

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: P182839

Luminaire Tested: **LDSQA4A09830D010TE LAR35FL 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182839
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26804)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA4A09830D010TE LAR35FL 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 35° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1080.9 lumens
Efficiency: N/A
Efficacy: 78.1 lumens/watt
Spacing Criteria (0/90/45): 2.46 / 0.61 / 1.2
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

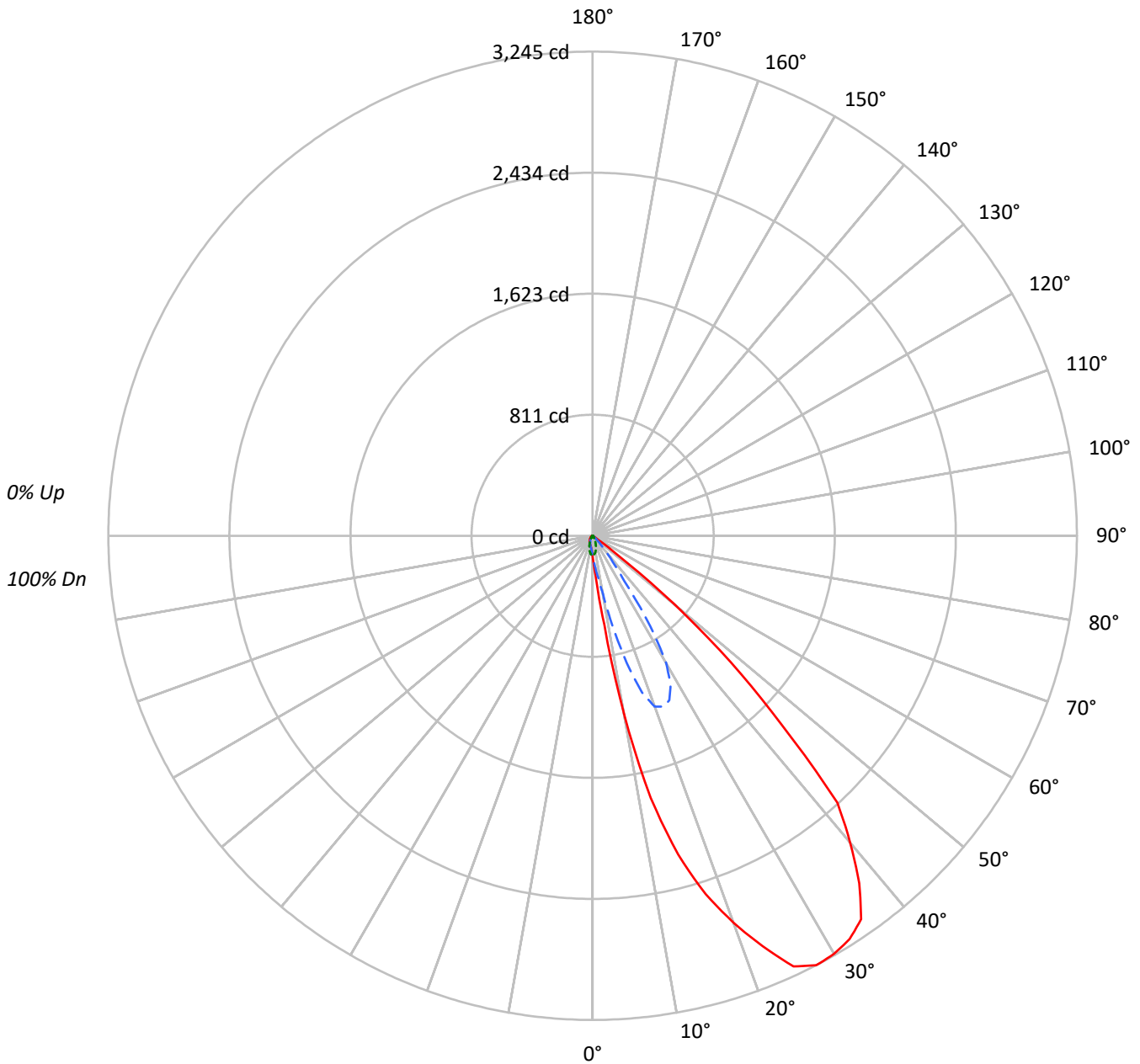
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	112	109	106	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91																			
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	86	84	82																			
3	99	91	85	80	97	90	84	80	87	82	78	84	80	77	82	79	76	74																			
4	92	83	77	71	90	82	76	71	80	74	70	78	73	69	76	72	68	67																			
5	86	76	69	64	84	75	68	64	73	67	63	71	66	62	70	65	62	60																			
6	80	70	62	57	79	69	62	57	67	61	57	66	60	56	64	59	56	54																			
7	75	64	57	52	74	63	56	51	62	56	51	60	55	51	59	54	50	49																			
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44																			
9	66	54	47	42	64	54	47	42	53	46	42	52	46	42	51	45	42	40																			
10	62	50	43	38	60	50	43	38	49	42	38	48	42	38	47	42	38	36																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	12943	12943	12943
5°	30341	12224	8548
10°	119893	10742	7122
15°	221878	8595	6248
20°	284505	6258	5649
25°	340403	4436	5013
30°	361952	2920	4407
35°	370956	1762	3844
40°	339563	1151	3301
45°	245029	808	2699
50°	106975	648	2246
55°	7381	540	1892
60°	1337	523	1550
65°	481	481	1100
70°	453	595	765
75°	412	786	786
80°	0	1172	893
85°	0	2334	556



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	19.5	1.8
10°-20°	153.0	14.2
20°-30°	320.3	29.6
30°-40°	356.5	33.0
40°-50°	204.7	18.9
50°-60°	20.4	1.9
60°-70°	3.2	0.3
70°-80°	2.0	0.2
80°-90°	1.2	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°	492.7	45.6
0°-40°	849.3	78.6
0°-60°	1074.4	99.4
0°-90°	1080.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1080.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	134	134	134	134	134	
