

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: P1219467

Luminaire Tested: **LDSQA4A15927D010TE LAR35FL 4LSQA1H 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: P1219467
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: LDSQA4A15927D010TE 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

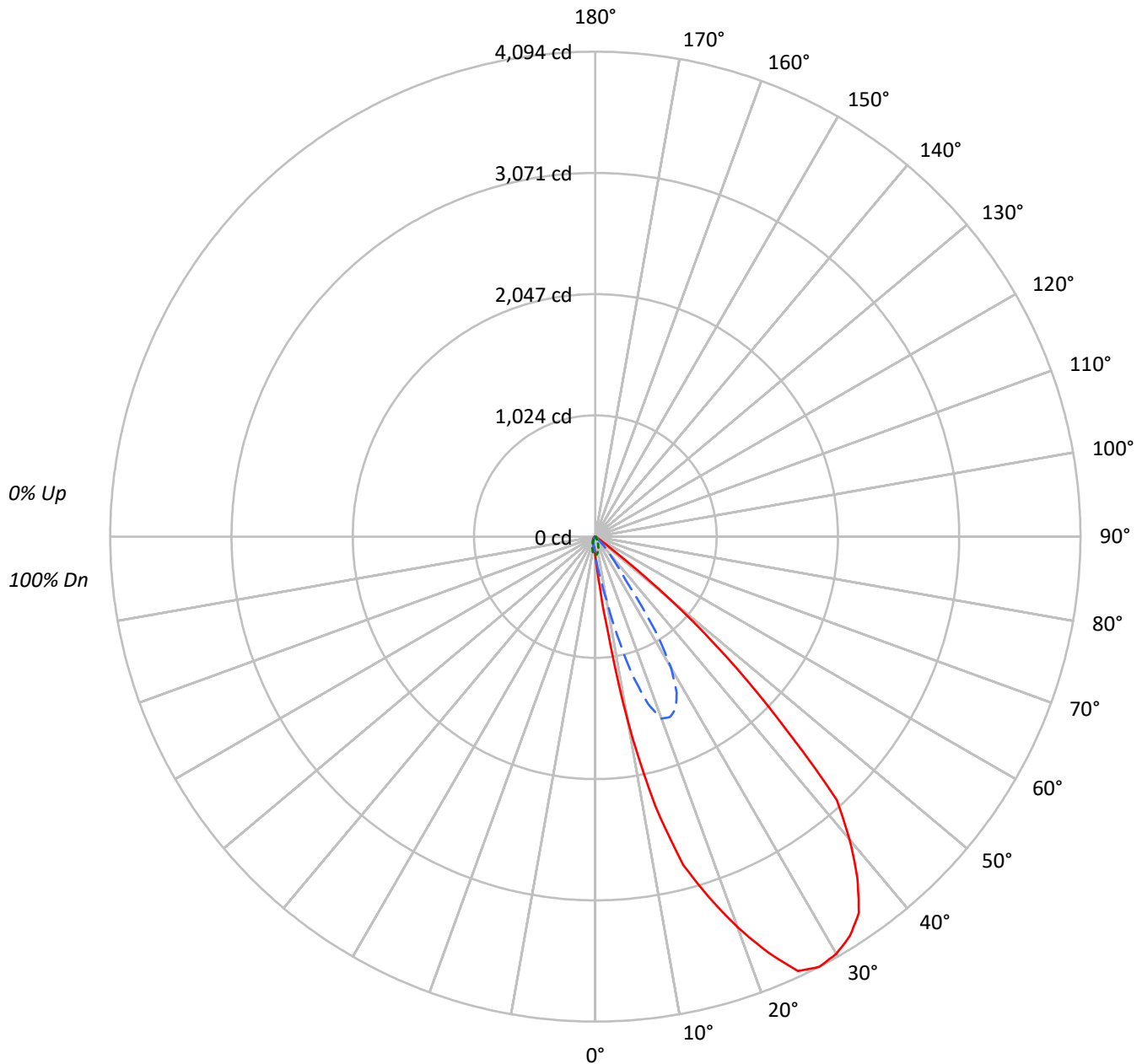
Lumens per Lamp: N/A
Luminaire Lumens: 1341.4 lumens
Efficiency: N/A
Efficacy: 65.8 lumens/watt
Spacing Criteria (0/90/45): 2.46 / 0.59 / 1.2
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 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

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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
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111			106	106	106			102
1	112	109	106	104	110	107	105	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	81	97	90	84	80		87	83	79			85	81	77			82
4	92	83	77	72	91	82	76	71		80	75	71			78	73	70			76
5	86	76	69	64	85	75	69	64		74	68	63			72	67	63			70
6	81	70	63	58	79	69	62	58		68	62	57			66	61	57			65
7	75	64	57	52	74	64	57	52		62	56	52			61	55	51			60
8	71	59	52	47	69	59	52	47		57	51	47			56	51	47			55
9	66	55	48	43	65	54	47	43		53	47	43			52	46	42			51
10	62	50	44	39	61	50	43	39		49	43	39			48	43	39			47

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	15161	15161	15161
5°	39871	14441	9433
10°	156310	12493	7850
15°	287780	9849	6960
20°	361628	6959	6330
25°	432542	4596	5644
30°	454865	2875	4944
35°	458530	1750	4281
40°	421940	1163	3642
45°	300200	836	3028
50°	124051	648	2487
55°	7161	625	2179
60°	833	601	1783
65°	275	711	1261
70°	340	708	878
75°	449	936	936
80°	0	1395	1060
85°	0	2779	1334



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.6	1.8
10°-20°	196.5	14.7
20°-30°	406.5	30.3
30°-40°	442.6	33.0
40°-50°	242.7	18.1
50°-60°	21.0	1.6
60°-70°	3.4	0.3
70°-80°	2.5	0.2
80°-90°	1.6	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°	627.7	46.8
0°-40°	1070.2	79.8
0°-60°	1333.9	99.4
0°-90°	1341.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1341.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	156	156	156	156	156	
5°	410	280	148	102	97	75
15°	2869	1206	98	66	69	801
25°	4047	1604	43	40	53	1827
35°	3877	439	15	23	36	2379
