

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: P209070

Luminaire Tested: **LDSQA6A45835D010TE LARH40FL 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209070
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: LDSQA6A45835D010TE 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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4920.8 lumens
Efficiency: N/A
Efficacy: 90.5 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

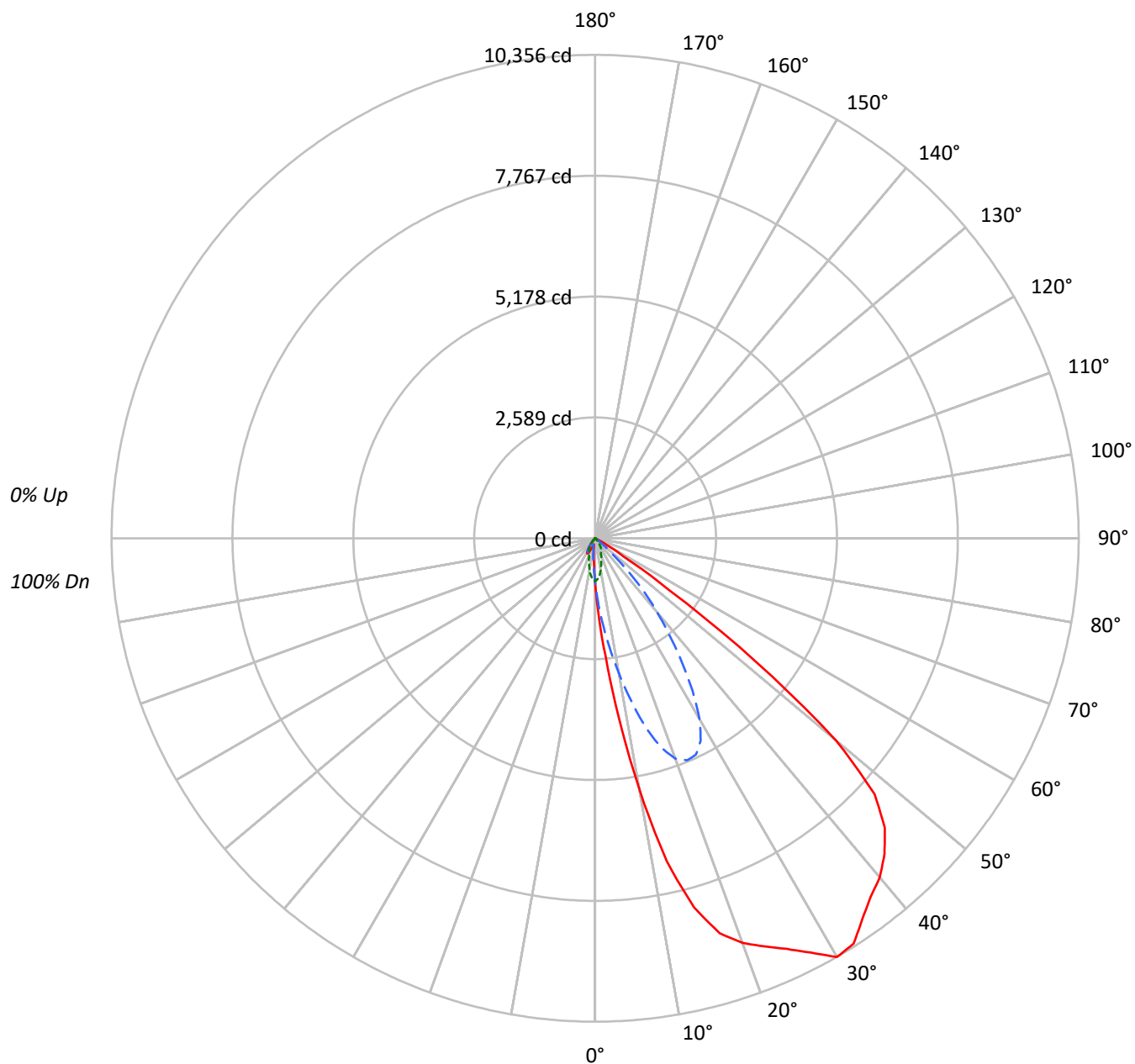
Input Watts (W): 54.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	39706	39706	39706
5°	108984	36586	14928
10°	238828	29944	5692
15°	364807	22791	6673
20°	422665	16958	10369
25°	461071	13943	16732
30°	514873	12648	17088
35°	523852	8673	11716
40°	533061	4114	5930
45°	533925	1711	2588
50°	451383	744	797
55°	145349	510	128
60°	28865	586	0
65°	2944	693	0
70°	327	969	0
75°	0	1281	0
80°	0	2108	223
85°	0	4199	445



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	125.2	2.5
10°-20°	647.5	13.2
20°-30°	1239.7	25.2
30°-40°	1460.6	29.7
40°-50°	1147.2	23.3
50°-60°	279.6	5.7
60°-70°	12.0	0.2
70°-80°	4.5	0.1
80°-90°	4.5	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°	2012.3	40.9
0°-40°	3472.9	70.6
0°-60°	4899.7	99.6
0°-90°	4920.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4920.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	922	922	922	922	922	
5°	2522	1825	846	443	345	333
15°	8184	4204	511	146	150	2285
25°	9705	5111	294	307	352	4524
35°	9966	3231	165	213	223	6249
45°	8769	999	28	39	42	6588
55°	1936	37	7	4	2	2305
65°	29	4	7	4	0	77
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°	922.2	922.2	922.2	922.2	922.2	922.2	922.2	922.2	922.2	922.2	922.2
2.5°	1580.7	1577.3	1554.3	1575.6	1510.9	1508.4	1479.5	1466.7	1429.3	1393.5	1342.5
5°	2521.6	2466.3	2421.2	2422.9	2298.7	2275.8	2211.1	2145.6	2045.2	1951.6	1824.9
7.5°	3843.7	3778.2	3682.9	3642.9	3405.6	3335.8	3202.2	3027.8	2809.2	2591.4	2356.6
10°	5462.7	5472.9	5349.5	5235.5	4876.5	4735.3	4519.2	4175.5	3761.2	3352.0	2935.9
12.5°	7091.9	7085.1	6937.9	6765.2	6322.8	6123.7	5836.1	5407.4	4858.6	4224.0	3573.2
