

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: P182804

Luminaire Tested: **LDSQA4A18935D010TE LAR25NF 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182804
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26803)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA4A18935D010TE LAR25NF 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 25° 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: 1625.5 lumens
Efficiency: N/A
Efficacy: 55.8 lumens/watt
Spacing Criteria (0/90/45): 2.36 / 0.61 / 1.19
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

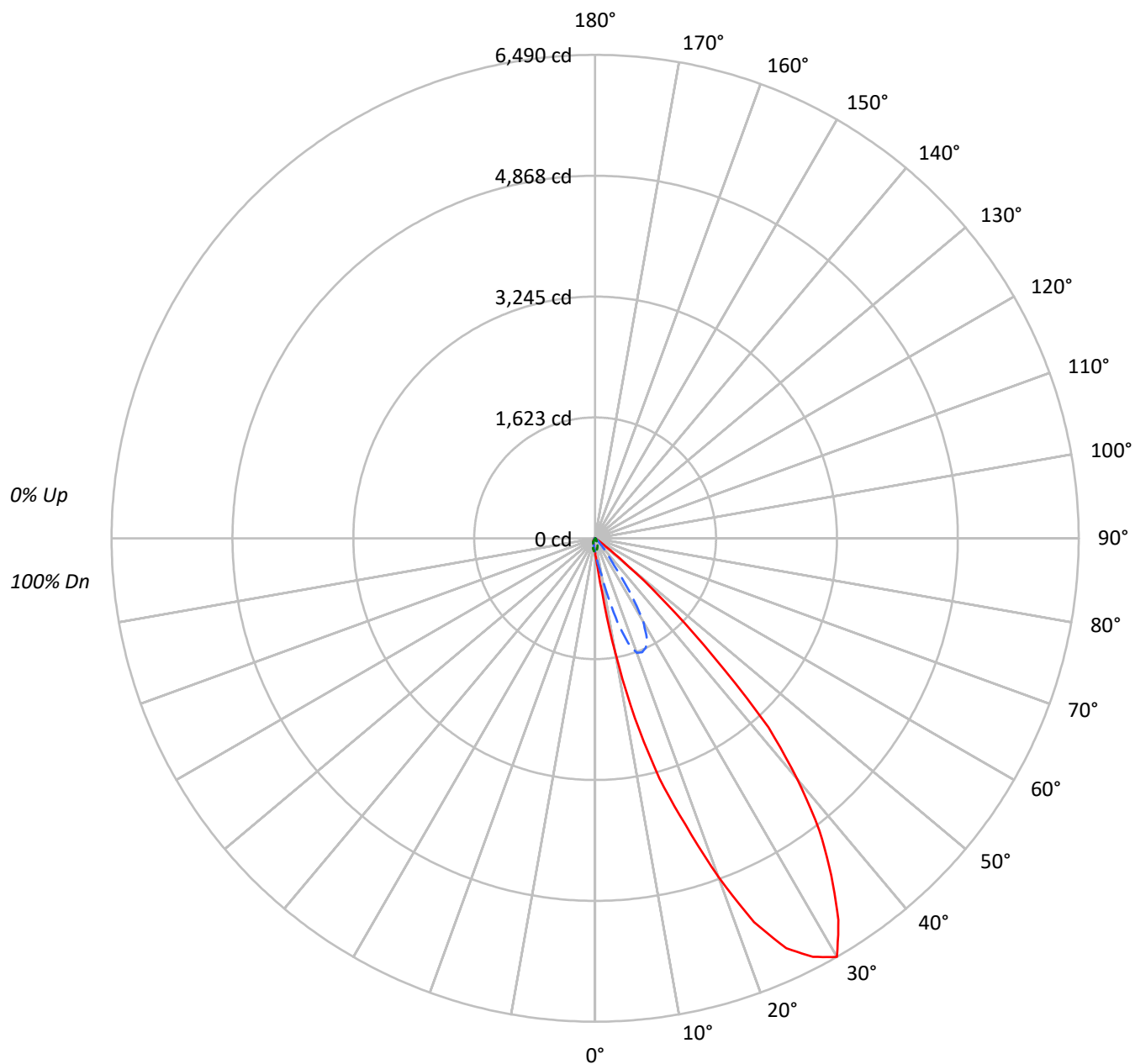
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P182804

