

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: P170857

Luminaire Tested: **LDA4A13927D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170857  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26102)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA4A13927D010TE LAR25NF 4LLWW1  
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 25° Narrow Flood Optic,  
at 30° tilt  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 875.4 lumens  
Efficiency: N/A  
Efficacy: 39.3 lumens/watt  
Spacing Criteria (0/90/45): 2.11 / 1.09 / 1.54  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

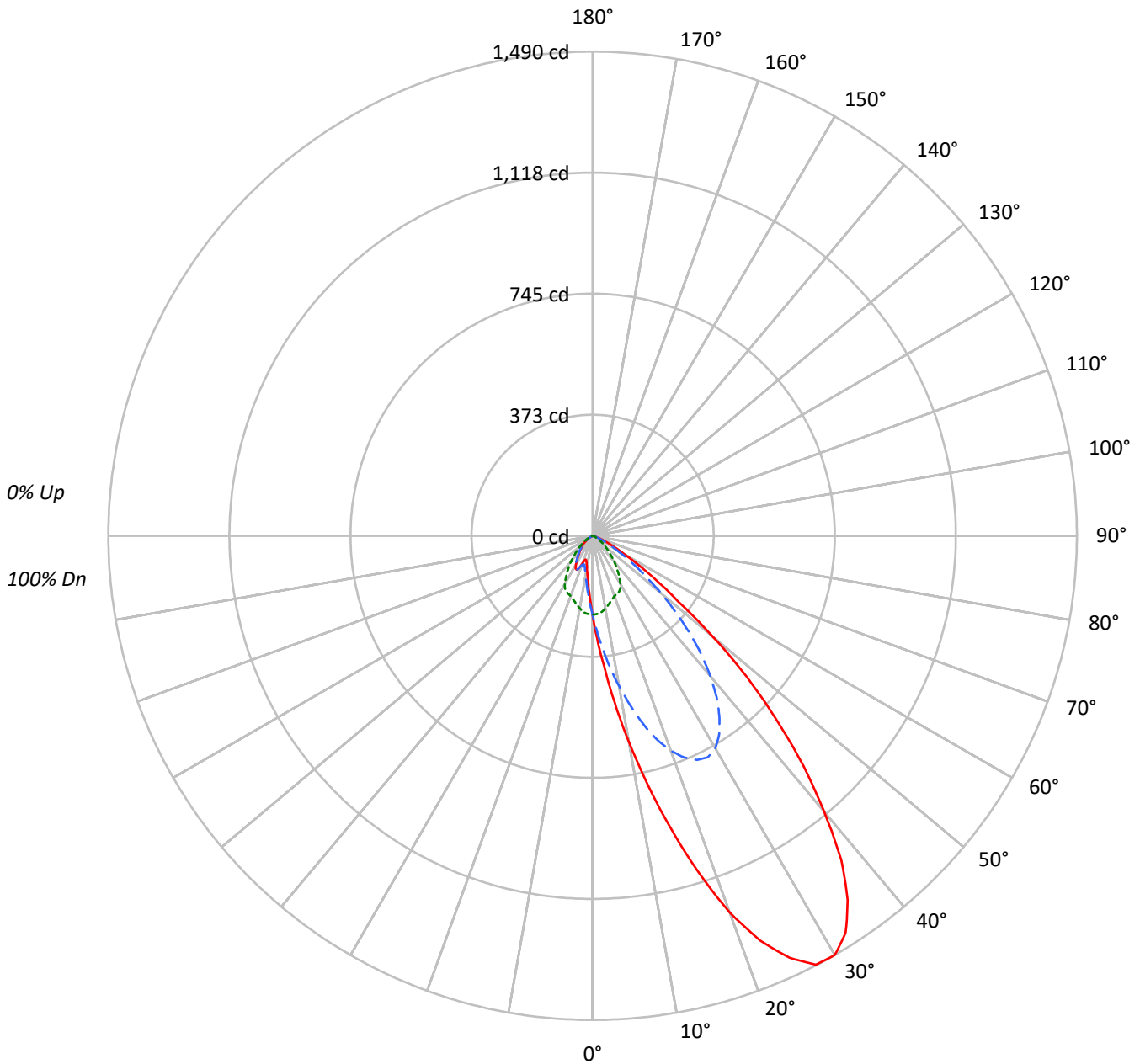
Input Watts (W): 22.27  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P170857

