

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: P1191473

Luminaire Tested: **LDA4A10940D010TE LAR15SP 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: P1191473
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P25648)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A10940D010TE LAR15SP 4LA1 30° Tilt
Description: PORTFOLIO 4" Adjustable Reflector, Self-flanged Trim Ring, 15° Spot
Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

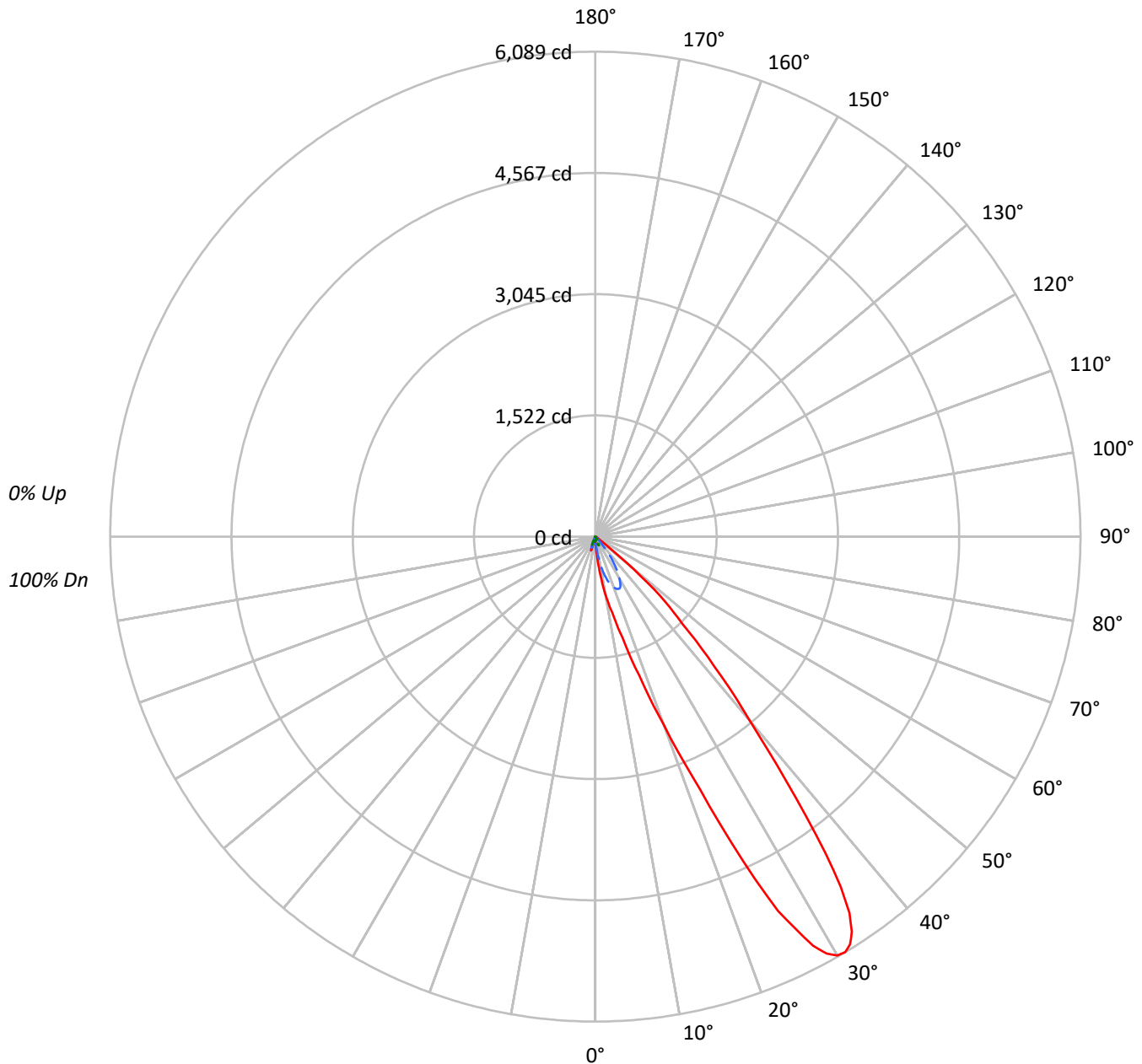
Lumens per Lamp: N/A
Luminaire Lumens: 982.3 lumens
Efficiency: N/A
Efficacy: 79.2 lumens/watt
Spacing Criteria (0/90/45): 2.52 / 1.04 / 1.28
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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



