

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: P182857

Luminaire Tested: **LDSQA4A28840D010TE LAR35FL 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182857
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: LDSQA4A28840D010TE LAR35FL 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 35° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2915.8 lumens
Efficiency: N/A
Efficacy: 65.5 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

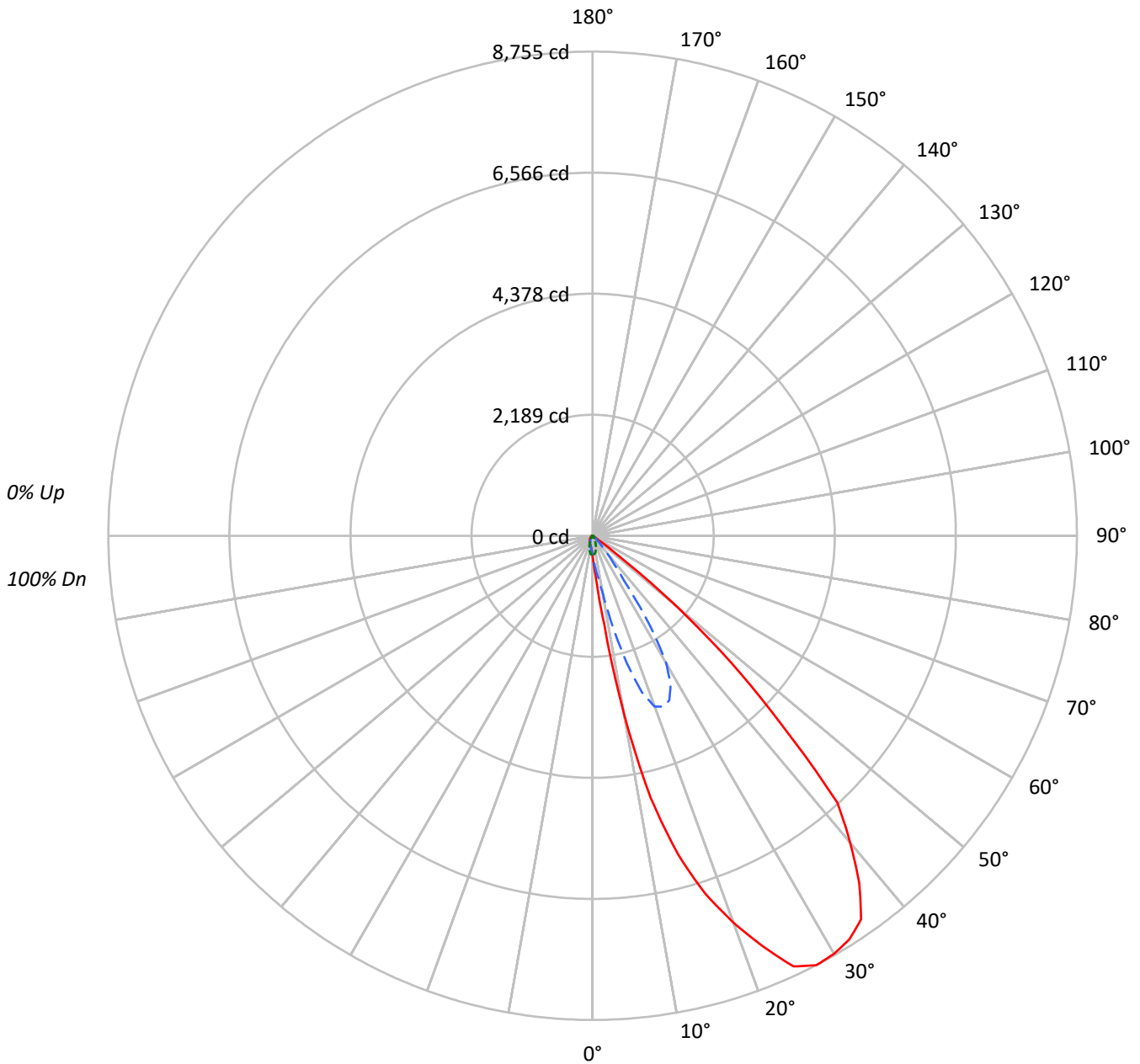
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	34924	34924	34924
5°	81852	32966	23047
10°	323430	28970	19212
15°	598568	23198	16859
20°	767504	16876	15247
25°	918304	11972	13511
30°	976444	7875	11891
35°	1000718	4754	10360
40°	916052	3086	8903
45°	661010	2165	7275
50°	288567	1733	6059
55°	19896	1453	5101
60°	3623	1395	4166
65°	1307	1307	2957
70°	1218	1614	2039
75°	1085	2133	2133
80°	0	3180	2399
85°	0	6336	1556



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.5	1.8
10°-20°	412.7	14.2
20°-30°	864.0	29.6
30°-40°	961.8	33.0
40°-50°	552.1	18.9
50°-60°	55.1	1.9
60°-70°	8.6	0.3
70°-80°	5.5	0.2
80°-90°	3.4	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°	1329.3	45.6
0°-40°	2291.1	78.6
0°-60°	2898.3	99.4
0°-90°	2915.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2915.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	360	360	360	360	360	
5°	842	580	339	247	237	154
15°	5968	2383	231	162	168	1687
25°	8591	3279	112	99	126	3890
35°	8462	1001	40	58	88	5167
45°	4825	121	16	32	53	3684
55°	118	17	9	19	30	352
65°	6	4	6	12	13	7
75°	3	3	6	7	6	2
85°	0	3	6	4	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°	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5
2.5°	538.6	527.2	515.7	508.5	501.3	511.4	504.2	501.3	481.2	471.1	462.5
5°	841.7	820.2	788.6	762.7	736.9	742.6	722.5	698.1	647.8	611.9	580.3
7.5°	1624.6	1571.4	1473.7	1378.9	1284.1	1266.9	1203.7	1094.5	953.8	847.5	755.5
10°	3287.9	3127.0	2947.5	2753.6	2526.6	2463.4	2306.8	2010.9	1687.8	1318.6	1051.4
12.5°	4853.6	4780.3	4569.2	4317.8	4072.2	3921.4	3759.0	3270.7	2757.9	2163.2	1666.2
15°	5968.2	5923.7	5738.4	5510.0	5245.7	5148.0	4949.8	4462.9	3815.1	3104.0	2383.0
