

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: P182833

Luminaire Tested: **LDSQA4A18840D010TE LAR35FL 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182833
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: LDSQA4A18840D010TE 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: 2128.8 lumens
Efficiency: N/A
Efficacy: 73.1 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

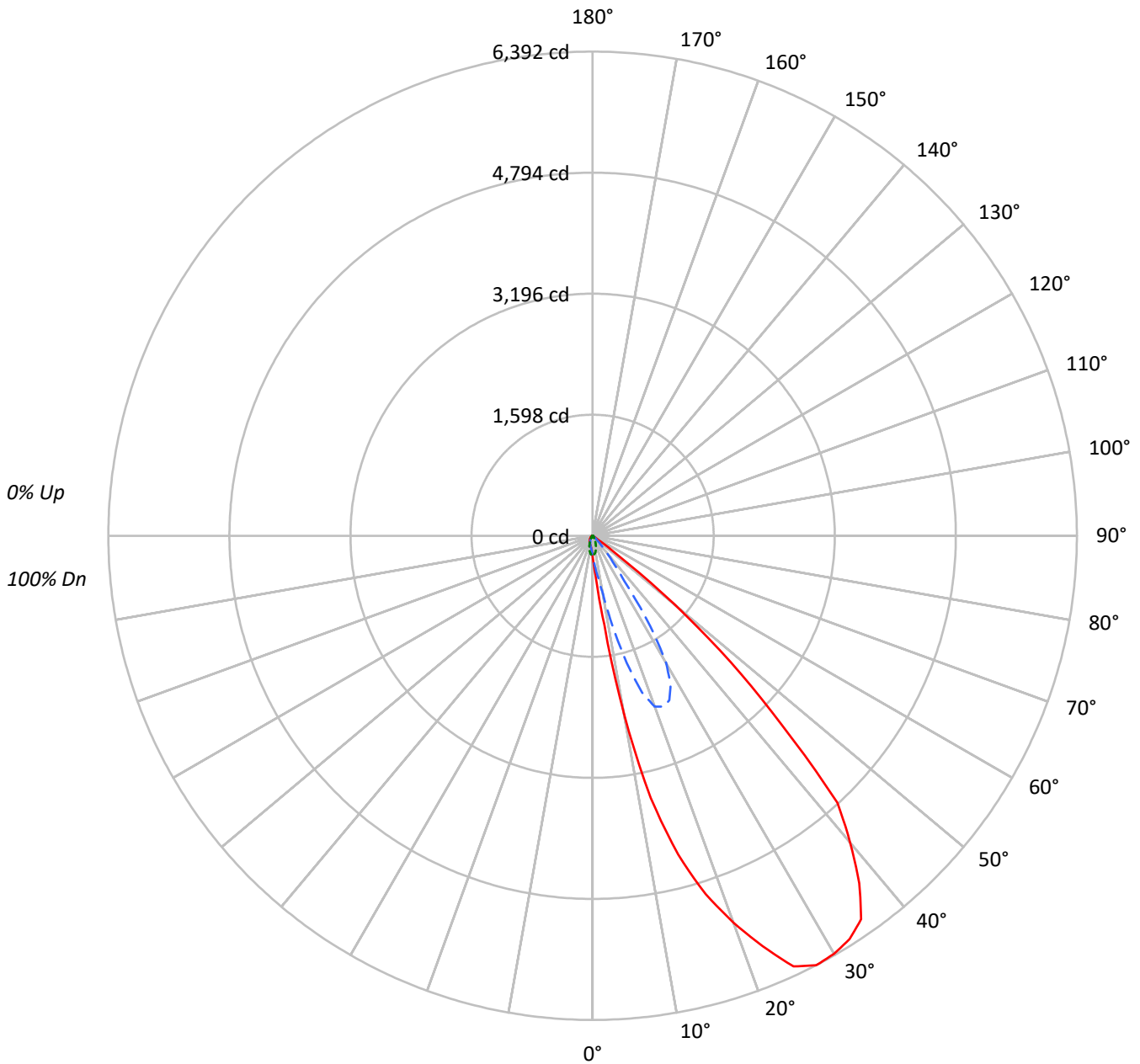
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
RC	80					70					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°	25498	25498	25498
5°	59757	24068	16823
10°	236137	21150	14028
15°	437016	16929	12306
20°	560360	12330	11134
25°	670458	8744	9866
30°	712897	5750	8680
35°	730629	3477	7569
40°	668819	2251	6500
45°	482605	1576	5316
50°	210679	1266	4431
55°	14525	1064	3716
60°	2635	1008	3042
65°	963	963	2155
70°	878	1190	1473
75°	786	1572	1572
80°	0	2343	1729
85°	0	4668	1112



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.3	1.8
10°-20°	301.3	14.2
20°-30°	630.8	29.6
30°-40°	702.2	33.0
40°-50°	403.1	18.9
50°-60°	40.3	1.9
60°-70°	6.3	0.3
70°-80°	4.0	0.2
80°-90°	2.4	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°	970.5	45.6
0°-40°	1672.7	78.6
0°-60°	2116.1	99.4
0°-90°	2128.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2128.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	263	263	263	263	263	
5°	614	424	248	180	173	113
15°	4357	1740	169	118	123	1232
25°	6272	2394	82	72	92	2840
35°	6178	731	29	42	64	3772
45°	3523	88	12	23	39	2690
55°	86	13	6	14	22	257
65°	4	3	4	8	9	5
75°	2	2	4	5	4	2
85°	0	2	4	3	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°	263.2	263.2	263.2	263.2	263.2	263.2	263.2	263.2	263.2	263.2	263.2
2.5°	393.3	384.9	376.5	371.2	366.0	373.3	368.1	366.0	351.3	344.0	337.7
5°	614.5	598.8	575.7	556.9	538.0	542.2	527.5	509.7	473.0	446.8	423.7
7.5°	1186.1	1147.3	1076.0	1006.8	937.6	925.0	878.8	799.1	696.3	618.7	551.6
10°	2400.5	2283.1	2152.0	2010.4	1844.7	1798.5	1684.2	1468.2	1232.2	962.7	767.7
12.5°	3543.6	3490.1	3336.0	3152.4	2973.1	2863.0	2744.5	2387.9	2013.5	1579.4	1216.5