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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	98	96			96
2	106	100	95	91	103	98	94	90		95	91	88			92	89	86			89
3	99	91	85	80	97	90	84	80		87	82	78			84	80	77			82
4	92	83	77	71	90	82	76	71		80	74	70			78	73	69			76
5	86	76	69	64	84	75	68	63		73	67	63			71	66	62			70
6	80	69	62	57	79	69	62	57		67	61	56			65	60	56			64
7	75	64	56	51	73	63	56	51		62	55	51			60	55	50			59
8	70	58	51	46	69	58	51	46		57	50	46			55	50	46			54
9	65	54	47	42	64	53	46	42		52	46	41			51	45	41			50
10	61	49	42	38	60	49	42	38		48	42	38			47	41	37			46

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	7068	7068	7068
5°	31697	6637	4309
10°	93836	6112	5498
15°	167513	7240	15490
20°	331843	14242	16631
25°	645739	9295	4736
30°	864961	3461	1652
35°	809352	1476	647
40°	485013	692	209
45°	269139	419	0
50°	98728	345	0
55°	15075	280	0
60°	3306	321	0
65°	1080	379	0
70°	216	469	0
75°	0	858	0
80°	0	1279	0
85°	0	2547	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	12.6	1.3
10°-20°	106.1	10.8
20°-30°	316.7	32.2
30°-40°	375.1	38.2
40°-50°	155.6	15.8
50°-60°	12.1	1.2
60°-70°	1.7	0.2
70°-80°	1.3	0.1
80°-90°	1.2	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°	435.4	44.3
0°-40°	810.5	82.5
0°-60°	978.2	99.6
0°-90°	982.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	982.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	57	57	57	57	57	
5°	256	129	54	37	35	41
15°	1312	554	57	85	121	433
25°	4745	720	68	40	35	2167
35°	5375	401	10	6	4	3115
45°	1543	35	2	2	0	1258
55°	70	5	1	1	0	103
65°	4	1	1	1	0	5
75°	0	1	2	1	0	0
85°	0	1	2	1	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°	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3
2.5°	99.4	94.5	96.9	92.6	95.1	90.8	87.8	90.8	90.8	88.4	84.7
5°	256.0	254.9	259.7	248.1	251.2	238.3	227.4	230.4	228.0	220.1	206.1
7.5°	487.7	482.9	488.4	471.8	472.4	451.2	434.6	438.3	427.3	414.0	389.5
10°	749.2	742.5	748.6	729.1	725.4	695.6	672.4	676.1	651.0	629.1	591.9
12.5°	975.9	975.4	955.8	959.5	952.3	906.5	891.9	893.2	858.9	834.6	790.1
15°	1311.8	1324.7	1328.4	1303.3	1258.2	1175.3	1138.7	1124.7	1069.3	1028.4	964.4
17.5°	1828.2	1845.9	1785.5	1800.2	1725.8	1596.0	1523.4	1480.1	1375.9	1299.1	1183.3
20°	2528.1	2512.9	2425.7	2414.6	2287.9	2120.9	1968.5	1886.8	1726.4	1614.2	1445.5
22.5°	3431.5	3420.0	3270.6	3204.1	2938.9	2703.7	2506.1	2301.3	2063.0	1913.0	1683.8
