

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: P209045

Luminaire Tested: **LDSQA6A55830D010TE LARH30NF 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209045
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: LDSQA6A55830D010TE 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 / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4923.0 lumens
Efficiency: N/A
Efficacy: 81.0 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

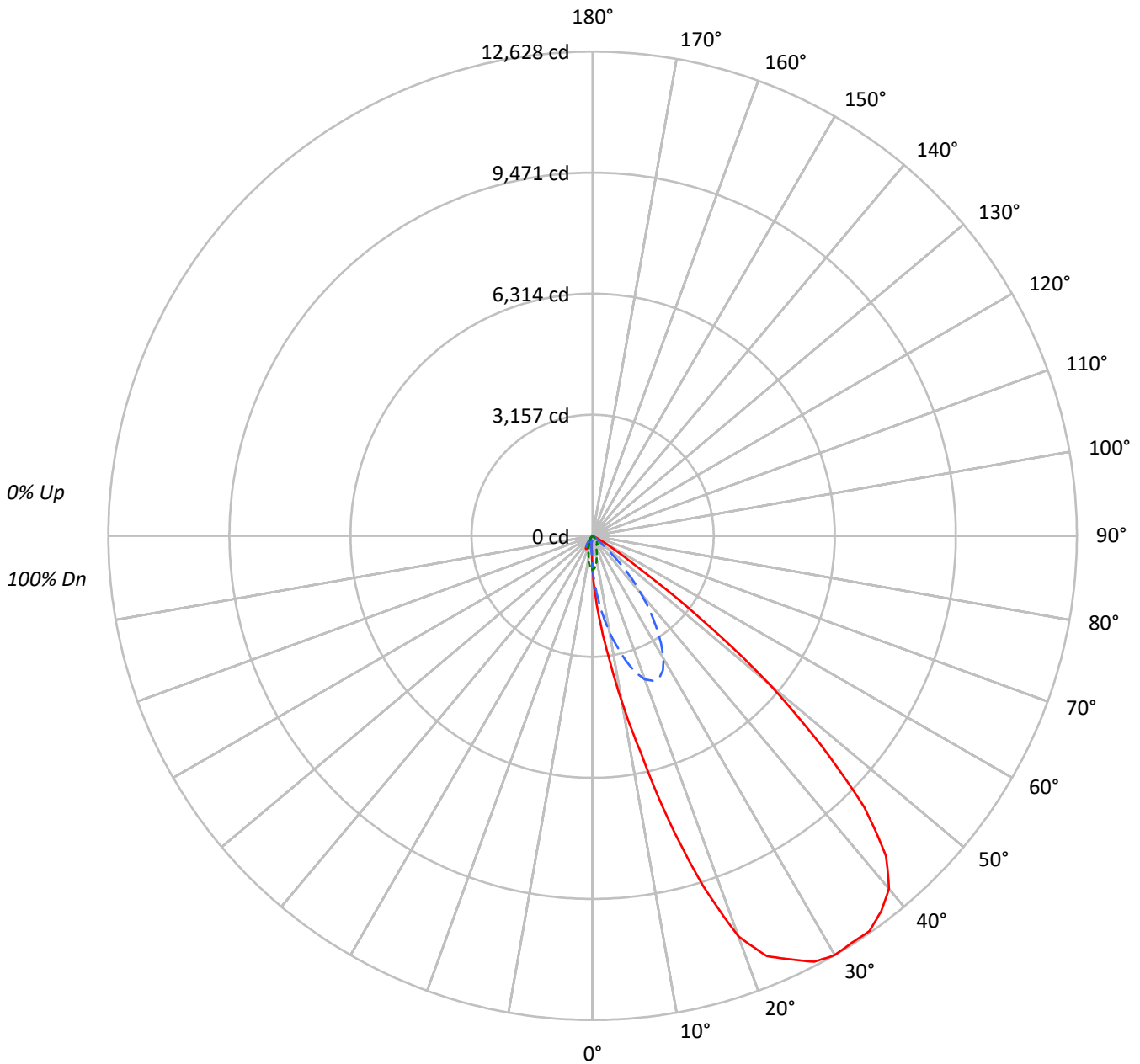
Input Watts (W): 60.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
RC	80					70					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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	112	109	106	103	110	107	104	102	103	100	98	99	97	95	95	94	93	91					91			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	85	83	81					81			
3	98	90	84	79	96	89	83	78	86	81	77	83	79	76	81	77	74	73					73			
4	91	82	75	70	89	81	74	69	78	73	68	76	71	67	74	70	67	65					65			
5	85	74	67	62	83	73	67	61	71	65	61	70	64	60	68	63	60	58					58			
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	54	52					52			
7	74	62	55	49	72	61	54	49	60	53	49	59	53	49	57	52	48	46					46			
8	69	57	49	44	67	56	49	44	55	49	44	54	48	44	53	47	43	42					42			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	43	39	38					38			
10	60	48	41	36	59	48	41	36	47	40	36	46	40	36	45	40	36	34					34			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	38233	38233	38233
5°	98075	34779	10831
10°	191178	26730	5207
15°	343188	18155	6985
20°	509529	13782	11523
25°	579159	11354	18072
30°	627814	12414	16998
35°	661294	8047	10539
40°	675592	3575	5132
45°	610190	1364	1906
50°	401669	543	543
55°	110001	473	0
60°	21967	543	0
65°	1549	734	0
70°	227	906	0
75°	0	1347	0
80°	0	2008	223
85°	0	4001	445



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	108.8	2.2
10°-20°	577.9	11.7
20°-30°	1309.8	26.6
30°-40°	1572.2	31.9
40°-50°	1108.0	22.5
50°-60°	228.6	4.6
60°-70°	8.1	0.2
70°-80°	4.8	0.1
80°-90°	4.7	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°	1996.4	40.6
0°-40°	3568.6	72.5
0°-60°	4905.3	99.6
0°-90°	4923.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4923.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	888	888	888	888	888	
5°	2269	1653	805	335	251	279
15°	7699	3387	407	145	157	2285
