

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: P1219451

Luminaire Tested: **LDSQA4A10950D010TE LAR25NF 4LSQAL1H 30°**

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: P1219451
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26803)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA4A10950D010TE LAR25NF 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 25° NARROW FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

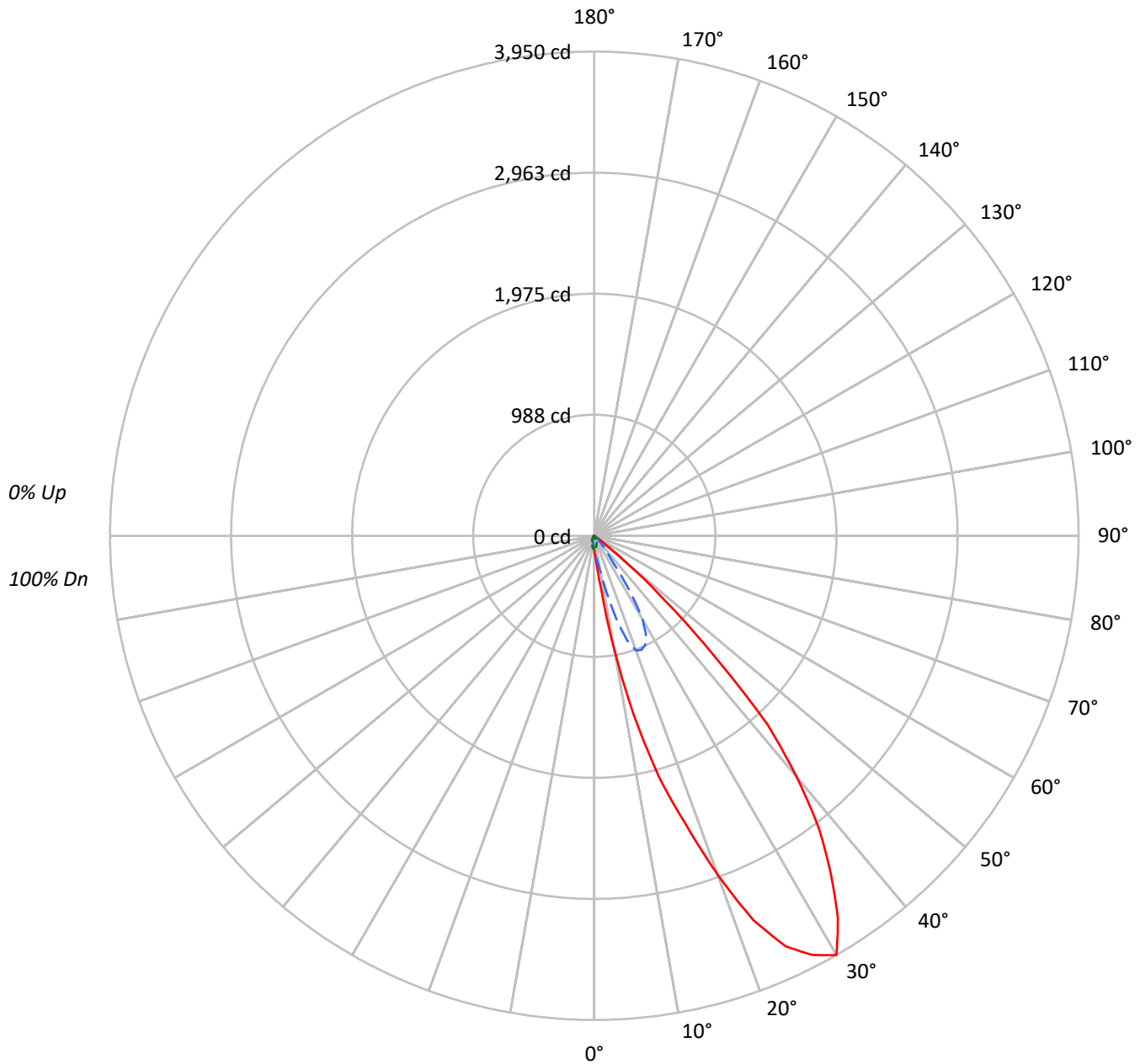
Lumens per Lamp: N/A
Luminaire Lumens: 989.4 lumens
Efficiency: N/A
Efficacy: 79.8 lumens/watt
Spacing Criteria (0/90/45): 2.37 / 0.61 / 1.19
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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	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	113	109	106	104	110	107	105	102	103	101	99	99	98	96	96	95	93	91		
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	87	85	83		
3	99	91	86	81	97	90	85	80	87	83	79	85	81	78	82	79	76	75		
4	93	84	77	72	91	83	76	72	80	75	71	78	74	70	76	72	69	67		
5	87	77	70	65	85	76	69	64	74	68	64	72	67	63	70	66	63	61		
6	81	70	63	58	79	69	63	58	68	62	57	66	61	57	65	60	57	55		
7	76	65	57	52	74	64	57	52	62	56	52	61	56	52	60	55	51	50		
8	71	59	52	47	69	59	52	47	58	51	47	57	51	47	55	50	47	45		
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	42	41		
10	62	51	44	39	61	50	44	39	49	43	39	48	43	39	48	42	39	37		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	10676	10676	10676
5°	23913	10045	7196
10°	93776	8794	5666
15°	203564	7121	4934
20°	303670	5278	4464
25°	394981	3709	3880
30°	441855	2506	3389
35°	397648	1466	2874
40°	324514	999	2517
45°	186323	685	2041
50°	54497	512	1718
55°	6283	422	1419
60°	1356	484	1143
65°	458	458	779
70°	425	566	566
75°	374	749	561
80°	0	1116	558
85°	0	2223	556



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	15.8	1.6
10°-20°	135.4	13.7
20°-30°	323.1	32.7
30°-40°	341.0	34.5
40°-50°	154.6	15.6
50°-60°	13.6	1.4
60°-70°	2.8	0.3
70°-80°	1.9	0.2
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°	474.3	47.9
0°-40°	815.3	82.4
0°-60°	983.5	99.4
0°-90°	989.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	989.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	110	110	110	110	110	
