

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: P209065

Luminaire Tested: **LDSQA6A75930D010TE LARH30NF 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209065
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26687)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA6A75930D010TE LARH30NF 6LSQA1H 30°
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 30° NARROW FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5556.7 lumens
Efficiency: N/A
Efficacy: 69.9 lumens/watt
Spacing Criteria (0/90/45): 2.58 / 0.47 / 1.37
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
CIE Type: Direct

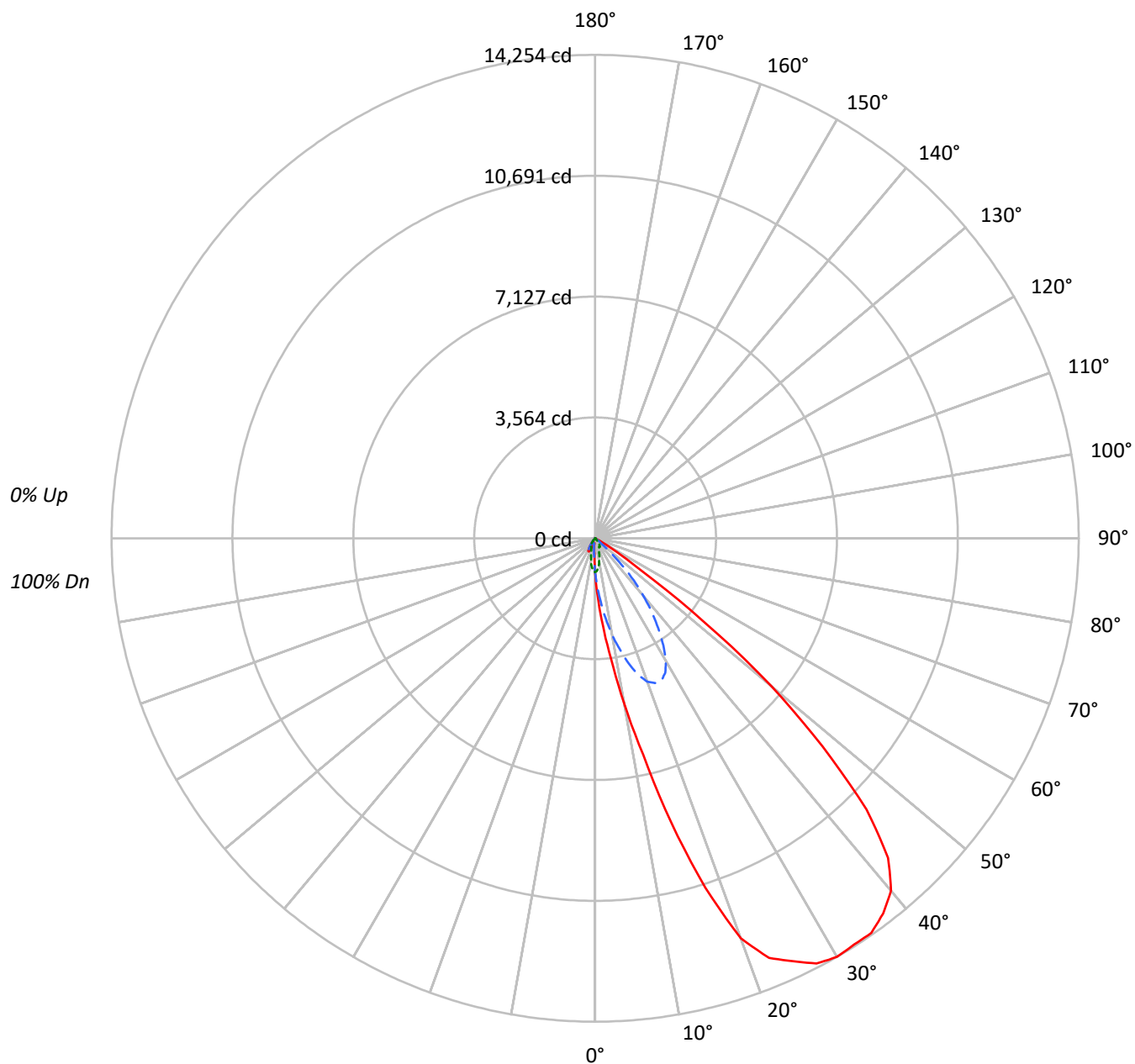
Input Watts (W): 79.45
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	112	109	106	103	110	107	104	102	103	100	98	99	97	95	95	94	93	91		
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	85	83	81		
3	98	90	84	79	96	89	83	78	86	81	77	83	79	76	81	77	74	73		
4	91	82	75	70	89	81	74	69	78	73	68	76	71	67	74	70	67	65		
5	85	74	67	62	83	73	67	61	71	65	61	70	64	60	68	63	60	58		
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	54	52		
7	74	62	55	49	72	61	54	49	60	53	49	59	53	49	57	52	48	46		
8	69	57	49	44	67	56	49	44	55	49	44	54	48	44	53	47	43	42		
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	43	39	38		
10	60	48	41	36	59	48	41	36	47	40	36	46	40	36	45	40	36	34		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	43155	43155	43155
5°	110700	39257	12227
10°	215788	30171	5876
15°	387366	20491	7881
20°	575119	15556	13008
25°	653711	12817	20399
30°	708633	14015	19191
35°	746417	9083	11895
40°	762558	4030	5795
45°	688738	1541	2156
50°	453379	610	610
55°	124158	533	0
60°	24800	611	0
65°	1752	825	0
70°	252	1020	0
75°	0	1514	0
80°	0	2256	248
85°	0	4495	494



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.8	2.2
10°-20°	652.3	11.7
20°-30°	1478.4	26.6
30°-40°	1774.6	31.9
40°-50°	1250.7	22.5
50°-60°	258.1	4.6
60°-70°	9.1	0.2
70°-80°	5.5	0.1
80°-90°	5.3	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°	2253.4	40.6
0°-40°	4028.0	72.5
0°-60°	5536.8	99.6
0°-90°	5556.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5556.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1002	1002	1002	1002	1002	
5°	2561	1866	908	378	283	315
15°	8690	3823	460	164	177	2579
25°	13760	4624	270	378	429	6350
35°	14201	3238	173	226	226	8828
