

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: P1219497

Luminaire Tested: **LDSQA4A15935D010TE LAR35FL 4LSQAL1H 30°**

Issue Date: 3/3/2020



Test Information

Test Method: LM-41-14
Report Number: P1219497
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26804)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA4A15935D010TE LAR35FL 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 35° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

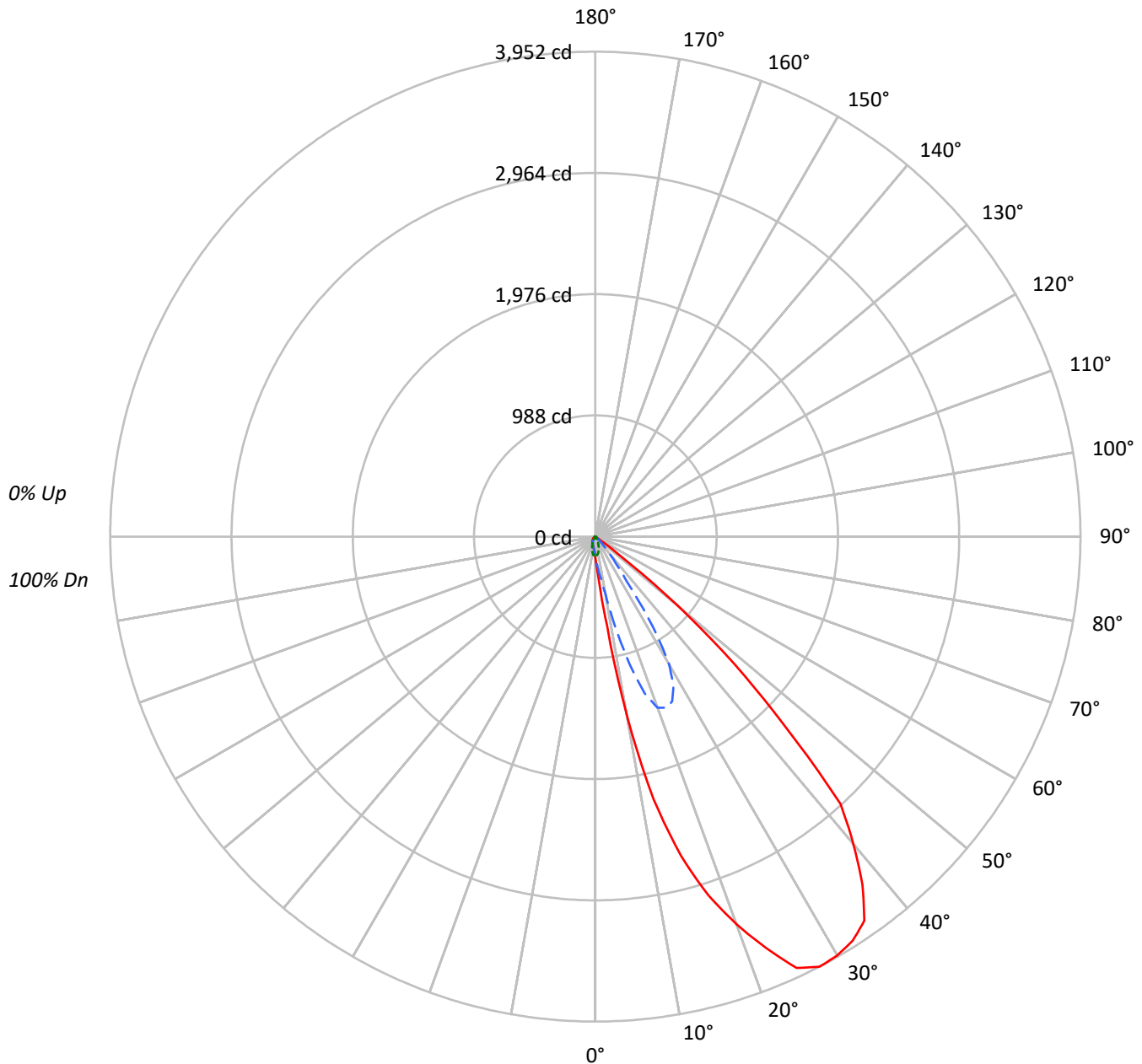
Lumens per Lamp: N/A
Luminaire Lumens: 1316.4 lumens
Efficiency: N/A
Efficacy: 64.5 lumens/watt
Spacing Criteria (0/90/45): 2.46 / 0.61 / 1.2
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P1219497

