

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: P1219485

Luminaire Tested: **LDSQA4A15935D010TE LAR15SP 4LSQA1H-LSF-20 30°**

Issue Date: 3/3/2020



Test Information

Test Method: LM-41-14
Report Number: P1219485
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: LDSQA4A15935D010TE 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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

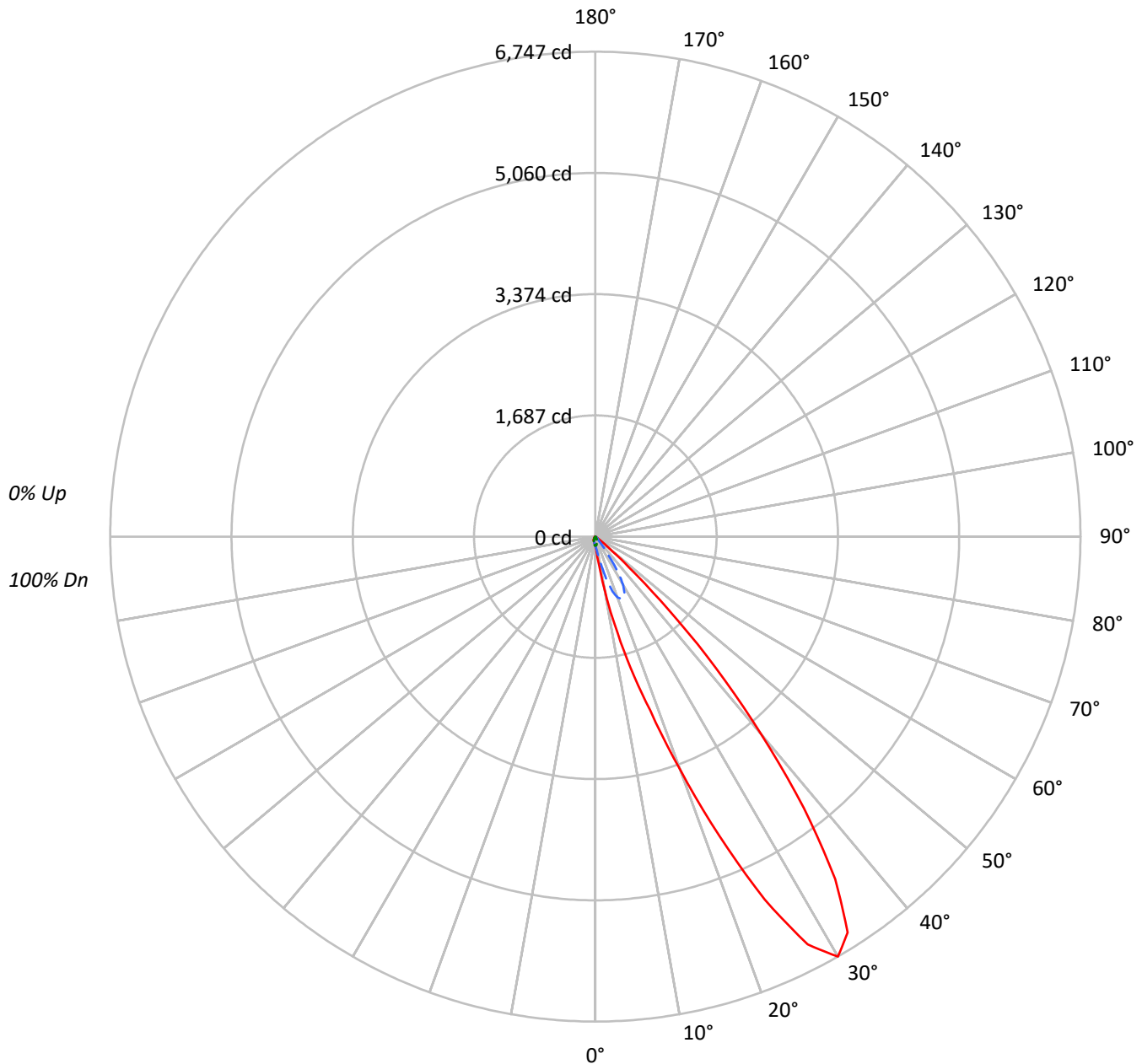
Lumens per Lamp: N/A
Luminaire Lumens: 1177.7 lumens
Efficiency: N/A
Efficacy: 57.7 lumens/watt
Spacing Criteria (0/90/45): 2.28 / 0.64 / 1.15
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 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					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	104	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°	12313	12313	12313
5°	23592	11728	9520
10°	77132	10398	8106
15°	188881	8585	7161
20°	355886	6557	6423
25°	595742	4650	5622
30°	754700	3188	4788
35°	687664	2070	4068
40°	452873	1480	3440
45°	196174	973	2850
50°	34799	693	2336
55°	5590	557	1976
60°	1376	504	1511
65°	458	596	1169
70°	368	736	935
75°	487	749	749
80°	0	1116	725
85°	0	2223	778



