

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: P209063

Luminaire Tested: **LDSQA6A75840D010TE LARH30NF 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209063
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: LDSQA6A75840D010TE 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: 7120.5 lumens
Efficiency: N/A
Efficacy: 89.6 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

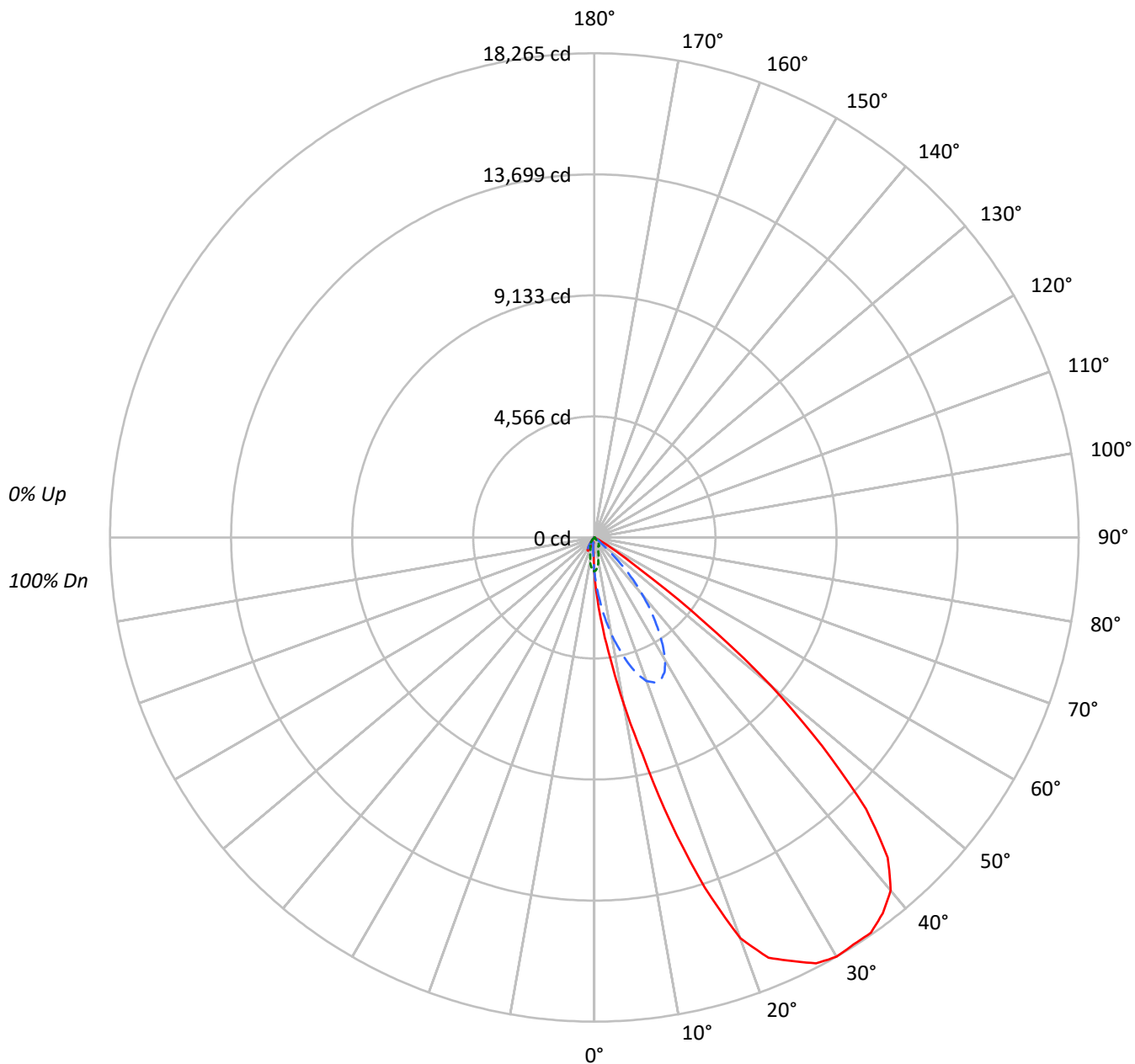
Input Watts (W): 79.45
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					0
RW	70	50	30	10	70	50	30	10	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	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°	55301	55301	55301
5°	141853	50308	15667
10°	276515	38661	7529
15°	496377	26259	10101
20°	736965	19931	16669
25°	837676	16423	26143
30°	908050	17958	24590
35°	956473	11637	15243
40°	977155	5165	7425
45°	882563	1973	2758
50°	580961	784	784
55°	159101	683	0
60°	31775	784	0
65°	2241	1060	0
70°	327	1309	0
75°	0	1946	0
80°	0	2901	322
85°	0	5780	642



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.3	2.2
10°-20°	835.8	11.7
20°-30°	1894.4	26.6
30°-40°	2274.0	31.9
40°-50°	1602.6	22.5
50°-60°	330.7	4.6
60°-70°	11.7	0.2
70°-80°	7.0	0.1
80°-90°	6.8	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°	2887.6	40.6
0°-40°	5161.6	72.5
0°-60°	7094.9	99.6
0°-90°	7120.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7120.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1284	1284	1284	1284	1284	
5°	3282	2391	1164	484	362	404
15°	11136	4899	589	210	227	3305
25°	17633	5926	346	484	550	8137
35°	18197	4150	221	290	290	11313
45°	14494	1423	32	44	45	10660
55°	2120	28	9	6	0	2793
65°	22	6	10	6	0	65
75°	0	6	12	8	0	0
85°	0	8	12	8	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°	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4
2.5°	2189.4	2123.3	2149.2	2072.8	2056.0	2041.8	2056.0	1973.2	1926.5	1867.0	1819.1
5°	3282.1	3203.1	3221.3	3087.9	3027.1	2985.6	2977.9	2807.0	2678.8	2537.6	2391.3
7.5°	4569.1	4494.0	4483.6	4276.5	4150.9	4079.7	4049.9	3805.2	3583.8	3332.6	3058.1
10°	6324.7	6153.8	6100.7	5800.3	5560.8	5409.3	5222.9	4831.9	4443.5	4064.1	3714.5
