

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: P209061

Luminaire Tested: **LDSQA6A75830D010TE LARH30NF 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209061
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: LDSQA6A75830D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6686.3 lumens
Efficiency: N/A
Efficacy: 84.2 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

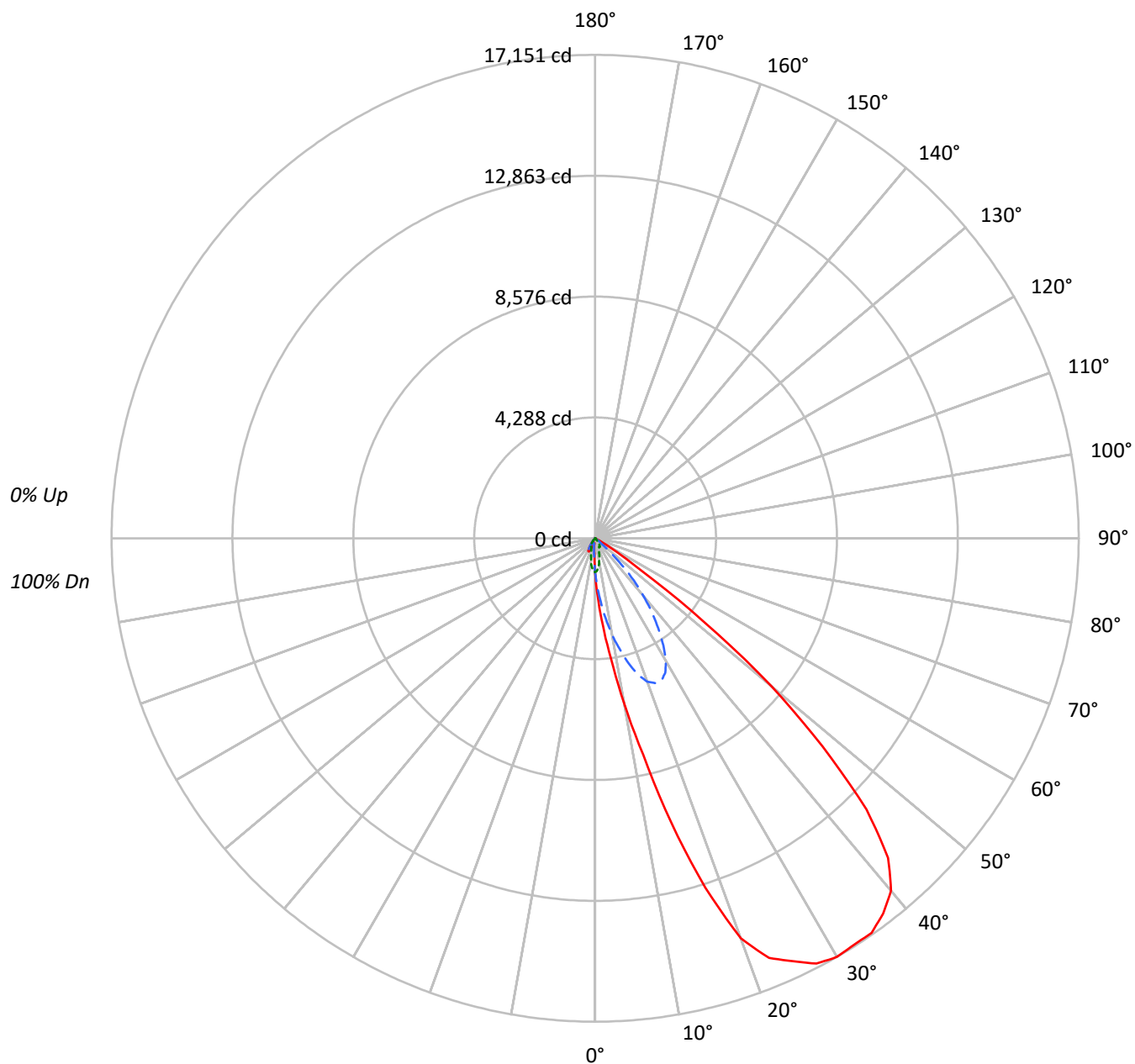
Input Watts (W): 79.45
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					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	89	83	78		86	81	77		83	79	76		81	77	74
4	91	82	75	70		89	81	74	69		78	73	68		76	71	67		74	70	67
5	85	74	67	62		83	73	67	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	43
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	40	36		46	40	36		45	40	36

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	51929	51929	51929
5°	133209	47240	14712
10°	259661	36305	7070
15°	466120	24659	9485
20°	692044	18717	15652
25°	786615	15421	24547
30°	852701	16864	23088
35°	898172	10927	14312
40°	917594	4851	6969
45°	828766	1851	2594
50°	545547	730	730
55°	149402	638	0
60°	29838	732	0
65°	2109	988	0
70°	302	1221	0
75°	0	1813	0
80°	0	2703	298
85°	0	5385	593



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.8	2.2
10°-20°	784.9	11.7
20°-30°	1778.9	26.6
30°-40°	2135.4	31.9
40°-50°	1505.0	22.5
50°-60°	310.5	4.6
60°-70°	11.0	0.2
70°-80°	6.5	0.1
80°-90°	6.4	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°	2711.6	40.6
0°-40°	4846.9	72.5
0°-60°	6662.4	99.6
0°-90°	6686.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6686.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1206	1206	1206	1206	1206	
5°	3082	2246	1093	455	340	379
15°	10457	4601	553	197	213	3103
25°	16558	5565	325	455	517	7641
35°	17088	3897	208	272	272	10623
45°	13611	1336	30	41	43	10011
55°	1990	27	8	6	0	2623
65°	21	6	10	6	0	61
75°	0	6	11	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°	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1
2.5°	2055.9	1993.9	2018.2	1946.5	1930.7	1917.3	1930.7	1852.9	1809.1	1753.2	1708.2
5°	3082.1	3007.9	3024.9	2899.7	2842.5	2803.6	2796.3	2635.9	2515.5	2383.0	2245.6
7.5°	4290.6	4220.0	4210.3	4015.8	3897.9	3831.0	3803.0	3573.2	3365.3	3129.5	2871.7
