

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: P209086

Luminaire Tested: **LDSQA6A65835D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209086
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26688)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA6A65835D010TE LARH40FL 6LSQA1H 30°
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 40° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6333.5 lumens
Efficiency: N/A
Efficacy: 80.5 lumens/watt
Spacing Criteria (0/90/45): 2.63 / 0.54 / 1.37
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
CIE Type: Direct

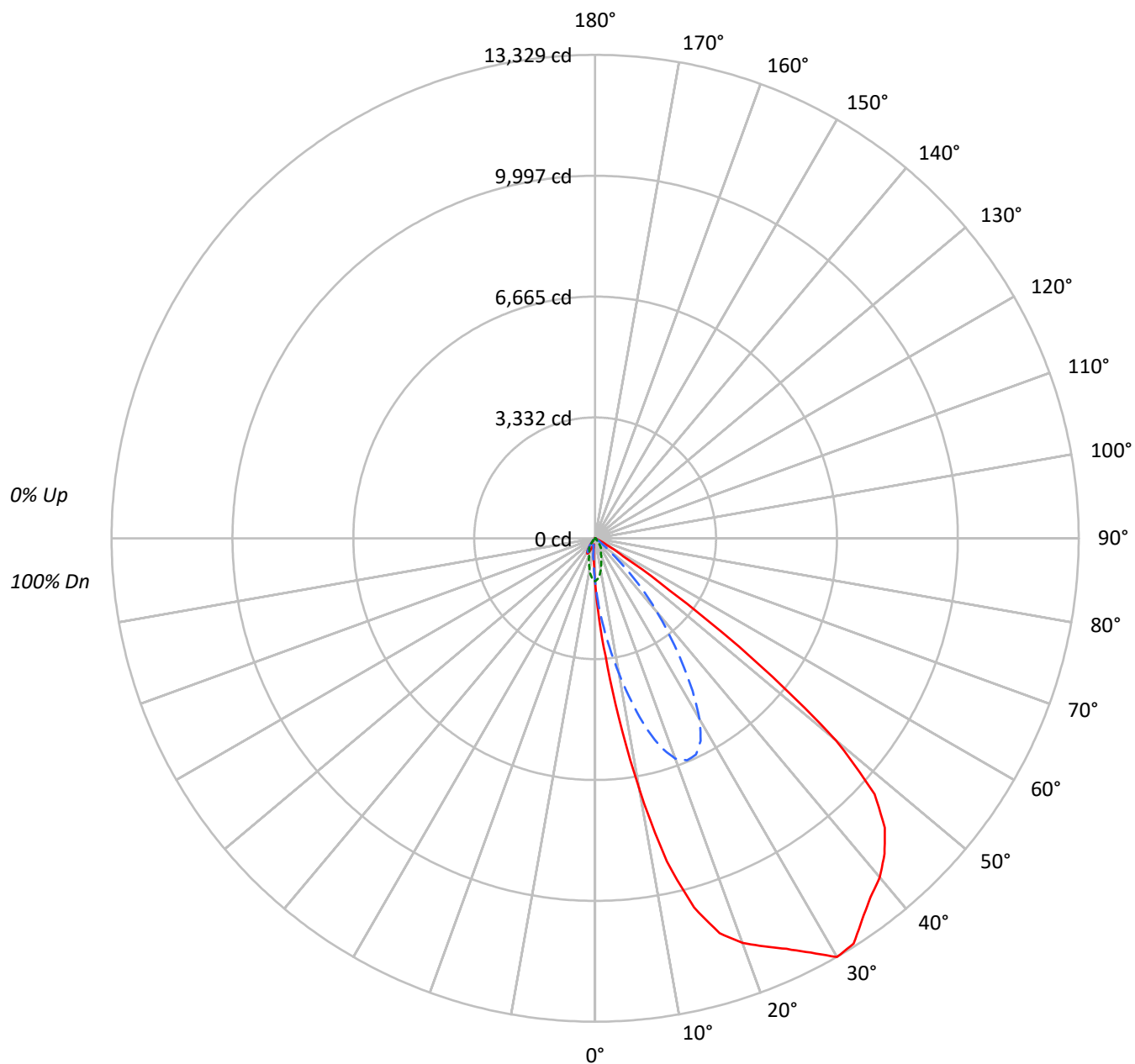
Input Watts (W): 78.67
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					10
RW	70	50	30	10		70	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
1	112	109	106	103		110	107	104	102		103	100	98		99	97	95		95	94	93
2	105	99	94	90		103	97	93	89		94	90	87		91	88	85		88	85	83
3	98	90	84	79		96	88	83	78		86	81	77		83	79	76		81	77	74
4	91	82	75	70		89	80	74	69		78	73	68		76	71	67		74	70	67
5	85	74	67	62		83	73	66	61		71	65	61		70	64	60		68	63	60
6	79	68	60	55		77	67	60	55		65	59	54		64	58	54		62	57	54
7	74	62	55	49		72	61	54	49		60	53	49		59	53	49		57	52	48
8	69	57	49	44		67	56	49	44		55	49	44		54	48	44		53	47	44
9	64	52	45	40		63	52	45	40		51	44	40		50	44	40		49	43	39
10	60	48	41	36		59	48	41	36		47	41	36		46	40	36		45	40	36

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	51107	51107	51107
5°	140275	47088	19216
10°	307394	38539	7323
15°	469543	29334	8590
20°	544012	21824	13347
25°	593444	17948	21535
30°	662690	16277	21995
35°	674251	11164	15080
40°	686102	5295	7633
45°	687216	2198	3331
50°	580975	951	1025
55°	187078	661	165
60°	37148	758	0
65°	3790	897	0
70°	415	1246	0
75°	0	1647	0
80°	0	2703	273
85°	0	5385	543



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	161.1	2.5
10°-20°	833.3	13.2
20°-30°	1595.6	25.2
30°-40°	1879.9	29.7
40°-50°	1476.6	23.3
