

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: P182798

Luminaire Tested: **LDSQA4A18827D010TE LAR25NF 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182798
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: LDSQA4A18827D010TE LAR25NF 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 25° NARROW FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1917.4 lumens
Efficiency: N/A
Efficacy: 65.8 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

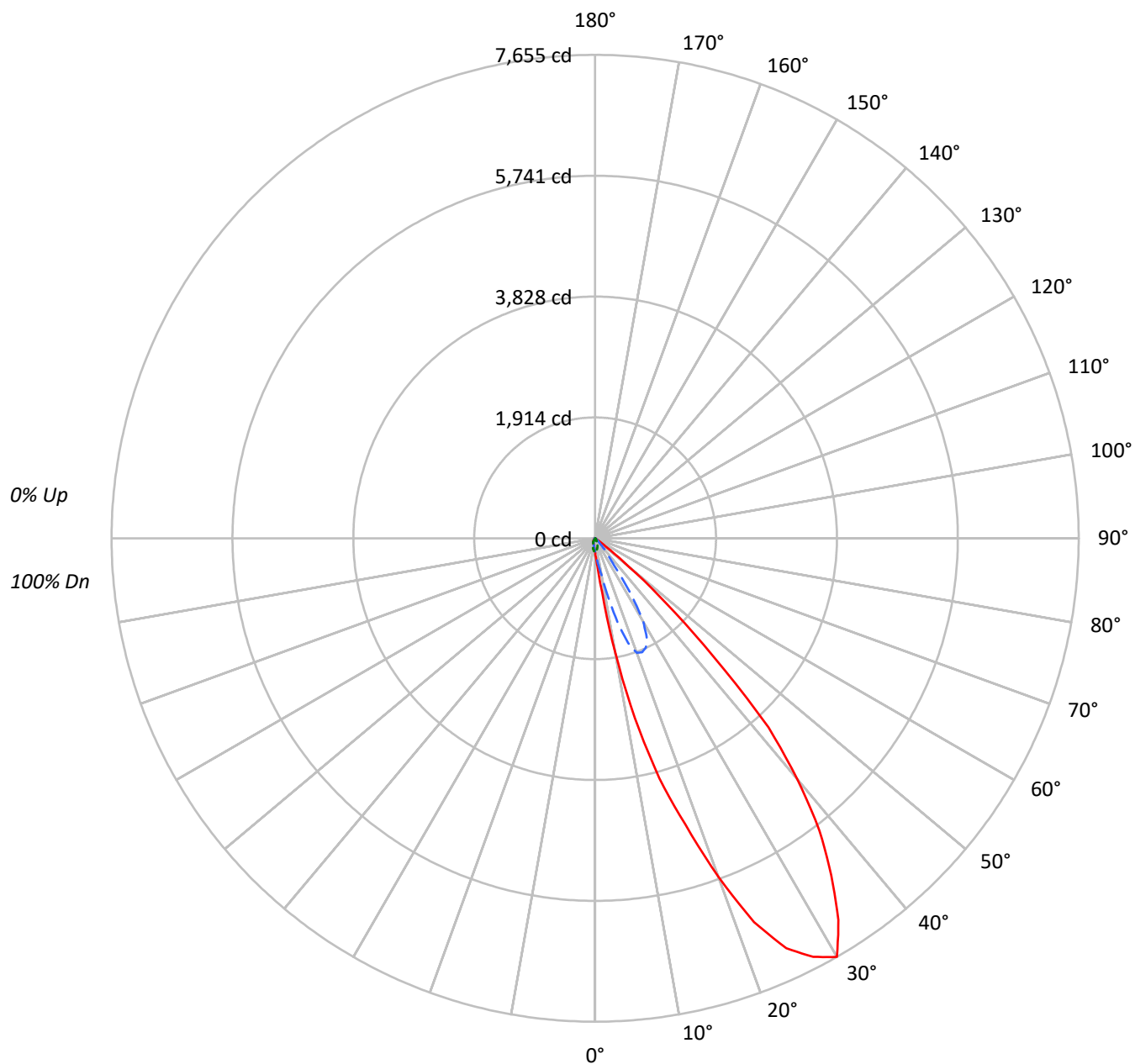
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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				0
RW	70	50	30	10	70	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°	20702	20702	20702
5°	46337	19469	13945
10°	181719	17048	10988
15°	394492	13810	9558
20°	588515	10227	8639
25°	765462	7204	7514
30°	856316	4844	6566
35°	770638	2850	5582
40°	628908	1948	4869
45°	361111	1315	3959
50°	105619	1010	3331
55°	12194	811	2770
60°	2616	930	2248
65°	894	894	1536
70°	821	1105	1105
75°	711	1460	1085
80°	0	2176	1060
85°	0	4335	1112



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.6	1.6
10°-20°	262.5	13.7
20°-30°	626.1	32.7
30°-40°	660.8	34.5
40°-50°	299.7	15.6
50°-60°	26.3	1.4
60°-70°	5.5	0.3
70°-80°	3.6	0.2
80°-90°	2.3	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°	919.2	47.9
0°-40°	1580.0	82.4
0°-60°	1906.0	99.4
0°-90°	1917.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1917.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	214	214	214	214	214	
5°	476	349	200	154	143	86
15°	3933	1383	138	94	95	1144
25°	7161	1904	67	58	70	3253
35°	6516	526	24	33	47	4024
45°	2636	74	10	18	29	2090
55°	72	12	5	11	16	144
65°	4	4	4	8	7	5
75°	2	2	4	5	3	2
85°	0	2	4	3	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°	213.7	213.7	213.7	213.7	213.7	213.7	213.7	213.7	213.7	213.7	213.7
2.5°	317.7	319.6	310.9	311.9	303.2	307.1	304.2	296.5	290.7	281.1	277.2
5°	476.5	479.4	460.2	454.4	434.2	434.2	425.5	405.3	387.0	364.8	349.4
7.5°	871.2	882.8	825.0	781.7	718.1	702.7	672.9	603.6	546.8	489.0	445.7
10°	1847.3	1826.2	1706.8	1608.6	1445.0	1384.3	1303.4	1104.2	921.3	739.3	596.9
