

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: P1191869

Luminaire Tested: **LDA4A35927D010TE 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: P1191869
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: LDA4A35927D010TE 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 / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

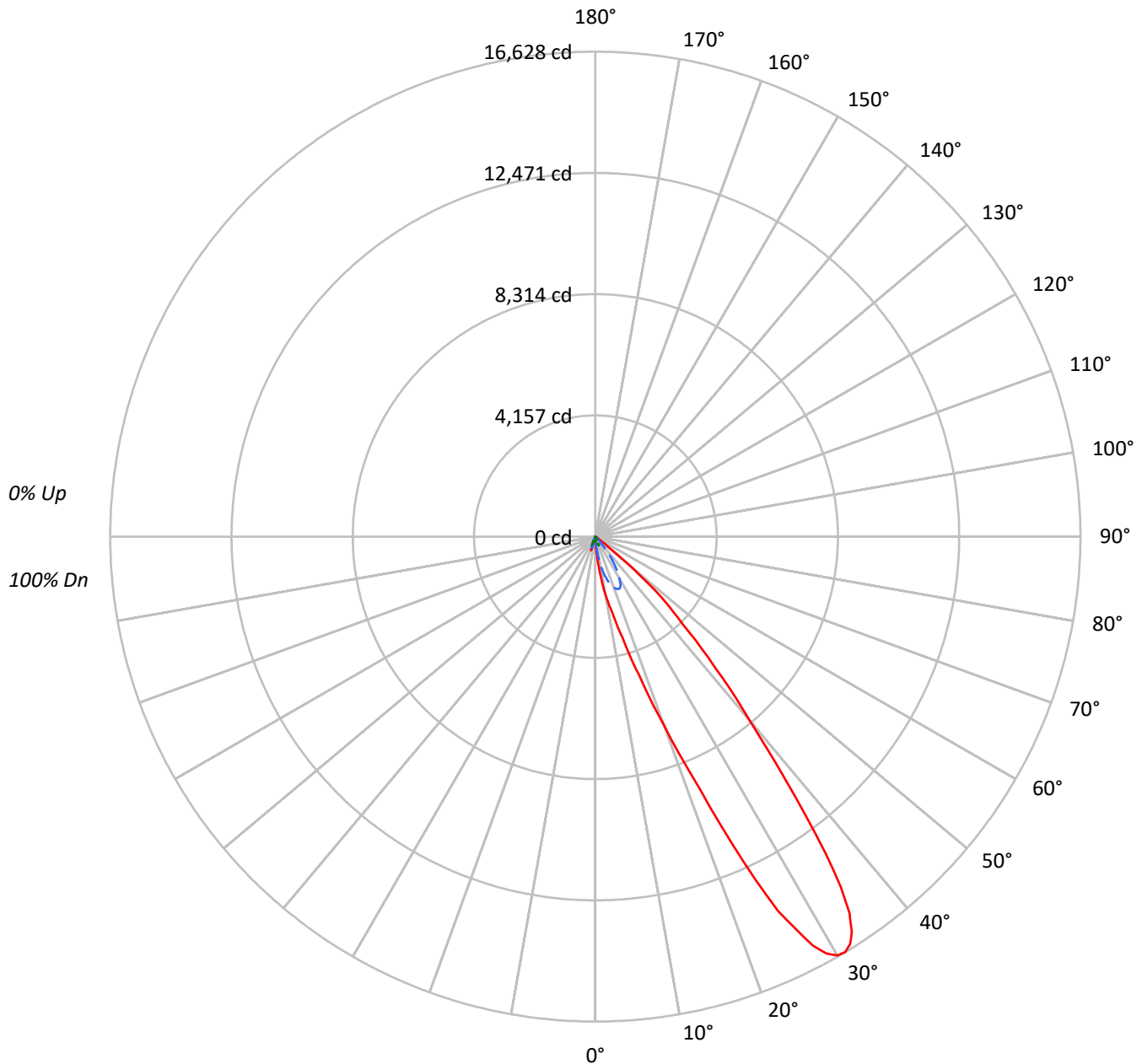
Lumens per Lamp: N/A
Luminaire Lumens: 2682.4 lumens
Efficiency: N/A
Efficacy: 57.0 lumens/watt
Spacing Criteria (0/90/45): 2.52 / 1.04 / 1.28
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 47.1
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