25°	4744.7	4691.6	4403.9	4214.8	3748.5	3348.7	3019.4	2701.2	2336.1	2173.3	1881.8
26°	5228.1	5215.2	4915.4	4666.6	4104.5	3608.3	3164.5	2845.7	2443.3	2253.1	1938.0
27°	5518.3	5620.0	5340.8	5059.2	4444.8	3850.3	3335.8	2962.1	2526.9	2309.2	1973.9
28°	5819.4	5885.2	5635.3	5281.7	4717.2	4043.0	3465.6	3040.8	2578.1	2336.7	1986.2
29°	5985.2	6048.7	5816.3	5484.8	4895.8	4168.0	3542.6	3075.5	2596.9	2336.1	1975.2
30°	6073.0	6132.1	5905.4	5583.5	4969.7	4206.9	3559.0	3061.5	2578.7	2308.0	1944.1
31°	6088.9	6138.2	5914.5	5580.4	4941.5	4158.8	3512.6	3003.6	2529.9	2256.2	1897.1
32°	6035.3	6073.6	5846.3	5490.2	4815.4	4036.9	3416.3	2914.0	2455.5	2191.6	1836.7
33°	5909.7	5978.5	5701.2	5308.0	4595.9	3856.4	3279.8	2796.9	2362.9	2107.4	1763.0
34°	5701.8	5745.6	5458.5	5022.7	4303.2	3636.9	3112.2	2661.0	2256.8	2008.1	1679.4
35°	5375.0	5414.1	5096.4	4637.3	3969.9	3389.4	2920.7	2511.1	2138.0	1896.5	1586.8
36°	4922.7	4959.9	4627.7	4209.4	3633.4	3131.6	2718.9	2347.6	2009.3	1777.0	1488.6
37°	4394.2	4426.4	4130.8	3789.4	3303.0	2870.7	2514.6	2181.8	1873.3	1655.1	1395.4
38°	3883.3	3912.6	3673.5	3395.6	2984.1	2615.9	2311.1	2009.9	1733.2	1532.6	1297.3
39°	3422.4	3448.0	3255.3	3026.2	2680.5	2371.5	2108.1	1839.2	1592.3	1410.0	1196.1
40°	3012.2	3034.1	2875.6	2687.2	2405.0	2142.8	1910.5	1674.0	1454.5	1291.2	1101.5
42.5°	2211.1	2215.9	2121.4	2010.5	1791.0	1640.5	1475.3	1304.6	1144.2	1032.1	911.4
45°	1542.9	1603.3	1541.7	1468.0	1310.7	1216.2	1110.7	1007.7	915.1	807.2	687.7
47.5°	1109.6	1112.0	1075.4	1029.1	904.6	840.0	753.6	628.5	536.5	383.4	284.7
50°	514.5	485.8	487.7	456.0	406.6	323.2	270.0	192.6	153.6	109.7	88.4
51°	306.1	284.7	287.7	265.2	232.2	181.0	153.6	123.2	106.7	82.9	68.3
52°	178.6	171.3	170.7	160.4	136.5	125.6	110.9	92.6	81.1	64.1	53.0
53°	129.8	125.0	125.0	118.2	101.8	94.5	84.1	71.3	62.2	48.8	40.3
54°	96.9	93.2	93.2	89.0	82.3	70.7	63.4	53.0	46.4	37.8	29.9
55°	70.1	67.6	67.6	64.6	59.7	51.2	45.7	38.5	34.1	27.4	21.9
57.5°	29.3	28.0	28.0	26.9	25.6	21.9	20.8	17.7	15.3	13.4	11.0
60°	13.4	12.9	13.4	12.9	11.6	12.2	10.3	9.2	8.5	7.3	6.1
61°	10.3	9.8	9.8	9.8	8.5	8.5	7.9	7.3	6.8	5.5	4.8
62°	7.9	7.3	7.3	7.3	6.8	6.8	6.1	5.5	5.5	4.3	3.7
63°	6.1	5.5	5.5	5.5	4.8	4.8	4.8	4.3	4.3	3.7	3.1
64°	4.3	4.3	4.3	4.3	4.3	3.7	3.7	3.7	3.1	2.4	2.4
65°	3.7	3.1	3.7	3.1	3.1	3.1	3.1	3.1	2.4	1.8	1.8
66°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.8	1.3



