

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: P1191893

Luminaire Tested: **LDA4A35930D010TE 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: P1191893
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: LDA4A35930D010TE 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

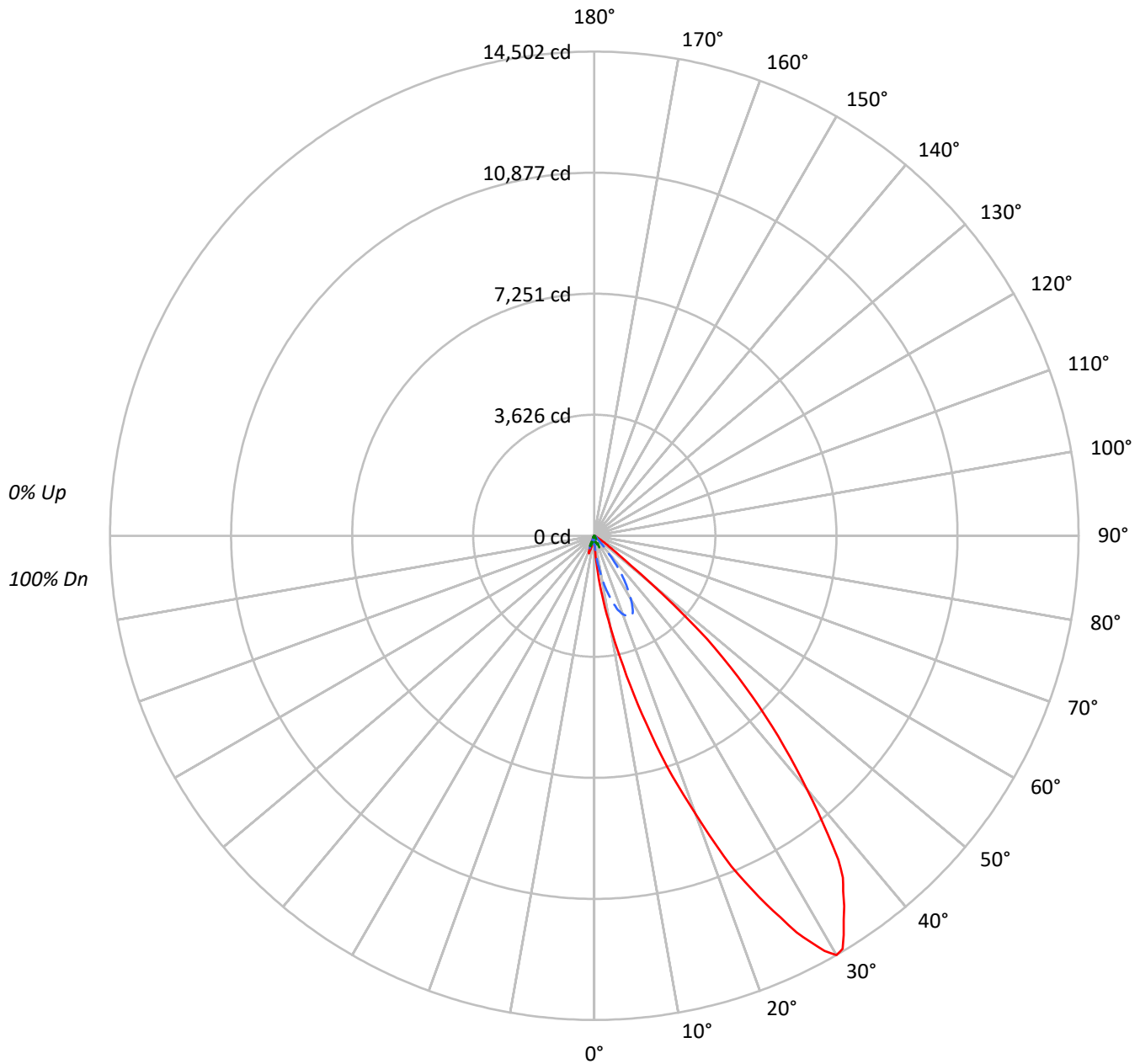
Lumens per Lamp: N/A
Luminaire Lumens: 3358.9 lumens
Efficiency: N/A
Efficacy: 71.3 lumens/watt
Spacing Criteria (0/90/45): 2.56 / 1.01 / 1.3
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 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

