

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: P209058

Luminaire Tested: **LDSQA6A65935D010TE LARH30NF 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209058
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: LDSQA6A65935D010TE 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 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5148.8 lumens
Efficiency: N/A
Efficacy: 65.4 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

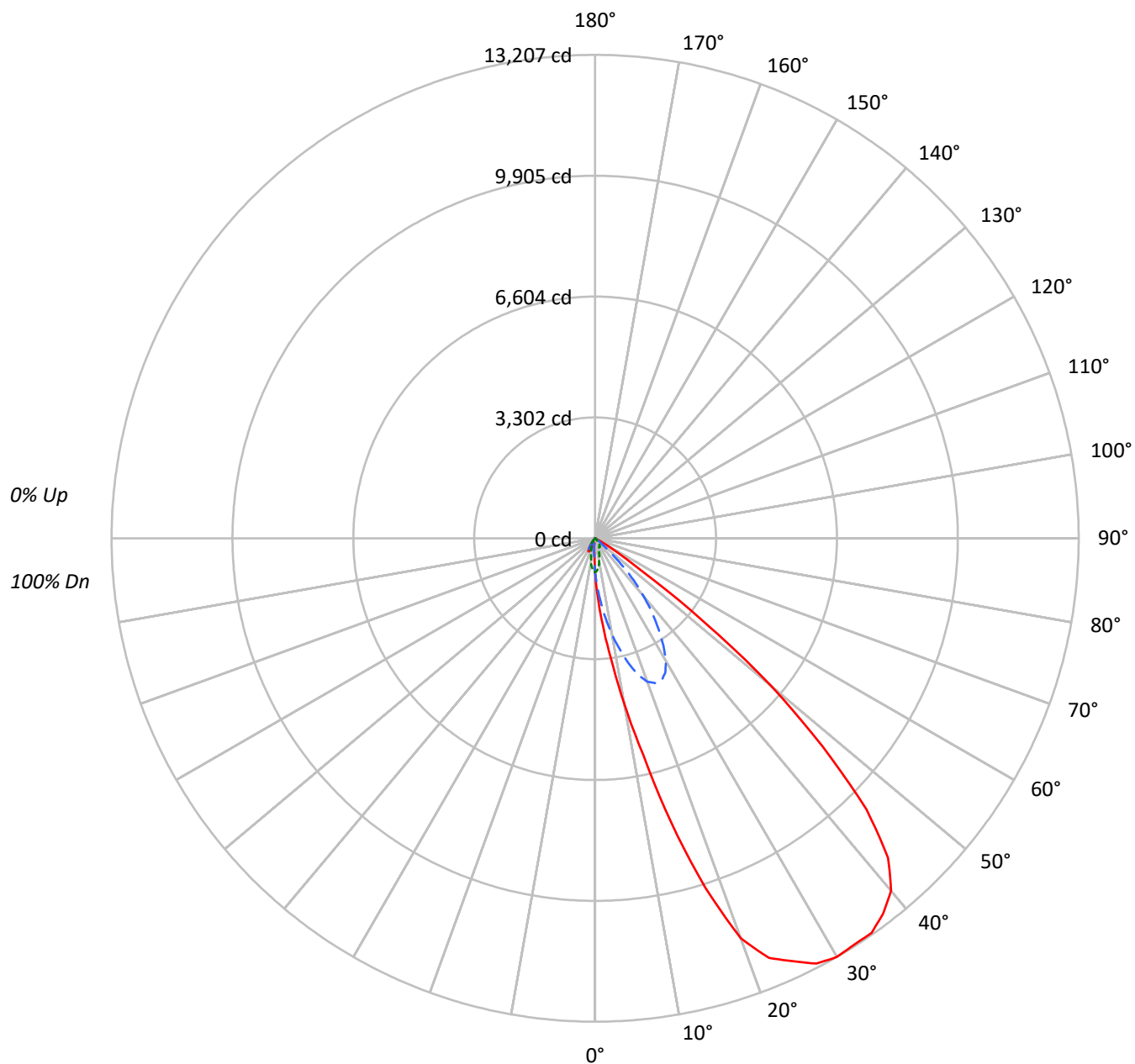
Input Watts (W): 78.67
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	39986	39986	39986
5°	102574	36378	11328
10°	199948	27954	5443
15°	358932	18989	7301
20°	532906	14415	12055
25°	605729	11877	18903
30°	656619	12986	17779
35°	691633	8415	11022
40°	706589	3738	5368
45°	638187	1425	1997
50°	420102	563	563
55°	115045	495	0
60°	22975	568	0
65°	1620	764	0
70°	239	944	0
75°	0	1397	0
80°	0	2083	223
85°	0	4150	445



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	113.8	2.2
10°-20°	604.4	11.7
20°-30°	1369.9	26.6
30°-40°	1644.3	31.9
40°-50°	1158.9	22.5
50°-60°	239.1	4.6
60°-70°	8.5	0.2
70°-80°	5.0	0.1
80°-90°	4.9	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°	2088.0	40.6
0°-40°	3732.4	72.5
0°-60°	5130.4	99.6
0°-90°	5148.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5148.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	929	929	929	929	929	
5°	2373	1729	842	350	262	292
15°	8052	3543	426	152	164	2390
25°	12750	4285	250	350	398	5884
35°	13159	3001	160	210	210	8180
45°	10481	1029	23	32	33	7709
55°	1533	21	7	5	0	2020
65°	16	5	8	5	0	47
75°	0	5	8	6	0	0
85°	0	6	8	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°	928.7	928.7	928.7	928.7	928.7	928.7	928.7	928.7	928.7	928.7	928.7
2.5°	1583.2	1535.4	1554.1	1498.9	1486.7	1476.4	1486.7	1426.8	1393.1	1350.0	1315.4
5°	2373.3	2316.2	2329.3	2232.9	2188.9	2158.9	2153.3	2029.7	1937.0	1835.0	1729.2
7.5°	3303.9	3249.6	3242.1	3092.3	3001.5	2950.0	2928.5	2751.6	2591.5	2409.8	2211.4
10°	4573.4	4449.9	4411.5	4194.3	4021.1	3911.5	3776.7	3494.0	3213.1	2938.8	2686.0
12.5°	6050.8	5983.4	5887.9	5505.0	5201.7	5046.2	4844.9	4403.1	3978.0	3524.9	3101.7