15°	8184.2	8232.7	8170.6	8032.8	7655.1	7427.1	7102.9	6521.0	5852.3	5081.5	4203.6
17.5°	8869.9	8915.9	8893.7	8785.7	8452.2	8208.9	7938.4	7461.9	6688.6	5719.6	4700.4
20°	9224.7	9297.0	9286.8	9169.4	8917.6	8715.9	8417.3	7975.8	7306.2	6162.8	5022.0
22.5°	9461.2	9516.5	9531.8	9399.1	9138.8	8947.3	8728.7	8281.2	7651.7	6433.4	5149.6
25°	9705.4	9803.2	9707.1	9543.7	9304.7	9120.9	8887.8	8459.0	7816.7	6544.0	5111.3
27.5°	10004.8	10051.6	9833.8	9684.9	9419.5	9220.4	8972.9	8562.0	7845.6	6455.5	4892.7
30°	10356.2	10162.2	10009.9	9714.7	9413.6	9219.6	8967.8	8497.3	7693.3	6162.0	4469.0
32.5°	10298.3	10120.5	9947.8	9635.6	9337.8	9145.6	8864.8	8282.1	7333.5	5671.1	3884.5
35°	9966.5	10004.8	9818.5	9559.9	9223.0	9024.8	8718.5	7975.8	6722.6	4993.9	3231.2
37.5°	9686.6	9770.9	9649.2	9410.2	9068.2	8800.2	8386.7	7484.1	5925.5	4134.6	2611.8
40°	9484.2	9511.4	9445.9	9177.9	8767.0	8379.9	7901.8	6601.0	4957.3	3245.6	2061.4
42.5°	9170.2	9242.6	9126.9	8834.2	8211.4	7773.3	7080.8	5580.9	3850.5	2479.1	1551.8
45°	8768.7	8837.6	8694.7	8208.0	7342.0	6699.7	5854.9	4351.6	2848.3	1827.4	998.8
47.5°	8113.6	8156.1	7879.7	7206.7	5947.6	5342.7	4476.6	3033.8	1835.1	1021.8	485.8
50°	6738.8	6718.4	6148.4	5320.6	3978.1	3343.5	2664.6	1644.5	824.4	484.1	303.7
52.5°	4343.1	4296.3	3732.2	2979.3	2014.6	1537.3	1155.3	709.5	429.6	270.5	120.0
55°	1936.3	1918.4	1570.5	1220.0	824.4	709.5	541.9	348.0	228.9	94.4	36.6
57.5°	718.0	701.9	618.5	519.0	398.2	330.9	262.9	166.7	58.7	31.5	19.6
60°	335.2	334.3	294.4	242.5	168.4	127.6	74.0	39.1	24.7	17.0	11.1
62.5°	107.2	104.6	73.2	53.6	38.3	33.2	26.4	19.6	12.8	9.4	6.8
65°	28.9	28.9	26.4	22.1	17.9	15.3	12.8	9.4	6.0	5.1	4.3
67.5°	11.1	11.1	10.2	9.4	6.8	6.0	5.1	4.3	3.4	4.3	4.3
70°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.4	3.4	4.3
72.5°	0.0	0.0	0.9	0.9	1.7	1.7	2.6	2.6	3.4	4.3	4.3
75°	0.0	0.0	0.9	0.9	1.7	1.7	2.6	2.6	3.4	4.3	4.3
77.5°	0.0	0.0	0.9	0.9	1.7	1.7	2.6	2.6	3.4	4.3	4.3
80°	0.0	0.0	0.9	0.9	1.7	1.7	2.6	2.6	3.4	4.3	4.3
82.5°	0.0	0.0	0.9	1.7	1.7	1.7	2.6	3.4	3.4	4.3	5.1
85°	0.0	0.0	0.9	1.7	1.7	2.6	2.6	3.4	3.4	4.3	5.1
87.5°	0.0	0.0	0.9	1.7	1.7	2.6	2.6	3.4	3.4	4.3	5.1
