

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: P1212210

Luminaire Tested: **LDSQA4A20935D010TE 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: P1212210
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: LDSQA4A20935D010TE LAR25NF 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 25° NARROW FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

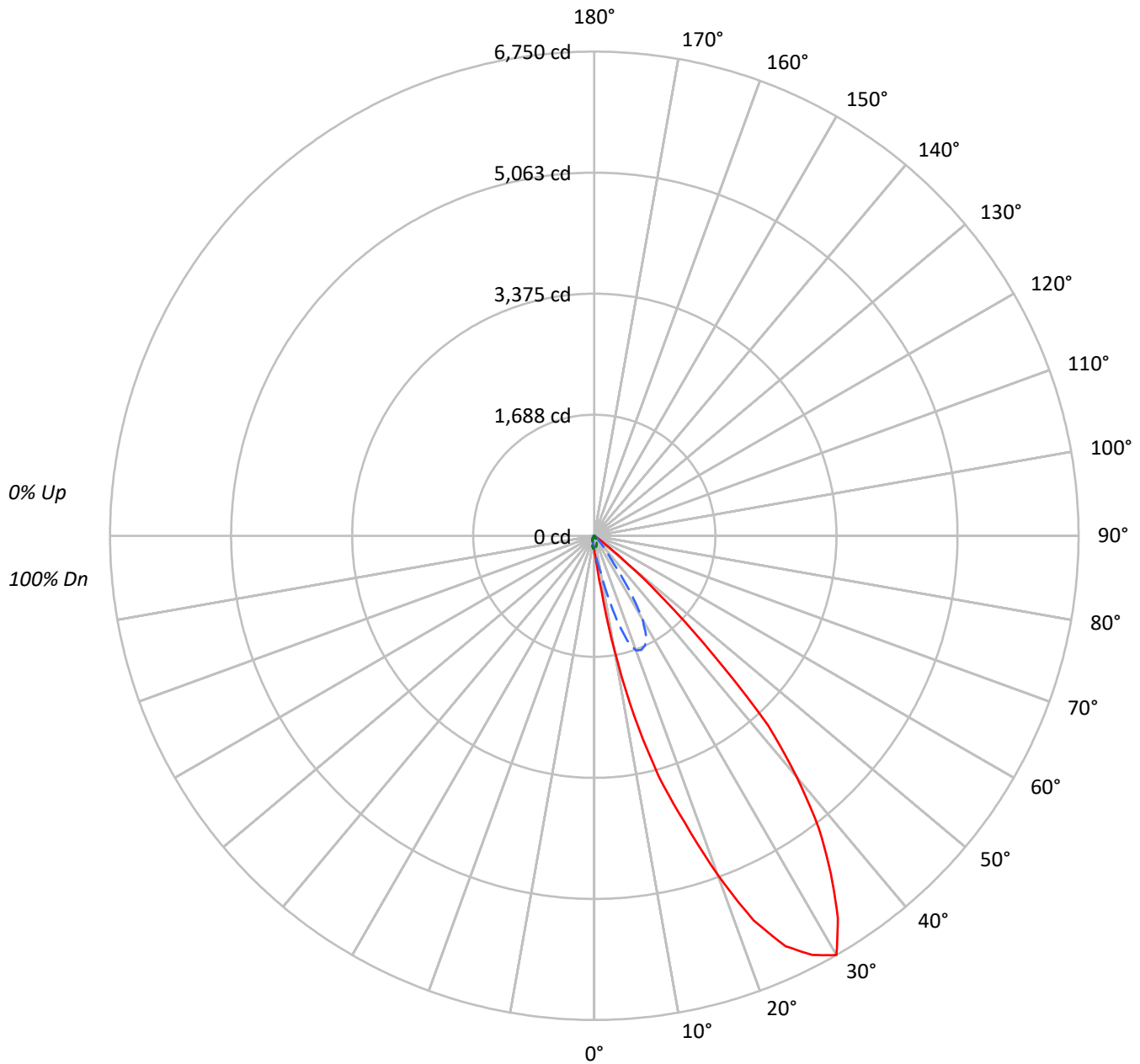
Lumens per Lamp: N/A
Luminaire Lumens: 1690.5 lumens
Efficiency: N/A
Efficacy: 58.7 lumens/watt
Spacing Criteria (0/90/45): 2.36 / 0.61 / 1.19
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P1212210