45°	2191	45	6	13	22	1672
55°	42	5	4	8	13	145
65°	1	2	3	5	6	2
75°	1	2	2	4	2	1
85°	0	1	2	2	1	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°	156.5	156.5	156.5	156.5	156.5	156.5	156.5	156.5	156.5	156.5	156.5
2.5°	246.1	237.5	236.3	237.5	231.4	230.8	232.1	227.1	222.8	218.5	214.8
5°	410.0	392.2	386.7	379.3	360.9	354.7	353.5	333.9	314.8	297.1	280.5
7.5°	796.7	761.1	742.1	705.3	648.7	623.6	610.1	545.7	485.5	430.8	381.2
10°	1589.0	1495.8	1450.4	1381.0	1257.6	1196.9	1152.7	990.6	831.1	677.7	542.6
12.5°	2318.9	2267.3	2200.4	2163.5	1963.5	1886.7	1813.7	1589.0	1346.0	1098.0	851.9
15°	2869.4	2793.9	2722.7	2705.6	2548.5	2458.8	2377.8	2145.1	1856.1	1540.5	1206.1
17.5°	3192.8	3138.9	3071.4	3038.8	2854.7	2782.3	2690.2	2464.9	2183.8	1869.6	1481.0
20°	3507.8	3428.0	3332.8	3283.7	3080.0	2996.4	2892.1	2655.2	2357.5	2023.7	1635.1
22.5°	3795.7	3692.5	3557.5	3481.3	3252.4	3160.4	3043.8	2787.1	2464.9	2083.2	1648.0
25°	4046.6	3953.4	3773.5	3640.3	3370.3	3261.7	3126.0	2857.7	2503.6	2078.3	1604.4
27.5°	4094.5	4031.9	3870.5	3716.5	3411.3	3290.5	3149.9	2872.5	2476.6	2010.1	1487.2
30°	4066.3	3998.8	3869.3	3712.1	3394.2	3272.0	3126.0	2809.9	2371.0	1851.2	1272.3
32.5°	3998.1	3939.8	3785.2	3619.4	3309.5	3182.5	3028.4	2663.2	2190.0	1598.3	936.0
35°	3877.2	3789.5	3602.9	3466.6	3175.1	3044.3	2856.0	2467.4	1919.3	1149.0	438.9
37.5°	3631.1	3545.8	3411.3	3285.6	3001.4	2847.3	2648.4	2194.8	1422.7	626.7	271.3
40°	3336.5	3262.8	3145.6	3023.5	2730.7	2553.3	2334.2	1715.5	837.2	352.9	166.9
42.5°	3016.1	2940.0	2807.4	2665.1	2345.9	2158.7	1921.8	1110.3	441.3	208.1	90.9
45°	2191.2	2123.1	2026.7	1924.2	1739.4	1604.4	1292.6	583.1	244.3	110.5	44.8
47.5°	1499.5	1418.5	1240.5	1025.0	831.1	710.7	534.6	252.8	125.2	55.2	26.4
50°	823.1	737.2	646.3	503.3	337.0	276.8	215.4	122.2	56.4	27.6	14.8
52.5°	202.0	178.6	163.3	150.4	119.1	107.4	90.9	51.0	25.7	15.3	10.4
55°	42.4	39.3	37.4	36.8	33.8	32.6	28.2	19.6	14.2	9.8	5.0
57.5°	12.3	11.7	12.3	12.3	12.3	11.7	11.7	8.6	8.0	5.0	3.1
60°	4.3	4.3	4.3	5.0	5.0	5.0	5.5	5.5	4.3	3.1	2.5
62.5°	1.9	1.9	1.9	2.5	2.5	3.1	3.1	3.1	2.5	2.5	1.9
65°	1.2	1.2	1.2	1.2	1.9	1.9	1.9	1.9	1.9	1.9	1.9
67.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.9
70°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.9
72.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.9
