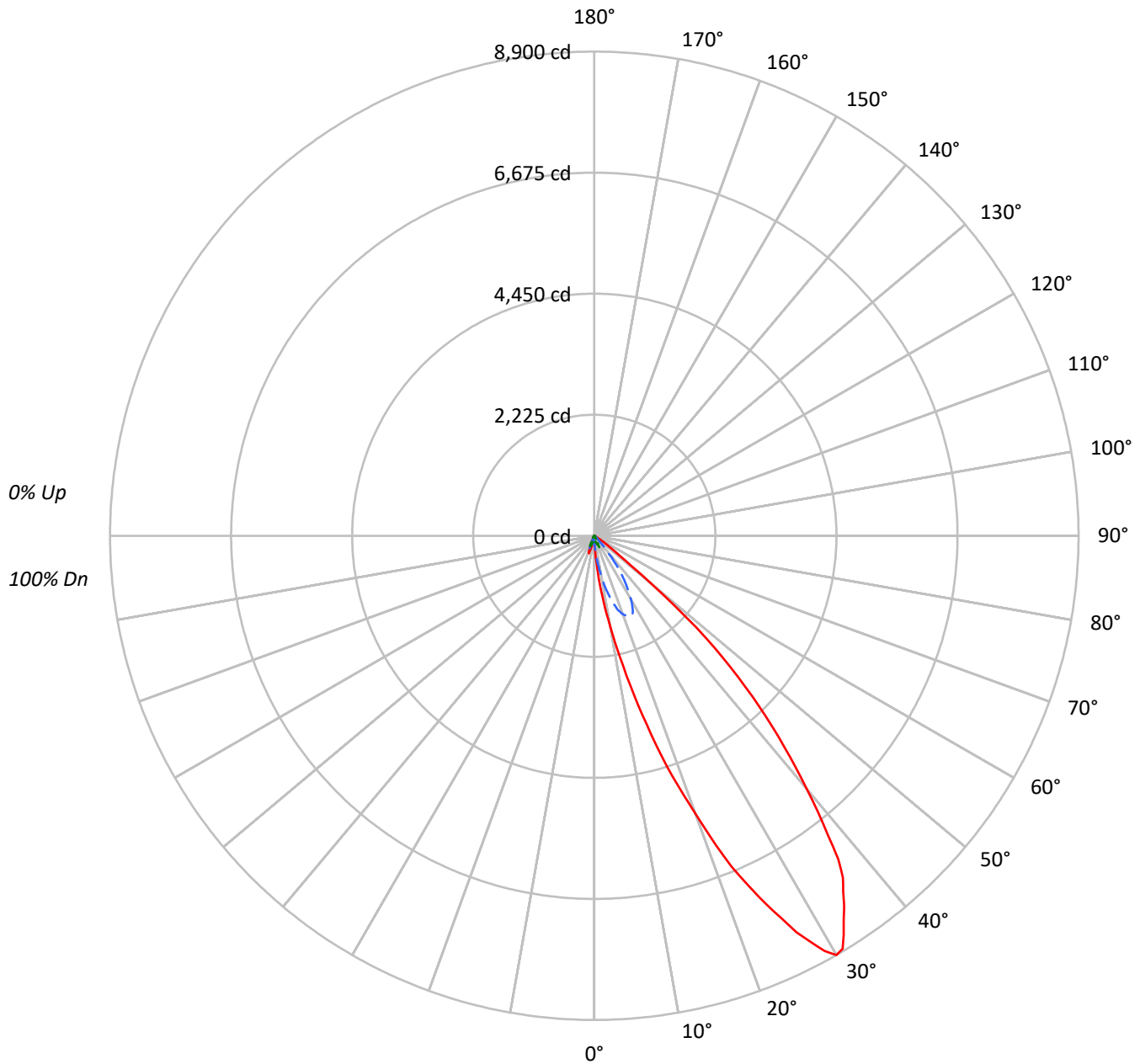
Lumens per Lamp: N/A
Luminaire Lumens: 2061.2 lumens
Efficiency: N/A
Efficacy: 71.6 lumens/watt
Spacing Criteria (0/90/45): 2.56 / 1.01 / 1.3
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 28.8
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		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	58	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	38		48	42	37			47	41	37			46