50°-60°	359.8	5.7
60°-70°	15.5	0.2
70°-80°	5.8	0.1
80°-90°	5.8	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°	2590.1	40.9
0°-40°	4469.9	70.6
0°-60°	6306.3	99.6
0°-90°	6333.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6333.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1187	1187	1187	1187	1187	
5°	3246	2349	1090	570	445	429
15°	10534	5410	658	188	193	2941
25°	12492	6579	378	395	453	5822
35°	12828	4159	212	274	287	8044
45°	11286	1286	36	50	55	8480
55°	2492	47	9	6	2	2966
65°	37	6	9	6	0	99
75°	0	6	10	7	0	0
85°	0	7	11	7	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°	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0
2.5°	2034.5	2030.1	2000.6	2027.9	1944.7	1941.4	1904.2	1887.8	1839.6	1793.6	1727.9
5°	3245.6	3174.4	3116.4	3118.6	2958.7	2929.1	2845.9	2761.6	2632.4	2511.9	2348.8
7.5°	4947.2	4862.9	4740.3	4688.8	4383.3	4293.5	4121.6	3897.1	3615.7	3335.4	3033.1
10°	7031.0	7044.1	6885.4	6738.6	6276.5	6094.8	5816.6	5374.3	4841.0	4314.3	3778.8
12.5°	9127.9	9119.2	8929.7	8707.4	8138.0	7881.8	7511.7	6959.8	6253.5	5436.7	4599.0
15°	10533.9	10596.3	10516.4	10339.0	9852.8	9559.3	9142.1	8393.2	7532.5	6540.4	5410.4
17.5°	11416.5	11475.6	11447.1	11308.1	10878.8	10565.6	10217.4	9604.2	8608.9	7361.7	6049.9
20°	11873.1	11966.2	11953.0	11801.9	11477.8	11218.3	10833.9	10265.6	9403.9	7932.2	6463.8
22.5°	12177.5	12248.7	12268.4	12097.6	11762.5	11516.1	11234.7	10658.7	9848.4	8280.4	6628.0
25°	12491.8	12617.7	12493.9	12283.7	11976.0	11739.5	11439.5	10887.6	10060.9	8422.7	6578.8
27.5°	12877.2	12937.4	12657.1	12465.5	12123.8	11867.6	11549.0	11020.1	10098.1	8308.9	6297.3
30°	13329.4	13079.8	12883.8	12503.8	12116.2	11866.5	11542.4	10936.9	9902.1	7931.1	5752.0
32.5°	13255.0	13026.1	12803.8	12402.0	12018.7	11771.2	11409.9	10659.8	9438.9	7299.3	4999.8
35°	12827.9	12877.2	12637.4	12304.5	11870.9	11615.8	11221.6	10265.6	8652.7	6427.6	4158.8
37.5°	12467.7	12576.1	12419.5	12111.8	11671.6	11326.7	10794.5	9632.7	7626.7	5321.7	3361.6