CATALOG NUMBER: LDA4A13927D010TE LAR25NF 4LLWW1

### 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	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	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90			
2	104	98	93	88	102	96	91	87	93	89	85	90	86	84	87	84	82	80			
3	97	89	82	77	95	87	81	76	84	79	75	82	77	74	79	76	73	71			
4	90	80	73	67	88	79	72	67	77	71	66	74	69	65	72	68	65	63			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56			
6	78	66	58	53	76	65	58	53	64	57	52	62	56	52	61	55	52	50			
7	72	60	53	47	71	60	52	47	58	52	47	57	51	47	56	50	46	45			
8	67	55	48	43	66	55	47	42	53	47	42	52	46	42	51	46	42	40			
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36			
10	59	47	40	35	58	46	39	35	45	39	35	45	39	34	44	38	34	33			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	29936	29936	29936
5°	49799	29704	18696
10°	80635	28406	12625
15°	119243	26918	9820
20°	161990	25872	11590
25°	195013	25981	15746
30°	212202	24341	14684
35°	205990	20509	11760
40°	178438	16520	9629
45°	139131	12716	8251
50°	92281	9518	6332
55°	51461	6989	3806
60°	27136	4638	1554
65°	14622	2335	175
70°	6996	829	216
75°	2431	524	286
80°	781	781	0
85°	2406	1557	0



TEST NUMBER: P170857

CATALOG NUMBER: LDA4A13927D010TE LAR25NF 4LLWW1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	25.9	3.0
10°-20°	102.2	11.7
20°-30°	210.2	24.0
30°-40°	251.0	28.7
40°-50°	185.4	21.2
50°-60°	78.0	8.9
60°-70°	19.2	2.2
70°-80°	2.6	0.3
80°-90°	1.0	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°	338.2	38.6
0°-40°	589.2	67.3
0°-60°	852.6	97.4
0°-90°	875.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	875.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	243	243	243	243	243	
5°	402	346	240	172	151	46
15°	934	599	211	96	77	274
25°	1433	761	191	115	116	655
35°	1368	680	136	82	78	839
45°	798	419	73	48	47	612
55°	239	156	32	20	18	228
65°	50	34	8	2	1	54
75°	5	3	1	1	1	7
85°	2	2	1	1	0	2
90°	0	0	0	0	0	



TEST NUMBER: P170857

CATALOG NUMBER: LDA4A13927D010TE LAR25NF 4LLWW1

**CANDELA DISTRIBUTION (FULL):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	242.7	242.7	242.7	242.7	242.7	242.7	242.7	242.7	242.7	242.7	242.7
2.5°	315.6	311.7	311.7	312.8	316.2	313.4	311.1	308.8	311.1	306.0	307.7
5°	402.2	401.7	401.7	397.1	401.1	401.7	397.1	393.1	394.3	386.9	386.9
7.5°	516.2	512.8	511.6	505.4	509.9	509.4	501.9	495.1	495.1	483.1	480.3
10°	643.8	639.3	637.0	629.0	633.0	630.7	619.9	609.6	606.8	589.7	583.4
12.5°	784.5	781.7	778.3	768.0	771.4	766.9	751.5	736.7	730.4	707.6	696.8
15°	933.8	938.4	932.7	920.7	923.0	915.0	895.1	874.6	864.9	834.1	818.2
17.5°	1087.6	1093.3	1087.1	1073.4	1072.8	1062.0	1034.7	1009.6	995.3	956.0	935.0
20°	1234.1	1235.8	1227.8	1213.0	1209.6	1194.8	1161.7	1126.4	1112.7	1064.3	1037.5
22.5°	1349.2	1355.4	1345.7	1334.9	1324.1	1305.3	1266.5	1227.8	1208.4	1153.2	1120.7
25°	1432.9	1447.2	1435.8	1423.2	1411.3	1389.0	1345.7	1304.2	1280.2	1218.7	1181.7
27.5°	1488.2	1501.9	1489.3	1475.1	1462.5	1436.9	1389.6	1349.7	1320.7	1253.4	1213.6
30°	1489.9	1506.4	1493.3	1477.9	1466.0	1440.3	1391.9	1350.9	1318.4	1251.2	1209.6
32.5°	1448.9	1462.0	1448.9	1435.8	1422.1	1397.6	1349.2	1309.8	1275.7	1211.3	1169.7
35°	1368.0	1379.4	1366.3	1350.9	1341.2	1319.5	1273.4	1235.8	1201.6	1142.3	1105.9
37.5°	1256.3	1266.5	1254.6	1246.0	1231.8	1212.4	1170.3	1136.6	1104.2	1050.6	1018.1
40°	1108.2	1129.8	1118.4	1112.7	1099.6	1083.1	1046.1	1016.4	986.8	940.1	913.3
42.5°	960.0	980.5	970.3	966.3	954.9	940.7	909.9	884.8	857.5	818.7	795.9
45°	797.6	819.3	809.6	807.9	798.2	787.4	754.3	741.2	717.3	680.8	670.0
47.5°	645.0	648.9	639.8	640.4	633.6	626.2	599.4	591.4	579.4	551.5	539.0
50°	480.9	483.7	476.3	478.6	474.0	469.5	451.2	447.3	439.8	421.0	413.6
52.5°	331.0	344.1	339.0	341.3	339.0	337.3	329.9	323.0	319.6	307.7	304.2
55°	239.3	240.4	236.4	238.7	237.0	236.4	231.9	227.9	226.2	218.8	217.6
57.5°	165.8	166.9	166.9	165.8	165.2	164.1	161.2	159.0	157.8	156.1	152.7
60°	110.0	114.5	112.8	113.9	113.4	113.4	111.1	109.4	108.8	105.4	105.4
62.5°	75.2	78.1	76.9	77.5	76.9	76.9	75.2	74.1	74.1	73.5	71.8
65°	50.1	51.8	50.7	51.3	51.3	51.3	50.1	49.0	49.0	48.4	47.3
67.5°	31.9	33.0	32.5	33.0	32.5	33.0	31.9	31.3	30.8	30.8	30.2
70°	19.4	19.9	19.4	19.9	19.4	19.4	18.8	18.8	18.2	17.7	17.7
72.5°	10.3	10.8	10.8	10.8	10.8	10.8	10.3	9.7	9.7	9.7	9.1
75°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	4.6	4.6	4.6
77.5°	2.3	2.3	2.3	2.3	2.8	2.3	2.3	2.3	2.3	2.3	2.3
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
85°	1.7	1.7	1.7	1.7	1.7	1.7	2.3	2.3	2.3	2.3	1.7
87.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.8	2.8	2.3	2.3
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: P170857

