

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: P182799

Luminaire Tested: **LDSQA4A18830D010TE LAR25NF 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182799
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: LDSQA4A18830D010TE LAR25NF 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 25° NARROW FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1956.8 lumens
Efficiency: N/A
Efficacy: 67.2 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

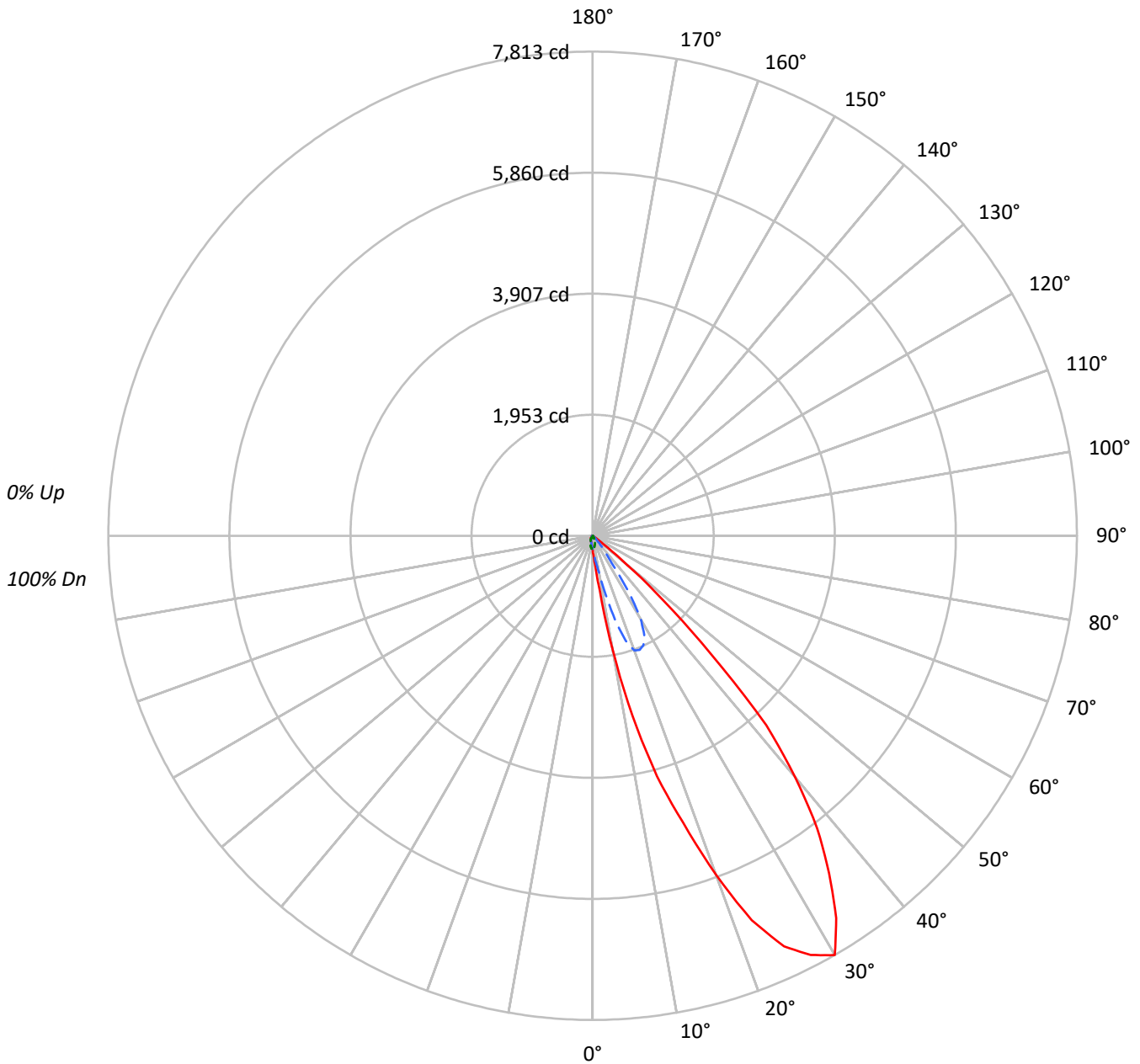
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	21129	21129	21129
5°	47290	19877	14237
10°	185467	17392	11214
15°	402616	14091	9758
20°	600628	10433	8814
25°	781228	7354	7664
30°	873945	4944	6701
35°	786497	2909	5688
40°	641857	1985	4970
45°	368537	1343	4042
50°	107789	1040	3406
55°	12448	828	2821
60°	2674	949	2286
65°	894	894	1582
70°	821	1105	1105
75°	749	1460	1085
80°	0	2176	1116
85°	0	4335	1112



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	31.3	1.6
10°-20°	267.9	13.7
20°-30°	639.0	32.7
30°-40°	674.4	34.5
40°-50°	305.8	15.6
50°-60°	26.8	1.4
60°-70°	5.6	0.3
70°-80°	3.7	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°	938.2	47.9
0°-40°	1612.6	82.4
0°-60°	1945.2	99.4
0°-90°	1956.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1956.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	218	218	218	218	218	
5°	486	357	204	157	146	87
15°	4014	1412	140	96	97	1168
25°	7309	1943	69	59	72	3320
35°	6650	536	25	33	48	4107
45°	2690	76	10	19	30	2133
55°	74	12	5	11	17	147
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°	218.1	218.1	218.1	218.1	218.1	218.1	218.1	218.1	218.1	218.1	218.1
2.5°	324.2	326.2	317.3	318.3	309.5	313.4	310.5	302.6	296.7	286.9	283.0
5°	486.3	489.3	469.6	463.7	443.1	443.1	434.3	413.6	395.0	372.4	356.6
7.5°	889.1	900.9	842.0	797.8	732.9	717.2	686.8	616.0	558.1	499.1	454.9
10°	1885.4	1863.8	1741.9	1641.7	1474.7	1412.8	1330.3	1126.9	940.2	754.5	609.1
12.5°	2973.0	3042.8	2807.9	2726.4	2462.1	2406.1	2230.2	1898.2	1582.8	1254.6	963.8
15°	4014.4	4035.1	3829.7	3697.1	3374.8	3302.1	3086.0	2695.9	2271.5	1813.7	1411.8
17.5°	4850.5	4933.1	4631.4	4489.0	4070.4	3953.5	3699.1	3224.5	2751.9	2251.9	1775.3
20°	5826.1	5847.7	5490.1	5216.0	4668.8	4490.9	4186.4	3597.9	3034.9	2464.1	1971.8
22.5°	6713.3	6708.4	6248.6	5861.5	5168.8	4956.6	4580.3	3882.8	3228.4	2558.4	1990.5
25°	7308.7	7324.4	6832.2	6374.4	5524.5	5237.6	4813.2	4031.1	3294.3	2555.4	1943.4
