

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: P209047

Luminaire Tested: **LDSQA6A55840D010TE LARH30NF 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209047
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: LDSQA6A55840D010TE 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 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5242.5 lumens
Efficiency: N/A
Efficacy: 86.2 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

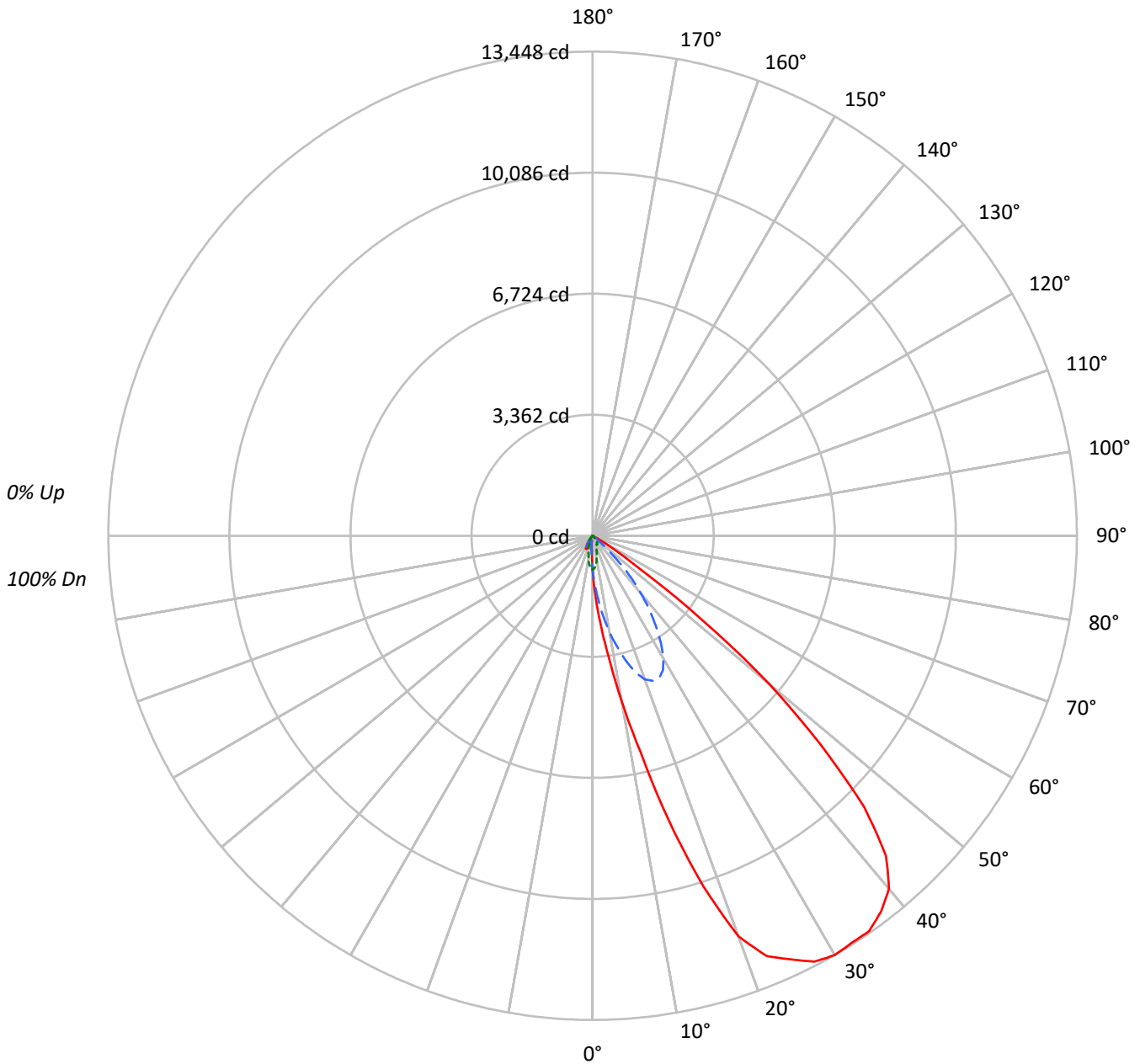
Input Watts (W): 60.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	40713	40713	40713
5°	104441	37040	11535
10°	203590	28466	5544
15°	365466	19332	7435
20°	542601	14676	12275
25°	616751	12090	19245
30°	668566	13225	18102
35°	704216	8567	11222
40°	719443	3805	5463
45°	649799	1449	2034
50°	427745	576	576
55°	117139	503	0
60°	23396	577	0
65°	1650	774	0
70°	239	957	0
75°	0	1431	0
80°	0	2132	248
85°	0	4248	494



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	115.8	2.2
10°-20°	615.4	11.7
20°-30°	1394.8	26.6
30°-40°	1674.2	31.9
40°-50°	1180.0	22.5
50°-60°	243.5	4.6
60°-70°	8.6	0.2
70°-80°	5.1	0.1
80°-90°	5.0	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°	2126.0	40.6
0°-40°	3800.3	72.5
0°-60°	5223.7	99.6
0°-90°	5242.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5242.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	946	946	946	946	946	
5°	2416	1761	857	356	267	297
15°	8199	3607	434	154	167	2433
25°	12982	4363	254	356	405	5991
35°	13398	3055	163	214	214	8329
45°	10672	1048	24	32	33	7849
55°	1560	21	7	5	0	2056
65°	16	5	8	5	0	48
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°	945.6	945.6	945.6	945.6	945.6	945.6	945.6	945.6	945.6	945.6	945.6
2.5°	1612.0	1563.3	1582.4	1526.2	1513.8	1503.3	1513.8	1452.8	1418.4	1374.6	1339.3
5°	2416.5	2358.4	2371.7	2273.5	2228.7	2198.2	2192.5	2066.7	1972.3	1868.4	1760.7
7.5°	3364.0	3308.8	3301.1	3148.6	3056.1	3003.7	2981.8	2801.6	2638.6	2453.7	2251.6
10°	4656.7	4530.8	4491.7	4270.6	4094.2	3982.7	3845.4	3557.6	3271.6	2992.3	2734.9
12.5°	6160.9	6092.3	5995.0	5605.2	5296.3	5138.1	4933.1	4483.2	4050.4	3589.0	3158.1
