

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: P209051

Luminaire Tested: **LDSQA6A55940D010TE LARH30NF 6LSQA1H 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P209051  
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: LDSQA6A55940D010TE 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 / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4466.3 lumens  
Efficiency: N/A  
Efficacy: 73.5 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

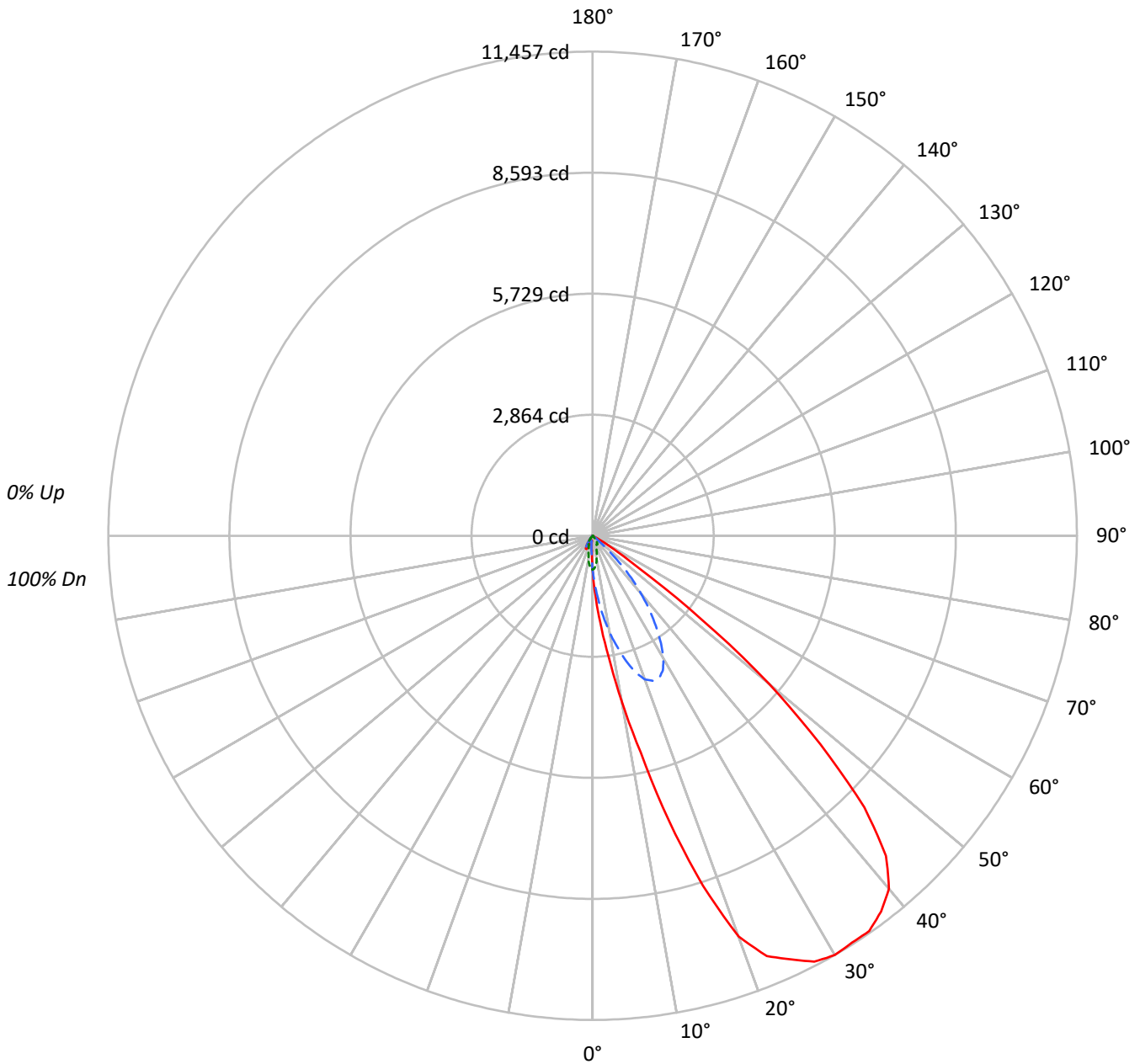
Input Watts (W): 60.8  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

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

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	34686	34686	34686
5°	88977	31555	9828
10°	173445	24251	4722
15°	311357	16470	6334
20°	462267	12504	10456
25°	525438	10299	16399
30°	569581	11266	15422
35°	599955	7301	9561
40°	612929	3243	4654
45°	553593	1236	1729
50°	364413	489	489
55°	99792	428	0
60°	19935	491	0
65°	1406	662	0
70°	201	818	0
75°	0	1214	0
80°	0	1810	198
85°	0	3606	395



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	98.7	2.2
10°-20°	524.3	11.7
20°-30°	1188.3	26.6
30°-40°	1426.4	31.9
40°-50°	1005.3	22.5
50°-60°	207.4	4.6
60°-70°	7.3	0.2
70°-80°	4.4	0.1
80°-90°	4.3	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°	1811.3	40.6
0°-40°	3237.6	72.5
0°-60°	4450.3	99.6
0°-90°	4466.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4466.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	806	806	806	806	806	
5°	2059	1500	730	304	227	253
15°	6985	3073	370	132	142	2073
25°	11060	3717	217	304	345	5104
35°	11414	2603	139	182	182	7096
45°	9092	892	20	28	28	6687
55°	1329	18	6	4	0	1752
65°	14	4	6	4	0	41
75°	0	4	7	5	0	0
85°	0	5	7	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°	805.6	805.6	805.6	805.6	805.6	805.6	805.6	805.6	805.6	805.6	805.6
2.5°	1373.3	1331.9	1348.1	1300.2	1289.6	1280.7	1289.6	1237.7	1208.4	1171.1	1141.0
5°	2058.7	2009.2	2020.6	1936.9	1898.7	1872.8	1867.9	1760.7	1680.3	1591.8	1500.0
7.5°	2866.0	2818.9	2812.4	2682.4	2603.7	2559.0	2540.3	2386.8	2248.0	2090.4	1918.2
10°	3967.2	3860.0	3826.7	3638.3	3488.1	3393.0	3276.1	3030.8	2787.2	2549.2	2330.0