TEST NUMBER: P1191869

CATALOG NUMBER: LDA4A35927D010TE LAR15SP 4LA1 30° Tilt

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°	19291	19291	19291
5°	86573	18139	11750
10°	256258	16683	15005
15°	457487	19767	42293
20°	906191	38893	45456
25°	1763380	25368	12916
30°	2362056	9486	4501
35°	2210202	4020	1747
40°	1324456	1868	531
45°	735008	1151	0
50°	269627	959	0
55°	41160	710	0
60°	9029	814	0
65°	2889	963	0
70°	613	1190	0
75°	0	2383	0
80°	0	3552	0
85°	0	7076	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	34.4	1.3
10°-20°	289.7	10.8
20°-30°	864.9	32.2
30°-40°	1024.3	38.2
40°-50°	424.9	15.8
50°-60°	33.0	1.2
60°-70°	4.5	0.2
70°-80°	3.4	0.1
80°-90°	3.2	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°	1189.0	44.3
0°-40°	2213.3	82.5
0°-60°	2671.3	99.6
0°-90°	2682.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2682.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	156	156	156	156	156	
5°	699	353	146	102	95	111
15°	3583	1513	155	232	331	1183
25°	12957	1966	186	108	95	5918
35°	14678	1095	27	15	12	8506
45°	4214	97	7	5	0	3435
55°	191	13	3	2	0	280
65°	10	3	3	3	0	12
75°	0	3	5	3	0	0
85°	0	3	5	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°	156.4	156.4	156.4	156.4	156.4	156.4	156.4	156.4	156.4	156.4	156.4
2.5°	271.4	258.0	264.8	253.0	259.6	248.0	239.8	248.0	248.0	241.4	231.5
5°	699.2	695.9	709.2	677.5	685.8	650.8	621.0	629.3	622.7	601.0	562.7
7.5°	1331.8	1318.4	1333.5	1288.6	1290.2	1231.9	1187.0	1197.0	1167.0	1130.4	1063.7
10°	2046.0	2027.7	2044.3	1991.1	1981.0	1899.5	1836.2	1846.2	1777.9	1718.1	1616.5
12.5°	2665.3	2663.7	2610.3	2620.3	2600.4	2475.5	2435.5	2438.8	2345.7	2279.1	2157.5
15°	3582.6	3617.6	3627.5	3559.2	3436.1	3209.6	3109.7	3071.4	2920.0	2808.5	2633.7
17.5°	4992.6	5040.9	4876.0	4916.1	4713.0	4358.4	4160.2	4042.1	3757.4	3547.6	3231.3
20°	6903.7	6862.2	6624.1	6594.1	6247.8	5791.6	5375.6	5152.4	4714.6	4408.3	3947.1
22.5°	9370.9	9339.3	8931.5	8750.0	8025.8	7383.3	6843.8	6284.4	5633.5	5224.0	4598.1
25°	12956.8	12812.0	12026.3	11510.2	10236.6	9144.6	8245.5	7376.5	6379.3	5934.9	5139.1
26°	14276.9	14241.9	13422.9	12743.7	11208.8	9853.7	8641.7	7771.1	6672.3	6153.0	5292.2
27°	15069.4	15347.4	14584.9	13815.8	12137.8	10514.7	9109.6	8089.1	6900.4	6306.1	5390.5