15°	8199.0	7954.9	7789.1	7225.7	6728.1	6484.1	6184.7	5496.5	4842.5	4258.2	3607.1
17.5°	10190.3	10062.6	9803.3	9072.1	8305.7	7920.6	7474.5	6539.3	5615.6	4784.4	3989.4
20°	11842.3	11722.2	11426.7	10737.5	9887.2	9319.0	8757.6	7474.5	6267.7	5203.8	4244.9
22.5°	12633.5	12557.3	12316.1	11726.0	11001.5	10461.0	9857.6	8270.5	6750.0	5478.4	4361.2
25°	12982.4	12947.1	12791.8	12326.6	11644.0	11185.5	10615.5	8833.8	7050.3	5606.1	4363.1
27.5°	13336.1	13342.7	12999.6	12631.6	11984.3	11543.9	10994.9	9083.6	7104.6	5534.6	4220.1
30°	13447.6	13377.1	13225.5	12697.4	12082.5	11614.5	11025.4	8968.2	6881.6	5241.0	3935.0
32.5°	13401.8	13374.2	13207.4	12648.8	11915.7	11400.0	10730.8	8510.7	6441.2	4821.6	3530.9
35°	13398.0	13346.6	12964.3	12484.8	11582.1	10945.3	10063.5	7771.0	5817.7	4268.7	3055.2
37.5°	13155.9	13028.2	12741.2	12094.9	10905.3	10097.9	9109.3	6867.3	5055.1	3648.1	2583.3
40°	12800.3	12628.8	12251.3	11273.2	9732.8	8802.4	7837.7	5840.6	4247.7	3036.1	2081.9
42.5°	12057.8	11798.5	11264.6	9919.6	8170.4	7331.5	6528.9	4800.6	3464.1	2473.7	1589.1
45°	10671.7	10317.1	9595.5	8118.9	6600.4	5915.9	5270.6	3862.6	2773.0	1835.0	1047.6
47.5°	8577.4	8248.5	7591.7	6463.1	5176.2	4597.6	4082.8	2873.1	1879.8	1062.9	500.5
50°	6385.9	6103.7	5590.9	4491.7	3474.6	3019.9	2579.5	1632.0	880.8	505.2	207.8
52.5°	3810.2	3670.0	3215.3	2490.9	1715.9	1478.5	1186.8	691.1	444.2	183.0	56.2
55°	1560.5	1440.4	1269.7	1019.0	746.4	633.0	541.5	341.3	138.2	38.1	21.0
57.5°	705.4	678.7	601.5	472.8	343.2	287.9	194.5	64.8	30.5	19.1	12.4
60°	271.7	245.0	209.7	113.4	48.6	41.0	33.4	21.9	15.3	10.5	7.6
62.5°	39.1	37.2	33.4	26.7	21.0	19.1	16.2	11.4	8.6	6.7	5.7
65°	16.2	16.2	14.3	11.4	9.5	8.6	7.6	5.7	4.8	4.8	4.8
67.5°	6.7	6.7	5.7	4.8	3.8	3.8	3.8	2.9	3.8	3.8	4.8
70°	1.9	1.9	1.9	1.9	1.9	1.9	2.9	2.9	3.8	3.8	4.8
72.5°	0.0	0.0	1.0	1.0	1.9	1.9	1.9	2.9	3.8	4.8	4.8
75°	0.0	0.0	1.0	1.0	1.9	1.9	1.9	2.9	3.8	4.8	4.8
77.5°	0.0	0.0	1.0	1.0	1.9	1.9	2.9	2.9	3.8	4.8	4.8
80°	0.0	0.0	1.0	1.0	1.9	1.9	2.9	2.9	3.8	4.8	5.7
82.5°	0.0	0.0	1.0	1.0	1.9	1.9	2.9	2.9	3.8	4.8	5.7
85°	0.0	0.0	1.0	1.0	1.9	1.9	2.9	2.9	3.8	4.8	5.7
