

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: P1212184

Luminaire Tested: **LDSQA4A20927D010TE LAR35FL 4LSQA1H 30°**

Issue Date: 3/3/2020



Test Information

Test Method: LM-41-14
Report Number: P1212184
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26801)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA4A20927D010TE LAR35FL 4LSQA1H 30°
Description: PORTFOLIO 4" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 35° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

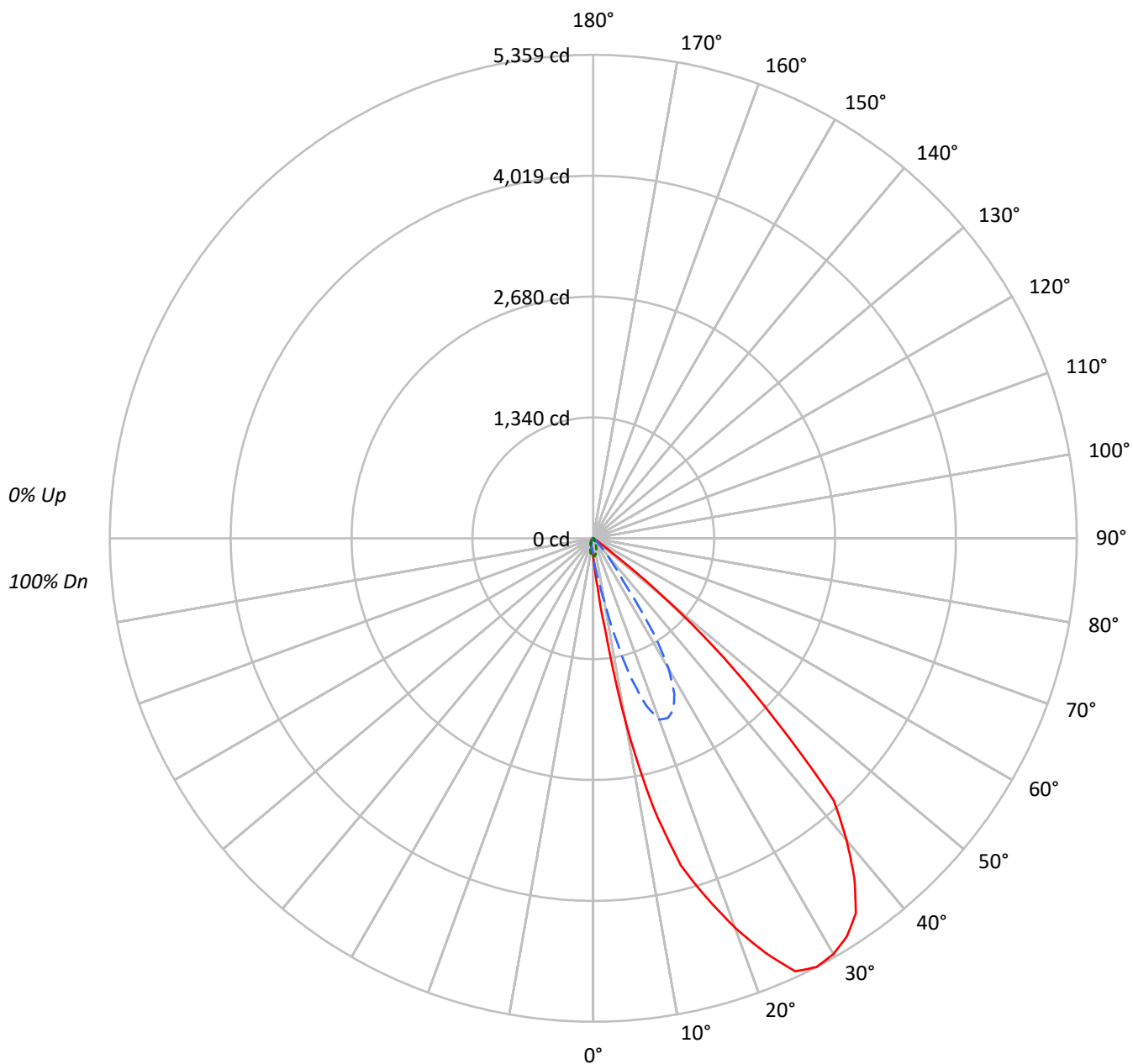
Lumens per Lamp: N/A
Luminaire Lumens: 1755.5 lumens
Efficiency: N/A
Efficacy: 61.0 lumens/watt
Spacing Criteria (0/90/45): 2.46 / 0.59 / 1.2
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 28.8
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