45°	11311	1110	25	34	35	8319
55°	1654	22	7	5	0	2180
65°	17	5	8	5	0	51
75°	0	5	9	6	0	0
85°	0	6	9	6	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°	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3
2.5°	1708.6	1657.0	1677.2	1617.6	1604.5	1593.4	1604.5	1539.8	1503.5	1457.0	1419.6
5°	2561.3	2499.7	2513.8	2409.8	2362.3	2329.9	2323.9	2190.5	2090.5	1980.4	1866.2
7.5°	3565.6	3507.0	3499.0	3337.3	3239.3	3183.7	3160.5	2969.5	2796.7	2600.7	2386.5
10°	4935.7	4802.4	4760.9	4526.5	4339.6	4221.4	4075.9	3770.8	3467.6	3171.6	2898.8
12.5°	6530.1	6457.4	6354.3	5941.1	5613.7	5446.0	5228.7	4751.8	4293.1	3804.1	3347.4
15°	8690.3	8431.7	8255.8	7658.7	7131.3	6872.6	6555.4	5825.9	5132.8	4513.4	3823.3
17.5°	10801.0	10665.6	10390.8	9615.8	8803.5	8395.3	7922.4	6931.2	5952.2	5071.1	4228.5
20°	12552.0	12424.7	12111.5	11381.0	10479.7	9877.5	9282.4	7922.4	6643.3	5515.7	4499.2
22.5°	13390.6	13309.8	13054.2	12428.7	11660.8	11088.0	10448.4	8766.1	7154.5	5806.7	4622.5
25°	13760.4	13723.0	13558.3	13065.3	12341.8	11855.8	11251.6	9363.2	7472.8	5942.1	4624.5
27.5°	14135.3	14142.3	13778.6	13388.6	12702.5	12235.7	11653.8	9627.9	7530.4	5866.3	4473.0
30°	14253.5	14178.7	14018.1	13458.3	12806.6	12310.5	11686.1	9505.7	7294.0	5555.1	4170.9
32.5°	14205.0	14175.7	13998.9	13406.8	12629.8	12083.2	11373.9	9020.7	6827.2	5110.5	3742.5
35°	14200.9	14146.4	13741.2	13233.0	12276.2	11601.2	10666.6	8236.6	6166.4	4524.5	3238.3
37.5°	13944.3	13808.9	13504.8	12819.8	11558.8	10703.0	9655.2	7278.8	5358.1	3866.7	2738.1
40°	13567.4	13385.6	12985.5	11948.8	10316.0	9329.9	8307.4	6190.6	4502.3	3218.1	2206.7
42.5°	12780.3	12505.5	11939.7	10514.1	8660.0	7770.9	6920.1	5088.3	3671.7	2621.9	1684.3
45°	11311.2	10935.4	10170.5	8605.4	6995.9	6270.4	5586.4	4094.1	2939.2	1945.0	1110.4
47.5°	9091.4	8742.9	8046.7	6850.4	5486.4	4873.1	4327.5	3045.3	1992.5	1126.6	530.5
50°	6768.6	6469.5	5925.9	4760.9	3682.8	3200.9	2734.1	1729.8	933.6	535.5	220.3
52.5°	4038.5	3890.0	3408.0	2640.1	1818.7	1567.1	1257.9	732.5	470.8	194.0	59.6
55°	1654.0	1526.7	1345.8	1080.1	791.1	670.9	573.9	361.7	146.5	40.4	22.2
57.5°	747.7	719.4	637.6	501.2	363.7	305.1	206.1	68.7	32.3	20.2	13.1
60°	288.0	259.7	222.3	120.2	51.5	43.4	35.4	23.2	16.2	11.1	8.1
62.5°	41.4	39.4	35.4	28.3	22.2	20.2	17.2	12.1	9.1	7.1	6.1
65°	17.2	17.2	15.2	12.1	10.1	9.1	8.1	6.1	5.1	5.1	5.1