12.5°	5248.7	5190.3	5107.4	4775.3	4512.1	4377.3	4202.7	3819.4	3450.7	3057.6	2690.6
15°	6985.1	6777.2	6635.8	6155.9	5732.0	5524.0	5269.0	4682.7	4125.6	3627.7	3073.1
17.5°	8681.6	8572.8	8351.9	7729.0	7076.0	6747.9	6367.8	5571.2	4784.2	4076.0	3398.7
20°	10089.0	9986.7	9734.9	9147.7	8423.3	7939.3	7461.0	6367.8	5339.7	4433.4	3616.4
22.5°	10763.0	10698.1	10492.6	9989.9	9372.7	8912.2	8398.1	7046.0	5750.6	4667.3	3715.5
25°	11060.3	11030.2	10897.9	10501.5	9920.1	9529.4	9043.8	7525.9	6006.4	4776.1	3717.1
27.5°	11361.6	11367.3	11074.9	10761.4	10210.0	9834.8	9367.0	7738.7	6052.7	4715.2	3595.3
30°	11456.6	11396.5	11267.4	10817.5	10293.6	9894.9	9393.0	7640.4	5862.7	4465.0	3352.4
32.5°	11417.6	11394.1	11251.9	10776.0	10151.5	9712.2	9142.0	7250.6	5487.5	4107.7	3008.1
35°	11414.4	11370.5	11044.8	10636.4	9867.3	9324.8	8573.6	6620.4	4956.4	3636.7	2602.8
37.5°	11208.1	11099.3	10854.8	10304.2	9290.7	8602.8	7760.6	5850.5	4306.7	3108.0	2200.8
40°	10905.2	10759.0	10437.4	9604.1	8291.8	7499.1	6677.3	4975.9	3618.8	2586.6	1773.7
42.5°	10272.5	10051.6	9596.8	8450.9	6960.7	6246.0	5562.2	4089.8	2951.2	2107.5	1353.8
45°	9091.7	8789.6	8174.8	6916.8	5623.1	5040.0	4490.2	3290.7	2362.5	1563.3	892.5
47.5°	7307.5	7027.3	6467.7	5506.2	4409.8	3916.9	3478.3	2447.7	1601.5	905.5	426.4
50°	5440.4	5200.0	4763.1	3826.7	2960.2	2572.8	2197.6	1390.4	750.4	430.4	177.0
52.5°	3246.0	3126.7	2739.3	2122.1	1461.8	1259.6	1011.1	588.8	378.4	155.9	47.9
55°	1329.4	1227.1	1081.7	868.2	635.9	539.2	461.3	290.7	117.8	32.5	17.9
57.5°	601.0	578.2	512.4	402.8	292.4	245.3	165.7	55.2	26.0	16.2	10.6
60°	231.5	208.7	178.7	96.6	41.4	34.9	28.4	18.7	13.0	8.9	6.5
62.5°	33.3	31.7	28.4	22.7	17.9	16.2	13.8	9.7	7.3	5.7	4.9
65°	13.8	13.8	12.2	9.7	8.1	7.3	6.5	4.9	4.1	4.1	4.1
67.5°	5.7	5.7	4.9	4.1	3.2	3.2	3.2	2.4	3.2	3.2	4.1
70°	1.6	1.6	1.6	1.6	1.6	1.6	2.4	2.4	3.2	3.2	4.1
72.5°	0.0	0.0	0.8	0.8	1.6	1.6	1.6	2.4	3.2	4.1	4.1
75°	0.0	0.0	0.8	0.8	1.6	1.6	1.6	2.4	3.2	4.1	4.1
77.5°	0.0	0.0	0.8	0.8	1.6	1.6	2.4	2.4	3.2	4.1	4.1
80°	0.0	0.0	0.8	0.8	1.6	1.6	2.4	2.4	3.2	4.1	4.9
82.5°	0.0	0.0	0.8	0.8	1.6	1.6	2.4	2.4	3.2	4.1	4.9
85°	0.0	0.0	0.8	0.8	1.6	1.6	2.4	2.4	3.2	4.1	4.9