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	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	105	102	103	101	99	99	98	96	96	94	93	91		
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	87	84	83		
3	99	91	85	81	97	90	84	80	87	83	79	85	81	77	82	79	76	74		
4	92	83	77	72	91	82	76	71	80	75	71	78	73	70	76	72	69	67		
5	86	76	69	64	85	75	69	64	74	68	63	72	67	63	70	66	62	60		
6	81	70	63	58	79	69	62	58	68	62	57	66	61	57	65	60	56	55		
7	75	64	57	52	74	64	57	52	62	56	52	61	55	51	60	55	51	49		
8	71	59	52	47	69	59	52	47	57	51	47	56	51	47	55	50	46	45		
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41		
10	62	50	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	19850	19850	19850
5°	52182	18905	12340
10°	204580	16359	10270
15°	376640	12898	9107
20°	473278	9113	8278
25°	566101	6007	7375
30°	595308	3770	6466
35°	600114	2271	5606
40°	552208	1530	4780
45°	392896	1096	3959
50°	162346	844	3286
55°	9357	811	2854
60°	1085	794	2344
65°	367	940	1673
70°	453	906	1161
75°	599	1198	1198
80°	0	1785	1339
85°	0	3557	1778



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.2	1.8
10°-20°	257.2	14.7
20°-30°	532.0	30.3
30°-40°	579.2	33.0
40°-50°	317.6	18.1
50°-60°	27.5	1.6
60°-70°	4.5	0.3
70°-80°	3.2	0.2
80°-90°	2.0	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°	821.5	46.8
0°-40°	1400.7	79.8
0°-60°	1745.7	99.4
0°-90°	1755.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1755.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	205	205	205	205	205	
5°	537	367	194	134	127	98
15°	3755	1578	129	87	91	1049
25°	5296	2100	56	53	69	2391
35°	5074	574	19	31	47	3114
45°	2868	59	8	17	29	2189
55°	55	6	5	10	17	189
65°	2	2	4	6	7	2
75°	2	2	3	5	3	1
85°	0	2	3	2	2	0
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	204.9	204.9	204.9	204.9	204.9	204.9	204.9	204.9	204.9	204.9	204.9
2.5°	322.1	310.9	309.3	310.9	302.9	302.0	303.7	297.2	291.6	286.0	281.1
5°	536.6	513.4	506.1	496.4	472.4	464.2	462.7	437.0	412.1	388.7	367.1
7.5°	1042.7	996.1	971.1	923.0	849.0	816.2	798.5	714.2	635.4	563.9	498.9
10°	2079.7	1957.6	1898.2	1807.4	1645.9	1566.5	1508.6	1296.5	1087.6	886.8	710.1
12.5°	3034.8	2967.4	2879.8	2831.6	2569.8	2469.3	2373.7	2079.7	1761.7	1437.0	1115.0
15°	3755.4	3656.6	3563.4	3540.9	3335.3	3218.0	3112.0	2807.5	2429.1	2016.2	1578.5
17.5°	4178.7	4108.0	4019.7	3977.0	3736.1	3641.4	3520.8	3226.0	2858.2	2446.8	1938.3
20°	4590.8	4486.3	4361.8	4297.6	4031.0	3921.6	3785.1	3475.0	3085.4	2648.5	2140.0
22.5°	4967.5	4832.6	4655.8	4556.2	4256.6	4136.2	3983.5	3647.7	3226.0	2726.4	2156.9
25°	5296.1	5174.0	4938.6	4764.3	4410.9	4268.6	4091.1	3740.2	3276.6	2719.9	2099.8
27.5°	5358.7	5276.9	5065.5	4864.0	4464.7	4306.4	4122.5	3759.4	3241.3	2630.8	1946.4
30°	5321.8	5233.5	5064.0	4858.2	4442.2	4282.3	4091.1	3677.4	3103.1	2422.7	1665.3
32.5°	5232.6	5156.3	4953.9	4737.0	4331.4	4165.1	3963.4	3485.4	2866.2	2091.8	1225.0
35°	5074.4	4959.5	4715.4	4537.0	4155.4	3984.3	3737.8	3229.2	2511.9	1503.8	574.4
37.5°	4752.3	4640.6	4464.7	4300.0	3928.1	3726.4	3466.2	2872.6	1862.0	820.2	355.0
