

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: P182802

Luminaire Tested: **LDSQA4A18927D010TE LAR25NF 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182802
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: LDSQA4A18927D010TE LAR25NF 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 25° NARROW FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1538.8 lumens
Efficiency: N/A
Efficacy: 52.8 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

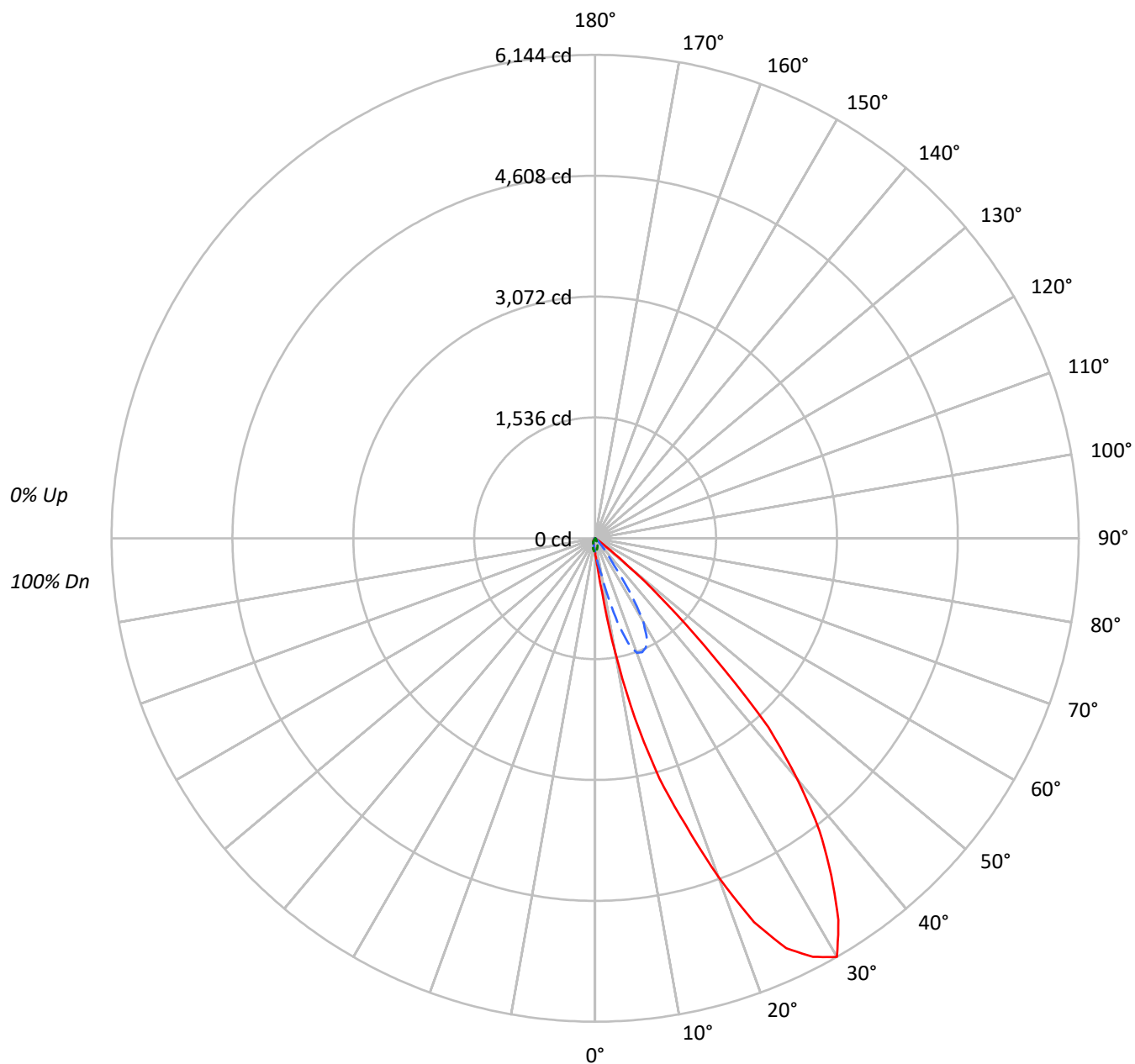
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					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°	16614	16614	16614
5°	37196	15627	11193
10°	145853	13683	8814
15°	316624	11082	7672
20°	472340	8206	6928
25°	614362	5783	6029
30°	687270	3893	5269
35°	618504	2282	4482
40°	504760	1568	3908
45°	289829	1055	3178
50°	84775	814	2683
55°	9779	659	2213
60°	2093	756	1802
65°	711	711	1238
70°	651	878	878
75°	561	1160	861
80°	0	1729	837
85°	0	3446	889



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.6	1.6
10°-20°	210.7	13.7
20°-30°	502.5	32.7
30°-40°	530.4	34.5
40°-50°	240.5	15.6
50°-60°	21.1	1.4
60°-70°	4.4	0.3
70°-80°	2.9	0.2
80°-90°	1.8	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°	737.8	47.9
0°-40°	1268.1	82.4
0°-60°	1529.7	99.4
0°-90°	1538.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1538.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	172	172	172	172	172	
5°	382	280	161	124	115	69
15°	3157	1110	110	76	76	919
25°	5748	1528	54	46	56	2611
35°	5230	422	19	26	38	3230
45°	2116	60	8	15	23	1677
55°	58	9	4	8	13	116
65°	3	3	3	6	5	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°	171.5	171.5	171.5	171.5	171.5	171.5	171.5	171.5	171.5	171.5	171.5
2.5°	255.0	256.5	249.6	250.3	243.4	246.5	244.2	238.0	233.3	225.6	222.5
5°	382.5	384.8	369.3	364.7	348.5	348.5	341.5	325.3	310.6	292.8	280.5
7.5°	699.2	708.5	662.1	627.4	576.4	564.0	540.1	484.4	438.9	392.5	357.7
10°	1482.7	1465.7	1369.9	1291.1	1159.7	1111.0	1046.1	886.2	739.4	593.4	479.0
12.5°	2338.0	2392.8	2208.2	2144.0	1936.2	1892.2	1753.9	1492.7	1244.7	986.6	757.9