12.5°	2913.0	2981.4	2751.3	2671.4	2412.4	2357.6	2185.2	1859.9	1550.8	1229.3	944.4
15°	3933.4	3953.7	3752.5	3622.5	3306.7	3235.5	3023.7	2641.5	2225.7	1777.1	1383.3
17.5°	4752.7	4833.5	4538.0	4398.4	3988.3	3873.8	3624.4	3159.5	2696.4	2206.4	1739.5
20°	5708.6	5729.8	5379.4	5110.8	4574.6	4400.3	4101.9	3525.3	2973.7	2414.4	1932.1
22.5°	6577.9	6573.1	6122.5	5743.2	5064.6	4856.6	4487.9	3804.4	3163.3	2506.8	1950.4
25°	7161.2	7176.6	6694.4	6245.8	5413.0	5132.0	4716.1	3949.8	3227.8	2503.9	1904.1
27.5°	7472.2	7456.8	6939.8	6460.4	5541.1	5226.3	4774.8	3954.6	3169.1	2405.7	1765.5
30°	7655.1	7449.1	6897.5	6399.8	5454.4	5131.0	4671.8	3802.5	2973.7	2186.2	1518.1
32.5°	7166.1	7086.2	6605.8	6077.3	5156.0	4835.5	4382.0	3479.1	2663.7	1850.2	1087.8
35°	6516.3	6519.1	6050.3	5556.5	4688.2	4409.0	3941.1	3085.3	2285.4	1286.1	525.6
37.5°	5834.7	5844.3	5398.6	4939.4	4166.4	3872.8	3434.8	2636.7	1644.2	654.6	316.7
40°	4973.1	4993.3	4609.2	4240.5	3527.2	3244.2	2853.3	1995.6	919.3	365.8	214.7
42.5°	4063.4	4088.4	3747.6	3420.3	2813.9	2580.9	2234.3	1236.1	456.3	236.8	126.1
45°	2635.8	2708.0	2454.8	2317.1	1965.8	1827.1	1458.4	630.5	275.3	138.6	74.1
47.5°	1508.5	1509.5	1295.7	1037.7	851.0	740.3	578.6	286.9	160.8	78.0	45.2
50°	700.8	718.1	568.9	473.6	338.9	286.9	235.9	155.0	84.7	45.2	27.9
52.5°	204.1	215.6	195.4	177.1	150.2	133.8	114.6	76.1	44.3	27.0	17.3
55°	72.2	77.0	72.2	67.4	60.6	54.9	49.1	36.6	25.0	16.4	11.6
57.5°	29.8	30.8	29.8	28.9	27.0	27.0	24.1	20.2	15.4	10.6	7.7
60°	13.5	14.4	13.5	14.4	13.5	13.5	13.5	14.4	9.6	6.7	5.8
62.5°	5.8	6.7	6.7	6.7	6.7	7.7	7.7	6.7	5.8	4.8	3.9
65°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
67.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
70°	2.9	2.9	2.9	2.9	2.9	2.9	1.9	1.9	2.9	2.9	2.9
72.5°	2.9	2.9	2.9	2.9	1.9	1.9	1.9	1.9	1.9	2.9	2.9
75°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
77.5°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.9	1.9	1.9
80°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.9	1.9	1.9
82.5°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.9	1.9	1.9
85°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.9	1.9	1.9
87.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.9	1.9	1.9