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Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



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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	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	64	73	67	63		71	66	62		70
6	80	70	62	57	79	69	62	57	67	61	57		66	60	56		64
7	75	64	57	52	74	63	56	51	62	56	51		60	55	51		59
8	70	59	52	47	69	58	51	46	57	51	46		56	50	46		55
9	66	54	47	42	64	54	47	42	53	46	42		52	46	42		51
10	62	50	43	38	60	50	43	38	49	42	38		48	42	38		47

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	15771	15771	15771
5°	36953	14888	10405
10°	146010	13083	8676
15°	270229	10471	7602
20°	346494	7629	6887
25°	414574	5409	6093
30°	440826	3557	5369
35°	451777	2141	4683
40°	413568	1391	4021
45°	298419	973	3288
50°	130275	769	2728
55°	8985	659	2314
60°	1628	639	1879
65°	596	596	1330
70°	566	736	935
75°	487	973	973
80°	0	1450	1116
85°	0	2890	778

Classified

Scaled Data Report

Cooper Lighting Solutions Photometric Lab

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	23.7	1.8
10°-20°	186.3	14.2
20°-30°	390.1	29.6
30°-40°	434.2	33.0
40°-50°	249.2	18.9
50°-60°	24.9	1.9
60°-70°	3.9	0.3
70°-80°	2.5	0.2
80°-90°	1.5	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°	600.1	45.6
0°-40°	1034.3	78.6
0°-60°	1308.5	99.4
0°-90°	1316.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1316.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	163	163	163	163	163	
5°	380	262	153	112	107	70
15°	2694	1076	104	73	76	762
25°	3878	1480	51	45	57	1756
35°	3820	452	18	26	40	2333
45°	2178	54	7	14	24	1663
55°	53	8	4	8	14	159
65°	3	2	3	5	6	3
75°	1	1	3	3	3	1
85°	0	1	3	2	1	0
90°	0	0	0	0	0	