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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°	27457	27457	27457
5°	119297	25902	15688
10°	343995	23309	17059
15°	704874	25731	49265
20°	1162926	47871	49893
25°	1656612	30554	16713
30°	2065523	13388	6566
35°	1957127	6053	2876
40°	1594029	3075	918
45°	1116554	1675	0
50°	418401	1094	0
55°	89158	1226	0
60°	17071	937	0
65°	5049	1664	0
70°	1370	2056	0
75°	0	2716	0
80°	0	4049	0
85°	0	8067	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.7	1.4
10°-20°	402.3	12.0
20°-30°	1027.5	30.6
30°-40°	1190.0	35.4
40°-50°	614.0	18.3
50°-60°	63.4	1.9
60°-70°	6.8	0.2
70°-80°	4.3	0.1
80°-90°	3.9	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°	1476.5	44.0
0°-40°	2666.5	79.4
0°-60°	3343.8	99.6
0°-90°	3358.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3358.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	223	223	223	223	223	
5°	964	501	209	138	127	150
15°	5520	2021	202	269	386	1690
25°	12172	2639	224	140	123	5655
35°	12998	1443	40	23	19	7959
45°	6401	169	10	6	0	4793
55°	415	25	6	4	0	519
65°	17	6	6	4	0	23
75°	0	4	6	6	0	0
85°	0	4	6	6	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°	222.6	222.6	222.6	222.6	222.6	222.6	222.6	222.6	222.6	222.6	222.6
2.5°	383.8	370.4	360.8	364.7	385.8	362.7	364.7	357.0	353.2	349.3	339.7
5°	963.5	925.1	900.1	902.1	846.4	888.6	884.9	852.2	831.1	790.7	767.8
7.5°	1808.0	1725.4	1696.7	1687.0	1692.9	1652.5	1635.2	1593.0	1537.4	1464.4	1422.2
10°	2746.5	2696.7	2679.3	2648.6	2646.8	2575.7	2533.5	2479.8	2368.5	2266.7	2191.8
12.5°	4001.8	3848.3	3821.3	3763.7	3748.4	3627.5	3539.2	3460.5	3274.3	3140.0	3021.0
15°	5519.9	5395.1	5423.9	5247.5	5199.4	5001.7	4836.7	4667.7	4366.4	4161.1	3950.0
17.5°	7243.4	7084.1	7103.4	6882.6	6485.4	6521.9	6281.8	6049.6	5625.6	5351.0	5024.7
20°	8859.6	8746.3	8754.0	8460.3	8326.0	7961.3	7640.8	7364.4	6800.1	6450.8	6019.0
22.5°	10719.3	10425.8	10370.0	9970.8	9734.7	9245.4	8798.1	8431.5	7748.2	7354.8	6825.1
25°	12172.3	11970.7	11817.1	11345.0	11016.8	10379.7	9861.4	9318.3	8496.7	8061.1	7431.6
26°	12717.4	12527.3	12329.6	11821.0	11452.6	10778.8	10214.6	9631.2	8752.0	8285.6	7600.4
27°	13333.4	13022.5	12784.6	12214.5	11815.3	11107.1	10437.2	9886.4	8945.9	8429.7	7708.0
