

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: P209032

Luminaire Tested: **LDSQA6A75927D010TE LARH20SP 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209032
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26686)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA6A75927D010TE LARH20SP 6LSQA1H 30°
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 20° SPOT, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4752.0 lumens
Efficiency: N/A
Efficacy: 59.8 lumens/watt
Spacing Criteria (0/90/45): 2.35 / 0.6 / 1.31
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
CIE Type: Direct

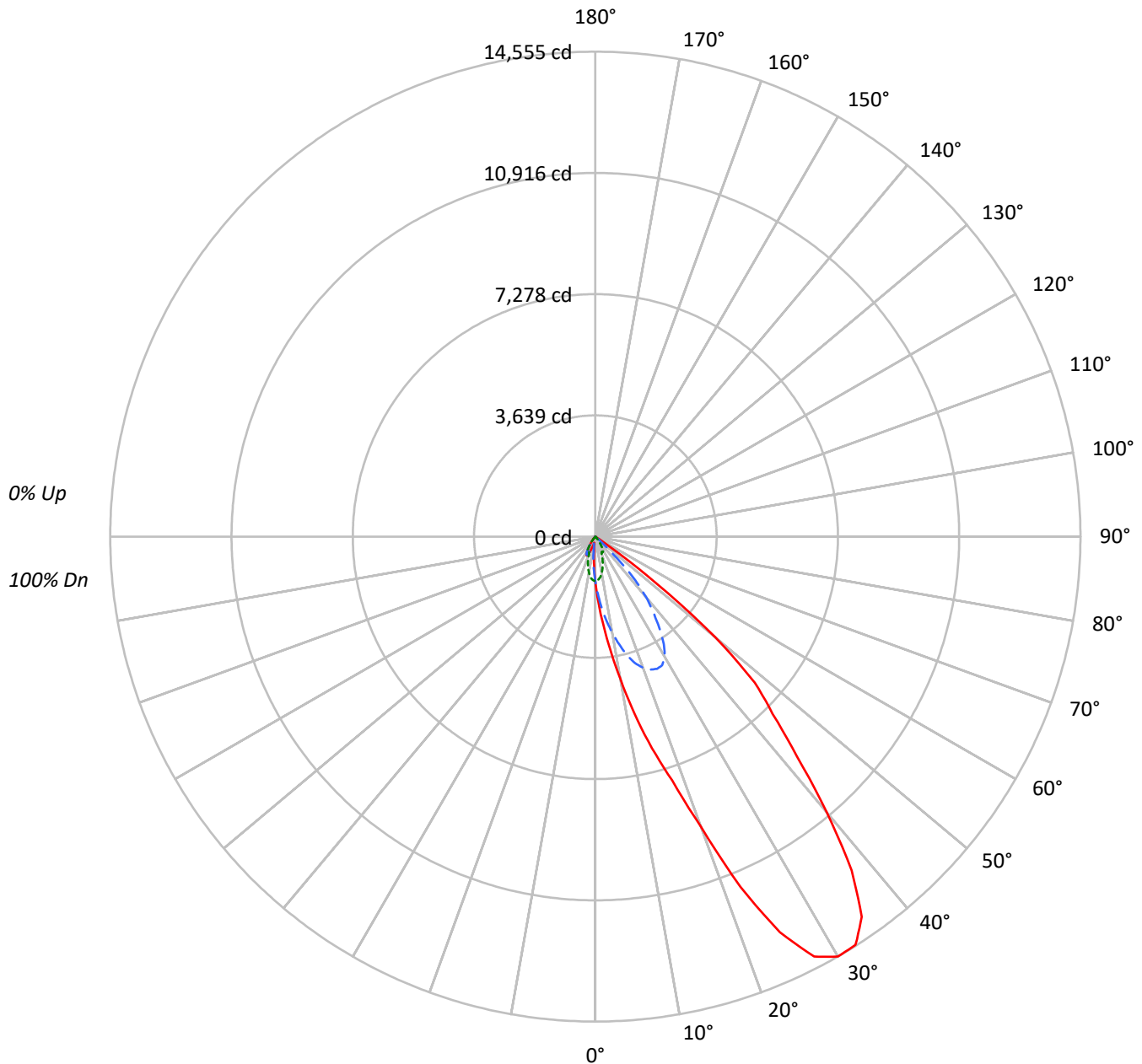
Input Watts (W): 79.45
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111		106	106	106		102	102	102
1	112	109	106	104	110	107	104	102		103	101	99		99	97	96		96	94	93
2	105	100	95	91	103	98	94	90		95	91	88		92	89	86		89	86	84
3	99	91	85	80	96	89	84	80		87	82	78		84	80	77		82	79	76
4	92	83	76	71	90	82	76	71		79	74	70		77	73	69		75	71	68
5	86	76	69	64	84	75	68	63		73	67	63		71	66	62		69	65	61
6	80	69	62	57	79	69	62	57		67	61	56		65	60	56		64	59	55
7	75	64	56	51	73	63	56	51		62	55	51		60	55	50		59	54	50
8	70	59	51	46	69	58	51	46		57	50	46		56	50	46		54	49	46
9	66	54	47	42	64	53	47	42		52	46	42		51	46	42		50	45	41
10	61	50	43	38	60	49	43	38		48	42	38		48	42	38		47	41	38

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	57759	57759	57759
5°	111923	55041	18563
10°	190151	48166	8337
15°	293010	38419	13256
20°	424164	25003	23056
25°	622328	24129	29644
30°	723602	22860	22715
35°	732404	12110	12010
40°	606381	4564	5042
45°	457971	1553	1839
50°	313332	569	569
55°	43583	495	68
60°	1137	491	0
65°	285	672	0
70°	113	831	0
75°	0	1098	0
80°	0	1884	223
85°	0	3754	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	140.7	3.0
10°-20°	594.9	12.5
20°-30°	1357.1	28.6
30°-40°	1570.5	33.0
40°-50°	947.1	19.9
50°-60°	128.7	2.7
60°-70°	4.2	0.1
70°-80°	4.5	0.1
80°-90°	4.2	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°	2092.8	44.0
0°-40°	3663.3	77.1
0°-60°	4739.1	99.7
0°-90°	4752.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4752.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1342	1342	1342	1342	1342	
5°	2590	2120	1274	697	430	301
15°	6574	3695	862	265	297	1946
25°	13100	4378	508	611	624	5928