15°	3157.0	3173.2	3011.7	2907.4	2654.0	2596.8	2426.8	2120.1	1786.3	1426.3	1110.3
17.5°	3814.5	3879.4	3642.2	3530.1	3201.0	3109.1	2908.9	2535.8	2164.1	1770.9	1396.1
20°	4581.7	4598.7	4317.5	4101.9	3671.5	3531.7	3292.2	2829.4	2386.7	1937.8	1550.7
22.5°	5279.4	5275.5	4913.9	4609.5	4064.8	3897.9	3602.0	3053.4	2538.9	2011.9	1565.3
25°	5747.6	5759.9	5372.9	5012.8	4344.5	4118.9	3785.1	3170.1	2590.6	2009.6	1528.3
27.5°	5997.1	5984.8	5569.9	5185.1	4447.3	4194.6	3832.2	3174.0	2543.5	1930.8	1417.0
30°	6143.9	5978.6	5535.9	5136.4	4377.7	4118.1	3749.6	3051.9	2386.7	1754.6	1218.4
32.5°	5751.5	5687.3	5301.8	4877.6	4138.2	3880.9	3517.0	2792.3	2137.9	1485.0	873.1
35°	5229.9	5232.2	4856.0	4459.6	3762.7	3538.6	3163.1	2476.3	1834.2	1032.2	421.9
37.5°	4682.9	4690.6	4332.9	3964.4	3343.9	3108.3	2756.7	2116.2	1319.7	525.4	254.2
40°	3991.4	4007.6	3699.3	3403.4	2830.9	2603.8	2290.1	1601.7	737.9	293.6	172.3
42.5°	3261.3	3281.4	3007.8	2745.2	2258.4	2071.4	1793.3	992.1	366.2	190.1	101.2
45°	2115.5	2173.4	1970.2	1859.7	1577.7	1466.4	1170.5	506.1	221.0	111.3	59.5
47.5°	1210.7	1211.5	1040.0	832.9	683.0	594.2	464.4	230.2	129.0	62.6	36.3
50°	562.5	576.4	456.6	380.1	272.0	230.2	189.3	124.4	68.0	36.3	22.4
52.5°	163.8	173.1	156.8	142.2	120.5	107.4	91.9	61.0	35.5	21.6	13.9
55°	57.9	61.8	57.9	54.1	48.7	44.0	39.4	29.4	20.1	13.1	9.3
57.5°	24.0	24.7	24.0	23.2	21.6	21.6	19.3	16.2	12.4	8.5	6.2
60°	10.8	11.6	10.8	11.6	10.8	10.8	10.8	11.6	7.7	5.4	4.6
62.5°	4.6	5.4	5.4	5.4	5.4	6.2	6.2	5.4	4.6	3.9	3.1
65°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
67.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
70°	2.3	2.3	2.3	2.3	2.3	2.3	1.5	1.5	2.3	2.3	2.3
72.5°	2.3	2.3	2.3	2.3	1.5	1.5	1.5	1.5	1.5	2.3	2.3
75°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
77.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.5	1.5	1.5
80°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.5	1.5	1.5
82.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.5	1.5	1.5
85°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.5	1.5	1.5