75°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.9
77.5°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.2	1.2	1.2	1.9
80°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.2	1.2	1.2	1.2
82.5°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	1.2	1.2	1.2
85°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	1.2	1.2	1.2
87.5°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	1.2	1.2	1.2
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	156.5	156.5	156.5	156.5	156.5	156.5	156.5	156.5	156.5	156.5	156.5
2.5°	204.4	198.3	190.9	183.0	181.7	177.4	171.3	162.7	159.6	153.4	147.9
5°	256.6	240.0	222.8	207.5	202.6	195.8	184.7	169.4	159.6	148.5	139.3
7.5°	326.5	288.5	253.5	225.9	217.3	206.2	189.1	169.4	154.6	139.3	127.0
10°	419.9	342.4	282.3	237.5	223.4	208.7	186.0	162.1	144.8	127.0	114.1
12.5°	599.6	421.6	309.4	243.6	224.0	205.0	176.1	150.4	130.8	113.0	100.1
15°	852.6	572.0	363.9	248.0	217.9	194.5	160.8	134.4	114.7	98.2	85.9
17.5°	1066.1	714.5	437.0	260.3	213.6	181.1	143.1	116.0	97.0	82.3	72.5
20°	1170.5	778.2	470.2	262.1	201.4	160.8	122.2	96.3	79.8	67.5	58.9
22.5°	1158.2	756.8	439.5	229.6	170.0	135.6	101.3	77.9	63.9	54.1	47.9
25°	1075.9	663.5	358.5	175.5	132.6	109.9	79.2	60.8	49.7	43.0	38.0
27.5°	937.8	532.7	261.5	123.9	100.7	83.5	58.9	46.6	38.0	33.2	30.1
30°	722.4	340.7	150.4	89.0	73.1	59.5	44.2	33.8	28.8	25.7	23.4
32.5°	372.5	165.7	100.1	63.9	51.6	43.0	30.7	24.6	21.5	19.6	18.4
35°	204.4	117.8	69.4	41.1	33.2	27.6	20.9	17.2	15.9	14.8	14.8
37.5°	140.6	73.1	38.7	24.6	20.3	17.2	14.2	12.3	11.7	11.7	11.7
40°	81.0	38.7	22.1	15.3	12.9	11.7	9.8	9.2	9.2	9.2	9.8
42.5°	41.8	22.7	14.8	10.4	9.2	8.0	6.7	6.7	6.7	7.3	8.0
45°	24.6	15.3	9.8	6.7	6.1	5.5	5.0	5.0	5.5	6.1	6.7
47.5°	15.3	10.4	6.1	4.3	3.7	3.7	3.7	3.7	4.3	5.0	5.5
50°	10.4	5.5	3.7	2.5	2.5	2.5	2.5	3.1	3.7	4.3	5.0
52.5°	5.5	3.1	2.5	1.9	1.9	1.9	2.5	2.5	3.1	3.7	4.3
55°	3.1	2.5	1.9	1.9	1.9	1.9	1.9	2.5	3.1	3.7	4.3
57.5°	2.5	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	3.1	3.7
60°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	3.1	3.7
62.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	3.1	3.1
65°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	3.1	3.1
67.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	3.1
