

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: P182853

Luminaire Tested: **LDSQA4A13940D010TE LAR35FL 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182853
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: LDSQA4A13940D010TE 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: 1435.6 lumens
Efficiency: N/A
Efficacy: 64.5 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

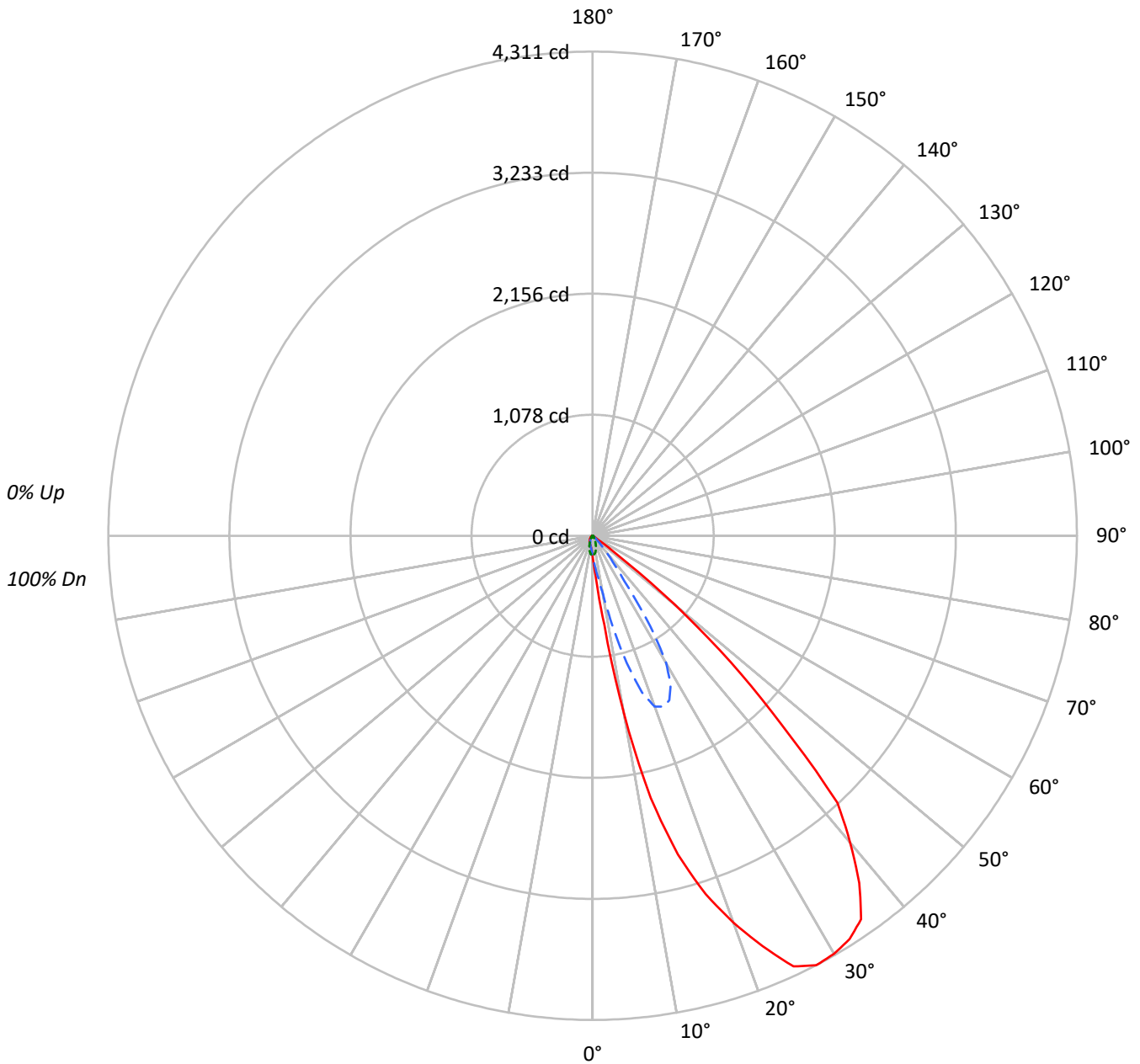
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	17195	17195	17195
5°	40299	16230	11349
10°	159251	14264	9463
15°	294720	11423	8294
20°	377897	8309	7505
25°	452146	5900	6649
30°	480772	3882	5850
35°	492731	2342	5097
40°	451039	1518	4388
45°	325463	1069	3589
50°	142091	859	2984
55°	9796	709	2517
60°	1783	678	2054
65°	642	642	1467
70°	595	793	991
75°	524	1048	1048
80°	0	1562	1172
85°	0	3112	778



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	25.9	1.8
10°-20°	203.2	14.2
20°-30°	425.4	29.6
30°-40°	473.6	33.0
40°-50°	271.8	18.9
50°-60°	27.2	1.9
60°-70°	4.3	0.3
70°-80°	2.7	0.2
80°-90°	1.6	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°	654.5	45.6
0°-40°	1128.1	78.6
0°-60°	1427.0	99.4
0°-90°	1435.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1435.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	178	178	178	178	178	
5°	414	286	167	122	117	76
15°	2939	1173	114	80	83	831
25°	4230	1615	55	49	62	1916
35°	4166	493	20	28	43	2544
45°	2376	59	8	16	26	1814
55°	58	8	4	9	15	173
65°	3	2	3	6	6	4
75°	1	1	3	4	3	1
85°	0	1	3	2	1	0
90°	0	0	0	0	0	



TEST NUMBER: P182853

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	177.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5
2.5°	265.2	259.6	253.9	250.4	246.8	251.8	248.2	246.8	236.9	232.0	227.7
5°	414.4	403.8	388.3	375.5	362.8	365.6	355.7	343.7	319.0	301.3	285.7
7.5°	799.9	773.7	725.6	679.0	632.3	623.8	592.7	538.9	469.6	417.3	372.0
10°	1618.9	1539.7	1451.3	1355.8	1244.0	1212.9	1135.8	990.1	831.0	649.2	517.7
12.5°	2389.8	2353.7	2249.7	2126.0	2005.0	1930.8	1850.9	1610.4	1357.9	1065.1	820.4
15°	2938.6	2916.7	2825.4	2713.0	2582.8	2534.8	2437.2	2197.4	1878.4	1528.3	1173.3
