

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: P1219477

Luminaire Tested: **LDSQA4A15930D010TE LAR25NF 4LSQA1H 30°**

Issue Date: 3/3/2020



Test Information

Test Method: LM-41-14
Report Number: P1219477
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26800)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA4A15930D010TE LAR25NF 4LSQA1H 30°
Description: PORTFOLIO 4" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 25° NARROW FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

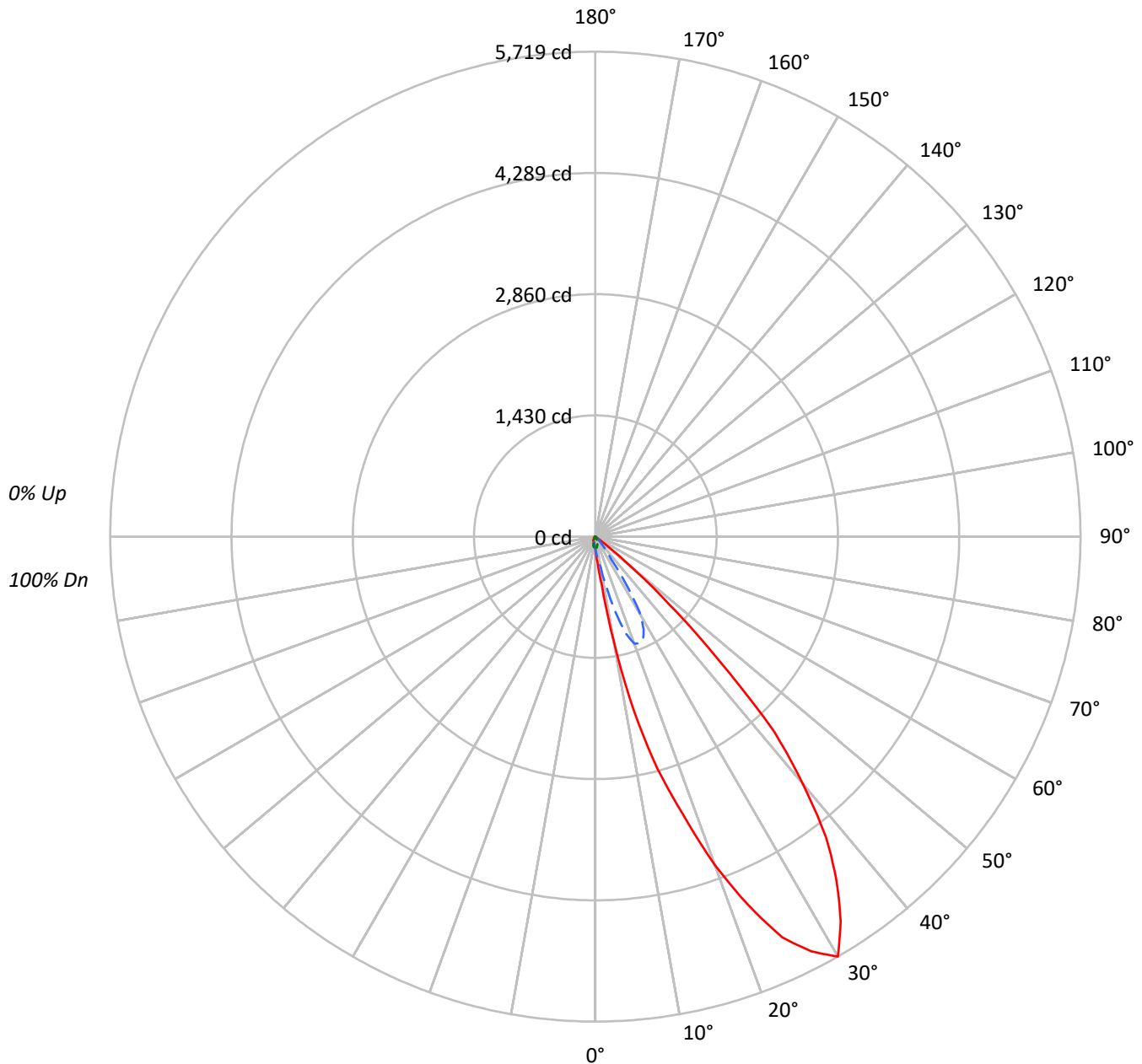
Lumens per Lamp: N/A
Luminaire Lumens: 1377.7 lumens
Efficiency: N/A
Efficacy: 67.5 lumens/watt
Spacing Criteria (0/90/45): 2.38 / 0.59 / 1.18
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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