87.5°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.5	1.5	1.5
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°	171.5	171.5	171.5	171.5	171.5	171.5	171.5	171.5	171.5	171.5	171.5
2.5°	218.7	211.7	200.9	193.9	190.8	186.2	183.1	175.4	172.3	166.1	163.8
5°	268.9	255.0	238.7	225.6	217.1	207.8	193.9	178.5	170.8	160.7	155.3
7.5°	326.0	295.9	267.3	244.2	233.3	221.0	203.2	179.2	164.6	151.4	143.7
10°	398.7	336.9	292.1	255.0	238.7	222.5	200.9	173.1	154.5	139.1	130.6
12.5°	568.7	406.4	314.5	261.1	240.3	220.2	193.2	164.6	142.9	125.2	115.9
15°	818.2	567.9	374.7	266.6	234.9	210.2	179.2	150.7	128.3	110.5	101.2
17.5°	1039.2	724.0	458.2	286.6	233.3	198.6	162.3	132.9	111.3	94.3	86.5
20°	1159.7	805.9	513.8	299.0	226.4	180.8	142.9	115.1	94.3	79.6	72.6
22.5°	1162.0	801.2	493.7	272.0	199.3	156.8	123.6	97.4	78.8	65.7	60.3
25°	1092.5	714.7	411.8	214.0	163.0	132.9	103.5	81.1	64.1	54.1	49.4
27.5°	962.7	581.0	302.9	154.5	127.5	107.4	83.4	64.9	50.2	44.0	40.2
30°	757.2	378.6	176.9	115.1	98.9	82.7	63.4	45.6	39.4	34.8	31.7
32.5°	406.4	183.9	123.6	85.0	70.3	57.9	41.7	33.2	28.6	25.5	24.7
35°	212.5	134.4	82.7	54.1	44.8	37.9	28.6	23.2	20.9	19.3	19.3
37.5°	152.2	84.2	52.5	34.8	29.4	24.0	20.1	17.0	15.5	15.5	15.5
40°	90.4	51.8	31.7	22.4	19.3	17.0	14.7	12.4	12.4	12.4	12.4
42.5°	54.9	32.5	22.4	15.5	13.9	12.4	10.8	10.0	9.3	9.3	10.0
45°	34.0	22.4	14.7	11.6	10.8	9.3	8.5	7.7	7.7	7.7	8.5
47.5°	21.6	16.2	10.8	7.7	7.0	6.2	5.4	5.4	6.2	6.2	7.0
50°	16.2	10.0	7.0	5.4	4.6	4.6	3.9	4.6	4.6	5.4	6.2
52.5°	9.3	6.2	4.6	3.9	3.9	3.1	3.1	3.9	3.9	4.6	5.4
55°	6.2	4.6	3.9	3.1	3.1	3.1	3.1	3.1	3.9	3.9	4.6
57.5°	4.6	3.9	3.1	3.1	3.1	2.3	3.1	3.1	3.1	3.9	4.6
60°	3.9	3.1	3.1	3.1	3.1	2.3	2.3	3.1	3.1	3.9	3.9
62.5°	3.1	3.1	3.1	3.1	3.1	2.3	3.1	3.1	3.1	3.1	3.9
65°	2.3	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.9
67.5°	2.3	2.3	3.1	3.1	3.1	2.3	3.1	3.1	3.1	3.1	3.9
70°	2.3	2.3	2.3	3.1	3.1	2.3	3.1	3.1	3.1	3.1	3.1
72.5°	2.3	2.3	2.3	3.1	3.1	2.3	3.1	3.1	3.1	3.1	3.1
75°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	3.1	3.1	3.1
77.5°	2.3	2.3	2.3	2.3	3.1	2.3	3.1	3.1	3.1	3.1	3.1
80°	2.3	2.3	2.3	2.3	2.3	2.3	3.1	3.1	3.1	3.1	3.1
