

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: P209093

Luminaire Tested: **LDSQA6A75830D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209093
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26688)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA6A75830D010TE LARH40FL 6LSQA1H 30°
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 40° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7031.6 lumens
Efficiency: N/A
Efficacy: 88.5 lumens/watt
Spacing Criteria (0/90/45): 2.63 / 0.54 / 1.37
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
CIE Type: Direct

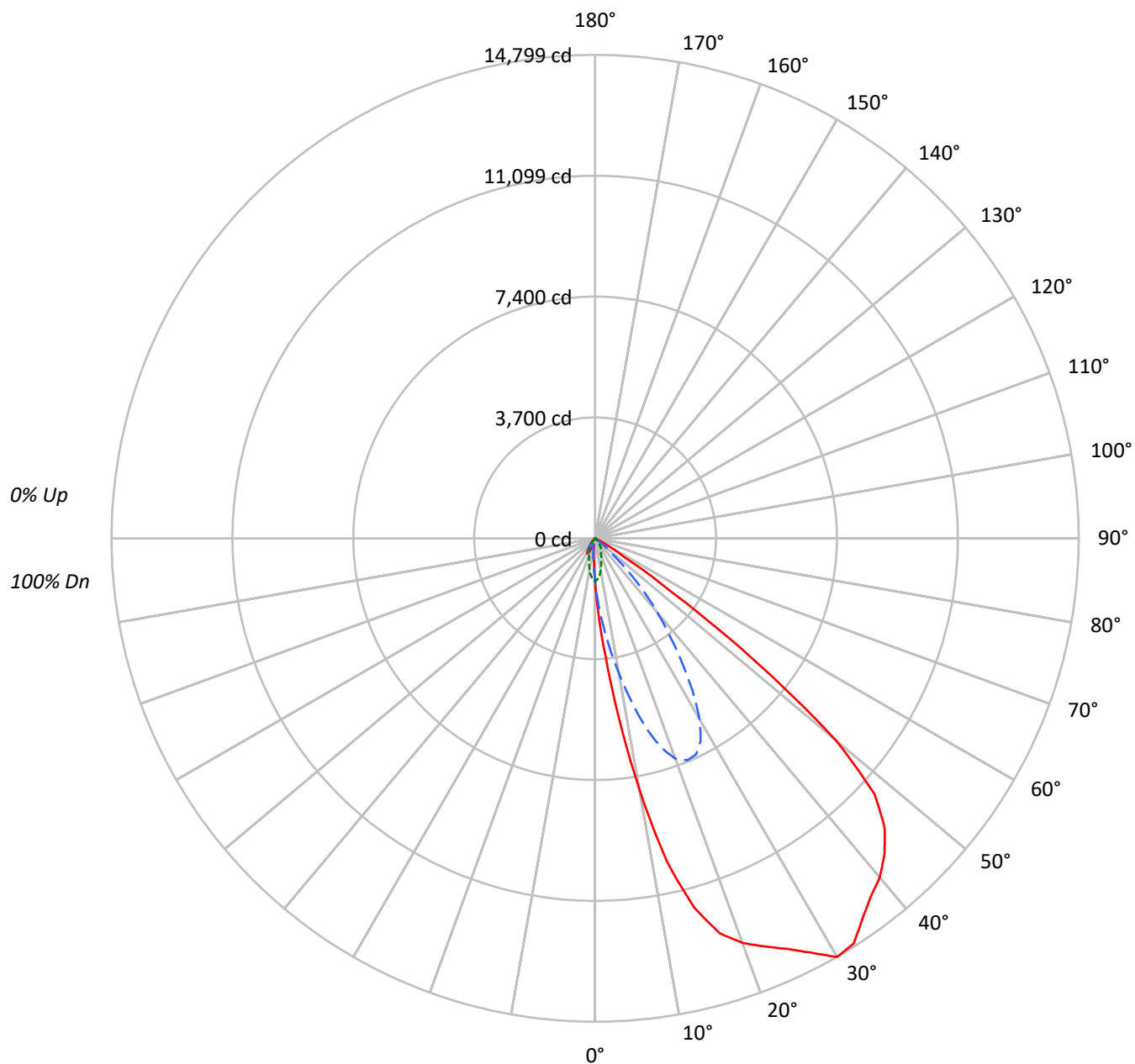
Input Watts (W): 79.45
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	88	83	78	86	81	77	83	79	76	81	77	74	73		
4	91	82	75	70	89	80	74	69	78	73	68	76	71	67	74	70	67	65		
5	85	74	67	62	83	73	66	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	44	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	41	36	46	40	36	45	40	36	34		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	56739	56739	56739
5°	155739	52279	21333
10°	341282	42789	8132
15°	521308	32566	9539
20°	603984	24229	14818
25°	658865	19924	23910
30°	735753	18072	24421
35°	748588	12394	16741
40°	761737	5879	8470
45°	762975	2442	3702
50°	645023	1058	1139
55°	207706	728	180
60°	41247	835	0
65°	4208	988	0
70°	453	1372	0
75°	0	1813	0
80°	0	3025	298
85°	0	6027	593



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	178.9	2.5
10°-20°	925.2	13.2
20°-30°	1771.5	25.2
30°-40°	2087.1	29.7
40°-50°	1639.4	23.3
50°-60°	399.5	5.7
60°-70°	17.1	0.2
70°-80°	6.4	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°	2875.6	40.9
0°-40°	4962.7	70.6
0°-60°	7001.6	99.6
0°-90°	7031.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7031.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1318	1318	1318	1318	1318	
5°	3603	2608	1210	633	494	476
15°	11695	6007	731	209	214	3265
25°	13869	7304	419	439	503	6464
35°	14242	4617	236	304	318	8930
45°	12530	1427	40	56	61	9415
55°	2767	52	10	6	2	3293
65°	41	6	10	6	0	110
75°	0	6	11	7	0	0
85°	0	7	12	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°	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8