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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°	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6
75°	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6
85°	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6
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°	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3
2.5°	82.9	85.3	83.6	78.6	81.1	79.9	77.4	75.5	64.6	56.0	47.5
5°	195.6	197.6	187.1	168.9	162.8	153.0	139.0	129.3	73.1	53.6	42.0
7.5°	370.0	357.8	348.1	314.0	299.3	276.8	249.9	231.1	83.6	50.6	39.0
10°	560.2	540.7	520.6	470.7	444.4	409.6	371.3	349.3	94.5	48.8	39.0
12.5°	748.6	722.3	685.8	631.0	593.8	546.8	494.3	455.4	102.4	49.9	45.1
15°	912.0	880.3	840.0	777.9	734.6	676.1	607.8	554.1	106.1	56.7	62.8
17.5°	1089.9	1032.8	966.3	887.0	839.4	771.8	695.0	629.7	106.1	72.0	100.6
20°	1294.8	1189.9	1083.3	972.4	905.3	834.6	752.3	682.2	110.3	108.5	138.3
22.5°	1485.7	1341.1	1190.6	1046.1	952.9	876.0	792.5	712.0	128.0	119.5	92.1
25°	1633.8	1450.3	1272.9	1097.3	991.9	906.5	816.9	719.9	117.1	68.3	49.9
26°	1672.2	1474.1	1289.3	1103.4	993.7	905.9	814.4	711.4	98.2	54.3	40.3
27°	1692.3	1482.0	1290.6	1098.0	986.4	895.6	801.1	693.7	78.6	43.9	32.9
28°	1692.3	1472.8	1277.7	1082.7	967.4	876.0	777.9	665.7	64.1	35.9	26.2
29°	1675.2	1449.0	1252.1	1059.5	941.8	848.6	746.2	632.8	54.3	29.9	21.4
30°	1642.4	1414.4	1218.0	1029.7	908.9	817.5	711.4	598.7	47.0	24.3	17.1
31°	1596.0	1375.3	1175.9	997.3	878.5	788.8	679.7	563.9	40.9	19.5	14.0
32°	1540.5	1326.5	1132.6	963.8	853.4	762.1	646.8	527.3	35.4	16.4	12.2
33°	1476.5	1271.7	1087.5	930.9	829.1	731.5	610.9	487.7	30.4	13.4	10.3
34°	1405.8	1211.3	1041.3	895.6	799.2	693.2	568.7	445.7	26.2	11.6	8.5
35°	1329.0	1143.7	993.7	859.5	765.7	650.5	523.6	401.1	22.5	9.8	7.3
36°	1246.1	1080.3	947.3	823.6	724.3	604.1	474.3	355.4	19.5	7.9	6.8
37°	1163.2	1020.5	901.7	785.1	676.1	551.7	422.5	307.9	17.1	6.8	5.5
38°	1084.5	962.6	856.5	740.7	619.9	493.8	368.9	260.4	14.6	6.1	4.8
39°	1010.7	906.5	810.2	687.7	562.1	437.7	317.0	210.9	12.9	5.5	4.3
40°	944.4	853.4	759.5	628.5	502.4	380.3	264.6	157.3	11.0	4.3	3.7
42.5°	804.1	707.8	584.0	438.3	339.6	220.7	123.2	58.5	7.9	3.1	3.1
45°	531.0	408.5	277.4	165.2	111.6	67.0	49.9	35.4	6.1	2.4	2.4
47.5°	177.4	112.7	82.3	59.1	50.6	40.3	32.4	21.9	4.3	1.8	1.8
50°	67.6	54.9	45.1	34.1	30.4	24.3	19.5	12.9	3.1	1.8	1.8
51°	53.0	43.3	35.4	26.9	24.3	19.5	15.8	11.0	2.4	1.8	1.8
52°	40.9	33.5	27.4	20.8	19.5	15.8	13.4	9.2	2.4	1.3	1.8
53°	31.1	25.6	20.8	15.8	15.3	12.9	11.0	7.3	1.8	1.3	1.8
54°	23.2	19.5	16.4	12.9	12.9	11.0	9.2	6.1	1.8	1.3	1.8
55°	17.7	14.6	12.9	9.8	10.3	9.2	7.9	4.8	1.8	1.3	1.8
57.5°	9.2	8.5	7.3	6.1	6.8	6.1	5.5	3.1	1.8	1.3	1.8
60°	5.5	4.8	4.3	3.7	4.3	4.3	4.3	1.8	1.8	1.3	1.8
61°	4.3	3.7	3.1	3.1	3.7	3.7	3.7	1.8	1.8	1.3	1.8
62°	3.1	3.1	2.4	2.4	3.7	3.1	3.1	1.8	1.8	1.3	1.8
63°	2.4	2.4	2.4	1.8	3.1	3.1	3.1	1.8	1.8	1.3	1.8
64°	1.8	1.8	1.8	1.8	2.4	3.1	3.1	1.3	1.8	1.3	1.8
65°	1.8	1.8	1.3	1.3	2.4	2.4	2.4	1.3	1.8	1.3	1.8
66°	1.3	1.3	1.3	1.3	2.4	2.4	2.4	1.3	1.8	1.3	1.8