CATALOG NUMBER: LDSQA4A20935D010TE LAR25NF 4LSQAL1H 30°

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	113	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	86	81	97	90	85	80	87	83	79		85	81	78		82
4	93	84	77	72	91	83	76	72	80	75	71		78	74	70		76
5	87	77	70	65	85	76	69	64	74	68	64		72	67	63		70
6	81	70	63	58	79	69	63	58	68	62	57		66	61	57		65
7	76	65	57	52	74	64	57	52	62	56	52		61	56	52		60
8	71	59	52	47	69	59	52	47	58	51	47		57	51	47		55
9	66	55	48	43	65	54	48	43	53	47	43		52	47	43		51
10	62	51	44	39	61	50	44	39	49	43	39		48	43	39		48

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	18261	18261	18261
5°	40863	17174	12302
10°	160235	15031	9689
15°	347836	12176	8425
20°	518907	9010	7608
25°	674926	6349	6627
30°	755024	4273	5794
35°	679469	2507	4920
40°	554523	1720	4287
45°	318394	1178	3480
50°	93140	889	2939
55°	10759	709	2449
60°	2286	814	1976
65°	779	779	1352
70°	708	963	963
75°	636	1273	936
80°	0	1897	948
85°	0	3779	889



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	27.0	1.6
10°-20°	231.4	13.7
20°-30°	552.1	32.7
30°-40°	582.6	34.5
40°-50°	264.2	15.6
50°-60°	23.2	1.4
60°-70°	4.8	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°	810.5	47.9
0°-40°	1393.1	82.4
0°-60°	1680.5	99.4
0°-90°	1690.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1690.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	188	188	188	188	188	
5°	420	308	177	136	126	75
15°	3468	1220	121	83	84	1009
25°	6314	1679	59	51	62	2868
35°	5745	463	21	29	42	3548
45°	2324	65	9	16	25	1843
55°	64	10	4	9	14	127
65°	3	3	3	7	6	4
75°	2	2	3	4	2	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°	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5
2.5°	280.1	281.8	274.2	275.0	267.4	270.8	268.2	261.4	256.3	247.8	244.5
5°	420.2	422.6	405.7	400.6	382.8	382.8	375.1	357.4	341.2	321.7	308.2
7.5°	768.2	778.3	727.4	689.2	633.1	619.6	593.3	532.2	482.2	431.2	393.0
10°	1628.9	1610.2	1504.9	1418.3	1274.0	1220.6	1149.3	973.5	812.3	651.8	526.2
12.5°	2568.5	2628.7	2425.9	2355.4	2127.1	2078.7	1926.8	1639.8	1367.4	1083.9	832.6
15°	3468.2	3486.0	3308.6	3194.1	2915.7	2852.8	2666.1	2329.1	1962.4	1566.9	1219.7
17.5°	4190.5	4261.8	4001.2	3878.2	3516.6	3415.6	3195.7	2785.8	2377.4	1945.4	1533.8
20°	5033.4	5052.0	4743.1	4506.2	4033.5	3879.8	3616.7	3108.2	2621.9	2128.8	1703.5
22.5°	5799.8	5795.6	5398.3	5064.0	4465.5	4282.2	3957.1	3354.4	2789.2	2210.3	1719.7
25°	6314.2	6327.8	5902.6	5507.0	4772.8	4525.0	4158.2	3482.6	2846.1	2207.7	1678.9
27.5°	6588.4	6574.8	6119.0	5696.3	4885.7	4608.2	4210.0	3486.8	2794.2	2121.2	1556.6
30°	6749.6	6568.0	6081.6	5642.8	4809.3	4524.1	4119.2	3352.7	2621.9	1927.7	1338.6
32.5°	6318.4	6248.0	5824.4	5358.5	4546.2	4263.5	3863.7	3067.6	2348.6	1631.4	959.2
35°	5745.4	5748.1	5334.7	4899.2	4133.7	3887.5	3475.0	2720.4	2015.0	1134.0	463.4
37.5°	5144.6	5153.1	4760.1	4355.2	3673.6	3414.7	3028.5	2324.8	1449.8	577.2	279.2
