

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: P182845

Luminaire Tested: **LDSQA4A09940D010TE LAR35FL 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182845
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: LDSQA4A09940D010TE LAR35FL 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 35° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 969.4 lumens
Efficiency: N/A
Efficacy: 70.0 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

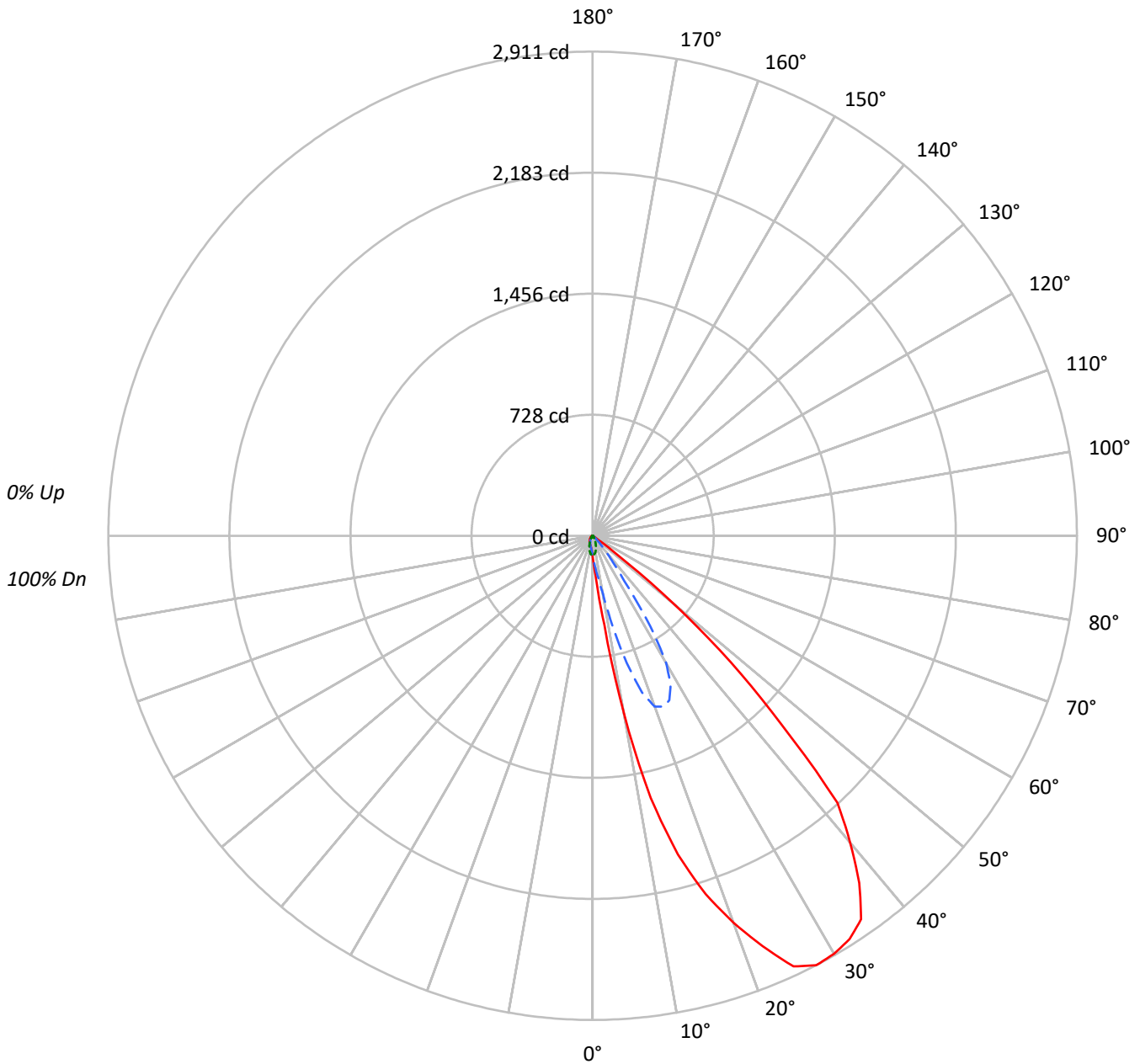
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	11615	11615	11615
5°	27219	10960	7663
10°	107538	9630	6384
15°	199011	7713	5606
20°	255175	5608	5072
25°	305311	3987	4489
30°	324646	2618	3949
35°	332721	1585	3441
40°	304571	1024	2959
45°	219779	726	2425
50°	95943	573	2020
55°	6621	490	1689
60°	1201	465	1395
65°	436	436	986
70°	397	538	680
75°	374	711	711
80°	0	1060	781
85°	0	2112	556



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	17.5	1.8
10°-20°	137.2	14.2
20°-30°	287.3	29.6
30°-40°	319.8	33.0
40°-50°	183.6	18.9
50°-60°	18.3	1.9
60°-70°	2.9	0.3
70°-80°	1.8	0.2
80°-90°	1.1	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°	442.0	45.6
0°-40°	761.7	78.6
0°-60°	963.6	99.4
0°-90°	969.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	969.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	120	120	120	120	120	
5°	280	193	113	82	79	51
15°	1984	792	77	54	56	561
25°	2856	1090	37	33	42	1293
35°	2813	333	13	19	29	1718
45°	1604	40	5	10	18	1225
55°	39	6	3	6	10	117
65°	2	1	2	4	4	2
75°	1	1	2	2	2	1
85°	0	1	2	1	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°	119.9	119.9	119.9	119.9	119.9	119.9	119.9	119.9	119.9	119.9	119.9
2.5°	179.1	175.3	171.4	169.1	166.7	170.0	167.6	166.7	160.0	156.6	153.8
5°	279.9	272.7	262.2	253.6	245.0	246.9	240.2	232.1	215.4	203.4	192.9
7.5°	540.1	522.5	490.0	458.5	426.9	421.2	400.2	363.9	317.1	281.8	251.2
10°	1093.2	1039.7	980.0	915.5	840.0	819.0	767.0	668.6	561.1	438.4	349.6
12.5°	1613.7	1589.3	1519.1	1435.6	1353.9	1303.8	1249.8	1087.4	916.9	719.2	554.0