5°	246	180	103	80	74	44
15°	2030	714	71	49	49	591
25°	3695	982	35	30	36	1679
35°	3362	271	12	17	24	2076
45°	1360	38	5	10	15	1078
55°	37	6	2	6	8	74
65°	2	2	2	4	3	3
75°	1	1	2	2	2	1
85°	0	1	2	2	0	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°	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2
2.5°	163.9	164.9	160.5	161.0	156.5	158.5	156.9	153.0	150.0	145.1	143.1
5°	245.9	247.4	237.4	234.4	224.0	224.0	219.5	209.1	199.7	188.2	180.3
7.5°	449.6	455.5	425.7	403.3	370.6	362.6	347.3	311.5	282.2	252.3	229.9
10°	953.3	942.3	880.7	830.0	745.6	714.3	672.6	569.7	475.4	381.5	307.9
12.5°	1503.1	1538.4	1419.7	1378.4	1244.8	1216.5	1127.6	959.7	800.3	634.3	487.3
15°	2029.7	2040.1	1936.3	1869.2	1706.3	1669.5	1560.2	1363.0	1148.5	917.0	713.9
17.5°	2452.3	2494.1	2341.6	2269.6	2058.0	1998.9	1870.2	1630.3	1391.3	1138.5	897.6
20°	2945.6	2956.5	2775.8	2637.1	2360.5	2270.5	2116.6	1819.1	1534.4	1245.8	996.9
22.5°	3394.1	3391.6	3159.2	2963.5	2613.3	2506.0	2315.8	1963.1	1632.3	1293.4	1006.4
25°	3695.2	3703.1	3454.3	3222.8	2793.1	2648.0	2433.5	2038.1	1665.6	1292.0	982.5
27.5°	3855.6	3847.7	3580.9	3333.6	2859.2	2696.7	2463.8	2040.6	1635.3	1241.3	911.0
30°	3950.0	3843.7	3559.1	3302.3	2814.4	2647.6	2410.6	1962.1	1534.4	1128.1	783.3
32.5°	3697.7	3656.4	3408.6	3135.9	2660.5	2495.1	2261.2	1795.1	1374.5	954.7	561.3
35°	3362.4	3363.9	3122.0	2867.2	2419.0	2275.0	2033.6	1592.0	1179.3	663.6	271.2
37.5°	3010.7	3015.7	2785.6	2548.7	2149.9	1998.4	1772.4	1360.5	848.4	337.8	163.4
40°	2566.1	2576.6	2378.4	2188.2	1820.0	1674.0	1472.3	1029.7	474.3	188.8	110.8
42.5°	2096.7	2109.6	1933.8	1764.9	1451.9	1331.7	1152.9	637.8	235.5	122.2	65.1
45°	1360.0	1397.3	1266.7	1195.7	1014.3	942.8	752.5	325.3	142.1	71.6	38.3
47.5°	778.3	778.9	668.6	535.5	439.1	382.0	298.6	148.0	83.0	40.2	23.3
50°	361.6	370.6	293.6	244.4	174.8	148.0	121.7	80.0	43.7	23.3	14.5
52.5°	105.4	111.3	100.9	91.4	77.5	69.1	59.1	39.2	22.9	13.9	8.9
55°	37.2	39.7	37.2	34.7	31.3	28.3	25.4	18.8	12.9	8.4	5.9
57.5°	15.4	15.9	15.4	14.9	13.9	13.9	12.4	10.4	7.9	5.5	4.0
60°	7.0	7.5	7.0	7.5	7.0	7.0	7.0	7.5	5.0	3.4	3.0
62.5°	3.0	3.4	3.4	3.4	3.4	4.0	4.0	3.4	3.0	2.5	2.0
65°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