2.5°	2258.8	2253.9	2221.1	2251.5	2159.1	2155.5	2114.1	2095.9	2042.4	1991.3	1918.4
5°	3603.4	3524.4	3459.9	3462.4	3284.9	3252.0	3159.7	3066.0	2922.6	2788.9	2607.7
7.5°	5492.6	5399.0	5262.8	5205.7	4866.5	4766.8	4576.0	4326.7	4014.3	3703.1	3367.5
10°	7806.1	7820.7	7644.4	7481.5	6968.5	6766.7	6457.9	5966.8	5374.7	4789.9	4195.4
12.5°	10134.2	10124.5	9914.2	9667.4	9035.2	8750.7	8339.8	7727.1	6943.0	6036.0	5106.0
15°	11695.2	11764.5	11675.8	11478.8	10939.0	10613.2	10150.0	9318.5	8362.9	7261.5	6006.9
17.5°	12675.1	12740.7	12709.1	12554.7	12078.2	11730.5	11343.9	10663.1	9558.0	8173.3	6716.9
20°	13182.0	13285.4	13270.8	13103.0	12743.2	12455.0	12028.3	11397.4	10440.6	8806.7	7176.4
22.5°	13520.0	13599.0	13620.9	13431.3	13059.3	12785.7	12473.3	11833.8	10934.2	9193.3	7358.8
25°	13868.9	14008.7	13871.4	13637.9	13296.3	13033.7	12700.6	12087.9	11170.0	9351.3	7304.0
27.5°	14296.9	14363.7	14052.5	13839.8	13460.4	13176.0	12822.2	12235.0	11211.4	9224.9	6991.6
30°	14799.0	14521.8	14304.2	13882.3	13451.9	13174.8	12814.9	12142.6	10993.8	8805.5	6386.2
32.5°	14716.3	14462.2	14215.4	13769.2	13343.7	13069.0	12667.8	11835.0	10479.5	8104.0	5551.0
35°	14242.2	14296.9	14030.6	13661.0	13179.6	12896.4	12458.7	11397.4	9606.6	7136.3	4617.3
37.5°	13842.2	13962.5	13788.7	13447.1	12958.4	12575.4	11984.6	10694.7	8467.5	5908.4	3732.3
40°	13552.8	13591.7	13498.1	13115.2	12528.0	11974.8	11291.6	9432.8	7084.0	4638.0	2945.7
42.5°	13104.2	13207.6	13042.2	12624.0	11734.1	11108.0	10118.4	7975.1	5502.3	3542.6	2217.5
45°	12530.4	12628.9	12424.7	11729.3	10491.7	9573.8	8366.6	6218.4	4070.2	2611.4	1427.3
47.5°	11594.3	11655.1	11260.0	10298.4	8499.1	7634.7	6397.1	4335.3	2622.3	1460.1	694.2
50°	9629.7	9600.5	8786.0	7603.1	5684.7	4777.8	3807.6	2350.0	1178.0	691.7	434.0
52.5°	6206.2	6139.4	5333.4	4257.4	2878.8	2196.8	1650.9	1013.9	613.9	386.6	171.4
55°	2767.0	2741.4	2244.2	1743.3	1178.0	1013.9	774.4	497.2	327.0	134.9	52.3
57.5°	1026.1	1003.0	883.8	741.6	569.0	472.9	375.7	238.3	83.9	45.0	28.0
60°	479.0	477.8	420.6	346.5	240.7	182.4	105.8	55.9	35.3	24.3	15.8
62.5°	153.2	149.5	104.6	76.6	54.7	47.4	37.7	28.0	18.2	13.4	9.7
65°	41.3	41.3	37.7	31.6	25.5	21.9	18.2	13.4	8.5	7.3	6.1
67.5°	15.8	15.8	14.6	13.4	9.7	8.5	7.3	6.1	4.9	6.1	6.1
