

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: P1191533

Luminaire Tested: **LDA4A15930D010TE 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: P1191533
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: LDA4A15930D010TE 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

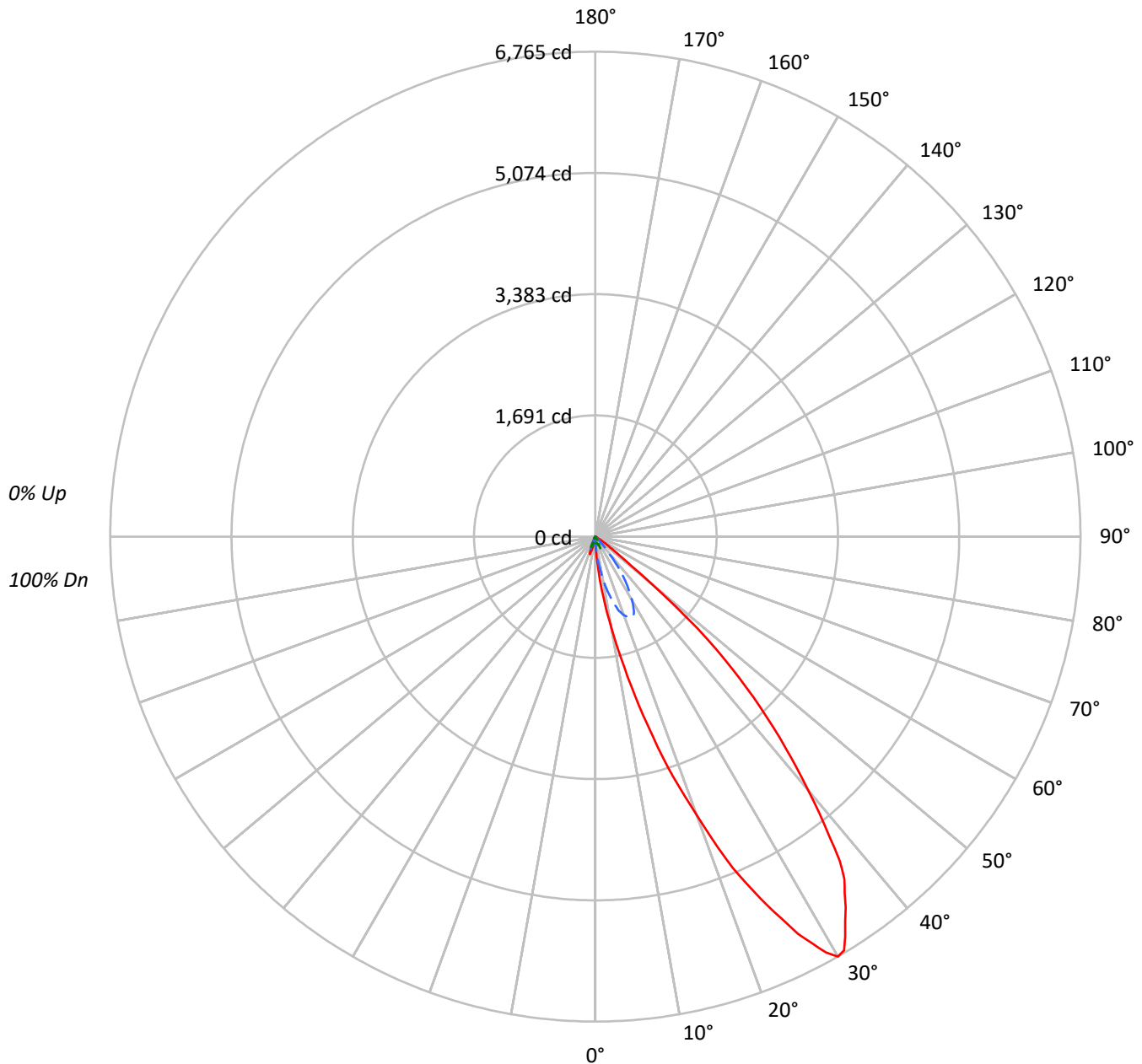
Lumens per Lamp: N/A
Luminaire Lumens: 1566.9 lumens
Efficiency: N/A
Efficacy: 76.8 lumens/watt
Spacing Criteria (0/90/45): 2.56 / 1.01 / 1.3
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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
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	37		48	42	37			47	41	37			46