17.5°	6794.1	6718.0	6524.1	6275.6	5962.5	5879.2	5642.1	5158.1	4485.9	3772.0	2971.9
20°	7444.8	7397.4	7146.1	6847.3	6472.4	6371.8	6094.6	5590.4	4859.3	4100.9	3286.5
22.5°	8029.4	7949.0	7640.2	7283.9	6855.9	6748.2	6439.3	5886.3	5100.6	4256.0	3342.5
25°	8591.1	8469.0	8094.1	7627.2	7124.5	6978.0	6639.0	6053.0	5189.7	4269.0	3279.3
27.5°	8754.8	8693.0	8346.9	7803.9	7222.2	7057.0	6703.6	6090.3	5156.6	4151.2	3052.3
30°	8729.0	8677.2	8388.5	7821.2	7204.9	7031.1	6672.0	5975.4	4964.2	3843.8	2651.6
32.5°	8647.1	8627.0	8277.9	7671.8	7044.1	6854.5	6466.6	5689.5	4603.6	3375.5	1937.7
35°	8461.8	8382.8	7947.6	7377.3	6774.0	6565.7	6127.6	5280.2	4128.2	2457.7	1001.2
37.5°	7918.8	7857.1	7513.8	7013.9	6426.4	6159.2	5696.7	4751.6	3196.0	1397.6	599.0
40°	7243.7	7213.6	6943.5	6496.8	5869.1	5567.5	5064.7	3888.3	1950.6	794.3	395.0
42.5°	6551.4	6542.8	6254.1	5787.2	5106.4	4760.2	4238.8	2622.9	1037.1	479.8	228.4
45°	4824.8	4876.6	4675.5	4395.4	3875.4	3624.0	2947.5	1351.6	597.5	265.7	120.7
47.5°	3384.1	3326.7	2970.5	2480.6	2005.2	1697.8	1284.1	639.2	318.9	139.3	68.9
50°	1914.7	1924.8	1603.0	1297.1	850.3	673.7	511.4	321.8	153.7	73.3	41.7
52.5°	499.9	522.8	451.0	387.8	330.4	268.6	216.9	139.3	73.3	43.1	27.3
55°	117.8	122.1	113.5	106.3	100.5	89.1	79.0	60.3	40.2	27.3	17.2
57.5°	41.7	43.1	41.7	41.7	40.2	38.8	35.9	31.6	24.4	17.2	11.5
60°	18.7	20.1	18.7	20.1	20.1	20.1	20.1	20.1	14.4	10.1	7.2
62.5°	8.6	8.6	8.6	8.6	10.1	10.1	11.5	11.5	8.6	7.2	5.7
65°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	4.3
67.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
70°	4.3	4.3	4.3	2.9	2.9	2.9	2.9	2.9	2.9	2.9	4.3
72.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
75°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
77.5°	0.0	0.0	0.0	1.4	1.4	1.4	1.4	2.9	2.9	2.9	2.9
80°	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4	2.9	2.9	2.9
82.5°	0.0	0.0	0.0	1.4	1.4	1.4	1.4	1.4	2.9	2.9	2.9
85°	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	2.9	2.9	2.9
87.5°	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	2.9	2.9	2.9
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5