28°	15891.7	16071.5	15389.0	14423.5	12881.9	11040.7	9464.2	8303.8	7040.3	6381.0	5423.8
29°	16344.6	16517.7	15883.4	14977.8	13369.7	11381.9	9674.0	8398.8	7091.8	6379.3	5393.8
30°	16584.3	16745.9	16126.5	15247.5	13571.0	11488.5	9718.9	8360.4	7041.9	6302.8	5308.9
31°	16627.6	16762.4	16151.5	15239.2	13494.5	11357.1	9592.3	8202.3	6908.7	6161.3	5180.7
32°	16481.1	16586.0	15965.0	14992.8	13149.9	11024.0	9329.3	7957.5	6705.6	5984.8	5015.8
33°	16138.1	16326.3	15568.8	14495.1	12550.5	10531.3	8956.3	7637.9	6452.6	5755.0	4814.5
34°	15570.5	15690.4	14906.2	13716.0	11751.6	9931.9	8498.5	7266.6	6162.9	5483.8	4586.4
35°	14678.2	14784.7	13917.3	12663.9	10840.9	9256.1	7975.9	6857.2	5838.3	5179.1	4333.4
36°	13443.0	13544.5	12637.2	11495.1	9922.0	8551.9	7424.8	6411.0	5487.1	4852.8	4065.3
37°	11999.6	12087.8	11280.4	10348.2	9019.6	7839.4	6867.1	5958.1	5115.8	4519.8	3810.6
38°	10604.5	10684.4	10031.9	9272.7	8148.9	7143.5	6311.1	5488.7	4732.8	4185.2	3542.7
39°	9345.9	9415.8	8889.7	8263.9	7320.0	6475.9	5756.7	5022.6	4348.3	3850.5	3266.3
40°	8225.6	8285.5	7852.7	7338.2	6567.5	5851.6	5217.3	4571.5	3972.1	3525.9	3008.2
42.5°	6038.0	6051.4	5793.4	5490.4	4891.1	4479.8	4028.7	3562.6	3124.8	2818.4	2488.9
45°	4213.6	4378.3	4210.2	4008.8	3579.3	3321.1	3033.2	2751.8	2498.8	2204.2	1877.8
47.5°	3029.9	3036.5	2936.6	2810.1	2470.5	2294.0	2057.6	1716.4	1465.0	1047.2	777.4
50°	1405.1	1326.9	1331.8	1245.2	1110.5	882.3	737.5	526.1	419.5	299.7	241.4
51°	835.7	777.4	785.7	724.2	634.3	494.4	419.5	336.3	291.3	226.3	186.4
52°	487.8	467.8	466.1	437.8	373.0	343.0	303.0	253.0	221.4	174.8	144.8
53°	354.6	341.3	341.3	322.9	278.0	258.0	229.8	194.8	169.8	133.2	109.9
54°	264.8	254.7	254.7	243.1	224.7	193.0	173.1	144.8	126.6	103.2	81.5
55°	191.4	184.8	184.8	176.5	163.2	139.8	124.9	104.9	93.3	74.9	60.0
57.5°	79.9	76.6	76.6	73.2	69.9	60.0	56.7	48.2	41.6	36.6	30.0
60°	36.6	35.0	36.6	35.0	31.6	33.3	28.3	25.0	23.4	20.0	16.6
61°	28.3	26.7	26.7	26.7	23.4	23.4	21.7	20.0	18.4	14.9	13.3
62°	21.7	20.0	20.0	20.0	18.4	18.4	16.6	14.9	14.9	11.6	9.9
63°	16.6	14.9	14.9	14.9	13.3	13.3	13.3	11.6	11.6	9.9	8.3
64°	11.6	11.6	11.6	11.6	11.6	9.9	9.9	9.9	8.3	6.6	6.6
65°	9.9	8.3	9.9	8.3	8.3	8.3	8.3	8.3	6.6	5.0	5.0
66°	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	5.0	3.3