17.5°	3345.3	3307.8	3212.3	3089.9	2935.8	2894.7	2778.0	2539.7	2208.7	1857.2	1463.3
20°	3665.6	3642.3	3518.5	3371.4	3186.8	3137.3	3000.8	2752.6	2392.6	2019.2	1618.2
22.5°	3953.5	3913.9	3761.8	3586.4	3375.7	3322.6	3170.6	2898.3	2511.4	2095.6	1645.8
25°	4230.0	4169.9	3985.3	3755.5	3507.9	3435.8	3268.9	2980.3	2555.3	2101.9	1614.6
27.5°	4310.6	4280.2	4109.8	3842.4	3556.0	3474.7	3300.7	2998.7	2539.0	2043.9	1502.9
30°	4297.9	4272.4	4130.3	3850.9	3547.5	3461.9	3285.1	2942.1	2444.2	1892.6	1305.6
32.5°	4257.6	4247.7	4075.8	3777.4	3468.3	3375.0	3184.0	2801.4	2266.7	1662.0	954.1
35°	4166.4	4127.5	3913.2	3632.4	3335.4	3232.8	3017.1	2599.8	2032.6	1210.1	492.9
37.5°	3899.0	3868.6	3699.6	3453.5	3164.2	3032.7	2804.9	2339.6	1573.6	688.1	294.9
40°	3566.6	3551.8	3418.8	3198.9	2889.8	2741.3	2493.7	1914.5	960.4	391.1	194.5
42.5°	3225.7	3221.5	3079.3	2849.5	2514.2	2343.8	2087.1	1291.4	510.6	236.2	112.5
45°	2375.6	2401.1	2302.1	2164.2	1908.1	1784.4	1451.3	665.5	294.2	130.8	59.4
47.5°	1666.3	1638.0	1462.6	1221.4	987.3	836.0	632.3	314.7	157.0	68.6	33.9
50°	942.8	947.7	789.3	638.6	418.7	331.7	251.8	158.4	75.7	36.1	20.5
52.5°	246.1	257.4	222.1	191.0	162.7	132.3	106.8	68.6	36.1	21.2	13.4
55°	58.0	60.1	55.9	52.3	49.5	43.8	38.9	29.7	19.8	13.4	8.5
57.5°	20.5	21.2	20.5	20.5	19.8	19.1	17.7	15.6	12.0	8.5	5.7
60°	9.2	9.9	9.2	9.9	9.9	9.9	9.9	9.9	7.1	5.0	3.5
62.5°	4.2	4.2	4.2	4.2	5.0	5.0	5.7	5.7	4.2	3.5	2.8
65°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.1
67.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
70°	2.1	2.1	2.1	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.1
72.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
75°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
77.5°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	1.4	1.4	1.4	1.4
80°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.4	1.4	1.4
82.5°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.4	1.4	1.4
85°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	1.4	1.4	1.4
87.5°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	1.4	1.4	1.4
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°	177.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5