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	16.3	1.4
10°-20°	131.0	11.1
20°-30°	394.6	33.5
30°-40°	449.1	38.1
40°-50°	166.0	14.1
50°-60°	13.2	1.1
60°-70°	3.6	0.3
70°-80°	2.5	0.2
80°-90°	1.5	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°	541.8	46.0
0°-40°	990.9	84.1
0°-60°	1170.1	99.4
0°-90°	1177.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1177.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	127	127	127	127	127	
5°	243	178	121	101	98	39
15°	1883	636	86	67	71	591
25°	5573	930	44	42	53	2544
35°	5815	326	18	24	34	3457
45°	1432	38	7	13	21	1212
55°	33	7	3	8	12	54
65°	2	2	3	5	5	3
75°	1	2	2	3	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°	127.1	127.1	127.1	127.1	127.1	127.1	127.1	127.1	127.1	127.1	127.1
2.5°	163.4	164.7	163.4	160.9	160.9	157.6	156.3	155.0	151.8	149.8	147.2
5°	242.6	238.7	235.4	227.6	225.0	217.9	212.8	205.6	195.8	187.4	178.3
7.5°	415.1	409.3	396.9	373.5	359.3	341.7	328.2	305.4	276.3	252.3	228.3
10°	784.1	758.7	729.6	677.1	638.8	598.0	565.5	504.6	431.2	371.0	312.5
12.5°	1263.3	1265.3	1210.8	1122.0	1051.3	979.3	923.5	810.6	680.9	567.5	455.3
15°	1883.3	1847.6	1791.2	1655.1	1513.7	1409.3	1320.4	1149.2	965.6	799.6	636.2
17.5°	2536.4	2551.3	2419.7	2197.2	1973.5	1817.1	1682.9	1423.5	1205.6	1000.0	800.3
20°	3452.1	3349.7	3161.6	2801.0	2453.4	2227.0	2027.9	1691.3	1387.2	1125.8	901.5
22.5°	4508.0	4342.5	3959.9	3452.1	2926.1	2612.9	2335.3	1872.3	1502.6	1190.1	935.8
25°	5573.4	5447.0	4837.3	4078.6	3325.0	2919.0	2559.7	1994.8	1557.8	1204.9	930.0
27.5°	6395.8	6189.6	5495.0	4506.0	3563.0	3083.8	2664.2	2032.5	1546.1	1168.7	874.9
30°	6746.7	6485.9	5716.2	4603.2	3565.0	3056.5	2612.3	1957.9	1463.1	1076.5	771.1
32.5°	6530.0	6229.1	5452.8	4334.1	3321.2	2843.8	2411.8	1796.5	1325.6	931.9	579.2
35°	5814.7	5515.1	4795.9	3803.0	2932.0	2515.0	2139.5	1585.7	1129.1	690.7	325.5
37.5°	4761.5	4506.0	3991.7	3187.5	2470.8	2132.4	1819.8	1336.0	841.1	396.3	163.4
40°	3581.1	3401.5	3092.9	2528.0	2000.1	1742.6	1490.9	1023.4	511.0	199.1	92.8
42.5°	2482.5	2365.8	2210.9	1870.3	1542.8	1365.8	1164.1	683.6	262.6	109.6	57.7
45°	1431.9	1358.7	1315.9	1170.6	1042.9	956.5	778.2	368.4	133.0	65.5	38.2
47.5°	632.3	583.7	562.9	501.9	467.0	443.6	352.1	156.9	71.4	42.2	31.8
50°	230.9	230.9	231.6	203.6	166.7	149.8	117.4	69.4	40.2	33.1	23.4
52.5°	81.7	80.4	83.7	79.1	69.4	62.3	51.9	35.0	24.7	20.8	13.0
55°	33.1	31.8	33.1	31.1	29.2	27.2	24.0	18.8	15.5	13.0	7.1
57.5°	14.9	14.9	15.5	14.9	14.9	13.7	12.3	14.3	11.0	7.1	4.6
60°	7.1	7.1	7.8	7.8	7.8	7.1	7.1	7.8	6.5	4.6	3.3
62.5°	3.3	3.3	3.9	3.9	3.9	3.9	3.9	4.6	3.3	2.6	2.0