87.5°	0.0	0.0	1.0	1.0	1.9	1.9	2.9	2.9	3.8	4.8	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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	945.6	945.6	945.6	945.6	945.6	945.6	945.6	945.6	945.6	945.6	945.6
2.5°	1308.8	1247.8	1230.7	1177.3	1132.5	1110.5	1082.9	1020.9	974.2	912.3	875.1
5°	1685.4	1570.0	1478.5	1367.0	1293.6	1245.9	1171.6	1058.1	966.6	857.0	778.8
7.5°	2092.4	1881.7	1716.8	1532.8	1427.0	1344.1	1217.3	1054.3	919.9	774.0	653.0
10°	2485.1	2170.6	1911.3	1647.2	1508.1	1392.7	1218.3	1013.3	835.1	651.1	523.3
12.5°	2831.2	2425.1	2060.0	1720.6	1548.1	1404.1	1185.9	939.9	724.5	535.7	423.2
15°	3120.0	2622.4	2164.8	1748.3	1550.9	1379.4	1118.2	835.1	601.5	433.7	354.6
17.5°	3339.3	2726.3	2197.3	1714.9	1495.7	1308.8	1014.3	702.6	488.1	368.0	298.4
20°	3452.7	2746.3	2150.5	1624.4	1393.7	1202.1	877.9	570.0	413.7	320.3	249.8
22.5°	3467.0	2690.1	2039.0	1494.7	1265.0	1072.4	727.3	475.7	368.9	283.1	220.2
25°	3382.2	2568.1	1879.8	1347.9	1123.9	923.7	592.0	426.1	335.5	254.5	253.6
27.5°	3201.0	2358.4	1689.2	1177.3	953.3	751.2	502.4	385.1	299.3	269.8	286.9
30°	2945.6	2089.5	1454.7	961.8	744.5	577.7	423.2	317.4	263.1	266.0	280.3
32.5°	2599.5	1755.9	1179.2	704.5	532.9	434.7	317.4	216.4	218.3	219.2	231.6
35°	2164.8	1408.0	880.8	473.8	374.6	306.0	179.2	159.2	162.1	163.0	171.6
37.5°	1734.9	1081.9	585.3	315.5	235.5	161.1	111.5	106.8	108.7	107.7	117.3
40°	1328.8	754.0	350.8	156.3	90.6	75.3	68.6	65.8	66.7	67.7	73.4
42.5°	940.9	408.9	173.5	59.1	47.7	43.8	41.0	39.1	40.0	40.0	43.8
45°	477.6	193.5	59.1	32.4	29.6	26.7	24.8	23.8	23.8	23.8	25.7
47.5°	206.9	63.9	27.6	20.0	18.1	17.2	15.3	14.3	14.3	14.3	15.3
50°	64.8	25.7	17.2	13.3	11.4	10.5	9.5	9.5	9.5	8.6	9.5
52.5°	23.8	16.2	11.4	8.6	7.6	7.6	7.6	6.7	7.6	6.7	7.6
55°	14.3	10.5	7.6	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
57.5°	9.5	7.6	6.7	6.7	5.7	5.7	6.7	6.7	6.7	6.7	6.7
60°	6.7	6.7	5.7	5.7	5.7	5.7	6.7	6.7	6.7	6.7	6.7
62.5°	5.7	5.7	5.7	5.7	5.7	5.7	6.7	6.7	6.7	6.7	7.6
65°	4.8	5.7	5.7	5.7	5.7	5.7	6.7	6.7	7.6	7.6	7.6
67.5°	4.8	5.7	5.7	6.7	6.7	6.7	6.7	7.6	7.6	7.6	7.6
70°	5.7	5.7	6.7	6.7	6.7	6.7	7.6	7.6	7.6	7.6	8.6
72.5°	5.7	5.7	6.7	6.7	6.7	6.7	7.6	7.6	8.6	8.6	8.6
75°	5.7	6.7	6.7	6.7	6.7	7.6	7.6	7.6	8.6	8.6	8.6