15°	4357.4	4324.9	4189.6	4022.9	3829.9	3758.6	3613.9	3258.4	2785.4	2266.3	1739.8
17.5°	4960.4	4904.8	4763.3	4581.8	4353.2	4292.4	4119.4	3765.9	3275.1	2753.9	2169.8
20°	5435.5	5400.9	5217.4	4999.2	4725.5	4652.1	4449.7	4081.6	3547.8	2994.1	2399.5
22.5°	5862.3	5803.6	5578.1	5318.0	5005.5	4926.9	4701.4	4297.6	3724.0	3107.3	2440.4
25°	6272.4	6183.2	5909.5	5568.7	5201.6	5094.7	4847.2	4419.3	3789.0	3116.8	2394.2
27.5°	6391.9	6346.8	6094.1	5697.7	5272.9	5152.3	4894.4	4446.6	3764.9	3030.8	2228.5
30°	6373.0	6335.3	6124.5	5710.3	5260.4	5133.5	4871.3	4362.7	3624.4	2806.4	1935.9
32.5°	6313.3	6298.6	6043.7	5601.2	5142.9	5004.5	4721.3	4154.0	3361.1	2464.5	1414.7
35°	6178.0	6120.3	5802.5	5386.2	4945.7	4793.7	4473.8	3855.1	3014.0	1794.4	731.0
37.5°	5781.6	5736.5	5485.8	5120.9	4692.0	4496.9	4159.2	3469.2	2333.4	1020.4	437.3
40°	5288.7	5266.6	5069.5	4743.3	4285.1	4064.8	3697.8	2838.9	1424.2	579.9	288.4
42.5°	4783.2	4776.9	4566.1	4225.3	3728.2	3475.4	3094.8	1915.0	757.2	350.3	166.7
45°	3522.6	3560.4	3413.6	3209.1	2829.4	2645.9	2152.0	986.8	436.3	194.0	88.1
47.5°	2470.8	2428.8	2168.7	1811.1	1464.0	1239.6	937.6	466.7	232.8	101.7	50.3
50°	1397.9	1405.3	1170.4	947.0	620.8	491.8	373.3	234.9	112.2	53.5	30.4
52.5°	365.0	381.7	329.3	283.2	241.2	196.1	158.4	101.7	53.5	31.5	19.9
55°	86.0	89.1	82.8	77.6	73.4	65.0	57.7	44.0	29.4	19.9	12.6
57.5°	30.4	31.5	30.4	30.4	29.4	28.3	26.2	23.1	17.8	12.6	8.4
60°	13.6	14.7	13.6	14.7	14.7	14.7	14.7	14.7	10.5	7.3	5.2
62.5°	6.3	6.3	6.3	6.3	7.3	7.3	8.4	8.4	6.3	5.2	4.2
65°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	3.1
67.5°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
70°	3.1	3.1	3.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	3.1
72.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
75°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
77.5°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	2.1	2.1	2.1	2.1
80°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.1	2.1	2.1
82.5°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.1	2.1	2.1
85°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	2.1	2.1	2.1
87.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	263.2	263.2	263.2	263.2	263.2	263.2	263.2	263.2	263.2	263.2	263.2
