

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: P182806

Luminaire Tested: **LDSQA4A09827D010TE LAR25NF 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182806
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: LDSQA4A09827D010TE 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: 1039.2 lumens
Efficiency: N/A
Efficacy: 75.1 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

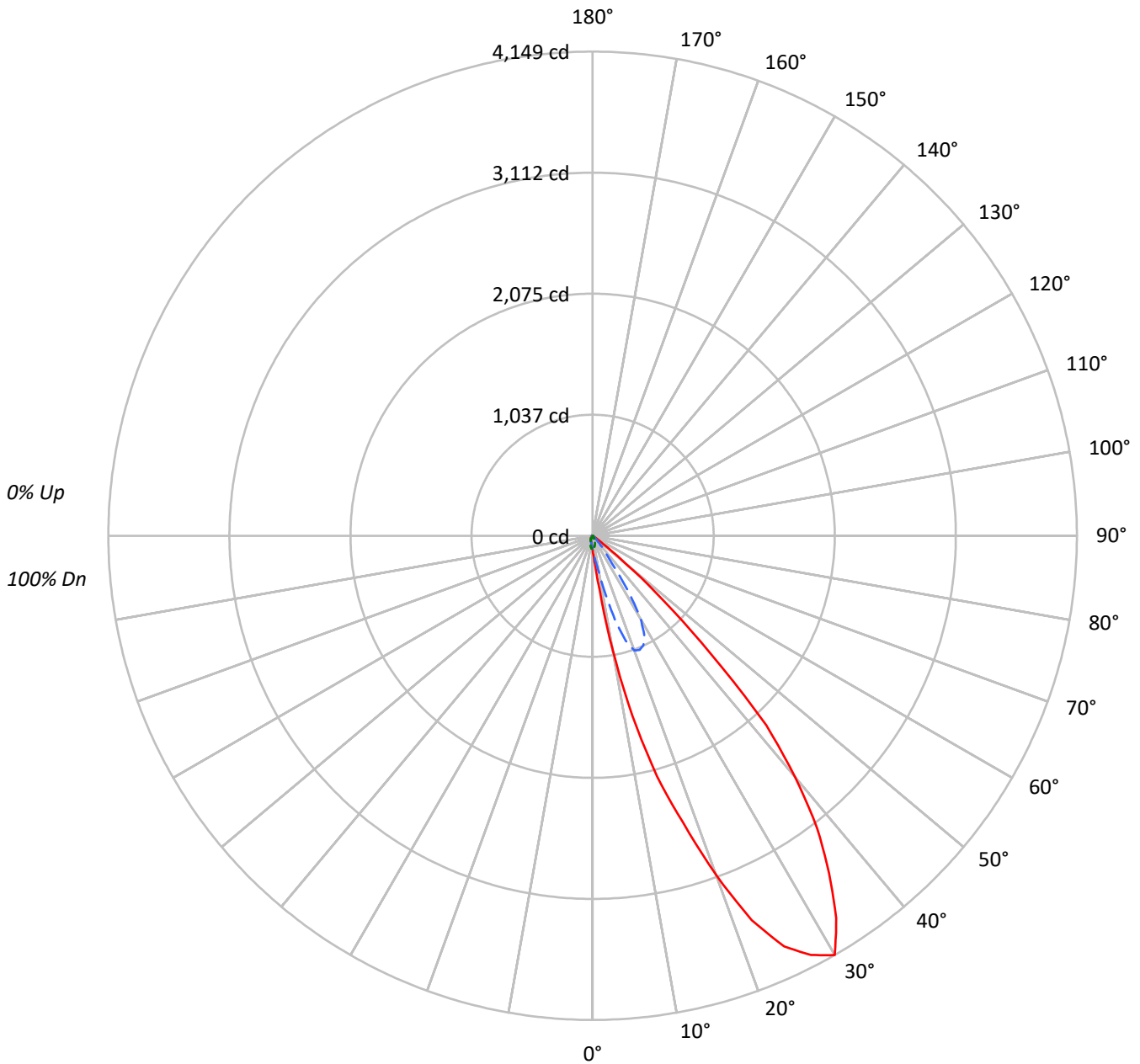
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	11218	11218	11218
5°	25119	10551	7556
10°	98498	9237	5951
15°	213824	7482	5185
20°	318979	5536	4680
25°	414884	3901	4073
30°	464127	2629	3557
35°	417693	1537	3028
40°	340878	1050	2643
45°	195722	712	2151
50°	57240	558	1809
55°	6604	439	1503
60°	1414	504	1221
65°	481	481	848
70°	453	595	595
75°	374	786	599
80°	0	1172	558
85°	0	2334	556



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	16.6	1.6
10°-20°	142.3	13.7
20°-30°	339.4	32.7
30°-40°	358.2	34.5
40°-50°	162.4	15.6
50°-60°	14.2	1.4
60°-70°	3.0	0.3
70°-80°	2.0	0.2
80°-90°	1.2	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°	498.2	47.9
0°-40°	856.4	82.4
0°-60°	1033.1	99.4
0°-90°	1039.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1039.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	116	116	116	116	116	
5°	258	189	108	84	78	46
15°	2132	750	75	51	52	620
25°	3881	1032	36	31	38	1763
35°	3532	285	13	18	26	2181
45°	1429	40	5	10	16	1133
55°	39	6	3	6	9	78
65°	2	2	2	4	4	3
75°	1	1	2	3	2	1
85°	0	1	2	2	0	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°	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8
2.5°	172.2	173.2	168.5	169.1	164.4	166.4	164.9	160.7	157.6	152.4	150.3
5°	258.3	259.8	249.4	246.3	235.3	235.3	230.6	219.7	209.8	197.8	189.4
7.5°	472.2	478.5	447.2	423.7	389.2	380.9	364.7	327.2	296.4	265.1	241.6
10°	1001.3	989.8	925.1	871.9	783.2	750.3	706.5	598.5	499.3	400.7	323.5
12.5°	1578.9	1615.9	1491.2	1447.9	1307.6	1277.8	1184.4	1008.1	840.6	666.3	511.9
15°	2132.0	2142.9	2033.9	1963.4	1792.3	1753.7	1638.9	1431.7	1206.3	963.2	749.8