5°	312	215	126	92	88	57
15°	2212	883	86	60	62	625
25°	3185	1216	42	37	47	1442
35°	3137	371	15	21	32	1915
45°	1788	45	6	12	20	1366
55°	44	6	3	7	11	130
65°	2	2	2	4	5	3
75°	1	1	2	3	2	1
85°	0	1	2	2	0	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°	133.6	133.6	133.6	133.6	133.6	133.6	133.6	133.6	133.6	133.6	133.6
2.5°	199.7	195.4	191.1	188.5	185.8	189.6	186.9	185.8	178.4	174.6	171.4
5°	312.0	304.0	292.3	282.7	273.1	275.3	267.8	258.8	240.1	226.8	215.1
7.5°	602.2	582.5	546.3	511.2	476.0	469.6	446.2	405.7	353.5	314.1	280.1
10°	1218.8	1159.1	1092.6	1020.7	936.6	913.1	855.1	745.4	625.6	488.8	389.8
12.5°	1799.1	1772.0	1693.7	1600.5	1509.5	1453.6	1393.4	1212.4	1022.3	801.9	617.6
15°	2212.3	2195.8	2127.1	2042.5	1944.5	1908.3	1834.8	1654.3	1414.2	1150.6	883.3
17.5°	2518.5	2490.3	2418.4	2326.3	2210.2	2179.3	2091.5	1912.0	1662.8	1398.2	1101.6
20°	2759.7	2742.1	2648.9	2538.2	2399.2	2361.9	2259.2	2072.3	1801.3	1520.1	1218.2
22.5°	2976.4	2946.6	2832.1	2700.0	2541.4	2501.4	2387.0	2182.0	1890.7	1577.6	1239.0
25°	3184.6	3139.3	3000.3	2827.3	2640.9	2586.6	2461.0	2243.7	1923.7	1582.4	1215.6
27.5°	3245.3	3222.4	3094.1	2892.8	2677.1	2615.9	2484.9	2257.6	1911.5	1538.8	1131.5
30°	3235.7	3216.5	3109.5	2899.2	2670.8	2606.3	2473.2	2215.0	1840.1	1424.8	982.9
32.5°	3205.3	3197.9	3068.5	2843.8	2611.1	2540.8	2397.1	2109.0	1706.5	1251.3	718.3
35°	3136.7	3107.4	2946.0	2734.7	2511.0	2433.8	2271.4	1957.3	1530.3	911.0	371.1
37.5°	2935.4	2912.5	2785.2	2599.9	2382.2	2283.1	2111.7	1761.3	1184.7	518.1	222.0
40°	2685.1	2674.0	2573.9	2408.3	2175.6	2063.8	1877.4	1441.3	723.1	294.4	146.4
42.5°	2428.5	2425.3	2318.3	2145.2	1892.9	1764.5	1571.3	972.3	384.4	177.8	84.7
45°	1788.5	1807.7	1733.1	1629.3	1436.5	1343.4	1092.6	501.0	221.5	98.5	44.7
47.5°	1254.4	1233.2	1101.1	919.5	743.3	629.4	476.0	236.9	118.2	51.6	25.6
50°	709.8	713.5	594.2	480.8	315.2	249.7	189.6	119.3	57.0	27.2	15.4
52.5°	185.3	193.8	167.2	143.8	122.5	99.6	80.4	51.6	27.2	16.0	10.1
55°	43.7	45.3	42.1	39.4	37.3	33.0	29.3	22.4	14.9	10.1	6.4
57.5°	15.4	16.0	15.4	15.4	14.9	14.4	13.3	11.7	9.1	6.4	4.3
60°	6.9	7.5	6.9	7.5	7.5	7.5	7.5	7.5	5.3	3.7	2.7
62.5°	3.2	3.2	3.2	3.2	3.7	3.7	4.3	4.3	3.2	2.7	2.1
65°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.6
67.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