2.5°	326.2	325.1	313.6	305.2	301.0	294.7	287.3	276.9	265.3	254.8	250.6
5°	396.4	382.8	358.7	338.7	329.3	319.9	303.1	284.2	266.4	247.5	238.1
7.5°	487.7	447.8	400.6	363.9	348.2	332.4	308.3	282.1	258.0	232.8	219.2
10°	612.4	520.2	438.4	379.6	356.6	335.6	301.0	268.5	242.3	215.0	197.2
12.5°	875.7	647.1	478.2	387.0	356.6	329.3	287.3	249.6	220.2	191.9	175.1
15°	1261.6	873.6	565.3	394.3	349.2	314.6	266.4	225.5	194.0	168.8	153.1
17.5°	1573.1	1082.3	673.3	413.2	339.8	294.7	239.1	196.1	166.7	143.7	131.1
20°	1730.4	1170.4	722.6	416.3	316.7	263.2	206.6	165.7	139.5	119.6	109.1
22.5°	1727.2	1142.1	678.5	365.0	277.9	227.6	174.1	136.3	115.4	99.6	91.2
25°	1618.2	1011.0	566.3	291.5	224.4	188.8	141.6	110.1	93.3	81.8	74.5
27.5°	1413.7	821.1	422.6	216.0	175.1	148.9	110.1	88.1	74.5	66.1	60.8
30°	1109.5	549.5	266.4	160.5	133.2	112.2	84.9	68.2	58.7	51.4	48.2
32.5°	611.4	286.3	179.3	117.5	97.5	81.8	62.9	49.3	43.0	37.8	36.7
35°	337.7	202.4	127.9	78.7	65.0	55.6	43.0	35.7	31.5	29.4	29.4
37.5°	239.1	130.0	76.6	49.3	41.9	36.7	29.4	25.2	24.1	23.1	23.1
40°	143.7	76.6	46.1	32.5	28.3	25.2	22.0	18.9	18.9	17.8	18.9
42.5°	78.7	46.1	31.5	23.1	19.9	18.9	15.7	14.7	14.7	14.7	15.7
45°	47.2	30.4	22.0	16.8	14.7	12.6	11.5	10.5	11.5	11.5	12.6
47.5°	30.4	22.0	14.7	10.5	9.4	8.4	7.3	8.4	8.4	9.4	10.5
50°	21.0	13.6	9.4	6.3	6.3	5.2	6.3	6.3	7.3	8.4	9.4
52.5°	13.6	9.4	6.3	5.2	4.2	4.2	4.2	5.2	6.3	7.3	8.4
55°	8.4	6.3	5.2	4.2	4.2	4.2	4.2	4.2	5.2	6.3	7.3
57.5°	6.3	5.2	4.2	3.1	3.1	3.1	4.2	4.2	5.2	5.2	6.3
60°	4.2	4.2	3.1	3.1	3.1	3.1	3.1	4.2	4.2	5.2	6.3
62.5°	4.2	4.2	3.1	3.1	3.1	3.1	4.2	4.2	4.2	5.2	5.2
65°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	4.2	4.2	4.2	5.2
67.5°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	4.2	4.2	5.2
70°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	4.2	4.2	5.2
72.5°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	4.2	4.2	4.2
75°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	4.2	4.2	4.2	4.2
77.5°	2.1	3.1	3.1	3.1	3.1	3.1	3.1	4.2	4.2	4.2	4.2
80°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	4.2	4.2	4.2	4.2