15°	8052.4	7812.8	7649.9	7096.6	6607.9	6368.2	6074.2	5398.3	4756.0	4182.1	3542.7
17.5°	10008.2	9882.8	9628.1	8910.0	8157.3	7779.1	7340.9	6422.5	5515.3	4698.9	3918.1
20°	11630.7	11512.7	11222.5	10545.6	9710.5	9152.5	8601.1	7340.9	6155.7	5110.8	4169.0
22.5°	12407.8	12332.9	12096.0	11516.5	10804.9	10274.1	9681.5	8122.7	6629.4	5380.5	4283.2
25°	12750.4	12715.8	12563.2	12106.3	11436.0	10985.6	10425.8	8676.0	6924.3	5505.9	4285.1
27.5°	13097.7	13104.3	12767.3	12405.9	11770.2	11337.6	10798.4	8921.3	6977.7	5435.7	4144.7
30°	13207.3	13138.0	12989.1	12470.5	11866.6	11406.9	10828.3	8808.0	6758.6	5147.3	3864.7
32.5°	13162.3	13135.2	12971.4	12422.7	11702.8	11196.3	10539.1	8358.6	6326.1	4735.4	3467.8
35°	13158.6	13108.0	12732.6	12261.7	11375.1	10749.7	9883.7	7632.1	5713.8	4192.4	3000.6
37.5°	12920.8	12795.3	12513.5	11878.8	10710.4	9917.4	8946.5	6744.5	4964.8	3582.9	2537.2
40°	12571.6	12403.1	12032.3	11071.8	9558.8	8645.1	7697.6	5736.2	4171.8	2981.9	2044.7
42.5°	11842.3	11587.6	11063.3	9742.3	8024.4	7200.5	6412.2	4714.8	3402.2	2429.5	1560.7
45°	10481.0	10132.7	9424.0	7973.8	6482.4	5810.2	5176.4	3793.6	2723.5	1802.2	1028.9
47.5°	8424.1	8101.1	7456.1	6347.6	5083.7	4515.4	4009.8	2821.8	1846.2	1043.9	491.5
50°	6271.8	5994.6	5490.9	4411.5	3412.5	2966.0	2533.4	1602.8	865.1	496.2	204.1
52.5°	3742.1	3604.5	3157.9	2446.3	1685.2	1452.1	1165.6	678.8	436.3	179.8	55.2
55°	1532.6	1414.6	1247.0	1000.8	733.1	621.7	531.8	335.2	135.8	37.4	20.6
57.5°	692.8	666.6	590.8	464.4	337.0	282.7	191.0	63.7	30.0	18.7	12.2
60°	266.8	240.6	206.0	111.4	47.7	40.3	32.8	21.5	15.0	10.3	7.5
62.5°	38.4	36.5	32.8	26.2	20.6	18.7	15.9	11.2	8.4	6.6	5.6
65°	15.9	15.9	14.0	11.2	9.4	8.4	7.5	5.6	4.7	4.7	4.7
67.5°	6.6	6.6	5.6	4.7	3.7	3.7	3.7	2.8	3.7	3.7	4.7
70°	1.9	1.9	1.9	1.9	1.9	1.9	2.8	2.8	3.7	3.7	4.7
72.5°	0.0	0.0	0.9	0.9	1.9	1.9	1.9	2.8	3.7	4.7	4.7
75°	0.0	0.0	0.9	0.9	1.9	1.9	1.9	2.8	3.7	4.7	4.7
77.5°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.7	4.7
80°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.7	5.6
82.5°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.7	5.6
85°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.7	5.6
87.5°	0.0	0.0	0.9	0.9	1.9	1.9	2.8	2.8	3.7	4.7	5.6