35°	13934	3338	230	235	228	8398
45°	7521	909	26	31	30	5881
55°	581	7	7	5	1	1138
65°	3	4	7	4	0	4
75°	0	5	7	5	0	0
85°	0	5	8	5	0	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°	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5
2.5°	1940.0	1922.1	1929.7	1909.8	1859.8	1849.4	1848.5	1835.3	1792.8	1759.7	1720.1
5°	2589.6	2588.6	2593.3	2550.8	2463.1	2435.7	2422.5	2390.4	2287.5	2208.2	2120.4
7.5°	3400.5	3394.8	3389.2	3311.8	3173.9	3121.1	3087.1	2971.0	2829.3	2688.7	2532.0
10°	4349.3	4346.4	4324.7	4188.8	3967.9	3870.6	3804.6	3620.5	3392.9	3192.8	2926.6
12.5°	5451.0	5425.5	5386.8	5187.6	4884.6	4778.8	4633.4	4341.7	3992.4	3685.6	3313.6
15°	6573.5	6536.7	6467.8	6211.9	5836.2	5655.9	5475.5	5091.3	4617.4	4171.8	3695.0
17.5°	7671.4	7630.8	7469.4	7035.1	6667.9	6447.9	6247.8	5720.1	5163.1	4590.0	3985.8
20°	9257.4	9110.2	8828.8	8144.4	7461.8	7065.3	6831.2	6273.3	5584.1	4916.7	4192.6
22.5°	11375.9	11049.3	10449.8	9337.7	8362.5	7790.4	7407.1	6665.1	5887.2	5130.0	4320.0
25°	13099.8	12951.6	12269.9	10687.7	9165.9	8491.8	7958.4	6976.6	6108.1	5272.6	4378.5
27.5°	14210.9	14174.1	13395.3	11805.5	9822.0	8937.4	8341.7	7182.4	6214.7	5302.8	4350.2
30°	14554.6	14612.2	13864.5	12185.0	10011.8	9027.1	8375.7	7185.2	6132.6	5165.9	4169.0
32.5°	14529.1	14531.9	13615.2	11857.4	9703.0	8766.5	8092.5	6946.4	5829.6	4823.2	3824.4
35°	13934.3	13788.0	12751.4	10851.0	8984.6	8158.6	7531.7	6483.8	5330.2	4307.7	3338.2
37.5°	12628.7	12437.0	11228.6	9562.4	8134.0	7370.3	6864.3	5876.8	4735.4	3757.4	2836.0
40°	10788.7	10516.8	9519.9	8364.4	7203.2	6629.2	6204.4	5198.0	4099.1	3217.4	2364.9
42.5°	8946.9	8813.7	8154.8	7215.4	6420.5	5880.5	5436.8	4487.1	3487.4	2684.9	1769.2
45°	7521.3	7407.1	6964.3	6345.0	5565.2	5072.4	4644.8	3746.0	2709.5	1801.3	909.1
47.5°	6482.9	6390.3	5966.5	5316.0	4460.7	3921.6	3480.7	2456.4	1535.0	777.9	227.5
50°	4677.8	4583.4	4168.0	3414.7	2642.4	2191.2	1874.0	1097.0	435.2	157.7	23.6
52.5°	2293.1	2215.7	1933.4	1447.2	971.4	698.6	510.7	205.8	50.0	17.0	11.3
55°	580.6	533.4	444.7	279.4	136.9	82.1	52.9	18.9	12.3	9.4	6.6
57.5°	33.0	32.1	29.3	21.7	16.0	14.2	12.3	9.4	6.6	5.7	4.7
60°	13.2	12.3	11.3	9.4	7.6	6.6	6.6	4.7	3.8	3.8	3.8
62.5°	5.7	5.7	5.7	4.7	3.8	3.8	3.8	2.8	3.8	3.8	3.8
65°	2.8	2.8	2.8	1.9	1.9	1.9	2.8	2.8	2.8	3.8	3.8