70°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	4.9	4.9	6.1
72.5°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.9	6.1	6.1
75°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	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	6.1
82.5°	0.0	0.0	1.2	2.4	2.4	2.4	3.6	4.9	4.9	6.1	7.3
85°	0.0	0.0	1.2	2.4	2.4	3.6	3.6	4.9	4.9	6.1	7.3
87.5°	0.0	0.0	1.2	2.4	2.4	3.6	3.6	4.9	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°	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8
2.5°	1864.9	1784.7	1674.0	1609.6	1593.8	1559.8	1500.2	1411.5	1338.5	1268.0	1226.7
5°	2454.5	2264.9	2052.1	1902.6	1841.8	1760.4	1615.7	1466.2	1328.8	1209.6	1116.0
7.5°	3079.4	2767.0	2422.9	2145.7	2046.1	1917.2	1681.3	1458.9	1270.4	1105.1	979.9
10°	3700.7	3197.3	2730.5	2329.3	2166.4	1991.3	1680.1	1392.0	1170.7	978.7	840.1
12.5°	4321.9	3598.5	2956.6	2439.9	2228.4	2007.2	1630.3	1289.9	1044.3	848.6	716.1
15°	4895.7	3918.3	3109.8	2477.6	2222.3	1961.0	1529.4	1165.9	911.8	730.6	607.9
17.5°	5323.6	4086.0	3145.1	2420.5	2126.3	1837.0	1375.0	1020.0	785.4	626.1	500.9
20°	5534.0	4112.8	3061.2	2257.6	1961.0	1660.7	1206.0	880.2	677.2	528.8	423.1
22.5°	5534.0	3986.3	2878.8	2053.4	1754.3	1457.6	1043.1	764.7	592.1	460.8	372.0
25°	5323.6	3734.7	2634.5	1817.5	1526.9	1257.1	902.1	678.4	526.4	419.4	345.3
27.5°	4915.2	3387.0	2320.8	1554.9	1303.3	1078.3	790.2	599.3	476.6	378.1	379.3
30°	4353.5	2960.3	1961.0	1277.7	1073.5	886.3	665.0	502.1	381.7	363.5	374.4
32.5°	3704.3	2449.7	1553.7	990.8	831.6	697.8	505.7	355.0	303.9	306.4	318.5
35°	3038.1	1928.1	1169.5	734.3	618.8	505.7	331.9	233.4	231.0	235.8	244.4
37.5°	2398.6	1443.1	846.1	537.3	415.8	311.2	178.7	160.5	160.5	165.3	170.2
40°	1796.8	1023.6	582.3	318.5	201.8	142.2	113.1	104.6	103.3	104.6	110.6
42.5°	1234.0	648.0	346.5	127.7	97.3	82.7	71.7	65.6	64.4	65.6	69.3
45°	693.0	398.8	134.9	68.1	58.4	52.3	45.0	41.3	40.1	40.1	42.6
47.5°	434.0	158.0	60.8	42.6	36.5	34.0	29.2	26.7	25.5	25.5	26.7
50°	166.6	62.0	37.7	28.0	24.3	21.9	19.5	17.0	15.8	15.8	17.0
52.5°	57.1	36.5	24.3	18.2	15.8	14.6	12.2	10.9	10.9	10.9	10.9
55°	31.6	21.9	14.6	10.9	9.7	9.7	9.7	9.7	9.7	9.7	9.7
57.5°	19.5	13.4	9.7	8.5	8.5	8.5	8.5	8.5	8.5	9.7	9.7
60°	10.9	8.5	7.3	7.3	7.3	7.3	8.5	8.5	8.5	9.7	9.7