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
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111		106	106	106		102	102	102
1	113	109	106	104	110	107	105	102		103	101	99		99	98	96		96	95	93
2	106	100	95	91	103	98	94	90		95	91	88		92	89	86		89	87	84
3	99	91	86	81	97	90	85	80		87	83	79		85	81	78		82	79	76
4	93	84	77	72	91	82	76	72		80	75	71		78	73	70		76	72	69
5	87	77	70	64	85	76	69	64		74	68	64		72	67	63		70	66	62
6	81	70	63	58	79	69	63	58		68	62	57		66	61	57		65	60	56
7	76	64	57	52	74	64	57	52		62	56	52		61	56	51		60	55	51
8	71	59	52	47	69	59	52	47		57	51	47		56	51	47		55	50	46
9	66	55	48	43	65	54	47	43		53	47	43		52	46	42		51	46	42
10	62	50	44	39	61	50	43	39		49	43	39		48	43	39		47	42	38

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	13931	13931	13931
5°	30846	13177	9258
10°	123484	11450	7742
15°	284641	9107	6800
20°	424907	6464	6062
25°	557304	4308	5398
30°	639739	2718	4721
35°	586573	1750	4092
40°	481023	1126	3478
45°	278869	781	2809
50°	79033	588	2306
55°	7246	540	1942
60°	1104	620	1608
65°	298	596	1169
70°	368	736	906
75°	487	973	973
80°	0	1450	725
85°	0	2890	667