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°	213.7	213.7	213.7	213.7	213.7	213.7	213.7	213.7	213.7	213.7	213.7
2.5°	272.4	263.8	250.3	241.6	237.8	232.0	228.2	218.5	214.7	207.0	204.1
5°	335.0	317.7	297.5	281.1	270.5	259.0	241.6	222.4	212.7	200.2	193.5
7.5°	406.2	368.7	333.1	304.2	290.7	275.3	253.2	223.3	205.0	188.7	179.1
10°	496.7	419.7	363.9	317.7	297.5	277.2	250.3	215.6	192.5	173.3	162.7
12.5°	708.5	506.4	391.8	325.4	299.4	274.4	240.7	205.0	178.1	156.0	144.4
15°	1019.5	707.6	466.9	332.1	292.6	261.8	223.3	187.7	159.8	137.7	126.1
17.5°	1294.8	902.0	570.9	357.1	290.7	247.4	202.2	165.6	138.6	117.4	107.8
20°	1445.0	1004.1	640.2	372.6	282.1	225.3	178.1	143.4	117.4	99.2	90.5
22.5°	1447.8	998.3	615.1	338.9	248.4	195.4	154.0	121.3	98.2	81.8	75.1
25°	1361.2	890.5	513.1	266.7	203.1	165.6	129.0	101.1	79.9	67.4	61.6
27.5°	1199.5	723.9	377.4	192.5	158.8	133.8	104.0	80.9	62.6	54.9	50.1
30°	943.4	471.7	220.4	143.4	123.2	103.0	78.9	56.8	49.1	43.3	39.5
32.5°	506.4	229.1	154.0	105.9	87.6	72.2	52.0	41.4	35.6	31.8	30.8
35°	264.7	167.5	103.0	67.4	55.8	47.2	35.6	28.9	26.0	24.1	24.1
37.5°	189.6	104.9	65.5	43.3	36.6	29.8	25.0	21.2	19.3	19.3	19.3
40°	112.6	64.5	39.5	27.9	24.1	21.2	18.3	15.4	15.4	15.4	15.4
42.5°	68.3	40.4	27.9	19.3	17.3	15.4	13.5	12.5	11.6	11.6	12.5
45°	42.4	27.9	18.3	14.4	13.5	11.6	10.6	9.6	9.6	9.6	10.6
47.5°	27.0	20.2	13.5	9.6	8.7	7.7	6.7	6.7	7.7	7.7	8.7
50°	20.2	12.5	8.7	6.7	5.8	5.8	4.8	5.8	5.8	6.7	7.7
52.5°	11.6	7.7	5.8	4.8	4.8	3.9	3.9	4.8	4.8	5.8	6.7
55°	7.7	5.8	4.8	3.9	3.9	3.9	3.9	3.9	4.8	4.8	5.8
57.5°	5.8	4.8	3.9	3.9	3.9	2.9	3.9	3.9	3.9	4.8	5.8
60°	4.8	3.9	3.9	3.9	3.9	2.9	2.9	3.9	3.9	4.8	4.8
62.5°	3.9	3.9	3.9	3.9	3.9	2.9	3.9	3.9	3.9	3.9	4.8
65°	2.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	4.8
67.5°	2.9	2.9	3.9	3.9	3.9	2.9	3.9	3.9	3.9	3.9	4.8
70°	2.9	2.9	2.9	3.9	3.9	2.9	3.9	3.9	3.9	3.9	3.9
72.5°	2.9	2.9	2.9	3.9	3.9	2.9	3.9	3.9	3.9	3.9	3.9
75°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.9	3.9	3.9
77.5°	2.9	2.9	2.9	2.9	3.9	2.9	3.9	3.9	3.9	3.9	3.9
80°	2.9	2.9	2.9	2.9	2.9	2.9	3.9	3.9	3.9	3.9	3.9
82.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.9	3.9	3.9	3.9