17.5°	2576.0	2619.8	2459.6	2384.0	2161.7	2099.6	1964.5	1712.5	1461.5	1195.9	942.8
20°	3094.1	3105.6	2915.7	2770.1	2479.5	2385.0	2223.3	1910.7	1611.7	1308.6	1047.2
22.5°	3565.3	3562.6	3318.5	3112.9	2745.0	2632.3	2432.5	2062.0	1714.5	1358.7	1057.1
25°	3881.4	3889.8	3628.4	3385.2	2933.9	2781.6	2556.2	2140.8	1749.5	1357.1	1032.1
27.5°	4050.0	4041.6	3761.4	3501.6	3003.3	2832.7	2588.0	2143.4	1717.7	1303.9	956.9
30°	4149.1	4037.5	3738.5	3468.7	2956.4	2781.0	2532.2	2061.0	1611.7	1184.9	822.8
32.5°	3884.1	3840.8	3580.4	3293.9	2794.6	2620.9	2375.1	1885.7	1443.7	1002.8	589.6
35°	3531.9	3533.4	3279.3	3011.7	2541.0	2389.7	2136.1	1672.3	1238.7	697.1	284.9
37.5°	3162.5	3167.7	2926.1	2677.2	2258.2	2099.1	1861.7	1429.1	891.2	354.8	171.7
40°	2695.5	2706.4	2498.2	2298.4	1911.8	1758.4	1546.5	1081.6	498.3	198.3	116.4
42.5°	2202.4	2216.0	2031.3	1853.9	1525.1	1398.9	1211.0	670.0	247.3	128.4	68.4
45°	1428.6	1467.7	1330.5	1255.9	1065.5	990.3	790.5	341.8	149.2	75.1	40.2
47.5°	817.6	818.1	702.3	562.5	461.2	401.2	313.6	155.5	87.1	42.3	24.5
50°	379.8	389.2	308.4	256.7	183.7	155.5	127.8	84.0	45.9	24.5	15.1
52.5°	110.6	116.9	105.9	96.0	81.4	72.5	62.1	41.2	24.0	14.6	9.4
55°	39.1	41.7	39.1	36.5	32.9	29.7	26.6	19.8	13.6	8.9	6.3
57.5°	16.2	16.7	16.2	15.7	14.6	14.6	13.0	11.0	8.3	5.7	4.2
60°	7.3	7.8	7.3	7.8	7.3	7.3	7.3	7.8	5.2	3.7	3.1
62.5°	3.1	3.7	3.7	3.7	3.7	4.2	4.2	3.7	3.1	2.6	2.1
65°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
67.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
70°	1.6	1.6	1.6	1.6	1.6	1.6	1.0	1.0	1.6	1.6	1.6
72.5°	1.6	1.6	1.6	1.6	1.0	1.0	1.0	1.0	1.0	1.6	1.6
75°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	1.0	1.0	1.0
80°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.0	1.0	1.0
82.5°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	1.0	1.0	1.0
85°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.0	1.0	1.0
87.5°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.0	1.0	1.0