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	20.4	1.5
10°-20°	183.2	13.3
20°-30°	446.4	32.4
30°-40°	483.8	35.1
40°-50°	219.2	15.9
50°-60°	17.0	1.2
60°-70°	3.5	0.3
70°-80°	2.6	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°	650.0	47.2
0°-40°	1133.8	82.3
0°-60°	1370.0	99.4
0°-90°	1377.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1377.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	144	144	144	144	144	
5°	317	234	136	102	95	57
15°	2838	928	91	66	68	825
25°	5214	1333	40	40	50	2377
35°	4960	339	15	23	35	3051
45°	2036	43	6	13	20	1607
55°	43	6	3	8	12	98
65°	1	2	3	5	5	2
75°	1	2	3	4	3	1
85°	0	2	3	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°	143.8	143.8	143.8	143.8	143.8	143.8	143.8	143.8	143.8	143.8	143.8
2.5°	215.5	211.7	213.5	208.5	205.3	202.8	204.0	202.8	194.4	192.5	186.1
5°	317.2	311.5	311.5	300.6	289.1	282.1	282.1	273.7	255.8	247.5	234.0
7.5°	568.6	557.0	547.4	513.5	469.4	444.4	438.1	402.9	357.5	328.7	294.8
10°	1255.3	1207.4	1173.4	1085.2	966.9	893.4	862.0	740.5	596.0	487.3	388.8
12.5°	2111.0	2045.7	1986.2	1841.8	1671.6	1555.9	1493.9	1314.8	1034.1	833.3	623.5
15°	2838.1	2767.7	2697.4	2521.5	2341.8	2241.5	2127.6	1890.3	1519.5	1234.2	928.5
17.5°	3434.7	3395.1	3322.8	3065.1	2838.7	2682.0	2563.7	2253.5	1871.8	1546.3	1200.4
20°	4121.6	4023.8	3894.6	3581.8	3272.3	3075.9	2909.7	2531.7	2090.5	1716.4	1344.2
22.5°	4699.6	4629.9	4444.5	4032.1	3576.7	3409.2	3205.8	2751.1	2231.2	1788.6	1360.9
25°	5213.8	5104.4	4871.7	4381.1	3915.0	3629.7	3380.4	2870.0	2283.0	1793.8	1333.3
27.5°	5515.0	5372.4	5098.7	4564.1	4032.1	3716.8	3440.4	2890.5	2250.4	1726.0	1232.9
30°	5719.0	5435.1	5132.6	4566.0	3994.9	3672.6	3386.1	2787.5	2114.8	1571.2	1064.2
32.5°	5382.6	5218.3	4929.2	4384.4	3792.9	3478.3	3193.6	2564.4	1903.2	1341.6	740.5
35°	4959.9	4826.9	4575.6	4034.5	3489.8	3193.0	2891.2	2277.9	1627.6	922.2	339.0
37.5°	4468.8	4364.5	4094.0	3599.7	3120.1	2829.8	2527.3	1941.5	1146.0	457.3	205.9
40°	3803.7	3715.5	3493.6	3096.4	2654.6	2378.3	2099.5	1452.3	622.2	255.1	134.3
42.5°	3126.5	3052.3	2850.2	2506.8	2118.7	1891.0	1645.4	885.1	309.5	160.5	74.8
45°	2035.5	1942.8	1834.1	1676.8	1484.9	1344.8	1055.1	427.2	183.5	89.5	42.9
47.5°	1167.1	1105.7	927.2	731.6	594.1	542.3	394.6	198.9	101.1	51.8	26.2
50°	524.4	484.7	406.7	331.3	239.8	187.4	159.2	99.8	49.9	28.1	17.9
52.5°	129.2	131.8	124.7	109.4	97.2	82.5	71.6	46.7	26.2	17.2	11.5
55°	42.9	43.5	39.6	37.7	34.6	32.0	29.4	21.1	15.9	15.3	5.7
57.5°	15.3	15.3	15.9	14.8	14.1	13.5	12.8	10.9	9.6	5.7	3.2
60°	5.7	5.7	5.7	6.4	6.4	6.4	7.0	6.4	4.5	3.2	2.6
62.5°	2.6	2.6	2.6	2.6	3.2	3.2	3.9	3.2	2.6	2.6	1.9
65°	1.3	1.3	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
67.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.9	1.9
70°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.9	1.9
72.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.9	1.9
75°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.9
77.5°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.3	1.3	1.3	1.9
80°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.3	1.3	1.3	1.9
82.5°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.3	1.3	1.3	1.9
85°	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.3	1.3	1.9
87.5°	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	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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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	143.8	143.8	143.8	143.8	143.8	143.8	143.8	143.8	143.8	143.8	143.8
2.5°	179.7	175.8	168.2	162.5	158.0	157.3	153.4	147.1	144.5	140.1	136.2
5°	221.3	211.7	199.5	188.0	179.7	175.2	161.8	149.7	142.6	135.5	129.2
7.5°	266.0	244.3	223.1	204.6	193.1	186.1	170.1	150.3	137.5	127.2	118.9
10°	322.3	277.5	241.1	212.4	197.0	187.4	168.2	144.5	128.5	116.4	108.1
12.5°	450.8	328.7	257.7	216.1	197.0	183.5	160.5	136.8	118.9	104.2	95.2
15°	670.8	459.2	305.7	218.1	190.6	175.2	149.0	124.0	106.1	90.8	82.5
17.5°	878.0	604.3	381.7	231.5	186.7	163.1	133.6	109.4	90.8	76.1	69.1
