

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: P182813

Luminaire Tested: **LDSQA4A09940D010TE LAR25NF 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182813
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: LDSQA4A09940D010TE LAR25NF 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 25° NARROW FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 951.3 lumens
Efficiency: N/A
Efficacy: 68.7 lumens/watt
Spacing Criteria (0/90/45): 2.37 / 0.61 / 1.19
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

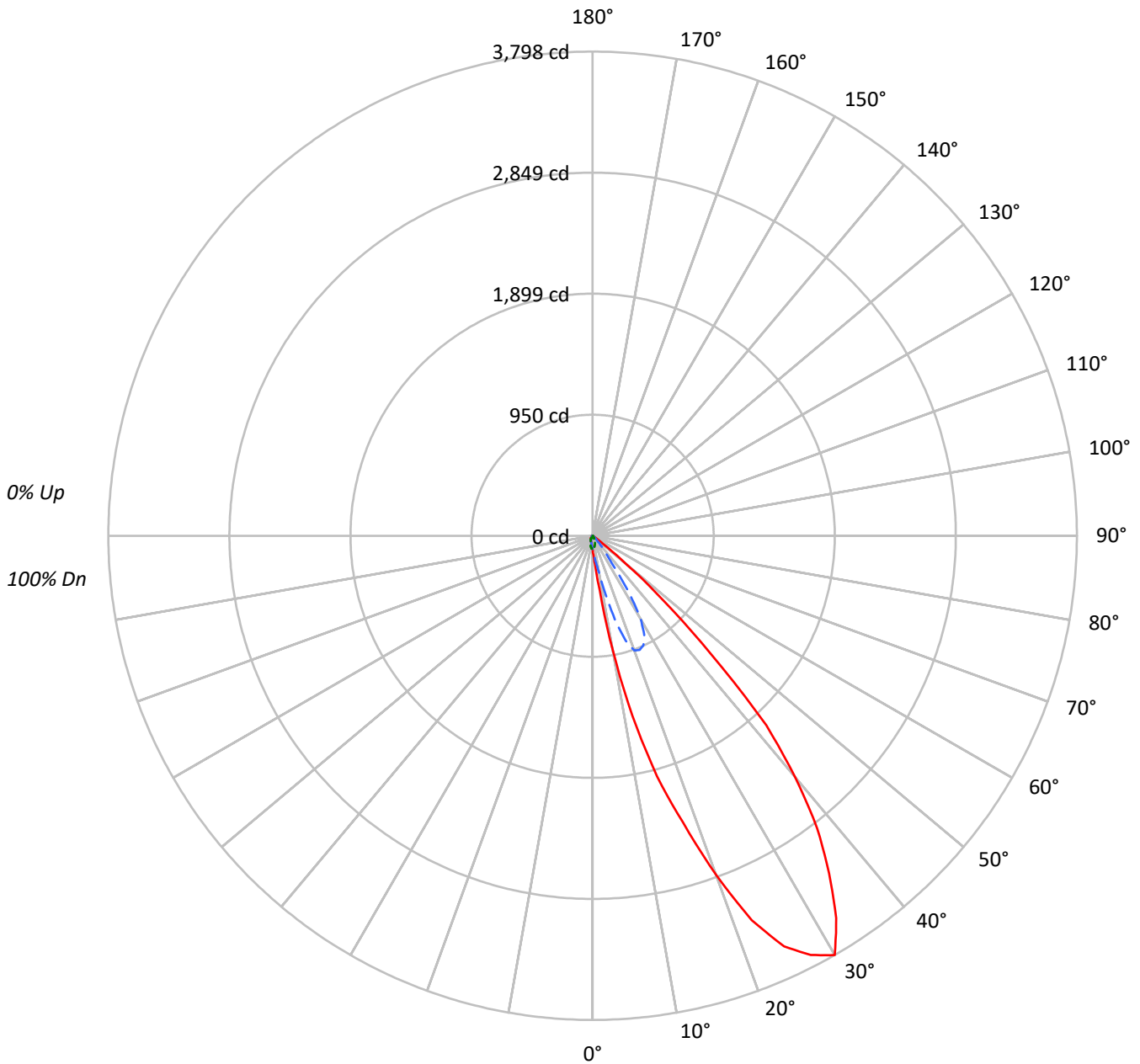
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				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°	10269	10269	10269
5°	22989	9656	6924
10°	90166	8460	5450
15°	195731	6850	4744
20°	291989	5072	4289
25°	379792	3570	3730
30°	424863	2405	3255
35°	382356	1407	2767
40°	312032	961	2415
45°	179158	658	1959
50°	52402	497	1658
55°	6047	405	1368
60°	1298	465	1104
65°	436	436	756
70°	397	538	538
75°	374	711	524
80°	0	1060	558
85°	0	2112	556



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	15.2	1.6
10°-20°	130.2	13.7
20°-30°	310.7	32.7
30°-40°	327.9	34.5
40°-50°	148.7	15.6
50°-60°	13.0	1.4
60°-70°	2.7	0.3
70°-80°	1.8	0.2
80°-90°	1.1	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°	456.1	47.9
0°-40°	783.9	82.4
0°-60°	945.7	99.4
0°-90°	951.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	951.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	106	106	106	106	106	
5°	236	173	99	76	71	42
15°	1952	686	68	47	47	568
25°	3553	945	33	29	35	1614
35°	3233	261	12	16	23	1997
45°	1308	37	5	9	14	1037
55°	36	6	2	5	8	71
65°	2	2	2	4	3	3
75°	1	1	2	2	1	1
85°	0	1	2	1	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°	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0
2.5°	157.6	158.6	154.3	154.8	150.5	152.4	150.9	147.1	144.2	139.5	137.6
5°	236.4	237.9	228.3	225.4	215.4	215.4	211.1	201.1	192.0	181.0	173.4