2.5°	220.0	219.2	211.5	205.8	203.0	198.7	193.8	186.7	178.9	171.9	169.0
5°	267.3	258.1	241.9	228.4	222.1	215.7	204.4	191.7	179.6	166.9	160.5
7.5°	328.9	302.0	270.2	245.4	234.8	224.2	207.9	190.2	174.0	157.0	147.8
10°	413.0	350.8	295.6	256.0	240.5	226.3	203.0	181.1	163.4	145.0	133.0
12.5°	590.5	436.4	322.5	261.0	240.5	222.1	193.8	168.3	148.5	129.4	118.1
15°	850.8	589.1	381.2	265.9	235.5	212.2	179.6	152.1	130.8	113.9	103.3
17.5°	1060.9	729.9	454.0	278.7	229.1	198.7	161.3	132.3	112.5	96.9	88.4
20°	1166.9	789.3	487.3	280.8	213.6	177.5	139.3	111.7	94.1	80.6	73.6
22.5°	1164.8	770.2	457.6	246.1	187.4	153.5	117.4	91.9	77.8	67.2	61.5
25°	1091.3	681.8	381.9	196.6	151.3	127.3	95.5	74.3	62.9	55.2	50.2
27.5°	953.4	553.8	285.0	145.7	118.1	100.4	74.3	59.4	50.2	44.6	41.0
30°	748.3	370.6	179.6	108.2	89.8	75.7	57.3	46.0	39.6	34.7	32.5
32.5°	412.3	193.1	120.9	79.2	65.8	55.2	42.4	33.2	29.0	25.5	24.8
35°	227.7	136.5	86.3	53.0	43.8	37.5	29.0	24.0	21.2	19.8	19.8
37.5°	161.3	87.7	51.6	33.2	28.3	24.8	19.8	17.0	16.3	15.6	15.6
40°	96.9	51.6	31.1	21.9	19.1	17.0	14.9	12.7	12.7	12.0	12.7
42.5°	53.0	31.1	21.2	15.6	13.4	12.7	10.6	9.9	9.9	9.9	10.6
45°	31.8	20.5	14.9	11.3	9.9	8.5	7.8	7.1	7.8	7.8	8.5
47.5°	20.5	14.9	9.9	7.1	6.4	5.7	5.0	5.7	5.7	6.4	7.1
50°	14.1	9.2	6.4	4.2	4.2	3.5	4.2	4.2	5.0	5.7	6.4
52.5°	9.2	6.4	4.2	3.5	2.8	2.8	2.8	3.5	4.2	5.0	5.7
55°	5.7	4.2	3.5	2.8	2.8	2.8	2.8	2.8	3.5	4.2	5.0
57.5°	4.2	3.5	2.8	2.1	2.1	2.1	2.8	2.8	3.5	3.5	4.2
60°	2.8	2.8	2.1	2.1	2.1	2.1	2.1	2.8	2.8	3.5	4.2
62.5°	2.8	2.8	2.1	2.1	2.1	2.1	2.8	2.8	2.8	3.5	3.5
65°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.8	2.8	3.5
67.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.8	3.5
70°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.8	3.5
72.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.8	2.8
75°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.8	2.8	2.8
77.5°	1.4	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.8	2.8	2.8
80°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.8	2.8	2.8
82.5°	1.4	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.8	2.8	2.8