77.5°	5.7	6.7	6.7	7.6	7.6	7.6	7.6	8.6	8.6	8.6	8.6
80°	5.7	6.7	6.7	7.6	7.6	7.6	8.6	8.6	8.6	8.6	9.5
82.5°	5.7	6.7	6.7	7.6	7.6	7.6	8.6	8.6	8.6	8.6	9.5
85°	6.7	6.7	7.6	7.6	7.6	7.6	8.6	8.6	8.6	8.6	9.5
87.5°	6.7	6.7	7.6	7.6	7.6	7.6	8.6	8.6	9.5	8.6	9.5
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°	945.6	945.6	945.6	945.6	945.6	945.6	945.6	945.6	945.6	945.6	945.6
2.5°	825.5	770.2	732.1	717.8	690.2	646.3	620.6	596.7	551.9	542.4	517.6
5°	689.2	600.6	537.6	513.8	482.3	445.2	408.9	385.1	356.5	345.1	327.9
7.5°	543.4	454.7	400.4	381.3	359.4	328.9	296.5	272.6	243.1	227.8	213.5
10°	427.1	361.3	315.5	296.5	273.6	241.2	207.8	176.4	150.6	134.4	131.5
12.5°	347.0	292.6	244.0	224.0	197.3	164.9	141.1	140.1	138.2	137.3	139.2
15°	284.1	231.6	180.2	158.2	150.6	149.7	152.5	155.4	154.4	157.3	159.2
17.5°	233.5	177.3	165.9	166.8	167.8	170.6	175.4	183.0	184.0	188.7	192.6
20°	190.7	187.8	192.6	196.4	199.2	205.0	215.4	225.0	227.8	234.5	242.1
22.5°	216.4	225.0	235.5	240.2	244.0	254.5	266.0	281.2	286.9	295.5	306.0
25°	261.2	275.5	291.7	297.4	303.1	320.3	333.6	351.8	356.5	367.0	377.5
27.5°	298.4	313.6	330.8	338.4	343.2	360.3	371.8	383.2	383.2	388.9	396.6
30°	292.6	305.0	319.3	325.1	327.0	339.4	350.8	354.6	352.7	355.6	361.3
32.5°	243.1	252.6	264.1	268.8	270.7	279.3	288.8	288.8	287.9	287.9	291.7
35°	180.2	186.8	192.6	197.3	200.2	205.9	214.5	213.5	213.5	211.6	214.5
37.5°	121.1	124.9	131.5	133.5	134.4	138.2	144.9	144.9	143.0	143.9	145.8
40°	73.4	78.2	82.0	82.9	84.8	87.7	92.5	92.5	92.5	92.5	93.4
42.5°	43.8	46.7	49.6	49.6	50.5	54.3	56.2	56.2	56.2	56.2	57.2
45°	25.7	26.7	28.6	29.6	29.6	31.5	32.4	32.4	32.4	32.4	33.4
47.5°	15.3	16.2	16.2	17.2	17.2	18.1	19.1	19.1	18.1	18.1	18.1
50°	9.5	9.5	9.5	9.5	10.5	10.5	10.5	10.5	10.5	10.5	9.5
52.5°	7.6	7.6	7.6	7.6	6.7	6.7	6.7	6.7	5.7	5.7	4.8
55°	6.7	6.7	6.7	6.7	6.7	5.7	5.7	5.7	4.8	3.8	2.9
57.5°	6.7	6.7	6.7	6.7	6.7	5.7	5.7	4.8	3.8	3.8	2.9
60°	6.7	6.7	6.7	6.7	6.7	5.7	5.7	4.8	3.8	3.8	2.9
62.5°	7.6	7.6	6.7	6.7	6.7	5.7	5.7	4.8	4.8	3.8	2.9
65°	7.6	7.6	6.7	6.7	6.7	6.7	5.7	5.7	4.8	3.8	2.9
67.5°	7.6	7.6	7.6	7.6	6.7	6.7	6.7	5.7	4.8	3.8	2.9
70°	8.6	8.6	7.6	7.6	7.6	6.7	6.7	5.7	4.8	4.8	3.8