62.5°	7.3	7.3	7.3	7.3	7.3	7.3	8.5	8.5	9.7	9.7	9.7
65°	6.1	6.1	6.1	7.3	7.3	7.3	8.5	8.5	9.7	9.7	9.7
67.5°	6.1	6.1	7.3	7.3	7.3	8.5	8.5	9.7	9.7	9.7	9.7
70°	6.1	7.3	7.3	8.5	8.5	8.5	9.7	9.7	9.7	10.9	10.9
72.5°	6.1	7.3	7.3	8.5	8.5	8.5	9.7	9.7	10.9	10.9	10.9
75°	7.3	7.3	7.3	8.5	8.5	8.5	9.7	10.9	10.9	10.9	10.9
77.5°	7.3	7.3	8.5	8.5	8.5	9.7	9.7	10.9	10.9	10.9	10.9
80°	7.3	7.3	8.5	8.5	9.7	9.7	10.9	10.9	10.9	12.2	12.2
82.5°	7.3	7.3	8.5	9.7	9.7	9.7	10.9	10.9	12.2	12.2	12.2
85°	7.3	8.5	8.5	9.7	9.7	9.7	10.9	10.9	12.2	12.2	12.2
87.5°	7.3	8.5	8.5	9.7	9.7	9.7	10.9	10.9	12.2	12.2	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°	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8
2.5°	1172.0	1120.9	1069.8	1032.1	1013.9	995.7	955.6	903.3	881.4	849.8	831.6
5°	1021.2	934.9	866.8	821.8	795.1	759.8	713.6	662.6	633.4	600.6	578.7
7.5°	865.6	764.7	699.0	657.7	631.0	587.2	528.8	468.1	432.8	396.3	370.8
10°	729.4	633.4	559.2	511.8	477.8	426.7	368.4	325.8	295.4	263.8	238.3
12.5°	609.1	505.7	426.7	386.6	363.5	314.9	266.2	218.8	200.6	194.5	194.5
15°	493.6	400.0	333.1	299.1	274.8	222.5	212.8	210.3	209.1	207.9	210.3
17.5°	402.4	323.4	252.9	235.8	233.4	232.2	233.4	233.4	234.6	238.3	244.4
20°	338.0	265.0	260.2	261.4	261.4	266.2	272.3	277.2	282.0	288.1	299.1
22.5°	300.3	299.1	307.6	308.8	314.9	322.2	333.1	340.4	352.6	358.6	374.4
25°	346.5	355.0	370.8	375.7	385.4	397.5	414.6	424.3	438.9	446.2	464.4
27.5°	392.7	406.1	425.5	431.6	440.1	459.5	471.7	480.2	487.5	492.4	503.3
30°	389.0	401.2	420.6	421.9	434.0	447.4	454.7	462.0	466.8	465.6	471.7
32.5°	329.5	340.4	358.6	358.6	372.0	383.0	386.6	392.7	392.7	392.7	395.1
35°	252.9	260.2	272.3	276.0	286.9	294.2	296.6	303.9	303.9	301.5	301.5
37.5°	175.1	184.8	193.3	195.7	203.0	207.9	214.0	215.2	212.8	214.0	214.0
40°	114.3	120.4	126.4	127.7	133.7	137.4	143.5	143.5	144.7	143.5	145.9
42.5°	70.5	75.4	79.0	81.5	83.9	86.3	90.0	91.2	92.4	91.2	93.6
45°	43.8	46.2	48.6	49.8	51.1	52.3	55.9	55.9	55.9	55.9	57.1
47.5°	26.7	28.0	29.2	29.2	30.4	31.6	32.8	32.8	32.8	32.8	34.0
50°	15.8	17.0	17.0	17.0	18.2	18.2	19.5	19.5	19.5	18.2	19.5
52.5°	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	9.7	10.9
55°	9.7	9.7	8.5	8.5	8.5	8.5	8.5	7.3	6.1	6.1	4.9