70°	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	2.5	3.1
72.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	2.5
75°	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	2.5	2.5	3.1
77.5°	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	2.5	2.5
80°	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	2.5	2.5
82.5°	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	2.5	2.5
85°	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	2.5	2.5	2.5
87.5°	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	2.5	2.5
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°	156.5	156.5	156.5	156.5	156.5	156.5	156.5	156.5	156.5	156.5	156.5
2.5°	144.8	140.0	135.0	135.0	132.6	128.9	127.7	123.9	121.6	120.3	119.1
5°	132.6	125.2	118.5	117.8	114.7	110.5	108.6	104.9	102.5	101.3	100.7
7.5°	118.5	111.1	104.3	103.2	100.7	97.6	95.7	92.7	91.5	90.2	89.6
10°	104.9	97.6	92.7	91.5	89.6	87.1	85.3	83.5	82.3	81.7	81.7
12.5°	91.5	85.9	81.7	80.4	79.2	77.3	76.1	74.8	74.2	74.2	74.2
15°	79.2	74.2	70.6	70.6	69.4	68.1	68.1	66.9	66.3	66.9	67.5
17.5°	66.9	63.3	60.2	60.2	59.5	58.9	58.9	58.9	59.5	60.2	61.4
20°	55.2	52.2	51.0	51.0	50.3	51.0	51.0	51.6	52.2	54.1	55.8
22.5°	44.8	43.0	41.8	42.4	42.4	43.0	43.6	44.8	46.0	47.9	49.7
25°	36.2	34.9	34.4	34.9	35.6	36.2	37.4	38.7	40.5	42.4	44.8
27.5°	28.8	28.2	28.2	28.8	29.5	30.7	32.6	33.8	35.6	37.4	39.9
30°	23.4	22.7	23.4	24.6	25.1	26.4	27.6	29.5	31.3	33.2	35.6
32.5°	18.4	19.0	19.6	20.3	20.9	22.7	24.0	25.1	27.0	28.8	31.3
35°	15.3	15.9	16.5	17.2	17.8	19.0	20.3	21.5	23.4	25.1	27.6
37.5°	12.3	12.9	13.5	14.8	15.3	15.9	17.8	18.4	20.3	21.5	24.0
40°	10.4	11.1	11.7	12.3	12.9	14.2	15.3	15.9	17.2	19.0	20.9
42.5°	8.6	9.2	9.8	10.4	11.1	12.3	12.9	14.2	15.3	16.5	17.8
45°	7.3	8.0	8.6	9.2	9.8	10.4	11.1	12.3	12.9	14.2	15.3
47.5°	6.1	6.7	8.0	8.0	8.6	9.2	9.8	10.4	11.7	12.3	13.5
50°	5.5	6.1	6.7	7.3	7.3	8.0	8.6	9.2	9.8	10.4	11.7
52.5°	5.0	5.5	6.1	6.1	6.7	7.3	8.0	8.0	8.6	9.2	9.8
55°	4.3	5.0	5.5	5.5	6.1	6.7	6.7	7.3	8.0	8.0	8.6
57.5°	4.3	4.3	5.0	5.0	5.5	5.5	6.1	6.7	6.7	7.3	8.0
60°	3.7	4.3	4.3	5.0	5.0	5.5	5.5	6.1	6.1	6.7	6.7
62.5°	3.7	3.7	4.3	4.3	5.0	5.0	5.5	5.5	5.5	6.1	6.1
65°	3.7	3.7	4.3	4.3	4.3	5.0	5.0	5.0	5.0	5.5	5.5
67.5°	3.1	3.7	3.7	4.3	4.3	4.3	4.3	4.3	5.0	5.0	5.0
70°	3.1	3.7	3.7	3.7	3.7	4.3	4.3	4.3	4.3	4.3	4.3
