

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: P209060

Luminaire Tested: **LDSQA6A75827D010TE LARH30NF 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209060
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: LDSQA6A75827D010TE 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 / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6529.1 lumens
Efficiency: N/A
Efficacy: 82.2 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

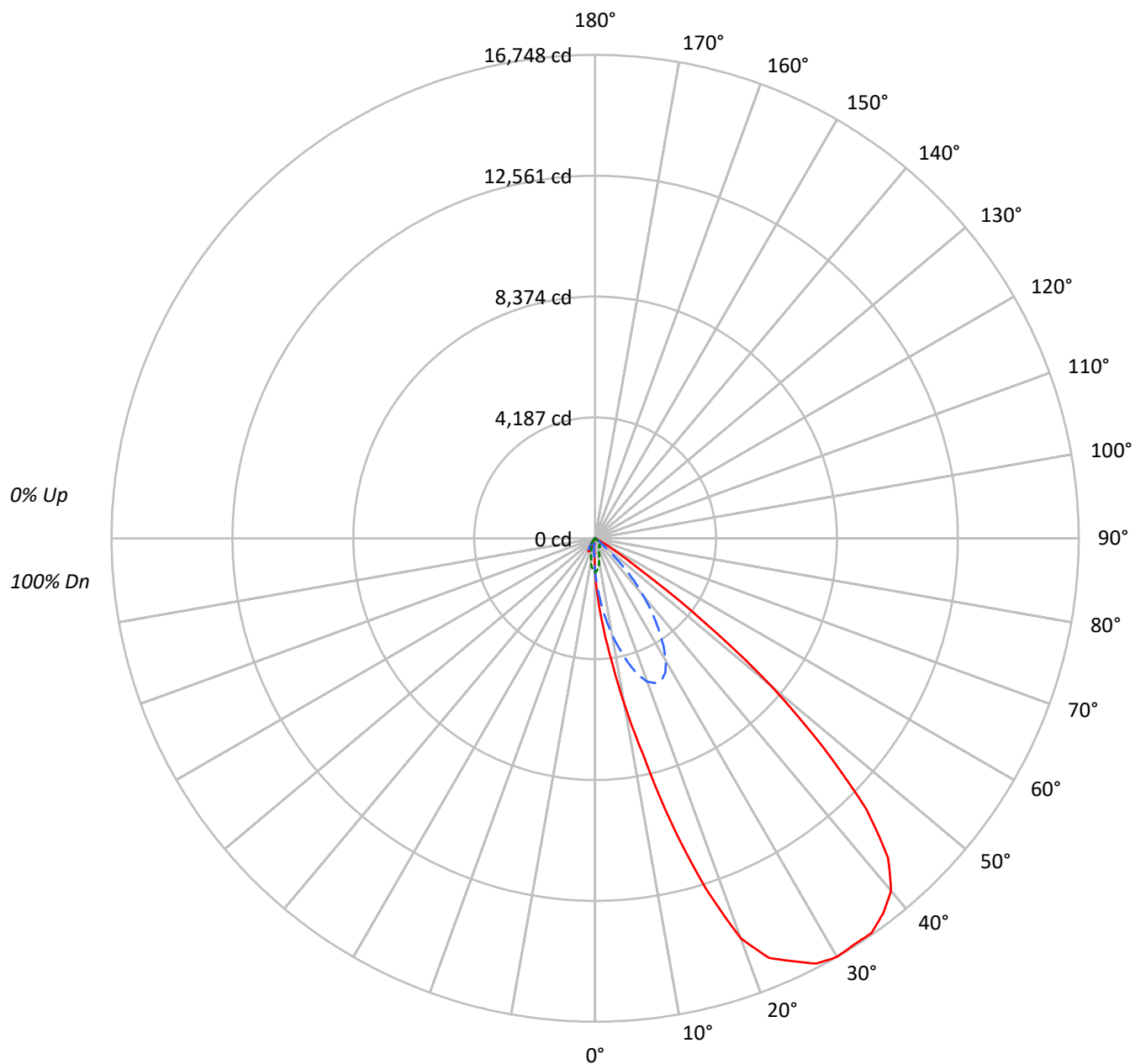
Input Watts (W): 79.45
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	50707	50707	50707
5°	130075	46129	14366
10°	253553	35452	6903
15°	455159	24079	9263
20°	675769	18277	15285
25°	768116	15060	23972
30°	832645	16466	22546
35°	877048	10670	13976
40°	896012	4738	6806
45°	809275	1808	2533
50°	532720	717	717
55°	145889	623	0
60°	29140	715	0
65°	2058	968	0
70°	302	1196	0
75°	0	1780	0
80°	0	2653	298
85°	0	5286	593



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	144.3	2.2
10°-20°	766.4	11.7
20°-30°	1737.1	26.6
30°-40°	2085.1	31.9
40°-50°	1469.6	22.5
50°-60°	303.2	4.6
60°-70°	10.7	0.2
70°-80°	6.4	0.1
80°-90°	6.3	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°	2647.8	40.6
0°-40°	4732.9	72.5
0°-60°	6505.7	99.6
0°-90°	6529.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6529.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1178	1178	1178	1178	1178	
5°	3010	2193	1067	444	332	370
15°	10211	4492	540	192	208	3030
25°	16169	5434	317	444	505	7462
35°	16686	3805	203	266	266	10373
45°	13291	1305	30	40	42	9775
55°	1944	26	8	6	0	2561
65°	20	6	10	6	0	60
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°	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7
2.5°	2007.6	1947.0	1970.8	1900.7	1885.3	1872.2	1885.3	1809.3	1766.6	1712.0	1668.0
5°	3009.6	2937.1	2953.8	2831.5	2775.7	2737.7	2730.6	2573.9	2456.3	2326.9	2192.8
7.5°	4189.7	4120.8	4111.3	3921.3	3806.2	3740.9	3713.6	3489.2	3286.2	3055.9	2804.2
10°	5799.5	5642.8	5594.1	5318.7	5099.1	4960.2	4789.2	4430.7	4074.5	3726.6	3406.1
12.5°	7672.9	7587.4	7466.3	6980.8	6596.1	6399.0	6143.8	5583.4	5044.4	4469.8	3933.2
