

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: P182803

Luminaire Tested: **LDSQA4A18930D010TE LAR25NF 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182803
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: LDSQA4A18930D010TE LAR25NF 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 25° NARROW FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1610.0 lumens
Efficiency: N/A
Efficacy: 55.3 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

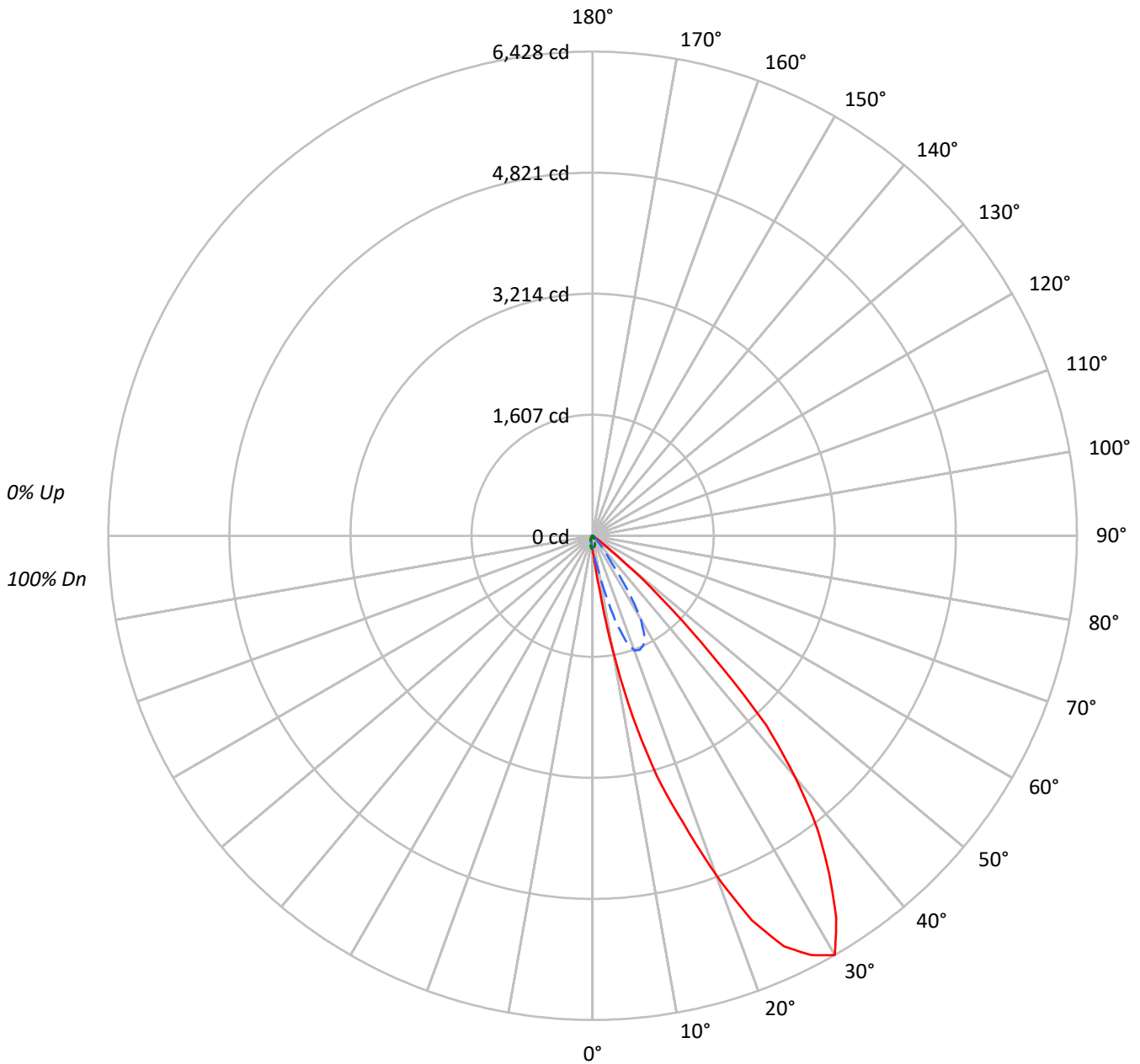
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	17389	17389	17389
5°	38918	16347	11718
10°	152601	14313	9227
15°	331277	11594	8023
20°	494206	8588	7247
25°	642806	6050	6307
30°	719094	4072	5515
35°	647135	2389	4683
40°	528130	1631	4085
45°	303241	1110	3329
50°	88694	859	2803
55°	10235	676	2314
60°	2189	775	1879
65°	734	734	1307
70°	680	906	906
75°	599	1198	898
80°	0	1785	893
85°	0	3557	889



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	25.7	1.6
10°-20°	220.4	13.7
20°-30°	525.8	32.7
30°-40°	554.9	34.5
40°-50°	251.7	15.6
50°-60°	22.1	1.4
60°-70°	4.6	0.3
70°-80°	3.0	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°	771.9	47.9
0°-40°	1326.8	82.4
0°-60°	1600.6	99.4
0°-90°	1610.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1610.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	180	180	180	180	180	
5°	400	293	168	129	120	72
15°	3303	1162	116	79	80	961
25°	6014	1599	57	48	59	2732
35°	5472	441	20	28	40	3379
45°	2213	62	8	15	24	1755
55°	61	10	4	9	14	121
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	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	179.5	179.5	179.5	179.5	179.5	179.5	179.5	179.5	179.5	179.5	179.5
2.5°	266.8	268.4	261.1	261.9	254.6	257.9	255.5	249.0	244.1	236.1	232.8
5°	400.2	402.6	386.4	381.6	364.6	364.6	357.3	340.3	325.0	306.4	293.4
7.5°	731.6	741.3	692.8	656.4	603.1	590.1	565.1	506.9	459.2	410.7	374.3
10°	1551.3	1533.5	1433.3	1350.8	1213.4	1162.5	1094.6	927.2	773.6	620.8	501.2
12.5°	2446.2	2503.6	2310.4	2243.3	2025.8	1979.8	1835.1	1561.8	1302.3	1032.3	793.0
15°	3303.1	3320.1	3151.1	3042.0	2776.8	2717.0	2539.2	2218.2	1869.0	1492.3	1161.7
17.5°	3991.0	4059.0	3810.8	3693.6	3349.2	3253.0	3043.6	2653.2	2264.3	1852.8	1460.8
20°	4793.8	4811.6	4517.3	4291.8	3841.5	3695.2	3444.6	2960.3	2497.1	2027.5	1622.4
22.5°	5523.8	5519.7	5141.4	4822.9	4253.0	4078.4	3768.7	3194.8	2656.4	2105.1	1637.8