70°	1.6	1.6	1.6	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.6
72.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
75°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
77.5°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.1	1.1	1.1	1.1
80°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	1.1	1.1	1.1
82.5°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	1.1	1.1	1.1
85°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.1	1.1	1.1
87.5°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.1	1.1	1.1
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°	133.6	133.6	133.6	133.6	133.6	133.6	133.6	133.6	133.6	133.6	133.6
2.5°	165.6	165.1	159.2	154.9	152.8	149.6	145.9	140.6	134.7	129.4	127.3
5°	201.3	194.3	182.1	172.0	167.2	162.4	153.9	144.3	135.2	125.7	120.9
7.5°	247.6	227.4	203.4	184.8	176.8	168.8	156.5	143.2	131.0	118.2	111.3
10°	310.9	264.1	222.6	192.7	181.0	170.4	152.8	136.3	123.0	109.2	100.1
12.5°	444.6	328.5	242.8	196.5	181.0	167.2	145.9	126.7	111.8	97.4	88.9
15°	640.5	443.5	287.0	200.2	177.3	159.7	135.2	114.5	98.5	85.7	77.7
17.5°	798.7	549.5	341.8	209.8	172.5	149.6	121.4	99.6	84.7	72.9	66.6
20°	878.5	594.2	366.9	211.4	160.8	133.6	104.9	84.1	70.8	60.7	55.4
22.5°	876.9	579.8	344.5	185.3	141.1	115.5	88.4	69.2	58.6	50.6	46.3
25°	821.6	513.3	287.5	148.0	113.9	95.8	71.9	55.9	47.4	41.5	37.8
27.5°	717.7	416.9	214.6	109.7	88.9	75.6	55.9	44.7	37.8	33.5	30.9
30°	563.3	279.0	135.2	81.5	67.6	57.0	43.1	34.6	29.8	26.1	24.5
32.5°	310.4	145.4	91.0	59.6	49.5	41.5	31.9	25.0	21.8	19.2	18.6
35°	171.4	102.8	65.0	39.9	33.0	28.2	21.8	18.1	16.0	14.9	14.9
37.5°	121.4	66.0	38.9	25.0	21.3	18.6	14.9	12.8	12.2	11.7	11.7
40°	72.9	38.9	23.4	16.5	14.4	12.8	11.2	9.6	9.6	9.1	9.6
42.5°	39.9	23.4	16.0	11.7	10.1	9.6	8.0	7.5	7.5	7.5	8.0
45°	24.0	15.4	11.2	8.5	7.5	6.4	5.9	5.3	5.9	5.9	6.4
47.5°	15.4	11.2	7.5	5.3	4.8	4.3	3.7	4.3	4.3	4.8	5.3
50°	10.6	6.9	4.8	3.2	3.2	2.7	3.2	3.2	3.7	4.3	4.8
52.5°	6.9	4.8	3.2	2.7	2.1	2.1	2.1	2.7	3.2	3.7	4.3
55°	4.3	3.2	2.7	2.1	2.1	2.1	2.1	2.1	2.7	3.2	3.7
57.5°	3.2	2.7	2.1	1.6	1.6	1.6	2.1	2.1	2.7	2.7	3.2
60°	2.1	2.1	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.7	3.2
62.5°	2.1	2.1	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.7	2.7
65°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.7
67.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.7