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°	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8
2.5°	147.7	143.0	135.7	131.0	128.9	125.7	123.7	118.4	116.4	112.2	110.6
5°	181.6	172.2	161.2	152.4	146.6	140.4	131.0	120.5	115.3	108.5	104.9
7.5°	220.2	199.8	180.5	164.9	157.6	149.2	137.2	121.1	111.1	102.3	97.0
10°	269.2	227.5	197.2	172.2	161.2	150.3	135.7	116.9	104.4	93.9	88.2
12.5°	384.0	274.5	212.4	176.4	162.3	148.7	130.4	111.1	96.5	84.5	78.3
15°	552.6	383.5	253.1	180.0	158.6	141.9	121.1	101.7	86.6	74.6	68.4
17.5°	701.8	488.9	309.4	193.6	157.6	134.1	109.6	89.7	75.1	63.7	58.4
20°	783.2	544.2	347.0	201.9	152.9	122.1	96.5	77.7	63.7	53.7	49.0
22.5°	784.7	541.1	333.4	183.7	134.6	105.9	83.5	65.7	53.2	44.4	40.7
25°	737.8	482.6	278.1	144.5	110.1	89.7	69.9	54.8	43.3	36.5	33.4
27.5°	650.1	392.4	204.5	104.4	86.1	72.5	56.4	43.8	33.9	29.7	27.1
30°	511.3	255.7	119.5	77.7	66.8	55.8	42.8	30.8	26.6	23.5	21.4
32.5°	274.5	124.2	83.5	57.4	47.5	39.1	28.2	22.4	19.3	17.2	16.7
35°	143.5	90.8	55.8	36.5	30.3	25.6	19.3	15.7	14.1	13.0	13.0
37.5°	102.8	56.9	35.5	23.5	19.8	16.2	13.6	11.5	10.4	10.4	10.4
40°	61.0	35.0	21.4	15.1	13.0	11.5	9.9	8.3	8.3	8.3	8.3
42.5°	37.0	21.9	15.1	10.4	9.4	8.3	7.3	6.8	6.3	6.3	6.8
45°	23.0	15.1	9.9	7.8	7.3	6.3	5.7	5.2	5.2	5.2	5.7
47.5°	14.6	11.0	7.3	5.2	4.7	4.2	3.7	3.7	4.2	4.2	4.7
50°	11.0	6.8	4.7	3.7	3.1	3.1	2.6	3.1	3.1	3.7	4.2
52.5°	6.3	4.2	3.1	2.6	2.6	2.1	2.1	2.6	2.6	3.1	3.7
55°	4.2	3.1	2.6	2.1	2.1	2.1	2.1	2.1	2.6	2.6	3.1
57.5°	3.1	2.6	2.1	2.1	2.1	1.6	2.1	2.1	2.1	2.6	3.1
60°	2.6	2.1	2.1	2.1	2.1	1.6	1.6	2.1	2.1	2.6	2.6
62.5°	2.1	2.1	2.1	2.1	2.1	1.6	2.1	2.1	2.1	2.1	2.6
65°	1.6	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.6
67.5°	1.6	1.6	2.1	2.1	2.1	1.6	2.1	2.1	2.1	2.1	2.6
70°	1.6	1.6	1.6	2.1	2.1	1.6	2.1	2.1	2.1	2.1	2.1
72.5°	1.6	1.6	1.6	2.1	2.1	1.6	2.1	2.1	2.1	2.1	2.1
75°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1
77.5°	1.6	1.6	1.6	1.6	2.1	1.6	2.1	2.1	2.1	2.1	2.1
80°	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.1	2.1
82.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.1