12.5°	8367.8	8274.5	8142.5	7612.9	7193.5	6978.5	6700.2	6089.1	5501.3	4874.6	4289.4
15°	11135.9	10804.4	10579.1	9814.0	9138.1	8806.7	8400.1	7465.3	6577.2	5783.5	4899.2
17.5°	13840.5	13667.1	13314.9	12321.8	11280.9	10757.8	10151.9	8881.8	7627.2	6498.2	5418.4
20°	16084.3	15921.2	15519.8	14583.7	13428.8	12657.2	11894.6	10151.9	8512.8	7067.9	5765.4
22.5°	17158.9	17055.3	16727.8	15926.3	14942.3	14208.2	13388.7	11233.0	9167.9	7440.7	5923.3
25°	17632.8	17584.9	17373.8	16742.0	15815.0	15192.2	14418.0	11998.2	9575.7	7614.2	5925.9
27.5°	18113.1	18122.2	17656.1	17156.3	16277.2	15679.0	14933.3	12337.4	9649.5	7517.1	5731.7
30°	18264.6	18168.8	17962.9	17245.7	16410.6	15774.9	14974.7	12180.7	9346.6	7118.4	5344.6
32.5°	18202.5	18164.9	17938.3	17179.6	16184.0	15483.5	14574.6	11559.2	8748.4	6548.7	4795.6
35°	18197.3	18127.4	17608.2	16956.9	15730.8	14866.0	13668.3	10554.5	7901.7	5797.8	4149.6
37.5°	17868.4	17694.9	17305.2	16427.4	14811.6	13715.0	12372.3	9327.2	6865.9	4954.9	3508.7
40°	17385.5	17152.4	16639.7	15311.3	13219.1	11955.4	10645.2	7932.7	5769.3	4123.7	2827.7
42.5°	16376.9	16024.7	15299.7	13472.8	11097.0	9957.7	8867.5	6520.2	4705.0	3359.8	2158.3
45°	14494.4	14012.7	13032.6	11027.1	8964.6	8035.0	7158.5	5246.2	3766.3	2492.3	1422.9
47.5°	11649.9	11203.2	10311.1	8778.2	7030.3	6244.4	5545.3	3902.3	2553.2	1443.6	679.7
50°	8673.3	8290.1	7593.5	6100.7	4719.2	4101.7	3503.5	2216.6	1196.3	686.2	282.2
52.5°	5175.0	4984.7	4367.1	3383.1	2330.5	2008.1	1611.9	938.7	603.3	248.6	76.4
55°	2119.5	1956.3	1724.6	1384.1	1013.8	859.7	735.4	463.5	187.7	51.8	28.5
57.5°	958.1	921.8	817.0	642.2	466.1	391.0	264.1	88.0	41.4	25.9	16.8
60°	369.0	332.7	284.8	154.1	66.0	55.7	45.3	29.8	20.7	14.2	10.4
62.5°	53.1	50.5	45.3	36.3	28.5	25.9	22.0	15.5	11.7	9.1	7.8
65°	22.0	22.0	19.4	15.5	12.9	11.7	10.4	7.8	6.5	6.5	6.5
67.5°	9.1	9.1	7.8	6.5	5.2	5.2	5.2	3.9	5.2	5.2	6.5
70°	2.6	2.6	2.6	2.6	2.6	2.6	3.9	3.9	5.2	5.2	6.5
72.5°	0.0	0.0	1.3	1.3	2.6	2.6	2.6	3.9	5.2	6.5	6.5
75°	0.0	0.0	1.3	1.3	2.6	2.6	2.6	3.9	5.2	6.5	6.5
77.5°	0.0	0.0	1.3	1.3	2.6	2.6	3.9	3.9	5.2	6.5	6.5
80°	0.0	0.0	1.3	1.3	2.6	2.6	3.9	3.9	5.2	6.5	7.8
82.5°	0.0	0.0	1.3	1.3	2.6	2.6	3.9	3.9	5.2	6.5	7.8
85°	0.0	0.0	1.3	1.3	2.6	2.6	3.9	3.9	5.2	6.5	7.8