70°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.7
72.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1
75°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.1
77.5°	1.1	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.1
80°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.1
82.5°	1.1	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.1
85°	1.1	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.1
87.5°	1.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1
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°	133.6	133.6	133.6	133.6	133.6	133.6	133.6	133.6	133.6	133.6	133.6
2.5°	124.6	120.9	117.7	118.7	116.6	112.9	111.8	109.2	106.0	105.4	105.4
5°	115.5	109.7	104.9	104.4	102.2	98.0	96.9	94.2	91.6	91.0	90.5
7.5°	104.4	98.0	93.7	92.6	91.0	87.3	86.8	84.1	82.5	81.5	81.5
10°	93.2	87.3	83.6	83.1	82.0	78.8	78.3	76.1	74.5	74.0	73.5
12.5°	82.5	77.7	74.5	74.0	72.9	70.3	69.8	68.2	67.1	66.6	66.6
15°	72.4	68.2	65.5	65.0	64.4	61.8	61.8	60.7	60.2	60.2	60.7
17.5°	62.3	58.6	56.4	55.9	55.9	53.8	54.3	53.8	53.8	53.8	54.8
20°	52.2	49.0	47.4	47.9	46.9	46.3	46.9	46.9	46.9	47.9	49.5
22.5°	43.7	41.0	39.4	39.9	39.9	39.4	39.9	40.5	41.5	43.1	44.7
25°	35.7	33.5	33.0	33.5	33.5	33.5	34.6	35.7	36.7	38.3	39.9
27.5°	28.8	27.2	27.2	27.7	28.2	28.2	29.8	30.9	32.5	34.1	35.7
30°	22.9	22.4	22.4	23.4	23.4	24.0	26.1	27.2	28.2	29.8	31.4
32.5°	18.1	18.1	18.6	19.7	19.7	20.8	22.4	23.4	24.5	26.1	27.7
35°	14.9	15.4	16.0	16.5	17.0	17.6	19.2	20.2	21.3	22.9	24.0
37.5°	12.2	12.8	13.3	14.4	14.4	14.9	16.5	17.6	18.1	19.7	21.3
40°	10.1	10.6	11.2	12.2	12.2	12.8	14.4	14.9	15.4	17.0	18.6
42.5°	8.5	9.1	9.6	10.1	10.6	11.2	12.2	12.8	13.8	14.9	16.0
45°	6.9	7.5	8.0	8.5	9.1	9.6	10.1	11.2	11.7	12.8	13.8
47.5°	5.9	6.4	6.9	7.5	8.0	8.0	9.1	9.6	10.1	11.2	12.2
50°	5.3	5.9	6.4	6.4	6.9	7.5	8.0	8.5	9.1	9.6	10.6
52.5°	4.3	4.8	5.3	5.9	5.9	6.4	6.9	7.5	8.0	8.5	9.1
55°	4.3	4.3	4.8	5.3	5.3	5.9	6.4	6.9	6.9	7.5	8.0
57.5°	3.7	4.3	4.3	4.8	4.8	5.3	5.9	5.9	6.4	6.4	6.9
60°	3.2	3.7	4.3	4.3	4.3	4.8	4.8	5.3	5.3	5.9	5.9
62.5°	3.2	3.7	3.7	4.3	4.3	4.3	4.8	4.8	4.8	5.3	5.3
65°	3.2	3.2	3.7	3.7	3.7	3.7	4.3	4.3	4.3	4.8	4.8
67.5°	2.7	3.2	3.2	3.2	3.7	3.7	3.7	3.7	3.7	4.3	4.3
70°	2.7	2.7	3.2	3.2	3.2	3.2	3.2	3.7	3.7	3.7	3.7
72.5°	2.7	2.7	2.7	2.7	3.2	3.2	3.2	3.2	3.2	3.2	3.2