85°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.1
87.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1
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°	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8
2.5°	106.4	104.9	101.7	101.2	100.7	98.6	97.0	95.5	95.5	93.9	92.9
5°	98.6	96.0	92.4	90.8	90.3	87.7	85.6	84.0	83.5	81.9	80.4
7.5°	90.3	87.1	83.0	81.4	80.9	78.3	76.2	74.6	73.6	72.0	71.0
10°	81.4	77.7	74.1	72.5	72.0	69.4	67.8	66.3	65.2	64.2	63.1
12.5°	72.0	68.9	65.2	63.7	63.1	61.0	59.5	58.4	57.9	56.9	56.4
15°	62.6	59.5	56.4	55.3	54.8	53.2	52.2	51.7	51.1	51.1	50.6
17.5°	53.2	50.6	48.0	47.5	47.0	45.9	45.4	44.9	45.4	45.4	45.9
20°	44.4	42.3	40.2	40.2	39.7	39.1	39.1	39.1	40.2	40.7	41.7
22.5°	36.5	35.0	33.4	33.4	33.4	33.4	33.4	34.4	35.5	36.5	37.0
25°	30.3	28.7	28.2	28.2	28.2	28.7	29.2	30.3	31.3	32.3	33.4
27.5°	24.5	23.5	23.5	23.5	24.0	24.5	25.0	26.1	27.7	28.7	29.7
30°	19.8	19.3	19.3	19.8	20.3	20.9	21.9	23.0	24.0	25.0	26.1
32.5°	15.7	16.2	16.2	16.7	17.2	17.7	18.8	19.8	20.9	21.9	22.4
35°	13.0	13.0	13.6	14.1	14.6	15.1	16.2	17.2	17.7	18.8	19.8
37.5°	10.4	11.0	11.5	12.0	12.5	13.0	13.6	14.6	15.1	16.2	17.2
40°	8.9	9.4	9.9	10.4	10.4	11.5	11.5	12.5	13.0	14.1	15.1
42.5°	7.3	7.8	8.3	8.9	8.9	9.4	9.9	10.4	11.5	12.0	13.0
45°	5.7	6.3	6.8	7.3	7.8	8.3	8.3	9.4	9.9	10.4	11.5
47.5°	5.2	5.7	6.3	6.3	6.8	7.3	7.3	8.3	8.9	9.4	9.9
50°	4.2	4.7	5.2	5.7	5.7	6.3	6.8	7.3	7.8	8.3	8.3
52.5°	3.7	4.2	4.7	4.7	5.2	5.7	5.7	6.3	6.8	6.8	7.3
55°	3.7	4.2	4.2	4.7	4.7	5.2	5.2	5.7	5.7	6.3	6.3
57.5°	3.1	3.7	3.7	4.2	4.2	4.7	4.7	5.2	5.2	5.2	5.7
60°	3.1	3.1	3.7	3.7	4.2	4.2	4.2	4.7	4.7	4.7	5.2
62.5°	2.6	3.1	3.1	3.7	3.7	3.7	4.2	4.2	4.2	4.7	4.7
65°	2.6	3.1	3.1	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.2
67.5°	2.6	2.6	3.1	3.1	3.1	3.1	3.7	3.7	3.7	3.7	3.7
70°	2.6	2.6	2.6	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
72.5°	2.1	2.6	2.6	2.6	2.6	3.1	3.1	3.1	3.1	3.1	2.6
75°	2.1	2.1	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