82.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	3.1	3.1	3.1	3.1
85°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	3.1	3.1	3.1	3.1
87.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	3.1	3.1	3.1
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°	171.5	171.5	171.5	171.5	171.5	171.5	171.5	171.5	171.5	171.5	171.5
2.5°	157.6	155.3	150.7	149.9	149.1	146.0	143.7	141.4	141.4	139.1	137.5
5°	146.0	142.2	136.8	134.4	133.7	129.8	126.7	124.4	123.6	121.3	119.0
7.5°	133.7	129.0	122.8	120.5	119.8	115.9	112.8	110.5	108.9	106.6	105.1
10°	120.5	115.1	109.7	107.4	106.6	102.8	100.4	98.1	96.6	95.0	93.5
12.5°	106.6	102.0	96.6	94.3	93.5	90.4	88.1	86.5	85.8	84.2	83.4
15°	92.7	88.1	83.4	81.9	81.1	78.8	77.3	76.5	75.7	75.7	74.9
17.5°	78.8	74.9	71.1	70.3	69.5	68.0	67.2	66.4	67.2	67.2	68.0
20°	65.7	62.6	59.5	59.5	58.7	57.9	57.9	57.9	59.5	60.3	61.8
22.5°	54.1	51.8	49.4	49.4	49.4	49.4	49.4	51.0	52.5	54.1	54.9
25°	44.8	42.5	41.7	41.7	41.7	42.5	43.3	44.8	46.4	47.9	49.4
27.5°	36.3	34.8	34.8	34.8	35.5	36.3	37.1	38.6	40.9	42.5	44.0
30°	29.4	28.6	28.6	29.4	30.1	30.9	32.5	34.0	35.5	37.1	38.6
32.5°	23.2	24.0	24.0	24.7	25.5	26.3	27.8	29.4	30.9	32.5	33.2
35°	19.3	19.3	20.1	20.9	21.6	22.4	24.0	25.5	26.3	27.8	29.4
37.5°	15.5	16.2	17.0	17.8	18.5	19.3	20.1	21.6	22.4	24.0	25.5
40°	13.1	13.9	14.7	15.5	15.5	17.0	17.0	18.5	19.3	20.9	22.4
42.5°	10.8	11.6	12.4	13.1	13.1	13.9	14.7	15.5	17.0	17.8	19.3
45°	8.5	9.3	10.0	10.8	11.6	12.4	12.4	13.9	14.7	15.5	17.0
47.5°	7.7	8.5	9.3	9.3	10.0	10.8	10.8	12.4	13.1	13.9	14.7
50°	6.2	7.0	7.7	8.5	8.5	9.3	10.0	10.8	11.6	12.4	12.4
52.5°	5.4	6.2	7.0	7.0	7.7	8.5	8.5	9.3	10.0	10.0	10.8
55°	5.4	6.2	6.2	7.0	7.0	7.7	7.7	8.5	8.5	9.3	9.3
57.5°	4.6	5.4	5.4	6.2	6.2	7.0	7.0	7.7	7.7	7.7	8.5
60°	4.6	4.6	5.4	5.4	6.2	6.2	6.2	7.0	7.0	7.0	7.7
62.5°	3.9	4.6	4.6	5.4	5.4	5.4	6.2	6.2	6.2	7.0	7.0
65°	3.9	4.6	4.6	5.4	5.4	5.4	5.4	5.4	6.2	6.2	6.2
67.5°	3.9	3.9	4.6	4.6	4.6	4.6	5.4	5.4	5.4	5.4	5.4
70°	3.9	3.9	3.9	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
72.5°	3.1	3.9	3.9	3.9	3.9	4.6	4.6	4.6	4.6	4.6	3.9
