

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: P1212104

Luminaire Tested: **LDSQA4A10940D010TE LAR15SP 4LSQA1H-LSF-20 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: P1212104
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26830)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA4A10940D010TE LAR15SP 4LSQA1H-LSF-20 30°
Description: PORTFOLIO 4" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 15° SPOT WITH SOLITE LENS, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

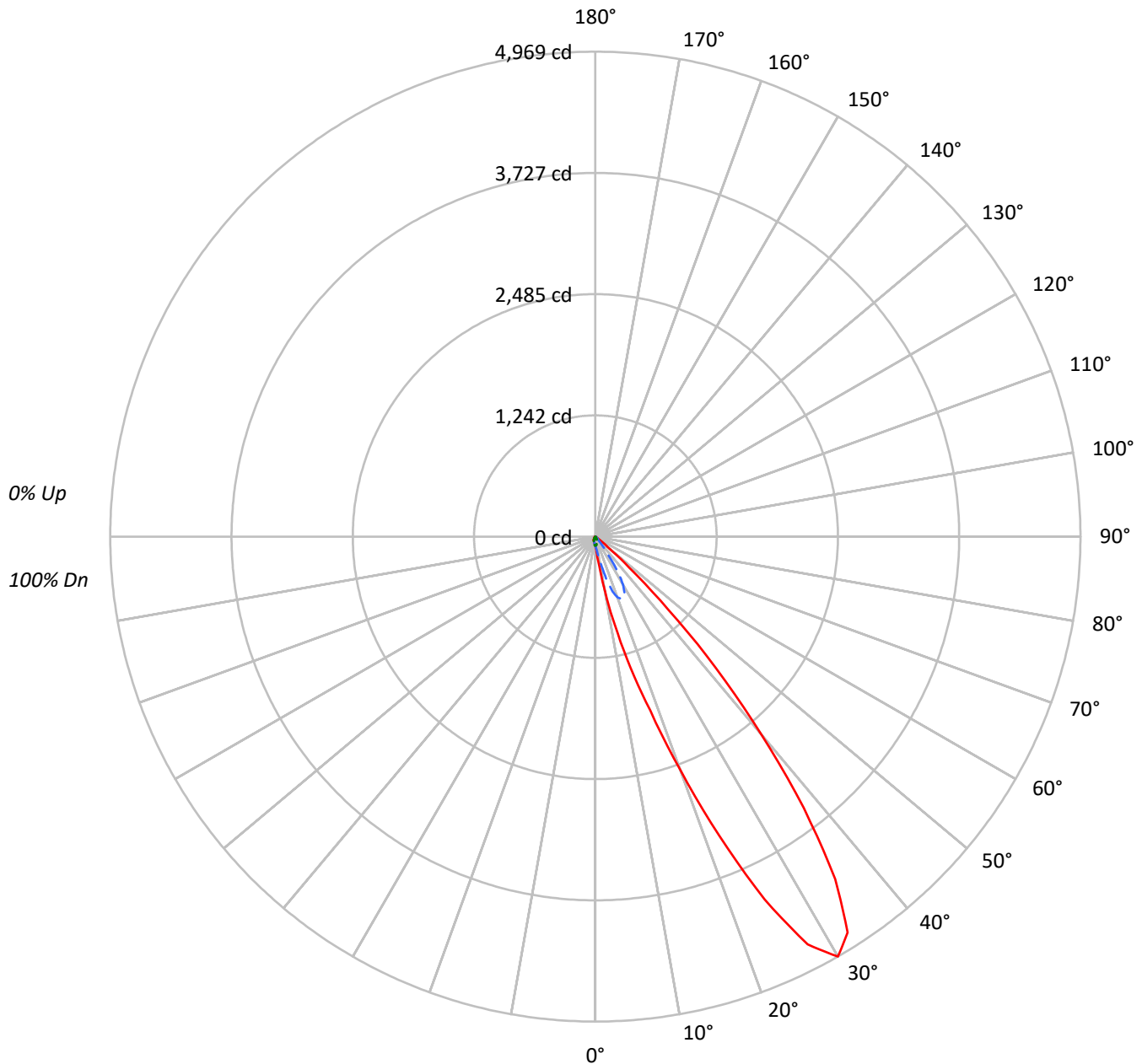
Lumens per Lamp: N/A
Luminaire Lumens: 867.2 lumens
Efficiency: N/A
Efficacy: 69.9 lumens/watt
Spacing Criteria (0/90/45): 2.28 / 0.64 / 1.15
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P1212104

