

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: P170854

Luminaire Tested: **LDA4A13830D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170854  
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: LDA4A13830D010TE LAR25NF 4LLWW1  
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 25° Narrow Flood Optic,  
at 30° tilt  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1180.0 lumens  
Efficiency: N/A  
Efficacy: 53.0 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

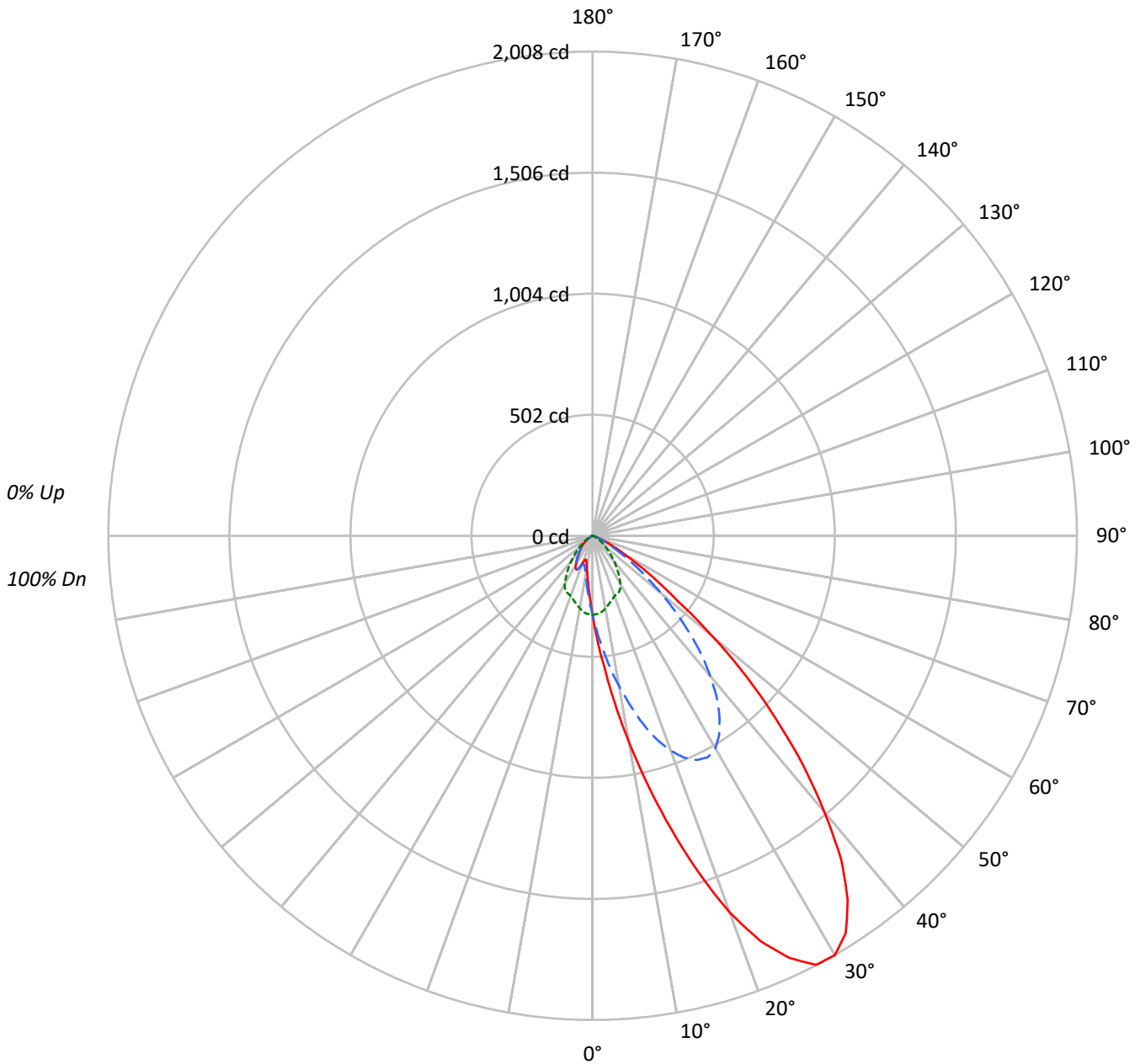
Input Watts (W): 22.27  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	40359	40359	40359
5°	67133	40030	25197
10°	108691	38288	17021
15°	160732	36291	13242
20°	218354	34876	15620
25°	262871	35018	21217
30°	286037	32815	19797
35°	277649	27631	15841
40°	240510	22252	12978
45°	187555	17147	11112
50°	124384	12818	8539
55°	69374	9419	5118
60°	36560	6241	2072
65°	19730	3152	233
70°	9413	1118	289
75°	3288	715	381
80°	1065	1065	0
85°	3255	2123	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	34.9	3.0
10°-20°	137.7	11.7
20°-30°	283.3	24.0
30°-40°	338.4	28.7
40°-50°	249.8	21.2
50°-60°	105.1	8.9
60°-70°	25.8	2.2
70°-80°	3.5	0.3
80°-90°	1.4	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°	455.9	38.6
0°-40°	794.3	67.3
0°-60°	1149.2	97.4
0°-90°	1180.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1180.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	327	327	327	327	327	
5°	542	467	323	232	204	62
15°	1259	808	284	129	104	369
25°	1932	1026	257	155	156	883
35°	1844	917	184	110	105	1131
45°	1075	565	98	64	64	825
55°	323	210	44	28	24	308
65°	68	46	11	2	1	73
75°	7	4	2	1	1	10
85°	2	2	2	1	0	2
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	327.2	327.2	327.2	327.2	327.2	327.2	327.2	327.2	327.2	327.2	327.2
2.5°	425.5	420.1	420.1	421.6	426.2	422.4	419.3	416.2	419.3	412.4	414.7
5°	542.2	541.4	541.4	535.3	540.7	541.4	535.3	529.9	531.4	521.5	521.5
7.5°	695.8	691.2	689.7	681.2	687.3	686.6	676.6	667.4	667.4	651.3	647.4
10°	867.8	861.7	858.6	847.9	853.2	850.2	835.6	821.7	817.9	794.9	786.4
12.5°	1057.5	1053.7	1049.1	1035.2	1039.9	1033.7	1013.0	993.0	984.6	953.8	939.2
15°	1258.7	1264.9	1257.2	1241.1	1244.1	1233.4	1206.5	1178.9	1165.8	1124.3	1102.8