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	928.7	928.7	928.7	928.7	928.7	928.7	928.7	928.7	928.7	928.7	928.7
2.5°	1285.4	1225.5	1208.7	1156.2	1112.2	1090.7	1063.5	1002.7	956.8	896.0	859.5
5°	1655.2	1542.0	1452.1	1342.5	1270.5	1223.6	1150.6	1039.2	949.3	841.7	764.9
7.5°	2055.0	1848.1	1686.1	1505.4	1401.5	1320.1	1195.6	1035.5	903.5	760.2	641.3
10°	2440.7	2131.8	1877.1	1617.8	1481.1	1367.8	1196.5	995.2	820.1	639.4	514.0
12.5°	2780.6	2381.7	2023.2	1689.9	1520.4	1379.1	1164.7	923.1	711.5	526.2	415.7
15°	3064.3	2575.5	2126.2	1717.0	1523.2	1354.7	1098.2	820.1	590.8	426.0	348.3
17.5°	3279.6	2677.6	2158.0	1684.3	1468.9	1285.4	996.1	690.0	479.3	361.4	293.0
20°	3391.0	2697.3	2112.1	1595.3	1368.8	1180.6	862.3	559.9	406.3	314.6	245.3
22.5°	3405.0	2642.0	2002.6	1468.0	1242.4	1053.2	714.3	467.2	362.3	278.1	216.3
25°	3321.7	2522.2	1846.2	1323.8	1103.8	907.2	581.4	418.5	329.6	250.0	249.0
27.5°	3143.8	2316.2	1659.0	1156.2	936.2	737.7	493.4	378.2	294.0	265.0	281.8
30°	2892.9	2052.2	1428.7	944.6	731.2	567.4	415.7	311.8	258.4	261.2	275.2
32.5°	2553.1	1724.5	1158.1	691.9	523.3	426.9	311.8	212.5	214.4	215.3	227.5
35°	2126.2	1382.8	865.1	465.3	367.9	300.5	176.0	156.3	159.2	160.1	168.5
37.5°	1703.9	1062.6	574.8	309.9	231.2	158.2	109.5	104.9	106.7	105.8	115.2
40°	1305.1	740.6	344.5	153.5	88.9	74.0	67.4	64.6	65.5	66.5	72.1
42.5°	924.1	401.6	170.4	58.0	46.8	43.1	40.3	38.4	39.3	39.3	43.1
45°	469.0	190.1	58.0	31.8	29.0	26.2	24.3	23.4	23.4	23.4	25.3
47.5°	203.2	62.7	27.2	19.7	17.8	16.9	15.0	14.0	14.0	14.0	15.0
50°	63.7	25.3	16.9	13.1	11.2	10.3	9.4	9.4	9.4	8.4	9.4
52.5°	23.4	15.9	11.2	8.4	7.5	7.5	7.5	6.6	7.5	6.6	7.5
55°	14.0	10.3	7.5	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
57.5°	9.4	7.5	6.6	6.6	5.6	5.6	6.6	6.6	6.6	6.6	6.6
60°	6.6	6.6	5.6	5.6	5.6	5.6	6.6	6.6	6.6	6.6	6.6
62.5°	5.6	5.6	5.6	5.6	5.6	5.6	6.6	6.6	6.6	6.6	7.5
65°	4.7	5.6	5.6	5.6	5.6	5.6	6.6	6.6	7.5	7.5	7.5
67.5°	4.7	5.6	5.6	6.6	6.6	6.6	6.6	7.5	7.5	7.5	7.5
70°	5.6	5.6	6.6	6.6	6.6	6.6	7.5	7.5	7.5	7.5	8.4
72.5°	5.6	5.6	6.6	6.6	6.6	6.6	7.5	7.5	8.4	8.4	8.4
75°	5.6	6.6	6.6	6.6	6.6	7.5	7.5	7.5	8.4	8.4	8.4
77.5°	5.6	6.6	6.6	7.5	7.5	7.5	7.5	8.4	8.4	8.4	8.4