87.5°	0.0	0.0	1.3	1.3	2.6	2.6	3.9	3.9	5.2	6.5	7.8
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°	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4
2.5°	1777.6	1694.8	1671.5	1599.0	1538.1	1508.3	1470.8	1386.6	1323.2	1239.0	1188.6
5°	2289.1	2132.4	2008.1	1856.6	1756.9	1692.2	1591.2	1437.1	1312.8	1164.0	1057.8
7.5°	2841.9	2555.8	2331.8	2081.9	1938.2	1825.6	1653.4	1432.0	1249.4	1051.3	886.9
10°	3375.3	2948.1	2595.9	2237.3	2048.2	1891.6	1654.7	1376.3	1134.2	884.3	710.8
12.5°	3845.3	3293.8	2797.9	2337.0	2102.6	1907.1	1610.6	1276.6	984.0	727.6	574.9
15°	4237.6	3561.8	2940.3	2374.5	2106.5	1873.5	1518.7	1134.2	817.0	589.1	481.6
17.5°	4535.4	3702.9	2984.3	2329.2	2031.4	1777.6	1377.6	954.2	662.9	499.8	405.2
20°	4689.5	3730.1	2920.9	2206.2	1892.9	1632.6	1192.4	774.2	561.9	435.0	339.2
22.5°	4708.9	3653.7	2769.4	2030.1	1718.1	1456.6	987.9	646.1	501.1	384.5	299.1
25°	4593.7	3488.0	2553.2	1830.7	1526.5	1254.6	804.0	578.7	455.7	345.7	344.4
27.5°	4347.7	3203.1	2294.2	1599.0	1294.7	1020.2	682.3	523.1	406.5	366.4	389.7
30°	4000.7	2838.0	1975.7	1306.4	1011.2	784.6	574.9	431.1	357.3	361.2	380.6
32.5°	3530.7	2384.9	1601.6	956.8	723.7	590.4	431.1	293.9	296.5	297.8	314.6
35°	2940.3	1912.3	1196.3	643.5	508.8	415.6	243.4	216.2	220.1	221.4	233.0
37.5°	2356.4	1469.5	795.0	428.6	319.8	218.8	151.5	145.0	147.6	146.3	159.3
40°	1804.8	1024.1	476.5	212.3	123.0	102.3	93.2	89.3	90.6	91.9	99.7
42.5°	1277.9	555.4	235.6	80.3	64.7	59.6	55.7	53.1	54.4	54.4	59.6
45°	648.7	262.8	80.3	44.0	40.1	36.3	33.7	32.4	32.4	32.4	35.0
47.5°	281.0	86.7	37.5	27.2	24.6	23.3	20.7	19.4	19.4	19.4	20.7
50°	88.0	35.0	23.3	18.1	15.5	14.2	12.9	12.9	12.9	11.7	12.9
52.5°	32.4	22.0	15.5	11.7	10.4	10.4	10.4	9.1	10.4	9.1	10.4
55°	19.4	14.2	10.4	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
57.5°	12.9	10.4	9.1	9.1	7.8	7.8	9.1	9.1	9.1	9.1	9.1
60°	9.1	9.1	7.8	7.8	7.8	7.8	9.1	9.1	9.1	9.1	9.1
62.5°	7.8	7.8	7.8	7.8	7.8	7.8	9.1	9.1	9.1	9.1	10.4
65°	6.5	7.8	7.8	7.8	7.8	7.8	9.1	9.1	10.4	10.4	10.4
67.5°	6.5	7.8	7.8	9.1	9.1	9.1	9.1	10.4	10.4	10.4	10.4
70°	7.8	7.8	9.1	9.1	9.1	9.1	10.4	10.4	10.4	10.4	11.7
72.5°	7.8	7.8	9.1	9.1	9.1	9.1	10.4	10.4	11.7	11.7	11.7
75°	7.8	9.1	9.1	9.1	9.1	10.4	10.4	10.4	11.7	11.7	11.7