67.5°	7.1	7.1	6.1	5.1	4.0	4.0	4.0	3.0	4.0	4.0	5.1
70°	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	4.0	4.0	5.1
72.5°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	5.1	5.1
75°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	5.1	5.1
77.5°	0.0	0.0	1.0	1.0	2.0	2.0	3.0	3.0	4.0	5.1	5.1
80°	0.0	0.0	1.0	1.0	2.0	2.0	3.0	3.0	4.0	5.1	6.1
82.5°	0.0	0.0	1.0	1.0	2.0	2.0	3.0	3.0	4.0	5.1	6.1
85°	0.0	0.0	1.0	1.0	2.0	2.0	3.0	3.0	4.0	5.1	6.1
87.5°	0.0	0.0	1.0	1.0	2.0	2.0	3.0	3.0	4.0	5.1	6.1
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°	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3
2.5°	1387.3	1322.6	1304.4	1247.8	1200.3	1177.1	1147.8	1082.1	1032.6	966.9	927.5
5°	1786.4	1664.1	1567.1	1448.9	1371.1	1320.6	1241.8	1121.5	1024.5	908.3	825.5
7.5°	2217.8	1994.5	1819.7	1624.7	1512.5	1424.6	1290.3	1117.5	975.0	820.4	692.1
10°	2634.1	2300.6	2025.8	1745.9	1598.4	1476.2	1291.3	1074.0	885.1	690.1	554.7
12.5°	3000.8	2570.4	2183.4	1823.7	1640.9	1488.3	1256.9	996.2	767.9	567.8	448.6
15°	3307.0	2779.6	2294.6	1853.0	1643.9	1462.0	1185.2	885.1	637.6	459.7	375.9
17.5°	3539.4	2889.7	2328.9	1817.7	1585.3	1387.3	1075.0	744.7	517.3	390.0	316.3
20°	3659.6	2910.9	2279.4	1721.7	1477.2	1274.1	930.6	604.2	438.5	339.5	264.7
22.5°	3674.8	2851.3	2161.2	1584.3	1340.8	1136.7	770.9	504.2	391.0	300.1	233.4
25°	3584.8	2722.0	1992.5	1428.7	1191.2	979.1	627.4	451.6	355.7	269.8	268.8
27.5°	3392.9	2499.7	1790.4	1247.8	1010.4	796.2	532.5	408.2	317.3	285.9	304.1
30°	3122.1	2214.8	1541.8	1019.5	789.1	612.3	448.6	336.5	278.9	281.9	297.1
32.5°	2755.3	1861.1	1249.8	746.7	564.8	460.7	336.5	229.4	231.4	232.4	245.5
35°	2294.6	1492.3	933.6	502.2	397.1	324.3	190.0	168.7	171.8	172.8	181.9
37.5°	1838.9	1146.8	620.4	334.4	249.6	170.8	118.2	113.2	115.2	114.2	124.3
40°	1408.5	799.2	371.8	165.7	96.0	79.8	72.7	69.7	70.7	71.7	77.8
42.5°	997.2	433.5	183.9	62.6	50.5	46.5	43.4	41.4	42.4	42.4	46.5
45°	506.2	205.1	62.6	34.4	31.3	28.3	26.3	25.3	25.3	25.3	27.3
47.5°	219.3	67.7	29.3	21.2	19.2	18.2	16.2	15.2	15.2	15.2	16.2
50°	68.7	27.3	18.2	14.1	12.1	11.1	10.1	10.1	10.1	9.1	10.1
52.5°	25.3	17.2	12.1	9.1	8.1	8.1	8.1	7.1	8.1	7.1	8.1
55°	15.2	11.1	8.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
57.5°	10.1	8.1	7.1	7.1	6.1	6.1	7.1	7.1	7.1	7.1	7.1
60°	7.1	7.1	6.1	6.1	6.1	6.1	7.1	7.1	7.1	7.1	7.1
62.5°	6.1	6.1	6.1	6.1	6.1	6.1	7.1	7.1	7.1	7.1	8.1