CATALOG NUMBER: LDSQA4A10940D010TE LAR15SP 4LSQA1H-LSF-20 30°

Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P1212104

CATALOG NUMBER: LDSQA4A10940D010TE LAR15SP 4LSQA1H-LSF-20 30°

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					0
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	112	109	106	104	110	107	105	102		103	101	99		99	98	96		96	94	93
2	106	100	95	91	103	98	94	90		95	91	88		92	89	86		89	87	84
3	99	91	85	81	97	90	84	80		87	83	79		85	81	77		82	79	76
4	92	83	77	72	90	82	76	71		80	75	70		78	73	70		76	72	69
5	86	76	69	64	85	75	69	64		73	68	63		72	67	63		70	66	62
6	81	70	63	58	79	69	62	57		67	61	57		66	61	57		64	60	56
7	75	64	57	52	74	63	57	52		62	56	51		61	55	51		59	55	51
8	70	59	52	47	69	58	51	47		57	51	46		56	50	46		55	50	46
9	66	54	47	42	65	54	47	42		53	46	42		52	46	42		51	46	42
10	62	50	43	38	60	50	43	38		49	42	38		48	42	38		47	42	38

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	9068	9068	9068
5°	17368	8635	7011
10°	56799	7663	5971
15°	139106	6318	5265
20°	262093	4825	4732
25°	438742	3420	4137
30°	555798	2349	3524
35°	506438	1526	2992
40°	333531	1088	2542
45°	144483	726	2096
50°	25621	497	1733
55°	4121	405	1453
60°	1027	368	1104
65°	321	436	871
70°	283	538	680
75°	374	524	524
80°	0	781	558
85°	0	1556	556



TEST NUMBER: P1212104

CATALOG NUMBER: LDSQA4A10940D010TE LAR15SP 4LSQA1H-LSF-20 30°

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	12.0	1.4
10°-20°	96.5	11.1
20°-30°	290.6	33.5
30°-40°	330.7	38.1
40°-50°	122.3	14.1
50°-60°	9.7	1.1
60°-70°	2.6	0.3
70°-80°	1.8	0.2
80°-90°	1.0	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°	399.0	46.0
0°-40°	729.8	84.1
0°-60°	861.8	99.4
0°-90°	867.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	867.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	94	94	94	94	94	
5°	179	131	89	74	72	29
15°	1387	468	63	50	52	435
25°	4105	685	32	31	39	1874
35°	4282	240	13	18	25	2546
45°	1055	28	5	10	15	893
55°	24	5	2	6	9	40
65°	1	1	2	4	4	2
75°	1	1	1	2	1	1
85°	0	1	1	1	0	0
90°	0	0	0	0	0	