15°	1984.3	1969.5	1907.9	1832.0	1744.1	1711.6	1645.7	1483.8	1268.4	1032.0	792.3
17.5°	2258.9	2233.6	2169.1	2086.5	1982.4	1954.7	1875.9	1714.9	1491.4	1254.1	988.1
20°	2475.2	2459.5	2375.9	2276.6	2151.9	2118.5	2026.3	1858.7	1615.6	1363.5	1092.7
22.5°	2669.6	2642.9	2540.2	2421.8	2279.4	2243.6	2140.9	1957.1	1695.8	1415.0	1111.3
25°	2856.3	2815.7	2691.1	2535.9	2368.7	2320.0	2207.3	2012.5	1725.5	1419.3	1090.3
27.5°	2910.8	2890.2	2775.2	2594.6	2401.2	2346.3	2228.8	2024.9	1714.5	1380.2	1014.8
30°	2902.2	2885.0	2789.0	2600.4	2395.5	2337.7	2218.3	1986.7	1650.5	1278.0	881.6
32.5°	2875.0	2868.3	2752.2	2550.7	2342.0	2279.0	2150.0	1891.6	1530.6	1122.3	644.2
35°	2813.4	2787.1	2642.4	2452.8	2252.2	2183.0	2037.3	1755.5	1372.5	817.1	332.9
37.5°	2632.8	2612.3	2498.2	2332.0	2136.6	2047.8	1894.0	1579.8	1062.6	464.7	199.1
40°	2408.4	2398.3	2308.6	2160.0	1951.3	1851.1	1683.9	1292.8	648.5	264.1	131.3
42.5°	2178.2	2175.3	2079.3	1924.1	1697.8	1582.7	1409.3	872.0	344.8	159.5	75.9
45°	1604.2	1621.3	1554.5	1461.4	1288.5	1204.9	980.0	449.4	198.7	88.4	40.1
47.5°	1125.2	1106.0	987.6	824.8	666.7	564.5	426.9	212.5	106.0	46.3	22.9
50°	636.6	639.9	533.0	431.2	282.7	224.0	170.0	107.0	51.1	24.4	13.8
52.5°	166.2	173.8	150.0	128.9	109.8	89.3	72.1	46.3	24.4	14.3	9.1
55°	39.2	40.6	37.7	35.3	33.4	29.6	26.3	20.1	13.4	9.1	5.7
57.5°	13.8	14.3	13.8	13.8	13.4	12.9	11.9	10.5	8.1	5.7	3.8
60°	6.2	6.7	6.2	6.7	6.7	6.7	6.7	6.7	4.8	3.3	2.4
62.5°	2.9	2.9	2.9	2.9	3.3	3.3	3.8	3.8	2.9	2.4	1.9
65°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.4
67.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
70°	1.4	1.4	1.4	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	1.0
75°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.0	1.0	1.0	1.0
80°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	1.0	1.0	1.0
82.5°	0.0	0.0	0.0	0.5	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	1.0	1.0	1.0
87.5°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	119.9	119.9	119.9	119.9	119.9	119.9	119.9	119.9	119.9	119.9	119.9