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	16861	16861	16861
5°	73200	15898	9633
10°	211106	14303	10483
15°	432560	15796	30226
20°	713643	29363	30623
25°	1016589	18754	10262
30°	1267531	8232	4016
35°	1201019	3734	1762
40°	978174	1884	564
45°	685189	1029	0
50°	256732	672	0
55°	54708	753	0
60°	10460	567	0
65°	3094	1022	0
70°	829	1262	0
75°	0	1668	0
80°	0	2486	0
85°	0	4953	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	28.6	1.4
10°-20°	246.8	12.0
20°-30°	630.6	30.6
30°-40°	730.3	35.4
40°-50°	376.8	18.3
50°-60°	38.9	1.9
60°-70°	4.2	0.2
70°-80°	2.6	0.1
80°-90°	2.4	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°	906.0	44.0
0°-40°	1636.3	79.4
0°-60°	2052.0	99.6
0°-90°	2061.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2061.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	137	137	137	137	137	
5°	591	307	128	85	78	92
15°	3387	1240	124	165	237	1037
25°	7470	1619	138	86	75	3470
35°	7976	886	25	14	12	4884
45°	3928	104	6	4	0	2941
55°	254	15	4	2	0	319
65°	11	4	4	2	0	14
75°	0	2	4	4	0	0
85°	0	2	4	4	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°	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7
2.5°	235.6	227.3	221.4	223.7	236.7	222.6	223.7	219.1	216.8	214.3	208.5
5°	591.2	567.8	552.4	553.6	519.4	545.3	543.0	523.0	510.0	485.2	471.2
7.5°	1109.4	1058.9	1041.2	1035.3	1038.8	1014.0	1003.5	977.5	943.4	898.6	872.7
10°	1685.5	1654.8	1644.2	1625.4	1624.2	1580.6	1554.7	1521.7	1453.3	1390.9	1345.0
12.5°	2455.8	2361.5	2345.0	2309.7	2300.3	2226.0	2171.8	2123.6	2009.4	1926.8	1853.9
15°	3387.4	3310.8	3328.5	3220.2	3190.6	3069.3	2968.1	2864.4	2679.5	2553.5	2423.9
17.5°	4445.0	4347.3	4359.0	4223.6	3979.8	4002.2	3855.0	3712.5	3452.2	3283.8	3083.5
20°	5436.8	5367.3	5371.9	5191.8	5109.4	4885.5	4688.9	4519.2	4173.0	3958.7	3693.5
22.5°	6578.1	6397.8	6363.6	6118.6	5973.8	5673.5	5399.1	5174.1	4754.8	4513.4	4188.3
25°	7469.6	7345.9	7251.7	6961.9	6760.5	6369.6	6051.6	5718.3	5214.1	4946.8	4560.4
26°	7804.1	7687.5	7566.2	7254.1	7028.0	6614.6	6268.2	5910.3	5370.7	5084.6	4664.1
27°	8182.2	7991.5	7845.4	7495.5	7250.5	6816.0	6404.9	6066.9	5489.8	5172.9	4730.0