CATALOG NUMBER: LDSQA4A18935D010TE LAR25NF 4LSQAL1H 30°

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	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	113	109	106	104	110	107	105	102	103	101	99	99	98	96	96	95	93	91		
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	87	85	83		
3	99	91	86	81	97	90	85	80	87	83	79	85	81	78	82	79	76	75		
4	93	84	77	72	91	83	76	72	80	75	71	78	74	70	76	72	69	67		
5	87	77	70	65	85	76	69	64	74	68	64	72	67	63	70	66	63	61		
6	81	70	63	58	79	69	63	58	68	62	57	66	61	57	65	60	57	55		
7	76	65	57	52	74	64	57	52	62	56	52	61	56	52	60	55	51	50		
8	71	59	52	47	69	59	52	47	58	51	47	57	51	47	55	50	47	45		
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	42	41		
10	62	51	44	39	61	50	44	39	49	43	39	48	43	39	48	42	39	37		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	17554	17554	17554
5°	39287	16512	11825
10°	154067	14451	9316
15°	334457	11704	8104
20°	498948	8670	7320
25°	648973	6103	6371
30°	725985	4105	5571
35°	653344	2413	4731
40°	533189	1657	4123
45°	306146	1123	3357
50°	89553	859	2833
55°	10337	692	2348
60°	2209	794	1899
65°	756	756	1307
70°	680	935	935
75°	599	1235	898
80°	0	1841	893
85°	0	3668	889



TEST NUMBER: P182804

CATALOG NUMBER: LDSQA4A18935D010TE LAR25NF 4LSQAL1H 30°

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	26.0	1.6
10°-20°	222.5	13.7
20°-30°	530.8	32.7
30°-40°	560.2	34.5
40°-50°	254.1	15.6
50°-60°	22.3	1.4
60°-70°	4.7	0.3
70°-80°	3.1	0.2
80°-90°	1.9	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°	779.3	47.9
0°-40°	1339.6	82.4
0°-60°	1615.9	99.4
0°-90°	1625.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1625.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	181	181	181	181	181	
5°	404	296	170	131	122	72
15°	3335	1173	117	80	81	970
25°	6071	1614	57	49	60	2758
35°	5524	446	20	28	40	3412
45°	2235	63	8	16	24	1772
55°	61	10	4	9	14	122
65°	3	3	3	6	6	4
75°	2	2	3	4	2	1
85°	0	2	3	2	1	0
90°	0	0	0	0	0	



TEST NUMBER: P182804

CATALOG NUMBER: LDSQA4A18935D010TE LAR25NF 4LSQAL1H 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	181.2	181.2	181.2	181.2	181.2	181.2	181.2	181.2	181.2	181.2	181.2
2.5°	269.3	271.0	263.6	264.4	257.1	260.4	257.9	251.4	246.5	238.3	235.1
5°	404.0	406.4	390.1	385.2	368.1	368.1	360.7	343.6	328.1	309.3	296.3
7.5°	738.6	748.4	699.4	662.7	608.8	595.8	570.5	511.7	463.6	414.6	377.9
10°	1566.2	1548.2	1447.0	1363.8	1225.0	1173.6	1105.1	936.1	781.1	626.8	506.0
12.5°	2469.7	2527.6	2332.6	2264.8	2045.3	1998.8	1852.7	1576.8	1314.8	1042.2	800.6
15°	3334.8	3351.9	3181.4	3071.2	2803.5	2743.1	2563.5	2239.5	1886.9	1506.6	1172.8
17.5°	4029.3	4097.9	3847.3	3729.0	3381.3	3284.2	3072.8	2678.6	2286.0	1870.6	1474.8
20°	4839.8	4857.7	4560.7	4332.9	3878.4	3730.6	3477.6	2988.7	2521.1	2046.9	1638.0
22.5°	5576.8	5572.7	5190.7	4869.2	4293.8	4117.5	3804.9	3225.4	2681.9	2125.3	1653.5
25°	6071.4	6084.4	5675.5	5295.2	4589.2	4350.9	3998.3	3348.7	2736.6	2122.8	1614.3
27.5°	6335.0	6321.9	5883.6	5477.2	4697.8	4430.9	4048.1	3352.7	2686.8	2039.6	1496.8
30°	6490.0	6315.4	5847.7	5425.8	4624.3	4350.1	3960.8	3223.8	2521.1	1853.5	1287.1
32.5°	6075.4	6007.7	5600.4	5152.4	4371.3	4099.5	3715.1	2949.6	2258.3	1568.6	922.3
35°	5524.5	5527.0	5129.5	4710.8	3974.7	3738.0	3341.3	2615.8	1937.5	1090.4	445.6
37.5°	4946.7	4954.9	4577.0	4187.7	3532.3	3283.4	2912.0	2235.4	1394.0	555.0	268.5
40°	4216.2	4233.4	3907.7	3595.1	2990.4	2750.4	2419.1	1691.9	779.4	310.1	182.0
42.5°	3445.0	3466.2	3177.3	2899.8	2385.6	2188.1	1894.3	1047.9	386.9	200.8	106.9
45°	2234.6	2295.8	2081.2	1964.5	1666.6	1549.1	1236.5	534.6	233.4	117.5	62.8
47.5°	1278.9	1279.7	1098.5	879.8	721.5	627.6	490.5	243.2	136.3	66.1	38.4
50°	594.2	608.8	482.3	401.5	287.3	243.2	200.0	131.4	71.8	38.4	23.7
52.5°	173.0	182.8	165.7	150.2	127.3	113.4	97.1	64.5	37.5	22.9	14.7
55°	61.2	65.3	61.2	57.1	51.4	46.5	41.6	31.0	21.2	13.9	9.8
57.5°	25.3	26.1	25.3	24.5	22.9	22.9	20.4	17.1	13.1	9.0	6.5
60°	11.4	12.2	11.4	12.2	11.4	11.4	11.4	12.2	8.2	5.7	4.9
62.5°	4.9	5.7	5.7	5.7	5.7	6.5	6.5	5.7	4.9	4.1	3.3
65°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
67.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
70°	2.4	2.4	2.4	2.4	2.4	2.4	1.6	1.6	2.4	2.4	2.4
72.5°	2.4	2.4	2.4	2.4	1.6	1.6	1.6	1.6	1.6	2.4	2.4
75°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
77.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.6	1.6	1.6
80°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.6	1.6	1.6
82.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.6	1.6	1.6
85°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.6	1.6	1.6
87.5°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.6	1.6	1.6
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: P182804