67.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
70°	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.5	1.5	1.5
72.5°	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.0	1.0	1.5	1.5
75°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	1.0	1.0	1.0
80°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.0	1.0	1.0
82.5°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	1.0	1.0	1.0
85°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.0	1.0	1.0
87.5°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.0	1.0	1.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2
2.5°	140.6	136.1	129.2	124.7	122.7	119.7	117.7	112.7	110.8	106.8	105.4
5°	172.8	163.9	153.5	145.1	139.6	133.6	124.7	114.7	109.8	103.3	99.8
7.5°	209.7	190.2	171.9	156.9	150.0	142.1	130.6	115.2	105.8	97.3	92.4
10°	256.4	216.5	187.7	163.9	153.5	143.1	129.2	111.3	99.3	89.4	83.9
12.5°	365.6	261.2	202.2	167.9	154.4	141.5	124.2	105.8	91.9	80.5	74.5
15°	526.0	365.1	240.9	171.4	151.0	135.1	115.2	96.8	82.5	71.0	65.1
17.5°	668.1	465.4	294.5	184.3	150.0	127.7	104.3	85.5	71.6	60.6	55.6
20°	745.6	518.1	330.3	192.2	145.5	116.3	91.9	74.0	60.6	51.2	46.7
22.5°	747.1	515.1	317.4	174.8	128.1	100.9	79.5	62.6	50.6	42.2	38.8
25°	702.4	459.5	264.8	137.6	104.8	85.5	66.6	52.2	41.2	34.7	31.8
27.5°	618.9	373.6	194.7	99.3	82.0	69.1	53.7	41.7	32.2	28.3	25.8
30°	486.8	243.4	113.8	74.0	63.5	53.1	40.8	29.3	25.4	22.4	20.4
32.5°	261.2	118.2	79.5	54.6	45.2	37.2	26.8	21.3	18.4	16.4	15.9
35°	136.6	86.4	53.1	34.7	28.8	24.3	18.4	14.9	13.4	12.4	12.4
37.5°	97.9	54.2	33.8	22.4	18.8	15.4	12.9	10.9	10.0	10.0	10.0
40°	58.1	33.3	20.4	14.5	12.4	10.9	9.5	7.9	7.9	7.9	7.9
42.5°	35.3	20.9	14.5	10.0	8.9	7.9	7.0	6.4	5.9	5.9	6.4
45°	21.8	14.5	9.5	7.5	7.0	5.9	5.5	5.0	5.0	5.0	5.5
47.5°	13.9	10.4	7.0	5.0	4.5	4.0	3.4	3.4	4.0	4.0	4.5
50°	10.4	6.4	4.5	3.4	3.0	3.0	2.5	3.0	3.0	3.4	4.0
52.5°	5.9	4.0	3.0	2.5	2.5	2.0	2.0	2.5	2.5	3.0	3.4
55°	4.0	3.0	2.5	2.0	2.0	2.0	2.0	2.0	2.5	2.5	3.0
57.5°	3.0	2.5	2.0	2.0	2.0	1.5	2.0	2.0	2.0	2.5	3.0
60°	2.5	2.0	2.0	2.0	2.0	1.5	1.5	2.0	2.0	2.5	2.5
62.5°	2.0	2.0	2.0	2.0	2.0	1.5	2.0	2.0	2.0	2.0	2.5
65°	1.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5
67.5°	1.5	1.5	2.0	2.0	2.0	1.5	2.0	2.0	2.0	2.0	2.5
70°	1.5	1.5	1.5	2.0	2.0	1.5	2.0	2.0	2.0	2.0	2.0