28°	8449.6	8258.8	8065.6	7685.2	7420.2	6965.6	6538.0	6169.3	5559.3	5215.4	4757.1
29°	8724.0	8521.4	8239.9	7825.4	7536.8	7058.5	6614.6	6220.0	5579.3	5212.9	4743.0
30°	8899.5	8695.8	8331.7	7904.3	7599.2	7096.3	6635.7	6210.6	5547.4	5165.8	4691.2
31°	8858.2	8671.0	8309.4	7912.5	7593.3	7073.9	6596.9	6143.4	5467.3	5082.2	4596.9
32°	8652.2	8493.2	8218.6	7857.1	7528.5	6997.3	6506.3	6037.4	5351.9	4984.4	4482.7
33°	8413.1	8281.2	8091.5	7745.3	7415.4	6881.9	6381.3	5906.6	5218.8	4851.3	4345.0
34°	8212.9	8093.8	7918.3	7594.4	7261.1	6727.7	6223.5	5741.9	5067.0	4694.7	4182.4
35°	7976.1	7867.8	7705.2	7390.7	7046.8	6520.3	6025.7	5551.0	4887.8	4508.6	3994.0
36°	7769.9	7599.2	7434.3	7128.0	6785.3	6269.5	5792.4	5327.2	4685.3	4295.5	3781.9
37°	7450.8	7280.1	7103.4	6813.7	6475.6	5982.1	5533.3	5088.1	4454.5	4135.3	3555.8
38°	6973.8	6894.9	6718.2	6442.5	6128.2	5665.3	5249.5	4816.0	4194.1	3825.4	3315.5
39°	6528.6	6463.8	6291.8	6039.7	5748.8	5324.8	4935.0	4509.8	3900.9	3552.2	3062.4
40°	6075.0	6010.3	5849.0	5621.7	5360.2	4970.4	4600.6	4183.5	3593.5	3270.7	2807.9
42.5°	5000.9	4933.9	4899.7	4667.6	4390.9	4056.4	3713.7	3336.7	2835.0	2570.0	2207.2
45°	3928.0	3866.7	3738.4	3643.0	3395.5	3117.7	2838.5	2531.1	2161.3	1899.8	1560.6
47.5°	2807.9	2778.4	2783.2	2606.5	2370.9	2151.9	1921.0	1643.0	1315.6	986.9	724.3
50°	1337.9	1346.2	1379.2	1255.6	1078.9	950.5	813.9	638.4	466.4	366.3	283.8
51°	866.9	876.3	904.6	816.2	687.8	600.6	513.5	414.6	331.0	281.5	225.0
52°	586.6	586.6	592.4	540.7	477.0	427.6	376.9	319.1	257.9	221.4	177.8
53°	440.5	439.3	441.6	407.5	363.9	327.4	292.1	249.6	203.7	173.2	137.8
54°	336.8	335.6	338.0	312.2	281.5	254.4	227.3	195.5	157.8	129.6	103.7
55°	254.4	254.4	257.9	237.9	214.3	193.2	173.2	146.1	116.6	94.3	75.4
57.5°	102.5	102.5	106.0	98.9	88.3	80.1	73.0	62.4	51.8	43.6	35.3
60°	42.4	43.6	44.7	41.3	38.8	36.5	34.2	30.6	27.1	22.4	18.8
61°	31.9	31.9	33.0	30.6	29.4	27.1	25.9	23.6	21.1	17.7	15.3
62°	23.6	23.6	24.8	23.6	22.4	21.1	20.0	18.8	16.5	14.2	11.7
63°	17.7	17.7	18.8	17.7	17.7	16.5	15.3	14.2	12.9	10.6	9.4
64°	14.2	14.2	14.2	12.9	12.9	12.9	11.7	11.7	9.4	8.3	7.1
65°	10.6	10.6	10.6	10.6	9.4	9.4	9.4	8.3	8.3	5.9	5.9
66°	8.3	8.3	8.3	7.1	7.1	7.1	7.1	7.1	5.9	4.8	3.5