77.5°	7.8	9.1	9.1	10.4	10.4	10.4	10.4	11.7	11.7	11.7	11.7
80°	7.8	9.1	9.1	10.4	10.4	10.4	11.7	11.7	11.7	11.7	12.9
82.5°	7.8	9.1	9.1	10.4	10.4	10.4	11.7	11.7	11.7	11.7	12.9
85°	9.1	9.1	10.4	10.4	10.4	10.4	11.7	11.7	11.7	11.7	12.9
87.5°	9.1	9.1	10.4	10.4	10.4	10.4	11.7	11.7	12.9	11.7	12.9
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°	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4
2.5°	1121.2	1046.1	994.3	974.9	937.4	877.8	842.9	810.5	749.6	736.7	703.0
5°	936.1	815.7	730.2	697.9	655.1	604.6	555.4	523.1	484.2	468.7	445.4
7.5°	738.0	617.6	543.8	517.9	488.1	446.7	402.7	370.3	330.2	309.4	290.0
10°	580.0	490.7	428.6	402.7	371.6	327.6	282.2	239.5	204.6	182.6	178.7
12.5°	471.3	397.5	331.4	304.3	268.0	224.0	191.6	190.3	187.7	186.4	189.0
15°	385.8	314.6	244.7	214.9	204.6	203.3	207.2	211.0	209.7	213.6	216.2
17.5°	317.2	240.8	225.3	226.6	227.9	231.8	238.2	248.6	249.9	256.4	261.5
20°	258.9	255.1	261.5	266.7	270.6	278.4	292.6	305.6	309.4	318.5	328.9
22.5°	293.9	305.6	319.8	326.3	331.4	345.7	361.2	381.9	389.7	401.4	415.6
25°	354.8	374.2	396.2	404.0	411.7	435.0	453.2	477.8	484.2	498.5	512.7
27.5°	405.2	426.0	449.3	459.6	466.1	489.4	504.9	520.5	520.5	528.2	538.6
30°	397.5	414.3	433.7	441.5	444.1	460.9	476.5	481.6	479.0	482.9	490.7
32.5°	330.2	343.1	358.6	365.1	367.7	379.4	392.3	392.3	391.0	391.0	396.2
35°	244.7	253.8	261.5	268.0	271.9	279.7	291.3	290.0	290.0	287.4	291.3
37.5°	164.4	169.6	178.7	181.3	182.6	187.7	196.8	196.8	194.2	195.5	198.1
40°	99.7	106.2	111.3	112.6	115.2	119.1	125.6	125.6	125.6	125.6	126.9
42.5°	59.6	63.4	67.3	67.3	68.6	73.8	76.4	76.4	76.4	76.4	77.7
45°	35.0	36.3	38.8	40.1	40.1	42.7	44.0	44.0	44.0	44.0	45.3
47.5°	20.7	22.0	22.0	23.3	23.3	24.6	25.9	25.9	24.6	24.6	24.6
50°	12.9	12.9	12.9	12.9	14.2	14.2	14.2	14.2	14.2	14.2	12.9
52.5°	10.4	10.4	10.4	10.4	9.1	9.1	9.1	9.1	7.8	7.8	6.5
55°	9.1	9.1	9.1	9.1	9.1	7.8	7.8	7.8	6.5	5.2	3.9
57.5°	9.1	9.1	9.1	9.1	9.1	7.8	7.8	6.5	5.2	5.2	3.9
60°	9.1	9.1	9.1	9.1	9.1	7.8	7.8	6.5	5.2	5.2	3.9
62.5°	10.4	10.4	9.1	9.1	9.1	7.8	7.8	6.5	6.5	5.2	3.9
65°	10.4	10.4	9.1	9.1	9.1	9.1	7.8	7.8	6.5	5.2	3.9
67.5°	10.4	10.4	10.4	10.4	9.1	9.1	9.1	7.8	6.5	5.2	3.9
70°	11.7	11.7	10.4	10.4	10.4	9.1	9.1	7.8	6.5	6.5	5.2