87.5°	0.0	0.0	0.8	0.8	1.6	1.6	2.4	2.4	3.2	4.1	4.9
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°	805.6	805.6	805.6	805.6	805.6	805.6	805.6	805.6	805.6	805.6	805.6
2.5°	1115.0	1063.1	1048.4	1003.0	964.8	946.1	922.6	869.8	830.0	777.2	745.5
5°	1435.8	1337.6	1259.6	1164.6	1102.0	1061.4	998.1	901.5	823.5	730.1	663.5
7.5°	1782.6	1603.1	1462.6	1305.9	1215.7	1145.1	1037.1	898.2	783.7	659.4	556.3
10°	2117.2	1849.2	1628.3	1403.3	1284.8	1186.5	1037.9	863.3	711.4	554.7	445.9
12.5°	2412.0	2066.0	1755.0	1465.9	1318.9	1196.3	1010.3	800.8	617.2	456.4	360.6
15°	2658.1	2234.1	1844.3	1489.4	1321.3	1175.1	952.6	711.4	512.4	369.5	302.1
17.5°	2844.9	2322.7	1871.9	1461.0	1274.2	1115.0	864.1	598.5	415.8	313.5	254.2
20°	2941.5	2339.7	1832.1	1383.9	1187.3	1024.1	748.0	485.6	352.5	272.9	212.8
22.5°	2953.7	2291.8	1737.1	1273.4	1077.7	913.6	619.6	405.2	314.3	241.2	187.6
25°	2881.4	2187.9	1601.5	1148.3	957.5	786.9	504.3	363.0	285.9	216.8	216.0
27.5°	2727.1	2009.2	1439.1	1003.0	812.1	640.0	428.0	328.1	255.0	229.8	244.4
30°	2509.5	1780.2	1239.3	819.4	634.3	492.1	360.6	270.4	224.1	226.6	238.8
32.5°	2214.7	1495.9	1004.6	600.2	454.0	370.3	270.4	184.4	186.0	186.8	197.3
35°	1844.3	1199.5	750.4	403.6	319.2	260.7	152.7	135.6	138.1	138.9	146.2
37.5°	1478.1	921.8	498.6	268.8	200.6	137.2	95.0	91.0	92.6	91.8	99.9
40°	1132.1	642.4	298.9	133.2	77.2	64.2	58.5	56.0	56.8	57.7	62.5
42.5°	801.6	348.4	147.8	50.4	40.6	37.4	34.9	33.3	34.1	34.1	37.4
45°	406.9	164.9	50.4	27.6	25.2	22.7	21.1	20.3	20.3	20.3	21.9
47.5°	176.2	54.4	23.6	17.1	15.4	14.6	13.0	12.2	12.2	12.2	13.0
50°	55.2	21.9	14.6	11.4	9.7	8.9	8.1	8.1	8.1	7.3	8.1
52.5°	20.3	13.8	9.7	7.3	6.5	6.5	6.5	5.7	6.5	5.7	6.5
55°	12.2	8.9	6.5	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
57.5°	8.1	6.5	5.7	5.7	4.9	4.9	5.7	5.7	5.7	5.7	5.7
60°	5.7	5.7	4.9	4.9	4.9	4.9	5.7	5.7	5.7	5.7	5.7
62.5°	4.9	4.9	4.9	4.9	4.9	4.9	5.7	5.7	5.7	5.7	6.5
65°	4.1	4.9	4.9	4.9	4.9	4.9	5.7	5.7	6.5	6.5	6.5
67.5°	4.1	4.9	4.9	5.7	5.7	5.7	5.7	6.5	6.5	6.5	6.5
70°	4.9	4.9	5.7	5.7	5.7	5.7	6.5	6.5	6.5	6.5	7.3
72.5°	4.9	4.9	5.7	5.7	5.7	5.7	6.5	6.5	7.3	7.3	7.3
75°	4.9	5.7	5.7	5.7	5.7	6.5	6.5	6.5	7.3	7.3	7.3
77.5°	4.9	5.7	5.7	6.5	6.5	6.5	6.5	7.3	7.3	7.3	7.3