85°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.9	3.9	3.9	3.9
87.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.9	3.9	3.9
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	213.7	213.7	213.7	213.7	213.7	213.7	213.7	213.7	213.7	213.7	213.7
2.5°	196.4	193.5	187.7	186.8	185.8	181.9	179.1	176.2	176.2	173.3	171.4
5°	181.9	177.1	170.4	167.5	166.5	161.7	157.9	155.0	154.0	151.1	148.2
7.5°	166.5	160.8	153.1	150.2	149.2	144.4	140.5	137.7	135.7	132.8	130.9
10°	150.2	143.4	136.7	133.8	132.8	128.0	125.1	122.3	120.3	118.4	116.5
12.5°	132.8	127.1	120.3	117.4	116.5	112.6	109.7	107.8	106.9	104.9	104.0
15°	115.5	109.7	104.0	102.0	101.1	98.2	96.3	95.3	94.3	94.3	93.4
17.5°	98.2	93.4	88.6	87.6	86.6	84.7	83.8	82.8	83.8	83.8	84.7
20°	81.8	78.0	74.1	74.1	73.2	72.2	72.2	72.2	74.1	75.1	77.0
22.5°	67.4	64.5	61.6	61.6	61.6	61.6	61.6	63.5	65.5	67.4	68.3
25°	55.8	52.9	52.0	52.0	52.0	52.9	53.9	55.8	57.8	59.7	61.6
27.5°	45.2	43.3	43.3	43.3	44.3	45.2	46.2	48.1	51.0	52.9	54.9
30°	36.6	35.6	35.6	36.6	37.5	38.5	40.4	42.4	44.3	46.2	48.1
32.5°	28.9	29.8	29.8	30.8	31.8	32.7	34.7	36.6	38.5	40.4	41.4
35°	24.1	24.1	25.0	26.0	27.0	27.9	29.8	31.8	32.7	34.7	36.6
37.5°	19.3	20.2	21.2	22.1	23.1	24.1	25.0	27.0	27.9	29.8	31.8
40°	16.4	17.3	18.3	19.3	19.3	21.2	21.2	23.1	24.1	26.0	27.9
42.5°	13.5	14.4	15.4	16.4	16.4	17.3	18.3	19.3	21.2	22.1	24.1
45°	10.6	11.6	12.5	13.5	14.4	15.4	15.4	17.3	18.3	19.3	21.2
47.5°	9.6	10.6	11.6	11.6	12.5	13.5	13.5	15.4	16.4	17.3	18.3
50°	7.7	8.7	9.6	10.6	10.6	11.6	12.5	13.5	14.4	15.4	15.4
52.5°	6.7	7.7	8.7	8.7	9.6	10.6	10.6	11.6	12.5	12.5	13.5
55°	6.7	7.7	7.7	8.7	8.7	9.6	9.6	10.6	10.6	11.6	11.6
57.5°	5.8	6.7	6.7	7.7	7.7	8.7	8.7	9.6	9.6	9.6	10.6
60°	5.8	5.8	6.7	6.7	7.7	7.7	7.7	8.7	8.7	8.7	9.6
62.5°	4.8	5.8	5.8	6.7	6.7	6.7	7.7	7.7	7.7	8.7	8.7
65°	4.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	7.7	7.7	7.7
67.5°	4.8	4.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7
70°	4.8	4.8	4.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
72.5°	3.9	4.8	4.8	4.8	4.8	5.8	5.8	5.8	5.8	5.8	4.8
75°	3.9	3.9	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