15°	10211.2	9907.2	9700.7	8999.0	8379.3	8075.4	7702.6	6845.4	6031.0	5303.3	4492.4
17.5°	12691.2	12532.2	12209.2	11298.6	10344.1	9864.5	9308.9	8144.2	6993.8	5958.6	4968.5
20°	14748.7	14599.1	14231.0	13372.7	12313.7	11606.1	10906.9	9308.9	7805.9	6481.0	5286.6
22.5°	15734.1	15639.1	15338.7	14603.8	13701.6	13028.4	12276.9	10300.2	8406.6	6822.9	5431.5
25°	16168.6	16124.6	15931.1	15351.8	14501.7	13930.7	13220.7	11001.8	8780.6	6982.0	5433.8
27.5°	16609.0	16617.3	16189.9	15731.7	14925.6	14377.1	13693.2	11312.9	8848.3	6892.9	5255.8
30°	16747.9	16660.1	16471.3	15813.6	15047.8	14464.9	13731.2	11169.2	8570.4	6527.3	4900.8
32.5°	16690.9	16656.5	16448.8	15753.0	14840.1	14197.8	13364.4	10599.4	8022.0	6004.9	4397.4
35°	16686.2	16622.1	16146.0	15548.8	14424.6	13631.5	12533.3	9678.1	7245.5	5316.3	3805.0
37.5°	16384.6	16225.6	15868.2	15063.3	13581.6	12576.1	11344.9	8552.6	6295.8	4543.4	3217.3
40°	15941.8	15728.1	15258.0	14039.9	12121.4	10962.7	9761.2	7274.0	5290.2	3781.3	2592.9
42.5°	15017.0	14694.1	14029.2	12354.1	10175.5	9130.8	8131.2	5978.8	4314.3	3080.8	1979.1
45°	13290.8	12849.1	11950.4	10111.4	8220.2	7367.8	6564.1	4810.6	3453.6	2285.4	1304.7
47.5°	10682.5	10272.9	9454.9	8049.3	6446.5	5725.9	5084.8	3578.2	2341.2	1323.7	623.3
50°	7953.1	7601.7	6963.0	5594.1	4327.4	3761.1	3212.6	2032.5	1097.0	629.2	258.8
52.5°	4745.3	4570.7	4004.4	3102.2	2137.0	1841.4	1478.1	860.7	553.2	227.9	70.0
55°	1943.5	1793.9	1581.4	1269.1	929.6	788.3	674.3	425.0	172.1	47.5	26.1
57.5°	878.5	845.3	749.1	588.9	427.4	358.5	242.2	80.7	38.0	23.7	15.4
60°	338.4	305.1	261.2	141.3	60.5	51.0	41.6	27.3	19.0	13.1	9.5
62.5°	48.7	46.3	41.6	33.2	26.1	23.7	20.2	14.2	10.7	8.3	7.1
65°	20.2	20.2	17.8	14.2	11.9	10.7	9.5	7.1	5.9	5.9	5.9
67.5°	8.3	8.3	7.1	5.9	4.7	4.7	4.7	3.6	4.7	4.7	5.9
70°	2.4	2.4	2.4	2.4	2.4	2.4	3.6	3.6	4.7	4.7	5.9
72.5°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.6	4.7	5.9	5.9
75°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.6	4.7	5.9	5.9
77.5°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.7	5.9	5.9
80°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.7	5.9	7.1