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°	922.2	922.2	922.2	922.2	922.2	922.2	922.2	922.2	922.2	922.2	922.2
2.5°	1305.1	1248.9	1171.5	1126.4	1115.3	1091.5	1049.8	987.7	936.7	887.3	858.4
5°	1717.7	1584.9	1436.1	1331.4	1288.9	1231.9	1130.6	1026.0	929.9	846.5	781.0
7.5°	2155.0	1936.3	1695.5	1501.6	1431.8	1341.6	1176.6	1020.9	889.0	773.3	685.7
10°	2589.7	2237.5	1910.8	1630.0	1516.0	1393.5	1175.7	974.1	819.3	684.9	587.9
12.5°	3024.4	2518.2	2069.0	1707.5	1559.4	1404.6	1140.9	902.6	730.8	593.8	501.1
15°	3426.0	2742.0	2176.2	1733.8	1555.2	1372.3	1070.2	815.9	638.1	511.3	425.4
17.5°	3725.4	2859.4	2200.9	1693.8	1488.0	1285.5	962.2	713.8	549.6	438.1	350.5
20°	3872.6	2878.1	2142.2	1579.8	1372.3	1162.1	843.9	615.9	473.9	370.1	296.1
22.5°	3872.6	2789.6	2014.6	1436.9	1227.6	1020.1	729.9	535.1	414.3	322.4	260.3
25°	3725.4	2613.5	1843.6	1271.9	1068.5	879.7	631.3	474.7	368.4	293.5	241.6
27.5°	3439.6	2370.2	1624.1	1088.1	912.0	754.6	553.0	419.4	333.5	264.6	265.4
30°	3046.5	2071.6	1372.3	894.1	751.2	620.2	465.4	351.4	267.1	254.4	262.0
32.5°	2592.2	1714.3	1087.3	693.4	581.9	488.3	353.9	248.4	212.7	214.4	222.9
35°	2126.0	1349.3	818.4	513.9	433.0	353.9	232.3	163.3	161.6	165.0	171.0
37.5°	1678.5	1009.8	592.1	376.0	291.0	217.8	125.1	112.3	112.3	115.7	119.1
40°	1257.4	716.3	407.5	222.9	141.2	99.5	79.1	73.2	72.3	73.2	77.4
42.5°	863.5	453.5	242.5	89.3	68.1	57.9	50.2	45.9	45.1	45.9	48.5
45°	484.9	279.0	94.4	47.6	40.8	36.6	31.5	28.9	28.1	28.1	29.8
47.5°	303.7	110.6	42.5	29.8	25.5	23.8	20.4	18.7	17.9	17.9	18.7
50°	116.6	43.4	26.4	19.6	17.0	15.3	13.6	11.9	11.1	11.1	11.9
52.5°	40.0	25.5	17.0	12.8	11.1	10.2	8.5	7.7	7.7	7.7	7.7
55°	22.1	15.3	10.2	7.7	6.8	6.8	6.8	6.8	6.8	6.8	6.8
57.5°	13.6	9.4	6.8	6.0	6.0	6.0	6.0	6.0	6.0	6.8	6.8
60°	7.7	6.0	5.1	5.1	5.1	5.1	6.0	6.0	6.0	6.8	6.8
62.5°	5.1	5.1	5.1	5.1	5.1	5.1	6.0	6.0	6.8	6.8	6.8
65°	4.3	4.3	4.3	5.1	5.1	5.1	6.0	6.0	6.8	6.8	6.8
67.5°	4.3	4.3	5.1	5.1	5.1	6.0	6.0	6.8	6.8	6.8	6.8
70°	4.3	5.1	5.1	6.0	6.0	6.0	6.8	6.8	6.8	7.7	7.7
72.5°	4.3	5.1	5.1	6.0	6.0	6.0	6.8	6.8	7.7	7.7	7.7
75°	5.1	5.1	5.1	6.0	6.0	6.0	6.8	7.7	7.7	7.7	7.7
77.5°	5.1	5.1	6.0	6.0	6.0	6.8	6.8	7.7	7.7	7.7	7.7
80°	5.1	5.1	6.0	6.0	6.8	6.8	7.7	7.7	7.7	8.5	8.5