77.5°	3.9	3.9	3.9	4.8	4.8	4.8	4.8	4.8	4.8	3.9	3.9
80°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	2.9
82.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	2.9	2.9	2.9
85°	3.9	2.9	3.9	3.9	3.9	2.9	2.9	2.9	2.9	2.9	1.9
87.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	1.9	1.9
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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CATALOG NUMBER: LDSQA4A18827D010TE LAR25NF 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	213.7	213.7	213.7	213.7	213.7	213.7	213.7	213.7
2.5°	169.4	167.5	168.5	168.5	166.5	165.6	165.6	166.5
5°	146.3	144.4	145.4	145.4	143.4	142.5	142.5	143.4
7.5°	129.0	127.1	128.0	128.0	126.1	126.1	126.1	126.1
10°	115.5	114.6	114.6	114.6	112.6	113.6	112.6	111.7
12.5°	103.0	103.0	103.0	103.0	102.0	103.0	102.0	102.0
15°	93.4	93.4	94.3	94.3	94.3	95.3	95.3	95.3
17.5°	85.7	86.6	87.6	88.6	88.6	89.5	89.5	89.5
20°	78.0	79.9	80.9	81.8	81.8	83.8	82.8	83.8
22.5°	70.3	72.2	73.2	74.1	75.1	76.1	76.1	77.0
25°	63.5	65.5	66.4	67.4	68.3	70.3	70.3	70.3
27.5°	56.8	58.7	59.7	61.6	62.6	64.5	64.5	64.5
30°	50.1	52.0	52.9	53.9	55.8	57.8	57.8	58.7
32.5°	43.3	46.2	47.2	48.1	50.1	52.0	52.9	52.9
35°	38.5	40.4	41.4	43.3	44.3	47.2	47.2	47.2
37.5°	33.7	35.6	37.5	38.5	39.5	41.4	42.4	43.3
40°	29.8	31.8	32.7	33.7	35.6	37.5	38.5	38.5
42.5°	26.0	27.9	28.9	29.8	30.8	32.7	32.7	32.7
45°	23.1	24.1	25.0	26.0	27.0	27.9	28.9	28.9
47.5°	19.3	21.2	21.2	22.1	23.1	25.0	25.0	26.0
50°	16.4	18.3	18.3	19.3	20.2	21.2	22.1	22.1
52.5°	14.4	15.4	16.4	16.4	17.3	18.3	19.3	19.3
55°	12.5	13.5	13.5	14.4	14.4	15.4	16.4	16.4
57.5°	10.6	11.6	12.5	12.5	12.5	13.5	13.5	14.4
60°	9.6	10.6	10.6	10.6	10.6	11.6	11.6	11.6
62.5°	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
65°	7.7	7.7	7.7	7.7	6.7	6.7	6.7	6.7
67.5°	6.7	6.7	6.7	6.7	5.8	5.8	5.8	5.8
70°	5.8	5.8	5.8	5.8	4.8	4.8	4.8	3.9
72.5°	4.8	4.8	4.8	4.8	4.8	3.9	3.9	3.9
75°	4.8	3.9	3.9	3.9	3.9	3.9	2.9	2.9
77.5°	3.9	3.9	3.9	2.9	2.9	2.9	2.9	2.9
80°	2.9	2.9	2.9	2.9	2.9	1.9	1.9	1.9
82.5°	2.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
85°	1.9	1.9	1.9	1.9	1.0	1.0	1.0	1.0
87.5°	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)