2.5°	446.7	445.3	429.5	418.0	412.2	403.6	393.6	379.2	363.4	349.0	343.3
5°	543.0	524.3	491.2	464.0	451.0	438.1	415.1	389.3	364.8	339.0	326.1
7.5°	667.9	613.3	548.7	498.4	476.9	455.3	422.3	386.4	353.4	318.9	300.2
10°	838.9	712.5	600.4	520.0	488.4	459.6	412.2	367.7	331.8	294.5	270.0
12.5°	1199.4	886.3	655.0	530.0	488.4	451.0	393.6	341.9	301.6	262.9	239.9
15°	1728.0	1196.5	774.2	540.1	478.3	430.9	364.8	308.8	265.7	231.3	209.7
17.5°	2154.6	1482.4	922.2	565.9	465.4	403.6	327.5	268.6	228.4	196.8	179.5
20°	2370.0	1603.0	989.7	570.2	433.8	360.5	283.0	226.9	191.0	163.7	149.4
22.5°	2365.7	1564.2	929.3	499.9	380.6	311.7	238.4	186.7	158.0	136.5	125.0
25°	2216.4	1384.7	775.7	399.3	307.4	258.6	193.9	150.8	127.8	112.0	102.0
27.5°	1936.3	1124.7	578.9	295.9	239.9	204.0	150.8	120.7	102.0	90.5	83.3
30°	1519.7	752.7	364.8	219.8	182.4	153.7	116.3	93.4	80.4	70.4	66.1
32.5°	837.4	392.1	245.6	160.9	133.6	112.0	86.2	67.5	58.9	51.7	50.3
35°	462.5	277.2	175.2	107.7	89.1	76.1	58.9	48.8	43.1	40.2	40.2
37.5°	327.5	178.1	104.9	67.5	57.5	50.3	40.2	34.5	33.0	31.6	31.6
40°	196.8	104.9	63.2	44.5	38.8	34.5	30.2	25.9	25.9	24.4	25.9
42.5°	107.7	63.2	43.1	31.6	27.3	25.9	21.5	20.1	20.1	20.1	21.5
45°	64.6	41.7	30.2	23.0	20.1	17.2	15.8	14.4	15.8	15.8	17.2
47.5°	41.7	30.2	20.1	14.4	12.9	11.5	10.1	11.5	11.5	12.9	14.4
50°	28.7	18.7	12.9	8.6	8.6	7.2	8.6	8.6	10.1	11.5	12.9
52.5°	18.7	12.9	8.6	7.2	5.7	5.7	5.7	7.2	8.6	10.1	11.5
55°	11.5	8.6	7.2	5.7	5.7	5.7	5.7	5.7	7.2	8.6	10.1
57.5°	8.6	7.2	5.7	4.3	4.3	4.3	5.7	5.7	7.2	7.2	8.6
60°	5.7	5.7	4.3	4.3	4.3	4.3	4.3	5.7	5.7	7.2	8.6
62.5°	5.7	5.7	4.3	4.3	4.3	4.3	5.7	5.7	5.7	7.2	7.2
65°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.7	5.7	5.7	7.2
67.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.7	5.7	7.2
70°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.7	5.7	7.2
72.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.7	5.7	5.7
75°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.7	5.7	5.7	5.7
77.5°	2.9	4.3	4.3	4.3	4.3	4.3	4.3	5.7	5.7	5.7	5.7
80°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.7	5.7	5.7	5.7
82.5°	2.9	4.3	4.3	4.3	4.3	4.3	4.3	5.7	5.7	5.7	5.7
85°	2.9	4.3	4.3	4.3	4.3	4.3	4.3	5.7	5.7	5.7	5.7