82.5°	5.1	5.1	6.0	6.8	6.8	6.8	7.7	7.7	8.5	8.5	8.5
85°	5.1	6.0	6.0	6.8	6.8	6.8	7.7	7.7	8.5	8.5	8.5
87.5°	5.1	6.0	6.0	6.8	6.8	6.8	7.7	7.7	8.5	8.5	8.5
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	922.2	922.2	922.2	922.2	922.2	922.2	922.2	922.2	922.2	922.2	922.2
2.5°	820.1	784.4	748.7	722.3	709.5	696.8	668.7	632.1	616.8	594.7	581.9
5°	714.6	654.2	606.6	575.1	556.4	531.7	499.4	463.7	443.2	420.3	405.0
7.5°	605.7	535.1	489.2	460.3	441.5	410.9	370.1	327.5	302.9	277.3	259.5
10°	510.5	443.2	391.3	358.2	334.3	298.6	257.8	228.0	206.7	184.6	166.7
12.5°	426.2	353.9	298.6	270.5	254.4	220.3	186.3	153.1	140.4	136.1	136.1
15°	345.4	279.9	233.1	209.3	192.3	155.7	148.9	147.2	146.3	145.5	147.2
17.5°	281.6	226.3	177.0	165.0	163.3	162.5	163.3	163.3	164.2	166.7	171.0
20°	236.5	185.5	182.1	182.9	182.9	186.3	190.6	194.0	197.4	201.6	209.3
22.5°	210.1	209.3	215.2	216.1	220.3	225.4	233.1	238.2	246.7	251.0	262.0
25°	242.5	248.4	259.5	262.9	269.7	278.2	290.1	296.9	307.1	312.2	325.0
27.5°	274.8	284.2	297.8	302.0	308.0	321.6	330.1	336.0	341.2	344.6	352.2
30°	272.2	280.7	294.4	295.2	303.7	313.1	318.2	323.3	326.7	325.8	330.1
32.5°	230.6	238.2	251.0	251.0	260.3	268.0	270.5	274.8	274.8	274.8	276.5
35°	177.0	182.1	190.6	193.1	200.8	205.9	207.6	212.7	212.7	211.0	211.0
37.5°	122.5	129.3	135.3	137.0	142.1	145.5	149.7	150.6	148.9	149.7	149.7
40°	80.0	84.2	88.5	89.3	93.6	96.1	100.4	100.4	101.2	100.4	102.1
42.5°	49.3	52.7	55.3	57.0	58.7	60.4	63.0	63.8	64.7	63.8	65.5
45°	30.6	32.3	34.0	34.9	35.7	36.6	39.1	39.1	39.1	39.1	40.0
47.5°	18.7	19.6	20.4	20.4	21.3	22.1	23.0	23.0	23.0	23.0	23.8
50°	11.1	11.9	11.9	11.9	12.8	12.8	13.6	13.6	13.6	12.8	13.6
52.5°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	6.8	7.7
55°	6.8	6.8	6.0	6.0	6.0	6.0	6.0	5.1	4.3	4.3	3.4
57.5°	6.0	6.0	6.0	6.0	6.0	5.1	5.1	4.3	4.3	3.4	2.6
60°	6.0	6.0	6.0	6.0	6.0	5.1	5.1	4.3	3.4	3.4	2.6
62.5°	6.8	6.0	6.0	6.0	6.0	5.1	5.1	4.3	3.4	3.4	2.6
65°	6.8	6.8	6.0	6.0	6.0	5.1	5.1	4.3	4.3	3.4	2.6
67.5°	6.8	6.8	6.8	6.0	6.8	6.0	5.1	5.1	4.3	3.4	3.4
70°	7.7	6.8	6.8	6.8	6.8	6.0	6.0	5.1	4.3	3.4	3.4
72.5°	7.7	7.7	6.8	6.8	6.8	6.0	6.0	5.1	4.3	4.3	3.4
