

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: P209085

Luminaire Tested: **LDSQA6A65830D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209085
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: LDSQA6A65830D010TE 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: 6103.7 lumens
Efficiency: N/A
Efficacy: 77.6 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

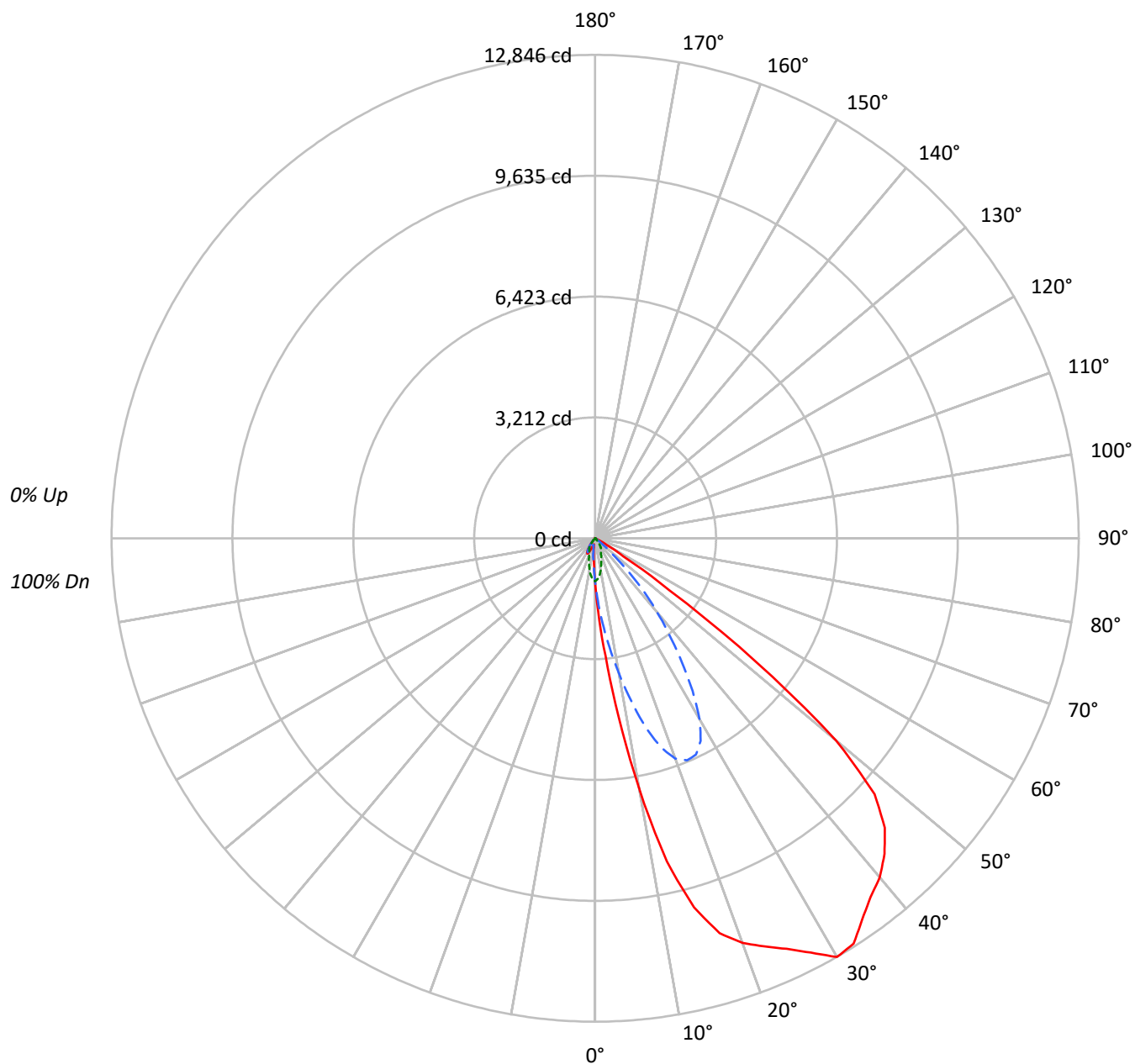
Input Watts (W): 78.67
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	49251	49251	49251
5°	135188	45381	18516
10°	296246	37140	7061
15°	452516	28269	8277
20°	524282	21035	12861
25°	571918	17297	20756
30°	638657	15686	21194
35°	649799	10759	14533
40°	661220	5103	7357
45°	662293	2119	3215
50°	559902	918	991
55°	180292	631	158
60°	35805	723	0
65°	3657	856	0
70°	403	1196	0
75°	0	1580	0
80°	0	2628	273
85°	0	5236	543



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	155.3	2.5
10°-20°	803.1	13.2
20°-30°	1537.7	25.2
30°-40°	1811.7	29.7
40°-50°	1423.0	23.3
50°-60°	346.8	5.7
60°-70°	14.9	0.2
70°-80°	5.6	0.1
80°-90°	5.6	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°	2496.1	40.9
0°-40°	4307.8	70.6
0°-60°	6077.6	99.6
0°-90°	6103.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6103.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1144	1144	1144	1144	1144	
5°	3128	2264	1050	550	428	413
15°	10152	5214	634	182	186	2834
25°	12039	6340	364	381	437	5611
35°	12363	4008	205	264	276	7752
45°	10877	1239	35	48	53	8172
55°	2402	45	8	5	2	2859
65°	36	5	8	5	0	95
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°	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9
2.5°	1960.7	1956.5	1928.0	1954.4	1874.2	1871.0	1835.1	1819.3	1772.9	1728.6	1665.2
5°	3127.9	3059.3	3003.4	3005.5	2851.4	2822.9	2742.7	2661.4	2536.9	2420.8	2263.6
7.5°	4767.8	4686.5	4568.3	4518.7	4224.3	4137.8	3972.1	3755.8	3484.6	3214.4	2923.2
10°	6776.0	6788.7	6635.7	6494.3	6048.9	5873.7	5605.7	5179.4	4665.4	4157.8	3641.8
12.5°	8796.9	8788.4	8605.9	8391.7	7842.9	7596.0	7239.3	6707.4	6026.8	5239.5	4432.2
15°	10151.9	10212.0	10135.0	9964.0	9495.5	9212.7	8810.6	8088.8	7259.3	6303.2	5214.2