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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°	0.6	0.6	0.6	0.6	1.8	1.8	2.4	1.3	1.8	1.8	1.8
75°	0.6	0.6	0.6	0.6	1.8	1.8	2.4	1.3	1.8	1.8	1.8
77.5°	0.6	0.6	0.6	0.6	1.8	1.8	2.4	1.3	1.8	1.8	2.4
80°	0.6	0.6	0.6	0.6	1.8	1.8	2.4	1.3	1.8	1.8	2.4
82.5°	0.6	0.6	0.6	0.6	1.8	1.8	2.4	1.3	1.8	1.8	2.4
85°	0.6	0.6	0.6	0.6	1.8	1.8	2.4	1.3	1.8	1.8	2.4
87.5°	0.6	0.6	0.6	0.6	1.8	1.8	2.4	1.3	1.8	1.8	1.8
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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CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	57.3	57.3	57.3
2.5°	43.3	41.4	40.3
5°	37.2	35.4	34.8
7.5°	34.8	34.1	34.8
10°	38.5	40.9	43.9
12.5°	51.2	60.4	65.2
15°	84.7	110.3	121.3
17.5°	149.4	170.0	182.3
20°	131.7	120.1	126.7
22.5°	71.3	62.2	64.1
25°	39.6	34.1	34.8
26°	31.7	27.4	27.4
27°	25.6	21.9	21.9
28°	20.8	17.7	17.7
29°	16.4	14.0	14.0
30°	13.4	11.6	11.6
31°	11.0	9.2	9.2
32°	9.2	7.9	7.3
33°	7.9	6.8	6.1
34°	6.8	5.5	4.8
35°	5.5	4.3	4.3
36°	4.8	3.7	3.7
37°	4.3	3.1	3.1
38°	3.7	2.4	2.4
39°	3.1	2.4	1.8
40°	2.4	1.8	1.3
42.5°	1.8	1.3	0.6
45°	1.8	0.6	0.0
47.5°	1.3	0.6	0.0
50°	1.3	0.0	0.0
51°	1.3	0.0	0.0
52°	1.3	0.0	0.0
53°	0.6	0.0	0.0
54°	1.3	0.0	0.0
55°	0.6	0.0	0.0
57.5°	1.3	0.0	0.0
60°	1.3	0.0	0.0
61°	1.3	0.0	0.0
62°	1.3	0.0	0.0
63°	1.3	0.0	0.0
64°	1.3	0.6	0.0
65°	1.3	0.6	0.0
66°	1.3	0.6	0.0



TEST NUMBER: P1191473

CATALOG NUMBER: LDA4A10940D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	1.3	0.6	0.0
75°	1.3	0.6	0.0
77.5°	1.3	0.6	0.0
80°	1.3	0.6	0.0
82.5°	1.3	0.6	0.0
85°	1.3	0.6	0.0
87.5°	1.3	0.6	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°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.3	1.3
70°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.3	1.3	0.6	0.6

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67.5°	1.3	0.6	1.3	1.3	1.8	2.4	2.4	1.3	1.8	1.3	1.8
70°	0.6	0.6	0.6	0.6	1.8	1.8	2.4	1.3	1.8	1.3	1.8

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67.5°	1.3	0.6	0.0
70°	1.3	0.6	0.0

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(END OF REPORT)