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CATALOG NUMBER: LDSQA4A15935D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8
2.5°	243.1	238.0	232.8	229.6	226.3	230.9	227.6	226.3	217.2	212.7	208.8
5°	380.0	370.3	356.0	344.3	332.6	335.2	326.2	315.1	292.4	276.2	262.0
7.5°	733.4	709.4	665.4	622.5	579.7	571.9	543.4	494.1	430.6	382.6	341.1
10°	1484.3	1411.7	1330.7	1243.1	1140.7	1112.2	1041.5	907.8	761.9	595.3	474.7
12.5°	2191.2	2158.1	2062.8	1949.3	1838.4	1770.3	1697.1	1476.6	1245.0	976.6	752.2
15°	2694.4	2674.3	2590.6	2487.6	2368.2	2324.1	2234.6	2014.7	1722.3	1401.3	1075.8
17.5°	3067.2	3032.9	2945.3	2833.2	2691.8	2654.2	2547.2	2328.7	2025.1	1702.9	1341.6
20°	3361.0	3339.7	3226.1	3091.3	2922.0	2876.6	2751.5	2523.8	2193.7	1851.4	1483.7
22.5°	3625.0	3588.7	3449.3	3288.4	3095.1	3046.5	2907.1	2657.5	2302.7	1921.4	1509.0
25°	3878.5	3823.4	3654.1	3443.4	3216.4	3150.3	2997.2	2732.7	2342.9	1927.2	1480.4
27.5°	3952.4	3924.6	3768.2	3523.1	3260.5	3185.9	3026.4	2749.5	2328.0	1874.1	1378.0
30°	3940.8	3917.4	3787.0	3530.9	3252.7	3174.2	3012.2	2697.7	2241.1	1735.3	1197.1
32.5°	3903.8	3894.8	3737.2	3463.5	3180.1	3094.5	2919.4	2568.6	2078.3	1523.9	874.8
35°	3820.1	3784.5	3588.0	3330.6	3058.2	2964.2	2766.4	2383.8	1863.7	1109.5	451.9
37.5°	3575.0	3547.2	3392.1	3166.5	2901.3	2780.6	2571.8	2145.1	1442.8	630.9	270.4
40°	3270.3	3256.6	3134.7	2933.1	2649.6	2513.5	2286.5	1755.4	880.6	358.6	178.3
42.5°	2957.6	2953.8	2823.5	2612.7	2305.3	2149.0	1913.7	1184.1	468.2	216.6	103.1
45°	2178.2	2201.6	2110.8	1984.4	1749.5	1636.1	1330.7	610.2	269.8	120.0	54.4
47.5°	1527.8	1501.8	1341.1	1119.9	905.3	766.5	579.7	288.6	143.9	62.9	31.1
50°	864.4	868.9	723.7	585.6	383.9	304.1	230.9	145.2	69.4	33.1	18.8
52.5°	225.6	236.0	203.6	175.1	149.2	121.3	97.9	62.9	33.1	19.5	12.3
55°	53.2	55.1	51.2	48.0	45.4	40.2	35.6	27.2	18.1	12.3	7.8
57.5°	18.8	19.5	18.8	18.8	18.1	17.5	16.2	14.3	11.0	7.8	5.1
60°	8.4	9.1	8.4	9.1	9.1	9.1	9.1	9.1	6.5	4.6	3.3
62.5°	3.9	3.9	3.9	3.9	4.6	4.6	5.1	5.1	3.9	3.3	2.6
65°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.0
67.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
70°	2.0	2.0	2.0	1.3	1.3	1.3	1.3	1.3	1.3	1.3	2.0
72.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
75°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
77.5°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	1.3	1.3	1.3	1.3
80°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.3	1.3	1.3
82.5°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.3	1.3	1.3
85°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	1.3	1.3	1.3
87.5°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	1.3	1.3	1.3
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: LDSQA4A15935D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8
2.5°	201.7	201.1	193.9	188.7	186.1	182.3	177.7	171.2	164.0	157.6	154.9
5°	245.1	236.7	221.8	209.5	203.6	197.8	187.4	175.7	164.7	153.1	147.2
7.5°	301.6	276.9	247.7	225.0	215.3	205.5	190.7	174.4	159.5	143.9	135.5
10°	378.7	321.7	271.1	234.7	220.5	207.5	186.1	166.0	149.8	133.0	121.9
12.5°	541.4	400.1	295.7	239.3	220.5	203.6	177.7	154.3	136.2	118.7	108.3
15°	780.1	540.1	349.6	243.8	215.9	194.5	164.7	139.4	120.0	104.4	94.6
17.5°	972.7	669.2	416.3	255.5	210.1	182.3	147.8	121.3	103.1	88.8	81.1
20°	1070.0	723.7	446.8	257.4	195.8	162.8	127.7	102.5	86.2	74.0	67.4
22.5°	1068.0	706.2	419.6	225.6	171.9	140.7	107.6	84.3	71.4	61.6	56.4
25°	1000.6	625.1	350.2	180.3	138.8	116.7	87.5	68.1	57.7	50.6	46.0
27.5°	874.2	507.8	261.4	133.6	108.3	92.1	68.1	54.4	46.0	40.9	37.6
