

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: P209062

Luminaire Tested: **LDSQA6A75835D010TE LARH30NF 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209062
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: LDSQA6A75835D010TE 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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6938.0 lumens
Efficiency: N/A
Efficacy: 87.3 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

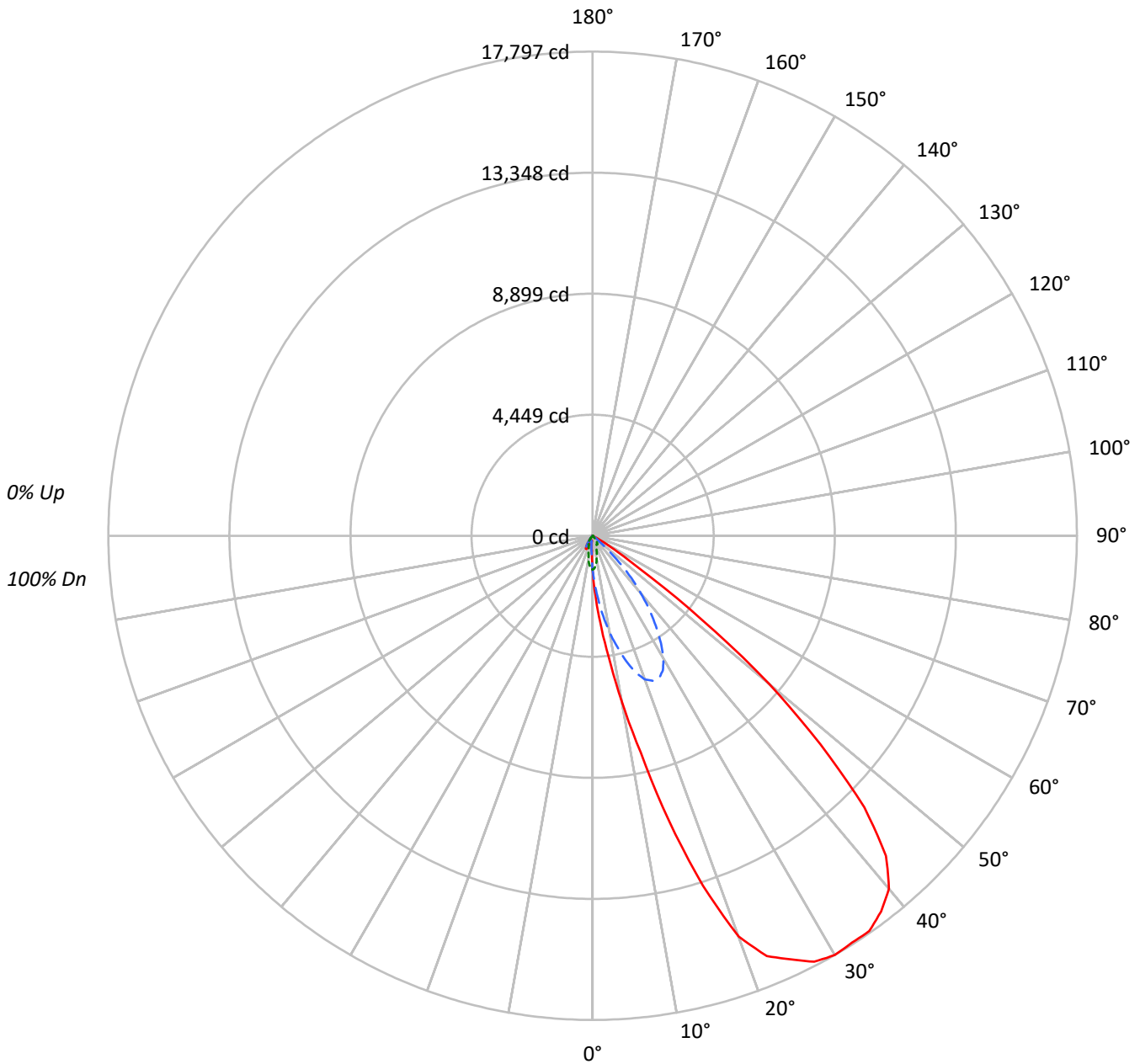
Input Watts (W): 79.45
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P209062

CATALOG NUMBER: LDSQA6A75835D010TE LARH30NF 6LSQA1H 30°

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°	53884	53884	53884
5°	138218	49016	15265
10°	269432	37669	7336
15°	483660	25586	9842
20°	718083	19423	16243
25°	816217	16000	25473
30°	884788	17500	23958
35°	931969	11337	14854
40°	952121	5036	7234
45°	859954	1918	2691
50°	566078	764	764
55°	155025	661	0
60°	30957	758	0
65°	2180	1029	0
70°	315	1271	0
75°	0	1896	0
80°	0	2827	322
85°	0	5632	642