17.5°	11002.4	11059.4	11032.0	10898.0	10484.3	10182.5	9846.9	9255.9	8296.7	7094.7	5830.5
20°	11442.5	11532.2	11519.5	11373.9	11061.5	10811.4	10441.0	9893.3	9062.8	7644.5	6229.4
22.5°	11735.9	11804.5	11823.5	11658.8	11335.9	11098.5	10827.3	10272.2	9491.3	7980.1	6387.7
25°	12038.7	12160.1	12040.9	11838.2	11541.7	11313.8	11024.6	10492.7	9696.0	8117.3	6340.2
27.5°	12410.2	12468.2	12198.1	12013.4	11684.2	11437.2	11130.1	10620.4	9731.9	8007.5	6069.0
30°	12846.0	12605.4	12416.5	12050.3	11676.8	11436.2	11123.8	10540.2	9543.0	7643.5	5543.4
32.5°	12774.3	12553.7	12339.5	11952.2	11582.9	11344.4	10996.1	10273.2	9096.6	7034.6	4818.5
35°	12362.7	12410.2	12179.1	11858.3	11440.4	11194.5	10814.6	9893.3	8338.9	6194.5	4008.0
37.5°	12015.5	12120.0	11969.1	11672.6	11248.3	10915.9	10403.0	9283.4	7350.1	5128.7	3239.7
40°	11764.4	11798.1	11716.9	11384.5	10874.8	10394.6	9801.5	8188.0	6149.2	4025.9	2557.0
42.5°	11375.0	11464.7	11321.1	10958.1	10185.7	9642.2	8783.2	6922.7	4776.2	3075.1	1924.8
45°	10876.9	10962.3	10785.1	10181.4	9107.1	8310.4	7262.5	5397.8	3533.1	2266.8	1238.9
47.5°	10064.3	10117.1	9774.1	8939.4	7377.5	6627.2	5552.9	3763.2	2276.3	1267.4	602.6
50°	8358.9	8333.6	7626.6	6599.8	4934.5	4147.3	3305.2	2039.9	1022.6	600.5	376.7
52.5°	5387.3	5329.2	4629.6	3695.6	2498.9	1906.9	1433.1	880.1	532.9	335.6	148.8
55°	2401.8	2379.7	1948.1	1513.3	1022.6	880.1	672.2	431.6	283.9	117.1	45.4
57.5°	890.7	870.6	767.2	643.7	493.9	410.5	326.1	206.8	72.8	39.0	24.3
60°	415.8	414.7	365.1	300.8	208.9	158.3	91.8	48.5	30.6	21.1	13.7
62.5°	133.0	129.8	90.8	66.5	47.5	41.2	32.7	24.3	15.8	11.6	8.4
65°	35.9	35.9	32.7	27.4	22.2	19.0	15.8	11.6	7.4	6.3	5.3
67.5°	13.7	13.7	12.7	11.6	8.4	7.4	6.3	5.3	4.2	5.3	5.3
70°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	4.2	4.2	5.3
72.5°	0.0	0.0	1.1	1.1	2.1	2.1	3.2	3.2	4.2	5.3	5.3
75°	0.0	0.0	1.1	1.1	2.1	2.1	3.2	3.2	4.2	5.3	5.3
77.5°	0.0	0.0	1.1	1.1	2.1	2.1	3.2	3.2	4.2	5.3	5.3
80°	0.0	0.0	1.1	1.1	2.1	2.1	3.2	3.2	4.2	5.3	5.3
82.5°	0.0	0.0	1.1	2.1	2.1	2.1	3.2	4.2	4.2	5.3	6.3
85°	0.0	0.0	1.1	2.1	2.1	3.2	3.2	4.2	4.2	5.3	6.3
87.5°	0.0	0.0	1.1	2.1	2.1	3.2	3.2	4.2	4.2	5.3	6.3