CATALOG NUMBER: LDSQA4A18935D010TE LAR25NF 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	181.2	181.2	181.2	181.2	181.2	181.2	181.2	181.2	181.2	181.2	181.2
2.5°	231.0	223.6	212.2	204.9	201.6	196.7	193.4	185.3	182.0	175.5	173.0
5°	284.0	269.3	252.2	238.3	229.3	219.5	204.9	188.5	180.4	169.8	164.0
7.5°	344.4	312.6	282.4	257.9	246.5	233.4	214.6	189.3	173.8	160.0	151.8
10°	421.1	355.8	308.5	269.3	252.2	235.1	212.2	182.8	163.2	146.9	137.9
12.5°	600.7	429.3	332.2	275.9	253.8	232.6	204.0	173.8	151.0	132.2	122.4
15°	864.3	599.9	395.8	281.6	248.1	222.0	189.3	159.1	135.5	116.7	106.9
17.5°	1097.7	764.7	484.0	302.8	246.5	209.8	171.4	140.4	117.5	99.6	91.4
20°	1225.0	851.2	542.7	315.9	239.1	191.0	151.0	121.6	99.6	84.1	76.7
22.5°	1227.5	846.3	521.5	287.3	210.6	165.7	130.6	102.8	83.2	69.4	63.7
25°	1154.0	754.9	435.0	226.1	172.2	140.4	109.4	85.7	67.7	57.1	52.2
27.5°	1016.9	613.7	319.9	163.2	134.7	113.4	88.1	68.6	53.0	46.5	42.4
30°	799.8	399.9	186.9	121.6	104.5	87.3	66.9	48.2	41.6	36.7	33.5
32.5°	429.3	194.2	130.6	89.8	74.3	61.2	44.1	35.1	30.2	26.9	26.1
35°	224.4	142.0	87.3	57.1	47.3	40.0	30.2	24.5	22.0	20.4	20.4
37.5°	160.8	89.0	55.5	36.7	31.0	25.3	21.2	18.0	16.3	16.3	16.3
40°	95.5	54.7	33.5	23.7	20.4	18.0	15.5	13.1	13.1	13.1	13.1
42.5°	57.9	34.3	23.7	16.3	14.7	13.1	11.4	10.6	9.8	9.8	10.6
45°	35.9	23.7	15.5	12.2	11.4	9.8	9.0	8.2	8.2	8.2	9.0
47.5°	22.9	17.1	11.4	8.2	7.3	6.5	5.7	5.7	6.5	6.5	7.3
50°	17.1	10.6	7.3	5.7	4.9	4.9	4.1	4.9	4.9	5.7	6.5
52.5°	9.8	6.5	4.9	4.1	4.1	3.3	3.3	4.1	4.1	4.9	5.7
55°	6.5	4.9	4.1	3.3	3.3	3.3	3.3	3.3	4.1	4.1	4.9
57.5°	4.9	4.1	3.3	3.3	3.3	2.4	3.3	3.3	3.3	4.1	4.9
60°	4.1	3.3	3.3	3.3	3.3	2.4	2.4	3.3	3.3	4.1	4.1
62.5°	3.3	3.3	3.3	3.3	3.3	2.4	3.3	3.3	3.3	3.3	4.1
65°	2.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	4.1
67.5°	2.4	2.4	3.3	3.3	3.3	2.4	3.3	3.3	3.3	3.3	4.1
70°	2.4	2.4	2.4	3.3	3.3	2.4	3.3	3.3	3.3	3.3	3.3
72.5°	2.4	2.4	2.4	3.3	3.3	2.4	3.3	3.3	3.3	3.3	3.3
75°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.3	3.3	3.3
77.5°	2.4	2.4	2.4	2.4	3.3	2.4	3.3	3.3	3.3	3.3	3.3
80°	2.4	2.4	2.4	2.4	2.4	2.4	3.3	3.3	3.3	3.3	3.3
82.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.3	3.3	3.3	3.3
85°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.3	3.3	3.3	3.3
87.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.3	3.3	3.3
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: P182804