72.5°	1.5	1.5	1.5	2.0	2.0	1.5	2.0	2.0	2.0	2.0	2.0
75°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0
77.5°	1.5	1.5	1.5	1.5	2.0	1.5	2.0	2.0	2.0	2.0	2.0
80°	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.0
82.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0
85°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0
87.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2
2.5°	101.3	99.8	96.8	96.4	95.9	93.9	92.4	90.9	90.9	89.4	88.4
5°	93.9	91.4	87.9	86.4	85.9	83.4	81.4	80.0	79.5	78.0	76.5
7.5°	85.9	83.0	78.9	77.5	77.0	74.5	72.5	71.0	70.0	68.5	67.6
10°	77.5	74.0	70.5	69.1	68.5	66.0	64.6	63.1	62.1	61.0	60.1
12.5°	68.5	65.5	62.1	60.6	60.1	58.1	56.6	55.6	55.1	54.2	53.7
15°	59.6	56.6	53.7	52.6	52.2	50.6	49.7	49.2	48.7	48.7	48.2
17.5°	50.6	48.2	45.7	45.2	44.7	43.7	43.3	42.7	43.3	43.3	43.7
20°	42.2	40.2	38.3	38.3	37.8	37.2	37.2	37.2	38.3	38.8	39.7
22.5°	34.7	33.3	31.8	31.8	31.8	31.8	31.8	32.8	33.8	34.7	35.3
25°	28.8	27.4	26.8	26.8	26.8	27.4	27.8	28.8	29.8	30.8	31.8
27.5°	23.3	22.4	22.4	22.4	22.9	23.3	23.8	24.9	26.3	27.4	28.3
30°	18.8	18.4	18.4	18.8	19.3	19.9	20.9	21.8	22.9	23.8	24.9
32.5°	14.9	15.4	15.4	15.9	16.4	16.8	17.9	18.8	19.9	20.9	21.3
35°	12.4	12.4	12.9	13.4	13.9	14.5	15.4	16.4	16.8	17.9	18.8
37.5°	10.0	10.4	10.9	11.4	12.0	12.4	12.9	13.9	14.5	15.4	16.4
40°	8.4	8.9	9.5	10.0	10.0	10.9	10.9	12.0	12.4	13.4	14.5
42.5°	7.0	7.5	7.9	8.4	8.4	8.9	9.5	10.0	10.9	11.4	12.4
45°	5.5	5.9	6.4	7.0	7.5	7.9	7.9	8.9	9.5	10.0	10.9
47.5°	5.0	5.5	5.9	5.9	6.4	7.0	7.0	7.9	8.4	8.9	9.5
50°	4.0	4.5	5.0	5.5	5.5	5.9	6.4	7.0	7.5	7.9	7.9
52.5°	3.4	4.0	4.5	4.5	5.0	5.5	5.5	5.9	6.4	6.4	7.0
55°	3.4	4.0	4.0	4.5	4.5	5.0	5.0	5.5	5.5	5.9	5.9
57.5°	3.0	3.4	3.4	4.0	4.0	4.5	4.5	5.0	5.0	5.0	5.5
60°	3.0	3.0	3.4	3.4	4.0	4.0	4.0	4.5	4.5	4.5	5.0
62.5°	2.5	3.0	3.0	3.4	3.4	3.4	4.0	4.0	4.0	4.5	4.5
65°	2.5	3.0	3.0	3.4	3.4	3.4	3.4	3.4	4.0	4.0	4.0
67.5°	2.5	2.5	3.0	3.0	3.0	3.0	3.4	3.4	3.4	3.4	3.4
70°	2.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
72.5°	2.0	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	2.5
75°	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
77.5°	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5	2.0	2.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.5