20°	985.4	676.6	424.0	241.8	180.4	147.7	115.7	93.4	75.4	62.7	56.9
22.5°	988.0	670.2	403.5	218.1	156.7	126.6	99.1	76.7	61.4	50.5	46.0
25°	927.2	592.8	331.9	170.1	126.6	106.1	82.5	62.7	47.9	40.3	37.1
27.5°	812.8	479.7	244.9	122.8	99.1	84.4	64.5	47.9	36.4	31.4	29.4
30°	628.6	296.7	135.5	90.8	74.8	63.3	46.7	32.0	27.5	24.3	23.1
32.5°	312.0	145.1	95.9	64.5	51.2	40.3	29.4	23.7	21.1	19.2	18.5
35°	169.5	104.2	60.1	39.0	30.7	25.5	19.8	16.6	15.3	14.8	14.8
37.5°	118.3	62.1	36.4	23.7	19.2	17.2	14.1	12.2	11.5	11.5	11.5
40°	65.2	37.1	22.4	15.3	12.8	11.5	9.6	8.9	8.9	8.9	9.6
42.5°	37.7	23.1	15.3	10.9	8.9	8.3	7.0	6.4	7.0	7.0	7.7
45°	24.3	17.2	10.2	7.7	6.4	5.7	5.1	5.1	5.7	5.7	6.4
47.5°	17.2	12.2	7.0	5.1	3.9	3.9	3.9	3.9	4.5	5.1	5.7
50°	10.2	6.4	3.9	3.2	2.6	2.6	2.6	3.2	3.9	3.9	4.5
52.5°	5.7	3.9	2.6	2.6	1.9	1.9	2.6	2.6	3.2	3.9	4.5
55°	3.2	2.6	1.9	1.9	1.9	1.9	1.9	2.6	2.6	3.2	3.9
57.5°	2.6	1.9	1.9	1.9	1.9	1.9	1.9	2.6	2.6	3.2	3.2
60°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.6	2.6	3.2	3.2
62.5°	1.9	1.9	1.9	1.9	1.9	1.9	2.6	2.6	2.6	2.6	3.2
65°	1.9	1.9	1.9	2.6	1.9	2.6	2.6	2.6	2.6	2.6	3.2
67.5°	1.9	1.9	1.9	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.2
70°	1.9	1.9	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.2
72.5°	1.9	1.9	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.2
75°	1.9	1.9	1.9	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
77.5°	1.9	1.9	1.9	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
80°	1.9	1.9	1.9	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
82.5°	1.9	1.9	1.9	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
85°	1.9	1.9	1.9	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
87.5°	1.9	1.9	1.9	1.9	2.6	2.6	2.6	2.6	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°	143.8	143.8	143.8	143.8	143.8	143.8	143.8	143.8	143.8	143.8	143.8
2.5°	134.9	130.5	127.2	126.0	123.5	124.0	122.2	120.9	117.0	117.0	114.4
5°	124.7	118.9	115.1	113.2	110.7	110.0	108.1	106.1	102.4	101.7	99.8
7.5°	113.8	108.1	103.6	101.7	99.1	98.5	95.9	94.6	91.5	90.8	88.9
10°	102.4	95.9	92.1	90.2	87.6	87.6	85.7	84.4	81.9	81.9	80.6
12.5°	90.2	84.4	81.9	79.3	78.0	78.0	76.7	75.4	73.6	74.2	73.6
15°	77.4	72.9	70.4	69.1	68.4	68.4	67.8	67.1	65.8	67.1	65.8
17.5°	65.2	62.1	60.1	59.5	58.8	58.8	58.8	59.5	58.8	60.1	60.1
20°	53.8	51.2	49.9	49.9	49.2	50.5	50.5	51.8	51.8	53.8	54.4
22.5°	44.2	42.2	41.6	41.6	41.6	42.9	43.5	44.7	45.4	47.3	48.6
25°	35.1	34.6	34.6	34.6	35.1	36.4	37.7	39.0	39.6	42.2	42.9
27.5°	28.8	28.1	28.8	28.8	29.4	31.4	32.6	33.9	35.1	37.1	38.4
30°	23.1	23.1	23.7	24.3	24.9	26.2	28.1	29.4	30.7	32.6	33.9
32.5°	18.5	19.2	19.8	20.5	20.5	22.4	23.7	25.5	26.2	28.1	29.4
35°	15.3	15.9	16.6	17.2	17.2	19.2	20.5	21.8	23.1	24.3	25.5
37.5°	12.2	12.8	14.1	14.8	14.8	16.6	17.2	18.5	19.8	21.1	22.4
40°	10.2	10.9	12.2	12.2	12.8	14.1	14.8	15.9	17.2	18.5	19.8
42.5°	8.3	8.9	10.2	10.9	10.9	12.2	12.8	14.1	14.8	15.9	16.6
45°	7.7	7.7	8.9	8.9	9.6	10.2	11.5	12.2	12.8	14.1	14.8
47.5°	6.4	7.0	7.7	8.3	8.3	8.9	9.6	10.2	10.9	12.2	12.8
50°	5.1	5.7	7.0	7.0	7.0	8.3	8.9	9.6	9.6	10.2	10.9
52.5°	5.1	5.1	5.7	6.4	6.4	7.0	7.7	8.3	8.3	8.9	9.6
55°	4.5	4.5	5.1	5.7	5.7	6.4	7.0	7.0	7.7	7.7	8.3
57.5°	3.9	4.5	5.1	5.1	5.1	5.7	6.4	6.4	7.0	7.0	7.7
60°	3.9	4.5	4.5	5.1	5.1	5.7	5.7	5.7	6.4	6.4	6.4
62.5°	3.9	3.9	4.5	4.5	4.5	5.1	5.1	5.7	5.7	5.7	5.7
65°	3.9	3.9	4.5	4.5	4.5	5.1	5.1	5.1	5.1	5.1	5.1
67.5°	3.2	3.9	3.9	3.9	4.5	4.5	4.5	4.5	4.5	4.5	4.5
70°	3.2	3.2	3.9	3.9	3.9	4.5	4.5	4.5	4.5	4.5	4.5
72.5°	3.2	3.2	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
75°	3.2	3.2	3.2	3.2	3.2	3.9	3.9	3.9	3.9	3.2	3.2
77.5°	2.6	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.6
80°	2.6	2.6	3.2	2.6	3.2	3.2	3.2	3.2	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	1.9	1.9
85°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	1.9	1.9	1.9	1.3
87.5°	2.6	2.6	2.6	2.6	2.6	2.6	1.9	1.9	1.9	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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TEST NUMBER: P1219477