10°	5939.2	5778.7	5728.9	5446.8	5221.9	5079.6	4904.5	4537.4	4172.6	3816.4	3488.1
12.5°	7857.7	7770.2	7646.2	7148.9	6755.0	6553.2	6291.8	5717.9	5165.9	4577.5	4027.9
15°	10457.1	10145.9	9934.3	9215.8	8581.1	8269.9	7888.1	7010.3	6176.3	5431.0	4600.6
17.5°	12996.9	12834.0	12503.3	11570.8	10593.3	10102.1	9533.1	8340.4	7162.3	6102.1	5088.1
20°	15103.9	14950.7	14573.8	13694.8	12610.3	11885.7	11169.6	9533.1	7993.9	6637.1	5414.0
22.5°	16113.0	16015.7	15708.1	14955.6	14031.6	13342.2	12572.6	10548.3	8609.1	6987.2	5562.3
25°	16558.0	16513.0	16314.8	15721.5	14851.0	14266.2	13539.2	11266.8	8992.1	7150.1	5564.7
27.5°	17009.0	17017.6	16579.9	16110.6	15285.0	14723.3	14023.0	11585.4	9061.4	7058.9	5382.3
30°	17151.3	17061.3	16868.0	16194.5	15410.3	14813.3	14061.9	11438.3	8776.9	6684.5	5018.8
32.5°	17092.9	17057.7	16844.9	16132.5	15197.5	14539.8	13686.3	10854.7	8215.2	6149.5	4503.3
35°	17088.1	17022.4	16534.9	15923.3	14772.0	13959.8	12835.2	9911.2	7420.0	5444.4	3896.6
37.5°	16779.3	16616.3	16250.4	15426.1	13908.8	12879.0	11618.2	8758.6	6447.4	4652.9	3294.8
40°	16325.8	16106.9	15625.5	14378.1	12413.3	11226.7	9996.3	7449.2	5417.6	3872.3	2655.3
42.5°	15378.7	15048.0	14367.1	12651.6	10420.6	9350.7	8327.0	6122.8	4418.2	3155.0	2026.7
45°	13610.9	13158.6	12238.2	10355.0	8418.2	7545.3	6722.2	4926.4	3536.8	2340.4	1336.2
47.5°	10939.8	10520.3	9682.6	8243.1	6601.8	5863.8	5207.3	3664.4	2397.6	1355.6	638.3
50°	8144.6	7784.8	7130.7	5728.9	4431.6	3851.7	3290.0	2081.5	1123.4	644.4	265.0
52.5°	4859.6	4680.8	4100.9	3176.9	2188.4	1885.7	1513.7	881.5	566.6	233.4	71.7
55°	1990.3	1837.1	1619.4	1299.7	952.0	807.3	690.6	435.3	176.3	48.6	26.7
57.5°	899.7	865.6	767.2	603.0	437.7	367.2	248.0	82.7	38.9	24.3	15.8
60°	346.5	312.5	267.5	144.7	62.0	52.3	42.6	28.0	19.5	13.4	9.7
62.5°	49.8	47.4	42.6	34.0	26.7	24.3	20.7	14.6	10.9	8.5	7.3
65°	20.7	20.7	18.2	14.6	12.2	10.9	9.7	7.3	6.1	6.1	6.1
67.5°	8.5	8.5	7.3	6.1	4.9	4.9	4.9	3.6	4.9	4.9	6.1
70°	2.4	2.4	2.4	2.4	2.4	2.4	3.6	3.6	4.9	4.9	6.1
72.5°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.6	4.9	6.1	6.1
75°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.6	4.9	6.1	6.1
77.5°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.9	6.1	6.1