30°	686.1	339.8	164.7	99.2	82.4	69.4	52.6	42.2	36.3	31.8	29.8
32.5°	378.1	177.0	110.9	72.7	60.3	50.6	38.9	30.5	26.6	23.4	22.7
35°	208.8	125.1	79.1	48.6	40.2	34.4	26.6	22.1	19.5	18.1	18.1
37.5°	147.8	80.4	47.3	30.5	25.9	22.7	18.1	15.5	14.9	14.3	14.3
40°	88.8	47.3	28.5	20.1	17.5	15.5	13.7	11.7	11.7	11.0	11.7
42.5°	48.6	28.5	19.5	14.3	12.3	11.7	9.7	9.1	9.1	9.1	9.7
45°	29.2	18.8	13.7	10.4	9.1	7.8	7.1	6.5	7.1	7.1	7.8
47.5°	18.8	13.7	9.1	6.5	5.8	5.1	4.6	5.1	5.1	5.8	6.5
50°	13.0	8.4	5.8	3.9	3.9	3.3	3.9	3.9	4.6	5.1	5.8
52.5°	8.4	5.8	3.9	3.3	2.6	2.6	2.6	3.3	3.9	4.6	5.1
55°	5.1	3.9	3.3	2.6	2.6	2.6	2.6	2.6	3.3	3.9	4.6
57.5°	3.9	3.3	2.6	2.0	2.0	2.0	2.6	2.6	3.3	3.3	3.9
60°	2.6	2.6	2.0	2.0	2.0	2.0	2.0	2.6	2.6	3.3	3.9
62.5°	2.6	2.6	2.0	2.0	2.0	2.0	2.6	2.6	2.6	3.3	3.3
65°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6	3.3
67.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	3.3
70°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	3.3
72.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6
75°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6	2.6
77.5°	1.3	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6	2.6
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6	2.6
82.5°	1.3	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6	2.6
85°	1.3	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6	2.6
87.5°	1.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8
2.5°	151.8	147.2	143.4	144.6	142.0	137.5	136.2	133.0	129.0	128.4	128.4
5°	140.7	133.6	127.7	127.1	124.5	119.3	118.0	114.7	111.6	110.9	110.3
7.5°	127.1	119.3	114.1	112.9	110.9	106.3	105.7	102.5	100.5	99.2	99.2
10°	113.5	106.3	101.8	101.2	99.9	95.9	95.3	92.8	90.8	90.1	89.5
12.5°	100.5	94.6	90.8	90.1	88.8	85.6	84.9	83.0	81.7	81.1	81.1
15°	88.2	83.0	79.8	79.1	78.5	75.2	75.2	74.0	73.3	73.3	74.0
17.5°	75.8	71.4	68.7	68.1	68.1	65.5	66.1	65.5	65.5	65.5	66.8
20°	63.6	59.7	57.7	58.4	57.0	56.4	57.0	57.0	57.0	58.4	60.3
22.5°	53.2	49.9	48.0	48.6	48.6	48.0	48.6	49.3	50.6	52.6	54.4
25°	43.5	40.9	40.2	40.9	40.9	40.9	42.2	43.5	44.7	46.7	48.6
27.5°	35.0	33.1	33.1	33.8	34.4	34.4	36.3	37.6	39.6	41.5	43.5
30°	27.9	27.2	27.2	28.5	28.5	29.2	31.8	33.1	34.4	36.3	38.2
32.5°	22.1	22.1	22.7	24.0	24.0	25.2	27.2	28.5	29.8	31.8	33.8
35°	18.1	18.8	19.5	20.1	20.8	21.4	23.4	24.7	25.9	27.9	29.2
37.5°	14.9	15.5	16.2	17.5	17.5	18.1	20.1	21.4	22.1	24.0	25.9
40°	12.3	13.0	13.7	14.9	14.9	15.5	17.5	18.1	18.8	20.8	22.7
42.5°	10.4	11.0	11.7	12.3	13.0	13.7	14.9	15.5	16.8	18.1	19.5
45°	8.4	9.1	9.7	10.4	11.0	11.7	12.3	13.7	14.3	15.5	16.8
47.5°	7.1	7.8	8.4	9.1	9.7	9.7	11.0	11.7	12.3	13.7	14.9
50°	6.5	7.1	7.8	7.8	8.4	9.1	9.7	10.4	11.0	11.7	13.0
52.5°	5.1	5.8	6.5	7.1	7.1	7.8	8.4	9.1	9.7	10.4	11.0
55°	5.1	5.1	5.8	6.5	6.5	7.1	7.8	8.4	8.4	9.1	9.7
57.5°	4.6	5.1	5.1	5.8	5.8	6.5	7.1	7.1	7.8	7.8	8.4
60°	3.9	4.6	5.1	5.1	5.1	5.8	5.8	6.5	6.5	7.1	7.1
62.5°	3.9	4.6	4.6	5.1	5.1	5.1	5.8	5.8	5.8	6.5	6.5
65°	3.9	3.9	4.6	4.6	4.6	4.6	5.1	5.1	5.1	5.8	5.8
67.5°	3.3	3.9	3.9	3.9	4.6	4.6	4.6	4.6	4.6	5.1	5.1
70°	3.3	3.3	3.9	3.9	3.9	3.9	3.9	4.6	4.6	4.6	4.6
72.5°	3.3	3.3	3.3	3.3	3.9	3.9	3.9	3.9	3.9	3.9	3.9
75°	2.6	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
77.5°	2.6	2.6	2.6	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
80°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
82.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.0	2.0
85°	2.6	2.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
87.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.3	1.3	1.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P1219497