2.5°	148.5	148.0	142.8	139.0	137.1	134.2	130.9	126.1	120.8	116.0	114.1
5°	180.5	174.3	163.3	154.3	150.0	145.7	138.0	129.4	121.3	112.7	108.4
7.5°	222.1	203.9	182.4	165.7	158.6	151.4	140.4	128.5	117.5	106.0	99.8
10°	278.9	236.9	199.6	172.9	162.4	152.8	137.1	122.3	110.3	97.9	89.8
12.5°	398.8	294.7	217.8	176.2	162.4	150.0	130.9	113.7	100.3	87.4	79.8
15°	574.5	397.8	257.4	179.6	159.0	143.3	121.3	102.7	88.4	76.9	69.7
17.5°	716.4	492.9	306.6	188.2	154.7	134.2	108.9	89.3	75.9	65.4	59.7
20°	788.0	533.0	329.0	189.6	144.2	119.9	94.1	75.5	63.5	54.4	49.7
22.5°	786.6	520.1	309.0	166.2	126.6	103.6	79.3	62.1	52.5	45.4	41.5
25°	736.9	460.4	257.9	132.8	102.2	86.0	64.5	50.1	42.5	37.3	33.9
27.5°	643.8	373.9	192.5	98.4	79.8	67.8	50.1	40.1	33.9	30.1	27.7
30°	505.3	250.2	121.3	73.1	60.7	51.1	38.7	31.0	26.7	23.4	22.0
32.5°	278.4	130.4	81.7	53.5	44.4	37.3	28.7	22.4	19.6	17.2	16.7
35°	153.8	92.2	58.3	35.8	29.6	25.3	19.6	16.2	14.3	13.4	13.4
37.5°	108.9	59.2	34.9	22.4	19.1	16.7	13.4	11.5	11.0	10.5	10.5
40°	65.4	34.9	21.0	14.8	12.9	11.5	10.0	8.6	8.6	8.1	8.6
42.5°	35.8	21.0	14.3	10.5	9.1	8.6	7.2	6.7	6.7	6.7	7.2
45°	21.5	13.8	10.0	7.6	6.7	5.7	5.3	4.8	5.3	5.3	5.7
47.5°	13.8	10.0	6.7	4.8	4.3	3.8	3.3	3.8	3.8	4.3	4.8
50°	9.6	6.2	4.3	2.9	2.9	2.4	2.9	2.9	3.3	3.8	4.3
52.5°	6.2	4.3	2.9	2.4	1.9	1.9	1.9	2.4	2.9	3.3	3.8
55°	3.8	2.9	2.4	1.9	1.9	1.9	1.9	1.9	2.4	2.9	3.3
57.5°	2.9	2.4	1.9	1.4	1.4	1.4	1.9	1.9	2.4	2.4	2.9
60°	1.9	1.9	1.4	1.4	1.4	1.4	1.4	1.9	1.9	2.4	2.9
62.5°	1.9	1.9	1.4	1.4	1.4	1.4	1.9	1.9	1.9	2.4	2.4
65°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	1.9	2.4
67.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	2.4
70°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	2.4
72.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	1.9
75°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	1.9	1.9
77.5°	1.0	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	1.9	1.9
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	1.9	1.9
82.5°	1.0	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	1.9	1.9