25°	6013.7	6026.6	5621.6	5244.9	4545.6	4309.6	3960.3	3316.8	2710.5	2102.6	1599.0
27.5°	6274.8	6261.8	5827.7	5425.1	4653.1	4388.8	4009.6	3320.9	2661.2	2020.2	1482.6
30°	6428.4	6255.4	5792.1	5374.2	4580.4	4308.7	3923.1	3193.2	2497.1	1835.9	1274.8
32.5°	6017.7	5950.6	5547.2	5103.4	4329.8	4060.6	3679.8	2921.5	2236.8	1553.7	913.5
35°	5472.0	5474.5	5080.8	4666.1	3936.9	3702.4	3309.6	2590.9	1919.1	1080.0	441.4
37.5°	4899.7	4907.8	4533.5	4147.9	3498.7	3252.2	2884.4	2214.2	1380.7	549.7	266.0
40°	4176.2	4193.1	3870.6	3561.0	2962.0	2724.3	2396.1	1675.8	772.0	307.2	180.3
42.5°	3412.2	3433.3	3147.1	2872.2	2362.9	2167.3	1876.3	1038.0	383.2	198.9	105.9
45°	2213.4	2274.0	2061.4	1945.8	1650.7	1534.3	1224.7	529.5	231.2	116.4	62.2
47.5°	1266.8	1267.6	1088.1	871.4	714.6	621.7	485.8	240.9	135.0	65.5	38.0
50°	588.5	603.1	477.8	397.7	284.6	240.9	198.1	130.2	71.1	38.0	23.4
52.5°	171.4	181.1	164.1	148.7	126.1	112.4	96.2	63.9	37.2	22.6	14.6
55°	60.6	64.7	60.6	56.6	50.9	46.1	41.2	30.7	21.0	13.7	9.7
57.5°	25.1	25.9	25.1	24.3	22.6	22.6	20.2	17.0	12.9	8.9	6.5
60°	11.3	12.1	11.3	12.1	11.3	11.3	11.3	12.1	8.1	5.7	4.9
62.5°	4.9	5.7	5.7	5.7	5.7	6.5	6.5	5.7	4.9	4.0	3.2
65°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	179.5	179.5	179.5	179.5	179.5	179.5	179.5	179.5	179.5	179.5	179.5
2.5°	228.8	221.5	210.2	202.9	199.7	194.8	191.6	183.5	180.3	173.8	171.4
5°	281.3	266.8	249.8	236.1	227.2	217.5	202.9	186.7	178.7	168.1	162.5
7.5°	341.1	309.6	279.7	255.5	244.1	231.2	212.6	187.5	172.2	158.4	150.4
10°	417.1	352.5	305.6	266.8	249.8	232.8	210.2	181.1	161.7	145.5	136.6
12.5°	595.0	425.2	329.0	273.2	251.4	230.4	202.1	172.2	149.6	131.0	121.3
15°	856.1	594.2	392.1	278.9	245.8	219.9	187.5	157.6	134.2	115.6	105.9
17.5°	1087.3	757.5	479.4	299.9	244.1	207.8	169.8	139.0	116.4	98.6	90.5
20°	1213.4	843.2	537.6	312.8	236.9	189.2	149.6	120.5	98.6	83.3	76.0
22.5°	1215.8	838.3	516.6	284.6	208.6	164.1	129.3	101.9	82.5	68.7	63.1
25°	1143.1	747.8	430.9	223.9	170.6	139.0	108.3	84.9	67.1	56.6	51.7
27.5°	1007.3	607.9	316.9	161.7	133.4	112.4	87.3	67.9	52.5	46.1	42.0
30°	792.2	396.1	185.1	120.5	103.5	86.5	66.3	47.7	41.2	36.4	33.1
32.5°	425.2	192.4	129.3	88.9	73.6	60.6	43.7	34.8	29.9	26.7	25.9
35°	222.3	140.7	86.5	56.6	46.9	39.6	29.9	24.3	21.8	20.2	20.2
37.5°	159.3	88.1	55.0	36.4	30.7	25.1	21.0	17.8	16.2	16.2	16.2