82.5°	2.1	3.1	3.1	3.1	3.1	3.1	3.1	4.2	4.2	4.2	4.2
85°	2.1	3.1	3.1	3.1	3.1	3.1	3.1	4.2	4.2	4.2	4.2
87.5°	2.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	4.2	4.2	4.2
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°	263.2	263.2	263.2	263.2	263.2	263.2	263.2	263.2	263.2	263.2	263.2
2.5°	245.4	238.1	231.8	233.9	229.7	222.3	220.2	215.0	208.7	207.6	207.6
5°	227.6	216.0	206.6	205.5	201.4	193.0	190.9	185.6	180.4	179.3	178.3
7.5°	205.5	193.0	184.6	182.5	179.3	172.0	170.9	165.7	162.6	160.5	160.5
10°	183.5	172.0	164.6	163.6	161.5	155.2	154.2	150.0	146.8	145.8	144.7
12.5°	162.6	153.1	146.8	145.8	143.7	138.4	137.4	134.2	132.1	131.1	131.1
15°	142.6	134.2	129.0	127.9	126.9	121.7	121.7	119.6	118.5	118.5	119.6
17.5°	122.7	115.4	111.2	110.1	110.1	105.9	107.0	105.9	105.9	105.9	108.0
20°	102.8	96.5	93.3	94.4	92.3	91.2	92.3	92.3	92.3	94.4	97.5
22.5°	86.0	80.8	77.6	78.7	78.7	77.6	78.7	79.7	81.8	84.9	88.1
25°	70.3	66.1	65.0	66.1	66.1	66.1	68.2	70.3	72.4	75.5	78.7
27.5°	56.6	53.5	53.5	54.5	55.6	55.6	58.7	60.8	64.0	67.1	70.3
30°	45.1	44.0	44.0	46.1	46.1	47.2	51.4	53.5	55.6	58.7	61.9
32.5°	35.7	35.7	36.7	38.8	38.8	40.9	44.0	46.1	48.2	51.4	54.5
35°	29.4	30.4	31.5	32.5	33.6	34.6	37.8	39.9	41.9	45.1	47.2
37.5°	24.1	25.2	26.2	28.3	28.3	29.4	32.5	34.6	35.7	38.8	41.9
40°	19.9	21.0	22.0	24.1	24.1	25.2	28.3	29.4	30.4	33.6	36.7
42.5°	16.8	17.8	18.9	19.9	21.0	22.0	24.1	25.2	27.3	29.4	31.5
45°	13.6	14.7	15.7	16.8	17.8	18.9	19.9	22.0	23.1	25.2	27.3
47.5°	11.5	12.6	13.6	14.7	15.7	15.7	17.8	18.9	19.9	22.0	24.1
50°	10.5	11.5	12.6	12.6	13.6	14.7	15.7	16.8	17.8	18.9	21.0
52.5°	8.4	9.4	10.5	11.5	11.5	12.6	13.6	14.7	15.7	16.8	17.8
55°	8.4	8.4	9.4	10.5	10.5	11.5	12.6	13.6	13.6	14.7	15.7
57.5°	7.3	8.4	8.4	9.4	9.4	10.5	11.5	11.5	12.6	12.6	13.6
60°	6.3	7.3	8.4	8.4	8.4	9.4	9.4	10.5	10.5	11.5	11.5
62.5°	6.3	7.3	7.3	8.4	8.4	8.4	9.4	9.4	9.4	10.5	10.5
65°	6.3	6.3	7.3	7.3	7.3	7.3	8.4	8.4	8.4	9.4	9.4
67.5°	5.2	6.3	6.3	6.3	7.3	7.3	7.3	7.3	7.3	8.4	8.4
70°	5.2	5.2	6.3	6.3	6.3	6.3	6.3	7.3	7.3	7.3	7.3
72.5°	5.2	5.2	5.2	5.2	6.3	6.3	6.3	6.3	6.3	6.3	6.3
75°	4.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