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°	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9
2.5°	1618.8	1549.2	1453.1	1397.2	1383.5	1353.9	1302.2	1225.2	1161.9	1100.7	1064.8
5°	2130.6	1966.0	1781.3	1651.5	1598.8	1528.1	1402.5	1272.7	1153.4	1050.0	968.8
7.5°	2673.0	2401.8	2103.2	1862.6	1776.1	1664.2	1459.5	1266.3	1102.8	959.3	850.6
10°	3212.3	2775.4	2370.2	2021.9	1880.5	1728.6	1458.4	1208.3	1016.2	849.5	729.2
12.5°	3751.6	3123.7	2566.5	2118.0	1934.3	1742.3	1415.1	1119.7	906.5	736.6	621.6
15°	4249.7	3401.2	2699.4	2150.7	1929.1	1702.2	1327.6	1012.0	791.5	634.2	527.6
17.5°	4621.1	3546.8	2730.0	2101.1	1845.7	1594.5	1193.5	885.4	681.7	543.5	434.8
20°	4803.7	3570.0	2657.2	1959.7	1702.2	1441.5	1046.8	764.0	587.8	459.1	367.2
22.5°	4803.7	3460.3	2498.9	1782.4	1522.8	1265.3	905.4	663.8	513.9	400.0	322.9
25°	4621.1	3241.8	2286.8	1577.7	1325.4	1091.2	783.0	588.9	456.9	364.1	299.7
27.5°	4266.5	2940.0	2014.5	1349.7	1131.3	936.0	685.9	520.3	413.7	328.2	329.3
30°	3779.0	2569.6	1702.2	1109.1	931.8	769.3	577.2	435.8	331.4	315.5	325.0
32.5°	3215.5	2126.4	1348.7	860.1	721.8	605.7	439.0	308.1	263.8	265.9	276.5
35°	2637.2	1673.7	1015.2	637.4	537.1	439.0	288.1	202.6	200.5	204.7	212.1
37.5°	2082.1	1252.6	734.5	466.4	360.9	270.2	155.1	139.3	139.3	143.5	147.7
40°	1559.7	888.6	505.5	276.5	175.2	123.5	98.1	90.8	89.7	90.8	96.0
42.5°	1071.1	562.5	300.8	110.8	84.4	71.8	62.3	57.0	55.9	57.0	60.2
45°	601.5	346.1	117.1	59.1	50.7	45.4	39.0	35.9	34.8	34.8	36.9
47.5°	376.7	137.2	52.8	36.9	31.7	29.5	25.3	23.2	22.2	22.2	23.2
50°	144.6	53.8	32.7	24.3	21.1	19.0	16.9	14.8	13.7	13.7	14.8
52.5°	49.6	31.7	21.1	15.8	13.7	12.7	10.6	9.5	9.5	9.5	9.5
55°	27.4	19.0	12.7	9.5	8.4	8.4	8.4	8.4	8.4	8.4	8.4
57.5°	16.9	11.6	8.4	7.4	7.4	7.4	7.4	7.4	7.4	8.4	8.4
60°	9.5	7.4	6.3	6.3	6.3	6.3	7.4	7.4	7.4	8.4	8.4
62.5°	6.3	6.3	6.3	6.3	6.3	6.3	7.4	7.4	8.4	8.4	8.4
65°	5.3	5.3	5.3	6.3	6.3	6.3	7.4	7.4	8.4	8.4	8.4
67.5°	5.3	5.3	6.3	6.3	6.3	7.4	7.4	8.4	8.4	8.4	8.4
70°	5.3	6.3	6.3	7.4	7.4	7.4	8.4	8.4	8.4	9.5	9.5
72.5°	5.3	6.3	6.3	7.4	7.4	7.4	8.4	8.4	9.5	9.5	9.5
75°	6.3	6.3	6.3	7.4	7.4	7.4	8.4	9.5	9.5	9.5	9.5
77.5°	6.3	6.3	7.4	7.4	7.4	8.4	8.4	9.5	9.5	9.5	9.5