17.5°	1466.1	1473.8	1465.3	1446.9	1446.1	1431.5	1394.7	1360.9	1341.7	1288.7	1260.3
20°	1663.5	1665.8	1655.0	1635.0	1630.4	1610.5	1565.9	1518.3	1499.9	1434.6	1398.5
22.5°	1818.6	1827.0	1814.0	1799.4	1784.8	1759.5	1707.2	1655.0	1628.9	1554.4	1510.6
25°	1931.5	1950.7	1935.3	1918.4	1902.3	1872.4	1814.0	1757.9	1725.7	1642.7	1592.8
27.5°	2006.0	2024.4	2007.5	1988.3	1971.4	1936.9	1873.1	1819.4	1780.2	1689.6	1635.8
30°	2008.3	2030.6	2012.9	1992.2	1976.0	1941.5	1876.2	1820.9	1777.1	1686.5	1630.4
32.5°	1953.0	1970.7	1953.0	1935.3	1916.9	1883.9	1818.6	1765.6	1719.5	1632.7	1576.7
35°	1843.9	1859.3	1841.6	1820.9	1807.8	1778.7	1716.5	1665.8	1619.7	1539.8	1490.7
37.5°	1693.4	1707.2	1691.1	1679.6	1660.4	1634.3	1577.4	1532.1	1488.4	1416.2	1372.4
40°	1493.7	1522.9	1507.6	1499.9	1482.2	1459.9	1410.0	1370.1	1330.2	1267.2	1231.1
42.5°	1294.1	1321.7	1307.9	1302.5	1287.1	1267.9	1226.5	1192.7	1155.8	1103.6	1072.9
45°	1075.2	1104.4	1091.3	1089.0	1076.0	1061.4	1016.8	999.2	966.9	917.7	903.2
47.5°	869.4	874.7	862.5	863.2	854.0	844.0	807.9	797.2	781.0	743.4	726.5
50°	648.2	652.0	642.0	645.1	639.0	632.8	608.2	602.9	592.9	567.5	557.6
52.5°	446.2	463.9	457.0	460.0	457.0	454.6	444.7	435.4	430.8	414.7	410.1
55°	322.6	324.1	318.7	321.8	319.5	318.7	312.6	307.2	304.9	294.9	293.4
57.5°	223.5	225.0	225.0	223.5	222.7	221.2	217.3	214.3	212.7	210.4	205.8
60°	148.2	154.4	152.1	153.6	152.8	152.8	149.8	147.5	146.7	142.1	142.1
62.5°	101.4	105.2	103.7	104.4	103.7	103.7	101.4	99.8	99.8	99.1	96.8
65°	67.6	69.9	68.4	69.1	69.1	69.1	67.6	66.0	66.0	65.3	63.7
67.5°	43.0	44.5	43.8	44.5	43.8	44.5	43.0	42.2	41.5	41.5	40.7
70°	26.1	26.9	26.1	26.9	26.1	26.1	25.3	25.3	24.6	23.8	23.8
72.5°	13.8	14.6	14.6	14.6	14.6	14.6	13.8	13.1	13.1	13.1	12.3
75°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.1	6.1	6.1
77.5°	3.1	3.1	3.1	3.1	3.8	3.1	3.1	3.1	3.1	3.1	3.1
80°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
82.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
85°	2.3	2.3	2.3	2.3	2.3	2.3	3.1	3.1	3.1	3.1	2.3
87.5°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.8	3.8	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):**

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°	50°	52.5°
0°	327.2	327.2	327.2	327.2	327.2	327.2	327.2	327.2	327.2	327.2	327.2