80°	4.9	5.7	5.7	6.5	6.5	6.5	7.3	7.3	7.3	7.3	8.1
82.5°	4.9	5.7	5.7	6.5	6.5	6.5	7.3	7.3	7.3	7.3	8.1
85°	5.7	5.7	6.5	6.5	6.5	6.5	7.3	7.3	7.3	7.3	8.1
87.5°	5.7	5.7	6.5	6.5	6.5	6.5	7.3	7.3	8.1	7.3	8.1
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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	805.6	805.6	805.6	805.6	805.6	805.6	805.6	805.6	805.6	805.6	805.6
2.5°	703.3	656.2	623.7	611.5	588.0	550.6	528.7	508.4	470.2	462.1	441.0
5°	587.2	511.6	458.0	437.7	410.9	379.3	348.4	328.1	303.7	294.0	279.4
7.5°	462.9	387.4	341.1	324.8	306.2	280.2	252.6	232.3	207.1	194.1	181.9
10°	363.8	307.8	268.8	252.6	233.1	205.5	177.0	150.2	128.3	114.5	112.1
12.5°	295.6	249.3	207.9	190.8	168.1	140.5	120.2	119.4	117.8	116.9	118.6
15°	242.0	197.3	153.5	134.8	128.3	127.5	129.9	132.4	131.6	134.0	135.6
17.5°	199.0	151.1	141.3	142.1	142.9	145.4	149.4	155.9	156.7	160.8	164.0
20°	162.4	160.0	164.0	167.3	169.7	174.6	183.5	191.7	194.1	199.8	206.3
22.5°	184.4	191.7	200.6	204.7	207.9	216.8	226.6	239.6	244.4	251.8	260.7
25°	222.5	234.7	248.5	253.4	258.3	272.9	284.2	299.7	303.7	312.7	321.6
27.5°	254.2	267.2	281.8	288.3	292.4	307.0	316.7	326.5	326.5	331.3	337.8
30°	249.3	259.9	272.1	276.9	278.6	289.1	298.9	302.1	300.5	302.9	307.8
32.5°	207.1	215.2	225.0	229.0	230.6	238.0	246.1	246.1	245.3	245.3	248.5
35°	153.5	159.2	164.0	168.1	170.5	175.4	182.7	181.9	181.9	180.3	182.7
37.5°	103.1	106.4	112.1	113.7	114.5	117.8	123.4	123.4	121.8	122.6	124.3
40°	62.5	66.6	69.8	70.7	72.3	74.7	78.8	78.8	78.8	78.8	79.6
42.5°	37.4	39.8	42.2	42.2	43.0	46.3	47.9	47.9	47.9	47.9	48.7
45°	21.9	22.7	24.4	25.2	25.2	26.8	27.6	27.6	27.6	27.6	28.4
47.5°	13.0	13.8	13.8	14.6	14.6	15.4	16.2	16.2	15.4	15.4	15.4
50°	8.1	8.1	8.1	8.1	8.9	8.9	8.9	8.9	8.9	8.9	8.1
52.5°	6.5	6.5	6.5	6.5	5.7	5.7	5.7	5.7	4.9	4.9	4.1
55°	5.7	5.7	5.7	5.7	5.7	4.9	4.9	4.9	4.1	3.2	2.4
57.5°	5.7	5.7	5.7	5.7	5.7	4.9	4.9	4.1	3.2	3.2	2.4
60°	5.7	5.7	5.7	5.7	5.7	4.9	4.9	4.1	3.2	3.2	2.4
62.5°	6.5	6.5	5.7	5.7	5.7	4.9	4.9	4.1	4.1	3.2	2.4
65°	6.5	6.5	5.7	5.7	5.7	5.7	4.9	4.9	4.1	3.2	2.4
67.5°	6.5	6.5	6.5	6.5	5.7	5.7	5.7	4.9	4.1	3.2	2.4
70°	7.3	7.3	6.5	6.5	6.5	5.7	5.7	4.9	4.1	4.1	3.2
72.5°	7.3	7.3	6.5	6.5	6.5	6.5	5.7	4.9	4.9	4.1	3.2