40°	4384.9	4402.7	4064.0	3738.9	3110.0	2860.4	2515.8	1759.6	810.6	322.5	189.3
42.5°	3582.8	3604.9	3304.4	3015.8	2481.0	2275.6	1970.1	1089.8	402.4	208.8	111.2
45°	2324.0	2387.6	2164.5	2043.0	1733.3	1611.0	1285.9	556.0	242.7	122.2	65.3
47.5°	1330.1	1330.9	1142.4	915.0	750.4	652.7	510.1	253.0	141.8	68.7	39.9
50°	618.0	633.1	501.6	417.6	298.8	253.0	208.0	136.6	74.6	39.9	24.6
52.5°	179.9	190.1	172.3	156.2	132.4	117.9	101.0	67.1	39.0	23.8	15.3
55°	63.7	67.9	63.7	59.4	53.4	48.3	43.3	32.2	22.1	14.5	10.2
57.5°	26.3	27.1	26.3	25.4	23.8	23.8	21.2	17.8	13.6	9.4	6.8
60°	11.8	12.7	11.8	12.7	11.8	11.8	11.8	12.7	8.6	5.9	5.1
62.5°	5.1	5.9	5.9	5.9	5.9	6.8	6.8	5.9	5.1	4.2	3.4
65°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
67.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
70°	2.5	2.5	2.5	2.5	2.5	2.5	1.7	1.7	2.5	2.5	2.5
72.5°	2.5	2.5	2.5	2.5	1.7	1.7	1.7	1.7	1.7	2.5	2.5
75°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
77.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.7	1.7	1.7
80°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.7	1.7	1.7
82.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.7	1.7	1.7
85°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.7	1.7	1.7
87.5°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.7	1.7	1.7
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°	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5
2.5°	240.2	232.6	220.7	213.1	209.7	204.6	201.1	192.7	189.3	182.6	179.9
5°	295.4	280.1	262.3	247.8	238.5	228.3	213.1	196.0	187.6	176.6	170.6
7.5°	358.2	325.1	293.7	268.2	256.3	242.7	223.2	196.9	180.7	166.4	157.8
10°	437.9	370.0	320.8	280.1	262.3	244.5	220.7	190.1	169.8	152.8	143.4
12.5°	624.7	446.5	345.5	287.0	263.9	241.9	212.2	180.7	157.0	137.5	127.3
15°	898.9	623.9	411.6	292.9	258.0	230.9	196.9	165.4	141.0	121.4	111.2
17.5°	1141.6	795.3	503.4	314.9	256.3	218.2	178.2	146.0	122.2	103.6	95.0
20°	1274.0	885.3	564.4	328.6	248.6	198.6	157.0	126.5	103.6	87.4	79.8
22.5°	1276.6	880.2	542.4	298.8	219.0	172.3	135.8	106.9	86.6	72.2	66.2
25°	1200.2	785.1	452.4	235.1	179.1	146.0	113.8	89.1	70.4	59.4	54.3
27.5°	1057.6	638.2	332.7	169.8	140.1	117.9	91.6	71.4	55.1	48.3	44.1
30°	831.8	415.9	194.4	126.5	108.6	90.8	69.6	50.2	43.3	38.2	34.9
32.5°	446.5	202.0	135.8	93.4	77.3	63.7	45.8	36.5	31.4	28.0	27.1
35°	233.4	147.7	90.8	59.4	49.2	41.6	31.4	25.4	22.9	21.2	21.2
37.5°	167.2	92.6	57.8	38.2	32.2	26.3	22.1	18.7	17.0	17.0	17.0
40°	99.4	56.9	34.9	24.6	21.2	18.7	16.2	13.6	13.6	13.6	13.6
42.5°	60.2	35.7	24.6	17.0	15.3	13.6	11.8	11.0	10.2	10.2	11.0
45°	37.4	24.6	16.2	12.7	11.8	10.2	9.4	8.6	8.6	8.6	9.4
47.5°	23.8	17.8	11.8	8.6	7.6	6.8	5.9	5.9	6.8	6.8	7.6
50°	17.8	11.0	7.6	5.9	5.1	5.1	4.2	5.1	5.1	5.9	6.8
52.5°	10.2	6.8	5.1	4.2	4.2	3.4	3.4	4.2	4.2	5.1	5.9
55°	6.8	5.1	4.2	3.4	3.4	3.4	3.4	3.4	4.2	4.2	5.1
57.5°	5.1	4.2	3.4	3.4	3.4	2.5	3.4	3.4	3.4	4.2	5.1
60°	4.2	3.4	3.4	3.4	3.4	2.5	2.5	3.4	3.4	4.2	4.2