27.5°	7626.0	7610.3	7082.7	6593.5	5655.2	5333.9	4873.1	4036.0	3234.3	2455.2	1801.9
30°	7812.7	7602.5	7039.5	6531.6	5566.8	5236.6	4768.0	3880.8	3034.9	2231.2	1549.4
32.5°	7313.6	7232.1	6741.8	6202.4	5262.2	4935.0	4472.3	3550.7	2718.5	1888.3	1110.2
35°	6650.4	6653.4	6174.9	5670.9	4784.7	4499.8	4022.3	3148.9	2332.4	1312.6	536.4
37.5°	5954.8	5964.7	5509.8	5041.1	4252.2	3952.5	3505.5	2691.0	1678.1	668.1	323.2
40°	5075.5	5096.1	4704.1	4327.8	3599.8	3311.0	2912.1	2036.7	938.3	373.3	219.1
42.5°	4147.1	4172.6	3824.8	3490.8	2871.8	2634.0	2280.3	1261.5	465.7	241.7	128.7
45°	2690.0	2763.7	2505.3	2364.8	2006.2	1864.8	1488.5	643.5	281.0	141.5	75.7
47.5°	1539.6	1540.5	1322.4	1059.1	868.5	755.5	590.5	292.8	164.1	79.6	46.2
50°	715.2	732.9	580.6	483.4	345.8	292.8	240.7	158.2	86.5	46.2	28.5
52.5°	208.3	220.1	199.4	180.8	153.3	136.6	116.9	77.6	45.2	27.5	17.7
55°	73.7	78.6	73.7	68.8	61.9	56.0	50.1	37.3	25.5	16.7	11.8
57.5°	30.5	31.4	30.5	29.5	27.5	27.5	24.6	20.6	15.7	10.8	7.9
60°	13.8	14.7	13.8	14.7	13.8	13.8	13.8	14.7	9.8	6.9	5.9
62.5°	5.9	6.9	6.9	6.9	6.9	7.9	7.9	6.9	5.9	4.9	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	2.0	2.0	2.9	2.9	2.9
72.5°	2.9	2.9	2.9	2.9	2.0	2.0	2.0	2.0	2.0	2.9	2.9
75°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
77.5°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0
80°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0
82.5°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0
85°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0
87.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0
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°	218.1	218.1	218.1	218.1	218.1	218.1	218.1	218.1	218.1	218.1	218.1
2.5°	278.0	269.2	255.4	246.6	242.7	236.8	232.8	223.0	219.1	211.2	208.3
5°	341.9	324.2	303.6	286.9	276.1	264.3	246.6	227.0	217.1	204.4	197.5
7.5°	414.6	376.3	339.9	310.5	296.7	281.0	258.4	227.9	209.3	192.6	182.7
10°	507.0	428.4	371.4	324.2	303.6	283.0	255.4	220.1	196.5	176.8	166.0
12.5°	723.1	516.8	399.9	332.1	305.6	280.0	245.6	209.3	181.8	159.2	147.4
15°	1040.5	722.1	476.5	339.0	298.7	267.2	227.9	191.6	163.1	140.5	128.7
17.5°	1321.4	920.6	582.6	364.5	296.7	252.5	206.3	169.0	141.5	119.9	110.0
20°	1474.7	1024.7	653.4	380.2	287.9	229.9	181.8	146.4	119.9	101.2	92.4
22.5°	1477.7	1018.8	627.8	345.8	253.5	199.4	157.2	123.8	100.2	83.5	76.6
25°	1389.2	908.8	523.7	272.1	207.3	169.0	131.7	103.2	81.5	68.8	62.9