87.5°	2.9	4.3	4.3	4.3	4.3	4.3	4.3	4.3	5.7	5.7	5.7
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5
2.5°	336.1	326.1	317.4	320.3	314.6	304.5	301.6	294.5	285.8	284.4	284.4
5°	311.7	295.9	283.0	281.5	275.8	264.3	261.4	254.2	247.1	245.6	244.2
7.5°	281.5	264.3	252.8	249.9	245.6	235.6	234.1	226.9	222.6	219.8	219.8
10°	251.4	235.6	225.5	224.1	221.2	212.6	211.1	205.4	201.1	199.7	198.2
12.5°	222.6	209.7	201.1	199.7	196.8	189.6	188.2	183.9	181.0	179.5	179.5
15°	195.3	183.9	176.7	175.2	173.8	166.6	166.6	163.7	162.3	162.3	163.7
17.5°	168.1	158.0	152.3	150.8	150.8	145.1	146.5	145.1	145.1	145.1	147.9
20°	140.8	132.1	127.8	129.3	126.4	125.0	126.4	126.4	126.4	129.3	133.6
22.5°	117.8	110.6	106.3	107.7	107.7	106.3	107.7	109.2	112.0	116.3	120.7
25°	96.2	90.5	89.1	90.5	90.5	90.5	93.4	96.2	99.1	103.4	107.7
27.5°	77.6	73.3	73.3	74.7	76.1	76.1	80.4	83.3	87.6	91.9	96.2
30°	61.8	60.3	60.3	63.2	63.2	64.6	70.4	73.3	76.1	80.4	84.7
32.5°	48.8	48.8	50.3	53.1	53.1	56.0	60.3	63.2	66.1	70.4	74.7
35°	40.2	41.7	43.1	44.5	46.0	47.4	51.7	54.6	57.5	61.8	64.6
37.5°	33.0	34.5	35.9	38.8	38.8	40.2	44.5	47.4	48.8	53.1	57.5
40°	27.3	28.7	30.2	33.0	33.0	34.5	38.8	40.2	41.7	46.0	50.3
42.5°	23.0	24.4	25.9	27.3	28.7	30.2	33.0	34.5	37.3	40.2	43.1
45°	18.7	20.1	21.5	23.0	24.4	25.9	27.3	30.2	31.6	34.5	37.3
47.5°	15.8	17.2	18.7	20.1	21.5	21.5	24.4	25.9	27.3	30.2	33.0
50°	14.4	15.8	17.2	17.2	18.7	20.1	21.5	23.0	24.4	25.9	28.7
52.5°	11.5	12.9	14.4	15.8	15.8	17.2	18.7	20.1	21.5	23.0	24.4
55°	11.5	11.5	12.9	14.4	14.4	15.8	17.2	18.7	18.7	20.1	21.5
57.5°	10.1	11.5	11.5	12.9	12.9	14.4	15.8	15.8	17.2	17.2	18.7
60°	8.6	10.1	11.5	11.5	11.5	12.9	12.9	14.4	14.4	15.8	15.8
62.5°	8.6	10.1	10.1	11.5	11.5	11.5	12.9	12.9	12.9	14.4	14.4
65°	8.6	8.6	10.1	10.1	10.1	10.1	11.5	11.5	11.5	12.9	12.9
67.5°	7.2	8.6	8.6	8.6	10.1	10.1	10.1	10.1	10.1	11.5	11.5
70°	7.2	7.2	8.6	8.6	8.6	8.6	8.6	10.1	10.1	10.1	10.1
72.5°	7.2	7.2	7.2	7.2	8.6	8.6	8.6	8.6	8.6	8.6	8.6
75°	5.7	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
77.5°	5.7	5.7	5.7	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
80°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