72.5°	8.6	8.6	7.6	7.6	7.6	7.6	6.7	5.7	5.7	4.8	3.8
75°	8.6	8.6	8.6	8.6	7.6	7.6	6.7	6.7	5.7	4.8	3.8
77.5°	8.6	8.6	8.6	8.6	7.6	7.6	7.6	6.7	5.7	4.8	3.8
80°	8.6	8.6	8.6	8.6	8.6	7.6	7.6	6.7	5.7	4.8	3.8
82.5°	9.5	9.5	8.6	8.6	8.6	7.6	7.6	6.7	5.7	4.8	4.8
85°	9.5	9.5	8.6	8.6	8.6	7.6	7.6	6.7	5.7	5.7	4.8
87.5°	9.5	9.5	8.6	8.6	8.6	7.6	7.6	6.7	5.7	5.7	4.8
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: P209047

CATALOG NUMBER: LDSQA6A55840D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	945.6	945.6	945.6	945.6	945.6	945.6	945.6	945.6
2.5°	502.4	473.8	464.2	470.9	463.3	457.6	449.9	446.1
5°	314.6	293.6	286.9	288.8	282.2	276.4	268.8	266.9
7.5°	193.5	173.5	165.9	165.9	158.2	151.6	146.8	143.9
10°	129.6	125.8	126.8	127.7	126.8	127.7	124.9	126.8
12.5°	139.2	137.3	139.2	140.1	140.1	142.0	138.2	141.1
15°	162.1	160.1	163.0	164.9	164.9	167.8	164.0	166.8
17.5°	198.3	197.3	202.1	204.0	205.0	209.7	205.0	208.8
20°	250.7	249.8	256.4	259.3	258.3	267.9	261.2	267.9
22.5°	318.4	316.5	326.0	328.9	329.8	342.2	336.5	341.3
25°	386.1	388.0	392.7	397.5	398.5	408.9	400.4	405.1
27.5°	400.4	397.5	400.4	406.1	407.0	411.8	404.2	408.0
30°	362.2	357.5	358.4	365.1	367.0	368.9	362.2	364.1
32.5°	294.6	286.9	286.9	293.6	295.5	298.4	286.9	291.7
35°	217.3	210.7	210.7	215.4	216.4	218.3	209.7	213.5
37.5°	148.7	143.0	144.9	146.8	147.8	149.7	148.7	147.8
40°	95.3	91.5	94.4	94.4	95.3	96.3	96.3	97.2
42.5°	58.1	55.3	57.2	57.2	58.1	58.1	58.1	59.1
45°	33.4	32.4	32.4	33.4	33.4	33.4	32.4	33.4
47.5°	18.1	17.2	18.1	18.1	18.1	18.1	18.1	18.1
50°	9.5	8.6	8.6	8.6	8.6	8.6	8.6	8.6
52.5°	4.8	3.8	3.8	3.8	2.9	3.8	2.9	2.9
55°	2.9	1.9	1.9	1.9	1.0	1.0	0.0	0.0
57.5°	1.9	1.0	1.0	1.0	0.0	0.0	0.0	0.0
60°	1.9	1.0	1.0	1.0	0.0	0.0	0.0	0.0
62.5°	1.9	1.0	1.0	1.0	0.0	0.0	0.0	0.0
65°	1.9	1.0	1.0	1.0	0.0	0.0	0.0	0.0
67.5°	2.9	1.9	1.0	1.0	1.0	0.0	0.0	0.0
70°	2.9	1.9	1.9	1.0	1.0	0.0	0.0	0.0
72.5°	2.9	1.9	1.9	1.9	1.0	1.0	0.0	0.0
75°	2.9	1.9	1.9	1.9	1.0	1.0	0.0	0.0
77.5°	2.9	2.9	1.9	1.9	1.0	1.0	1.0	0.0
80°	3.8	2.9	1.9	1.9	1.9	1.0	1.0	1.0
82.5°	3.8	2.9	1.9	1.9	1.9	1.0	1.0	1.0
85°	3.8	2.9	2.9	1.9	1.9	1.0	1.0	1.0
87.5°	3.8	2.9	2.9	1.9	1.9	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)