27.5°	1224.2	738.8	385.1	196.5	162.1	136.6	106.1	82.5	63.9	56.0	51.1
30°	962.8	481.4	225.0	146.4	125.8	105.1	80.6	58.0	50.1	44.2	40.3
32.5°	516.8	233.8	157.2	108.1	89.4	73.7	53.1	42.2	36.4	32.4	31.4
35°	270.2	171.0	105.1	68.8	57.0	48.1	36.4	29.5	26.5	24.6	24.6
37.5°	193.5	107.1	66.8	44.2	37.3	30.5	25.5	21.6	19.6	19.6	19.6
40°	115.0	65.8	40.3	28.5	24.6	21.6	18.7	15.7	15.7	15.7	15.7
42.5°	69.8	41.3	28.5	19.6	17.7	15.7	13.8	12.8	11.8	11.8	12.8
45°	43.2	28.5	18.7	14.7	13.8	11.8	10.8	9.8	9.8	9.8	10.8
47.5°	27.5	20.6	13.8	9.8	8.8	7.9	6.9	6.9	7.9	7.9	8.8
50°	20.6	12.8	8.8	6.9	5.9	5.9	4.9	5.9	5.9	6.9	7.9
52.5°	11.8	7.9	5.9	4.9	4.9	3.9	3.9	4.9	4.9	5.9	6.9
55°	7.9	5.9	4.9	3.9	3.9	3.9	3.9	3.9	4.9	4.9	5.9
57.5°	5.9	4.9	3.9	3.9	3.9	2.9	3.9	3.9	3.9	4.9	5.9
60°	4.9	3.9	3.9	3.9	3.9	2.9	2.9	3.9	3.9	4.9	4.9
62.5°	3.9	3.9	3.9	3.9	3.9	2.9	3.9	3.9	3.9	3.9	4.9
65°	2.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	4.9
67.5°	2.9	2.9	3.9	3.9	3.9	2.9	3.9	3.9	3.9	3.9	4.9
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°	218.1	218.1	218.1	218.1	218.1	218.1	218.1	218.1	218.1	218.1	218.1
2.5°	200.4	197.5	191.6	190.6	189.6	185.7	182.7	179.8	179.8	176.8	174.9
5°	185.7	180.8	173.9	171.0	170.0	165.1	161.1	158.2	157.2	154.3	151.3
7.5°	170.0	164.1	156.2	153.3	152.3	147.4	143.4	140.5	138.5	135.6	133.6
10°	153.3	146.4	139.5	136.6	135.6	130.7	127.7	124.8	122.8	120.8	118.9
12.5°	135.6	129.7	122.8	119.9	118.9	115.0	112.0	110.0	109.1	107.1	106.1
15°	117.9	112.0	106.1	104.1	103.2	100.2	98.2	97.3	96.3	96.3	95.3
17.5°	100.2	95.3	90.4	89.4	88.4	86.5	85.5	84.5	85.5	85.5	86.5
20°	83.5	79.6	75.7	75.7	74.7	73.7	73.7	73.7	75.7	76.6	78.6
22.5°	68.8	65.8	62.9	62.9	62.9	62.9	62.9	64.8	66.8	68.8	69.8
25°	57.0	54.0	53.1	53.1	53.1	54.0	55.0	57.0	58.9	60.9	62.9
27.5°	46.2	44.2	44.2	44.2	45.2	46.2	47.2	49.1	52.1	54.0	56.0
30°	37.3	36.4	36.4	37.3	38.3	39.3	41.3	43.2	45.2	47.2	49.1
32.5°	29.5	30.5	30.5	31.4	32.4	33.4	35.4	37.3	39.3	41.3	42.2
35°	24.6	24.6	25.5	26.5	27.5	28.5	30.5	32.4	33.4	35.4	37.3
37.5°	19.6	20.6	21.6	22.6	23.6	24.6	25.5	27.5	28.5	30.5	32.4
40°	16.7	17.7	18.7	19.6	19.6	21.6	21.6	23.6	24.6	26.5	28.5
42.5°	13.8	14.7	15.7	16.7	16.7	17.7	18.7	19.6	21.6	22.6	24.6
45°	10.8	11.8	12.8	13.8	14.7	15.7	15.7	17.7	18.7	19.6	21.6
47.5°	9.8	10.8	11.8	11.8	12.8	13.8	13.8	15.7	16.7	17.7	18.7
50°	7.9	8.8	9.8	10.8	10.8	11.8	12.8	13.8	14.7	15.7	15.7
52.5°	6.9	7.9	8.8	8.8	9.8	10.8	10.8	11.8	12.8	12.8	13.8