2.5°	408.6	404.7	403.2	400.1	396.3	394.0	391.7	392.4	387.1	383.2	377.9
5°	511.5	503.0	498.4	491.5	483.1	476.2	470.0	466.9	457.0	450.0	435.4
7.5°	632.8	618.2	609.0	596.7	582.1	569.8	557.6	549.1	533.8	520.7	498.4
10°	765.7	743.4	727.3	708.9	686.6	666.6	648.2	632.8	609.8	589.8	560.6
12.5°	910.8	879.3	856.3	829.4	797.9	770.3	737.3	719.6	688.1	660.5	622.8
15°	1065.2	1023.7	991.5	954.6	913.1	876.3	834.0	807.9	766.5	731.1	684.3
17.5°	1213.4	1161.2	1119.0	1072.1	1020.7	973.0	923.1	886.3	835.6	791.8	735.7
20°	1342.4	1280.2	1228.8	1172.0	1111.3	1052.9	998.4	949.2	890.1	838.6	774.9
22.5°	1447.7	1375.5	1316.3	1250.3	1180.4	1114.4	1052.1	996.1	928.5	871.7	801.8
25°	1523.7	1444.6	1378.5	1305.6	1228.8	1153.5	1087.5	1026.0	952.3	891.6	817.1
27.5°	1563.6	1479.9	1410.0	1331.7	1250.3	1172.0	1100.5	1035.2	957.7	893.9	817.1
30°	1556.7	1471.5	1399.3	1318.6	1236.5	1158.1	1083.6	1018.4	938.5	874.0	797.2
32.5°	1503.7	1420.0	1349.4	1271.0	1190.4	1114.4	1039.9	976.9	897.0	834.0	759.5
35°	1416.2	1337.1	1270.3	1195.8	1119.7	1048.3	980.7	917.0	840.2	780.3	710.4
37.5°	1302.5	1230.3	1169.6	1100.5	1030.6	966.1	899.3	844.8	776.4	720.4	652.0
40°	1166.6	1102.8	1049.1	987.6	924.7	868.6	812.5	759.5	692.7	642.8	584.4
42.5°	1016.8	962.3	916.2	862.5	807.9	760.3	711.9	665.8	610.6	565.2	510.7
45°	855.5	809.5	771.8	728.8	683.5	639.0	603.6	565.2	513.8	480.0	433.9
47.5°	688.9	653.6	625.1	592.1	556.0	528.4	494.6	463.9	426.2	394.7	357.1
50°	530.7	506.1	486.1	463.1	437.0	411.6	391.7	367.9	339.5	314.1	284.2
52.5°	392.4	376.3	364.0	348.7	331.0	317.9	299.5	281.9	260.3	241.1	218.1
55°	281.1	271.9	264.2	255.0	242.7	231.2	221.9	209.7	194.3	179.7	162.8
57.5°	202.0	192.0	191.2	181.2	176.6	168.2	159.7	150.5	139.8	129.8	117.5
60°	139.8	132.9	129.8	126.0	120.6	115.2	111.4	105.2	97.5	90.6	81.4
62.5°	94.5	89.9	88.3	86.8	82.2	79.9	75.3	71.4	66.0	60.7	54.5
65°	62.2	59.1	57.6	55.3	53.0	51.5	49.2	46.1	41.5	38.4	34.6
67.5°	39.2	36.9	35.3	34.6	32.3	31.5	29.2	27.6	24.6	23.0	20.7
70°	22.3	21.5	20.0	20.0	18.4	16.9	16.1	14.6	13.8	12.3	11.5
72.5°	11.5	11.5	10.8	10.0	9.2	9.2	8.4	7.7	6.9	6.1	6.1
75°	5.4	5.4	5.4	4.6	4.6	4.6	3.8	3.8	3.8	3.1	3.1
77.5°	3.1	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.5	1.5
80°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