82.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.5	1.5	1.5
85°	2.0	1.5	2.0	2.0	2.0	1.5	1.5	1.5	1.5	1.5	1.0
87.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0
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: P1219451

CATALOG NUMBER: LDSQA4A10950D010TE LAR25NF 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	110.2	110.2	110.2	110.2	110.2	110.2	110.2	110.2
2.5°	87.5	86.4	86.9	86.9	85.9	85.5	85.5	85.9
5°	75.5	74.5	75.0	75.0	74.0	73.5	73.5	74.0
7.5°	66.6	65.5	66.0	66.0	65.1	65.1	65.1	65.1
10°	59.6	59.1	59.1	59.1	58.1	58.7	58.1	57.6
12.5°	53.1	53.1	53.1	53.1	52.6	53.1	52.6	52.6
15°	48.2	48.2	48.7	48.7	48.7	49.2	49.2	49.2
17.5°	44.2	44.7	45.2	45.7	45.7	46.2	46.2	46.2
20°	40.2	41.2	41.7	42.2	42.2	43.3	42.7	43.3
22.5°	36.3	37.2	37.8	38.3	38.8	39.2	39.2	39.7
25°	32.8	33.8	34.3	34.7	35.3	36.3	36.3	36.3
27.5°	29.3	30.3	30.8	31.8	32.2	33.3	33.3	33.3
30°	25.8	26.8	27.4	27.8	28.8	29.8	29.8	30.3
32.5°	22.4	23.8	24.3	24.9	25.8	26.8	27.4	27.4
35°	19.9	20.9	21.3	22.4	22.9	24.3	24.3	24.3
37.5°	17.4	18.4	19.3	19.9	20.4	21.3	21.8	22.4
40°	15.4	16.4	16.8	17.4	18.4	19.3	19.9	19.9
42.5°	13.4	14.5	14.9	15.4	15.9	16.8	16.8	16.8
45°	12.0	12.4	12.9	13.4	13.9	14.5	14.9	14.9
47.5°	10.0	10.9	10.9	11.4	12.0	12.9	12.9	13.4
50°	8.4	9.5	9.5	10.0	10.4	10.9	11.4	11.4
52.5°	7.5	7.9	8.4	8.4	8.9	9.5	10.0	10.0
55°	6.4	7.0	7.0	7.5	7.5	7.9	8.4	8.4
57.5°	5.5	5.9	6.4	6.4	6.4	7.0	7.0	7.5
60°	5.0	5.5	5.5	5.5	5.5	5.9	5.9	5.9
62.5°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
65°	4.0	4.0	4.0	4.0	3.4	3.4	3.4	3.4
67.5°	3.4	3.4	3.4	3.4	3.0	3.0	3.0	3.0
70°	3.0	3.0	3.0	3.0	2.5	2.5	2.5	2.0
72.5°	2.5	2.5	2.5	2.5	2.5	2.0	2.0	2.0
75°	2.5	2.0	2.0	2.0	2.0	2.0	1.5	1.5
77.5°	2.0	2.0	2.0	1.5	1.5	1.5	1.5	1.5
80°	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0
82.5°	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5
87.5°	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
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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Peachtree City, GA 30269

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— 0°-180° - - 45°-225° - - - 90°-270°

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(END OF REPORT)