65°	5.1	6.1	6.1	6.1	6.1	6.1	7.1	7.1	8.1	8.1	8.1
67.5°	5.1	6.1	6.1	7.1	7.1	7.1	7.1	8.1	8.1	8.1	8.1
70°	6.1	6.1	7.1	7.1	7.1	7.1	8.1	8.1	8.1	8.1	9.1
72.5°	6.1	6.1	7.1	7.1	7.1	7.1	8.1	8.1	9.1	9.1	9.1
75°	6.1	7.1	7.1	7.1	7.1	8.1	8.1	8.1	9.1	9.1	9.1
77.5°	6.1	7.1	7.1	8.1	8.1	8.1	8.1	9.1	9.1	9.1	9.1
80°	6.1	7.1	7.1	8.1	8.1	8.1	9.1	9.1	9.1	9.1	10.1
82.5°	6.1	7.1	7.1	8.1	8.1	8.1	9.1	9.1	9.1	9.1	10.1
85°	7.1	7.1	8.1	8.1	8.1	8.1	9.1	9.1	9.1	9.1	10.1
87.5°	7.1	7.1	8.1	8.1	8.1	8.1	9.1	9.1	10.1	9.1	10.1
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°	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3
2.5°	875.0	816.4	776.0	760.8	731.5	685.0	657.8	632.5	585.0	574.9	548.6
5°	730.5	636.5	569.9	544.6	511.3	471.8	433.5	408.2	377.9	365.8	347.6
7.5°	575.9	482.0	424.4	404.2	380.9	348.6	314.2	289.0	257.6	241.5	226.3
10°	452.7	382.9	334.4	314.2	290.0	255.6	220.3	186.9	159.6	142.5	139.4
12.5°	367.8	310.2	258.7	237.4	209.1	174.8	149.5	148.5	146.5	145.5	147.5
15°	301.1	245.5	191.0	167.7	159.6	158.6	161.7	164.7	163.7	166.7	168.7
17.5°	247.5	187.9	175.8	176.8	177.8	180.9	185.9	194.0	195.0	200.1	204.1
20°	202.1	199.0	204.1	208.1	211.2	217.2	228.3	238.5	241.5	248.6	256.6
22.5°	229.4	238.5	249.6	254.6	258.7	269.8	281.9	298.1	304.1	313.2	324.3
25°	276.8	292.0	309.2	315.2	321.3	339.5	353.6	372.8	377.9	389.0	400.1
27.5°	316.3	332.4	350.6	358.7	363.7	381.9	394.0	406.2	406.2	412.2	420.3
30°	310.2	323.3	338.5	344.5	346.6	359.7	371.8	375.9	373.8	376.9	382.9
32.5°	257.6	267.8	279.9	284.9	286.9	296.0	306.1	306.1	305.1	305.1	309.2
35°	191.0	198.0	204.1	209.1	212.2	218.2	227.3	226.3	226.3	224.3	227.3
37.5°	128.3	132.4	139.4	141.5	142.5	146.5	153.6	153.6	151.6	152.6	154.6
40°	77.8	82.9	86.9	87.9	89.9	93.0	98.0	98.0	98.0	98.0	99.0
42.5°	46.5	49.5	52.5	52.5	53.6	57.6	59.6	59.6	59.6	59.6	60.6
45°	27.3	28.3	30.3	31.3	31.3	33.3	34.4	34.4	34.4	34.4	35.4
47.5°	16.2	17.2	17.2	18.2	18.2	19.2	20.2	20.2	19.2	19.2	19.2
50°	10.1	10.1	10.1	10.1	11.1	11.1	11.1	11.1	11.1	11.1	10.1
52.5°	8.1	8.1	8.1	8.1	7.1	7.1	7.1	7.1	6.1	6.1	5.1
55°	7.1	7.1	7.1	7.1	7.1	6.1	6.1	6.1	5.1	4.0	3.0
57.5°	7.1	7.1	7.1	7.1	7.1	6.1	6.1	5.1	4.0	4.0	3.0
60°	7.1	7.1	7.1	7.1	7.1	6.1	6.1	5.1	4.0	4.0	3.0
62.5°	8.1	8.1	7.1	7.1	7.1	6.1	6.1	5.1	5.1	4.0	3.0
65°	8.1	8.1	7.1	7.1	7.1	7.1	6.1	6.1	5.1	4.0	3.0
67.5°	8.1	8.1	8.1	8.1	7.1	7.1	7.1	6.1	5.1	4.0	3.0