80°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.9	6.1	7.3
82.5°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.9	6.1	7.3
85°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.9	6.1	7.3
87.5°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.9	6.1	7.3
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°	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1
2.5°	1669.3	1591.5	1569.6	1501.5	1444.4	1416.4	1381.1	1302.1	1242.5	1163.5	1116.1
5°	2149.5	2002.4	1885.7	1743.5	1649.8	1589.1	1494.2	1349.5	1232.8	1093.0	993.3
7.5°	2668.7	2400.0	2189.7	1955.0	1820.1	1714.3	1552.6	1344.7	1173.2	987.2	832.8
10°	3169.6	2768.4	2437.7	2100.9	1923.4	1776.3	1553.8	1292.4	1065.0	830.4	667.5
12.5°	3610.9	3093.0	2627.3	2194.5	1974.5	1790.9	1512.5	1198.8	924.0	683.3	539.8
15°	3979.3	3344.7	2761.1	2229.8	1978.1	1759.3	1426.1	1065.0	767.2	553.2	452.3
17.5°	4258.9	3477.2	2802.4	2187.2	1907.6	1669.3	1293.6	896.0	622.5	469.3	380.5
20°	4403.6	3502.7	2742.8	2071.7	1777.5	1533.1	1119.8	727.0	527.7	408.5	318.5
22.5°	4421.9	3431.0	2600.6	1906.4	1613.4	1367.8	927.7	606.7	470.5	361.1	280.8
25°	4313.7	3275.4	2397.6	1719.1	1433.4	1178.1	755.0	543.5	428.0	324.6	323.4
27.5°	4082.7	3007.9	2154.4	1501.5	1215.8	958.1	640.7	491.2	381.8	344.1	366.0
30°	3756.8	2665.0	1855.3	1226.7	949.5	736.8	539.8	404.9	335.6	339.2	357.4
32.5°	3315.5	2239.5	1503.9	898.5	679.6	554.4	404.9	276.0	278.4	279.6	295.4
35°	2761.1	1795.7	1123.4	604.3	477.8	390.3	228.6	203.0	206.7	207.9	218.8
37.5°	2212.8	1379.9	746.5	402.4	300.3	205.5	142.2	136.2	138.6	137.4	149.5
40°	1694.8	961.7	447.4	199.4	115.5	96.0	87.5	83.9	85.1	86.3	93.6
42.5°	1200.0	521.6	221.3	75.4	60.8	55.9	52.3	49.8	51.1	51.1	55.9
45°	609.1	246.8	75.4	41.3	37.7	34.0	31.6	30.4	30.4	30.4	32.8
47.5°	263.8	81.5	35.3	25.5	23.1	21.9	19.5	18.2	18.2	18.2	19.5
50°	82.7	32.8	21.9	17.0	14.6	13.4	12.2	12.2	12.2	10.9	12.2
52.5°	30.4	20.7	14.6	10.9	9.7	9.7	9.7	8.5	9.7	8.5	9.7
55°	18.2	13.4	9.7	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
57.5°	12.2	9.7	8.5	8.5	7.3	7.3	8.5	8.5	8.5	8.5	8.5
60°	8.5	8.5	7.3	7.3	7.3	7.3	8.5	8.5	8.5	8.5	8.5
62.5°	7.3	7.3	7.3	7.3	7.3	7.3	8.5	8.5	8.5	8.5	9.7
65°	6.1	7.3	7.3	7.3	7.3	7.3	8.5	8.5	9.7	9.7	9.7
67.5°	6.1	7.3	7.3	8.5	8.5	8.5	8.5	9.7	9.7	9.7	9.7