65°	2.0	1.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
67.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	2.0	2.0
70°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	2.0
72.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	2.0
75°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	2.0
77.5°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.3	1.3	2.0
80°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	1.3	1.3	1.3
82.5°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	1.3	1.3	1.3
85°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.3	1.3
87.5°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	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°	127.1	127.1	127.1	127.1	127.1	127.1	127.1	127.1	127.1	127.1	127.1
2.5°	144.6	142.7	138.8	136.8	134.2	132.3	131.0	128.4	125.8	123.8	122.6
5°	169.9	162.8	154.3	147.9	142.7	139.4	134.2	129.7	124.5	120.6	117.4
7.5°	206.9	189.4	170.6	157.6	150.5	143.9	134.9	127.1	120.0	114.7	110.3
10°	264.6	227.0	193.9	168.6	156.3	147.2	133.0	122.0	112.9	105.7	101.2
12.5°	360.6	283.4	225.0	182.3	163.4	149.8	129.7	114.7	103.8	96.6	90.8
15°	492.2	366.4	267.8	198.5	171.9	152.4	124.5	106.3	94.0	85.6	80.4
17.5°	616.1	453.3	316.5	217.9	180.3	153.7	117.4	95.3	82.4	74.5	69.4
20°	693.9	509.8	348.9	228.9	182.9	149.8	107.6	83.7	70.7	63.6	58.4
22.5°	712.1	516.2	346.3	218.6	171.9	138.1	94.0	72.0	59.7	53.2	48.6
25°	685.5	480.0	310.0	188.7	146.5	116.1	78.5	58.4	49.3	43.5	40.2
27.5°	618.7	408.6	245.1	142.1	109.6	85.6	59.7	45.4	39.6	35.0	33.1
30°	498.8	287.3	153.7	88.2	70.0	56.4	42.8	35.0	30.5	28.5	26.6
32.5°	302.2	147.9	81.1	52.6	44.1	38.2	31.1	25.9	23.4	22.1	21.4
35°	143.9	77.8	49.9	35.6	31.1	27.2	22.7	19.5	18.1	17.5	17.5
37.5°	81.7	50.6	33.8	24.0	21.4	18.8	16.8	14.9	14.3	14.3	14.3
40°	51.9	32.5	22.1	17.5	15.5	14.3	13.0	11.7	11.7	11.7	11.7
42.5°	33.8	23.4	16.8	13.0	11.7	11.0	9.7	9.1	9.1	9.1	9.7
45°	26.6	19.5	13.7	10.4	9.1	8.4	7.8	7.1	7.1	7.1	7.8
47.5°	22.7	13.7	9.1	7.1	5.8	5.8	5.1	5.1	5.1	5.8	6.5
50°	13.7	8.4	5.8	4.6	3.9	3.9	3.9	3.9	3.9	4.6	5.1
52.5°	7.8	5.1	3.9	3.3	2.6	2.6	2.6	2.6	3.3	3.9	3.9
55°	5.1	3.9	2.6	2.6	2.0	2.0	2.0	2.6	2.6	3.3	3.9
57.5°	3.3	2.6	2.0	2.0	2.0	2.0	2.0	2.0	2.6	3.3	3.3
60°	2.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	3.3
62.5°	2.0	2.0	2.6	2.0	2.0	2.0	2.0	2.0	2.6	2.6	3.3
65°	2.0	2.0	2.6	2.6	2.0	2.0	2.0	2.0	2.0	2.6	3.3
67.5°	2.0	2.0	2.6	2.6	2.6	2.6	2.0	2.0	2.0	2.6	2.6
70°	2.0	2.6	2.6	2.6	2.6	2.6	2.6	2.0	2.0	2.6	2.6
72.5°	2.0	2.6	2.6	2.6	2.6	2.6	2.6	2.0	2.0	2.6	2.6
75°	2.0	2.0	2.6	2.6	2.6	2.6	2.6	2.0	2.0	2.0	2.6