62.5°	3.4	3.4	3.4	3.4	3.4	2.5	3.4	3.4	3.4	3.4	4.2
65°	2.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	4.2
67.5°	2.5	2.5	3.4	3.4	3.4	2.5	3.4	3.4	3.4	3.4	4.2
70°	2.5	2.5	2.5	3.4	3.4	2.5	3.4	3.4	3.4	3.4	3.4
72.5°	2.5	2.5	2.5	3.4	3.4	2.5	3.4	3.4	3.4	3.4	3.4
75°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.4	3.4	3.4
77.5°	2.5	2.5	2.5	2.5	3.4	2.5	3.4	3.4	3.4	3.4	3.4
80°	2.5	2.5	2.5	2.5	2.5	2.5	3.4	3.4	3.4	3.4	3.4
82.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.4	3.4	3.4	3.4
85°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.4	3.4	3.4	3.4
87.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.4	3.4	3.4
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°	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5
2.5°	173.1	170.6	165.4	164.6	163.8	160.5	157.8	155.4	155.4	152.8	151.1
5°	160.5	156.2	150.2	147.7	146.9	142.6	139.1	136.6	135.8	133.2	130.7
7.5°	146.9	141.8	135.0	132.4	131.6	127.3	124.0	121.4	119.7	117.1	115.4
10°	132.4	126.5	120.6	117.9	117.1	112.8	110.3	107.8	106.1	104.4	102.7
12.5°	117.1	112.0	106.1	103.6	102.7	99.4	96.7	95.0	94.2	92.6	91.6
15°	101.8	96.7	91.6	89.9	89.1	86.6	84.9	84.0	83.2	83.2	82.4
17.5°	86.6	82.4	78.1	77.3	76.5	74.6	73.8	73.0	73.8	73.8	74.6
20°	72.2	68.7	65.3	65.3	64.5	63.7	63.7	63.7	65.3	66.2	67.9
22.5°	59.4	56.9	54.3	54.3	54.3	54.3	54.3	56.1	57.8	59.4	60.2
25°	49.2	46.7	45.8	45.8	45.8	46.7	47.5	49.2	51.0	52.6	54.3
27.5°	39.9	38.2	38.2	38.2	39.0	39.9	40.8	42.4	45.0	46.7	48.3
30°	32.2	31.4	31.4	32.2	33.0	33.9	35.7	37.4	39.0	40.8	42.4
32.5°	25.4	26.3	26.3	27.1	28.0	28.8	30.6	32.2	33.9	35.7	36.5
35°	21.2	21.2	22.1	22.9	23.8	24.6	26.3	28.0	28.8	30.6	32.2
37.5°	17.0	17.8	18.7	19.5	20.4	21.2	22.1	23.8	24.6	26.3	28.0
40°	14.5	15.3	16.2	17.0	17.0	18.7	18.7	20.4	21.2	22.9	24.6
42.5°	11.8	12.7	13.6	14.5	14.5	15.3	16.2	17.0	18.7	19.5	21.2
45°	9.4	10.2	11.0	11.8	12.7	13.6	13.6	15.3	16.2	17.0	18.7
47.5°	8.6	9.4	10.2	10.2	11.0	11.8	11.8	13.6	14.5	15.3	16.2
50°	6.8	7.6	8.6	9.4	9.4	10.2	11.0	11.8	12.7	13.6	13.6
52.5°	5.9	6.8	7.6	7.6	8.6	9.4	9.4	10.2	11.0	11.0	11.8
55°	5.9	6.8	6.8	7.6	7.6	8.6	8.6	9.4	9.4	10.2	10.2
57.5°	5.1	5.9	5.9	6.8	6.8	7.6	7.6	8.6	8.6	8.6	9.4
60°	5.1	5.1	5.9	5.9	6.8	6.8	6.8	7.6	7.6	7.6	8.6
62.5°	4.2	5.1	5.1	5.9	5.9	5.9	6.8	6.8	6.8	7.6	7.6
65°	4.2	5.1	5.1	5.9	5.9	5.9	5.9	5.9	6.8	6.8	6.8
67.5°	4.2	4.2	5.1	5.1	5.1	5.1	5.9	5.9	5.9	5.9	5.9
70°	4.2	4.2	4.2	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
72.5°	3.4	4.2	4.2	4.2	4.2	5.1	5.1	5.1	5.1	5.1	4.2
75°	3.4	3.4	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
77.5°	3.4	3.4	3.4	4.2	4.2	4.2	4.2	4.2	4.2	3.4	3.4
80°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	2.5
82.5°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	2.5	2.5	2.5
85°	3.4	2.5	3.4	3.4	3.4	2.5	2.5	2.5	2.5	2.5	1.7
87.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.7	1.7
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: P1212210