CATALOG NUMBER: LDSQA4A18935D010TE LAR25NF 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	181.2	181.2	181.2	181.2	181.2	181.2	181.2	181.2	181.2	181.2	181.2
2.5°	166.5	164.0	159.1	158.3	157.5	154.3	151.8	149.4	149.4	146.9	145.3
5°	154.3	150.2	144.5	142.0	141.2	137.1	133.8	131.4	130.6	128.1	125.7
7.5°	141.2	136.3	129.8	127.3	126.5	122.4	119.2	116.7	115.1	112.6	111.0
10°	127.3	121.6	115.9	113.4	112.6	108.5	106.1	103.7	102.0	100.4	98.8
12.5°	112.6	107.7	102.0	99.6	98.8	95.5	93.0	91.4	90.6	89.0	88.1
15°	97.9	93.0	88.1	86.5	85.7	83.2	81.6	80.8	80.0	80.0	79.2
17.5°	83.2	79.2	75.1	74.3	73.5	71.8	71.0	70.2	71.0	71.0	71.8
20°	69.4	66.1	62.8	62.8	62.0	61.2	61.2	61.2	62.8	63.7	65.3
22.5°	57.1	54.7	52.2	52.2	52.2	52.2	52.2	53.9	55.5	57.1	57.9
25°	47.3	44.9	44.1	44.1	44.1	44.9	45.7	47.3	49.0	50.6	52.2
27.5°	38.4	36.7	36.7	36.7	37.5	38.4	39.2	40.8	43.3	44.9	46.5
30°	31.0	30.2	30.2	31.0	31.8	32.6	34.3	35.9	37.5	39.2	40.8
32.5°	24.5	25.3	25.3	26.1	26.9	27.7	29.4	31.0	32.6	34.3	35.1
35°	20.4	20.4	21.2	22.0	22.9	23.7	25.3	26.9	27.7	29.4	31.0
37.5°	16.3	17.1	18.0	18.8	19.6	20.4	21.2	22.9	23.7	25.3	26.9
40°	13.9	14.7	15.5	16.3	16.3	18.0	18.0	19.6	20.4	22.0	23.7
42.5°	11.4	12.2	13.1	13.9	13.9	14.7	15.5	16.3	18.0	18.8	20.4
45°	9.0	9.8	10.6	11.4	12.2	13.1	13.1	14.7	15.5	16.3	18.0
47.5°	8.2	9.0	9.8	9.8	10.6	11.4	11.4	13.1	13.9	14.7	15.5
50°	6.5	7.3	8.2	9.0	9.0	9.8	10.6	11.4	12.2	13.1	13.1
52.5°	5.7	6.5	7.3	7.3	8.2	9.0	9.0	9.8	10.6	10.6	11.4
55°	5.7	6.5	6.5	7.3	7.3	8.2	8.2	9.0	9.0	9.8	9.8
57.5°	4.9	5.7	5.7	6.5	6.5	7.3	7.3	8.2	8.2	8.2	9.0
60°	4.9	4.9	5.7	5.7	6.5	6.5	6.5	7.3	7.3	7.3	8.2
62.5°	4.1	4.9	4.9	5.7	5.7	5.7	6.5	6.5	6.5	7.3	7.3
65°	4.1	4.9	4.9	5.7	5.7	5.7	5.7	5.7	6.5	6.5	6.5
67.5°	4.1	4.1	4.9	4.9	4.9	4.9	5.7	5.7	5.7	5.7	5.7
70°	4.1	4.1	4.1	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
72.5°	3.3	4.1	4.1	4.1	4.1	4.9	4.9	4.9	4.9	4.9	4.1
75°	3.3	3.3	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
77.5°	3.3	3.3	3.3	4.1	4.1	4.1	4.1	4.1	4.1	3.3	3.3
80°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.4
82.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.4	2.4	2.4
85°	3.3	2.4	3.3	3.3	3.3	2.4	2.4	2.4	2.4	2.4	1.6
87.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.6	1.6
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: P182804