TEST NUMBER: P209062

CATALOG NUMBER: LDSQA6A75835D010TE LARH30NF 6LSQA1H 30°

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.3	2.2
10°-20°	814.4	11.7
20°-30°	1845.9	26.6
30°-40°	2215.7	31.9
40°-50°	1561.6	22.5
50°-60°	322.2	4.6
60°-70°	11.4	0.2
70°-80°	6.8	0.1
80°-90°	6.7	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°	2813.6	40.6
0°-40°	5029.3	72.5
0°-60°	6913.1	99.6
0°-90°	6938.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6938.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1252	1252	1252	1252	1252	
5°	3198	2330	1134	472	353	393
15°	10851	4774	574	204	221	3220
25°	17181	5774	337	472	536	7929
35°	17731	4043	216	283	283	11023
45°	14123	1386	32	43	44	10387
55°	2065	28	9	6	0	2721
65°	21	6	10	6	0	64
75°	0	6	11	8	0	0
85°	0	8	11	8	1	0
90°	0	0	0	0	0	



TEST NUMBER: P209062

CATALOG NUMBER: LDSQA6A75835D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5
2.5°	2133.3	2068.9	2094.2	2019.7	2003.3	1989.5	2003.3	1922.6	1877.2	1819.2	1772.5
5°	3198.0	3121.1	3138.7	3008.8	2949.5	2909.1	2901.6	2735.0	2610.1	2472.6	2330.1
7.5°	4452.0	4378.8	4368.7	4166.9	4044.5	3975.1	3946.1	3707.7	3492.0	3247.2	2979.8
10°	6162.7	5996.1	5944.4	5651.7	5418.4	5270.8	5089.1	4708.1	4329.6	3960.0	3619.4
12.5°	8153.4	8062.6	7933.9	7417.9	7009.2	6799.8	6528.5	5933.1	5360.3	4749.7	4179.5
15°	10850.6	10527.6	10308.1	9562.6	8904.0	8581.1	8184.9	7274.1	6408.7	5635.3	4773.7
17.5°	13486.0	13316.9	12973.8	12006.2	10991.9	10482.2	9891.8	8654.2	7431.8	6331.7	5279.6
20°	15672.2	15513.3	15122.2	14210.1	13084.8	12332.9	11589.9	9891.8	8294.7	6886.8	5617.7
22.5°	16719.3	16618.4	16299.2	15518.3	14559.6	13844.3	13045.7	10945.2	8933.0	7250.1	5771.6
25°	17181.1	17134.4	16928.7	16313.1	15409.8	14803.0	14048.6	11690.8	9330.4	7419.2	5774.1
27.5°	17649.1	17657.9	17203.8	16716.8	15860.2	15277.4	14550.7	12021.3	9402.3	7324.6	5584.9
30°	17796.7	17703.3	17502.7	16803.8	15990.1	15370.7	14591.1	11868.7	9107.1	6936.0	5207.7
32.5°	17736.1	17699.5	17478.8	16739.5	15769.4	15086.9	14201.3	11263.1	8524.3	6380.9	4672.8
35°	17731.1	17663.0	17157.1	16522.5	15327.8	14485.1	13318.2	10284.2	7699.2	5649.2	4043.3
37.5°	17410.7	17241.6	16861.9	16006.5	14432.1	13363.6	12055.4	9088.2	6690.0	4828.0	3418.8
40°	16940.1	16713.0	16213.4	14919.1	12880.4	11649.2	10372.5	7729.5	5621.5	4018.0	2755.2
42.5°	15957.3	15614.2	14907.7	13127.7	10812.7	9702.6	8640.4	6353.2	4584.5	3273.7	2103.0
45°	14123.1	13653.8	12698.8	10744.6	8735.0	7829.2	6975.1	5111.8	3669.8	2428.5	1386.4
47.5°	11351.4	10916.2	10047.0	8553.3	6850.2	6084.5	5403.2	3802.3	2487.8	1406.6	662.3
50°	8451.1	8077.7	7399.0	5944.4	4598.4	3996.6	3413.8	2159.8	1165.7	668.6	275.0
52.5°	5042.4	4857.0	4255.2	3296.4	2270.8	1956.7	1570.6	914.6	587.9	242.2	74.4
55°	2065.2	1906.2	1680.4	1348.6	987.8	837.7	716.6	451.6	182.9	50.5	27.8
57.5°	933.5	898.2	796.0	625.7	454.2	381.0	257.4	85.8	40.4	25.2	16.4
60°	359.5	324.2	277.5	150.1	64.3	54.2	44.2	29.0	20.2	13.9	10.1
62.5°	51.7	49.2	44.2	35.3	27.8	25.2	21.4	15.1	11.4	8.8	7.6
65°	21.4	21.4	18.9	15.1	12.6	11.4	10.1	7.6	6.3	6.3	6.3
67.5°	8.8	8.8	7.6	6.3	5.0	5.0	5.0	3.8	5.0	5.0	6.3
70°	2.5	2.5	2.5	2.5	2.5	2.5	3.8	3.8	5.0	5.0	6.3
72.5°	0.0	0.0	1.3	1.3	2.5	2.5	2.5	3.8	5.0	6.3	6.3
75°	0.0	0.0	1.3	1.3	2.5	2.5	2.5	3.8	5.0	6.3	6.3
77.5°	0.0	0.0	1.3	1.3	2.5	2.5	3.8	3.8	5.0	6.3	6.3
80°	0.0	0.0	1.3	1.3	2.5	2.5	3.8	3.8	5.0	6.3	7.6
82.5°	0.0	0.0	1.3	1.3	2.5	2.5	3.8	3.8	5.0	6.3	7.6
85°	0.0	0.0	1.3	1.3	2.5	2.5	3.8	3.8	5.0	6.3	7.6
87.5°	0.0	0.0	1.3	1.3	2.5	2.5	3.8	3.8	5.0	6.3	7.6
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: P209062