CATALOG NUMBER: LDSQA4A15935D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8
2.5°	125.8	124.5	123.8	125.8	123.3	124.5	123.8	124.5
5°	108.3	107.0	106.3	108.3	105.7	107.0	105.7	107.0
7.5°	97.3	96.6	95.9	97.3	95.3	96.6	95.9	96.6
10°	88.2	87.5	86.9	88.8	86.9	88.2	87.5	88.2
12.5°	80.4	80.4	79.8	81.1	79.8	81.1	80.4	81.1
15°	73.3	74.0	73.3	74.5	74.0	75.2	74.5	75.8
17.5°	67.4	68.1	68.1	70.0	69.4	71.4	70.7	71.4
20°	61.6	62.3	62.9	64.2	64.2	66.1	65.5	66.8
22.5°	55.7	57.0	57.0	59.0	59.0	61.0	61.0	61.6
25°	49.9	51.9	52.6	53.9	54.4	56.4	56.4	57.0
27.5°	45.4	46.7	47.3	49.3	49.9	51.9	51.9	53.2
30°	40.2	42.2	42.8	44.1	44.7	46.7	46.7	48.0
32.5°	35.6	36.9	38.2	39.6	40.2	42.2	42.2	43.5
35°	31.1	33.1	33.8	35.0	36.3	38.2	38.2	39.6
37.5°	27.2	29.2	29.8	31.1	32.5	34.4	34.4	35.6
40°	24.0	25.9	26.6	27.9	28.5	31.1	31.1	31.8
42.5°	21.4	22.7	23.4	24.7	25.2	26.6	26.6	27.9
45°	18.1	19.5	20.1	20.8	22.1	23.4	23.4	24.0
47.5°	15.5	16.8	17.5	18.1	18.8	20.1	20.1	21.4
50°	13.7	14.3	14.9	15.5	16.2	17.5	17.5	18.1
52.5°	11.7	12.3	13.0	13.7	14.3	14.9	15.5	16.2
55°	10.4	11.0	11.0	11.7	12.3	13.0	13.0	13.7
57.5°	9.1	9.7	9.7	9.7	10.4	11.0	11.0	11.7
60°	7.8	8.4	8.4	8.4	9.1	9.1	9.1	9.7
62.5°	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
65°	5.8	5.8	5.8	5.8	5.8	5.8	5.1	5.8
67.5°	5.1	5.1	5.1	4.6	4.6	4.6	4.6	4.6
70°	4.6	4.6	4.6	3.9	3.9	3.9	3.3	3.3
72.5°	3.9	3.9	3.9	3.3	3.3	3.3	2.6	2.6
75°	3.3	3.3	3.3	3.3	2.6	2.6	2.6	2.6
77.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.0	2.0
80°	2.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	2.0	2.0	2.0	2.0	1.3	1.3	1.3	1.3
85°	1.3	1.3	1.3	1.3	1.3	1.3	0.7	0.7
87.5°	1.3	0.7	0.7	0.7	0.7	0.7	0.7	0.7
90°	0.0	0.0	0.0	0.0	0.0	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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