

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: P209098

Luminaire Tested: **LDSQA6A75935D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209098
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: LDSQA6A75935D010TE LARH40FL 6LSQA1H 30°
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 40° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6237.8 lumens
Efficiency: N/A
Efficacy: 78.5 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

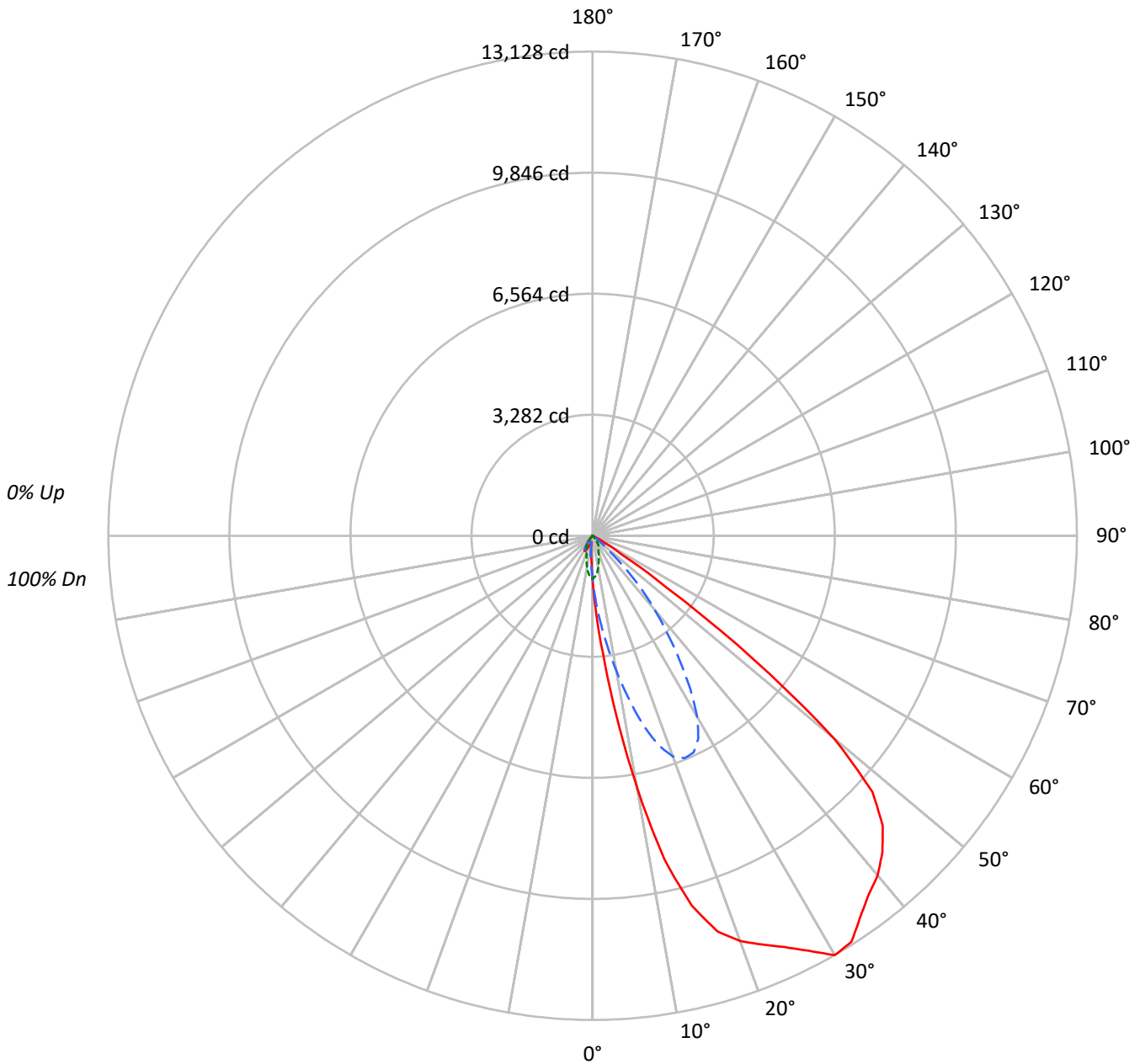
Input Watts (W): 79.45
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	50336	50336	50336
5°	138157	46380	18926
10°	302756	37958	7214
15°	462460	28893	8460
20°	535806	21494	13145
25°	584489	17677	21212
30°	652692	16034	21661
35°	664080	10996	14854
40°	675749	5210	7515
45°	676846	2168	3282
50°	572207	938	1011
55°	184255	646	165
60°	36589	741	0
65°	3739	876	0
70°	403	1221	0
75°	0	1614	0
80°	0	2678	273
85°	0	5335	543



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	158.7	2.5
10°-20°	820.8	13.2
20°-30°	1571.5	25.2
30°-40°	1851.5	29.7
40°-50°	1454.3	23.3
50°-60°	354.4	5.7
60°-70°	15.2	0.2
70°-80°	5.7	0.1
80°-90°	5.7	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°	2551.0	40.9
0°-40°	4402.5	70.6
0°-60°	6211.2	99.6
0°-90°	6237.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6237.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1169	1169	1169	1169	1169	
5°	3197	2313	1073	562	438	423
15°	10375	5329	648	186	190	2896
25°	12303	6480	372	389	446	5734
35°	12634	4096	209	270	283	7922
45°	11116	1266	36	50	54	8352
55°	2455	46	9	5	2	2922
65°	37	5	9	5	0	97
75°	0	5	10	6	0	0
85°	0	6	11	6	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°	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1
2.5°	2003.8	1999.5	1970.4	1997.3	1915.4	1912.1	1875.5	1859.3	1811.8	1766.5	1701.8
5°	3196.6	3126.5	3069.4	3071.5	2914.1	2884.9	2803.0	2719.9	2592.7	2474.0	2313.3
7.5°	4872.6	4789.5	4668.7	4618.0	4317.2	4228.7	4059.4	3838.3	3561.1	3285.0	2987.4
10°	6924.9	6937.9	6781.5	6637.0	6181.8	6002.8	5728.9	5293.2	4768.0	4249.2	3721.8
12.5°	8990.2	8981.6	8795.0	8576.1	8015.3	7762.9	7398.4	6854.8	6159.2	5354.6	4529.6