75°	7.3	7.3	7.3	7.3	6.5	6.5	5.7	5.7	4.9	4.1	3.2
77.5°	7.3	7.3	7.3	7.3	6.5	6.5	6.5	5.7	4.9	4.1	3.2
80°	7.3	7.3	7.3	7.3	7.3	6.5	6.5	5.7	4.9	4.1	3.2
82.5°	8.1	8.1	7.3	7.3	7.3	6.5	6.5	5.7	4.9	4.1	4.1
85°	8.1	8.1	7.3	7.3	7.3	6.5	6.5	5.7	4.9	4.9	4.1
87.5°	8.1	8.1	7.3	7.3	7.3	6.5	6.5	5.7	4.9	4.9	4.1
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: P209051

CATALOG NUMBER: LDSQA6A55940D010TE LARH30NF 6LSQA1H 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	805.6	805.6	805.6	805.6	805.6	805.6	805.6	805.6
2.5°	428.0	403.6	395.5	401.2	394.7	389.8	383.3	380.1
5°	268.0	250.1	244.4	246.1	240.4	235.5	229.0	227.4
7.5°	164.9	147.8	141.3	141.3	134.8	129.1	125.1	122.6
10°	110.4	107.2	108.0	108.8	108.0	108.8	106.4	108.0
12.5°	118.6	116.9	118.6	119.4	119.4	121.0	117.8	120.2
15°	138.1	136.4	138.9	140.5	140.5	142.9	139.7	142.1
17.5°	168.9	168.1	172.2	173.8	174.6	178.7	174.6	177.9
20°	213.6	212.8	218.5	220.9	220.1	228.2	222.5	228.2
22.5°	271.2	269.6	277.7	280.2	281.0	291.6	286.7	290.7
25°	328.9	330.5	334.6	338.7	339.5	348.4	341.1	345.2
27.5°	341.1	338.7	341.1	346.0	346.8	350.8	344.3	347.6
30°	308.6	304.5	305.4	311.0	312.7	314.3	308.6	310.2
32.5°	250.9	244.4	244.4	250.1	251.8	254.2	244.4	248.5
35°	185.2	179.5	179.5	183.5	184.4	186.0	178.7	181.9
37.5°	126.7	121.8	123.4	125.1	125.9	127.5	126.7	125.9
40°	81.2	78.0	80.4	80.4	81.2	82.0	82.0	82.8
42.5°	49.5	47.1	48.7	48.7	49.5	49.5	49.5	50.4
45°	28.4	27.6	27.6	28.4	28.4	28.4	27.6	28.4
47.5°	15.4	14.6	15.4	15.4	15.4	15.4	15.4	15.4
50°	8.1	7.3	7.3	7.3	7.3	7.3	7.3	7.3
52.5°	4.1	3.2	3.2	3.2	2.4	3.2	2.4	2.4
55°	2.4	1.6	1.6	1.6	0.8	0.8	0.0	0.0
57.5°	1.6	0.8	0.8	0.8	0.0	0.0	0.0	0.0
60°	1.6	0.8	0.8	0.8	0.0	0.0	0.0	0.0
62.5°	1.6	0.8	0.8	0.8	0.0	0.0	0.0	0.0
65°	1.6	0.8	0.8	0.8	0.0	0.0	0.0	0.0
67.5°	2.4	1.6	0.8	0.8	0.8	0.0	0.0	0.0
70°	2.4	1.6	1.6	0.8	0.8	0.0	0.0	0.0
72.5°	2.4	1.6	1.6	1.6	0.8	0.8	0.0	0.0
75°	2.4	1.6	1.6	1.6	0.8	0.8	0.0	0.0
77.5°	2.4	2.4	1.6	1.6	0.8	0.8	0.8	0.0
80°	3.2	2.4	1.6	1.6	1.6	0.8	0.8	0.8
82.5°	3.2	2.4	1.6	1.6	1.6	0.8	0.8	0.8
85°	3.2	2.4	2.4	1.6	1.6	0.8	0.8	0.8
87.5°	3.2	2.4	2.4	1.6	1.6	0.8	0.8	0.8
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)