TEST NUMBER: P1191623

CATALOG NUMBER: LDA4A20930D010TE 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	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
75°	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
77.5°	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
80°	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.2
82.5°	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.2
85°	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.2
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	67.5°	90°	112.5°
0°	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7	136.7
2.5°	210.8	209.7	197.9	197.9	202.6	195.5	192.0	183.7	157.8	134.2	113.1
5°	466.4	453.5	413.4	401.7	400.5	367.5	348.7	307.4	180.3	128.4	97.7
7.5°	861.0	822.2	753.8	717.3	672.6	646.7	600.6	530.0	204.9	120.2	88.3
10°	1273.2	1229.6	1128.3	1063.5	1029.4	945.8	869.2	772.6	229.7	114.2	87.2
12.5°	1745.6	1647.8	1551.2	1435.7	1333.3	1259.0	1131.9	1018.8	246.2	113.1	95.4
15°	2256.7	2134.2	1969.3	1813.8	1669.0	1563.0	1392.1	1240.2	252.1	123.7	124.8
17.5°	2829.1	2599.4	2361.5	2149.5	1950.4	1808.0	1596.0	1416.9	248.5	151.9	199.1
20°	3365.0	3059.9	2737.3	2442.8	2161.3	1976.4	1731.4	1537.0	249.6	223.7	268.6
22.5°	3790.1	3419.1	3025.7	2666.6	2309.7	2088.3	1820.8	1600.6	280.3	239.1	182.6
25°	4103.5	3666.5	3215.4	2802.0	2426.3	2177.8	1884.4	1619.4	261.5	137.8	103.7
26°	4187.2	3726.5	3250.7	2822.0	2440.4	2177.8	1875.0	1599.4	226.2	109.5	86.0
27°	4234.2	3753.6	3256.7	2812.6	2422.8	2153.0	1841.0	1559.3	184.9	91.8	73.0
28°	4240.1	3741.9	3227.1	2773.8	2373.3	2100.0	1779.7	1498.2	153.1	77.8	60.1
29°	4208.3	3698.3	3170.7	2708.9	2298.0	2022.3	1696.0	1422.8	130.8	67.2	50.7
30°	4141.1	3621.7	3084.7	2621.7	2200.1	1928.0	1598.3	1339.1	114.2	57.8	42.4
31°	4044.5	3516.9	2991.7	2518.2	2097.7	1833.9	1506.3	1254.4	101.4	48.2	35.3
32°	3919.7	3393.2	2871.5	2406.3	2005.8	1744.4	1418.0	1168.4	90.6	41.3	29.4
33°	3780.7	3253.1	2740.8	2289.7	1917.4	1652.4	1325.1	1077.7	81.2	34.2	24.8
34°	3620.6	3098.8	2601.7	2173.0	1823.3	1551.2	1224.9	984.6	70.7	28.2	21.1
35°	3438.0	2926.8	2452.2	2067.0	1718.5	1441.6	1120.0	885.7	62.4	24.8	17.7
36°	3240.2	2747.9	2301.4	1945.7	1605.4	1327.4	1009.4	785.5	54.2	21.1	15.3
37°	3032.8	2561.8	2150.7	1808.0	1480.6	1206.0	895.1	677.2	47.1	17.7	12.9
38°	2813.7	2374.4	2004.6	1677.2	1348.5	1075.3	778.6	558.3	41.3	15.3	11.7
39°	2590.0	2189.5	1859.8	1533.6	1213.1	947.0	666.7	433.4	36.5	12.9	10.6
40°	2370.9	2015.2	1706.6	1376.9	1077.7	820.9	558.3	319.1	31.9	11.7	8.3
42.5°	1877.5	1547.6	1224.9	918.7	751.5	520.6	309.7	167.2	22.4	8.3	5.9
45°	1228.5	915.1	660.7	447.6	388.6	220.2	143.6	103.7	16.5	5.9	4.8
47.5°	508.8	371.0	257.9	186.1	150.7	117.7	91.8	67.2	11.7	4.8	4.8
50°	223.7	176.7	140.2	109.5	95.4	76.6	58.9	41.3	7.1	3.5	3.5
51°	179.0	142.5	109.5	87.2	77.8	62.4	48.2	33.0	7.1	3.5	3.5
52°	141.3	110.8	86.0	67.2	62.4	50.7	40.1	27.1	5.9	3.5	3.5
53°	108.3	83.7	64.7	53.0	49.5	41.3	33.0	22.4	4.8	3.5	3.5
54°	80.1	63.6	50.7	41.3	40.1	33.0	27.1	18.8	4.8	3.5	3.5
55°	58.9	49.5	38.8	33.0	31.9	27.1	22.4	15.3	4.8	3.5	3.5
57.5°	30.6	25.9	21.1	18.8	18.8	17.7	15.3	9.4	3.5	2.3	3.5
60°	16.5	14.2	11.7	10.6	12.9	11.7	10.6	5.9	3.5	2.3	3.5
61°	12.9	11.7	9.4	8.3	10.6	9.4	9.4	4.8	3.5	3.5	3.5
62°	10.6	9.4	8.3	7.1	9.4	8.3	8.3	4.8	3.5	3.5	3.5
63°	8.3	7.1	5.9	5.9	8.3	8.3	7.1	3.5	3.5	3.5	3.5
64°	5.9	5.9	4.8	4.8	7.1	7.1	5.9	3.5	3.5	3.5	3.5
65°	4.8	4.8	3.5	3.5	5.9	5.9	5.9	3.5	3.5	3.5	3.5
66°	3.5	3.5	3.5	2.3	4.8	5.9	5.9	2.3	3.5	3.5	3.5