15°	10375.0	10436.4	10357.7	10183.0	9704.2	9415.1	9004.2	8266.5	7418.9	6441.8	5328.8
17.5°	11244.2	11302.5	11274.4	11137.5	10714.7	10406.2	10063.3	9459.3	8479.0	7250.6	5958.6
20°	11694.0	11785.6	11772.7	11623.8	11304.6	11049.0	10670.5	10110.7	9262.0	7812.5	6366.3
22.5°	11993.8	12063.9	12083.3	11915.0	11585.0	11342.4	11065.2	10497.9	9699.8	8155.5	6528.0
25°	12303.3	12427.3	12305.4	12098.4	11795.3	11562.4	11266.9	10723.3	9909.1	8295.7	6479.5
27.5°	12682.9	12742.2	12466.1	12277.4	11940.9	11688.6	11374.7	10853.8	9945.7	8183.5	6202.3
30°	13128.3	12882.4	12689.4	12315.2	11933.4	11687.5	11368.3	10771.9	9752.7	7811.4	5665.3
32.5°	13055.0	12829.6	12610.7	12214.9	11837.4	11593.7	11237.8	10499.0	9296.5	7189.1	4924.3
35°	12634.4	12682.9	12446.7	12118.9	11691.8	11440.5	11052.3	10110.7	8522.1	6330.7	4096.1
37.5°	12279.6	12386.3	12232.1	11929.1	11495.5	11155.8	10631.6	9487.4	7511.6	5241.4	3310.9
40°	12022.9	12057.4	11974.4	11634.6	11113.7	10623.0	10016.9	8367.9	6284.3	4114.4	2613.2
42.5°	11624.9	11716.6	11569.9	11198.9	10409.5	9854.1	8976.2	7074.8	4881.2	3142.7	1967.1
45°	11115.9	11203.2	11022.1	10405.2	9307.3	8493.0	7422.1	5516.4	3610.7	2316.6	1266.1
47.5°	10285.5	10339.4	9988.9	9135.8	7539.6	6772.8	5675.0	3845.9	2326.3	1295.3	615.8
50°	8542.6	8516.8	7794.2	6744.8	5043.0	4238.4	3377.8	2084.7	1045.0	613.7	385.0
52.5°	5505.6	5446.3	4731.3	3776.8	2553.8	1948.8	1464.6	899.5	544.6	343.0	152.1
55°	2454.6	2432.0	1990.9	1546.5	1045.0	899.5	687.0	441.1	290.1	119.7	46.4
57.5°	910.2	889.7	784.1	657.9	504.7	419.5	333.3	211.4	74.4	39.9	24.8
60°	424.9	423.8	373.2	307.4	213.5	161.8	93.8	49.6	31.3	21.6	14.0
62.5°	135.9	132.7	92.7	67.9	48.5	42.1	33.4	24.8	16.2	11.9	8.6
65°	36.7	36.7	33.4	28.0	22.6	19.4	16.2	11.9	7.5	6.5	5.4
67.5°	14.0	14.0	12.9	11.9	8.6	7.5	6.5	5.4	4.3	5.4	5.4
70°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	4.3	4.3	5.4
72.5°	0.0	0.0	1.1	1.1	2.2	2.2	3.2	3.2	4.3	5.4	5.4
75°	0.0	0.0	1.1	1.1	2.2	2.2	3.2	3.2	4.3	5.4	5.4
77.5°	0.0	0.0	1.1	1.1	2.2	2.2	3.2	3.2	4.3	5.4	5.4
80°	0.0	0.0	1.1	1.1	2.2	2.2	3.2	3.2	4.3	5.4	5.4
82.5°	0.0	0.0	1.1	2.2	2.2	2.2	3.2	4.3	4.3	5.4	6.5
85°	0.0	0.0	1.1	2.2	2.2	3.2	3.2	4.3	4.3	5.4	6.5