67.5°	1.9	0.9	0.9	0.9	1.9	1.9	1.9	2.8	2.8	3.8	3.8
70°	0.9	0.9	0.9	0.9	1.9	1.9	1.9	2.8	2.8	3.8	4.7
72.5°	0.0	0.9	0.9	0.9	1.9	1.9	1.9	2.8	2.8	3.8	4.7
75°	0.0	0.9	0.9	0.9	1.9	1.9	1.9	2.8	3.8	3.8	4.7
77.5°	0.0	0.9	0.9	0.9	1.9	1.9	1.9	2.8	3.8	3.8	4.7
80°	0.0	0.9	0.9	0.9	1.9	1.9	1.9	2.8	3.8	3.8	4.7
82.5°	0.0	0.0	0.9	0.9	1.9	1.9	1.9	2.8	3.8	3.8	4.7
85°	0.0	0.0	0.9	0.9	1.9	1.9	1.9	2.8	3.8	3.8	4.7
87.5°	0.0	0.0	0.9	0.9	1.9	1.9	1.9	2.8	2.8	3.8	4.7
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°	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5
2.5°	1669.1	1635.1	1585.1	1552.0	1519.9	1489.7	1439.7	1411.4	1360.4	1313.2	1272.6
5°	2014.6	1929.7	1826.8	1739.0	1682.3	1626.6	1525.6	1451.0	1357.6	1273.5	1196.1
7.5°	2363.9	2213.8	2044.8	1900.4	1812.6	1726.7	1575.6	1454.8	1322.6	1202.7	1088.5
10°	2681.1	2455.5	2216.7	2009.9	1891.0	1779.6	1580.4	1419.9	1249.9	1101.7	958.2
12.5°	2975.7	2667.0	2355.4	2085.4	1938.2	1804.1	1560.5	1364.2	1162.1	986.5	819.4
15°	3238.1	2841.6	2456.4	2128.9	1956.1	1797.5	1514.3	1285.8	1058.3	861.9	650.5
17.5°	3437.3	2950.2	2500.8	2122.2	1924.0	1747.5	1435.0	1187.6	947.8	709.9	471.1
20°	3558.2	2996.4	2491.4	2071.3	1855.1	1668.2	1340.6	1080.9	814.7	545.7	415.4
22.5°	3609.1	2992.7	2447.0	1994.8	1770.1	1581.3	1249.9	977.1	675.0	493.7	433.3
25°	3617.6	2954.0	2384.7	1910.8	1686.1	1498.2	1158.4	859.1	586.3	507.9	485.2
27.5°	3552.5	2863.3	2267.6	1789.9	1568.1	1373.6	1021.5	682.6	550.4	506.0	521.1
30°	3359.9	2656.6	2060.9	1577.5	1363.2	1168.7	729.8	535.3	456.9	459.8	463.5
32.5°	3021.0	2312.9	1728.6	1266.9	1032.8	770.4	454.1	357.8	347.4	347.4	345.5
35°	2568.8	1892.8	1356.6	801.5	513.6	370.1	235.1	236.0	231.3	230.4	229.4
37.5°	2101.5	1493.5	859.1	331.4	222.8	154.8	138.8	140.7	138.8	141.6	139.7
40°	1656.8	922.3	313.4	105.7	78.4	75.5	77.4	79.3	79.3	81.2	81.2
42.5°	962.9	305.9	82.1	42.5	42.5	40.6	41.5	43.4	44.4	45.3	44.4
45°	286.1	63.3	26.4	23.6	23.6	22.7	22.7	23.6	24.5	25.5	25.5
47.5°	45.3	17.9	15.1	13.2	13.2	13.2	13.2	13.2	14.2	14.2	15.1
50°	14.2	11.3	9.4	8.5	8.5	7.6	7.6	8.5	8.5	8.5	9.4
52.5°	8.5	6.6	6.6	5.7	6.6	6.6	5.7	6.6	6.6	6.6	7.6
55°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	6.6	6.6	6.6
57.5°	4.7	4.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
60°	4.7	4.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	6.6