28°	13769.1	13458.2	13143.4	12523.4	12091.7	11350.7	10654.1	10053.4	9059.1	8498.7	7752.2
29°	14216.3	13886.2	13427.4	12751.9	12281.7	11502.5	10778.8	10135.8	9091.8	8494.9	7729.1
30°	14502.3	14170.2	13577.2	12880.4	12383.4	11563.8	10813.3	10120.5	9040.0	8418.1	7644.6
31°	14435.1	14130.0	13540.8	12894.0	12373.8	11527.3	10750.1	10011.1	8909.5	8281.8	7491.0
32°	14099.2	13840.2	13392.9	12803.7	12268.3	11402.6	10602.2	9838.4	8721.4	8122.6	7304.9
33°	13709.7	13494.6	13185.7	12621.4	12084.0	11214.5	10398.8	9625.3	8504.4	7905.7	7080.4
34°	13383.3	13189.5	12903.5	12375.7	11832.5	10963.1	10141.7	9356.6	8256.8	7650.4	6815.4
35°	12997.5	12821.0	12556.1	12043.6	11483.2	10625.3	9819.2	9045.7	7965.1	7347.1	6508.3
36°	12661.8	12383.4	12114.7	11615.6	11057.2	10216.5	9439.2	8681.0	7635.1	6999.7	6162.9
37°	12141.6	11863.2	11575.4	11103.1	10552.3	9748.2	9016.9	8291.5	7258.8	6738.7	5794.3
38°	11364.3	11235.6	10947.8	10498.5	9986.2	9231.8	8554.3	7848.0	6834.7	6233.9	5402.8
39°	10638.7	10533.2	10252.9	9842.3	9368.2	8677.3	8041.9	7349.0	6356.7	5788.6	4990.2
40°	9899.8	9794.2	9531.2	9160.8	8734.8	8099.5	7496.9	6817.4	5855.8	5329.9	4575.7
42.5°	8149.4	8040.0	7984.4	7606.3	7155.3	6610.0	6051.6	5437.3	4619.8	4187.9	3596.8
45°	6400.9	6301.1	6092.0	5936.4	5533.3	5080.3	4625.6	4124.6	3521.9	3095.9	2543.1
47.5°	4575.7	4527.6	4535.3	4247.5	3863.6	3506.6	3130.4	2677.4	2143.9	1608.4	1180.4
50°	2180.4	2193.8	2247.5	2046.0	1758.1	1548.8	1326.3	1040.2	760.1	596.9	462.5
51°	1412.6	1428.0	1474.1	1330.0	1120.9	978.9	836.8	675.6	539.3	458.7	366.6
52°	955.9	955.9	965.3	881.0	777.3	696.7	614.2	520.2	420.3	360.8	289.8
53°	717.8	715.9	719.7	664.1	593.1	533.6	476.0	406.9	332.0	282.1	224.5
54°	549.0	547.0	550.8	508.6	458.7	414.6	370.4	318.6	257.2	211.1	168.9
55°	414.6	414.6	420.3	387.7	349.3	314.8	282.1	237.9	190.0	153.6	122.8
57.5°	167.0	167.0	172.7	161.2	143.9	130.5	119.0	101.7	84.4	71.0	57.6
60°	69.2	71.0	72.9	67.2	63.3	59.5	55.6	49.9	44.2	36.5	30.7
61°	51.8	51.8	53.8	49.9	47.9	44.2	42.2	38.4	34.5	28.8	25.0
62°	38.4	38.4	40.2	38.4	36.5	34.5	32.7	30.7	26.8	23.1	19.1
63°	28.8	28.8	30.7	28.8	28.8	26.8	25.0	23.1	21.1	17.3	15.4
64°	23.1	23.1	23.1	21.1	21.1	21.1	19.1	19.1	15.4	13.4	11.5
65°	17.3	17.3	17.3	17.3	15.4	15.4	15.4	13.4	13.4	9.6	9.6
66°	13.4	13.4	13.4	11.5	11.5	11.5	11.5	11.5	9.6	7.7	5.7