82.5°	1.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85°	2.3	1.5	1.5	1.5	1.5	2.3	2.3	2.3	2.3	2.3	2.3
87.5°	2.3	2.3	3.1	3.1	3.1	3.1	3.1	3.1	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):**

	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77.5°	80°
0°	327.2	327.2	327.2	327.2	327.2	327.2	327.2	327.2	327.2	327.2	327.2
2.5°	374.0	372.5	368.6	367.9	359.4	357.9	353.3	346.4	341.0	339.5	341.0
5°	430.1	423.2	411.6	409.3	395.5	390.9	380.9	370.2	361.0	355.6	353.3
7.5°	487.7	476.2	459.3	450.8	430.8	420.9	406.3	390.9	376.3	366.3	360.2
10°	543.0	524.5	493.8	486.9	462.3	446.2	426.2	405.5	387.1	373.2	363.3
12.5°	595.2	572.9	541.4	522.2	490.0	469.2	443.9	418.6	395.5	377.1	363.3
15°	649.0	619.8	580.6	553.7	516.9	489.2	458.5	429.3	402.4	379.4	362.5
17.5°	693.5	657.4	611.3	579.1	536.1	503.0	467.7	433.9	404.7	378.6	359.4
20°	726.5	684.3	632.1	594.4	546.8	509.9	471.5	434.7	402.4	374.0	353.3
22.5°	748.8	700.4	643.6	602.1	552.2	512.2	470.8	432.4	399.4	370.2	347.9
25°	759.5	707.3	648.2	603.6	551.4	509.9	466.9	427.8	394.0	364.0	342.5
27.5°	758.0	702.7	642.0	595.2	542.2	499.2	455.4	416.2	383.2	353.3	331.0
30°	735.7	681.2	619.8	572.2	519.9	476.9	433.1	394.7	362.5	331.8	311.0
32.5°	701.2	645.1	585.2	532.2	487.7	445.4	404.0	364.8	334.1	304.1	284.2
35°	654.3	600.6	543.0	497.7	449.3	408.6	368.6	331.8	302.6	273.4	255.0
37.5°	599.8	548.3	495.4	448.5	406.3	368.6	331.0	298.0	268.8	242.7	225.0
40°	536.8	489.2	440.8	400.9	359.4	324.9	290.3	258.0	234.2	210.4	195.1
42.5°	468.5	426.2	382.5	347.9	310.3	279.5	246.5	223.5	200.4	178.9	166.7
45°	397.1	360.2	323.3	291.8	261.1	234.2	205.8	184.3	166.7	149.0	138.2
47.5°	326.4	294.9	265.0	239.6	212.7	190.5	170.5	151.3	134.4	119.8	111.4
50°	255.0	234.2	210.4	189.7	168.2	149.8	131.3	117.5	104.4	93.7	88.3
52.5°	198.9	179.7	160.5	143.6	128.3	112.9	100.6	89.1	79.9	73.0	69.1
55°	148.2	132.9	118.3	105.2	92.9	82.9	74.5	67.6	61.4	56.1	54.5
57.5°	106.0	94.5	84.5	74.5	66.8	60.7	55.3	50.7	46.8	43.0	42.2
60°	73.7	65.3	59.1	53.0	48.4	43.8	40.7	37.6	34.6	32.3	31.5
62.5°	49.2	44.5	39.9	36.9	34.6	30.7	29.2	26.9	25.3	23.0	22.3
65°	31.5	28.4	26.1	23.8	22.3	20.7	19.2	17.7	16.1	14.6	14.6
67.5°	19.2	16.9	16.1	14.6	13.1	12.3	11.5	10.0	9.2	9.2	8.4
70°	10.8	9.2	8.4	7.7	6.9	6.9	6.1	5.4	5.4	4.6	4.6
72.5°	5.4	5.4	4.6	4.6	3.8	3.8	3.1	3.1	3.1	2.3	2.3
