

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: P182827

Luminaire Tested: **LDSQA4A28930D010TE LAR25NF 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182827
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: LDSQA4A28930D010TE 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: 2205.2 lumens
Efficiency: N/A
Efficacy: 49.6 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

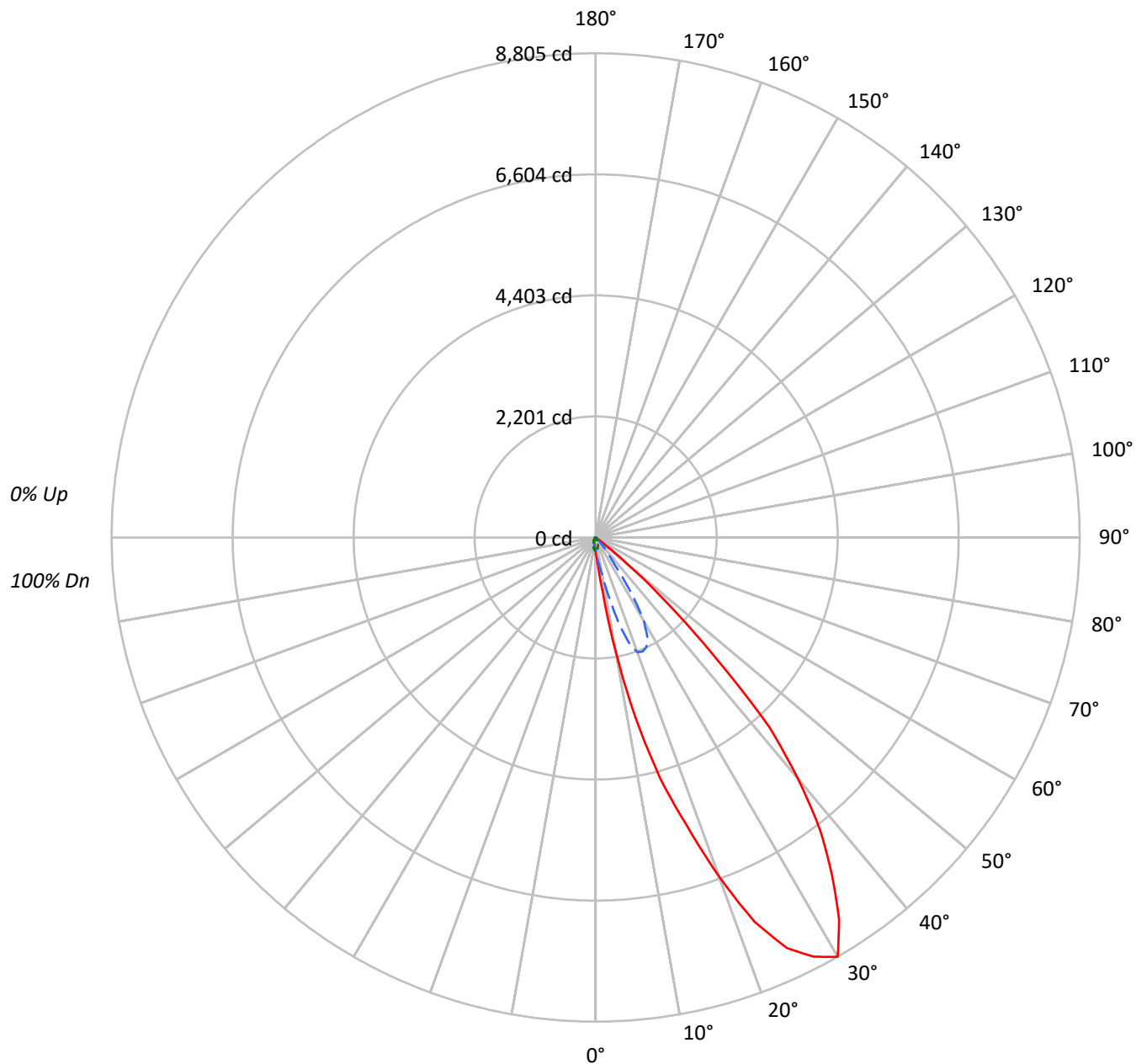
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	113	109	106	104	110	107	105	102	103	101	99		99	98	96		96
2	106	100	95	91	103	98	94	90	95	91	88		92	89	86		89
3	99	91	86	81	97	90	85	80	87	83	79		85	81	78		82
4	93	84	77	72	91	83	76	72	80	75	71		78	74	70		76
5	87	77	70	65	85	76	69	64	74	68	64		72	67	63		70
6	81	70	63	58	79	69	63	58	68	62	57		66	61	57		65
7	76	65	57	52	74	64	57	52	62	56	52		61	56	52		60
8	71	59	52	47	69	59	52	47	58	51	47		57	51	47		55
9	66	55	48	43	65	54	48	43	53	47	43		52	47	43		51
10	62	51	44	39	61	50	44	39	49	43	39		48	43	39		48

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	23812	23812	23812
5°	53300	22396	16046
10°	209016	19605	12631
15°	453745	15876	10992
20°	676896	11753	9928
25°	880423	8284	8637
30°	984912	5571	7551
35°	886370	3276	6422
40°	723362	2238	5602
45°	415337	1521	4548
50°	121488	1176	3843
55°	14018	929	3175
60°	3003	1066	2577
65°	1009	1009	1788
70°	935	1246	1246
75°	823	1647	1235
80°	0	2455	1227
85°	0	4891	1223



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.2	1.6
10°-20°	301.9	13.7
20°-30°	720.2	32.7
30°-40°	760.0	34.5
40°-50°	344.7	15.6
50°-60°	30.2	1.4
60°-70°	6.3	0.3
70°-80°	4.1	0.2
80°-90°	2.6	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°	1057.3	47.9
0°-40°	1817.3	82.4
0°-60°	2192.2	99.4
0°-90°	2205.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2205.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	246	246	246	246	246	
5°	548	402	230	177	165	98
15°	4524	1591	158	108	110	1316
25°	8237	2190	78	66	81	3742
35°	7495	604	28	38	54	4628
45°	3032	85	11	21	33	2403
55°	83	13	6	12	19	166
65°	4	4	4	9	8	6
75°	2	2	4	6	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°	245.8	245.8	245.8	245.8	245.8	245.8	245.8	245.8	245.8	245.8	245.8
2.5°	365.4	367.6	357.6	358.7	348.8	353.2	349.9	341.0	334.4	323.3	318.9