TEST NUMBER: P1191893

CATALOG NUMBER: LDA4A35930D010TE 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	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
75°	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
77.5°	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
80°	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
85°	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0
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°	222.6	222.6	222.6	222.6	222.6	222.6	222.6	222.6	222.6	222.6	222.6
2.5°	343.6	341.6	322.5	322.5	330.2	318.6	312.8	299.4	257.2	218.8	184.3
5°	760.1	739.0	673.8	654.5	652.5	598.9	568.1	500.9	293.7	209.2	159.3
7.5°	1403.0	1339.7	1228.3	1168.9	1096.0	1053.7	978.9	863.6	333.9	195.8	143.9
10°	2074.8	2003.8	1838.8	1733.1	1677.5	1541.1	1416.5	1259.0	374.3	186.1	142.0
12.5°	2844.3	2685.1	2527.7	2339.7	2172.7	2051.7	1844.5	1660.2	401.1	184.3	155.5
15°	3677.4	3477.7	3209.0	2955.7	2719.7	2546.9	2268.7	2021.1	410.8	201.5	203.4
17.5°	4610.2	4235.9	3848.3	3502.7	3178.4	2946.1	2600.7	2308.9	404.9	247.6	324.3
20°	5483.5	4986.3	4460.5	3980.6	3521.9	3220.6	2821.4	2504.7	406.9	364.7	437.6
22.5°	6176.3	5571.8	4930.7	4345.3	3763.7	3403.0	2967.3	2608.4	456.8	389.7	297.5
25°	6686.9	5974.9	5239.8	4566.0	3953.8	3548.8	3070.8	2639.1	426.0	224.5	168.9
26°	6823.1	6072.7	5297.3	4598.7	3976.8	3548.8	3055.5	2606.4	368.4	178.4	140.1
27°	6900.0	6116.8	5306.8	4583.4	3948.0	3508.5	2999.9	2541.2	301.4	149.6	119.0
28°	6909.5	6097.7	5258.9	4519.9	3867.4	3422.1	2900.1	2441.4	249.5	126.7	98.0
29°	6857.6	6026.7	5166.8	4414.4	3744.6	3295.5	2763.9	2318.6	213.1	109.4	82.6
30°	6748.2	5901.9	5026.7	4272.3	3585.3	3142.0	2604.4	2182.2	186.1	94.0	69.2
31°	6590.9	5731.0	4875.1	4103.5	3418.3	2988.4	2454.8	2044.0	165.0	78.7	57.6
32°	6387.5	5529.6	4679.4	3921.2	3268.6	2842.5	2310.9	1904.0	147.8	67.2	47.9
33°	6161.0	5301.1	4466.3	3731.2	3124.6	2692.8	2159.3	1756.2	132.5	55.6	40.2
34°	5900.0	5049.8	4239.8	3541.2	2971.1	2527.7	1996.1	1604.6	115.1	46.1	34.5
35°	5602.5	4769.5	3996.0	3368.5	2800.3	2349.2	1825.2	1443.3	101.7	40.2	28.8
36°	5280.0	4477.7	3750.3	3170.8	2616.0	2163.1	1644.8	1280.1	88.3	34.5	25.0
37°	4942.2	4174.5	3504.7	2946.1	2412.6	1965.4	1458.7	1103.5	76.7	28.8	21.1
38°	4585.2	3869.4	3266.6	2733.1	2197.6	1752.3	1268.7	909.7	67.2	25.0	19.1
39°	4220.6	3568.0	3030.6	2499.0	1977.0	1543.1	1086.4	706.3	59.5	21.1	17.3
40°	3863.6	3283.9	2781.1	2243.7	1756.2	1337.7	909.7	520.2	51.8	19.1	13.4
42.5°	3059.4	2522.0	1996.1	1497.0	1224.5	848.4	504.8	272.6	36.5	13.4	9.6
45°	2001.8	1491.3	1076.7	729.4	633.4	359.0	234.2	168.9	26.8	9.6	7.7
47.5°	829.1	604.6	420.3	303.2	245.6	192.0	149.6	109.4	19.1	7.7	7.7
50°	364.7	287.8	228.5	178.4	155.5	124.8	96.0	67.2	11.5	5.7	5.7
51°	291.7	232.2	178.4	142.0	126.7	101.7	78.7	53.8	11.5	5.7	5.7
52°	230.3	180.4	140.1	109.4	101.7	82.6	65.3	44.2	9.6	5.7	5.7
53°	176.6	136.2	105.6	86.3	80.6	67.2	53.8	36.5	7.7	5.7	5.7
54°	130.5	103.7	82.6	67.2	65.3	53.8	44.2	30.7	7.7	5.7	5.7
55°	96.0	80.6	63.3	53.8	51.8	44.2	36.5	25.0	7.7	5.7	5.7
57.5°	49.9	42.2	34.5	30.7	30.7	28.8	25.0	15.4	5.7	3.8	5.7
60°	26.8	23.1	19.1	17.3	21.1	19.1	17.3	9.6	5.7	3.8	5.7
61°	21.1	19.1	15.4	13.4	17.3	15.4	15.4	7.7	5.7	5.7	5.7
62°	17.3	15.4	13.4	11.5	15.4	13.4	13.4	7.7	5.7	5.7	5.7
63°	13.4	11.5	9.6	9.6	13.4	13.4	11.5	5.7	5.7	5.7	5.7
64°	9.6	9.6	7.7	7.7	11.5	11.5	9.6	5.7	5.7	5.7	5.7
65°	7.7	7.7	5.7	5.7	9.6	9.6	9.6	5.7	5.7	5.7	5.7
66°	5.7	5.7	5.7	3.8	7.7	9.6	9.6	3.8	5.7	5.7	5.7