TEST NUMBER: P1191869

CATALOG NUMBER: LDA4A35927D010TE LAR15SP 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	0.0	0.0	1.7	1.7	1.7	1.7	1.7	1.7	1.7
75°	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7	1.7
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7
80°	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7
85°	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7	1.7
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.7	1.7	1.7
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°	156.4	156.4	156.4	156.4	156.4	156.4	156.4	156.4	156.4	156.4	156.4
2.5°	226.3	233.1	228.0	214.7	221.4	218.1	211.4	206.5	176.5	153.1	129.9
5°	534.4	539.3	511.2	461.1	444.5	417.9	379.6	352.9	199.8	146.5	114.8
7.5°	1010.6	977.3	950.6	857.3	817.4	755.7	682.5	631.0	228.0	138.2	106.5
10°	1529.8	1476.7	1421.6	1285.1	1213.5	1118.8	1013.9	953.9	258.0	133.2	106.5
12.5°	2044.3	1972.7	1872.8	1723.0	1621.5	1493.2	1350.1	1243.5	279.7	136.5	123.1
15°	2490.5	2403.9	2294.0	2124.2	2006.0	1846.2	1659.7	1513.3	289.6	154.8	171.5
17.5°	2976.7	2820.1	2638.7	2422.3	2292.4	2107.6	1897.8	1719.7	289.6	196.5	274.7
20°	3535.9	3249.6	2958.3	2655.2	2472.1	2279.1	2054.3	1862.9	301.4	296.3	377.9
22.5°	4057.0	3662.5	3251.2	2856.7	2602.0	2392.3	2164.1	1944.4	349.6	326.3	251.4
25°	4461.6	3960.4	3476.1	2996.6	2708.6	2475.5	2230.7	1966.1	319.6	186.4	136.5
26°	4566.5	4025.3	3521.0	3013.3	2713.5	2473.8	2224.1	1942.7	268.1	148.1	109.9
27°	4621.3	4047.0	3524.3	2998.2	2693.5	2445.5	2187.5	1894.5	214.7	119.8	90.0
28°	4621.3	4022.0	3489.3	2956.6	2642.0	2392.3	2124.2	1818.0	174.8	98.3	71.6
29°	4574.8	3957.1	3419.4	2893.3	2572.0	2317.4	2037.7	1728.0	148.1	81.5	58.3
30°	4484.8	3862.3	3326.1	2811.8	2482.1	2232.4	1942.7	1634.7	128.2	66.6	46.6
31°	4358.4	3755.7	3211.3	2723.5	2398.9	2154.2	1856.2	1539.9	111.5	53.3	38.3
32°	4206.8	3622.5	3093.1	2632.0	2330.6	2080.9	1766.3	1440.0	96.6	44.9	33.3
33°	4032.1	3472.7	2969.9	2542.1	2264.0	1997.8	1668.0	1331.8	83.2	36.6	28.3
34°	3838.9	3307.9	2843.4	2445.5	2182.5	1892.9	1553.2	1217.0	71.6	31.6	23.4
35°	3629.2	3123.1	2713.5	2347.4	2090.9	1776.2	1430.1	1095.4	61.6	26.7	20.0
36°	3402.8	2950.0	2587.0	2249.1	1977.7	1649.8	1295.2	970.6	53.3	21.7	18.4
37°	3176.3	2786.8	2462.2	2144.2	1846.2	1506.6	1153.7	840.7	46.6	18.4	14.9
38°	2961.6	2628.7	2338.9	2022.6	1693.0	1348.4	1007.2	710.8	39.9	16.6	13.3
39°	2760.1	2475.5	2212.5	1877.8	1535.0	1195.3	865.7	576.0	35.0	14.9	11.6
40°	2578.7	2330.6	2074.3	1716.4	1371.8	1038.9	722.6	429.5	30.0	11.6	9.9
42.5°	2195.8	1932.8	1594.8	1197.0	927.2	602.6	336.3	159.9	21.7	8.3	8.3
45°	1450.0	1115.4	757.5	451.2	304.7	183.1	136.5	96.6	16.6	6.6	6.6
47.5°	484.5	308.0	224.7	161.5	138.2	109.9	88.3	60.0	11.6	5.0	5.0
50°	184.8	149.8	123.1	93.3	83.2	66.6	53.3	35.0	8.3	5.0	5.0
51°	144.8	118.1	96.6	73.2	66.6	53.3	43.2	30.0	6.6	5.0	5.0
52°	111.5	91.6	74.9	56.7	53.3	43.2	36.6	25.0	6.6	3.3	5.0
53°	84.8	69.9	56.7	43.2	41.6	35.0	30.0	20.0	5.0	3.3	5.0
54°	63.3	53.3	44.9	35.0	35.0	30.0	25.0	16.6	5.0	3.3	5.0
55°	48.2	39.9	35.0	26.7	28.3	25.0	21.7	13.3	5.0	3.3	5.0
57.5°	25.0	23.4	20.0	16.6	18.4	16.6	14.9	8.3	5.0	3.3	5.0
60°	14.9	13.3	11.6	9.9	11.6	11.6	11.6	5.0	5.0	3.3	5.0
61°	11.6	9.9	8.3	8.3	9.9	9.9	9.9	5.0	5.0	3.3	5.0
62°	8.3	8.3	6.6	6.6	9.9	8.3	8.3	5.0	5.0	3.3	5.0
63°	6.6	6.6	6.6	5.0	8.3	8.3	8.3	5.0	5.0	3.3	5.0
64°	5.0	5.0	5.0	5.0	6.6	8.3	8.3	3.3	5.0	3.3	5.0
65°	5.0	5.0	3.3	3.3	6.6	6.6	6.6	3.3	5.0	3.3	5.0
66°	3.3	3.3	3.3	3.3	6.6	6.6	6.6	3.3	5.0	3.3	5.0