25°	12191	4097	239	335	380	5626
35°	12581	2869	153	200	200	7821
45°	10021	984	22	30	31	7370
55°	1465	20	6	4	0	1931
65°	15	4	7	4	0	45
75°	0	4	8	5	0	0
85°	0	5	8	5	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°	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0
2.5°	1513.7	1468.0	1486.0	1433.1	1421.5	1411.7	1421.5	1364.2	1332.0	1290.8	1257.7
5°	2269.2	2214.6	2227.1	2134.9	2092.9	2064.2	2058.9	1940.7	1852.1	1754.5	1653.3
7.5°	3159.0	3107.1	3099.9	2956.7	2869.9	2820.6	2800.0	2630.9	2477.8	2304.1	2114.3
10°	4372.8	4254.7	4218.0	4010.3	3844.7	3739.9	3611.0	3340.7	3072.2	2809.9	2568.2
12.5°	5785.4	5720.9	5629.6	5263.5	4973.5	4824.9	4632.4	4209.9	3803.5	3370.2	2965.6
15°	7699.2	7470.0	7314.3	6785.3	6318.0	6088.8	5807.7	5161.4	4547.4	3998.6	3387.3
17.5°	9569.2	9449.2	9205.7	8519.2	7799.5	7437.8	7018.9	6140.7	5273.3	4492.8	3746.2
20°	11120.5	11007.7	10730.2	10083.0	9284.5	8751.0	8223.8	7018.9	5885.6	4886.6	3986.1
22.5°	11863.5	11791.8	11565.4	11011.3	10331.0	9823.4	9256.8	7766.3	6338.6	5144.4	4095.3
25°	12191.1	12158.0	12012.0	11575.2	10934.3	10503.7	9968.4	8295.4	6620.5	5264.4	4097.1
27.5°	12523.2	12529.4	12207.2	11861.7	11253.9	10840.3	10324.7	8529.9	6671.6	5197.3	3962.8
30°	12627.9	12561.7	12419.3	11923.4	11346.1	10906.5	10353.3	8421.6	6462.1	4921.5	3695.2
32.5°	12584.9	12559.0	12402.3	11877.8	11189.4	10705.1	10076.7	7991.9	6048.5	4527.7	3315.6
35°	12581.4	12533.0	12174.1	11723.8	10876.1	10278.1	9450.1	7297.3	5463.1	4008.5	2869.0
37.5°	12354.0	12234.0	11964.6	11357.7	10240.5	9482.3	8554.1	6448.7	4747.0	3425.7	2425.9
40°	12020.1	11859.0	11504.5	10586.1	9139.5	8265.8	7359.9	5484.6	3988.8	2851.1	1955.0
42.5°	11322.8	11079.3	10578.0	9315.0	7672.4	6884.6	6130.9	4508.0	3253.0	2322.9	1492.2
45°	10021.2	9688.2	9010.6	7624.0	6198.0	5555.3	4949.3	3627.2	2604.0	1723.2	983.8
47.5°	8054.6	7745.8	7129.0	6069.1	4860.7	4317.3	3833.9	2698.0	1765.2	998.1	470.0
50°	5996.6	5731.7	5250.1	4218.0	3262.8	2835.8	2422.3	1532.5	827.1	474.4	195.1
52.5°	3577.9	3446.3	3019.3	2339.0	1611.3	1388.4	1114.5	649.0	417.1	171.9	52.8
55°	1465.4	1352.6	1192.3	956.9	700.9	594.4	508.4	320.5	129.8	35.8	19.7
57.5°	662.4	637.3	564.8	444.0	322.3	270.3	182.6	60.9	28.6	17.9	11.6
60°	255.1	230.1	196.9	106.5	45.7	38.5	31.3	20.6	14.3	9.8	7.2
62.5°	36.7	34.9	31.3	25.1	19.7	17.9	15.2	10.7	8.1	6.3	5.4