40°	12207.1	12242.1	12157.8	11812.9	11284.0	10785.7	10170.4	8496.1	6380.6	4177.4	2653.2
42.5°	11803.0	11896.1	11747.2	11370.5	10568.9	10005.0	9113.7	7183.2	4956.0	3190.8	1997.3
45°	11286.2	11374.9	11190.9	10564.6	9449.8	8623.1	7535.8	5600.9	3666.1	2352.1	1285.5
47.5°	10443.0	10497.8	10141.9	9275.7	7655.1	6876.6	5761.9	3904.8	2361.9	1315.1	625.2
50°	8673.5	8647.2	7913.6	6848.1	5120.2	4303.3	3429.5	2116.6	1061.1	623.1	390.9
52.5°	5590.0	5529.7	4803.8	3834.7	2593.0	1978.7	1487.0	913.2	553.0	348.2	154.4
55°	2492.2	2469.2	2021.4	1570.2	1061.1	913.2	697.5	447.9	294.6	121.5	47.1
57.5°	924.2	903.4	796.1	667.9	512.5	426.0	338.4	214.6	75.6	40.5	25.2
60°	431.4	430.3	378.9	312.1	216.8	164.2	95.3	50.4	31.8	21.9	14.2
62.5°	138.0	134.7	94.2	69.0	49.3	42.7	33.9	25.2	16.4	12.0	8.8
65°	37.2	37.2	33.9	28.5	23.0	19.7	16.4	12.0	7.7	6.6	5.5
67.5°	14.2	14.2	13.1	12.0	8.8	7.7	6.6	5.5	4.4	5.5	5.5
70°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	4.4	4.4	5.5
72.5°	0.0	0.0	1.1	1.1	2.2	2.2	3.3	3.3	4.4	5.5	5.5
75°	0.0	0.0	1.1	1.1	2.2	2.2	3.3	3.3	4.4	5.5	5.5
77.5°	0.0	0.0	1.1	1.1	2.2	2.2	3.3	3.3	4.4	5.5	5.5
80°	0.0	0.0	1.1	1.1	2.2	2.2	3.3	3.3	4.4	5.5	5.5
82.5°	0.0	0.0	1.1	2.2	2.2	2.2	3.3	4.4	4.4	5.5	6.6
85°	0.0	0.0	1.1	2.2	2.2	3.3	3.3	4.4	4.4	5.5	6.6
87.5°	0.0	0.0	1.1	2.2	2.2	3.3	3.3	4.4	4.4	5.5	6.6
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°	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0
2.5°	1679.7	1607.5	1507.8	1449.8	1435.5	1404.9	1351.2	1271.3	1205.6	1142.1	1104.9
5°	2210.8	2040.0	1848.4	1713.7	1658.9	1585.6	1455.3	1320.6	1196.8	1089.5	1005.2
7.5°	2773.6	2492.2	2182.3	1932.7	1842.9	1726.8	1514.4	1314.0	1144.3	995.4	882.6
10°	3333.2	2879.8	2459.4	2098.0	1951.3	1793.6	1513.3	1253.8	1054.5	881.5	756.6
12.5°	3892.7	3241.2	2663.0	2197.7	2007.1	1807.8	1468.4	1161.8	940.6	764.3	645.0
15°	4409.6	3529.2	2801.0	2231.6	2001.7	1766.2	1377.5	1050.1	821.2	658.1	547.5