87.5°	0.0	0.0	1.1	2.2	2.2	3.2	3.2	4.3	4.3	5.4	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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1
2.5°	1654.4	1583.2	1485.1	1427.9	1413.9	1383.7	1330.8	1252.1	1187.4	1124.9	1088.2
5°	2177.4	2009.2	1820.5	1687.8	1633.9	1561.6	1433.3	1300.6	1178.8	1073.1	990.0
7.5°	2731.8	2454.6	2149.4	1903.5	1815.1	1700.8	1491.5	1294.2	1127.0	980.3	869.3
10°	3282.9	2836.4	2422.3	2066.4	1921.9	1766.5	1490.5	1234.9	1038.6	868.2	745.2
12.5°	3834.0	3192.3	2622.9	2164.5	1976.9	1780.6	1446.2	1144.3	926.4	752.8	635.2
15°	4343.0	3475.9	2758.7	2197.9	1971.5	1739.6	1356.7	1034.3	808.9	648.2	539.2
17.5°	4722.7	3624.8	2790.0	2147.3	1886.3	1629.6	1219.8	904.8	696.7	555.4	444.3
20°	4909.2	3648.5	2715.6	2002.7	1739.6	1473.2	1069.9	780.8	600.7	469.1	375.3
22.5°	4909.2	3536.3	2553.8	1821.6	1556.2	1293.1	925.3	678.4	525.2	408.7	330.0
25°	4722.7	3313.1	2337.1	1612.3	1354.6	1115.1	800.2	601.8	467.0	372.1	306.3
27.5°	4360.3	3004.6	2058.8	1379.4	1156.1	956.6	701.0	531.7	422.8	335.4	336.5
30°	3862.0	2626.1	1739.6	1133.5	952.3	786.2	589.9	445.4	338.6	322.5	332.2
32.5°	3286.1	2173.1	1378.3	879.0	737.7	619.0	448.6	314.9	269.6	271.8	282.6
35°	2695.1	1710.5	1037.5	651.4	548.9	448.6	294.4	207.1	204.9	209.2	216.8
37.5°	2127.8	1280.2	750.6	476.7	368.8	276.1	158.5	142.4	142.4	146.7	151.0
40°	1594.0	908.1	516.6	282.6	179.0	126.2	100.3	92.7	91.7	92.7	98.1
42.5°	1094.7	574.8	307.4	113.2	86.3	73.3	63.6	58.2	57.2	58.2	61.5
45°	614.7	353.7	119.7	60.4	51.8	46.4	39.9	36.7	35.6	35.6	37.7
47.5°	385.0	140.2	53.9	37.7	32.4	30.2	25.9	23.7	22.6	22.6	23.7
50°	147.8	55.0	33.4	24.8	21.6	19.4	17.3	15.1	14.0	14.0	15.1
52.5°	50.7	32.4	21.6	16.2	14.0	12.9	10.8	9.7	9.7	9.7	9.7
55°	28.0	19.4	12.9	9.7	8.6	8.6	8.6	8.6	8.6	8.6	8.6
57.5°	17.3	11.9	8.6	7.5	7.5	7.5	7.5	7.5	7.5	8.6	8.6
60°	9.7	7.5	6.5	6.5	6.5	6.5	7.5	7.5	7.5	8.6	8.6
62.5°	6.5	6.5	6.5	6.5	6.5	6.5	7.5	7.5	8.6	8.6	8.6
65°	5.4	5.4	5.4	6.5	6.5	6.5	7.5	7.5	8.6	8.6	8.6
67.5°	5.4	5.4	6.5	6.5	6.5	7.5	7.5	8.6	8.6	8.6	8.6
70°	5.4	6.5	6.5	7.5	7.5	7.5	8.6	8.6	8.6	9.7	9.7
72.5°	5.4	6.5	6.5	7.5	7.5	7.5	8.6	8.6	9.7	9.7	9.7
75°	6.5	6.5	6.5	7.5	7.5	7.5	8.6	9.7	9.7	9.7	9.7