7.5°	432.3	438.0	409.3	387.8	356.3	348.7	333.9	299.5	271.3	242.6	221.1
10°	916.6	906.1	846.8	798.1	716.9	686.8	646.7	547.8	457.1	366.8	296.1
12.5°	1445.3	1479.2	1365.1	1325.4	1196.9	1169.7	1084.2	922.8	769.5	609.9	468.6
15°	1951.6	1961.6	1861.8	1797.3	1640.7	1605.3	1500.2	1310.6	1104.3	881.7	686.4
17.5°	2358.0	2398.2	2251.5	2182.3	1978.8	1922.0	1798.3	1567.6	1337.8	1094.7	863.1
20°	2832.3	2842.8	2669.0	2535.7	2269.7	2183.2	2035.2	1749.1	1475.4	1197.9	958.6
22.5°	3263.6	3261.2	3037.7	2849.5	2512.8	2409.6	2226.7	1887.6	1569.5	1243.7	967.7
25°	3553.1	3560.7	3321.4	3098.8	2685.7	2546.2	2339.9	1959.7	1601.5	1242.3	944.7
27.5°	3707.3	3699.7	3443.2	3205.4	2749.2	2593.0	2369.0	1962.1	1572.4	1193.6	876.0
30°	3798.1	3695.9	3422.2	3175.3	2706.2	2545.8	2317.9	1886.6	1475.4	1084.7	753.2
32.5°	3555.5	3515.8	3277.5	3015.3	2558.2	2399.1	2174.2	1726.1	1321.6	918.0	539.7
35°	3233.1	3234.5	3001.9	2756.9	2326.0	2187.5	1955.4	1530.8	1133.9	638.1	260.8
37.5°	2894.9	2899.7	2678.5	2450.7	2067.2	1921.5	1704.2	1308.2	815.8	324.8	157.1
40°	2467.4	2477.5	2286.9	2104.0	1750.0	1609.6	1415.7	990.1	456.1	181.5	106.5
42.5°	2016.1	2028.5	1859.4	1697.0	1396.1	1280.5	1108.6	613.3	226.4	117.5	62.6
45°	1307.7	1343.6	1218.0	1149.7	975.3	906.5	723.6	312.8	136.6	68.8	36.8
47.5°	748.4	748.9	642.9	514.9	422.2	367.3	287.1	142.3	79.8	38.7	22.4
50°	347.7	356.3	282.3	235.0	168.1	142.3	117.0	76.9	42.0	22.4	13.9
52.5°	101.3	107.0	97.0	87.9	74.5	66.4	56.8	37.7	22.0	13.4	8.6
55°	35.8	38.2	35.8	33.4	30.1	27.2	24.4	18.1	12.4	8.1	5.7
57.5°	14.8	15.3	14.8	14.3	13.4	13.4	11.9	10.0	7.6	5.3	3.8
60°	6.7	7.2	6.7	7.2	6.7	6.7	6.7	7.2	4.8	3.3	2.9
62.5°	2.9	3.3	3.3	3.3	3.3	3.8	3.8	3.3	2.9	2.4	1.9
65°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
67.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
70°	1.4	1.4	1.4	1.4	1.4	1.4	1.0	1.0	1.4	1.4	1.4
72.5°	1.4	1.4	1.4	1.4	1.0	1.0	1.0	1.0	1.0	1.4	1.4