55°	6.9	7.9	7.9	8.8	8.8	9.8	9.8	10.8	10.8	11.8	11.8
57.5°	5.9	6.9	6.9	7.9	7.9	8.8	8.8	9.8	9.8	9.8	10.8
60°	5.9	5.9	6.9	6.9	7.9	7.9	7.9	8.8	8.8	8.8	9.8
62.5°	4.9	5.9	5.9	6.9	6.9	6.9	7.9	7.9	7.9	8.8	8.8
65°	4.9	5.9	5.9	6.9	6.9	6.9	6.9	6.9	7.9	7.9	7.9
67.5°	4.9	4.9	5.9	5.9	5.9	5.9	6.9	6.9	6.9	6.9	6.9
70°	4.9	4.9	4.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
72.5°	3.9	4.9	4.9	4.9	4.9	5.9	5.9	5.9	5.9	5.9	4.9
75°	3.9	3.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
77.5°	3.9	3.9	3.9	4.9	4.9	4.9	4.9	4.9	4.9	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	2.0
87.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.0	2.0
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: LDSQA4A18830D010TE LAR25NF 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	218.1	218.1	218.1	218.1	218.1	218.1	218.1	218.1
2.5°	172.9	171.0	171.9	171.9	170.0	169.0	169.0	170.0
5°	149.3	147.4	148.4	148.4	146.4	145.4	145.4	146.4
7.5°	131.7	129.7	130.7	130.7	128.7	128.7	128.7	128.7
10°	117.9	116.9	116.9	116.9	115.0	115.9	115.0	114.0
12.5°	105.1	105.1	105.1	105.1	104.1	105.1	104.1	104.1
15°	95.3	95.3	96.3	96.3	96.3	97.3	97.3	97.3
17.5°	87.4	88.4	89.4	90.4	90.4	91.4	91.4	91.4
20°	79.6	81.5	82.5	83.5	83.5	85.5	84.5	85.5
22.5°	71.7	73.7	74.7	75.7	76.6	77.6	77.6	78.6
25°	64.8	66.8	67.8	68.8	69.8	71.7	71.7	71.7
27.5°	58.0	59.9	60.9	62.9	63.9	65.8	65.8	65.8
30°	51.1	53.1	54.0	55.0	57.0	58.9	58.9	59.9
32.5°	44.2	47.2	48.1	49.1	51.1	53.1	54.0	54.0
35°	39.3	41.3	42.2	44.2	45.2	48.1	48.1	48.1
37.5°	34.4	36.4	38.3	39.3	40.3	42.2	43.2	44.2
40°	30.5	32.4	33.4	34.4	36.4	38.3	39.3	39.3
42.5°	26.5	28.5	29.5	30.5	31.4	33.4	33.4	33.4
45°	23.6	24.6	25.5	26.5	27.5	28.5	29.5	29.5
47.5°	19.6	21.6	21.6	22.6	23.6	25.5	25.5	26.5
50°	16.7	18.7	18.7	19.6	20.6	21.6	22.6	22.6
52.5°	14.7	15.7	16.7	16.7	17.7	18.7	19.6	19.6
55°	12.8	13.8	13.8	14.7	14.7	15.7	16.7	16.7
57.5°	10.8	11.8	12.8	12.8	12.8	13.8	13.8	14.7
60°	9.8	10.8	10.8	10.8	10.8	11.8	11.8	11.8
62.5°	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
65°	7.9	7.9	7.9	7.9	6.9	6.9	6.9	6.9
67.5°	6.9	6.9	6.9	6.9	5.9	5.9	5.9	5.9
70°	5.9	5.9	5.9	5.9	4.9	4.9	4.9	3.9
72.5°	4.9	4.9	4.9	4.9	4.9	3.9	3.9	3.9
75°	4.9	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	2.0	2.0	2.0
82.5°	2.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0
85°	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
87.5°	2.0	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)