CATALOG NUMBER: LDSQA4A15930D010TE LAR25NF 4LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	143.8	143.8	143.8	143.8	143.8	143.8	143.8	143.8
2.5°	113.2	114.4	113.2	114.4	111.3	112.6	113.8	110.7
5°	98.5	97.2	97.8	99.1	96.5	97.2	97.8	95.2
7.5°	88.2	88.9	87.6	88.9	86.9	87.6	88.2	86.3
10°	79.9	80.6	79.9	80.6	78.7	79.9	80.6	78.7
12.5°	72.3	73.6	72.9	74.2	72.3	73.6	74.8	72.3
15°	66.5	67.8	67.1	68.4	67.1	68.4	69.7	67.8
17.5°	60.8	62.1	62.1	63.3	62.7	64.0	65.2	63.3
20°	55.0	56.9	56.9	58.2	58.2	58.8	60.8	58.8
22.5°	49.9	51.8	51.8	53.1	53.1	54.4	55.6	54.4
25°	44.2	46.7	47.3	48.6	48.6	49.9	51.8	50.5
27.5°	40.3	42.2	42.9	44.2	44.7	46.0	47.3	46.0
30°	35.1	37.7	38.4	39.6	40.3	42.2	42.9	42.2
32.5°	31.4	33.3	33.9	35.1	36.4	37.7	39.0	38.4
35°	27.5	29.4	30.1	31.4	32.0	33.9	35.1	34.6
37.5°	24.3	26.2	26.8	27.5	28.1	30.1	31.4	30.7
40°	21.1	22.4	23.1	24.3	24.9	26.2	27.5	27.5
42.5°	18.5	19.8	20.5	21.1	21.8	23.1	24.3	23.7
45°	15.9	17.2	17.9	18.5	19.2	19.8	21.1	20.5
47.5°	13.5	14.8	15.3	15.9	16.6	17.2	18.5	17.9
50°	11.5	12.8	12.8	13.5	14.1	14.8	15.9	15.3
52.5°	10.2	10.9	11.5	11.5	12.2	12.8	14.1	13.5
55°	8.9	9.6	9.6	10.2	10.2	10.9	11.5	11.5
57.5°	7.7	8.3	8.3	8.9	8.9	9.6	10.2	10.2
60°	7.0	7.0	7.7	7.7	7.7	8.3	8.3	8.3
62.5°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
65°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
67.5°	4.5	4.5	4.5	4.5	4.5	3.9	3.9	3.9
70°	3.9	3.9	3.9	3.9	3.9	3.2	3.2	3.2
72.5°	3.9	3.9	3.2	3.2	3.2	3.2	3.2	2.6
75°	3.2	3.2	3.2	3.2	2.6	2.6	2.6	2.6
77.5°	2.6	2.6	2.6	2.6	1.9	1.9	1.9	1.9
80°	2.6	1.9	1.9	1.9	1.9	1.9	1.9	1.3
82.5°	1.9	1.9	1.9	1.3	1.3	1.3	1.3	1.3
85°	1.3	1.3	1.3	1.3	0.6	0.6	0.6	0.6
87.5°	1.3	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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(END OF REPORT)