77.5°	6.5	6.5	7.5	7.5	7.5	8.6	8.6	9.7	9.7	9.7	9.7
80°	6.5	6.5	7.5	7.5	8.6	8.6	9.7	9.7	9.7	10.8	10.8
82.5°	6.5	6.5	7.5	8.6	8.6	8.6	9.7	9.7	10.8	10.8	10.8
85°	6.5	7.5	7.5	8.6	8.6	8.6	9.7	9.7	10.8	10.8	10.8
87.5°	6.5	7.5	7.5	8.6	8.6	8.6	9.7	9.7	10.8	10.8	10.8
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1
2.5°	1039.7	994.4	949.1	915.6	899.5	883.3	847.7	801.3	781.9	753.9	737.7
5°	905.9	829.4	769.0	729.1	705.3	674.0	633.1	587.8	561.9	532.8	513.4
7.5°	767.9	678.4	620.1	583.5	559.7	520.9	469.1	415.2	383.9	351.6	328.9
10°	647.1	561.9	496.1	454.0	423.8	378.5	326.8	289.0	262.1	234.0	211.4
12.5°	540.3	448.6	378.5	343.0	322.5	279.3	236.2	194.1	177.9	172.6	172.6
15°	437.9	354.8	295.5	265.3	243.7	197.4	188.7	186.6	185.5	184.4	186.6
17.5°	357.0	286.9	224.3	209.2	207.1	206.0	207.1	207.1	208.1	211.4	216.8
20°	299.8	235.1	230.8	231.9	231.9	236.2	241.6	245.9	250.2	255.6	265.3
22.5°	266.4	265.3	272.9	273.9	279.3	285.8	295.5	302.0	312.8	318.2	332.2
25°	307.4	314.9	328.9	333.3	341.9	352.7	367.8	376.4	389.3	395.8	412.0
27.5°	348.3	360.2	377.5	382.9	390.4	407.7	418.4	426.0	432.5	436.8	446.5
30°	345.1	355.9	373.2	374.2	385.0	396.9	403.4	409.8	414.1	413.1	418.4
32.5°	292.3	302.0	318.2	318.2	330.0	339.7	343.0	348.3	348.3	348.3	350.5
35°	224.3	230.8	241.6	244.8	254.5	261.0	263.1	269.6	269.6	267.5	267.5
37.5°	155.3	163.9	171.5	173.6	180.1	184.4	189.8	190.9	188.7	189.8	189.8
40°	101.4	106.8	112.2	113.2	118.6	121.9	127.3	127.3	128.3	127.3	129.4
42.5°	62.6	66.9	70.1	72.3	74.4	76.6	79.8	80.9	82.0	80.9	83.0
45°	38.8	41.0	43.1	44.2	45.3	46.4	49.6	49.6	49.6	49.6	50.7
47.5°	23.7	24.8	25.9	25.9	27.0	28.0	29.1	29.1	29.1	29.1	30.2
50°	14.0	15.1	15.1	15.1	16.2	16.2	17.3	17.3	17.3	16.2	17.3
52.5°	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	8.6	9.7
55°	8.6	8.6	7.5	7.5	7.5	7.5	7.5	6.5	5.4	5.4	4.3
57.5°	7.5	7.5	7.5	7.5	7.5	6.5	6.5	5.4	5.4	4.3	3.2
60°	7.5	7.5	7.5	7.5	7.5	6.5	6.5	5.4	4.3	4.3	3.2
62.5°	8.6	7.5	7.5	7.5	7.5	6.5	6.5	5.4	4.3	4.3	3.2
65°	8.6	8.6	7.5	7.5	7.5	6.5	6.5	5.4	5.4	4.3	3.2
67.5°	8.6	8.6	8.6	7.5	8.6	7.5	6.5	6.5	5.4	4.3	4.3
70°	9.7	8.6	8.6	8.6	8.6	7.5	7.5	6.5	5.4	4.3	4.3