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	12816	12816	12816
5°	55656	12085	7305
10°	160456	10884	7953
15°	328794	12003	22985
20°	542452	22314	23273
25°	772744	14249	7798
30°	963506	6253	3062
35°	912935	2831	1355
40°	743573	1449	435
45°	520834	785	0
50°	195154	518	0
55°	41590	581	0
60°	7943	444	0
65°	2335	788	0
70°	649	974	0
75°	0	1287	0
80°	0	1918	0
85°	0	3821	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	21.8	1.4
10°-20°	187.6	12.0
20°-30°	479.3	30.6
30°-40°	555.1	35.4
40°-50°	286.4	18.3
50°-60°	29.6	1.9
60°-70°	3.2	0.2
70°-80°	2.0	0.1
80°-90°	1.8	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°	688.7	44.0
0°-40°	1243.8	79.4
0°-60°	1559.8	99.5
0°-90°	1566.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1566.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	104	104	104	104	104	
5°	450	234	98	64	59	70
15°	2575	943	94	125	180	788
25°	5678	1231	105	65	57	2638
35°	6063	673	19	11	9	3713
45°	2986	79	4	3	0	2236
55°	193	12	3	2	0	242
65°	8	3	3	2	0	10
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°	103.9	103.9	103.9	103.9	103.9	103.9	103.9	103.9	103.9	103.9	103.9
2.5°	179.0	172.8	168.3	170.0	180.0	169.2	170.0	166.5	164.7	163.0	158.5
5°	449.5	431.6	419.9	420.8	394.8	414.5	412.8	397.5	387.7	368.9	358.1
7.5°	843.4	804.8	791.5	787.0	789.7	770.9	762.8	743.0	717.1	683.0	663.4
10°	1281.1	1258.0	1249.8	1235.5	1234.6	1201.5	1181.7	1156.8	1104.8	1057.4	1022.5
12.5°	1866.7	1795.1	1782.6	1755.7	1748.5	1692.1	1651.0	1614.3	1527.4	1464.7	1409.2
15°	2574.8	2516.7	2530.1	2447.7	2425.4	2333.2	2256.1	2177.3	2036.7	1941.0	1842.6
17.5°	3378.8	3304.5	3313.5	3210.6	3025.2	3042.3	2930.3	2821.9	2624.1	2496.1	2343.8
20°	4132.6	4079.9	4083.4	3946.5	3883.8	3713.7	3564.1	3435.3	3172.1	3009.1	2807.6
22.5°	5000.2	4863.3	4837.2	4651.1	4540.9	4312.6	4104.0	3933.0	3614.3	3430.8	3183.7
25°	5677.9	5584.0	5512.4	5292.2	5139.0	4841.7	4600.0	4346.6	3963.4	3760.2	3466.6
26°	5932.2	5843.6	5751.4	5514.2	5342.2	5028.0	4764.7	4492.6	4082.6	3865.0	3545.3
27°	6219.6	6074.6	5963.6	5697.7	5511.4	5181.0	4868.6	4611.7	4173.0	3932.2	3595.5
28°	6422.9	6277.8	6130.9	5841.8	5640.4	5294.7	4969.8	4689.6	4225.8	3964.4	3616.1