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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°	2.0	2.0	2.0	2.0	5.7	7.7	7.7	3.8	5.7	5.7	5.7
75°	2.0	2.0	2.0	2.0	5.7	7.7	7.7	3.8	5.7	5.7	5.7
77.5°	2.0	2.0	2.0	2.0	5.7	7.7	7.7	3.8	5.7	5.7	7.7
80°	2.0	2.0	2.0	2.0	5.7	7.7	7.7	3.8	5.7	5.7	7.7
82.5°	2.0	2.0	2.0	2.0	5.7	7.7	7.7	3.8	5.7	5.7	7.7
85°	2.0	2.0	2.0	2.0	5.7	7.7	7.7	3.8	5.7	5.7	7.7
87.5°	2.0	2.0	2.0	2.0	5.7	7.7	7.7	3.8	5.7	5.7	7.7
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):

	135°	157.5°	180°
0°	222.6	222.6	222.6
2.5°	167.0	157.3	155.5
5°	138.2	128.5	126.7
7.5°	126.7	119.0	117.1
10°	130.5	132.5	136.2
12.5°	167.0	184.3	199.7
15°	268.7	337.9	385.8
17.5°	468.4	518.2	550.8
20°	410.8	378.1	380.1
22.5°	230.3	207.4	205.4
25°	140.1	126.7	122.8
26°	117.1	105.6	101.7
27°	96.0	86.3	82.6
28°	78.7	71.0	69.2
29°	67.2	57.6	55.6
30°	55.6	47.9	46.1
31°	46.1	40.2	38.4
32°	40.2	34.5	30.7
33°	32.7	28.8	26.8
34°	28.8	23.1	21.1
35°	23.1	19.1	19.1
36°	21.1	17.3	15.4
37°	17.3	13.4	13.4
38°	15.4	11.5	9.6
39°	13.4	9.6	7.7
40°	11.5	7.7	5.7
42.5°	7.7	3.8	2.0
45°	5.7	2.0	0.0
47.5°	3.8	2.0	0.0
50°	3.8	0.0	0.0
51°	3.8	0.0	0.0
52°	3.8	0.0	0.0
53°	3.8	0.0	0.0
54°	3.8	0.0	0.0
55°	3.8	0.0	0.0
57.5°	3.8	0.0	0.0
60°	3.8	0.0	0.0
61°	3.8	0.0	0.0
62°	3.8	0.0	0.0
63°	3.8	2.0	0.0
64°	3.8	2.0	0.0
65°	3.8	2.0	0.0
66°	3.8	2.0	0.0



TEST NUMBER: P1191893

CATALOG NUMBER: LDA4A35930D010TE LAR25NF 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
72.5°	5.7	2.0	0.0
75°	5.7	2.0	0.0
77.5°	5.7	2.0	0.0
80°	5.7	2.0	0.0
82.5°	5.7	2.0	0.0
85°	5.7	2.0	0.0
87.5°	3.8	2.0	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



Report Generated By 670245859 / DESKTOP-T8S5UU9

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— 0°-180° - - 45°-225° - - - 90°-270°

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67.5°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	5.7	3.8
70°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	2.0	2.0

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67.5°	3.8	3.8	3.8	3.8	7.7	7.7	7.7	3.8	5.7	5.7	5.7
70°	2.0	2.0	2.0	3.8	5.7	7.7	7.7	3.8	5.7	5.7	5.7

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67.5°	3.8	2.0	0.0
70°	3.8	2.0	0.0

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Scaled Data Report



(END OF REPORT)