70°	9.1	9.1	8.1	8.1	8.1	7.1	7.1	6.1	5.1	5.1	4.0
72.5°	9.1	9.1	8.1	8.1	8.1	8.1	7.1	6.1	6.1	5.1	4.0
75°	9.1	9.1	9.1	9.1	8.1	8.1	7.1	7.1	6.1	5.1	4.0
77.5°	9.1	9.1	9.1	9.1	8.1	8.1	8.1	7.1	6.1	5.1	4.0
80°	9.1	9.1	9.1	9.1	9.1	8.1	8.1	7.1	6.1	5.1	4.0
82.5°	10.1	10.1	9.1	9.1	9.1	8.1	8.1	7.1	6.1	5.1	5.1
85°	10.1	10.1	9.1	9.1	9.1	8.1	8.1	7.1	6.1	6.1	5.1
87.5°	10.1	10.1	9.1	9.1	9.1	8.1	8.1	7.1	6.1	6.1	5.1
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: P209065

CATALOG NUMBER: LDSQA6A75930D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3	1002.3
2.5°	532.5	502.2	492.1	499.1	491.0	485.0	476.9	472.9
5°	333.4	311.2	304.1	306.1	299.1	293.0	284.9	282.9
7.5°	205.1	183.9	175.8	175.8	167.7	160.7	155.6	152.6
10°	137.4	133.4	134.4	135.4	134.4	135.4	132.4	134.4
12.5°	147.5	145.5	147.5	148.5	148.5	150.5	146.5	149.5
15°	171.8	169.7	172.8	174.8	174.8	177.8	173.8	176.8
17.5°	210.2	209.1	214.2	216.2	217.2	222.3	217.2	221.3
20°	265.7	264.7	271.8	274.8	273.8	283.9	276.8	283.9
22.5°	337.5	335.4	345.6	348.6	349.6	362.7	356.7	361.7
25°	409.2	411.2	416.3	421.3	422.3	433.5	424.4	429.4
27.5°	424.4	421.3	424.4	430.4	431.4	436.5	428.4	432.4
30°	383.9	378.9	379.9	387.0	389.0	391.0	383.9	386.0
32.5°	312.2	304.1	304.1	311.2	313.2	316.3	304.1	309.2
35°	230.4	223.3	223.3	228.3	229.4	231.4	222.3	226.3
37.5°	157.6	151.6	153.6	155.6	156.6	158.6	157.6	156.6
40°	101.0	97.0	100.0	100.0	101.0	102.0	102.0	103.1
42.5°	61.6	58.6	60.6	60.6	61.6	61.6	61.6	62.6
45°	35.4	34.4	34.4	35.4	35.4	35.4	34.4	35.4
47.5°	19.2	18.2	19.2	19.2	19.2	19.2	19.2	19.2
50°	10.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
52.5°	5.1	4.0	4.0	4.0	3.0	4.0	3.0	3.0
55°	3.0	2.0	2.0	2.0	1.0	1.0	0.0	0.0
57.5°	2.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
60°	2.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
62.5°	2.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
65°	2.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
67.5°	3.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0
70°	3.0	2.0	2.0	1.0	1.0	0.0	0.0	0.0
72.5°	3.0	2.0	2.0	2.0	1.0	1.0	0.0	0.0
75°	3.0	2.0	2.0	2.0	1.0	1.0	0.0	0.0
77.5°	3.0	3.0	2.0	2.0	1.0	1.0	1.0	0.0
80°	4.0	3.0	2.0	2.0	2.0	1.0	1.0	1.0
82.5°	4.0	3.0	2.0	2.0	2.0	1.0	1.0	1.0
85°	4.0	3.0	3.0	2.0	2.0	1.0	1.0	1.0
87.5°	4.0	3.0	3.0	2.0	2.0	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)