77.5°	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	2.6	2.1	2.1
80°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.6
82.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.6	1.6	1.6
85°	2.1	1.6	2.1	2.1	2.1	1.6	1.6	1.6	1.6	1.6	1.0
87.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.0	1.0
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: LDSQA4A09827D010TE LAR25NF 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	115.8	115.8	115.8	115.8	115.8	115.8	115.8	115.8
2.5°	91.8	90.8	91.3	91.3	90.3	89.7	89.7	90.3
5°	79.3	78.3	78.8	78.8	77.7	77.2	77.2	77.7
7.5°	69.9	68.9	69.4	69.4	68.4	68.4	68.4	68.4
10°	62.6	62.1	62.1	62.1	61.0	61.6	61.0	60.5
12.5°	55.8	55.8	55.8	55.8	55.3	55.8	55.3	55.3
15°	50.6	50.6	51.1	51.1	51.1	51.7	51.7	51.7
17.5°	46.4	47.0	47.5	48.0	48.0	48.5	48.5	48.5
20°	42.3	43.3	43.8	44.4	44.4	45.4	44.9	45.4
22.5°	38.1	39.1	39.7	40.2	40.7	41.2	41.2	41.7
25°	34.4	35.5	36.0	36.5	37.0	38.1	38.1	38.1
27.5°	30.8	31.8	32.3	33.4	33.9	35.0	35.0	35.0
30°	27.1	28.2	28.7	29.2	30.3	31.3	31.3	31.8
32.5°	23.5	25.0	25.6	26.1	27.1	28.2	28.7	28.7
35°	20.9	21.9	22.4	23.5	24.0	25.6	25.6	25.6
37.5°	18.3	19.3	20.3	20.9	21.4	22.4	23.0	23.5
40°	16.2	17.2	17.7	18.3	19.3	20.3	20.9	20.9
42.5°	14.1	15.1	15.7	16.2	16.7	17.7	17.7	17.7
45°	12.5	13.0	13.6	14.1	14.6	15.1	15.7	15.7
47.5°	10.4	11.5	11.5	12.0	12.5	13.6	13.6	14.1
50°	8.9	9.9	9.9	10.4	11.0	11.5	12.0	12.0
52.5°	7.8	8.3	8.9	8.9	9.4	9.9	10.4	10.4
55°	6.8	7.3	7.3	7.8	7.8	8.3	8.9	8.9
57.5°	5.7	6.3	6.8	6.8	6.8	7.3	7.3	7.8
60°	5.2	5.7	5.7	5.7	5.7	6.3	6.3	6.3
62.5°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
65°	4.2	4.2	4.2	4.2	3.7	3.7	3.7	3.7
67.5°	3.7	3.7	3.7	3.7	3.1	3.1	3.1	3.1
70°	3.1	3.1	3.1	3.1	2.6	2.6	2.6	2.1
72.5°	2.6	2.6	2.6	2.6	2.6	2.1	2.1	2.1
75°	2.6	2.1	2.1	2.1	2.1	2.1	1.6	1.6
77.5°	2.1	2.1	2.1	1.6	1.6	1.6	1.6	1.6
80°	1.6	1.6	1.6	1.6	1.6	1.0	1.0	1.0
82.5°	1.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5
87.5°	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
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)