85°	1.0	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	1.9	1.9
87.5°	1.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	1.9
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°	119.9	119.9	119.9	119.9	119.9	119.9	119.9	119.9	119.9	119.9	119.9
2.5°	111.8	108.4	105.5	106.5	104.6	101.2	100.3	97.9	95.0	94.6	94.6
5°	103.6	98.4	94.1	93.6	91.7	87.9	86.9	84.5	82.1	81.7	81.2
7.5°	93.6	87.9	84.1	83.1	81.7	78.3	77.8	75.5	74.0	73.1	73.1
10°	83.6	78.3	75.0	74.5	73.5	70.7	70.2	68.3	66.9	66.4	65.9
12.5°	74.0	69.7	66.9	66.4	65.4	63.0	62.6	61.1	60.2	59.7	59.7
15°	64.9	61.1	58.7	58.3	57.8	55.4	55.4	54.4	54.0	54.0	54.4
17.5°	55.9	52.5	50.6	50.1	50.1	48.2	48.7	48.2	48.2	48.2	49.2
20°	46.8	43.9	42.5	43.0	42.0	41.5	42.0	42.0	42.0	43.0	44.4
22.5°	39.2	36.8	35.3	35.8	35.8	35.3	35.8	36.3	37.3	38.7	40.1
25°	32.0	30.1	29.6	30.1	30.1	30.1	31.0	32.0	33.0	34.4	35.8
27.5°	25.8	24.4	24.4	24.8	25.3	25.3	26.7	27.7	29.1	30.6	32.0
30°	20.5	20.1	20.1	21.0	21.0	21.5	23.4	24.4	25.3	26.7	28.2
32.5°	16.2	16.2	16.7	17.7	17.7	18.6	20.1	21.0	22.0	23.4	24.8
35°	13.4	13.8	14.3	14.8	15.3	15.8	17.2	18.1	19.1	20.5	21.5
37.5°	11.0	11.5	11.9	12.9	12.9	13.4	14.8	15.8	16.2	17.7	19.1
40°	9.1	9.6	10.0	11.0	11.0	11.5	12.9	13.4	13.8	15.3	16.7
42.5°	7.6	8.1	8.6	9.1	9.6	10.0	11.0	11.5	12.4	13.4	14.3
45°	6.2	6.7	7.2	7.6	8.1	8.6	9.1	10.0	10.5	11.5	12.4
47.5°	5.3	5.7	6.2	6.7	7.2	7.2	8.1	8.6	9.1	10.0	11.0
50°	4.8	5.3	5.7	5.7	6.2	6.7	7.2	7.6	8.1	8.6	9.6
52.5°	3.8	4.3	4.8	5.3	5.3	5.7	6.2	6.7	7.2	7.6	8.1
55°	3.8	3.8	4.3	4.8	4.8	5.3	5.7	6.2	6.2	6.7	7.2
57.5°	3.3	3.8	3.8	4.3	4.3	4.8	5.3	5.3	5.7	5.7	6.2
60°	2.9	3.3	3.8	3.8	3.8	4.3	4.3	4.8	4.8	5.3	5.3
62.5°	2.9	3.3	3.3	3.8	3.8	3.8	4.3	4.3	4.3	4.8	4.8
65°	2.9	2.9	3.3	3.3	3.3	3.3	3.8	3.8	3.8	4.3	4.3
67.5°	2.4	2.9	2.9	2.9	3.3	3.3	3.3	3.3	3.3	3.8	3.8
70°	2.4	2.4	2.9	2.9	2.9	2.9	2.9	3.3	3.3	3.3	3.3
72.5°	2.4	2.4	2.4	2.4	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	2.4	2.4	2.4	2.4	2.4	2.4
77.5°	1.9	1.9	1.9	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