29°	6631.5	6477.4	6263.5	5948.3	5729.1	5365.5	5028.0	4728.0	4241.1	3962.6	3605.3
30°	6764.9	6610.0	6333.3	6008.3	5776.4	5394.2	5044.1	4720.9	4216.8	3926.7	3565.9
31°	6733.5	6591.2	6316.2	6014.6	5772.0	5377.1	5014.5	4669.9	4156.0	3863.2	3494.3
32°	6576.8	6456.0	6247.4	5972.5	5722.8	5319.0	4945.6	4589.3	4068.3	3788.9	3407.5
33°	6395.1	6294.8	6150.7	5887.5	5636.7	5231.2	4850.7	4489.9	3967.1	3687.7	3302.7
34°	6242.9	6152.5	6019.1	5772.8	5519.5	5113.9	4730.7	4364.6	3851.6	3568.6	3179.2
35°	6062.9	5980.5	5857.0	5617.9	5356.5	4956.4	4580.3	4219.5	3715.5	3427.2	3036.0
36°	5906.2	5776.4	5651.1	5418.3	5157.8	4765.6	4403.1	4049.5	3561.4	3265.1	2874.8
37°	5663.6	5533.8	5399.5	5179.2	4922.3	4547.2	4206.1	3867.7	3386.1	3143.3	2702.9
38°	5301.0	5241.0	5106.8	4897.2	4658.2	4306.4	3990.3	3660.8	3188.2	2908.0	2520.3
39°	4962.6	4913.3	4782.7	4591.1	4369.9	4047.7	3751.2	3428.1	2965.2	2700.1	2327.7
40°	4618.0	4568.7	4446.0	4273.2	4074.6	3778.1	3497.1	3180.1	2731.5	2486.2	2134.4
42.5°	3801.4	3750.4	3724.4	3548.1	3337.6	3083.5	2822.9	2536.4	2155.0	1953.6	1677.8
45°	2985.8	2939.2	2841.7	2769.1	2581.1	2369.9	2157.7	1924.0	1642.9	1444.1	1186.2
47.5°	2134.4	2112.0	2115.6	1981.2	1802.2	1635.7	1460.2	1249.0	1000.1	750.3	550.6
50°	1017.0	1023.3	1048.4	954.4	820.1	722.5	618.7	485.2	354.5	278.5	215.7
51°	658.9	666.1	687.5	620.5	522.8	456.5	390.4	315.1	251.6	214.0	171.0
52°	445.9	445.9	450.3	411.0	362.6	325.0	286.5	242.6	196.1	168.3	135.1
53°	334.8	334.0	335.7	309.8	276.7	248.9	222.0	189.8	154.9	131.6	104.7
54°	256.1	255.1	256.9	237.3	214.0	193.4	172.8	148.6	120.0	98.5	78.8
55°	193.4	193.4	196.1	180.8	163.0	146.9	131.6	111.0	88.6	71.6	57.3
57.5°	77.9	77.9	80.6	75.3	67.1	60.8	55.5	47.5	39.4	33.1	26.9
60°	32.2	33.1	34.0	31.4	29.6	27.8	25.9	23.3	20.6	17.0	14.3
61°	24.1	24.1	25.1	23.3	22.4	20.6	19.6	17.9	16.1	13.4	11.6
62°	17.9	17.9	18.8	17.9	17.0	16.1	15.3	14.3	12.5	10.8	9.0
63°	13.4	13.4	14.3	13.4	13.4	12.5	11.6	10.8	9.8	8.0	7.2
64°	10.8	10.8	10.8	9.8	9.8	9.8	9.0	9.0	7.2	6.3	5.3
65°	8.0	8.0	8.0	8.0	7.2	7.2	7.2	6.3	6.3	4.5	4.5
66°	6.3	6.3	6.3	5.3	5.3	5.3	5.3	5.3	4.5	3.5	2.7