40°	94.6	54.2	33.1	23.4	20.2	17.8	15.4	12.9	12.9	12.9	12.9
42.5°	57.4	34.0	23.4	16.2	14.6	12.9	11.3	10.5	9.7	9.7	10.5
45°	35.6	23.4	15.4	12.1	11.3	9.7	8.9	8.1	8.1	8.1	8.9
47.5°	22.6	17.0	11.3	8.1	7.3	6.5	5.7	5.7	6.5	6.5	7.3
50°	17.0	10.5	7.3	5.7	4.9	4.9	4.0	4.9	4.9	5.7	6.5
52.5°	9.7	6.5	4.9	4.0	4.0	3.2	3.2	4.0	4.0	4.9	5.7
55°	6.5	4.9	4.0	3.2	3.2	3.2	3.2	3.2	4.0	4.0	4.9
57.5°	4.9	4.0	3.2	3.2	3.2	2.4	3.2	3.2	3.2	4.0	4.9
60°	4.0	3.2	3.2	3.2	3.2	2.4	2.4	3.2	3.2	4.0	4.0
62.5°	3.2	3.2	3.2	3.2	3.2	2.4	3.2	3.2	3.2	3.2	4.0
65°	2.4	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	4.0
67.5°	2.4	2.4	3.2	3.2	3.2	2.4	3.2	3.2	3.2	3.2	4.0
70°	2.4	2.4	2.4	3.2	3.2	2.4	3.2	3.2	3.2	3.2	3.2
72.5°	2.4	2.4	2.4	3.2	3.2	2.4	3.2	3.2	3.2	3.2	3.2
75°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2
77.5°	2.4	2.4	2.4	2.4	3.2	2.4	3.2	3.2	3.2	3.2	3.2
80°	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2	3.2
82.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2
85°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2
87.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2
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°	179.5	179.5	179.5	179.5	179.5	179.5	179.5	179.5	179.5	179.5	179.5
2.5°	164.9	162.5	157.6	156.8	156.0	152.8	150.4	147.9	147.9	145.5	143.9
5°	152.8	148.7	143.1	140.7	139.9	135.8	132.6	130.2	129.3	126.9	124.5
7.5°	139.9	135.0	128.5	126.1	125.3	121.3	118.0	115.6	114.0	111.6	109.9
10°	126.1	120.5	114.8	112.4	111.6	107.5	105.1	102.7	101.0	99.4	97.8
12.5°	111.6	106.7	101.0	98.6	97.8	94.6	92.2	90.5	89.7	88.1	87.3
15°	97.0	92.2	87.3	85.7	84.9	82.5	80.8	80.0	79.2	79.2	78.4
17.5°	82.5	78.4	74.4	73.6	72.8	71.1	70.3	69.5	70.3	70.3	71.1
20°	68.7	65.5	62.2	62.2	61.4	60.6	60.6	60.6	62.2	63.1	64.7
22.5°	56.6	54.2	51.7	51.7	51.7	51.7	51.7	53.4	55.0	56.6	57.4
25°	46.9	44.5	43.7	43.7	43.7	44.5	45.3	46.9	48.5	50.1	51.7
27.5°	38.0	36.4	36.4	36.4	37.2	38.0	38.8	40.4	42.8	44.5	46.1
30°	30.7	29.9	29.9	30.7	31.5	32.3	34.0	35.6	37.2	38.8	40.4
32.5°	24.3	25.1	25.1	25.9	26.7	27.5	29.1	30.7	32.3	34.0	34.8
35°	20.2	20.2	21.0	21.8	22.6	23.4	25.1	26.7	27.5	29.1	30.7
37.5°	16.2	17.0	17.8	18.6	19.4	20.2	21.0	22.6	23.4	25.1	26.7
40°	13.7	14.6	15.4	16.2	16.2	17.8	17.8	19.4	20.2	21.8	23.4
42.5°	11.3	12.1	12.9	13.7	13.7	14.6	15.4	16.2	17.8	18.6	20.2
45°	8.9	9.7	10.5	11.3	12.1	12.9	12.9	14.6	15.4	16.2	17.8
47.5°	8.1	8.9	9.7	9.7	10.5	11.3	11.3	12.9	13.7	14.6	15.4