75°	3.1	3.1	2.3	2.3	2.3	2.3	2.3	2.3	1.5	1.5	1.5
77.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
80°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
82.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
85°	2.3	2.3	2.3	2.3	1.5	1.5	1.5	1.5	1.5	1.5	1.5
87.5°	2.3	2.3	2.3	2.3	2.3	1.5	1.5	1.5	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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CATALOG NUMBER: LDA4A13830D010TE LAR25NF 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	327.2	327.2	327.2	327.2	327.2	327.2	327.2	327.2
2.5°	334.8	327.2	325.6	325.6	293.4	274.2	259.6	255.7
5°	342.5	331.8	326.4	323.3	265.7	231.9	209.7	203.5
7.5°	346.4	331.0	322.6	315.6	238.8	195.1	171.3	164.3
10°	344.8	326.4	314.9	305.7	214.3	166.7	142.1	135.9
12.5°	341.8	321.0	306.4	294.9	193.5	144.4	122.1	116.0
15°	338.7	314.9	298.0	284.2	176.6	129.0	109.1	103.7
17.5°	332.5	308.0	288.8	274.2	165.9	122.9	106.0	102.9
20°	325.6	300.3	280.3	265.7	162.8	129.0	119.0	119.0
22.5°	321.0	294.9	275.7	261.1	168.2	143.6	139.8	142.1
25°	314.9	290.3	271.1	257.3	173.6	155.1	152.8	155.9
27.5°	304.9	280.3	261.9	248.1	170.5	153.6	151.3	152.8
30°	284.9	261.1	245.0	230.4	158.2	142.1	138.2	139.0
32.5°	259.6	236.5	221.2	207.4	140.5	125.2	121.3	121.3
35°	231.9	210.4	195.8	183.5	123.6	109.8	106.0	105.2
37.5°	204.3	184.3	172.0	160.5	108.3	96.0	92.2	91.4
40°	176.6	159.0	147.5	138.2	95.2	85.2	81.4	80.6
42.5°	150.5	135.2	125.2	117.5	82.9	75.3	72.2	71.4
45°	124.4	112.1	104.4	98.3	72.2	64.5	63.7	63.7
47.5°	100.6	90.6	85.2	81.4	61.4	55.3	54.5	55.3
50°	80.6	73.7	69.9	66.8	52.2	46.8	44.5	44.5
52.5°	63.7	59.1	56.8	54.5	43.0	37.6	34.6	33.8
55°	50.7	46.8	45.3	43.8	33.8	27.6	24.6	23.8
57.5°	39.9	36.9	35.3	33.8	25.3	19.2	16.1	15.4
60°	30.0	27.6	26.1	25.3	17.7	11.5	9.2	8.4
62.5°	21.5	20.0	18.4	17.7	10.8	6.1	3.8	3.1
65°	13.1	13.1	11.5	10.8	5.4	2.3	1.5	0.8
67.5°	7.7	6.9	6.1	6.1	2.3	1.5	0.8	0.8
70°	3.8	3.8	3.1	3.1	1.5	0.8	0.8	0.8
72.5°	2.3	2.3	2.3	1.5	1.5	0.8	0.8	0.8
75°	1.5	1.5	1.5	1.5	1.5	0.8	0.8	0.8
77.5°	1.5	1.5	1.5	1.5	1.5	0.8	0.8	0.0
80°	1.5	1.5	1.5	1.5	1.5	0.8	0.8	0.0
82.5°	1.5	1.5	1.5	1.5	1.5	0.8	0.8	0.8
85°	1.5	1.5	1.5	1.5	1.5	0.8	0.8	0.0
87.5°	1.5	1.5	1.5	1.5	1.5	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)