5°	548.1	551.4	529.3	522.6	499.4	499.4	489.4	466.1	445.1	419.6	401.9
7.5°	1002.0	1015.3	948.9	899.1	826.0	808.3	774.0	694.2	628.9	562.5	512.6
10°	2124.8	2100.4	1963.1	1850.2	1662.0	1592.2	1499.2	1270.0	1059.6	850.4	686.5
12.5°	3350.5	3429.1	3164.5	3072.6	2774.7	2711.6	2513.4	2139.2	1783.8	1413.9	1086.2
15°	4524.2	4547.4	4316.0	4166.5	3803.3	3721.4	3477.8	3038.2	2559.9	2044.0	1591.1
17.5°	5466.4	5559.4	5219.5	5058.9	4587.3	4455.5	4168.7	3633.9	3101.4	2537.8	2000.8
20°	6565.9	6590.3	6187.2	5878.3	5261.6	5061.2	4717.9	4054.7	3420.2	2776.9	2222.2
22.5°	7565.7	7560.2	7042.0	6605.8	5825.2	5586.0	5161.9	4375.8	3638.4	2883.2	2243.3
25°	8236.7	8254.4	7699.7	7183.7	6226.0	5902.7	5424.3	4543.0	3712.6	2879.9	2190.1
27.5°	8594.3	8576.6	7982.0	7430.6	6373.2	6011.2	5491.9	4548.5	3645.0	2767.0	2030.7
30°	8804.7	8567.8	7933.3	7360.9	6273.6	5901.6	5373.4	4373.6	3420.2	2514.5	1746.1
32.5°	8242.2	8150.3	7597.8	6990.0	5930.3	5561.6	5040.1	4001.5	3063.7	2128.1	1251.2
35°	7494.9	7498.2	6959.0	6390.9	5392.2	5071.1	4533.0	3548.7	2628.6	1479.3	604.5
37.5°	6710.9	6722.0	6209.4	5681.2	4792.1	4454.4	3950.6	3032.7	1891.2	752.9	364.3
40°	5720.0	5743.2	5301.4	4877.4	4056.9	3731.4	3281.8	2295.3	1057.4	420.7	246.9
42.5°	4673.6	4702.4	4310.5	3934.0	3236.4	2968.5	2569.9	1421.7	524.8	272.4	145.0
45°	3031.6	3114.6	2823.4	2665.1	2261.0	2101.5	1677.5	725.2	316.7	159.4	85.3
47.5°	1735.0	1736.1	1490.3	1193.6	978.8	851.5	665.4	330.0	184.9	89.7	52.0
50°	806.1	826.0	654.4	544.8	389.7	330.0	271.3	178.3	97.4	52.0	32.1
52.5°	234.7	248.0	224.8	203.7	172.7	153.9	131.8	87.5	50.9	31.0	19.9
55°	83.0	88.6	83.0	77.5	69.8	63.1	56.5	42.1	28.8	18.8	13.3
57.5°	34.3	35.4	34.3	33.2	31.0	31.0	27.7	23.3	17.7	12.2	8.9
60°	15.5	16.6	15.5	16.6	15.5	15.5	15.5	16.6	11.1	7.8	6.6
62.5°	6.6	7.8	7.8	7.8	7.8	8.9	8.9	7.8	6.6	5.5	4.4
65°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
67.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
70°	3.3	3.3	3.3	3.3	3.3	3.3	2.2	2.2	3.3	3.3	3.3
72.5°	3.3	3.3	3.3	3.3	2.2	2.2	2.2	2.2	2.2	3.3	3.3
75°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
77.5°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	2.2	2.2
80°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	2.2	2.2	2.2