77.5°	2.0	2.0	2.6	2.6	2.6	2.6	2.6	2.0	2.0	2.0	2.6
80°	2.0	2.0	2.0	2.6	2.0	2.6	2.0	2.0	2.0	2.0	2.0
82.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
85°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
87.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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°	127.1	127.1	127.1	127.1	127.1	127.1	127.1	127.1	127.1	127.1	127.1
2.5°	120.6	119.3	117.4	116.7	117.4	116.7	113.5	112.9	111.6	111.6	111.6
5°	114.1	112.2	109.6	108.3	108.3	107.0	103.8	103.2	101.2	101.2	100.5
7.5°	106.3	103.8	100.5	99.2	99.2	97.9	94.6	93.4	92.1	92.1	91.5
10°	97.3	94.0	90.8	90.2	89.5	87.5	85.6	84.9	83.1	83.7	83.1
12.5°	86.9	84.3	81.7	80.4	80.4	78.5	77.2	76.5	75.8	75.8	75.8
15°	77.2	74.0	71.4	70.7	70.7	70.0	68.7	68.7	67.4	68.7	68.7
17.5°	66.1	63.6	62.9	61.6	62.3	61.6	60.3	61.0	61.0	61.6	62.3
20°	55.7	53.9	53.2	52.6	53.2	53.2	52.6	53.2	53.9	55.7	57.0
22.5°	46.7	45.4	45.4	44.7	45.4	46.0	45.4	46.7	48.0	49.3	51.3
25°	38.9	38.2	38.2	38.2	38.9	39.6	40.2	41.5	42.2	44.1	45.4
27.5°	31.8	31.8	31.8	32.5	33.1	33.8	34.4	36.3	36.9	38.9	40.2
30°	26.6	25.9	26.6	27.2	27.9	29.2	29.8	31.1	31.8	33.8	35.0
32.5°	21.4	22.1	22.7	23.4	24.0	24.7	25.2	26.6	27.9	29.2	30.5
35°	18.1	18.1	18.8	19.5	20.1	21.4	22.1	22.7	24.0	25.2	25.9
37.5°	14.9	15.5	16.2	16.8	17.5	18.1	18.8	19.5	20.1	21.4	22.7
40°	12.3	13.0	13.7	14.3	14.3	15.5	15.5	16.8	17.5	18.8	20.1
42.5°	10.4	11.0	11.7	12.3	12.3	13.0	13.7	14.3	14.9	16.2	17.5
45°	8.4	9.1	9.7	10.4	10.4	11.0	11.7	12.3	13.0	14.3	14.9
47.5°	7.1	7.8	8.4	9.1	9.1	9.7	10.4	11.0	11.0	12.3	13.0
50°	5.8	6.5	7.1	7.8	7.8	8.4	9.1	9.7	9.7	10.4	11.0
52.5°	4.6	5.1	6.5	6.5	7.1	7.8	7.8	8.4	8.4	9.1	9.7
55°	4.6	5.1	5.8	5.8	6.5	7.1	7.1	7.8	7.8	7.8	8.4
57.5°	3.9	4.6	5.1	5.8	5.8	6.5	6.5	6.5	6.5	7.1	7.1
60°	3.9	4.6	4.6	5.1	5.1	5.8	5.8	5.8	5.8	6.5	6.5
62.5°	3.9	3.9	4.6	4.6	5.1	5.1	5.1	5.8	5.8	5.8	5.8
65°	3.3	3.9	4.6	4.6	4.6	5.1	5.1	5.1	5.1	5.1	5.1
67.5°	3.3	3.9	3.9	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
70°	3.3	3.3	3.9	3.9	3.9	4.6	4.6	4.6	3.9	4.6	3.9
72.5°	2.6	3.3	3.3	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
75°	2.6	3.3	3.3	3.3	3.3	3.9	3.9	3.3	3.3	3.3	3.3
77.5°	2.6	2.6	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.6
80°	2.6	2.6	2.6	2.6	3.3	3.3	2.6	2.6	2.6	2.6	2.6
82.5°	2.0	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.0	2.0	2.0
85°	2.0	2.0	2.6	2.6	2.6	2.6	2.0	2.0	2.0	2.0	1.3
87.5°	2.0	2.0	2.0	2.6	2.0	2.0	2.0	2.0	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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Peachtree City, GA 30269