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°	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0
2.5°	135.2	130.9	124.2	119.9	118.0	115.1	113.2	108.4	106.5	102.7	101.3
5°	166.2	157.6	147.6	139.5	134.2	128.5	119.9	110.3	105.6	99.3	96.0
7.5°	201.6	182.9	165.3	150.9	144.2	136.6	125.6	110.8	101.7	93.6	88.8
10°	246.5	208.2	180.5	157.6	147.6	137.6	124.2	107.0	95.5	86.0	80.7
12.5°	351.5	251.2	194.4	161.4	148.5	136.1	119.4	101.7	88.4	77.4	71.6
15°	505.8	351.1	231.6	164.8	145.2	129.9	110.8	93.1	79.3	68.3	62.6
17.5°	642.4	447.5	283.2	177.2	144.2	122.8	100.3	82.2	68.8	58.3	53.5
20°	716.9	498.2	317.6	184.8	139.9	111.8	88.4	71.2	58.3	49.2	44.9
22.5°	718.4	495.3	305.2	168.1	123.2	97.0	76.4	60.2	48.7	40.6	37.3
25°	675.4	441.8	254.6	132.3	100.8	82.2	64.0	50.2	39.6	33.4	30.6
27.5°	595.1	359.2	187.2	95.5	78.8	66.4	51.6	40.1	31.0	27.2	24.8
30°	468.1	234.0	109.4	71.2	61.1	51.1	39.2	28.2	24.4	21.5	19.6
32.5°	251.2	113.7	76.4	52.5	43.5	35.8	25.8	20.5	17.7	15.8	15.3
35°	131.3	83.1	51.1	33.4	27.7	23.4	17.7	14.3	12.9	11.9	11.9
37.5°	94.1	52.1	32.5	21.5	18.1	14.8	12.4	10.5	9.6	9.6	9.6
40°	55.9	32.0	19.6	13.9	11.9	10.5	9.1	7.6	7.6	7.6	7.6
42.5°	33.9	20.1	13.9	9.6	8.6	7.6	6.7	6.2	5.7	5.7	6.2
45°	21.0	13.9	9.1	7.2	6.7	5.7	5.3	4.8	4.8	4.8	5.3
47.5°	13.4	10.0	6.7	4.8	4.3	3.8	3.3	3.3	3.8	3.8	4.3
50°	10.0	6.2	4.3	3.3	2.9	2.9	2.4	2.9	2.9	3.3	3.8
52.5°	5.7	3.8	2.9	2.4	2.4	1.9	1.9	2.4	2.4	2.9	3.3
55°	3.8	2.9	2.4	1.9	1.9	1.9	1.9	1.9	2.4	2.4	2.9
57.5°	2.9	2.4	1.9	1.9	1.9	1.4	1.9	1.9	1.9	2.4	2.9
60°	2.4	1.9	1.9	1.9	1.9	1.4	1.4	1.9	1.9	2.4	2.4
62.5°	1.9	1.9	1.9	1.9	1.9	1.4	1.9	1.9	1.9	1.9	2.4
65°	1.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.4
67.5°	1.4	1.4	1.9	1.9	1.9	1.4	1.9	1.9	1.9	1.9	2.4
70°	1.4	1.4	1.4	1.9	1.9	1.4	1.9	1.9	1.9	1.9	1.9
72.5°	1.4	1.4	1.4	1.9	1.9	1.4	1.9	1.9	1.9	1.9	1.9
75°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	1.9
77.5°	1.4	1.4	1.4	1.4	1.9	1.4	1.9	1.9	1.9	1.9	1.9
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	1.9	1.9	1.9