Classified

Scaled Data Report

Cooper Lighting Solutions Photometric Lab

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CATALOG NUMBER: LDA4A15930D010TE 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°	103.9	103.9	103.9	103.9	103.9	103.9	103.9	103.9	103.9	103.9	103.9
2.5°	160.2	159.4	150.4	150.4	154.0	148.6	145.9	139.6	120.0	102.0	85.9
5°	354.5	344.7	314.2	305.3	304.4	279.3	265.0	233.7	137.0	97.6	74.3
7.5°	654.4	625.0	573.0	545.2	511.2	491.5	456.5	402.8	155.7	91.4	67.1
10°	967.8	934.6	857.7	808.5	782.5	718.9	660.7	587.3	174.5	86.9	66.3
12.5°	1326.8	1252.5	1179.1	1091.3	1013.5	957.1	860.3	774.4	187.1	85.9	72.5
15°	1715.3	1622.3	1496.9	1378.8	1268.6	1188.0	1058.2	942.7	191.6	94.0	94.9
17.5°	2150.5	1975.9	1795.1	1633.9	1482.5	1374.3	1213.1	1077.0	188.9	115.5	151.4
20°	2557.9	2326.0	2080.6	1856.9	1642.9	1502.3	1316.0	1168.4	189.8	170.0	204.1
22.5°	2881.1	2599.1	2300.1	2026.9	1755.7	1587.4	1384.1	1216.6	213.1	181.8	138.8
25°	3119.2	2787.0	2444.2	2129.9	1844.3	1655.5	1432.5	1231.1	198.8	104.7	78.8
26°	3182.7	2832.7	2471.1	2145.1	1855.1	1655.5	1425.3	1215.8	172.0	83.3	65.3
27°	3218.6	2853.3	2475.6	2137.9	1841.6	1636.6	1399.4	1185.4	140.6	69.8	55.5
28°	3223.1	2844.4	2453.1	2108.5	1804.0	1596.3	1352.7	1138.8	116.5	59.0	45.7
29°	3198.8	2811.3	2410.1	2059.2	1746.7	1537.2	1289.2	1081.5	99.4	51.0	38.5
30°	3147.8	2753.1	2344.8	1993.0	1672.4	1465.6	1214.9	1018.0	86.9	43.9	32.2
31°	3074.5	2673.4	2274.0	1914.1	1594.5	1393.9	1145.0	953.5	77.0	36.7	26.9
32°	2979.6	2579.3	2182.8	1829.1	1524.7	1325.9	1078.0	888.1	69.0	31.4	22.4
33°	2873.9	2472.8	2083.4	1740.4	1457.6	1256.0	1007.2	819.1	61.8	25.9	18.8
34°	2752.1	2355.6	1977.7	1651.8	1385.9	1179.1	931.1	748.5	53.7	21.5	16.1
35°	2613.4	2224.8	1864.0	1571.2	1306.2	1095.8	851.5	673.2	47.5	18.8	13.4
36°	2463.0	2088.7	1749.4	1479.0	1220.3	1009.0	767.3	597.1	41.2	16.1	11.6
37°	2305.4	1947.3	1634.9	1374.3	1125.4	916.8	680.5	514.8	35.9	13.4	9.8
38°	2138.9	1804.9	1523.7	1274.9	1025.0	817.4	591.8	424.4	31.4	11.6	9.0
39°	1968.7	1664.3	1413.7	1165.6	922.1	719.9	506.7	329.5	27.8	9.8	8.0
40°	1802.2	1531.9	1297.2	1046.6	819.1	624.0	424.4	242.6	24.1	9.0	6.3
42.5°	1427.0	1176.4	931.1	698.3	571.2	395.7	235.5	127.1	17.0	6.3	4.5
45°	933.8	695.6	502.2	340.2	295.5	167.5	109.2	78.8	12.5	4.5	3.5
47.5°	386.7	282.0	196.1	141.4	114.5	89.6	69.8	51.0	9.0	3.5	3.5
50°	170.0	134.3	106.5	83.3	72.5	58.2	44.7	31.4	5.3	2.7	2.7
51°	136.1	108.3	83.3	66.3	59.0	47.5	36.7	25.1	5.3	2.7	2.7
52°	107.5	84.1	65.3	51.0	47.5	38.5	30.4	20.6	4.5	2.7	2.7
53°	82.4	63.5	49.2	40.2	37.6	31.4	25.1	17.0	3.5	2.7	2.7
54°	60.8	48.4	38.5	31.4	30.4	25.1	20.6	14.3	3.5	2.7	2.7
55°	44.7	37.6	29.6	25.1	24.1	20.6	17.0	11.6	3.5	2.7	2.7
57.5°	23.3	19.6	16.1	14.3	14.3	13.4	11.6	7.2	2.7	1.8	2.7
60°	12.5	10.8	9.0	8.0	9.8	9.0	8.0	4.5	2.7	1.8	2.7
61°	9.8	9.0	7.2	6.3	8.0	7.2	7.2	3.5	2.7	2.7	2.7
62°	8.0	7.2	6.3	5.3	7.2	6.3	6.3	3.5	2.7	2.7	2.7
63°	6.3	5.3	4.5	4.5	6.3	6.3	5.3	2.7	2.7	2.7	2.7
64°	4.5	4.5	3.5	3.5	5.3	5.3	4.5	2.7	2.7	2.7	2.7
65°	3.5	3.5	2.7	2.7	4.5	4.5	4.5	2.7	2.7	2.7	2.7
66°	2.7	2.7	2.7	1.8	3.5	4.5	4.5	1.8	2.7	2.7	2.7