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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	127.1	127.1	127.1	127.1	127.1	127.1	127.1	127.1
2.5°	109.6	109.0	109.6	109.0	109.0	109.6	107.6	109.0
5°	99.2	97.9	98.6	97.9	97.3	97.9	96.6	97.9
7.5°	90.2	89.5	89.5	89.5	88.8	89.5	88.2	89.5
10°	82.4	81.7	81.7	81.7	81.7	82.4	81.1	82.4
12.5°	74.5	74.5	75.2	74.5	75.2	75.8	74.5	75.8
15°	68.1	68.7	69.4	69.4	70.0	70.7	70.0	71.4
17.5°	62.9	63.6	64.8	64.8	65.5	66.8	66.1	67.4
20°	57.7	58.4	59.7	59.7	60.3	61.6	61.0	62.3
22.5°	51.9	53.2	53.9	54.4	55.1	56.4	55.7	57.0
25°	46.0	48.0	48.6	49.3	49.9	51.3	51.3	52.6
27.5°	41.5	42.8	43.5	44.1	45.4	46.7	46.7	47.3
30°	36.3	37.6	38.9	39.6	40.2	41.5	41.5	42.8
32.5°	31.8	33.1	33.8	34.4	35.6	36.9	37.6	38.2
35°	27.2	29.2	29.8	31.1	31.8	33.8	33.8	34.4
37.5°	24.0	25.2	26.6	27.2	28.5	29.8	29.8	31.1
40°	21.4	22.7	23.4	24.0	25.2	26.6	26.6	27.2
42.5°	18.1	20.1	20.8	21.4	22.1	23.4	24.0	24.7
45°	16.2	16.8	17.5	18.1	18.8	20.1	20.1	20.8
47.5°	13.7	14.3	14.9	15.5	16.2	16.8	17.5	18.1
50°	11.7	12.3	13.0	13.0	13.7	14.9	14.9	15.5
52.5°	9.7	10.4	11.0	11.0	11.7	13.0	13.0	13.7
55°	8.4	9.1	9.7	9.7	10.4	11.0	11.0	11.7
57.5°	7.8	7.8	8.4	8.4	9.1	9.1	9.7	9.7
60°	6.5	7.1	7.1	7.1	7.8	7.8	7.8	7.8
62.5°	5.8	5.8	5.8	5.8	5.8	5.8	5.8	6.5
65°	5.1	5.1	5.1	5.1	5.1	5.1	4.6	5.1
67.5°	4.6	4.6	4.6	4.6	3.9	3.9	3.9	3.9
70°	3.9	3.9	3.9	3.9	3.9	3.3	3.3	3.3
72.5°	3.3	3.3	3.3	3.3	3.3	2.6	2.6	2.6
75°	3.3	3.3	2.6	2.6	2.6	2.6	2.6	2.0
77.5°	2.6	2.6	2.6	2.6	2.0	2.0	2.0	2.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	1.3	1.3
82.5°	2.0	1.3	1.3	1.3	1.3	1.3	1.3	1.3
85°	1.3	1.3	1.3	1.3	0.7	0.7	0.7	0.7
87.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
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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— 0°-180° - - 45°-225° - - - 90°-270°

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(END OF REPORT)