80°	6.3	6.3	7.4	7.4	8.4	8.4	9.5	9.5	9.5	10.6	10.6
82.5°	6.3	6.3	7.4	8.4	8.4	8.4	9.5	9.5	10.6	10.6	10.6
85°	6.3	7.4	7.4	8.4	8.4	8.4	9.5	9.5	10.6	10.6	10.6
87.5°	6.3	7.4	7.4	8.4	8.4	8.4	9.5	9.5	10.6	10.6	10.6
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°	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9
2.5°	1017.3	973.0	928.7	895.9	880.1	864.3	829.5	784.1	765.1	737.6	721.8
5°	886.4	811.5	752.4	713.4	690.2	659.6	619.5	575.1	549.8	521.3	502.3
7.5°	751.4	663.8	606.8	570.9	547.7	509.7	459.1	406.3	375.7	344.0	321.9
10°	633.2	549.8	485.4	444.3	414.7	370.4	319.8	282.8	256.4	229.0	206.8
12.5°	528.7	439.0	370.4	335.6	315.5	273.3	231.1	190.0	174.1	168.8	168.8
15°	428.4	347.2	289.1	259.6	238.5	193.1	184.7	182.6	181.5	180.5	182.6
17.5°	349.3	280.7	219.5	204.7	202.6	201.6	202.6	202.6	203.7	206.8	212.1
20°	293.4	230.1	225.8	226.9	226.9	231.1	236.4	240.6	244.8	250.1	259.6
22.5°	260.7	259.6	267.0	268.0	273.3	279.7	289.1	295.5	306.0	311.3	325.0
25°	300.8	308.1	321.9	326.1	334.5	345.1	359.9	368.3	381.0	387.3	403.1
27.5°	340.9	352.5	369.4	374.6	382.0	398.9	409.5	416.8	423.2	427.4	436.9
30°	337.7	348.2	365.1	366.2	376.7	388.3	394.7	401.0	405.2	404.2	409.5
32.5°	286.0	295.5	311.3	311.3	322.9	332.4	335.6	340.9	340.9	340.9	343.0
35°	219.5	225.8	236.4	239.6	249.0	255.4	257.5	263.8	263.8	261.7	261.7
37.5°	152.0	160.4	167.8	169.9	176.2	180.5	185.7	186.8	184.7	185.7	185.7
40°	99.2	104.5	109.8	110.8	116.1	119.2	124.5	124.5	125.6	124.5	126.6
42.5°	61.2	65.4	68.6	70.7	72.8	74.9	78.1	79.1	80.2	79.1	81.3
45°	38.0	40.1	42.2	43.3	44.3	45.4	48.5	48.5	48.5	48.5	49.6
47.5°	23.2	24.3	25.3	25.3	26.4	27.4	28.5	28.5	28.5	28.5	29.5
50°	13.7	14.8	14.8	14.8	15.8	15.8	16.9	16.9	16.9	15.8	16.9
52.5°	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	8.4	9.5
55°	8.4	8.4	7.4	7.4	7.4	7.4	7.4	6.3	5.3	5.3	4.2
57.5°	7.4	7.4	7.4	7.4	7.4	6.3	6.3	5.3	5.3	4.2	3.2
60°	7.4	7.4	7.4	7.4	7.4	6.3	6.3	5.3	4.2	4.2	3.2
62.5°	8.4	7.4	7.4	7.4	7.4	6.3	6.3	5.3	4.2	4.2	3.2
65°	8.4	8.4	7.4	7.4	7.4	6.3	6.3	5.3	5.3	4.2	3.2
67.5°	8.4	8.4	8.4	7.4	8.4	7.4	6.3	6.3	5.3	4.2	4.2
70°	9.5	8.4	8.4	8.4	8.4	7.4	7.4	6.3	5.3	4.2	4.2