70°	7.3	7.3	8.5	8.5	8.5	8.5	9.7	9.7	9.7	9.7	10.9
72.5°	7.3	7.3	8.5	8.5	8.5	8.5	9.7	9.7	10.9	10.9	10.9
75°	7.3	8.5	8.5	8.5	8.5	9.7	9.7	9.7	10.9	10.9	10.9
77.5°	7.3	8.5	8.5	9.7	9.7	9.7	9.7	10.9	10.9	10.9	10.9
80°	7.3	8.5	8.5	9.7	9.7	9.7	10.9	10.9	10.9	10.9	12.2
82.5°	7.3	8.5	8.5	9.7	9.7	9.7	10.9	10.9	10.9	10.9	12.2
85°	8.5	8.5	9.7	9.7	9.7	9.7	10.9	10.9	10.9	10.9	12.2
87.5°	8.5	8.5	9.7	9.7	9.7	9.7	10.9	10.9	12.2	10.9	12.2
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°	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1
2.5°	1052.9	982.4	933.7	915.5	880.2	824.3	791.5	761.1	703.9	691.8	660.2
5°	879.0	766.0	685.7	655.3	615.2	567.8	521.6	491.2	454.7	440.1	418.2
7.5°	693.0	579.9	510.6	486.3	458.4	419.5	378.1	347.7	310.0	290.6	272.3
10°	544.7	460.8	402.4	378.1	348.9	307.6	265.0	224.9	192.1	171.4	167.8
12.5°	442.6	373.3	311.2	285.7	251.7	210.3	179.9	178.7	176.3	175.1	177.5
15°	362.3	295.4	229.8	201.8	192.1	190.9	194.5	198.2	197.0	200.6	203.0
17.5°	297.9	226.1	211.5	212.8	214.0	217.6	223.7	233.4	234.6	240.7	245.6
20°	243.2	239.5	245.6	250.5	254.1	261.4	274.8	286.9	290.6	299.1	308.8
22.5°	276.0	286.9	300.3	306.4	311.2	324.6	339.2	358.7	366.0	376.9	390.3
25°	333.1	351.4	372.0	379.3	386.6	408.5	425.5	448.6	454.7	468.1	481.5
27.5°	380.5	400.0	421.9	431.6	437.7	459.6	474.2	488.8	488.8	496.0	505.8
30°	373.3	389.1	407.3	414.6	417.0	432.8	447.4	452.3	449.8	453.5	460.8
32.5°	310.0	322.2	336.8	342.9	345.3	356.2	368.4	368.4	367.2	367.2	372.0
35°	229.8	238.3	245.6	251.7	255.3	262.6	273.6	272.3	272.3	269.9	273.6
37.5°	154.4	159.3	167.8	170.2	171.4	176.3	184.8	184.8	182.4	183.6	186.0
40°	93.6	99.7	104.6	105.8	108.2	111.9	117.9	117.9	117.9	117.9	119.1
42.5°	55.9	59.6	63.2	63.2	64.4	69.3	71.7	71.7	71.7	71.7	72.9
45°	32.8	34.0	36.5	37.7	37.7	40.1	41.3	41.3	41.3	41.3	42.6
47.5°	19.5	20.7	20.7	21.9	21.9	23.1	24.3	24.3	23.1	23.1	23.1
50°	12.2	12.2	12.2	12.2	13.4	13.4	13.4	13.4	13.4	13.4	12.2
52.5°	9.7	9.7	9.7	9.7	8.5	8.5	8.5	8.5	7.3	7.3	6.1
55°	8.5	8.5	8.5	8.5	8.5	7.3	7.3	7.3	6.1	4.9	3.6
57.5°	8.5	8.5	8.5	8.5	8.5	7.3	7.3	6.1	4.9	4.9	3.6
60°	8.5	8.5	8.5	8.5	8.5	7.3	7.3	6.1	4.9	4.9	3.6
62.5°	9.7	9.7	8.5	8.5	8.5	7.3	7.3	6.1	6.1	4.9	3.6
65°	9.7	9.7	8.5	8.5	8.5	8.5	7.3	7.3	6.1	4.9	3.6
67.5°	9.7	9.7	9.7	9.7	8.5	8.5	8.5	7.3	6.1	4.9	3.6