62.5°	4.7	4.7	5.7	5.7	5.7	5.7	5.7	5.7	6.6	6.6	6.6
65°	4.7	4.7	5.7	5.7	5.7	5.7	5.7	6.6	6.6	6.6	6.6
67.5°	4.7	5.7	5.7	5.7	5.7	6.6	6.6	6.6	6.6	6.6	6.6
70°	4.7	5.7	5.7	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
72.5°	4.7	5.7	5.7	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
75°	5.7	5.7	5.7	6.6	6.6	6.6	6.6	6.6	6.6	6.6	7.6
77.5°	5.7	5.7	6.6	6.6	6.6	6.6	6.6	6.6	7.6	7.6	7.6
80°	5.7	5.7	6.6	6.6	6.6	6.6	6.6	7.6	7.6	7.6	7.6
82.5°	5.7	5.7	6.6	6.6	6.6	6.6	6.6	7.6	7.6	7.6	7.6
85°	5.7	5.7	6.6	6.6	6.6	6.6	6.6	7.6	7.6	7.6	7.6
87.5°	5.7	5.7	6.6	6.6	6.6	6.6	6.6	7.6	7.6	7.6	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5
2.5°	1237.7	1194.2	1173.5	1144.2	1123.4	1077.2	1058.3	1026.2	999.8	956.3	959.2
5°	1130.0	1047.9	992.2	948.8	918.6	844.9	795.8	743.9	696.7	638.2	616.5
7.5°	980.9	879.9	794.9	743.0	704.3	606.1	497.5	412.6	348.4	302.1	284.2
10°	831.7	700.5	565.5	485.2	429.5	335.1	287.0	264.3	243.6	218.1	201.1
12.5°	658.0	471.1	348.4	316.3	293.6	262.4	231.3	206.7	211.5	212.4	219.0
15°	449.4	338.9	300.2	278.5	254.0	236.0	246.4	253.0	265.3	266.2	274.7
17.5°	365.4	318.1	287.0	286.1	287.9	298.3	314.4	322.9	338.9	342.7	355.0
20°	365.4	338.0	364.4	364.4	369.1	383.3	404.1	416.3	434.3	440.9	456.0
22.5°	416.3	435.2	468.3	472.0	473.9	489.0	515.5	527.7	548.5	552.3	568.3
25°	507.9	524.9	555.1	557.9	558.9	570.2	590.0	596.6	610.8	603.3	612.7
27.5°	537.2	544.7	563.6	565.5	560.8	565.5	573.0	573.0	577.8	562.7	565.5
30°	472.0	473.9	483.4	484.3	473.9	475.8	476.8	475.8	474.9	458.8	458.8
32.5°	350.2	350.2	362.5	359.7	348.4	351.2	351.2	351.2	350.2	337.0	335.1
35°	232.2	233.2	243.6	241.7	233.2	235.1	235.1	237.9	235.1	227.5	225.6
37.5°	141.6	142.6	147.3	148.2	145.4	146.3	147.3	146.3	148.2	144.4	142.6
40°	82.1	84.0	87.8	88.7	87.8	87.8	88.7	89.7	93.5	88.7	86.9
42.5°	48.1	49.1	51.0	51.0	51.0	51.0	51.9	52.9	53.8	52.9	51.9
45°	27.4	28.3	29.3	29.3	30.2	29.3	30.2	30.2	31.2	30.2	30.2
47.5°	16.0	16.0	17.0	17.0	17.9	17.0	17.9	17.9	17.9	17.0	17.0
50°	9.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	9.4	9.4
52.5°	7.6	7.6	7.6	7.6	7.6	6.6	6.6	6.6	6.6	5.7	5.7
55°	6.6	6.6	6.6	6.6	6.6	6.6	5.7	4.7	4.7	3.8	3.8
57.5°	5.7	6.6	6.6	6.6	6.6	5.7	5.7	4.7	3.8	2.8	2.8
60°	6.6	6.6	6.6	6.6	5.7	5.7	5.7	4.7	3.8	2.8	2.8
62.5°	6.6	6.6	6.6	6.6	6.6	5.7	5.7	4.7	3.8	2.8	2.8