57.5°	8.5	8.5	8.5	8.5	8.5	7.3	7.3	6.1	6.1	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	8.5	8.5	8.5	8.5	7.3	7.3	6.1	4.9	4.9	3.6
65°	9.7	9.7	8.5	8.5	8.5	7.3	7.3	6.1	6.1	4.9	3.6
67.5°	9.7	9.7	9.7	8.5	9.7	8.5	7.3	7.3	6.1	4.9	4.9
70°	10.9	9.7	9.7	9.7	9.7	8.5	8.5	7.3	6.1	4.9	4.9
72.5°	10.9	10.9	9.7	9.7	9.7	8.5	8.5	7.3	6.1	6.1	4.9
75°	10.9	10.9	9.7	9.7	9.7	8.5	8.5	7.3	7.3	6.1	4.9
77.5°	10.9	10.9	10.9	9.7	9.7	9.7	8.5	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	10.9	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	10.9	10.9	10.9	10.9	9.7	9.7	8.5	7.3	6.1	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: P209093

CATALOG NUMBER: LDSQA6A75830D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8	1317.8
2.5°	813.3	803.6	803.6	786.6	784.1	770.8	781.7	774.4
5°	554.4	538.6	533.7	516.7	510.6	494.8	499.7	493.6
7.5°	348.9	333.1	328.2	316.1	308.8	296.6	297.9	294.2
10°	212.8	198.2	194.5	190.9	187.2	186.0	187.2	186.0
12.5°	193.3	192.1	189.7	190.9	188.4	189.7	190.9	189.7
15°	210.3	212.8	210.3	211.5	210.3	212.8	214.0	214.0
17.5°	246.8	251.7	249.2	252.9	251.7	257.7	257.7	257.7
20°	302.7	311.2	308.8	313.7	313.7	320.9	320.9	323.4
22.5°	380.5	391.5	390.2	401.2	398.8	407.3	407.3	409.7
25°	474.1	485.1	486.3	493.6	492.4	500.9	500.9	503.3
27.5°	513.0	519.1	517.9	521.5	522.8	527.6	531.3	528.8
30°	481.4	486.3	485.1	487.5	487.5	491.2	494.8	491.2
32.5°	404.8	408.5	408.5	413.3	409.7	410.9	417.0	413.3
35°	310.0	312.4	310.0	312.4	313.7	313.7	319.7	318.5
37.5°	221.3	222.5	222.5	226.1	222.5	222.5	228.6	229.8
40°	148.3	149.5	148.3	153.2	150.7	150.7	154.4	150.7
42.5°	94.8	96.0	94.8	98.5	96.0	98.5	99.7	100.9
45°	58.4	58.4	57.1	59.6	58.4	59.6	60.8	60.8
47.5°	34.0	34.0	32.8	35.3	34.0	34.0	34.0	35.3
50°	18.2	18.2	18.2	19.5	18.2	18.2	18.2	17.0
52.5°	9.7	9.7	8.5	9.7	8.5	8.5	8.5	8.5
55°	4.9	3.6	3.6	3.6	2.4	2.4	2.4	2.4
57.5°	3.6	2.4	2.4	1.2	1.2	1.2	0.0	0.0
60°	2.4	2.4	1.2	1.2	0.0	0.0	0.0	0.0
62.5°	2.4	2.4	1.2	1.2	0.0	0.0	0.0	0.0
65°	2.4	2.4	1.2	1.2	0.0	0.0	0.0	0.0
67.5°	3.6	2.4	2.4	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	3.6	2.4	2.4	1.2	1.2	0.0	0.0
77.5°	4.9	3.6	2.4	2.4	1.2	1.2	0.0	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	3.6	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)