65°	15.2	15.2	13.4	10.7	9.0	8.1	7.2	5.4	4.5	4.5	4.5
67.5°	6.3	6.3	5.4	4.5	3.6	3.6	3.6	2.7	3.6	3.6	4.5
70°	1.8	1.8	1.8	1.8	1.8	1.8	2.7	2.7	3.6	3.6	4.5
72.5°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	3.6	4.5	4.5
75°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	3.6	4.5	4.5
77.5°	0.0	0.0	0.9	0.9	1.8	1.8	2.7	2.7	3.6	4.5	4.5
80°	0.0	0.0	0.9	0.9	1.8	1.8	2.7	2.7	3.6	4.5	5.4
82.5°	0.0	0.0	0.9	0.9	1.8	1.8	2.7	2.7	3.6	4.5	5.4
85°	0.0	0.0	0.9	0.9	1.8	1.8	2.7	2.7	3.6	4.5	5.4
87.5°	0.0	0.0	0.9	0.9	1.8	1.8	2.7	2.7	3.6	4.5	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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0
2.5°	1229.0	1171.8	1155.6	1105.5	1063.4	1042.9	1016.9	958.7	914.8	856.7	821.7
5°	1582.6	1474.3	1388.4	1283.6	1214.7	1170.0	1100.1	993.6	907.7	804.7	731.3
7.5°	1964.9	1767.0	1612.2	1439.4	1340.0	1262.2	1143.1	990.0	863.8	726.9	613.2
10°	2333.7	2038.3	1794.8	1546.8	1416.1	1307.8	1144.0	951.5	784.2	611.4	491.4
12.5°	2658.6	2277.3	1934.4	1615.7	1453.7	1318.6	1113.6	882.6	680.3	503.1	397.4
15°	2929.8	2462.6	2032.9	1641.7	1456.4	1295.3	1050.0	784.2	564.8	407.3	333.0
17.5°	3135.7	2560.1	2063.3	1610.4	1404.5	1229.0	952.4	659.7	458.3	345.5	280.2
20°	3242.2	2578.9	2019.5	1525.3	1308.7	1128.8	824.4	535.3	388.5	300.8	234.5
22.5°	3255.7	2526.1	1914.7	1403.6	1187.9	1007.0	683.0	446.7	346.4	265.9	206.8
25°	3176.0	2411.5	1765.2	1265.7	1055.4	867.4	555.9	400.1	315.1	239.0	238.1
27.5°	3005.9	2214.6	1586.2	1105.5	895.2	705.4	471.7	361.6	281.1	253.3	269.4
30°	2766.0	1962.2	1366.0	903.2	699.1	542.5	397.4	298.1	247.1	249.7	263.2
32.5°	2441.1	1648.9	1107.3	661.5	500.4	408.2	298.1	203.2	205.0	205.9	217.5
35°	2032.9	1322.1	827.1	444.9	351.8	287.3	168.3	149.5	152.2	153.1	161.1
37.5°	1629.2	1016.0	549.6	296.3	221.1	151.3	104.7	100.3	102.0	101.2	110.1
40°	1247.8	708.1	329.4	146.8	85.0	70.7	64.5	61.8	62.7	63.6	68.9
42.5°	883.5	384.0	162.9	55.5	44.8	41.2	38.5	36.7	37.6	37.6	41.2
45°	448.5	181.7	55.5	30.4	27.7	25.1	23.3	22.4	22.4	22.4	24.2
47.5°	194.2	60.0	26.0	18.8	17.0	16.1	14.3	13.4	13.4	13.4	14.3
50°	60.9	24.2	16.1	12.5	10.7	9.8	9.0	9.0	9.0	8.1	9.0
52.5°	22.4	15.2	10.7	8.1	7.2	7.2	7.2	6.3	7.2	6.3	7.2
55°	13.4	9.8	7.2	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
57.5°	9.0	7.2	6.3	6.3	5.4	5.4	6.3	6.3	6.3	6.3	6.3