82.5°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.7	5.9	7.1
85°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.7	5.9	7.1
87.5°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.7	5.9	7.1
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°	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7
2.5°	1630.0	1554.1	1532.7	1466.2	1410.4	1383.1	1348.7	1271.5	1213.3	1136.2	1089.9
5°	2099.0	1955.3	1841.4	1702.5	1611.0	1551.7	1459.1	1317.8	1203.8	1067.3	969.9
7.5°	2605.9	2343.5	2138.2	1909.0	1777.2	1674.0	1516.1	1313.1	1145.7	964.0	813.2
10°	3095.0	2703.3	2380.3	2051.5	1878.2	1734.5	1517.3	1262.0	1040.0	810.9	651.8
12.5°	3526.0	3020.3	2565.6	2142.9	1928.0	1748.8	1476.9	1170.6	902.3	667.2	527.1
15°	3885.7	3266.0	2696.1	2177.3	1931.6	1717.9	1392.6	1040.0	749.1	540.2	441.6
17.5°	4158.8	3395.4	2736.5	2135.8	1862.7	1630.0	1263.2	875.0	607.8	458.3	371.6
20°	4300.1	3420.3	2678.3	2023.0	1735.7	1497.1	1093.4	709.9	515.2	398.9	311.0
22.5°	4317.9	3350.3	2539.4	1861.5	1575.4	1335.6	905.8	592.4	459.4	352.6	274.2
25°	4212.2	3198.3	2341.2	1678.7	1399.7	1150.4	737.3	530.7	417.9	317.0	315.8
27.5°	3986.6	2937.1	2103.7	1466.2	1187.2	935.5	625.7	479.6	372.8	336.0	357.3
30°	3668.5	2602.4	1811.7	1197.9	927.2	719.4	527.1	395.3	327.7	331.2	349.0
32.5°	3237.5	2186.8	1468.6	877.3	663.6	541.4	395.3	269.5	271.9	273.1	288.5
35°	2696.1	1753.5	1097.0	590.0	466.6	381.1	223.2	198.3	201.8	203.0	213.7
37.5°	2160.7	1347.5	728.9	393.0	293.2	200.6	138.9	133.0	135.3	134.2	146.0
40°	1655.0	939.1	436.9	194.7	112.8	93.8	85.5	81.9	83.1	84.3	91.4
42.5°	1171.8	509.3	216.1	73.6	59.4	54.6	51.0	48.7	49.9	49.9	54.6
45°	594.8	241.0	73.6	40.4	36.8	33.2	30.9	29.7	29.7	29.7	32.1
47.5°	257.6	79.5	34.4	24.9	22.6	21.4	19.0	17.8	17.8	17.8	19.0
50°	80.7	32.1	21.4	16.6	14.2	13.1	11.9	11.9	11.9	10.7	11.9
52.5°	29.7	20.2	14.2	10.7	9.5	9.5	9.5	8.3	9.5	8.3	9.5
55°	17.8	13.1	9.5	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
57.5°	11.9	9.5	8.3	8.3	7.1	7.1	8.3	8.3	8.3	8.3	8.3
60°	8.3	8.3	7.1	7.1	7.1	7.1	8.3	8.3	8.3	8.3	8.3
62.5°	7.1	7.1	7.1	7.1	7.1	7.1	8.3	8.3	8.3	8.3	9.5
65°	5.9	7.1	7.1	7.1	7.1	7.1	8.3	8.3	9.5	9.5	9.5