80°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
82.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.4	1.4
85°	1.9	1.9	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	1.0	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



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CATALOG NUMBER: LDSQA4A09940D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	119.9	119.9	119.9	119.9	119.9	119.9	119.9	119.9
2.5°	92.6	91.7	91.2	92.6	90.7	91.7	91.2	91.7
5°	79.8	78.8	78.3	79.8	77.8	78.8	77.8	78.8
7.5°	71.6	71.2	70.7	71.6	70.2	71.2	70.7	71.2
10°	64.9	64.5	64.0	65.4	64.0	64.9	64.5	64.9
12.5°	59.2	59.2	58.7	59.7	58.7	59.7	59.2	59.7
15°	54.0	54.4	54.0	54.9	54.4	55.4	54.9	55.9
17.5°	49.7	50.1	50.1	51.6	51.1	52.5	52.1	52.5
20°	45.4	45.8	46.3	47.3	47.3	48.7	48.2	49.2
22.5°	41.1	42.0	42.0	43.5	43.5	44.9	44.9	45.4
25°	36.8	38.2	38.7	39.6	40.1	41.5	41.5	42.0
27.5°	33.4	34.4	34.9	36.3	36.8	38.2	38.2	39.2
30°	29.6	31.0	31.5	32.5	33.0	34.4	34.4	35.3
32.5°	26.3	27.2	28.2	29.1	29.6	31.0	31.0	32.0
35°	22.9	24.4	24.8	25.8	26.7	28.2	28.2	29.1
37.5°	20.1	21.5	22.0	22.9	23.9	25.3	25.3	26.3
40°	17.7	19.1	19.6	20.5	21.0	22.9	22.9	23.4
42.5°	15.8	16.7	17.2	18.1	18.6	19.6	19.6	20.5
45°	13.4	14.3	14.8	15.3	16.2	17.2	17.2	17.7
47.5°	11.5	12.4	12.9	13.4	13.8	14.8	14.8	15.8
50°	10.0	10.5	11.0	11.5	11.9	12.9	12.9	13.4
52.5°	8.6	9.1	9.6	10.0	10.5	11.0	11.5	11.9
55°	7.6	8.1	8.1	8.6	9.1	9.6	9.6	10.0
57.5°	6.7	7.2	7.2	7.2	7.6	8.1	8.1	8.6
60°	5.7	6.2	6.2	6.2	6.7	6.7	6.7	7.2
62.5°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
65°	4.3	4.3	4.3	4.3	4.3	4.3	3.8	4.3
67.5°	3.8	3.8	3.8	3.3	3.3	3.3	3.3	3.3
70°	3.3	3.3	3.3	2.9	2.9	2.9	2.4	2.4
72.5°	2.9	2.9	2.9	2.4	2.4	2.4	1.9	1.9
75°	2.4	2.4	2.4	2.4	1.9	1.9	1.9	1.9
77.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.4	1.4
80°	1.9	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	1.4	1.4	1.4	1.0	1.0	1.0	1.0
85°	1.0	1.0	1.0	1.0	1.0	1.0	0.5	0.5
87.5°	1.0	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)