17.5°	4795.0	3680.3	2832.8	2180.1	1915.2	1654.5	1238.4	918.7	707.4	563.9	451.1
20°	4984.4	3704.4	2757.2	2033.4	1766.2	1495.8	1086.2	792.8	609.9	476.3	381.1
22.5°	4984.4	3590.5	2593.0	1849.5	1580.1	1312.9	939.5	688.8	533.3	415.0	335.1
25°	4795.0	3363.8	2372.9	1637.0	1375.3	1132.2	812.5	611.0	474.1	377.8	311.0
27.5°	4427.1	3050.7	2090.4	1400.5	1173.8	971.3	711.7	539.8	429.2	340.5	341.6
30°	3921.2	2666.3	1766.2	1150.8	966.9	798.3	599.0	452.2	343.8	327.4	337.3
32.5°	3336.5	2206.4	1399.4	892.4	749.0	628.5	455.5	319.7	273.7	275.9	286.9
35°	2736.4	1736.7	1053.4	661.4	557.4	455.5	298.9	210.2	208.0	212.4	220.1
37.5°	2160.4	1299.8	762.1	484.0	374.5	280.3	161.0	144.5	144.5	148.9	153.3
40°	1618.4	922.0	524.5	286.9	181.8	128.1	101.8	94.2	93.1	94.2	99.6
42.5°	1111.4	583.6	312.1	115.0	87.6	74.5	64.6	59.1	58.0	59.1	62.4
45°	624.1	359.2	121.5	61.3	52.6	47.1	40.5	37.2	36.1	36.1	38.3
47.5°	390.9	142.3	54.7	38.3	32.8	30.7	26.3	24.1	23.0	23.0	24.1
50°	150.0	55.8	33.9	25.2	21.9	19.7	17.5	15.3	14.2	14.2	15.3
52.5°	51.5	32.8	21.9	16.4	14.2	13.1	10.9	9.9	9.9	9.9	9.9
55°	28.5	19.7	13.1	9.9	8.8	8.8	8.8	8.8	8.8	8.8	8.8
57.5°	17.5	12.0	8.8	7.7	7.7	7.7	7.7	7.7	7.7	8.8	8.8
60°	9.9	7.7	6.6	6.6	6.6	6.6	7.7	7.7	7.7	8.8	8.8
62.5°	6.6	6.6	6.6	6.6	6.6	6.6	7.7	7.7	8.8	8.8	8.8
65°	5.5	5.5	5.5	6.6	6.6	6.6	7.7	7.7	8.8	8.8	8.8
67.5°	5.5	5.5	6.6	6.6	6.6	7.7	7.7	8.8	8.8	8.8	8.8
70°	5.5	6.6	6.6	7.7	7.7	7.7	8.8	8.8	8.8	9.9	9.9
72.5°	5.5	6.6	6.6	7.7	7.7	7.7	8.8	8.8	9.9	9.9	9.9
75°	6.6	6.6	6.6	7.7	7.7	7.7	8.8	9.9	9.9	9.9	9.9
77.5°	6.6	6.6	7.7	7.7	7.7	8.8	8.8	9.9	9.9	9.9	9.9
80°	6.6	6.6	7.7	7.7	8.8	8.8	9.9	9.9	9.9	10.9	10.9
82.5°	6.6	6.6	7.7	8.8	8.8	8.8	9.9	9.9	10.9	10.9	10.9
85°	6.6	7.7	7.7	8.8	8.8	8.8	9.9	9.9	10.9	10.9	10.9
87.5°	6.6	7.7	7.7	8.8	8.8	8.8	9.9	9.9	10.9	10.9	10.9
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°	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0
2.5°	1055.6	1009.6	963.6	929.7	913.2	896.8	860.7	813.6	793.9	765.4	749.0