50°	6.5	7.3	8.1	8.9	8.9	9.7	10.5	11.3	12.1	12.9	12.9
52.5°	5.7	6.5	7.3	7.3	8.1	8.9	8.9	9.7	10.5	10.5	11.3
55°	5.7	6.5	6.5	7.3	7.3	8.1	8.1	8.9	8.9	9.7	9.7
57.5°	4.9	5.7	5.7	6.5	6.5	7.3	7.3	8.1	8.1	8.1	8.9
60°	4.9	4.9	5.7	5.7	6.5	6.5	6.5	7.3	7.3	7.3	8.1
62.5°	4.0	4.9	4.9	5.7	5.7	5.7	6.5	6.5	6.5	7.3	7.3
65°	4.0	4.9	4.9	5.7	5.7	5.7	5.7	5.7	6.5	6.5	6.5
67.5°	4.0	4.0	4.9	4.9	4.9	4.9	5.7	5.7	5.7	5.7	5.7
70°	4.0	4.0	4.0	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
72.5°	3.2	4.0	4.0	4.0	4.0	4.9	4.9	4.9	4.9	4.9	4.0
75°	3.2	3.2	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
77.5°	3.2	3.2	3.2	4.0	4.0	4.0	4.0	4.0	4.0	3.2	3.2
80°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.4
82.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.4	2.4	2.4
85°	3.2	2.4	3.2	3.2	3.2	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



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CATALOG NUMBER: LDSQA4A18930D010TE LAR25NF 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	179.5	179.5	179.5	179.5	179.5	179.5	179.5	179.5
2.5°	142.3	140.7	141.5	141.5	139.9	139.0	139.0	139.9
5°	122.9	121.3	122.1	122.1	120.5	119.6	119.6	120.5
7.5°	108.3	106.7	107.5	107.5	105.9	105.9	105.9	105.9
10°	97.0	96.2	96.2	96.2	94.6	95.4	94.6	93.8
12.5°	86.5	86.5	86.5	86.5	85.7	86.5	85.7	85.7
15°	78.4	78.4	79.2	79.2	79.2	80.0	80.0	80.0
17.5°	71.9	72.8	73.6	74.4	74.4	75.2	75.2	75.2
20°	65.5	67.1	67.9	68.7	68.7	70.3	69.5	70.3
22.5°	59.0	60.6	61.4	62.2	63.1	63.9	63.9	64.7
25°	53.4	55.0	55.8	56.6	57.4	59.0	59.0	59.0
27.5°	47.7	49.3	50.1	51.7	52.5	54.2	54.2	54.2
30°	42.0	43.7	44.5	45.3	46.9	48.5	48.5	49.3
32.5°	36.4	38.8	39.6	40.4	42.0	43.7	44.5	44.5
35°	32.3	34.0	34.8	36.4	37.2	39.6	39.6	39.6
37.5°	28.3	29.9	31.5	32.3	33.1	34.8	35.6	36.4
40°	25.1	26.7	27.5	28.3	29.9	31.5	32.3	32.3
42.5°	21.8	23.4	24.3	25.1	25.9	27.5	27.5	27.5
45°	19.4	20.2	21.0	21.8	22.6	23.4	24.3	24.3
47.5°	16.2	17.8	17.8	18.6	19.4	21.0	21.0	21.8
50°	13.7	15.4	15.4	16.2	17.0	17.8	18.6	18.6
52.5°	12.1	12.9	13.7	13.7	14.6	15.4	16.2	16.2
55°	10.5	11.3	11.3	12.1	12.1	12.9	13.7	13.7
57.5°	8.9	9.7	10.5	10.5	10.5	11.3	11.3	12.1
60°	8.1	8.9	8.9	8.9	8.9	9.7	9.7	9.7
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	4.0	4.0	4.0	3.2
72.5°	4.0	4.0	4.0	4.0	4.0	3.2	3.2	3.2
75°	4.0	3.2	3.2	3.2	3.2	3.2	2.4	2.4
77.5°	3.2	3.2	3.2	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)