85°	1.4	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.8	2.8	2.8
87.5°	1.4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.8	2.8
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°	177.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5
2.5°	165.5	160.5	156.3	157.7	154.9	149.9	148.5	145.0	140.7	140.0	140.0
5°	153.5	145.7	139.3	138.6	135.8	130.1	128.7	125.2	121.6	120.9	120.2
7.5°	138.6	130.1	124.5	123.1	120.9	116.0	115.3	111.7	109.6	108.2	108.2
10°	123.8	116.0	111.0	110.3	108.9	104.7	104.0	101.1	99.0	98.3	97.6
12.5°	109.6	103.3	99.0	98.3	96.9	93.4	92.6	90.5	89.1	88.4	88.4
15°	96.2	90.5	87.0	86.3	85.6	82.0	82.0	80.6	79.9	79.9	80.6
17.5°	82.7	77.8	75.0	74.3	74.3	71.4	72.1	71.4	71.4	71.4	72.8
20°	69.3	65.1	62.9	63.7	62.2	61.5	62.2	62.2	62.2	63.7	65.8
22.5°	58.0	54.5	52.3	53.0	53.0	52.3	53.0	53.8	55.2	57.3	59.4
25°	47.4	44.6	43.8	44.6	44.6	44.6	46.0	47.4	48.8	50.9	53.0
27.5°	38.2	36.1	36.1	36.8	37.5	37.5	39.6	41.0	43.1	45.3	47.4
30°	30.4	29.7	29.7	31.1	31.1	31.8	34.7	36.1	37.5	39.6	41.7
32.5°	24.0	24.0	24.8	26.2	26.2	27.6	29.7	31.1	32.5	34.7	36.8
35°	19.8	20.5	21.2	21.9	22.6	23.3	25.5	26.9	28.3	30.4	31.8
37.5°	16.3	17.0	17.7	19.1	19.1	19.8	21.9	23.3	24.0	26.2	28.3
40°	13.4	14.1	14.9	16.3	16.3	17.0	19.1	19.8	20.5	22.6	24.8
42.5°	11.3	12.0	12.7	13.4	14.1	14.9	16.3	17.0	18.4	19.8	21.2
45°	9.2	9.9	10.6	11.3	12.0	12.7	13.4	14.9	15.6	17.0	18.4
47.5°	7.8	8.5	9.2	9.9	10.6	10.6	12.0	12.7	13.4	14.9	16.3
50°	7.1	7.8	8.5	8.5	9.2	9.9	10.6	11.3	12.0	12.7	14.1
52.5°	5.7	6.4	7.1	7.8	7.8	8.5	9.2	9.9	10.6	11.3	12.0
55°	5.7	5.7	6.4	7.1	7.1	7.8	8.5	9.2	9.2	9.9	10.6
57.5°	5.0	5.7	5.7	6.4	6.4	7.1	7.8	7.8	8.5	8.5	9.2
60°	4.2	5.0	5.7	5.7	5.7	6.4	6.4	7.1	7.1	7.8	7.8
62.5°	4.2	5.0	5.0	5.7	5.7	5.7	6.4	6.4	6.4	7.1	7.1
65°	4.2	4.2	5.0	5.0	5.0	5.0	5.7	5.7	5.7	6.4	6.4
67.5°	3.5	4.2	4.2	4.2	5.0	5.0	5.0	5.0	5.0	5.7	5.7
70°	3.5	3.5	4.2	4.2	4.2	4.2	4.2	5.0	5.0	5.0	5.0
72.5°	3.5	3.5	3.5	3.5	4.2	4.2	4.2	4.2	4.2	4.2	4.2
75°	2.8	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
77.5°	2.8	2.8	2.8	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
80°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