65°	6.6	6.6	6.6	6.6	6.6	5.7	5.7	4.7	3.8	2.8	2.8
67.5°	6.6	6.6	6.6	6.6	6.6	5.7	5.7	4.7	3.8	3.8	2.8
70°	6.6	7.6	7.6	6.6	6.6	6.6	5.7	4.7	4.7	3.8	2.8
72.5°	6.6	7.6	7.6	6.6	6.6	6.6	5.7	4.7	4.7	3.8	2.8
75°	7.6	7.6	7.6	7.6	6.6	6.6	5.7	5.7	4.7	3.8	2.8
77.5°	7.6	7.6	7.6	7.6	6.6	6.6	5.7	5.7	4.7	3.8	2.8
80°	7.6	7.6	7.6	7.6	7.6	6.6	6.6	5.7	4.7	3.8	3.8
82.5°	7.6	7.6	7.6	7.6	7.6	6.6	6.6	5.7	4.7	3.8	3.8
85°	7.6	7.6	7.6	7.6	7.6	6.6	6.6	5.7	4.7	3.8	2.8
87.5°	7.6	7.6	7.6	7.6	6.6	6.6	5.7	5.7	4.7	3.8	2.8
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: P209032

CATALOG NUMBER: LDSQA6A75927D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5	1341.5
2.5°	924.2	902.5	893.1	908.2	900.6	878.0	882.7	868.5
5°	551.3	518.3	497.5	507.0	476.8	449.4	449.4	429.5
7.5°	266.2	255.8	250.2	252.1	245.5	237.0	232.2	232.2
10°	186.9	183.1	184.1	184.1	189.8	188.8	191.6	190.7
12.5°	221.9	223.7	224.7	228.5	233.2	233.2	236.0	234.1
15°	284.2	282.3	287.9	288.9	296.4	297.4	301.2	297.4
17.5°	361.6	365.4	371.0	370.1	385.2	386.1	386.1	385.2
20°	465.4	468.3	473.9	475.8	493.7	495.6	502.2	503.2
22.5°	578.7	578.7	581.5	585.3	602.3	603.3	606.1	606.1
25°	617.4	611.8	612.7	617.4	626.9	623.1	625.9	624.0
27.5°	567.4	558.9	557.0	563.6	570.2	559.8	563.6	563.6
30°	460.7	453.1	451.3	457.9	462.6	451.3	455.0	456.9
32.5°	337.0	332.3	331.4	336.1	339.9	330.4	334.2	337.0
35°	227.5	225.6	223.7	224.7	230.4	222.8	226.6	228.5
37.5°	144.4	140.7	141.6	143.5	147.3	142.6	146.3	146.3
40°	88.7	86.9	86.9	88.7	90.6	86.9	88.7	89.7
42.5°	51.9	51.9	51.9	52.9	53.8	51.9	51.9	52.9
45°	30.2	29.3	29.3	30.2	31.2	29.3	30.2	30.2
47.5°	17.0	16.0	16.0	17.0	17.0	16.0	17.0	17.0
50°	9.4	8.5	8.5	9.4	9.4	8.5	8.5	8.5
52.5°	4.7	4.7	4.7	4.7	4.7	4.7	3.8	3.8
55°	2.8	2.8	1.9	1.9	1.9	1.9	1.9	0.9
57.5°	1.9	1.9	0.9	0.9	0.9	0.9	0.0	0.0
60°	1.9	1.9	0.9	0.9	0.9	0.0	0.0	0.0
62.5°	1.9	1.9	0.9	0.9	0.9	0.0	0.0	0.0
65°	1.9	1.9	0.9	0.9	0.9	0.0	0.0	0.0
67.5°	1.9	1.9	0.9	0.9	0.9	0.0	0.0	0.0
70°	2.8	1.9	1.9	0.9	0.9	0.9	0.0	0.0
72.5°	2.8	1.9	1.9	1.9	0.9	0.9	0.0	0.0
75°	2.8	1.9	1.9	1.9	0.9	0.9	0.0	0.0
77.5°	2.8	1.9	1.9	1.9	0.9	0.9	0.9	0.0
80°	2.8	1.9	1.9	1.9	0.9	0.9	0.9	0.9
82.5°	2.8	1.9	1.9	1.9	0.9	0.9	0.9	0.9
85°	2.8	1.9	1.9	1.9	0.9	0.9	0.9	0.0
87.5°	2.8	1.9	1.9	1.9	0.9	0.9	0.9	0.0
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)