80°	5.6	6.6	6.6	7.5	7.5	7.5	8.4	8.4	8.4	8.4	9.4
82.5°	5.6	6.6	6.6	7.5	7.5	7.5	8.4	8.4	8.4	8.4	9.4
85°	6.6	6.6	7.5	7.5	7.5	7.5	8.4	8.4	8.4	8.4	9.4
87.5°	6.6	6.6	7.5	7.5	7.5	7.5	8.4	8.4	9.4	8.4	9.4
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	928.7	928.7	928.7	928.7	928.7	928.7	928.7	928.7	928.7	928.7	928.7
2.5°	810.8	756.5	719.0	705.0	677.8	634.8	609.5	586.1	542.1	532.7	508.4
5°	676.9	589.8	528.0	504.6	473.7	437.2	401.6	378.2	350.1	338.9	322.1
7.5°	533.6	446.6	393.2	374.5	353.0	323.0	291.2	267.8	238.7	223.8	209.7
10°	419.4	354.8	309.9	291.2	268.7	236.9	204.1	173.2	147.9	132.0	129.2
12.5°	340.8	287.4	239.7	220.0	193.8	162.0	138.6	137.6	135.8	134.8	136.7
15°	279.0	227.5	176.9	155.4	147.9	147.0	149.8	152.6	151.7	154.5	156.3
17.5°	229.4	174.1	162.9	163.8	164.8	167.6	172.3	179.8	180.7	185.4	189.1
20°	187.2	184.4	189.1	192.9	195.7	201.3	211.6	220.9	223.8	230.3	237.8
22.5°	212.5	220.9	231.2	235.9	239.7	250.0	261.2	276.2	281.8	290.2	300.5
25°	256.5	270.6	286.5	292.1	297.7	314.6	327.7	345.5	350.1	360.4	370.7
27.5°	293.0	308.0	324.9	332.4	337.0	353.9	365.1	376.4	376.4	382.0	389.5
30°	287.4	299.6	313.6	319.3	321.1	333.3	344.5	348.3	346.4	349.2	354.8
32.5°	238.7	248.1	259.3	264.0	265.9	274.3	283.7	283.7	282.7	282.7	286.5
35°	176.9	183.5	189.1	193.8	196.6	202.2	210.6	209.7	209.7	207.8	210.6
37.5°	118.9	122.6	129.2	131.1	132.0	135.8	142.3	142.3	140.4	141.4	143.2
40°	72.1	76.8	80.5	81.5	83.3	86.1	90.8	90.8	90.8	90.8	91.7
42.5°	43.1	45.9	48.7	48.7	49.6	53.4	55.2	55.2	55.2	55.2	56.2
45°	25.3	26.2	28.1	29.0	29.0	30.9	31.8	31.8	31.8	31.8	32.8
47.5°	15.0	15.9	15.9	16.9	16.9	17.8	18.7	18.7	17.8	17.8	17.8
50°	9.4	9.4	9.4	9.4	10.3	10.3	10.3	10.3	10.3	10.3	9.4
52.5°	7.5	7.5	7.5	7.5	6.6	6.6	6.6	6.6	5.6	5.6	4.7
55°	6.6	6.6	6.6	6.6	6.6	5.6	5.6	5.6	4.7	3.7	2.8
57.5°	6.6	6.6	6.6	6.6	6.6	5.6	5.6	4.7	3.7	3.7	2.8
60°	6.6	6.6	6.6	6.6	6.6	5.6	5.6	4.7	3.7	3.7	2.8
62.5°	7.5	7.5	6.6	6.6	6.6	5.6	5.6	4.7	4.7	3.7	2.8
65°	7.5	7.5	6.6	6.6	6.6	6.6	5.6	5.6	4.7	3.7	2.8
67.5°	7.5	7.5	7.5	7.5	6.6	6.6	6.6	5.6	4.7	3.7	2.8
70°	8.4	8.4	7.5	7.5	7.5	6.6	6.6	5.6	4.7	4.7	3.7
72.5°	8.4	8.4	7.5	7.5	7.5	7.5	6.6	5.6	5.6	4.7	3.7
75°	8.4	8.4	8.4	8.4	7.5	7.5	6.6	6.6	5.6	4.7	3.7