82.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	1.9	1.9
85°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	1.9	1.9
87.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0
2.5°	97.4	96.0	93.1	92.7	92.2	90.3	88.8	87.4	87.4	86.0	85.0
5°	90.3	87.9	84.5	83.1	82.6	80.2	78.3	76.9	76.4	75.0	73.6
7.5°	82.6	79.8	75.9	74.5	74.0	71.6	69.7	68.3	67.3	65.9	65.0
10°	74.5	71.2	67.8	66.4	65.9	63.5	62.1	60.7	59.7	58.7	57.8
12.5°	65.9	63.0	59.7	58.3	57.8	55.9	54.4	53.5	53.0	52.1	51.6
15°	57.3	54.4	51.6	50.6	50.2	48.7	47.8	47.3	46.8	46.8	46.3
17.5°	48.7	46.3	43.9	43.5	43.0	42.0	41.6	41.1	41.6	41.6	42.0
20°	40.6	38.7	36.8	36.8	36.3	35.8	35.8	35.8	36.8	37.3	38.2
22.5°	33.4	32.0	30.6	30.6	30.6	30.6	30.6	31.5	32.5	33.4	33.9
25°	27.7	26.3	25.8	25.8	25.8	26.3	26.7	27.7	28.7	29.6	30.6
27.5°	22.4	21.5	21.5	21.5	22.0	22.4	22.9	23.9	25.3	26.3	27.2
30°	18.1	17.7	17.7	18.1	18.6	19.1	20.1	21.0	22.0	22.9	23.9
32.5°	14.3	14.8	14.8	15.3	15.8	16.2	17.2	18.1	19.1	20.1	20.5
35°	11.9	11.9	12.4	12.9	13.4	13.9	14.8	15.8	16.2	17.2	18.1
37.5°	9.6	10.0	10.5	11.0	11.5	11.9	12.4	13.4	13.9	14.8	15.8
40°	8.1	8.6	9.1	9.6	9.6	10.5	10.5	11.5	11.9	12.9	13.9
42.5°	6.7	7.2	7.6	8.1	8.1	8.6	9.1	9.6	10.5	11.0	11.9
45°	5.3	5.7	6.2	6.7	7.2	7.6	7.6	8.6	9.1	9.6	10.5
47.5°	4.8	5.3	5.7	5.7	6.2	6.7	6.7	7.6	8.1	8.6	9.1
50°	3.8	4.3	4.8	5.3	5.3	5.7	6.2	6.7	7.2	7.6	7.6
52.5°	3.3	3.8	4.3	4.3	4.8	5.3	5.3	5.7	6.2	6.2	6.7
55°	3.3	3.8	3.8	4.3	4.3	4.8	4.8	5.3	5.3	5.7	5.7
57.5°	2.9	3.3	3.3	3.8	3.8	4.3	4.3	4.8	4.8	4.8	5.3
60°	2.9	2.9	3.3	3.3	3.8	3.8	3.8	4.3	4.3	4.3	4.8
62.5°	2.4	2.9	2.9	3.3	3.3	3.3	3.8	3.8	3.8	4.3	4.3
65°	2.4	2.9	2.9	3.3	3.3	3.3	3.3	3.3	3.8	3.8	3.8
67.5°	2.4	2.4	2.9	2.9	2.9	2.9	3.3	3.3	3.3	3.3	3.3
70°	2.4	2.4	2.4	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
72.5°	1.9	2.4	2.4	2.4	2.4	2.9	2.9	2.9	2.9	2.9	2.4
75°	1.9	1.9	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