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CATALOG NUMBER: LDA4A15930D010TE 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°	1.0	1.0	1.0	1.0	2.7	3.5	3.5	1.8	2.7	2.7	2.7
75°	1.0	1.0	1.0	1.0	2.7	3.5	3.5	1.8	2.7	2.7	2.7
77.5°	1.0	1.0	1.0	1.0	2.7	3.5	3.5	1.8	2.7	2.7	3.5
80°	1.0	1.0	1.0	1.0	2.7	3.5	3.5	1.8	2.7	2.7	3.5
82.5°	1.0	1.0	1.0	1.0	2.7	3.5	3.5	1.8	2.7	2.7	3.5
85°	1.0	1.0	1.0	1.0	2.7	3.5	3.5	1.8	2.7	2.7	3.5
87.5°	1.0	1.0	1.0	1.0	2.7	3.5	3.5	1.8	2.7	2.7	3.5
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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CATALOG NUMBER: LDA4A15930D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	103.9	103.9	103.9
2.5°	77.9	73.4	72.5
5°	64.5	60.0	59.0
7.5°	59.0	55.5	54.5
10°	60.8	61.8	63.5
12.5°	77.9	85.9	93.1
15°	125.3	157.6	180.0
17.5°	218.5	241.8	256.9
20°	191.6	176.3	177.3
22.5°	107.5	96.7	95.9
25°	65.3	59.0	57.3
26°	54.5	49.2	47.5
27°	44.7	40.2	38.5
28°	36.7	33.1	32.2
29°	31.4	26.9	25.9
30°	25.9	22.4	21.5
31°	21.5	18.8	17.9
32°	18.8	16.1	14.3
33°	15.3	13.4	12.5
34°	13.4	10.8	9.8
35°	10.8	9.0	9.0
36°	9.8	8.0	7.2
37°	8.0	6.3	6.3
38°	7.2	5.3	4.5
39°	6.3	4.5	3.5
40°	5.3	3.5	2.7
42.5°	3.5	1.8	1.0
45°	2.7	1.0	0.0
47.5°	1.8	1.0	0.0
50°	1.8	0.0	0.0
51°	1.8	0.0	0.0
52°	1.8	0.0	0.0
53°	1.8	0.0	0.0
54°	1.8	0.0	0.0
55°	1.8	0.0	0.0
57.5°	1.8	0.0	0.0
60°	1.8	0.0	0.0
61°	1.8	0.0	0.0
62°	1.8	0.0	0.0
63°	1.8	1.0	0.0
64°	1.8	1.0	0.0
65°	1.8	1.0	0.0
66°	1.8	1.0	0.0



TEST NUMBER: P1191533

CATALOG NUMBER: LDA4A15930D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	2.7	1.0	0.0
75°	2.7	1.0	0.0
77.5°	2.7	1.0	0.0
80°	2.7	1.0	0.0
82.5°	2.7	1.0	0.0
85°	2.7	1.0	0.0
87.5°	1.8	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°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.7	1.8
70°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.0	1.0

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67.5°	1.8	1.8	1.8	1.8	3.5	3.5	3.5	1.8	2.7	2.7	2.7
70°	1.0	1.0	1.0	1.8	2.7	3.5	3.5	1.8	2.7	2.7	2.7

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67.5°	1.8	1.0	0.0
70°	1.8	1.0	0.0

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(END OF REPORT)