72.5°	9.7	9.7	8.6	8.6	8.6	7.5	7.5	6.5	5.4	5.4	4.3
75°	9.7	9.7	8.6	8.6	8.6	7.5	7.5	6.5	6.5	5.4	4.3
77.5°	9.7	9.7	9.7	8.6	8.6	8.6	7.5	7.5	6.5	5.4	4.3
80°	9.7	9.7	9.7	9.7	9.7	8.6	8.6	7.5	6.5	5.4	4.3
82.5°	10.8	9.7	9.7	9.7	9.7	8.6	8.6	7.5	6.5	5.4	5.4
85°	10.8	10.8	9.7	9.7	9.7	8.6	8.6	7.5	6.5	6.5	5.4
87.5°	10.8	9.7	9.7	9.7	9.7	8.6	8.6	7.5	6.5	5.4	5.4
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: P209098

CATALOG NUMBER: LDSQA6A75935D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1	1169.1
2.5°	721.5	712.9	712.9	697.8	695.6	683.8	693.5	687.0
5°	491.8	477.8	473.5	458.4	453.0	438.9	443.3	437.9
7.5°	309.5	295.5	291.2	280.4	273.9	263.1	264.2	261.0
10°	188.7	175.8	172.6	169.3	166.1	165.0	166.1	165.0
12.5°	171.5	170.4	168.2	169.3	167.2	168.2	169.3	168.2
15°	186.6	188.7	186.6	187.7	186.6	188.7	189.8	189.8
17.5°	218.9	223.2	221.1	224.3	223.2	228.6	228.6	228.6
20°	268.5	276.1	273.9	278.2	278.2	284.7	284.7	286.9
22.5°	337.6	347.3	346.2	355.9	353.7	361.3	361.3	363.4
25°	420.6	430.3	431.4	437.9	436.8	444.3	444.3	446.5
27.5°	455.1	460.5	459.4	462.7	463.7	468.1	471.3	469.1
30°	427.1	431.4	430.3	432.5	432.5	435.7	438.9	435.7
32.5°	359.1	362.4	362.4	366.7	363.4	364.5	369.9	366.7
35°	275.0	277.2	275.0	277.2	278.2	278.2	283.6	282.6
37.5°	196.3	197.4	197.4	200.6	197.4	197.4	202.8	203.8
40°	131.6	132.7	131.6	135.9	133.7	133.7	137.0	133.7
42.5°	84.1	85.2	84.1	87.4	85.2	87.4	88.4	89.5
45°	51.8	51.8	50.7	52.8	51.8	52.8	53.9	53.9
47.5°	30.2	30.2	29.1	31.3	30.2	30.2	30.2	31.3
50°	16.2	16.2	16.2	17.3	16.2	16.2	16.2	15.1
52.5°	8.6	8.6	7.5	8.6	7.5	7.5	7.5	7.5
55°	4.3	3.2	3.2	3.2	2.2	2.2	2.2	2.2
57.5°	3.2	2.2	2.2	1.1	1.1	1.1	0.0	0.0
60°	2.2	2.2	1.1	1.1	0.0	0.0	0.0	0.0
62.5°	2.2	2.2	1.1	1.1	0.0	0.0	0.0	0.0
65°	2.2	2.2	1.1	1.1	0.0	0.0	0.0	0.0
67.5°	3.2	2.2	2.2	1.1	1.1	0.0	0.0	0.0
70°	3.2	2.2	2.2	1.1	1.1	0.0	0.0	0.0
72.5°	3.2	2.2	2.2	2.2	1.1	1.1	0.0	0.0
75°	3.2	3.2	2.2	2.2	1.1	1.1	0.0	0.0
77.5°	4.3	3.2	2.2	2.2	1.1	1.1	0.0	0.0
80°	4.3	3.2	2.2	2.2	2.2	1.1	1.1	1.1
82.5°	4.3	3.2	3.2	2.2	2.2	1.1	1.1	1.1
85°	4.3	3.2	3.2	2.2	2.2	1.1	1.1	1.1
87.5°	4.3	3.2	3.2	2.2	2.2	1.1	1.1	1.1
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)