TEST NUMBER: P1212104

CATALOG NUMBER: LDSQA4A10940D010TE LAR15SP 4LSQA1H-LSF-20 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6
2.5°	120.4	121.3	120.4	118.4	118.4	116.1	115.1	114.1	111.8	110.3	108.4
5°	178.6	175.8	173.4	167.6	165.7	160.5	156.7	151.4	144.2	138.0	131.3
7.5°	305.7	301.4	292.3	275.1	264.6	251.7	241.7	225.0	203.5	185.8	168.1
10°	577.4	558.8	537.3	498.6	470.4	440.4	416.5	371.6	317.6	273.2	230.2
12.5°	930.4	931.8	891.7	826.3	774.2	721.2	680.1	597.0	501.5	417.9	335.3
15°	1387.0	1360.7	1319.2	1218.9	1114.7	1037.8	972.4	846.3	711.2	588.9	468.5
17.5°	1867.9	1878.9	1782.0	1618.1	1453.4	1338.3	1239.4	1048.4	887.9	736.5	589.4
20°	2542.3	2466.9	2328.4	2062.8	1806.8	1640.1	1493.5	1245.6	1021.6	829.1	663.9
22.5°	3319.9	3198.1	2916.3	2542.3	2155.0	1924.3	1719.9	1378.9	1106.6	876.4	689.2
25°	4104.6	4011.5	3562.5	3003.7	2448.7	2149.7	1885.1	1469.1	1147.2	887.4	684.9
27.5°	4710.2	4558.3	4046.8	3318.4	2624.0	2271.0	1962.0	1496.8	1138.6	860.7	644.3
30°	4968.6	4776.6	4209.7	3390.1	2625.4	2251.0	1923.8	1441.9	1077.5	792.8	567.9
32.5°	4809.1	4587.5	4015.8	3191.9	2445.8	2094.3	1776.2	1323.0	976.2	686.3	426.5
35°	4282.3	4061.6	3531.9	2800.7	2159.3	1852.2	1575.6	1167.8	831.5	508.7	239.8
37.5°	3506.6	3318.4	2939.7	2347.5	1819.7	1570.4	1340.2	983.9	619.5	291.8	120.4
40°	2637.4	2505.1	2277.7	1861.7	1473.0	1283.3	1098.0	753.7	376.4	146.6	68.3
42.5°	1828.3	1742.3	1628.2	1377.4	1136.2	1005.8	857.3	503.4	193.4	80.7	42.5
45°	1054.6	1000.6	969.1	862.1	768.0	704.5	573.1	271.3	97.9	48.2	28.2
47.5°	465.7	429.9	414.6	369.7	343.9	326.7	259.3	115.6	52.5	31.0	23.4
50°	170.0	170.0	170.5	150.0	122.7	110.3	86.4	51.1	29.6	24.4	17.2
52.5°	60.2	59.2	61.6	58.3	51.1	45.9	38.2	25.8	18.1	15.3	9.6
55°	24.4	23.4	24.4	22.9	21.5	20.1	17.7	13.9	11.5	9.6	5.3
57.5°	11.0	11.0	11.5	11.0	11.0	10.0	9.1	10.5	8.1	5.3	3.3
60°	5.3	5.3	5.7	5.7	5.7	5.3	5.3	5.7	4.8	3.3	2.4
62.5°	2.4	2.4	2.9	2.9	2.9	2.9	2.9	3.3	2.4	1.9	1.4
65°	1.4	1.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
67.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.4	1.4
70°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.4
72.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.4
75°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.4
77.5°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	1.0	1.0	1.4
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	0.0	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	0.5	1.0	1.0
87.5°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	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: P1212104

CATALOG NUMBER: LDSQA4A10940D010TE LAR15SP 4LSQA1H-LSF-20 30°

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6
2.5°	106.5	105.1	102.2	100.8	98.9	97.4	96.5	94.6	92.7	91.2	90.3
5°	125.1	119.9	113.7	108.9	105.1	102.7	98.9	95.5	91.7	88.8	86.4
7.5°	152.4	139.5	125.6	116.1	110.8	106.0	99.3	93.6	88.4	84.5	81.2
10°	194.9	167.2	142.8	124.2	115.1	108.4	97.9	89.8	83.1	77.9	74.5
12.5°	265.6	208.7	165.7	134.2	120.4	110.3	95.5	84.5	76.4	71.2	66.9
15°	362.5	269.9	197.3	146.1	126.6	112.2	91.7	78.3	69.3	63.0	59.2
17.5°	453.7	333.9	233.1	160.5	132.8	113.2	86.4	70.2	60.7	54.9	51.1
20°	511.0	375.4	257.0	168.6	134.7	110.3	79.3	61.6	52.1	46.8	43.0
22.5°	524.4	380.2	255.0	161.0	126.6	101.7	69.3	53.0	43.9	39.2	35.8
25°	504.8	353.4	228.3	139.0	107.9	85.5	57.8	43.0	36.3	32.0	29.6
27.5°	455.6	300.9	180.5	104.6	80.7	63.0	43.9	33.4	29.1	25.8	24.4
30°	367.3	211.6	113.2	65.0	51.6	41.6	31.5	25.8	22.4	21.0	19.6
32.5°	222.6	108.9	59.7	38.7	32.5	28.2	22.9	19.1	17.2	16.2	15.8
35°	106.0	57.3	36.8	26.3	22.9	20.1	16.7	14.3	13.4	12.9	12.9
37.5°	60.2	37.3	24.8	17.7	15.8	13.9	12.4	11.0	10.5	10.5	10.5
40°	38.2	23.9	16.2	12.9	11.5	10.5	9.6	8.6	8.6	8.6	8.6
42.5°	24.8	17.2	12.4	9.6	8.6	8.1	7.2	6.7	6.7	6.7	7.2
45°	19.6	14.3	10.0	7.6	6.7	6.2	5.7	5.3	5.3	5.3	5.7
47.5°	16.7	10.0	6.7	5.3	4.3	4.3	3.8	3.8	3.8	4.3	4.8
50°	10.0	6.2	4.3	3.3	2.9	2.9	2.9	2.9	2.9	3.3	3.8
52.5°	5.7	3.8	2.9	2.4	1.9	1.9	1.9	1.9	2.4	2.9	2.9
55°	3.8	2.9	1.9	1.9	1.4	1.4	1.4	1.9	1.9	2.4	2.9
57.5°	2.4	1.9	1.4	1.4	1.4	1.4	1.4	1.4	1.9	2.4	2.4
60°	1.9	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	2.4
62.5°	1.4	1.4	1.9	1.4	1.4	1.4	1.4	1.4	1.9	1.9	2.4
65°	1.4	1.4	1.9	1.9	1.4	1.4	1.4	1.4	1.4	1.9	2.4
67.5°	1.4	1.4	1.9	1.9	1.9	1.9	1.4	1.4	1.4	1.9	1.9
70°	1.4	1.9	1.9	1.9	1.9	1.9	1.9	1.4	1.4	1.9	1.9
72.5°	1.4	1.9	1.9	1.9	1.9	1.9	1.9	1.4	1.4	1.9	1.9
75°	1.4	1.4	1.9	1.9	1.9	1.9	1.9	1.4	1.4	1.4	1.9
77.5°	1.4	1.4	1.9	1.9	1.9	1.9	1.9	1.4	1.4	1.4	1.9
80°	1.4	1.4	1.4	1.9	1.4	1.9	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
85°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
87.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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: P1212104