72.5°	11.7	11.7	10.4	10.4	10.4	10.4	9.1	7.8	7.8	6.5	5.2
75°	11.7	11.7	11.7	11.7	10.4	10.4	9.1	9.1	7.8	6.5	5.2
77.5°	11.7	11.7	11.7	11.7	10.4	10.4	10.4	9.1	7.8	6.5	5.2
80°	11.7	11.7	11.7	11.7	11.7	10.4	10.4	9.1	7.8	6.5	5.2
82.5°	12.9	12.9	11.7	11.7	11.7	10.4	10.4	9.1	7.8	6.5	6.5
85°	12.9	12.9	11.7	11.7	11.7	10.4	10.4	9.1	7.8	7.8	6.5
87.5°	12.9	12.9	11.7	11.7	11.7	10.4	10.4	9.1	7.8	7.8	6.5
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: P209063

CATALOG NUMBER: LDSQA6A75840D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4	1284.4
2.5°	682.3	643.5	630.5	639.6	629.2	621.5	611.1	605.9
5°	427.3	398.8	389.7	392.3	383.2	375.5	365.1	362.5
7.5°	262.8	235.6	225.3	225.3	214.9	205.9	199.4	195.5
10°	176.1	170.9	172.2	173.5	172.2	173.5	169.6	172.2
12.5°	189.0	186.4	189.0	190.3	190.3	192.9	187.7	191.6
15°	220.1	217.5	221.4	224.0	224.0	227.9	222.7	226.6
17.5°	269.3	268.0	274.5	277.1	278.4	284.8	278.4	283.5
20°	340.5	339.2	348.3	352.2	350.9	363.8	354.8	363.8
22.5°	432.4	429.8	442.8	446.7	448.0	464.8	457.0	463.5
25°	524.4	527.0	533.4	539.9	541.2	555.4	543.8	550.3
27.5°	543.8	539.9	543.8	551.6	552.8	559.3	549.0	554.1
30°	492.0	485.5	486.8	495.9	498.5	501.1	492.0	494.6
32.5°	400.1	389.7	389.7	398.8	401.4	405.2	389.7	396.2
35°	295.2	286.1	286.1	292.6	293.9	296.5	284.8	290.0
37.5°	202.0	194.2	196.8	199.4	200.7	203.3	202.0	200.7
40°	129.5	124.3	128.2	128.2	129.5	130.8	130.8	132.1
42.5°	79.0	75.1	77.7	77.7	79.0	79.0	79.0	80.3
45°	45.3	44.0	44.0	45.3	45.3	45.3	44.0	45.3
47.5°	24.6	23.3	24.6	24.6	24.6	24.6	24.6	24.6
50°	12.9	11.7	11.7	11.7	11.7	11.7	11.7	11.7
52.5°	6.5	5.2	5.2	5.2	3.9	5.2	3.9	3.9
55°	3.9	2.6	2.6	2.6	1.3	1.3	0.0	0.0
57.5°	2.6	1.3	1.3	1.3	0.0	0.0	0.0	0.0
60°	2.6	1.3	1.3	1.3	0.0	0.0	0.0	0.0
62.5°	2.6	1.3	1.3	1.3	0.0	0.0	0.0	0.0
65°	2.6	1.3	1.3	1.3	0.0	0.0	0.0	0.0
67.5°	3.9	2.6	1.3	1.3	1.3	0.0	0.0	0.0
70°	3.9	2.6	2.6	1.3	1.3	0.0	0.0	0.0
72.5°	3.9	2.6	2.6	2.6	1.3	1.3	0.0	0.0
75°	3.9	2.6	2.6	2.6	1.3	1.3	0.0	0.0
77.5°	3.9	3.9	2.6	2.6	1.3	1.3	1.3	0.0
80°	5.2	3.9	2.6	2.6	2.6	1.3	1.3	1.3
82.5°	5.2	3.9	2.6	2.6	2.6	1.3	1.3	1.3
85°	5.2	3.9	3.9	2.6	2.6	1.3	1.3	1.3
87.5°	5.2	3.9	3.9	2.6	2.6	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)