40°	4366.6	4270.3	4116.8	3957.0	3573.8	3341.8	3054.9	2245.1	1095.7	461.8	218.5
42.5°	3947.4	3847.8	3674.2	3487.8	3070.2	2825.1	2515.1	1453.2	577.6	272.2	118.9
45°	2867.8	2778.6	2652.4	2518.4	2276.6	2099.8	1691.8	763.1	319.7	144.6	58.6
47.5°	1962.5	1856.4	1623.4	1341.5	1087.6	930.2	699.7	331.0	163.9	72.3	34.6
50°	1077.2	964.7	845.8	658.7	441.0	362.3	281.9	159.8	73.9	36.2	19.2
52.5°	264.2	233.8	213.8	196.8	155.8	140.6	118.9	66.6	33.7	20.1	13.6
55°	55.4	51.4	49.0	48.2	44.2	42.6	37.0	25.7	18.5	12.9	6.5
57.5°	16.0	15.3	16.0	16.0	16.0	15.3	15.3	11.2	10.4	6.5	4.1
60°	5.6	5.6	5.6	6.5	6.5	6.5	7.3	7.3	5.6	4.1	3.2
62.5°	2.4	2.4	2.4	3.2	3.2	4.1	4.1	4.1	3.2	3.2	2.4
65°	1.6	1.6	1.6	1.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4
67.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.4
70°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.4
72.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.4
75°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.4
77.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.6	1.6	1.6	2.4
80°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.6	1.6	1.6	1.6
82.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.6	1.6	1.6
85°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.6	1.6	1.6
87.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.6	1.6	1.6
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	204.9	204.9	204.9	204.9	204.9	204.9	204.9	204.9	204.9	204.9	204.9
2.5°	267.5	259.5	249.8	239.4	237.8	232.2	224.2	212.9	208.8	200.8	193.5
5°	335.8	314.1	291.6	271.5	265.1	256.2	241.8	221.8	208.8	194.4	182.3
7.5°	427.4	377.5	331.8	295.6	284.3	269.9	247.4	221.8	202.4	182.3	166.3
10°	549.4	448.2	369.5	310.9	292.5	273.1	243.4	212.1	189.6	166.3	149.4
12.5°	784.8	551.8	404.9	318.9	293.2	268.3	230.6	196.8	171.0	147.8	131.0
15°	1115.8	748.7	476.3	324.5	285.2	254.6	210.5	176.0	150.2	128.6	112.4
17.5°	1395.4	935.0	571.9	340.6	279.5	237.0	187.2	151.8	126.9	107.7	94.7
20°	1531.9	1018.6	615.4	343.0	263.4	210.5	159.8	126.2	104.4	88.4	77.0
22.5°	1515.8	990.5	575.1	300.5	222.6	177.5	132.5	102.0	83.5	70.7	62.6
25°	1408.2	868.4	469.1	229.8	173.4	143.8	103.6	79.5	65.1	56.2	49.8
27.5°	1227.4	697.2	342.2	162.2	131.8	109.2	77.0	61.0	49.8	43.4	39.3
30°	945.4	445.8	196.8	116.5	95.6	77.9	57.8	44.2	37.8	33.7	30.6
32.5°	487.5	216.8	131.0	83.5	67.5	56.2	40.2	32.2	28.1	25.7	24.2
35°	267.5	154.2	90.8	53.8	43.4	36.2	27.4	22.5	20.9	19.2	19.2
37.5°	184.0	95.6	50.6	32.2	26.6	22.5	18.5	16.0	15.3	15.3	15.3
40°	106.1	50.6	28.9	20.1	16.9	15.3	12.9	12.1	12.1	12.1	12.9
42.5°	54.6	29.8	19.2	13.6	12.1	10.4	8.8	8.8	8.8	9.7	10.4
45°	32.2	20.1	12.9	8.8	8.0	7.3	6.5	6.5	7.3	8.0	8.8
47.5°	20.1	13.6	8.0	5.6	4.8	4.8	4.8	4.8	5.6	6.5	7.3
50°	13.6	7.3	4.8	3.2	3.2	3.2	3.2	4.1	4.8	5.6	6.5
52.5°	7.3	4.1	3.2	2.4	2.4	2.4	3.2	3.2	4.1	4.8	5.6
55°	4.1	3.2	2.4	2.4	2.4	2.4	2.4	3.2	4.1	4.8	5.6
57.5°	3.2	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	4.1	4.8