75°	2.1	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
77.5°	2.1	2.1	2.1	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
80°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
82.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.6	1.6
85°	2.1	2.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
87.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.1	1.1	1.1
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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CATALOG NUMBER: LDSQA4A09830D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	133.6	133.6	133.6	133.6	133.6	133.6	133.6	133.6
2.5°	103.3	102.2	101.7	103.3	101.2	102.2	101.7	102.2
5°	88.9	87.9	87.3	88.9	86.8	87.9	86.8	87.9
7.5°	79.9	79.3	78.8	79.9	78.3	79.3	78.8	79.3
10°	72.4	71.9	71.3	72.9	71.3	72.4	71.9	72.4
12.5°	66.0	66.0	65.5	66.6	65.5	66.6	66.0	66.6
15°	60.2	60.7	60.2	61.2	60.7	61.8	61.2	62.3
17.5°	55.4	55.9	55.9	57.5	57.0	58.6	58.0	58.6
20°	50.6	51.1	51.6	52.7	52.7	54.3	53.8	54.8
22.5°	45.8	46.9	46.9	48.5	48.5	50.1	50.1	50.6
25°	41.0	42.6	43.1	44.2	44.7	46.3	46.3	46.9
27.5°	37.3	38.3	38.9	40.5	41.0	42.6	42.6	43.7
30°	33.0	34.6	35.1	36.2	36.7	38.3	38.3	39.4
32.5°	29.3	30.3	31.4	32.5	33.0	34.6	34.6	35.7
35°	25.6	27.2	27.7	28.8	29.8	31.4	31.4	32.5
37.5°	22.4	24.0	24.5	25.6	26.6	28.2	28.2	29.3
40°	19.7	21.3	21.8	22.9	23.4	25.6	25.6	26.1
42.5°	17.6	18.6	19.2	20.2	20.8	21.8	21.8	22.9
45°	14.9	16.0	16.5	17.0	18.1	19.2	19.2	19.7
47.5°	12.8	13.8	14.4	14.9	15.4	16.5	16.5	17.6
50°	11.2	11.7	12.2	12.8	13.3	14.4	14.4	14.9
52.5°	9.6	10.1	10.6	11.2	11.7	12.2	12.8	13.3
55°	8.5	9.1	9.1	9.6	10.1	10.6	10.6	11.2
57.5°	7.5	8.0	8.0	8.0	8.5	9.1	9.1	9.6
60°	6.4	6.9	6.9	6.9	7.5	7.5	7.5	8.0
62.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
65°	4.8	4.8	4.8	4.8	4.8	4.8	4.3	4.8
67.5°	4.3	4.3	4.3	3.7	3.7	3.7	3.7	3.7
70°	3.7	3.7	3.7	3.2	3.2	3.2	2.7	2.7
72.5°	3.2	3.2	3.2	2.7	2.7	2.7	2.1	2.1
75°	2.7	2.7	2.7	2.7	2.1	2.1	2.1	2.1
77.5°	2.1	2.1	2.1	2.1	2.1	2.1	1.6	1.6
80°	2.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6
82.5°	1.6	1.6	1.6	1.6	1.1	1.1	1.1	1.1
85°	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5
87.5°	1.1	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



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— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)