CATALOG NUMBER: LDSQA4A10940D010TE LAR15SP 4LSQA1H-LSF-20 30°

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6
2.5°	88.8	87.9	86.4	86.0	86.4	86.0	83.6	83.1	82.1	82.1	82.1
5°	84.1	82.6	80.7	79.8	79.8	78.8	76.4	75.9	74.5	74.5	74.0
7.5°	78.3	76.4	74.0	73.1	73.1	72.1	69.7	68.8	67.8	67.8	67.3
10°	71.6	69.3	66.9	66.4	65.9	64.5	63.0	62.6	61.1	61.6	61.1
12.5°	64.0	62.1	60.2	59.2	59.2	57.8	56.8	56.4	55.9	55.9	55.9
15°	56.8	54.4	52.5	52.1	52.1	51.6	50.6	50.6	49.7	50.6	50.6
17.5°	48.7	46.8	46.3	45.4	45.9	45.4	44.4	44.9	44.9	45.4	45.9
20°	41.1	39.6	39.2	38.7	39.2	39.2	38.7	39.2	39.6	41.1	42.0
22.5°	34.4	33.4	33.4	33.0	33.4	33.9	33.4	34.4	35.3	36.3	37.7
25°	28.7	28.2	28.2	28.2	28.7	29.1	29.6	30.6	31.0	32.5	33.4
27.5°	23.4	23.4	23.4	23.9	24.4	24.8	25.3	26.7	27.2	28.7	29.6
30°	19.6	19.1	19.6	20.1	20.5	21.5	22.0	22.9	23.4	24.8	25.8
32.5°	15.8	16.2	16.7	17.2	17.7	18.1	18.6	19.6	20.5	21.5	22.4
35°	13.4	13.4	13.9	14.3	14.8	15.8	16.2	16.7	17.7	18.6	19.1
37.5°	11.0	11.5	11.9	12.4	12.9	13.4	13.9	14.3	14.8	15.8	16.7
40°	9.1	9.6	10.0	10.5	10.5	11.5	11.5	12.4	12.9	13.9	14.8
42.5°	7.6	8.1	8.6	9.1	9.1	9.6	10.0	10.5	11.0	11.9	12.9
45°	6.2	6.7	7.2	7.6	7.6	8.1	8.6	9.1	9.6	10.5	11.0
47.5°	5.3	5.7	6.2	6.7	6.7	7.2	7.6	8.1	8.1	9.1	9.6
50°	4.3	4.8	5.3	5.7	5.7	6.2	6.7	7.2	7.2	7.6	8.1
52.5°	3.3	3.8	4.8	4.8	5.3	5.7	5.7	6.2	6.2	6.7	7.2
55°	3.3	3.8	4.3	4.3	4.8	5.3	5.3	5.7	5.7	5.7	6.2
57.5°	2.9	3.3	3.8	4.3	4.3	4.8	4.8	4.8	4.8	5.3	5.3
60°	2.9	3.3	3.3	3.8	3.8	4.3	4.3	4.3	4.3	4.8	4.8
62.5°	2.9	2.9	3.3	3.3	3.8	3.8	3.8	4.3	4.3	4.3	4.3
65°	2.4	2.9	3.3	3.3	3.3	3.8	3.8	3.8	3.8	3.8	3.8
67.5°	2.4	2.9	2.9	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
70°	2.4	2.4	2.9	2.9	2.9	3.3	3.3	3.3	2.9	3.3	2.9
72.5°	1.9	2.4	2.4	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
75°	1.9	2.4	2.4	2.4	2.4	2.9	2.9	2.4	2.4	2.4	2.4
77.5°	1.9	1.9	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.9
80°	1.9	1.9	1.9	1.9	2.4	2.4	1.9	1.9	1.9	1.9	1.9
82.5°	1.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.4	1.4	1.4
85°	1.4	1.4	1.9	1.9	1.9	1.9	1.4	1.4	1.4	1.4	1.0
87.5°	1.4	1.4	1.4	1.9	1.4	1.4	1.4	1.4	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