77.5°	4.2	4.2	4.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
80°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
82.5°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	3.1	3.1
85°	4.2	4.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
87.5°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	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



TEST NUMBER: P182833

CATALOG NUMBER: LDSQA4A18840D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	263.2	263.2	263.2	263.2	263.2	263.2	263.2	263.2
2.5°	203.5	201.4	200.3	203.5	199.3	201.4	200.3	201.4
5°	175.1	173.0	172.0	175.1	170.9	173.0	170.9	173.0
7.5°	157.3	156.3	155.2	157.3	154.2	156.3	155.2	156.3
10°	142.6	141.6	140.5	143.7	140.5	142.6	141.6	142.6
12.5°	130.0	130.0	129.0	131.1	129.0	131.1	130.0	131.1
15°	118.5	119.6	118.5	120.6	119.6	121.7	120.6	122.7
17.5°	109.1	110.1	110.1	113.3	112.2	115.4	114.3	115.4
20°	99.6	100.7	101.7	103.8	103.8	107.0	105.9	108.0
22.5°	90.2	92.3	92.3	95.4	95.4	98.6	98.6	99.6
25°	80.8	83.9	84.9	87.0	88.1	91.2	91.2	92.3
27.5°	73.4	75.5	76.6	79.7	80.8	83.9	83.9	86.0
30°	65.0	68.2	69.2	71.3	72.4	75.5	75.5	77.6
32.5°	57.7	59.8	61.9	64.0	65.0	68.2	68.2	70.3
35°	50.3	53.5	54.5	56.6	58.7	61.9	61.9	64.0
37.5°	44.0	47.2	48.2	50.3	52.4	55.6	55.6	57.7
40°	38.8	41.9	43.0	45.1	46.1	50.3	50.3	51.4
42.5°	34.6	36.7	37.8	39.9	40.9	43.0	43.0	45.1
45°	29.4	31.5	32.5	33.6	35.7	37.8	37.8	38.8
47.5°	25.2	27.3	28.3	29.4	30.4	32.5	32.5	34.6
50°	22.0	23.1	24.1	25.2	26.2	28.3	28.3	29.4
52.5°	18.9	19.9	21.0	22.0	23.1	24.1	25.2	26.2
55°	16.8	17.8	17.8	18.9	19.9	21.0	21.0	22.0
57.5°	14.7	15.7	15.7	15.7	16.8	17.8	17.8	18.9
60°	12.6	13.6	13.6	13.6	14.7	14.7	14.7	15.7
62.5°	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
65°	9.4	9.4	9.4	9.4	9.4	9.4	8.4	9.4
67.5°	8.4	8.4	8.4	7.3	7.3	7.3	7.3	7.3
70°	7.3	7.3	7.3	6.3	6.3	6.3	5.2	5.2
72.5°	6.3	6.3	6.3	5.2	5.2	5.2	4.2	4.2
75°	5.2	5.2	5.2	5.2	4.2	4.2	4.2	4.2
77.5°	4.2	4.2	4.2	4.2	4.2	4.2	3.1	3.1
80°	4.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1
82.5°	3.1	3.1	3.1	3.1	2.1	2.1	2.1	2.1
85°	2.1	2.1	2.1	2.1	2.1	2.1	1.0	1.0
87.5°	2.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)