82.5°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	2.2	2.2
85°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	2.2	2.2	2.2
87.5°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	2.2	2.2	2.2
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	245.8	245.8	245.8	245.8	245.8	245.8	245.8	245.8	245.8	245.8	245.8
2.5°	313.3	303.4	287.9	277.9	273.5	266.8	262.4	251.3	246.9	238.1	234.7
5°	385.3	365.4	342.1	323.3	311.1	297.8	277.9	255.8	244.7	230.3	222.6
7.5°	467.3	424.1	383.1	349.9	334.4	316.7	291.2	256.9	235.8	217.0	205.9
10°	571.3	482.8	418.5	365.4	342.1	318.9	287.9	248.0	221.4	199.3	187.1
12.5°	814.9	582.4	450.6	374.2	344.3	315.6	276.8	235.8	204.8	179.4	166.1
15°	1172.6	813.8	537.0	382.0	336.6	301.2	256.9	215.9	183.8	158.3	145.0
17.5°	1489.2	1037.5	656.6	410.8	334.4	284.6	232.5	190.4	159.4	135.1	124.0
20°	1662.0	1154.8	736.3	428.5	324.4	259.1	204.8	165.0	135.1	114.0	104.1
22.5°	1665.3	1148.2	707.5	389.7	285.7	224.8	177.2	139.5	112.9	94.1	86.4
25°	1565.6	1024.2	590.2	306.7	233.6	190.4	148.4	116.3	91.9	77.5	70.9
27.5°	1379.6	832.6	434.0	221.4	182.7	153.9	119.6	93.0	72.0	63.1	57.6
30°	1085.1	542.5	253.6	165.0	141.7	118.5	90.8	65.3	56.5	49.8	45.4
32.5°	582.4	263.5	177.2	121.8	100.8	83.0	59.8	47.6	41.0	36.5	35.4
35°	304.5	192.7	118.5	77.5	64.2	54.3	41.0	33.2	29.9	27.7	27.7
37.5°	218.1	120.7	75.3	49.8	42.1	34.3	28.8	24.4	22.1	22.1	22.1
40°	129.5	74.2	45.4	32.1	27.7	24.4	21.0	17.7	17.7	17.7	17.7
42.5°	78.6	46.5	32.1	22.1	19.9	17.7	15.5	14.4	13.3	13.3	14.4
45°	48.7	32.1	21.0	16.6	15.5	13.3	12.2	11.1	11.1	11.1	12.2
47.5°	31.0	23.3	15.5	11.1	10.0	8.9	7.8	7.8	8.9	8.9	10.0
50°	23.3	14.4	10.0	7.8	6.6	6.6	5.5	6.6	6.6	7.8	8.9
52.5°	13.3	8.9	6.6	5.5	5.5	4.4	4.4	5.5	5.5	6.6	7.8
55°	8.9	6.6	5.5	4.4	4.4	4.4	4.4	4.4	5.5	5.5	6.6
57.5°	6.6	5.5	4.4	4.4	4.4	3.3	4.4	4.4	4.4	5.5	6.6
60°	5.5	4.4	4.4	4.4	4.4	3.3	3.3	4.4	4.4	5.5	5.5
62.5°	4.4	4.4	4.4	4.4	4.4	3.3	4.4	4.4	4.4	4.4	5.5
65°	3.3	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	5.5
67.5°	3.3	3.3	4.4	4.4	4.4	3.3	4.4	4.4	4.4	4.4	5.5
70°	3.3	3.3	3.3	4.4	4.4	3.3	4.4	4.4	4.4	4.4	4.4
72.5°	3.3	3.3	3.3	4.4	4.4	3.3	4.4	4.4	4.4	4.4	4.4
75°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	4.4	4.4	4.4
77.5°	3.3	3.3	3.3	3.3	4.4	3.3	4.4	4.4	4.4	4.4	4.4