72.5°	9.5	9.5	8.4	8.4	8.4	7.4	7.4	6.3	5.3	5.3	4.2
75°	9.5	9.5	8.4	8.4	8.4	7.4	7.4	6.3	6.3	5.3	4.2
77.5°	9.5	9.5	9.5	8.4	8.4	8.4	7.4	7.4	6.3	5.3	4.2
80°	9.5	9.5	9.5	9.5	9.5	8.4	8.4	7.4	6.3	5.3	4.2
82.5°	10.6	9.5	9.5	9.5	9.5	8.4	8.4	7.4	6.3	5.3	5.3
85°	10.6	10.6	9.5	9.5	9.5	8.4	8.4	7.4	6.3	6.3	5.3
87.5°	10.6	9.5	9.5	9.5	9.5	8.4	8.4	7.4	6.3	5.3	5.3
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: P209085

CATALOG NUMBER: LDSQA6A65830D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9	1143.9
2.5°	706.0	697.5	697.5	682.8	680.7	669.1	678.6	672.2
5°	481.2	467.5	463.3	448.5	443.2	429.5	433.7	428.4
7.5°	302.9	289.1	284.9	274.4	268.0	257.5	258.5	255.4
10°	184.7	172.0	168.8	165.7	162.5	161.5	162.5	161.5
12.5°	167.8	166.7	164.6	165.7	163.6	164.6	165.7	164.6
15°	182.6	184.7	182.6	183.6	182.6	184.7	185.7	185.7
17.5°	214.2	218.4	216.3	219.5	218.4	223.7	223.7	223.7
20°	262.8	270.2	268.0	272.3	272.3	278.6	278.6	280.7
22.5°	330.3	339.8	338.7	348.2	346.1	353.5	353.5	355.6
25°	411.6	421.1	422.1	428.4	427.4	434.8	434.8	436.9
27.5°	445.3	450.6	449.6	452.7	453.8	458.0	461.2	459.1
30°	417.9	422.1	421.1	423.2	423.2	426.3	429.5	426.3
32.5°	351.4	354.6	354.6	358.8	355.6	356.7	362.0	358.8
35°	269.1	271.2	269.1	271.2	272.3	272.3	277.5	276.5
37.5°	192.1	193.1	193.1	196.3	193.1	193.1	198.4	199.4
40°	128.7	129.8	128.7	133.0	130.9	130.9	134.0	130.9
42.5°	82.3	83.4	82.3	85.5	83.4	85.5	86.5	87.6
45°	50.7	50.7	49.6	51.7	50.7	51.7	52.8	52.8
47.5°	29.5	29.5	28.5	30.6	29.5	29.5	29.5	30.6
50°	15.8	15.8	15.8	16.9	15.8	15.8	15.8	14.8
52.5°	8.4	8.4	7.4	8.4	7.4	7.4	7.4	7.4
55°	4.2	3.2	3.2	3.2	2.1	2.1	2.1	2.1
57.5°	3.2	2.1	2.1	1.1	1.1	1.1	0.0	0.0
60°	2.1	2.1	1.1	1.1	0.0	0.0	0.0	0.0
62.5°	2.1	2.1	1.1	1.1	0.0	0.0	0.0	0.0
65°	2.1	2.1	1.1	1.1	0.0	0.0	0.0	0.0
67.5°	3.2	2.1	2.1	1.1	1.1	0.0	0.0	0.0
70°	3.2	2.1	2.1	1.1	1.1	0.0	0.0	0.0
72.5°	3.2	2.1	2.1	2.1	1.1	1.1	0.0	0.0
75°	3.2	3.2	2.1	2.1	1.1	1.1	0.0	0.0
77.5°	4.2	3.2	2.1	2.1	1.1	1.1	0.0	0.0
80°	4.2	3.2	2.1	2.1	2.1	1.1	1.1	1.1
82.5°	4.2	3.2	3.2	2.1	2.1	1.1	1.1	1.1
85°	4.2	3.2	3.2	2.1	2.1	1.1	1.1	1.1
87.5°	4.2	3.2	3.2	2.1	2.1	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)