CATALOG NUMBER: LDSQA6A75835D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5
2.5°	1732.1	1651.4	1628.7	1558.0	1498.7	1469.7	1433.1	1351.1	1289.3	1207.3	1158.1
5°	2230.4	2077.8	1956.7	1809.1	1711.9	1648.8	1550.4	1400.3	1279.2	1134.1	1030.7
7.5°	2769.1	2490.3	2272.1	2028.6	1888.5	1778.8	1611.0	1395.3	1217.4	1024.4	864.2
10°	3288.9	2872.5	2529.4	2180.0	1995.8	1843.1	1612.3	1341.0	1105.1	861.6	692.6
12.5°	3746.8	3209.4	2726.2	2277.1	2048.8	1858.3	1569.4	1243.9	958.8	709.0	560.1
15°	4129.1	3470.5	2865.0	2313.7	2052.5	1825.5	1479.8	1105.1	796.0	574.0	469.3
17.5°	4419.2	3608.0	2907.9	2269.5	1979.4	1732.1	1342.3	929.8	645.9	487.0	394.9
20°	4569.3	3634.5	2846.1	2149.7	1844.4	1590.8	1161.9	754.4	547.5	423.9	330.5
22.5°	4588.3	3560.1	2698.5	1978.1	1674.1	1419.2	962.6	629.5	488.2	374.7	291.4
25°	4476.0	3398.6	2487.8	1783.8	1487.4	1222.4	783.4	563.9	444.1	336.8	335.6
27.5°	4236.3	3121.1	2235.5	1558.0	1261.6	994.1	664.8	509.7	396.1	357.0	379.7
30°	3898.2	2765.3	1925.1	1272.9	985.3	764.5	560.1	420.1	348.2	352.0	370.9
32.5°	3440.2	2323.8	1560.5	932.3	705.2	575.3	420.1	286.4	288.9	290.2	306.6
35°	2865.0	1863.3	1165.7	627.0	495.8	405.0	237.2	210.7	214.5	215.7	227.1
37.5°	2296.0	1431.9	774.6	417.6	311.6	213.2	147.6	141.3	143.8	142.6	155.2
40°	1758.6	997.9	464.3	206.9	119.8	99.7	90.8	87.0	88.3	89.6	97.1
42.5°	1245.2	541.2	229.6	78.2	63.1	58.0	54.2	51.7	53.0	53.0	58.0
45°	632.0	256.1	78.2	42.9	39.1	35.3	32.8	31.5	31.5	31.5	34.1
47.5°	273.8	84.5	36.6	26.5	24.0	22.7	20.2	18.9	18.9	18.9	20.2
50°	85.8	34.1	22.7	17.7	15.1	13.9	12.6	12.6	12.6	11.4	12.6
52.5°	31.5	21.4	15.1	11.4	10.1	10.1	10.1	8.8	10.1	8.8	10.1
55°	18.9	13.9	10.1	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
57.5°	12.6	10.1	8.8	8.8	7.6	7.6	8.8	8.8	8.8	8.8	8.8
60°	8.8	8.8	7.6	7.6	7.6	7.6	8.8	8.8	8.8	8.8	8.8
62.5°	7.6	7.6	7.6	7.6	7.6	7.6	8.8	8.8	8.8	8.8	10.1
65°	6.3	7.6	7.6	7.6	7.6	7.6	8.8	8.8	10.1	10.1	10.1
67.5°	6.3	7.6	7.6	8.8	8.8	8.8	8.8	10.1	10.1	10.1	10.1
70°	7.6	7.6	8.8	8.8	8.8	8.8	10.1	10.1	10.1	10.1	11.4
72.5°	7.6	7.6	8.8	8.8	8.8	8.8	10.1	10.1	11.4	11.4	11.4
75°	7.6	8.8	8.8	8.8	8.8	10.1	10.1	10.1	11.4	11.4	11.4
77.5°	7.6	8.8	8.8	10.1	10.1	10.1	10.1	11.4	11.4	11.4	11.4
80°	7.6	8.8	8.8	10.1	10.1	10.1	11.4	11.4	11.4	11.4	12.6
82.5°	7.6	8.8	8.8	10.1	10.1	10.1	11.4	11.4	11.4	11.4	12.6
85°	8.8	8.8	10.1	10.1	10.1	10.1	11.4	11.4	11.4	11.4	12.6
87.5°	8.8	8.8	10.1	10.1	10.1	10.1	11.4	11.4	12.6	11.4	12.6
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: P209062