60°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	4.1	4.8
62.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	4.1	4.1
65°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	4.1	4.1
67.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	4.1
70°	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2	4.1
72.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2
75°	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2	3.2	4.1
77.5°	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2	3.2
80°	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2	3.2
82.5°	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2	3.2
85°	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2	3.2	3.2
87.5°	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2	3.2
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°	204.9	204.9	204.9	204.9	204.9	204.9	204.9	204.9	204.9	204.9	204.9
2.5°	189.6	183.1	176.7	176.7	173.4	168.7	167.1	162.2	159.0	157.4	155.8
5°	173.4	163.9	155.0	154.2	150.2	144.6	142.2	137.4	134.2	132.5	131.8
7.5°	155.0	145.4	136.6	135.0	131.8	127.7	125.3	121.3	119.7	118.1	117.3
10°	137.4	127.7	121.3	119.7	117.3	114.1	111.7	109.2	107.7	106.8	106.8
12.5°	119.7	112.4	106.8	105.3	103.6	101.2	99.6	98.0	97.3	97.3	97.3
15°	103.6	97.3	92.3	92.3	90.8	89.1	89.1	87.6	86.7	87.6	88.4
17.5°	87.6	82.8	78.7	78.7	77.9	77.0	77.0	77.0	77.9	78.7	80.3
20°	72.3	68.3	66.6	66.6	65.8	66.6	66.6	67.5	68.3	70.7	73.1
22.5°	58.6	56.2	54.6	55.4	55.4	56.2	57.0	58.6	60.2	62.6	65.1
25°	47.4	45.8	45.0	45.8	46.6	47.4	49.0	50.6	53.0	55.4	58.6
27.5°	37.8	37.0	37.0	37.8	38.6	40.2	42.6	44.2	46.6	49.0	52.2
30°	30.6	29.8	30.6	32.2	33.0	34.6	36.2	38.6	41.0	43.4	46.6
32.5°	24.2	24.9	25.7	26.6	27.4	29.8	31.3	33.0	35.4	37.8	41.0
35°	20.1	20.9	21.8	22.5	23.3	24.9	26.6	28.1	30.6	33.0	36.2
37.5°	16.0	16.9	17.7	19.2	20.1	20.9	23.3	24.2	26.6	28.1	31.3
40°	13.6	14.5	15.3	16.0	16.9	18.5	20.1	20.9	22.5	24.9	27.4
42.5°	11.2	12.1	12.9	13.6	14.5	16.0	16.9	18.5	20.1	21.8	23.3
45°	9.7	10.4	11.2	12.1	12.9	13.6	14.5	16.0	16.9	18.5	20.1
47.5°	8.0	8.8	10.4	10.4	11.2	12.1	12.9	13.6	15.3	16.0	17.7
50°	7.3	8.0	8.8	9.7	9.7	10.4	11.2	12.1	12.9	13.6	15.3
52.5°	6.5	7.3	8.0	8.0	8.8	9.7	10.4	10.4	11.2	12.1	12.9
55°	5.6	6.5	7.3	7.3	8.0	8.8	8.8	9.7	10.4	10.4	11.2
57.5°	5.6	5.6	6.5	6.5	7.3	7.3	8.0	8.8	8.8	9.7	10.4
60°	4.8	5.6	5.6	6.5	6.5	7.3	7.3	8.0	8.0	8.8	8.8
62.5°	4.8	4.8	5.6	5.6	6.5	6.5	7.3	7.3	7.3	8.0	8.0
65°	4.8	4.8	5.6	5.6	5.6	6.5	6.5	6.5	6.5	7.3	7.3
67.5°	4.1	4.8	4.8	5.6	5.6	5.6	5.6	5.6	6.5	6.5	6.5
70°	4.1	4.8	4.8	4.8	4.8	5.6	5.6	5.6	5.6	5.6	5.6
72.5°	4.1	4.1	4.1	4.1	4.8	4.8	4.8	4.8	4.8	4.8	4.8
75°	4.1	4.1	4.1	4.1	4.1	4.8	4.8	4.8	4.8	4.8	4.8
77.5°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
80°	3.2	3.2	3.2	3.2	3.2	4.1	3.2	3.2	3.2	3.2	3.2
82.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.4	2.4
85°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.4	2.4	2.4	2.4
87.5°	3.2	3.2	3.2	2.4	2.4	2.4	2.4	2.4	2.4	1.6	1.6
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: P1212184