72.5°	3.1	3.1	3.1	3.1	3.7	3.7	3.7	3.7	3.7	3.7	3.7
75°	3.1	3.1	3.1	3.1	3.1	3.7	3.7	3.7	3.7	3.7	3.7
77.5°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
80°	2.5	2.5	2.5	2.5	2.5	3.1	2.5	2.5	2.5	2.5	2.5
82.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.9	1.9
85°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.9	1.9	1.9	1.9
87.5°	2.5	2.5	2.5	1.9	1.9	1.9	1.9	1.9	1.9	1.2	1.2
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: P1219467

CATALOG NUMBER: LDSQA4A15927D010TE LAR35FL 4LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	156.5	156.5	156.5	156.5	156.5	156.5	156.5	156.5
2.5°	117.2	116.0	117.2	116.0	116.0	113.6	115.4	114.1
5°	98.8	97.6	98.8	98.2	97.0	96.3	97.6	97.0
7.5°	88.4	87.1	88.4	88.4	87.1	86.5	87.8	87.1
10°	80.4	79.8	80.4	80.4	79.8	79.2	80.4	79.8
12.5°	73.7	73.1	74.2	74.2	73.7	73.7	74.8	73.7
15°	67.5	67.5	68.7	68.7	68.7	68.7	70.0	69.4
17.5°	61.4	62.6	63.9	64.4	64.4	64.4	65.6	65.6
20°	56.4	57.7	58.9	59.5	60.2	60.2	61.4	61.4
22.5°	51.0	52.2	54.1	54.6	55.2	55.8	57.1	57.1
25°	46.0	47.2	49.1	49.7	51.0	51.6	52.8	52.8
27.5°	41.1	43.0	44.2	45.4	46.0	47.2	48.5	48.5
30°	36.8	38.7	39.9	41.1	41.8	43.0	44.2	44.2
32.5°	32.6	34.4	35.6	36.8	38.0	38.7	40.5	40.5
35°	28.8	30.1	31.9	32.6	33.8	34.9	36.2	36.2
37.5°	25.1	26.4	27.6	28.8	30.1	30.7	31.9	32.6
40°	22.1	23.4	24.6	25.1	26.4	27.6	28.2	28.8
42.5°	19.0	20.3	21.5	22.1	23.4	24.0	25.1	25.1
45°	16.5	17.8	18.4	19.0	20.3	20.9	22.1	22.1
47.5°	14.2	15.3	15.9	16.5	17.2	17.8	19.0	19.0
50°	12.3	12.9	13.5	14.2	14.8	15.9	16.5	16.5
52.5°	10.4	11.7	11.7	12.3	12.9	13.5	14.2	14.8
55°	9.2	9.8	10.4	10.4	11.1	11.7	12.3	12.9
57.5°	8.0	8.6	9.2	9.2	9.8	9.8	10.4	11.1
60°	7.3	7.3	8.0	8.0	8.0	8.6	8.6	9.2
62.5°	6.1	6.1	6.7	6.7	6.7	6.7	6.7	6.7
65°	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
67.5°	5.0	5.0	5.0	5.0	4.3	4.3	4.3	4.3
70°	4.3	4.3	4.3	4.3	3.7	3.7	3.7	3.1
72.5°	3.7	3.7	3.7	3.7	3.1	3.1	2.5	2.5
75°	3.1	3.1	3.1	3.1	3.1	2.5	2.5	2.5
77.5°	3.1	2.5	2.5	2.5	2.5	2.5	2.5	1.9
80°	2.5	2.5	1.9	1.9	1.9	1.9	1.9	1.9
82.5°	1.9	1.9	1.9	1.9	1.2	1.2	1.2	1.2
85°	1.9	1.2	1.2	1.2	1.2	1.2	1.2	1.2
87.5°	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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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