CATALOG NUMBER: LDSQA6A75835D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5
2.5°	1092.5	1019.3	968.9	949.9	913.4	855.3	821.3	789.7	730.4	717.8	685.0
5°	912.1	794.8	711.5	680.0	638.3	589.1	541.2	509.7	471.8	456.7	434.0
7.5°	719.1	601.8	529.9	504.6	475.6	435.2	392.3	360.8	321.7	301.5	282.6
10°	565.2	478.1	417.6	392.3	362.1	319.2	275.0	233.4	199.3	177.9	174.1
12.5°	459.2	387.3	323.0	296.5	261.1	218.2	186.7	185.4	182.9	181.7	184.2
15°	375.9	306.6	238.4	209.4	199.3	198.1	201.8	205.6	204.4	208.2	210.7
17.5°	309.1	234.6	219.5	220.8	222.0	225.8	232.1	242.2	243.5	249.8	254.8
20°	252.3	248.5	254.8	259.9	263.7	271.2	285.1	297.7	301.5	310.3	320.4
22.5°	286.4	297.7	311.6	317.9	323.0	336.8	352.0	372.2	379.7	391.1	405.0
25°	345.7	364.6	386.0	393.6	401.2	423.9	441.5	465.5	471.8	485.7	499.6
27.5°	394.9	415.1	437.8	447.9	454.2	476.9	492.0	507.1	507.1	514.7	524.8
30°	387.3	403.7	422.6	430.2	432.7	449.1	464.3	469.3	466.8	470.6	478.1
32.5°	321.7	334.3	349.4	355.8	358.3	369.6	382.2	382.2	381.0	381.0	386.0
35°	238.4	247.3	254.8	261.1	264.9	272.5	283.8	282.6	282.6	280.1	283.8
37.5°	160.2	165.3	174.1	176.6	177.9	182.9	191.8	191.8	189.2	190.5	193.0
40°	97.1	103.4	108.5	109.8	112.3	116.1	122.4	122.4	122.4	122.4	123.6
42.5°	58.0	61.8	65.6	65.6	66.9	71.9	74.4	74.4	74.4	74.4	75.7
45°	34.1	35.3	37.8	39.1	39.1	41.6	42.9	42.9	42.9	42.9	44.2
47.5°	20.2	21.4	21.4	22.7	22.7	24.0	25.2	25.2	24.0	24.0	24.0
50°	12.6	12.6	12.6	12.6	13.9	13.9	13.9	13.9	13.9	13.9	12.6
52.5°	10.1	10.1	10.1	10.1	8.8	8.8	8.8	8.8	7.6	7.6	6.3
55°	8.8	8.8	8.8	8.8	8.8	7.6	7.6	7.6	6.3	5.0	3.8
57.5°	8.8	8.8	8.8	8.8	8.8	7.6	7.6	6.3	5.0	5.0	3.8
60°	8.8	8.8	8.8	8.8	8.8	7.6	7.6	6.3	5.0	5.0	3.8
62.5°	10.1	10.1	8.8	8.8	8.8	7.6	7.6	6.3	6.3	5.0	3.8
65°	10.1	10.1	8.8	8.8	8.8	8.8	7.6	7.6	6.3	5.0	3.8
67.5°	10.1	10.1	10.1	10.1	8.8	8.8	8.8	7.6	6.3	5.0	3.8
70°	11.4	11.4	10.1	10.1	10.1	8.8	8.8	7.6	6.3	6.3	5.0
72.5°	11.4	11.4	10.1	10.1	10.1	10.1	8.8	7.6	7.6	6.3	5.0
75°	11.4	11.4	11.4	11.4	10.1	10.1	8.8	8.8	7.6	6.3	5.0
77.5°	11.4	11.4	11.4	11.4	10.1	10.1	10.1	8.8	7.6	6.3	5.0
80°	11.4	11.4	11.4	11.4	11.4	10.1	10.1	8.8	7.6	6.3	5.0
82.5°	12.6	12.6	11.4	11.4	11.4	10.1	10.1	8.8	7.6	6.3	6.3
85°	12.6	12.6	11.4	11.4	11.4	10.1	10.1	8.8	7.6	7.6	6.3
87.5°	12.6	12.6	11.4	11.4	11.4	10.1	10.1	8.8	7.6	7.6	6.3
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: P209062