77.5°	8.4	8.4	8.4	8.4	7.5	7.5	7.5	6.6	5.6	4.7	3.7
80°	8.4	8.4	8.4	8.4	8.4	7.5	7.5	6.6	5.6	4.7	3.7
82.5°	9.4	9.4	8.4	8.4	8.4	7.5	7.5	6.6	5.6	4.7	4.7
85°	9.4	9.4	8.4	8.4	8.4	7.5	7.5	6.6	5.6	5.6	4.7
87.5°	9.4	9.4	8.4	8.4	8.4	7.5	7.5	6.6	5.6	5.6	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



TEST NUMBER: P209058

CATALOG NUMBER: LDSQA6A65935D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	928.7	928.7	928.7	928.7	928.7	928.7	928.7	928.7
2.5°	493.4	465.3	455.9	462.5	455.0	449.4	441.9	438.2
5°	309.0	288.4	281.8	283.7	277.1	271.5	264.0	262.1
7.5°	190.1	170.4	162.9	162.9	155.4	148.9	144.2	141.4
10°	127.3	123.6	124.5	125.5	124.5	125.5	122.6	124.5
12.5°	136.7	134.8	136.7	137.6	137.6	139.5	135.8	138.6
15°	159.2	157.3	160.1	162.0	162.0	164.8	161.0	163.8
17.5°	194.7	193.8	198.5	200.4	201.3	206.0	201.3	205.0
20°	246.2	245.3	251.8	254.7	253.7	263.1	256.5	263.1
22.5°	312.7	310.8	320.2	323.0	323.9	336.1	330.5	335.2
25°	379.2	381.0	385.7	390.4	391.3	401.6	393.2	397.9
27.5°	393.2	390.4	393.2	398.8	399.8	404.4	397.0	400.7
30°	355.8	351.1	352.0	358.6	360.4	362.3	355.8	357.6
32.5°	289.3	281.8	281.8	288.4	290.2	293.0	281.8	286.5
35°	213.5	206.9	206.9	211.6	212.5	214.4	206.0	209.7
37.5°	146.1	140.4	142.3	144.2	145.1	147.0	146.1	145.1
40°	93.6	89.9	92.7	92.7	93.6	94.6	94.6	95.5
42.5°	57.1	54.3	56.2	56.2	57.1	57.1	57.1	58.0
45°	32.8	31.8	31.8	32.8	32.8	32.8	31.8	32.8
47.5°	17.8	16.9	17.8	17.8	17.8	17.8	17.8	17.8
50°	9.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
52.5°	4.7	3.7	3.7	3.7	2.8	3.7	2.8	2.8
55°	2.8	1.9	1.9	1.9	0.9	0.9	0.0	0.0
57.5°	1.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0
60°	1.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0
62.5°	1.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0
65°	1.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0
67.5°	2.8	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	0.0	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	2.8	1.9	1.9	0.9	0.9	0.9	0.0
80°	3.7	2.8	1.9	1.9	1.9	0.9	0.9	0.9
82.5°	3.7	2.8	1.9	1.9	1.9	0.9	0.9	0.9
85°	3.7	2.8	2.8	1.9	1.9	0.9	0.9	0.9
87.5°	3.7	2.8	2.8	1.9	1.9	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)