CATALOG NUMBER: LDSQA4A18935D010TE LAR25NF 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	181.2	181.2	181.2	181.2	181.2	181.2	181.2	181.2
2.5°	143.6	142.0	142.8	142.8	141.2	140.4	140.4	141.2
5°	124.1	122.4	123.2	123.2	121.6	120.8	120.8	121.6
7.5°	109.4	107.7	108.5	108.5	106.9	106.9	106.9	106.9
10°	97.9	97.1	97.1	97.1	95.5	96.3	95.5	94.7
12.5°	87.3	87.3	87.3	87.3	86.5	87.3	86.5	86.5
15°	79.2	79.2	80.0	80.0	80.0	80.8	80.8	80.8
17.5°	72.6	73.5	74.3	75.1	75.1	75.9	75.9	75.9
20°	66.1	67.7	68.6	69.4	69.4	71.0	70.2	71.0
22.5°	59.6	61.2	62.0	62.8	63.7	64.5	64.5	65.3
25°	53.9	55.5	56.3	57.1	57.9	59.6	59.6	59.6
27.5°	48.2	49.8	50.6	52.2	53.0	54.7	54.7	54.7
30°	42.4	44.1	44.9	45.7	47.3	49.0	49.0	49.8
32.5°	36.7	39.2	40.0	40.8	42.4	44.1	44.9	44.9
35°	32.6	34.3	35.1	36.7	37.5	40.0	40.0	40.0
37.5°	28.6	30.2	31.8	32.6	33.5	35.1	35.9	36.7
40°	25.3	26.9	27.7	28.6	30.2	31.8	32.6	32.6
42.5°	22.0	23.7	24.5	25.3	26.1	27.7	27.7	27.7
45°	19.6	20.4	21.2	22.0	22.9	23.7	24.5	24.5
47.5°	16.3	18.0	18.0	18.8	19.6	21.2	21.2	22.0
50°	13.9	15.5	15.5	16.3	17.1	18.0	18.8	18.8
52.5°	12.2	13.1	13.9	13.9	14.7	15.5	16.3	16.3
55°	10.6	11.4	11.4	12.2	12.2	13.1	13.9	13.9
57.5°	9.0	9.8	10.6	10.6	10.6	11.4	11.4	12.2
60°	8.2	9.0	9.0	9.0	9.0	9.8	9.8	9.8
62.5°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
65°	6.5	6.5	6.5	6.5	5.7	5.7	5.7	5.7
67.5°	5.7	5.7	5.7	5.7	4.9	4.9	4.9	4.9
70°	4.9	4.9	4.9	4.9	4.1	4.1	4.1	3.3
72.5°	4.1	4.1	4.1	4.1	4.1	3.3	3.3	3.3
75°	4.1	3.3	3.3	3.3	3.3	3.3	2.4	2.4
77.5°	3.3	3.3	3.3	2.4	2.4	2.4	2.4	2.4
80°	2.4	2.4	2.4	2.4	2.4	1.6	1.6	1.6
82.5°	2.4	1.6	1.6	1.6	1.6	1.6	1.6	1.6
85°	1.6	1.6	1.6	1.6	0.8	0.8	0.8	0.8
87.5°	1.6	0.8	0.8	0.8	0.8	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)