82.5°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	4.3	4.3
85°	5.7	5.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
87.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	2.9	2.9	2.9
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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CATALOG NUMBER: LDSQA4A28840D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5
2.5°	278.7	275.8	274.4	278.7	272.9	275.8	274.4	275.8
5°	239.9	237.0	235.6	239.9	234.1	237.0	234.1	237.0
7.5°	215.5	214.0	212.6	215.5	211.1	214.0	212.6	214.0
10°	195.3	193.9	192.5	196.8	192.5	195.3	193.9	195.3
12.5°	178.1	178.1	176.7	179.5	176.7	179.5	178.1	179.5
15°	162.3	163.7	162.3	165.2	163.7	166.6	165.2	168.1
17.5°	149.4	150.8	150.8	155.1	153.7	158.0	156.6	158.0
20°	136.5	137.9	139.3	142.2	142.2	146.5	145.1	147.9
22.5°	123.5	126.4	126.4	130.7	130.7	135.0	135.0	136.5
25°	110.6	114.9	116.3	119.2	120.7	125.0	125.0	126.4
27.5°	100.5	103.4	104.9	109.2	110.6	114.9	114.9	117.8
30°	89.1	93.4	94.8	97.7	99.1	103.4	103.4	106.3
32.5°	79.0	81.9	84.7	87.6	89.1	93.4	93.4	96.2
35°	68.9	73.3	74.7	77.6	80.4	84.7	84.7	87.6
37.5°	60.3	64.6	66.1	68.9	71.8	76.1	76.1	79.0
40°	53.1	57.5	58.9	61.8	63.2	68.9	68.9	70.4
42.5°	47.4	50.3	51.7	54.6	56.0	58.9	58.9	61.8
45°	40.2	43.1	44.5	46.0	48.8	51.7	51.7	53.1
47.5°	34.5	37.3	38.8	40.2	41.7	44.5	44.5	47.4
50°	30.2	31.6	33.0	34.5	35.9	38.8	38.8	40.2
52.5°	25.9	27.3	28.7	30.2	31.6	33.0	34.5	35.9
55°	23.0	24.4	24.4	25.9	27.3	28.7	28.7	30.2
57.5°	20.1	21.5	21.5	21.5	23.0	24.4	24.4	25.9
60°	17.2	18.7	18.7	18.7	20.1	20.1	20.1	21.5
62.5°	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8
65°	12.9	12.9	12.9	12.9	12.9	12.9	11.5	12.9
67.5°	11.5	11.5	11.5	10.1	10.1	10.1	10.1	10.1
70°	10.1	10.1	10.1	8.6	8.6	8.6	7.2	7.2
72.5°	8.6	8.6	8.6	7.2	7.2	7.2	5.7	5.7
75°	7.2	7.2	7.2	7.2	5.7	5.7	5.7	5.7
77.5°	5.7	5.7	5.7	5.7	5.7	5.7	4.3	4.3
80°	5.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3
82.5°	4.3	4.3	4.3	4.3	2.9	2.9	2.9	2.9
85°	2.9	2.9	2.9	2.9	2.9	2.9	1.4	1.4
87.5°	2.9	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



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













(END OF REPORT)