60°	6.3	6.3	5.4	5.4	5.4	5.4	6.3	6.3	6.3	6.3	6.3
62.5°	5.4	5.4	5.4	5.4	5.4	5.4	6.3	6.3	6.3	6.3	7.2
65°	4.5	5.4	5.4	5.4	5.4	5.4	6.3	6.3	7.2	7.2	7.2
67.5°	4.5	5.4	5.4	6.3	6.3	6.3	6.3	7.2	7.2	7.2	7.2
70°	5.4	5.4	6.3	6.3	6.3	6.3	7.2	7.2	7.2	7.2	8.1
72.5°	5.4	5.4	6.3	6.3	6.3	6.3	7.2	7.2	8.1	8.1	8.1
75°	5.4	6.3	6.3	6.3	6.3	7.2	7.2	7.2	8.1	8.1	8.1
77.5°	5.4	6.3	6.3	7.2	7.2	7.2	7.2	8.1	8.1	8.1	8.1
80°	5.4	6.3	6.3	7.2	7.2	7.2	8.1	8.1	8.1	8.1	9.0
82.5°	5.4	6.3	6.3	7.2	7.2	7.2	8.1	8.1	8.1	8.1	9.0
85°	6.3	6.3	7.2	7.2	7.2	7.2	8.1	8.1	8.1	8.1	9.0
87.5°	6.3	6.3	7.2	7.2	7.2	7.2	8.1	8.1	9.0	8.1	9.0
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°	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0
2.5°	775.2	723.3	687.5	674.0	648.1	606.9	582.7	560.4	518.3	509.3	486.1
5°	647.2	563.9	504.9	482.5	452.9	418.0	384.0	361.6	334.8	324.0	307.9
7.5°	510.2	427.0	376.0	358.1	337.5	308.8	278.4	256.0	228.3	213.9	200.5
10°	401.0	339.3	296.3	278.4	256.9	226.5	195.1	165.6	141.4	126.2	123.5
12.5°	325.8	274.8	229.2	210.4	185.3	154.9	132.5	131.6	129.8	128.9	130.7
15°	266.8	217.5	169.2	148.6	141.4	140.5	143.2	145.9	145.0	147.7	149.5
17.5°	219.3	166.5	155.8	156.7	157.5	160.2	164.7	171.9	172.8	177.2	180.8
20°	179.0	176.3	180.8	184.4	187.1	192.5	202.3	211.3	213.9	220.2	227.4
22.5°	203.2	211.3	221.1	225.6	229.2	239.0	249.7	264.1	269.4	277.5	287.3
25°	245.3	258.7	273.9	279.3	284.7	300.8	313.3	330.3	334.8	344.6	354.5
27.5°	280.2	294.5	310.6	317.8	322.3	338.4	349.1	359.9	359.9	365.2	372.4
30°	274.8	286.4	299.9	305.2	307.0	318.7	329.4	333.0	331.2	333.9	339.3
32.5°	228.3	237.2	248.0	252.4	254.2	262.3	271.2	271.2	270.3	270.3	273.9
35°	169.2	175.4	180.8	185.3	188.0	193.4	201.4	200.5	200.5	198.7	201.4
37.5°	113.7	117.3	123.5	125.3	126.2	129.8	136.1	136.1	134.3	135.2	137.0
40°	68.9	73.4	77.0	77.9	79.7	82.4	86.8	86.8	86.8	86.8	87.7
42.5°	41.2	43.9	46.5	46.5	47.4	51.0	52.8	52.8	52.8	52.8	53.7
45°	24.2	25.1	26.9	27.7	27.7	29.5	30.4	30.4	30.4	30.4	31.3
47.5°	14.3	15.2	15.2	16.1	16.1	17.0	17.9	17.9	17.0	17.0	17.0
50°	9.0	9.0	9.0	9.0	9.8	9.8	9.8	9.8	9.8	9.8	9.0
52.5°	7.2	7.2	7.2	7.2	6.3	6.3	6.3	6.3	5.4	5.4	4.5
55°	6.3	6.3	6.3	6.3	6.3	5.4	5.4	5.4	4.5	3.6	2.7
57.5°	6.3	6.3	6.3	6.3	6.3	5.4	5.4	4.5	3.6	3.6	2.7
60°	6.3	6.3	6.3	6.3	6.3	5.4	5.4	4.5	3.6	3.6	2.7
62.5°	7.2	7.2	6.3	6.3	6.3	5.4	5.4	4.5	4.5	3.6	2.7