TEST NUMBER: P1212104

CATALOG NUMBER: LDSQA4A10940D010TE LAR15SP 4LSQA1H-LSF-20 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	93.6	93.6	93.6	93.6	93.6	93.6	93.6	93.6
2.5°	80.7	80.2	80.7	80.2	80.2	80.7	79.3	80.2
5°	73.1	72.1	72.6	72.1	71.6	72.1	71.2	72.1
7.5°	66.4	65.9	65.9	65.9	65.4	65.9	65.0	65.9
10°	60.7	60.2	60.2	60.2	60.2	60.7	59.7	60.7
12.5°	54.9	54.9	55.4	54.9	55.4	55.9	54.9	55.9
15°	50.1	50.6	51.1	51.1	51.6	52.1	51.6	52.5
17.5°	46.3	46.8	47.8	47.8	48.2	49.2	48.7	49.7
20°	42.5	43.0	43.9	43.9	44.4	45.4	44.9	45.9
22.5°	38.2	39.2	39.6	40.1	40.6	41.6	41.1	42.0
25°	33.9	35.3	35.8	36.3	36.8	37.7	37.7	38.7
27.5°	30.6	31.5	32.0	32.5	33.4	34.4	34.4	34.9
30°	26.7	27.7	28.7	29.1	29.6	30.6	30.6	31.5
32.5°	23.4	24.4	24.8	25.3	26.3	27.2	27.7	28.2
35°	20.1	21.5	22.0	22.9	23.4	24.8	24.8	25.3
37.5°	17.7	18.6	19.6	20.1	21.0	22.0	22.0	22.9
40°	15.8	16.7	17.2	17.7	18.6	19.6	19.6	20.1
42.5°	13.4	14.8	15.3	15.8	16.2	17.2	17.7	18.1
45°	11.9	12.4	12.9	13.4	13.9	14.8	14.8	15.3
47.5°	10.0	10.5	11.0	11.5	11.9	12.4	12.9	13.4
50°	8.6	9.1	9.6	9.6	10.0	11.0	11.0	11.5
52.5°	7.2	7.6	8.1	8.1	8.6	9.6	9.6	10.0
55°	6.2	6.7	7.2	7.2	7.6	8.1	8.1	8.6
57.5°	5.7	5.7	6.2	6.2	6.7	6.7	7.2	7.2
60°	4.8	5.3	5.3	5.3	5.7	5.7	5.7	5.7
62.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.8
65°	3.8	3.8	3.8	3.8	3.8	3.8	3.3	3.8
67.5°	3.3	3.3	3.3	3.3	2.9	2.9	2.9	2.9
70°	2.9	2.9	2.9	2.9	2.9	2.4	2.4	2.4
72.5°	2.4	2.4	2.4	2.4	2.4	1.9	1.9	1.9
75°	2.4	2.4	1.9	1.9	1.9	1.9	1.9	1.4
77.5°	1.9	1.9	1.9	1.9	1.4	1.4	1.4	1.4
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.0	1.0
82.5°	1.4	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°	0.5	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

Classified

Scaled Data Report

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



Report Generated By 670245859 / DESKTOP-T8S5UU9

Classified

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269

Scaled Data Report



Classified

Scaled Data Report

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



— 0°-180° - - 45°-225° - - - 90°-270°

Classified

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269

Scaled Data Report



Classified

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269

Scaled Data Report



Classified

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269

Scaled Data Report



Classified

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269

Scaled Data Report



Classified

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269

Scaled Data Report



Classified

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)