5°	919.8	842.1	780.7	740.2	716.1	684.4	642.8	596.8	570.5	540.9	521.2
7.5°	779.6	688.8	629.6	592.4	568.3	528.9	476.3	421.6	389.8	357.0	334.0
10°	657.0	570.5	503.7	461.0	430.3	384.3	331.8	293.5	266.1	237.6	214.6
12.5°	548.6	455.5	384.3	348.2	327.4	283.6	239.8	197.1	180.7	175.2	175.2
15°	444.6	360.3	300.0	269.4	247.5	200.4	191.6	189.4	188.3	187.2	189.4
17.5°	362.4	291.3	227.8	212.4	210.2	209.1	210.2	210.2	211.3	214.6	220.1
20°	304.4	238.7	234.3	235.4	235.4	239.8	245.3	249.7	254.0	259.5	269.4
22.5°	270.5	269.4	277.0	278.1	283.6	290.2	300.0	306.6	317.5	323.0	337.3
25°	312.1	319.7	334.0	338.4	347.1	358.1	373.4	382.2	395.3	401.9	418.3
27.5°	353.7	365.7	383.2	388.7	396.4	413.9	424.9	432.5	439.1	443.5	453.3
30°	350.4	361.3	378.9	380.0	390.9	403.0	409.5	416.1	420.5	419.4	424.9
32.5°	296.7	306.6	323.0	323.0	335.1	344.9	348.2	353.7	353.7	353.7	355.9
35°	227.8	234.3	245.3	248.6	258.4	265.0	267.2	273.7	273.7	271.6	271.6
37.5°	157.7	166.4	174.1	176.3	182.9	187.2	192.7	193.8	191.6	192.7	192.7
40°	102.9	108.4	113.9	115.0	120.4	123.7	129.2	129.2	130.3	129.2	131.4
42.5°	63.5	67.9	71.2	73.4	75.6	77.7	81.0	82.1	83.2	82.1	84.3
45°	39.4	41.6	43.8	44.9	46.0	47.1	50.4	50.4	50.4	50.4	51.5
47.5°	24.1	25.2	26.3	26.3	27.4	28.5	29.6	29.6	29.6	29.6	30.7
50°	14.2	15.3	15.3	15.3	16.4	16.4	17.5	17.5	17.5	16.4	17.5
52.5°	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	8.8	9.9
55°	8.8	8.8	7.7	7.7	7.7	7.7	7.7	6.6	5.5	5.5	4.4
57.5°	7.7	7.7	7.7	7.7	7.7	6.6	6.6	5.5	5.5	4.4	3.3
60°	7.7	7.7	7.7	7.7	7.7	6.6	6.6	5.5	4.4	4.4	3.3
62.5°	8.8	7.7	7.7	7.7	7.7	6.6	6.6	5.5	4.4	4.4	3.3
65°	8.8	8.8	7.7	7.7	7.7	6.6	6.6	5.5	5.5	4.4	3.3
67.5°	8.8	8.8	8.8	7.7	8.8	7.7	6.6	6.6	5.5	4.4	4.4
70°	9.9	8.8	8.8	8.8	8.8	7.7	7.7	6.6	5.5	4.4	4.4
72.5°	9.9	9.9	8.8	8.8	8.8	7.7	7.7	6.6	5.5	5.5	4.4
75°	9.9	9.9	8.8	8.8	8.8	7.7	7.7	6.6	6.6	5.5	4.4
77.5°	9.9	9.9	9.9	8.8	8.8	8.8	7.7	7.7	6.6	5.5	4.4
80°	9.9	9.9	9.9	9.9	9.9	8.8	8.8	7.7	6.6	5.5	4.4