CATALOG NUMBER: LDA4A13927D010TE LAR25NF 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°	50°	52.5°
0°	242.7	242.7	242.7	242.7	242.7	242.7	242.7	242.7	242.7	242.7	242.7
2.5°	303.1	300.3	299.1	296.8	294.0	292.3	290.6	291.1	287.2	284.3	280.3
5°	379.5	373.2	369.8	364.6	358.4	353.2	348.7	346.4	339.0	333.9	323.0
7.5°	469.5	458.6	451.8	442.7	431.9	422.8	413.6	407.4	396.0	386.3	369.8
10°	568.0	551.5	539.6	525.9	509.4	494.5	480.9	469.5	452.4	437.6	415.9
12.5°	675.7	652.4	635.3	615.3	592.0	571.5	547.0	533.9	510.5	490.0	462.1
15°	790.2	759.5	735.5	708.2	677.4	650.1	618.7	599.4	568.6	542.4	507.6
17.5°	900.2	861.5	830.1	795.4	757.2	721.9	684.8	657.5	619.9	587.4	545.8
20°	995.9	949.8	911.6	869.4	824.4	781.1	740.7	704.2	660.3	622.2	574.9
22.5°	1074.0	1020.4	976.5	927.5	875.7	826.7	780.6	739.0	688.8	646.7	594.8
25°	1130.4	1071.7	1022.7	968.6	911.6	855.8	806.8	761.2	706.5	661.5	606.2
27.5°	1160.0	1097.9	1046.1	987.9	927.5	869.4	816.4	768.0	710.5	663.2	606.2
30°	1154.9	1091.6	1038.1	978.3	917.3	859.2	803.9	755.5	696.2	648.4	591.4
32.5°	1115.6	1053.5	1001.0	942.9	883.1	826.7	771.4	724.7	665.5	618.7	563.5
35°	1050.6	991.9	942.4	887.1	830.7	777.7	727.6	680.3	623.3	578.9	527.0
37.5°	966.3	912.7	867.7	816.4	764.6	716.7	667.2	626.7	576.0	534.4	483.7
40°	865.4	818.2	778.3	732.7	686.0	644.4	602.8	563.5	513.9	476.9	433.6
42.5°	754.3	713.9	679.7	639.8	599.4	564.1	528.2	494.0	452.9	419.3	378.9
45°	634.7	600.5	572.6	540.7	507.1	474.0	447.8	419.3	381.2	356.1	321.9
47.5°	511.1	484.9	463.8	439.3	412.5	392.0	366.9	344.1	316.2	292.9	264.9
50°	393.7	375.5	360.7	343.6	324.2	305.4	290.6	272.9	251.8	233.0	210.8
52.5°	291.1	279.2	270.1	258.7	245.6	235.9	222.2	209.1	193.1	178.9	161.8
55°	208.5	201.7	196.0	189.2	180.0	171.5	164.7	155.5	144.1	133.3	120.8
57.5°	149.8	142.4	141.9	134.5	131.0	124.8	118.5	111.7	103.7	96.3	87.2
60°	103.7	98.6	96.3	93.4	89.5	85.5	82.6	78.1	72.4	67.2	60.4
62.5°	70.1	66.7	65.5	64.4	61.0	59.3	55.8	53.0	49.0	45.0	40.5
65°	46.1	43.9	42.7	41.0	39.3	38.2	36.5	34.2	30.8	28.5	25.6
67.5°	29.1	27.3	26.2	25.6	23.9	23.4	21.7	20.5	18.2	17.1	15.4
70°	16.5	16.0	14.8	14.8	13.7	12.5	12.0	10.8	10.3	9.1	8.5
72.5°	8.5	8.5	8.0	7.4	6.8	6.8	6.3	5.7	5.1	4.6	4.6
75°	4.0	4.0	4.0	3.4	3.4	3.4	2.8	2.8	2.8	2.3	2.3
77.5°	2.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.1	1.1
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	1.1	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
85°	1.7	1.1	1.1	1.1	1.1	1.7	1.7	1.7	1.7	1.7	1.7
87.5°	1.7	1.7	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
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: P170857