CATALOG NUMBER: LDSQA6A75835D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5	1251.5
2.5°	664.8	627.0	614.4	623.2	613.1	605.5	595.5	590.4
5°	416.3	388.6	379.7	382.2	373.4	365.8	355.8	353.2
7.5°	256.1	229.6	219.5	219.5	209.4	200.6	194.3	190.5
10°	171.6	166.5	167.8	169.0	167.8	169.0	165.3	167.8
12.5°	184.2	181.7	184.2	185.4	185.4	188.0	182.9	186.7
15°	214.5	211.9	215.7	218.2	218.2	222.0	217.0	220.8
17.5°	262.4	261.1	267.4	270.0	271.2	277.5	271.2	276.3
20°	331.8	330.5	339.4	343.1	341.9	354.5	345.7	354.5
22.5°	421.4	418.8	431.5	435.2	436.5	452.9	445.3	451.6
25°	510.9	513.5	519.8	526.1	527.3	541.2	529.9	536.2
27.5°	529.9	526.1	529.9	537.4	538.7	545.0	534.9	539.9
30°	479.4	473.1	474.3	483.2	485.7	488.2	479.4	481.9
32.5°	389.8	379.7	379.7	388.6	391.1	394.9	379.7	386.0
35°	287.6	278.8	278.8	285.1	286.4	288.9	277.5	282.6
37.5°	196.8	189.2	191.8	194.3	195.5	198.1	196.8	195.5
40°	126.2	121.1	124.9	124.9	126.2	127.4	127.4	128.7
42.5°	77.0	73.2	75.7	75.7	77.0	77.0	77.0	78.2
45°	44.2	42.9	42.9	44.2	44.2	44.2	42.9	44.2
47.5°	24.0	22.7	24.0	24.0	24.0	24.0	24.0	24.0
50°	12.6	11.4	11.4	11.4	11.4	11.4	11.4	11.4
52.5°	6.3	5.0	5.0	5.0	3.8	5.0	3.8	3.8
55°	3.8	2.5	2.5	2.5	1.3	1.3	0.0	0.0
57.5°	2.5	1.3	1.3	1.3	0.0	0.0	0.0	0.0
60°	2.5	1.3	1.3	1.3	0.0	0.0	0.0	0.0
62.5°	2.5	1.3	1.3	1.3	0.0	0.0	0.0	0.0
65°	2.5	1.3	1.3	1.3	0.0	0.0	0.0	0.0
67.5°	3.8	2.5	1.3	1.3	1.3	0.0	0.0	0.0
70°	3.8	2.5	2.5	1.3	1.3	0.0	0.0	0.0
72.5°	3.8	2.5	2.5	2.5	1.3	1.3	0.0	0.0
75°	3.8	2.5	2.5	2.5	1.3	1.3	0.0	0.0
77.5°	3.8	3.8	2.5	2.5	1.3	1.3	1.3	0.0
80°	5.0	3.8	2.5	2.5	2.5	1.3	1.3	1.3
82.5°	5.0	3.8	2.5	2.5	2.5	1.3	1.3	1.3
85°	5.0	3.8	3.8	2.5	2.5	1.3	1.3	1.3
87.5°	5.0	3.8	3.8	2.5	2.5	1.3	1.3	1.3
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)