65°	7.2	7.2	6.3	6.3	6.3	6.3	5.4	5.4	4.5	3.6	2.7
67.5°	7.2	7.2	7.2	7.2	6.3	6.3	6.3	5.4	4.5	3.6	2.7
70°	8.1	8.1	7.2	7.2	7.2	6.3	6.3	5.4	4.5	4.5	3.6
72.5°	8.1	8.1	7.2	7.2	7.2	7.2	6.3	5.4	5.4	4.5	3.6
75°	8.1	8.1	8.1	8.1	7.2	7.2	6.3	6.3	5.4	4.5	3.6
77.5°	8.1	8.1	8.1	8.1	7.2	7.2	7.2	6.3	5.4	4.5	3.6
80°	8.1	8.1	8.1	8.1	8.1	7.2	7.2	6.3	5.4	4.5	3.6
82.5°	9.0	9.0	8.1	8.1	8.1	7.2	7.2	6.3	5.4	4.5	4.5
85°	9.0	9.0	8.1	8.1	8.1	7.2	7.2	6.3	5.4	5.4	4.5
87.5°	9.0	9.0	8.1	8.1	8.1	7.2	7.2	6.3	5.4	5.4	4.5
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: P209045

CATALOG NUMBER: LDSQA6A55830D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	888.0	888.0	888.0	888.0	888.0	888.0	888.0	888.0
2.5°	471.7	444.9	435.9	442.2	435.0	429.7	422.5	418.9
5°	295.4	275.7	269.4	271.2	265.0	259.6	252.4	250.6
7.5°	181.7	162.9	155.8	155.8	148.6	142.3	137.9	135.2
10°	121.7	118.2	119.1	120.0	119.1	120.0	117.3	119.1
12.5°	130.7	128.9	130.7	131.6	131.6	133.4	129.8	132.5
15°	152.2	150.4	153.1	154.9	154.9	157.5	154.0	156.7
17.5°	186.2	185.3	189.8	191.6	192.5	196.9	192.5	196.0
20°	235.4	234.5	240.8	243.5	242.6	251.5	245.3	251.5
22.5°	299.0	297.2	306.1	308.8	309.7	321.4	316.0	320.5
25°	362.5	364.3	368.8	373.3	374.2	384.0	376.0	380.4
27.5°	376.0	373.3	376.0	381.3	382.2	386.7	379.5	383.1
30°	340.2	335.7	336.6	342.8	344.6	346.4	340.2	341.9
32.5°	276.6	269.4	269.4	275.7	277.5	280.2	269.4	273.9
35°	204.1	197.8	197.8	202.3	203.2	205.0	196.9	200.5
37.5°	139.6	134.3	136.1	137.9	138.7	140.5	139.6	138.7
40°	89.5	85.9	88.6	88.6	89.5	90.4	90.4	91.3
42.5°	54.6	51.9	53.7	53.7	54.6	54.6	54.6	55.5
45°	31.3	30.4	30.4	31.3	31.3	31.3	30.4	31.3
47.5°	17.0	16.1	17.0	17.0	17.0	17.0	17.0	17.0
50°	9.0	8.1	8.1	8.1	8.1	8.1	8.1	8.1
52.5°	4.5	3.6	3.6	3.6	2.7	3.6	2.7	2.7
55°	2.7	1.8	1.8	1.8	0.9	0.9	0.0	0.0
57.5°	1.8	0.9	0.9	0.9	0.0	0.0	0.0	0.0
60°	1.8	0.9	0.9	0.9	0.0	0.0	0.0	0.0
62.5°	1.8	0.9	0.9	0.9	0.0	0.0	0.0	0.0
65°	1.8	0.9	0.9	0.9	0.0	0.0	0.0	0.0
67.5°	2.7	1.8	0.9	0.9	0.9	0.0	0.0	0.0
70°	2.7	1.8	1.8	0.9	0.9	0.0	0.0	0.0
72.5°	2.7	1.8	1.8	1.8	0.9	0.9	0.0	0.0
75°	2.7	1.8	1.8	1.8	0.9	0.9	0.0	0.0
77.5°	2.7	2.7	1.8	1.8	0.9	0.9	0.9	0.0
80°	3.6	2.7	1.8	1.8	1.8	0.9	0.9	0.9
82.5°	3.6	2.7	1.8	1.8	1.8	0.9	0.9	0.9
85°	3.6	2.7	2.7	1.8	1.8	0.9	0.9	0.9
87.5°	3.6	2.7	2.7	1.8	1.8	0.9	0.9	0.9
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)