CATALOG NUMBER: LDA4A13927D010TE LAR25NF 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77.5°	80°
0°	242.7	242.7	242.7	242.7	242.7	242.7	242.7	242.7	242.7	242.7	242.7
2.5°	277.5	276.3	273.5	272.9	266.6	265.5	262.1	257.0	253.0	251.8	253.0
5°	319.1	313.9	305.4	303.7	293.4	290.0	282.6	274.6	267.8	263.8	262.1
7.5°	361.8	353.2	340.7	334.4	319.6	312.2	301.4	290.0	279.2	271.8	267.2
10°	402.8	389.1	366.3	361.2	343.0	331.0	316.2	300.8	287.2	276.9	269.5
12.5°	441.6	425.0	401.7	387.4	363.5	348.1	329.3	310.5	293.4	279.7	269.5
15°	481.4	459.8	430.7	410.8	383.4	362.9	340.1	318.5	298.5	281.5	268.9
17.5°	514.5	487.7	453.5	429.6	397.7	373.2	347.0	321.9	300.3	280.9	266.6
20°	539.0	507.6	468.9	441.0	405.7	378.3	349.8	322.5	298.5	277.5	262.1
22.5°	555.5	519.6	477.4	446.7	409.6	380.0	349.3	320.8	296.3	274.6	258.1
25°	563.5	524.7	480.9	447.8	409.1	378.3	346.4	317.3	292.3	270.1	254.1
27.5°	562.3	521.3	476.3	441.6	402.2	370.3	337.9	308.8	284.3	262.1	245.6
30°	545.8	505.4	459.8	424.5	385.7	353.8	321.3	292.9	268.9	246.1	230.7
32.5°	520.2	478.6	434.1	394.8	361.8	330.5	299.7	270.6	247.8	225.6	210.8
35°	485.4	445.5	402.8	369.2	333.3	303.1	273.5	246.1	224.5	202.8	189.2
37.5°	445.0	406.8	367.5	332.7	301.4	273.5	245.6	221.1	199.4	180.0	166.9
40°	398.3	362.9	327.0	297.4	266.6	241.0	215.4	191.4	173.8	156.1	144.7
42.5°	347.5	316.2	283.7	258.1	230.2	207.4	182.9	165.8	148.7	132.8	123.6
45°	294.6	267.2	239.9	216.5	193.7	173.8	152.7	136.7	123.6	110.5	102.6
47.5°	242.1	218.8	196.6	177.8	157.8	141.3	126.5	112.2	99.7	88.9	82.6
50°	189.2	173.8	156.1	140.7	124.8	111.1	97.4	87.2	77.5	69.5	65.5
52.5°	147.6	133.3	119.1	106.5	95.1	83.8	74.6	66.1	59.3	54.1	51.3
55°	110.0	98.6	87.7	78.1	68.9	61.5	55.3	50.1	45.6	41.6	40.5
57.5°	78.6	70.1	62.7	55.3	49.6	45.0	41.0	37.6	34.8	31.9	31.3
60°	54.7	48.4	43.9	39.3	35.9	32.5	30.2	27.9	25.6	23.9	23.4
62.5°	36.5	33.0	29.6	27.3	25.6	22.8	21.7	19.9	18.8	17.1	16.5
65°	23.4	21.1	19.4	17.7	16.5	15.4	14.2	13.1	12.0	10.8	10.8
67.5°	14.2	12.5	12.0	10.8	9.7	9.1	8.5	7.4	6.8	6.8	6.3
70°	8.0	6.8	6.3	5.7	5.1	5.1	4.6	4.0	4.0	3.4	3.4
72.5°	4.0	4.0	3.4	3.4	2.8	2.8	2.3	2.3	2.3	1.7	1.7
75°	2.3	2.3	1.7	1.7	1.7	1.7	1.7	1.7	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
85°	1.7	1.7	1.7	1.7	1.1	1.1	1.1	1.1	1.1	1.1	1.1
87.5°	1.7	1.7	1.7	1.7	1.7	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	0.0	0.0	0.0