75°	7.7	7.7	6.8	6.8	6.8	6.0	6.0	5.1	5.1	4.3	3.4
77.5°	7.7	7.7	7.7	6.8	6.8	6.8	6.0	6.0	5.1	4.3	3.4
80°	7.7	7.7	7.7	7.7	7.7	6.8	6.8	6.0	5.1	4.3	3.4
82.5°	8.5	7.7	7.7	7.7	7.7	6.8	6.8	6.0	5.1	4.3	4.3
85°	8.5	8.5	7.7	7.7	7.7	6.8	6.8	6.0	5.1	5.1	4.3
87.5°	8.5	7.7	7.7	7.7	7.7	6.8	6.8	6.0	5.1	4.3	4.3
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: P209070

CATALOG NUMBER: LDSQA6A45835D010TE LARH40FL 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	922.2	922.2	922.2	922.2	922.2	922.2	922.2	922.2
2.5°	569.2	562.3	562.3	550.4	548.7	539.4	547.0	541.9
5°	387.9	376.9	373.5	361.6	357.3	346.3	349.7	345.4
7.5°	244.2	233.1	229.7	221.2	216.1	207.6	208.4	205.9
10°	148.9	138.7	136.1	133.6	131.0	130.2	131.0	130.2
12.5°	135.3	134.4	132.7	133.6	131.9	132.7	133.6	132.7
15°	147.2	148.9	147.2	148.0	147.2	148.9	149.7	149.7
17.5°	172.7	176.1	174.4	177.0	176.1	180.4	180.4	180.4
20°	211.8	217.8	216.1	219.5	219.5	224.6	224.6	226.3
22.5°	266.3	273.9	273.1	280.7	279.0	285.0	285.0	286.7
25°	331.8	339.4	340.3	345.4	344.6	350.5	350.5	352.2
27.5°	359.0	363.3	362.4	365.0	365.8	369.2	371.8	370.1
30°	336.9	340.3	339.4	341.2	341.2	343.7	346.3	343.7
32.5°	283.3	285.9	285.9	289.3	286.7	287.6	291.8	289.3
35°	216.9	218.6	216.9	218.6	219.5	219.5	223.7	222.9
37.5°	154.8	155.7	155.7	158.2	155.7	155.7	159.9	160.8
40°	103.8	104.6	103.8	107.2	105.5	105.5	108.0	105.5
42.5°	66.4	67.2	66.4	68.9	67.2	68.9	69.8	70.6
45°	40.8	40.8	40.0	41.7	40.8	41.7	42.5	42.5
47.5°	23.8	23.8	23.0	24.7	23.8	23.8	23.8	24.7
50°	12.8	12.8	12.8	13.6	12.8	12.8	12.8	11.9
52.5°	6.8	6.8	6.0	6.8	6.0	6.0	6.0	6.0
55°	3.4	2.6	2.6	2.6	1.7	1.7	1.7	1.7
57.5°	2.6	1.7	1.7	0.9	0.9	0.9	0.0	0.0
60°	1.7	1.7	0.9	0.9	0.0	0.0	0.0	0.0
62.5°	1.7	1.7	0.9	0.9	0.0	0.0	0.0	0.0
65°	1.7	1.7	0.9	0.9	0.0	0.0	0.0	0.0
67.5°	2.6	1.7	1.7	0.9	0.9	0.0	0.0	0.0
70°	2.6	1.7	1.7	0.9	0.9	0.0	0.0	0.0
72.5°	2.6	1.7	1.7	1.7	0.9	0.9	0.0	0.0
75°	2.6	2.6	1.7	1.7	0.9	0.9	0.0	0.0
77.5°	3.4	2.6	1.7	1.7	0.9	0.9	0.0	0.0
80°	3.4	2.6	1.7	1.7	1.7	0.9	0.9	0.9
82.5°	3.4	2.6	2.6	1.7	1.7	0.9	0.9	0.9
85°	3.4	2.6	2.6	1.7	1.7	0.9	0.9	0.9
87.5°	3.4	2.6	2.6	1.7	1.7	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)