70°	10.9	10.9	9.7	9.7	9.7	8.5	8.5	7.3	6.1	6.1	4.9
72.5°	10.9	10.9	9.7	9.7	9.7	9.7	8.5	7.3	7.3	6.1	4.9
75°	10.9	10.9	10.9	10.9	9.7	9.7	8.5	8.5	7.3	6.1	4.9
77.5°	10.9	10.9	10.9	10.9	9.7	9.7	9.7	8.5	7.3	6.1	4.9
80°	10.9	10.9	10.9	10.9	10.9	9.7	9.7	8.5	7.3	6.1	4.9
82.5°	12.2	12.2	10.9	10.9	10.9	9.7	9.7	8.5	7.3	6.1	6.1
85°	12.2	12.2	10.9	10.9	10.9	9.7	9.7	8.5	7.3	7.3	6.1
87.5°	12.2	12.2	10.9	10.9	10.9	9.7	9.7	8.5	7.3	7.3	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



TEST NUMBER: P209061

CATALOG NUMBER: LDSQA6A75830D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1	1206.1
2.5°	640.7	604.3	592.1	600.6	590.9	583.6	573.9	569.0
5°	401.2	374.5	366.0	368.4	359.9	352.6	342.9	340.4
7.5°	246.8	221.3	211.5	211.5	201.8	193.3	187.2	183.6
10°	165.3	160.5	161.7	162.9	161.7	162.9	159.3	161.7
12.5°	177.5	175.1	177.5	178.7	178.7	181.2	176.3	179.9
15°	206.7	204.3	207.9	210.3	210.3	214.0	209.1	212.8
17.5°	252.9	251.7	257.7	260.2	261.4	267.5	261.4	266.3
20°	319.8	318.5	327.1	330.7	329.5	341.6	333.1	341.6
22.5°	406.1	403.6	415.8	419.5	420.7	436.5	429.2	435.3
25°	492.4	494.8	500.9	507.0	508.2	521.6	510.6	516.7
27.5°	510.6	507.0	510.6	517.9	519.1	525.2	515.5	520.4
30°	462.0	455.9	457.1	465.7	468.1	470.5	462.0	464.4
32.5°	375.7	366.0	366.0	374.5	376.9	380.5	366.0	372.0
35°	277.2	268.7	268.7	274.8	276.0	278.4	267.5	272.3
37.5°	189.7	182.4	184.8	187.2	188.4	190.9	189.7	188.4
40°	121.6	116.7	120.4	120.4	121.6	122.8	122.8	124.0
42.5°	74.2	70.5	72.9	72.9	74.2	74.2	74.2	75.4
45°	42.6	41.3	41.3	42.6	42.6	42.6	41.3	42.6
47.5°	23.1	21.9	23.1	23.1	23.1	23.1	23.1	23.1
50°	12.2	10.9	10.9	10.9	10.9	10.9	10.9	10.9
52.5°	6.1	4.9	4.9	4.9	3.6	4.9	3.6	3.6
55°	3.6	2.4	2.4	2.4	1.2	1.2	0.0	0.0
57.5°	2.4	1.2	1.2	1.2	0.0	0.0	0.0	0.0
60°	2.4	1.2	1.2	1.2	0.0	0.0	0.0	0.0
62.5°	2.4	1.2	1.2	1.2	0.0	0.0	0.0	0.0
65°	2.4	1.2	1.2	1.2	0.0	0.0	0.0	0.0
67.5°	3.6	2.4	1.2	1.2	1.2	0.0	0.0	0.0
70°	3.6	2.4	2.4	1.2	1.2	0.0	0.0	0.0
72.5°	3.6	2.4	2.4	2.4	1.2	1.2	0.0	0.0
75°	3.6	2.4	2.4	2.4	1.2	1.2	0.0	0.0
77.5°	3.6	3.6	2.4	2.4	1.2	1.2	1.2	0.0
80°	4.9	3.6	2.4	2.4	2.4	1.2	1.2	1.2
82.5°	4.9	3.6	2.4	2.4	2.4	1.2	1.2	1.2
85°	4.9	3.6	3.6	2.4	2.4	1.2	1.2	1.2
87.5°	4.9	3.6	3.6	2.4	2.4	1.2	1.2	1.2
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)