67.5°	5.9	7.1	7.1	8.3	8.3	8.3	8.3	9.5	9.5	9.5	9.5
70°	7.1	7.1	8.3	8.3	8.3	8.3	9.5	9.5	9.5	9.5	10.7
72.5°	7.1	7.1	8.3	8.3	8.3	8.3	9.5	9.5	10.7	10.7	10.7
75°	7.1	8.3	8.3	8.3	8.3	9.5	9.5	9.5	10.7	10.7	10.7
77.5°	7.1	8.3	8.3	9.5	9.5	9.5	9.5	10.7	10.7	10.7	10.7
80°	7.1	8.3	8.3	9.5	9.5	9.5	10.7	10.7	10.7	10.7	11.9
82.5°	7.1	8.3	8.3	9.5	9.5	9.5	10.7	10.7	10.7	10.7	11.9
85°	8.3	8.3	9.5	9.5	9.5	9.5	10.7	10.7	10.7	10.7	11.9
87.5°	8.3	8.3	9.5	9.5	9.5	9.5	10.7	10.7	11.9	10.7	11.9
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°	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7
2.5°	1028.1	959.3	911.8	894.0	859.5	804.9	772.9	743.2	687.4	675.5	644.7
5°	858.4	747.9	669.6	639.9	600.7	554.4	509.3	479.6	444.0	429.8	408.4
7.5°	676.7	566.3	498.6	474.9	447.6	409.6	369.2	339.5	302.7	283.7	265.9
10°	531.9	450.0	393.0	369.2	340.7	300.4	258.8	219.6	187.6	167.4	163.8
12.5°	432.1	364.5	303.9	279.0	245.8	205.4	175.7	174.5	172.1	171.0	173.3
15°	353.8	288.5	224.4	197.1	187.6	186.4	190.0	193.5	192.3	195.9	198.3
17.5°	290.9	220.8	206.6	207.8	208.9	212.5	218.4	227.9	229.1	235.1	239.8
20°	237.4	233.9	239.8	244.6	248.1	255.2	268.3	280.2	283.7	292.1	301.6
22.5°	269.5	280.2	293.2	299.2	303.9	317.0	331.2	350.2	357.3	368.0	381.1
25°	325.3	343.1	363.3	370.4	377.5	398.9	415.5	438.1	444.0	457.1	470.1
27.5°	371.6	390.6	412.0	421.5	427.4	448.8	463.0	477.3	477.3	484.4	493.9
30°	364.5	379.9	397.7	404.8	407.2	422.6	436.9	441.6	439.3	442.8	450.0
32.5°	302.7	314.6	328.9	334.8	337.2	347.9	359.7	359.7	358.5	358.5	363.3
35°	224.4	232.7	239.8	245.8	249.3	256.4	267.1	265.9	265.9	263.6	267.1
37.5°	150.8	155.5	163.8	166.2	167.4	172.1	180.5	180.5	178.1	179.3	181.6
40°	91.4	97.4	102.1	103.3	105.7	109.2	115.2	115.2	115.2	115.2	116.3
42.5°	54.6	58.2	61.7	61.7	62.9	67.7	70.0	70.0	70.0	70.0	71.2
45°	32.1	33.2	35.6	36.8	36.8	39.2	40.4	40.4	40.4	40.4	41.6
47.5°	19.0	20.2	20.2	21.4	21.4	22.6	23.7	23.7	22.6	22.6	22.6
50°	11.9	11.9	11.9	11.9	13.1	13.1	13.1	13.1	13.1	13.1	11.9
52.5°	9.5	9.5	9.5	9.5	8.3	8.3	8.3	8.3	7.1	7.1	5.9
55°	8.3	8.3	8.3	8.3	8.3	7.1	7.1	7.1	5.9	4.7	3.6