82.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.1	2.1
85°	2.8	2.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
87.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.4	1.4	1.4
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: P182853

CATALOG NUMBER: LDSQA4A13940D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	177.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5
2.5°	137.2	135.8	135.1	137.2	134.4	135.8	135.1	135.8
5°	118.1	116.7	116.0	118.1	115.3	116.7	115.3	116.7
7.5°	106.1	105.4	104.7	106.1	104.0	105.4	104.7	105.4
10°	96.2	95.5	94.8	96.9	94.8	96.2	95.5	96.2
12.5°	87.7	87.7	87.0	88.4	87.0	88.4	87.7	88.4
15°	79.9	80.6	79.9	81.3	80.6	82.0	81.3	82.7
17.5°	73.6	74.3	74.3	76.4	75.7	77.8	77.1	77.8
20°	67.2	67.9	68.6	70.0	70.0	72.1	71.4	72.8
22.5°	60.8	62.2	62.2	64.4	64.4	66.5	66.5	67.2
25°	54.5	56.6	57.3	58.7	59.4	61.5	61.5	62.2
27.5°	49.5	50.9	51.6	53.8	54.5	56.6	56.6	58.0
30°	43.8	46.0	46.7	48.1	48.8	50.9	50.9	52.3
32.5°	38.9	40.3	41.7	43.1	43.8	46.0	46.0	47.4
35°	33.9	36.1	36.8	38.2	39.6	41.7	41.7	43.1
37.5°	29.7	31.8	32.5	33.9	35.4	37.5	37.5	38.9
40°	26.2	28.3	29.0	30.4	31.1	33.9	33.9	34.7
42.5°	23.3	24.8	25.5	26.9	27.6	29.0	29.0	30.4
45°	19.8	21.2	21.9	22.6	24.0	25.5	25.5	26.2
47.5°	17.0	18.4	19.1	19.8	20.5	21.9	21.9	23.3
50°	14.9	15.6	16.3	17.0	17.7	19.1	19.1	19.8
52.5°	12.7	13.4	14.1	14.9	15.6	16.3	17.0	17.7
55°	11.3	12.0	12.0	12.7	13.4	14.1	14.1	14.9
57.5°	9.9	10.6	10.6	10.6	11.3	12.0	12.0	12.7
60°	8.5	9.2	9.2	9.2	9.9	9.9	9.9	10.6
62.5°	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
65°	6.4	6.4	6.4	6.4	6.4	6.4	5.7	6.4
67.5°	5.7	5.7	5.7	5.0	5.0	5.0	5.0	5.0
70°	5.0	5.0	5.0	4.2	4.2	4.2	3.5	3.5
72.5°	4.2	4.2	4.2	3.5	3.5	3.5	2.8	2.8
75°	3.5	3.5	3.5	3.5	2.8	2.8	2.8	2.8
77.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.1	2.1
80°	2.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1
82.5°	2.1	2.1	2.1	2.1	1.4	1.4	1.4	1.4
85°	1.4	1.4	1.4	1.4	1.4	1.4	0.7	0.7
87.5°	1.4	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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— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)