77.5°	1.9	1.9	1.9	2.4	2.4	2.4	2.4	2.4	2.4	1.9	1.9
80°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.4
82.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.4	1.4	1.4
85°	1.9	1.4	1.9	1.9	1.9	1.4	1.4	1.4	1.4	1.4	1.0
87.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	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



TEST NUMBER: P182813

CATALOG NUMBER: LDSQA4A09940D010TE LAR25NF 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	106.0	106.0	106.0	106.0	106.0	106.0	106.0	106.0
2.5°	84.1	83.1	83.6	83.6	82.6	82.2	82.2	82.6
5°	72.6	71.6	72.1	72.1	71.2	70.7	70.7	71.2
7.5°	64.0	63.0	63.5	63.5	62.6	62.6	62.6	62.6
10°	57.3	56.8	56.8	56.8	55.9	56.4	55.9	55.4
12.5°	51.1	51.1	51.1	51.1	50.6	51.1	50.6	50.6
15°	46.3	46.3	46.8	46.8	46.8	47.3	47.3	47.3
17.5°	42.5	43.0	43.5	43.9	43.9	44.4	44.4	44.4
20°	38.7	39.6	40.1	40.6	40.6	41.6	41.1	41.6
22.5°	34.9	35.8	36.3	36.8	37.3	37.7	37.7	38.2
25°	31.5	32.5	33.0	33.4	33.9	34.9	34.9	34.9
27.5°	28.2	29.1	29.6	30.6	31.0	32.0	32.0	32.0
30°	24.8	25.8	26.3	26.7	27.7	28.7	28.7	29.1
32.5°	21.5	22.9	23.4	23.9	24.8	25.8	26.3	26.3
35°	19.1	20.1	20.5	21.5	22.0	23.4	23.4	23.4
37.5°	16.7	17.7	18.6	19.1	19.6	20.5	21.0	21.5
40°	14.8	15.8	16.2	16.7	17.7	18.6	19.1	19.1
42.5°	12.9	13.9	14.3	14.8	15.3	16.2	16.2	16.2
45°	11.5	11.9	12.4	12.9	13.4	13.9	14.3	14.3
47.5°	9.6	10.5	10.5	11.0	11.5	12.4	12.4	12.9
50°	8.1	9.1	9.1	9.6	10.0	10.5	11.0	11.0
52.5°	7.2	7.6	8.1	8.1	8.6	9.1	9.6	9.6
55°	6.2	6.7	6.7	7.2	7.2	7.6	8.1	8.1
57.5°	5.3	5.7	6.2	6.2	6.2	6.7	6.7	7.2
60°	4.8	5.3	5.3	5.3	5.3	5.7	5.7	5.7
62.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
65°	3.8	3.8	3.8	3.8	3.3	3.3	3.3	3.3
67.5°	3.3	3.3	3.3	3.3	2.9	2.9	2.9	2.9
70°	2.9	2.9	2.9	2.9	2.4	2.4	2.4	1.9
72.5°	2.4	2.4	2.4	2.4	2.4	1.9	1.9	1.9
75°	2.4	1.9	1.9	1.9	1.9	1.9	1.4	1.4
77.5°	1.9	1.9	1.9	1.4	1.4	1.4	1.4	1.4
80°	1.4	1.4	1.4	1.4	1.4	1.0	1.0	1.0
82.5°	1.4	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)