CATALOG NUMBER: LDSQA4A20935D010TE LAR25NF 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	188.5	188.5	188.5	188.5	188.5	188.5	188.5	188.5
2.5°	149.4	147.7	148.5	148.5	146.9	146.0	146.0	146.9
5°	129.0	127.3	128.2	128.2	126.5	125.6	125.6	126.5
7.5°	113.8	112.0	112.8	112.8	111.2	111.2	111.2	111.2
10°	101.8	101.0	101.0	101.0	99.4	100.2	99.4	98.5
12.5°	90.8	90.8	90.8	90.8	89.9	90.8	89.9	89.9
15°	82.4	82.4	83.2	83.2	83.2	84.0	84.0	84.0
17.5°	75.5	76.5	77.3	78.1	78.1	79.0	79.0	79.0
20°	68.7	70.4	71.4	72.2	72.2	73.8	73.0	73.8
22.5°	62.0	63.7	64.5	65.3	66.2	67.1	67.1	67.9
25°	56.1	57.8	58.6	59.4	60.2	62.0	62.0	62.0
27.5°	50.2	51.8	52.6	54.3	55.1	56.9	56.9	56.9
30°	44.1	45.8	46.7	47.5	49.2	51.0	51.0	51.8
32.5°	38.2	40.8	41.6	42.4	44.1	45.8	46.7	46.7
35°	33.9	35.7	36.5	38.2	39.0	41.6	41.6	41.6
37.5°	29.8	31.4	33.0	33.9	34.9	36.5	37.4	38.2
40°	26.3	28.0	28.8	29.8	31.4	33.0	33.9	33.9
42.5°	22.9	24.6	25.4	26.3	27.1	28.8	28.8	28.8
45°	20.4	21.2	22.1	22.9	23.8	24.6	25.4	25.4
47.5°	17.0	18.7	18.7	19.5	20.4	22.1	22.1	22.9
50°	14.5	16.2	16.2	17.0	17.8	18.7	19.5	19.5
52.5°	12.7	13.6	14.5	14.5	15.3	16.2	17.0	17.0
55°	11.0	11.8	11.8	12.7	12.7	13.6	14.5	14.5
57.5°	9.4	10.2	11.0	11.0	11.0	11.8	11.8	12.7
60°	8.6	9.4	9.4	9.4	9.4	10.2	10.2	10.2
62.5°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
65°	6.8	6.8	6.8	6.8	5.9	5.9	5.9	5.9
67.5°	5.9	5.9	5.9	5.9	5.1	5.1	5.1	5.1
70°	5.1	5.1	5.1	5.1	4.2	4.2	4.2	3.4
72.5°	4.2	4.2	4.2	4.2	4.2	3.4	3.4	3.4
75°	4.2	3.4	3.4	3.4	3.4	3.4	2.5	2.5
77.5°	3.4	3.4	3.4	2.5	2.5	2.5	2.5	2.5
80°	2.5	2.5	2.5	2.5	2.5	1.7	1.7	1.7
82.5°	2.5	1.7	1.7	1.7	1.7	1.7	1.7	1.7
85°	1.7	1.7	1.7	1.7	0.8	0.8	0.8	0.8
87.5°	1.7	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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Peachtree City, GA 30269

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— 0°-180° - - 45°-225° - - - 90°-270°

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