75°	3.1	3.1	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
77.5°	3.1	3.1	3.1	3.9	3.9	3.9	3.9	3.9	3.9	3.1	3.1
80°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.3
82.5°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.3	2.3	2.3
85°	3.1	2.3	3.1	3.1	3.1	2.3	2.3	2.3	2.3	2.3	1.5
87.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.5	1.5
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: LDSQA4A18927D010TE LAR25NF 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	171.5	171.5	171.5	171.5	171.5	171.5	171.5	171.5
2.5°	136.0	134.4	135.2	135.2	133.7	132.9	132.9	133.7
5°	117.4	115.9	116.7	116.7	115.1	114.3	114.3	115.1
7.5°	103.5	102.0	102.8	102.8	101.2	101.2	101.2	101.2
10°	92.7	91.9	91.9	91.9	90.4	91.2	90.4	89.6
12.5°	82.7	82.7	82.7	82.7	81.9	82.7	81.9	81.9
15°	74.9	74.9	75.7	75.7	75.7	76.5	76.5	76.5
17.5°	68.8	69.5	70.3	71.1	71.1	71.9	71.9	71.9
20°	62.6	64.1	64.9	65.7	65.7	67.2	66.4	67.2
22.5°	56.4	57.9	58.7	59.5	60.3	61.0	61.0	61.8
25°	51.0	52.5	53.3	54.1	54.9	56.4	56.4	56.4
27.5°	45.6	47.1	47.9	49.4	50.2	51.8	51.8	51.8
30°	40.2	41.7	42.5	43.3	44.8	46.4	46.4	47.1
32.5°	34.8	37.1	37.9	38.6	40.2	41.7	42.5	42.5
35°	30.9	32.5	33.2	34.8	35.5	37.9	37.9	37.9
37.5°	27.0	28.6	30.1	30.9	31.7	33.2	34.0	34.8
40°	24.0	25.5	26.3	27.0	28.6	30.1	30.9	30.9
42.5°	20.9	22.4	23.2	24.0	24.7	26.3	26.3	26.3
45°	18.5	19.3	20.1	20.9	21.6	22.4	23.2	23.2
47.5°	15.5	17.0	17.0	17.8	18.5	20.1	20.1	20.9
50°	13.1	14.7	14.7	15.5	16.2	17.0	17.8	17.8
52.5°	11.6	12.4	13.1	13.1	13.9	14.7	15.5	15.5
55°	10.0	10.8	10.8	11.6	11.6	12.4	13.1	13.1
57.5°	8.5	9.3	10.0	10.0	10.0	10.8	10.8	11.6
60°	7.7	8.5	8.5	8.5	8.5	9.3	9.3	9.3
62.5°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
65°	6.2	6.2	6.2	6.2	5.4	5.4	5.4	5.4
67.5°	5.4	5.4	5.4	5.4	4.6	4.6	4.6	4.6
70°	4.6	4.6	4.6	4.6	3.9	3.9	3.9	3.1
72.5°	3.9	3.9	3.9	3.9	3.9	3.1	3.1	3.1
75°	3.9	3.1	3.1	3.1	3.1	3.1	2.3	2.3
77.5°	3.1	3.1	3.1	2.3	2.3	2.3	2.3	2.3
80°	2.3	2.3	2.3	2.3	2.3	1.5	1.5	1.5
82.5°	2.3	1.5	1.5	1.5	1.5	1.5	1.5	1.5
85°	1.5	1.5	1.5	1.5	0.8	0.8	0.8	0.8
87.5°	1.5	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)