80°	3.3	3.3	3.3	3.3	3.3	3.3	4.4	4.4	4.4	4.4	4.4
82.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	4.4	4.4	4.4	4.4
85°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	4.4	4.4	4.4	4.4
87.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	4.4	4.4	4.4
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°	245.8	245.8	245.8	245.8	245.8	245.8	245.8	245.8	245.8	245.8	245.8
2.5°	225.9	222.6	215.9	214.8	213.7	209.3	205.9	202.6	202.6	199.3	197.1
5°	209.3	203.7	196.0	192.7	191.6	186.0	181.6	178.3	177.2	173.8	170.5
7.5°	191.6	184.9	176.1	172.7	171.6	166.1	161.7	158.3	156.1	152.8	150.6
10°	172.7	165.0	157.2	153.9	152.8	147.3	143.9	140.6	138.4	136.2	134.0
12.5°	152.8	146.2	138.4	135.1	134.0	129.5	126.2	124.0	122.9	120.7	119.6
15°	132.9	126.2	119.6	117.4	116.3	112.9	110.7	109.6	108.5	108.5	107.4
17.5°	112.9	107.4	101.9	100.8	99.7	97.4	96.3	95.2	96.3	96.3	97.4
20°	94.1	89.7	85.3	85.3	84.1	83.0	83.0	83.0	85.3	86.4	88.6
22.5°	77.5	74.2	70.9	70.9	70.9	70.9	70.9	73.1	75.3	77.5	78.6
25°	64.2	60.9	59.8	59.8	59.8	60.9	62.0	64.2	66.4	68.6	70.9
27.5°	52.0	49.8	49.8	49.8	50.9	52.0	53.1	55.4	58.7	60.9	63.1
30°	42.1	41.0	41.0	42.1	43.2	44.3	46.5	48.7	50.9	53.1	55.4
32.5°	33.2	34.3	34.3	35.4	36.5	37.6	39.9	42.1	44.3	46.5	47.6
35°	27.7	27.7	28.8	29.9	31.0	32.1	34.3	36.5	37.6	39.9	42.1
37.5°	22.1	23.3	24.4	25.5	26.6	27.7	28.8	31.0	32.1	34.3	36.5
40°	18.8	19.9	21.0	22.1	22.1	24.4	24.4	26.6	27.7	29.9	32.1
42.5°	15.5	16.6	17.7	18.8	18.8	19.9	21.0	22.1	24.4	25.5	27.7
45°	12.2	13.3	14.4	15.5	16.6	17.7	17.7	19.9	21.0	22.1	24.4
47.5°	11.1	12.2	13.3	13.3	14.4	15.5	15.5	17.7	18.8	19.9	21.0
50°	8.9	10.0	11.1	12.2	12.2	13.3	14.4	15.5	16.6	17.7	17.7
52.5°	7.8	8.9	10.0	10.0	11.1	12.2	12.2	13.3	14.4	14.4	15.5
55°	7.8	8.9	8.9	10.0	10.0	11.1	11.1	12.2	12.2	13.3	13.3
57.5°	6.6	7.8	7.8	8.9	8.9	10.0	10.0	11.1	11.1	11.1	12.2
60°	6.6	6.6	7.8	7.8	8.9	8.9	8.9	10.0	10.0	10.0	11.1
62.5°	5.5	6.6	6.6	7.8	7.8	7.8	8.9	8.9	8.9	10.0	10.0
65°	5.5	6.6	6.6	7.8	7.8	7.8	7.8	7.8	8.9	8.9	8.9
67.5°	5.5	5.5	6.6	6.6	6.6	6.6	7.8	7.8	7.8	7.8	7.8
70°	5.5	5.5	5.5	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
72.5°	4.4	5.5	5.5	5.5	5.5	6.6	6.6	6.6	6.6	6.6	5.5
75°	4.4	4.4	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