57.5°	8.3	8.3	8.3	8.3	8.3	7.1	7.1	5.9	4.7	4.7	3.6
60°	8.3	8.3	8.3	8.3	8.3	7.1	7.1	5.9	4.7	4.7	3.6
62.5°	9.5	9.5	8.3	8.3	8.3	7.1	7.1	5.9	5.9	4.7	3.6
65°	9.5	9.5	8.3	8.3	8.3	8.3	7.1	7.1	5.9	4.7	3.6
67.5°	9.5	9.5	9.5	9.5	8.3	8.3	8.3	7.1	5.9	4.7	3.6
70°	10.7	10.7	9.5	9.5	9.5	8.3	8.3	7.1	5.9	5.9	4.7
72.5°	10.7	10.7	9.5	9.5	9.5	9.5	8.3	7.1	7.1	5.9	4.7
75°	10.7	10.7	10.7	10.7	9.5	9.5	8.3	8.3	7.1	5.9	4.7
77.5°	10.7	10.7	10.7	10.7	9.5	9.5	9.5	8.3	7.1	5.9	4.7
80°	10.7	10.7	10.7	10.7	10.7	9.5	9.5	8.3	7.1	5.9	4.7
82.5°	11.9	11.9	10.7	10.7	10.7	9.5	9.5	8.3	7.1	5.9	5.9
85°	11.9	11.9	10.7	10.7	10.7	9.5	9.5	8.3	7.1	7.1	5.9
87.5°	11.9	11.9	10.7	10.7	10.7	9.5	9.5	8.3	7.1	7.1	5.9
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: P209060

CATALOG NUMBER: LDSQA6A75827D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7	1177.7
2.5°	625.7	590.0	578.2	586.5	577.0	569.9	560.4	555.6
5°	391.8	365.7	357.3	359.7	351.4	344.3	334.8	332.4
7.5°	241.0	216.1	206.6	206.6	197.1	188.8	182.8	179.3
10°	161.5	156.7	157.9	159.1	157.9	159.1	155.5	157.9
12.5°	173.3	171.0	173.3	174.5	174.5	176.9	172.1	175.7
15°	201.8	199.5	203.0	205.4	205.4	208.9	204.2	207.8
17.5°	246.9	245.8	251.7	254.1	255.2	261.2	255.2	260.0
20°	312.2	311.0	319.4	322.9	321.7	333.6	325.3	333.6
22.5°	396.5	394.2	406.0	409.6	410.8	426.2	419.1	425.0
25°	480.8	483.2	489.1	495.1	496.3	509.3	498.6	504.6
27.5°	498.6	495.1	498.6	505.8	506.9	512.9	503.4	508.1
30°	451.1	445.2	446.4	454.7	457.1	459.4	451.1	453.5
32.5°	366.8	357.3	357.3	365.7	368.0	371.6	357.3	363.3
35°	270.7	262.4	262.4	268.3	269.5	271.9	261.2	265.9
37.5°	185.2	178.1	180.5	182.8	184.0	186.4	185.2	184.0
40°	118.7	114.0	117.5	117.5	118.7	119.9	119.9	121.1
42.5°	72.4	68.9	71.2	71.2	72.4	72.4	72.4	73.6
45°	41.6	40.4	40.4	41.6	41.6	41.6	40.4	41.6
47.5°	22.6	21.4	22.6	22.6	22.6	22.6	22.6	22.6
50°	11.9	10.7	10.7	10.7	10.7	10.7	10.7	10.7
52.5°	5.9	4.7	4.7	4.7	3.6	4.7	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°	4.7	3.6	2.4	2.4	2.4	1.2	1.2	1.2
82.5°	4.7	3.6	2.4	2.4	2.4	1.2	1.2	1.2
85°	4.7	3.6	3.6	2.4	2.4	1.2	1.2	1.2
87.5°	4.7	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)