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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°	1.2	1.2	1.2	1.2	3.5	4.8	4.8	2.3	3.5	3.5	3.5
75°	1.2	1.2	1.2	1.2	3.5	4.8	4.8	2.3	3.5	3.5	3.5
77.5°	1.2	1.2	1.2	1.2	3.5	4.8	4.8	2.3	3.5	3.5	4.8
80°	1.2	1.2	1.2	1.2	3.5	4.8	4.8	2.3	3.5	3.5	4.8
82.5°	1.2	1.2	1.2	1.2	3.5	4.8	4.8	2.3	3.5	3.5	4.8
85°	1.2	1.2	1.2	1.2	3.5	4.8	4.8	2.3	3.5	3.5	4.8
87.5°	1.2	1.2	1.2	1.2	3.5	4.8	4.8	2.3	3.5	3.5	4.8
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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CATALOG NUMBER: LDA4A20930D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	136.7	136.7	136.7
2.5°	102.5	96.6	95.4
5°	84.9	78.9	77.8
7.5°	77.8	73.0	71.8
10°	80.1	81.2	83.7
12.5°	102.5	113.1	122.5
15°	164.9	207.4	236.7
17.5°	287.4	318.0	338.0
20°	252.1	232.0	233.3
22.5°	141.3	127.1	126.0
25°	86.0	77.8	75.4
26°	71.8	64.7	62.4
27°	58.9	53.0	50.7
28°	48.2	43.6	42.4
29°	41.3	35.3	34.2
30°	34.2	29.4	28.2
31°	28.2	24.8	23.6
32°	24.8	21.1	18.8
33°	20.0	17.7	16.5
34°	17.7	14.2	12.9
35°	14.2	11.7	11.7
36°	12.9	10.6	9.4
37°	10.6	8.3	8.3
38°	9.4	7.1	5.9
39°	8.3	5.9	4.8
40°	7.1	4.8	3.5
42.5°	4.8	2.3	1.2
45°	3.5	1.2	0.0
47.5°	2.3	1.2	0.0
50°	2.3	0.0	0.0
51°	2.3	0.0	0.0
52°	2.3	0.0	0.0
53°	2.3	0.0	0.0
54°	2.3	0.0	0.0
55°	2.3	0.0	0.0
57.5°	2.3	0.0	0.0
60°	2.3	0.0	0.0
61°	2.3	0.0	0.0
62°	2.3	0.0	0.0
63°	2.3	1.2	0.0
64°	2.3	1.2	0.0
65°	2.3	1.2	0.0
66°	2.3	1.2	0.0



TEST NUMBER: P1191623

CATALOG NUMBER: LDA4A20930D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	3.5	1.2	0.0
75°	3.5	1.2	0.0
77.5°	3.5	1.2	0.0
80°	3.5	1.2	0.0
82.5°	3.5	1.2	0.0
85°	3.5	1.2	0.0
87.5°	2.3	1.2	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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Peachtree City, GA 30269



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— 0°-180° - - 45°-225° - - - 90°-270°

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67.5°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	3.5	2.3
70°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.2	1.2

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67.5°	2.3	2.3	2.3	2.3	4.8	4.8	4.8	2.3	3.5	3.5	3.5
70°	1.2	1.2	1.2	2.3	3.5	4.8	4.8	2.3	3.5	3.5	3.5

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67.5°	2.3	1.2	0.0
70°	2.3	1.2	0.0

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(END OF REPORT)