CATALOG NUMBER: LDSQA4A20927D010TE LAR35FL 4LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	204.9	204.9	204.9	204.9	204.9	204.9	204.9	204.9
2.5°	153.4	151.8	153.4	151.8	151.8	148.6	151.0	149.4
5°	129.4	127.7	129.4	128.6	126.9	126.2	127.7	126.9
7.5°	115.7	114.1	115.7	115.7	114.1	113.3	114.9	114.1
10°	105.3	104.4	105.3	105.3	104.4	103.6	105.3	104.4
12.5°	96.4	95.6	97.3	97.3	96.4	96.4	98.0	96.4
15°	88.4	88.4	89.9	89.9	89.9	89.9	91.6	90.8
17.5°	80.3	81.9	83.5	84.3	84.3	84.3	85.9	85.9
20°	73.9	75.5	77.0	77.9	78.7	78.7	80.3	80.3
22.5°	66.6	68.3	70.7	71.4	72.3	73.1	74.6	74.6
25°	60.2	61.9	64.2	65.1	66.6	67.5	69.0	69.0
27.5°	53.8	56.2	57.8	59.5	60.2	61.9	63.4	63.4
30°	48.2	50.6	52.2	53.8	54.6	56.2	57.8	57.8
32.5°	42.6	45.0	46.6	48.2	49.8	50.6	53.0	53.0
35°	37.8	39.3	41.8	42.6	44.2	45.8	47.4	47.4
37.5°	33.0	34.6	36.2	37.8	39.3	40.2	41.8	42.6
40°	28.9	30.6	32.2	33.0	34.6	36.2	37.0	37.8
42.5°	24.9	26.6	28.1	28.9	30.6	31.3	33.0	33.0
45°	21.8	23.3	24.2	24.9	26.6	27.4	28.9	28.9
47.5°	18.5	20.1	20.9	21.8	22.5	23.3	24.9	24.9
50°	16.0	16.9	17.7	18.5	19.2	20.9	21.8	21.8
52.5°	13.6	15.3	15.3	16.0	16.9	17.7	18.5	19.2
55°	12.1	12.9	13.6	13.6	14.5	15.3	16.0	16.9
57.5°	10.4	11.2	12.1	12.1	12.9	12.9	13.6	14.5
60°	9.7	9.7	10.4	10.4	10.4	11.2	11.2	12.1
62.5°	8.0	8.0	8.8	8.8	8.8	8.8	8.8	8.8
65°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
67.5°	6.5	6.5	6.5	6.5	5.6	5.6	5.6	5.6
70°	5.6	5.6	5.6	5.6	4.8	4.8	4.8	4.1
72.5°	4.8	4.8	4.8	4.8	4.1	4.1	3.2	3.2
75°	4.1	4.1	4.1	4.1	4.1	3.2	3.2	3.2
77.5°	4.1	3.2	3.2	3.2	3.2	3.2	3.2	2.4
80°	3.2	3.2	2.4	2.4	2.4	2.4	2.4	2.4
82.5°	2.4	2.4	2.4	2.4	1.6	1.6	1.6	1.6
85°	2.4	1.6	1.6	1.6	1.6	1.6	1.6	1.6
87.5°	1.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8
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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(END OF REPORT)