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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°	1.7	1.7	1.7	1.7	5.0	5.0	6.6	3.3	5.0	5.0	5.0
75°	1.7	1.7	1.7	1.7	5.0	5.0	6.6	3.3	5.0	5.0	5.0
77.5°	1.7	1.7	1.7	1.7	5.0	5.0	6.6	3.3	5.0	5.0	6.6
80°	1.7	1.7	1.7	1.7	5.0	5.0	6.6	3.3	5.0	5.0	6.6
82.5°	1.7	1.7	1.7	1.7	5.0	5.0	6.6	3.3	5.0	5.0	6.6
85°	1.7	1.7	1.7	1.7	5.0	5.0	6.6	3.3	5.0	5.0	6.6
87.5°	1.7	1.7	1.7	1.7	5.0	5.0	6.6	3.3	5.0	5.0	5.0
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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TEST NUMBER: P1191869

CATALOG NUMBER: LDA4A35927D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
0°	156.4	156.4	156.4
2.5°	118.1	113.2	109.9
5°	101.6	96.6	94.9
7.5°	94.9	93.3	94.9
10°	104.9	111.5	119.8
12.5°	139.8	164.9	178.1
15°	231.5	301.4	331.2
17.5°	407.9	464.4	497.7
20°	359.6	327.9	346.3
22.5°	194.8	169.8	174.8
25°	108.2	93.3	94.9
26°	86.5	74.9	74.9
27°	69.9	60.0	60.0
28°	56.7	48.2	48.2
29°	44.9	38.3	38.3
30°	36.6	31.6	31.6
31°	30.0	25.0	25.0
32°	25.0	21.7	20.0
33°	21.7	18.4	16.6
34°	18.4	14.9	13.3
35°	14.9	11.6	11.6
36°	13.3	9.9	9.9
37°	11.6	8.3	8.3
38°	9.9	6.6	6.6
39°	8.3	6.6	5.0
40°	6.6	5.0	3.3
42.5°	5.0	3.3	1.7
45°	5.0	1.7	0.0
47.5°	3.3	1.7	0.0
50°	3.3	0.0	0.0
51°	3.3	0.0	0.0
52°	3.3	0.0	0.0
53°	1.7	0.0	0.0
54°	3.3	0.0	0.0
55°	1.7	0.0	0.0
57.5°	3.3	0.0	0.0
60°	3.3	0.0	0.0
61°	3.3	0.0	0.0
62°	3.3	0.0	0.0
63°	3.3	0.0	0.0
64°	3.3	1.7	0.0
65°	3.3	1.7	0.0
66°	3.3	1.7	0.0



TEST NUMBER: P1191869

CATALOG NUMBER: LDA4A35927D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	3.3	1.7	0.0
75°	3.3	1.7	0.0
77.5°	3.3	1.7	0.0
80°	3.3	1.7	0.0
82.5°	3.3	1.7	0.0
85°	3.3	1.7	0.0
87.5°	3.3	1.7	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°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.3	3.3
70°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	3.3	3.3	1.7	1.7

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67.5°	3.3	1.7	3.3	3.3	5.0	6.6	6.6	3.3	5.0	3.3	5.0
70°	1.7	1.7	1.7	1.7	5.0	5.0	6.6	3.3	5.0	3.3	5.0

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67.5°	3.3	1.7	0.0
70°	3.3	1.7	0.0

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(END OF REPORT)