TEST NUMBER: P170857

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**CANDELA DISTRIBUTION (continued):**

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	242.7	242.7	242.7	242.7	242.7	242.7	242.7	242.7
2.5°	248.4	242.7	241.6	241.6	217.6	203.4	192.6	189.7
5°	254.1	246.1	242.1	239.9	197.1	172.1	155.5	151.0
7.5°	257.0	245.6	239.3	234.2	177.2	144.7	127.1	121.9
10°	255.8	242.1	233.6	226.8	159.0	123.6	105.4	100.8
12.5°	253.5	238.2	227.3	218.8	143.6	107.1	90.6	86.0
15°	251.3	233.6	221.1	210.8	131.0	95.7	80.9	76.9
17.5°	246.7	228.5	214.2	203.4	123.1	91.2	78.6	76.3
20°	241.6	222.8	208.0	197.1	120.8	95.7	88.3	88.3
22.5°	238.2	218.8	204.5	193.7	124.8	106.5	103.7	105.4
25°	233.6	215.4	201.1	190.9	128.8	115.1	113.4	115.7
27.5°	226.2	208.0	194.3	184.0	126.5	113.9	112.2	113.4
30°	211.4	193.7	181.7	170.9	117.4	105.4	102.6	103.1
32.5°	192.6	175.5	164.1	153.8	104.3	92.9	90.0	90.0
35°	172.1	156.1	145.3	136.2	91.7	81.5	78.6	78.1
37.5°	151.6	136.7	127.6	119.1	80.3	71.2	68.4	67.8
40°	131.0	117.9	109.4	102.6	70.6	63.2	60.4	59.8
42.5°	111.7	100.3	92.9	87.2	61.5	55.8	53.6	53.0
45°	92.3	83.2	77.5	72.9	53.6	47.9	47.3	47.3
47.5°	74.6	67.2	63.2	60.4	45.6	41.0	40.5	41.0
50°	59.8	54.7	51.8	49.6	38.7	34.8	33.0	33.0
52.5°	47.3	43.9	42.2	40.5	31.9	27.9	25.6	25.1
55°	37.6	34.8	33.6	32.5	25.1	20.5	18.2	17.7
57.5°	29.6	27.3	26.2	25.1	18.8	14.2	12.0	11.4
60°	22.2	20.5	19.4	18.8	13.1	8.5	6.8	6.3
62.5°	16.0	14.8	13.7	13.1	8.0	4.6	2.8	2.3
65°	9.7	9.7	8.5	8.0	4.0	1.7	1.1	0.6
67.5°	5.7	5.1	4.6	4.6	1.7	1.1	0.6	0.6
70°	2.8	2.8	2.3	2.3	1.1	0.6	0.6	0.6
72.5°	1.7	1.7	1.7	1.1	1.1	0.6	0.6	0.6
75°	1.1	1.1	1.1	1.1	1.1	0.6	0.6	0.6
77.5°	1.1	1.1	1.1	1.1	1.1	0.6	0.6	0.0
80°	1.1	1.1	1.1	1.1	1.1	0.6	0.6	0.0
82.5°	1.1	1.1	1.1	1.1	1.1	0.6	0.6	0.6
85°	1.1	1.1	1.1	1.1	1.1	0.6	0.6	0.0
87.5°	1.1	1.1	1.1	1.1	1.1	0.6	0.6	0.6
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)