82.5°	10.9	9.9	9.9	9.9	9.9	8.8	8.8	7.7	6.6	5.5	5.5
85°	10.9	10.9	9.9	9.9	9.9	8.8	8.8	7.7	6.6	6.6	5.5
87.5°	10.9	9.9	9.9	9.9	9.9	8.8	8.8	7.7	6.6	5.5	5.5
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: P209086

CATALOG NUMBER: LDSQA6A65835D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0	1187.0
2.5°	732.6	723.8	723.8	708.5	706.3	694.2	704.1	697.5
5°	499.3	485.1	480.7	465.4	459.9	445.7	450.0	444.6
7.5°	314.3	300.0	295.6	284.7	278.1	267.2	268.3	265.0
10°	191.6	178.5	175.2	171.9	168.6	167.5	168.6	167.5
12.5°	174.1	173.0	170.8	171.9	169.7	170.8	171.9	170.8
15°	189.4	191.6	189.4	190.5	189.4	191.6	192.7	192.7
17.5°	222.3	226.7	224.5	227.8	226.7	232.1	232.1	232.1
20°	272.7	280.3	278.1	282.5	282.5	289.1	289.1	291.3
22.5°	342.7	352.6	351.5	361.3	359.2	366.8	366.8	369.0
25°	427.0	436.9	438.0	444.6	443.5	451.1	451.1	453.3
27.5°	462.1	467.6	466.5	469.8	470.8	475.2	478.5	476.3
30°	433.6	438.0	436.9	439.1	439.1	442.4	445.7	442.4
32.5°	364.6	367.9	367.9	372.3	369.0	370.1	375.6	372.3
35°	279.2	281.4	279.2	281.4	282.5	282.5	288.0	286.9
37.5°	199.3	200.4	200.4	203.7	200.4	200.4	205.9	207.0
40°	133.6	134.7	133.6	138.0	135.8	135.8	139.1	135.8
42.5°	85.4	86.5	85.4	88.7	86.5	88.7	89.8	90.9
45°	52.6	52.6	51.5	53.7	52.6	53.7	54.7	54.7
47.5°	30.7	30.7	29.6	31.8	30.7	30.7	30.7	31.8
50°	16.4	16.4	16.4	17.5	16.4	16.4	16.4	15.3
52.5°	8.8	8.8	7.7	8.8	7.7	7.7	7.7	7.7
55°	4.4	3.3	3.3	3.3	2.2	2.2	2.2	2.2
57.5°	3.3	2.2	2.2	1.1	1.1	1.1	0.0	0.0
60°	2.2	2.2	1.1	1.1	0.0	0.0	0.0	0.0
62.5°	2.2	2.2	1.1	1.1	0.0	0.0	0.0	0.0
65°	2.2	2.2	1.1	1.1	0.0	0.0	0.0	0.0
67.5°	3.3	2.2	2.2	1.1	1.1	0.0	0.0	0.0
70°	3.3	2.2	2.2	1.1	1.1	0.0	0.0	0.0
72.5°	3.3	2.2	2.2	2.2	1.1	1.1	0.0	0.0
75°	3.3	3.3	2.2	2.2	1.1	1.1	0.0	0.0
77.5°	4.4	3.3	2.2	2.2	1.1	1.1	0.0	0.0
80°	4.4	3.3	2.2	2.2	2.2	1.1	1.1	1.1
82.5°	4.4	3.3	3.3	2.2	2.2	1.1	1.1	1.1
85°	4.4	3.3	3.3	2.2	2.2	1.1	1.1	1.1
87.5°	4.4	3.3	3.3	2.2	2.2	1.1	1.1	1.1
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)