77.5°	4.4	4.4	4.4	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4
80°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	3.3
82.5°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	3.3	3.3	3.3
85°	4.4	3.3	4.4	4.4	4.4	3.3	3.3	3.3	3.3	3.3	2.2
87.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.2	2.2
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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CATALOG NUMBER: LDSQA4A28930D010TE LAR25NF 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	245.8	245.8	245.8	245.8	245.8	245.8	245.8	245.8
2.5°	194.9	192.7	193.8	193.8	191.6	190.4	190.4	191.6
5°	168.3	166.1	167.2	167.2	165.0	163.9	163.9	165.0
7.5°	148.4	146.2	147.3	147.3	145.0	145.0	145.0	145.0
10°	132.9	131.8	131.8	131.8	129.5	130.7	129.5	128.4
12.5°	118.5	118.5	118.5	118.5	117.4	118.5	117.4	117.4
15°	107.4	107.4	108.5	108.5	108.5	109.6	109.6	109.6
17.5°	98.5	99.7	100.8	101.9	101.9	103.0	103.0	103.0
20°	89.7	91.9	93.0	94.1	94.1	96.3	95.2	96.3
22.5°	80.8	83.0	84.1	85.3	86.4	87.5	87.5	88.6
25°	73.1	75.3	76.4	77.5	78.6	80.8	80.8	80.8
27.5°	65.3	67.5	68.6	70.9	72.0	74.2	74.2	74.2
30°	57.6	59.8	60.9	62.0	64.2	66.4	66.4	67.5
32.5°	49.8	53.1	54.3	55.4	57.6	59.8	60.9	60.9
35°	44.3	46.5	47.6	49.8	50.9	54.3	54.3	54.3
37.5°	38.8	41.0	43.2	44.3	45.4	47.6	48.7	49.8
40°	34.3	36.5	37.6	38.8	41.0	43.2	44.3	44.3
42.5°	29.9	32.1	33.2	34.3	35.4	37.6	37.6	37.6
45°	26.6	27.7	28.8	29.9	31.0	32.1	33.2	33.2
47.5°	22.1	24.4	24.4	25.5	26.6	28.8	28.8	29.9
50°	18.8	21.0	21.0	22.1	23.3	24.4	25.5	25.5
52.5°	16.6	17.7	18.8	18.8	19.9	21.0	22.1	22.1
55°	14.4	15.5	15.5	16.6	16.6	17.7	18.8	18.8
57.5°	12.2	13.3	14.4	14.4	14.4	15.5	15.5	16.6
60°	11.1	12.2	12.2	12.2	12.2	13.3	13.3	13.3
62.5°	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
65°	8.9	8.9	8.9	8.9	7.8	7.8	7.8	7.8
67.5°	7.8	7.8	7.8	7.8	6.6	6.6	6.6	6.6
70°	6.6	6.6	6.6	6.6	5.5	5.5	5.5	4.4
72.5°	5.5	5.5	5.5	5.5	5.5	4.4	4.4	4.4
75°	5.5	4.4	4.4	4.4	4.4	4.4	3.3	3.3
77.5°	4.4	4.4	4.4	3.3	3.3	3.3	3.3	3.3
80°	3.3	3.3	3.3	3.3	3.3	2.2	2.2	2.2
82.5°	3.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2
85°	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1
87.5°	2.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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)