

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: P170843

Luminaire Tested: **LDA4A18935D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170843  
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: LDA4A18935D010TE LAR25NF 4LLWW1  
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 25° Narrow Flood Optic,  
at 30° tilt  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1259.9 lumens  
Efficiency: N/A  
Efficacy: 43.3 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

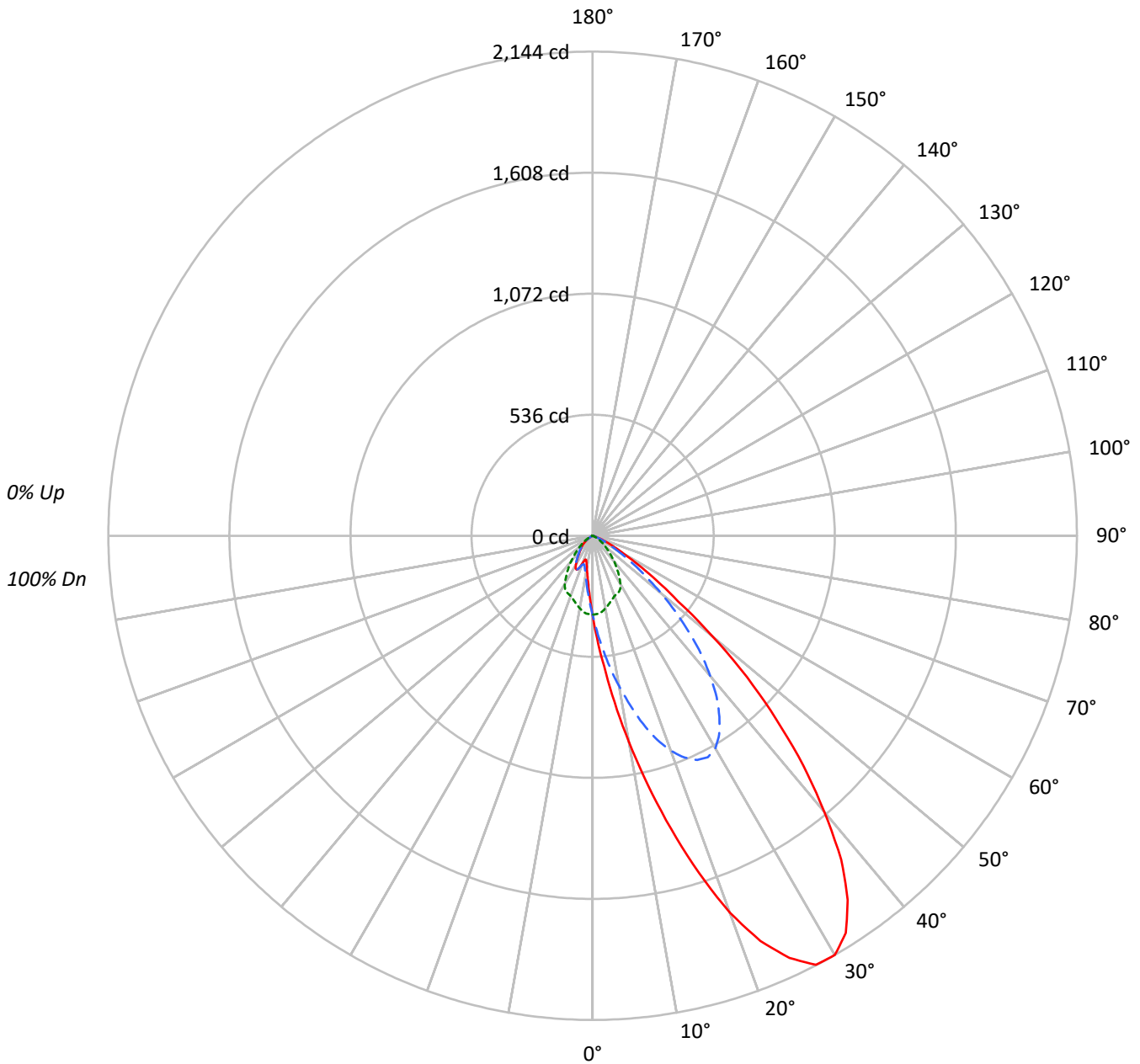
Input Watts (W): 29.12  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	43085	43085	43085
5°	71678	42742	26905
10°	116055	40869	18174
15°	171612	38743	14136
20°	233121	37239	16683
25°	280659	37386	22660
30°	305393	35037	21136
35°	296441	29513	16910
40°	256789	23766	13864
45°	200254	18316	11879
50°	132808	13682	9134
55°	74062	10043	5462
60°	39051	6685	2220
65°	21072	3356	233
70°	10062	1190	289
75°	3527	763	381
80°	1137	1137	0
85°	3538	2264	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.3	3.0
10°-20°	147.1	11.7
20°-30°	302.4	24.0
30°-40°	361.3	28.7
40°-50°	266.8	21.2
50°-60°	112.3	8.9
60°-70°	27.6	2.2
70°-80°	3.8	0.3
80°-90°	1.5	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°	486.8	38.6
0°-40°	848.0	67.3
0°-60°	1227.1	97.4
0°-90°	1259.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1259.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	349	349	349	349	349	
5°	579	498	345	248	217	66
15°	1344	863	303	138	111	394
25°	2062	1096	275	166	166	943
35°	1969	979	196	117	112	1207
45°	1148	604	105	69	68	881
55°	344	224	47	30	25	329
65°	72	49	12	2	1	78
75°	7	4	2	1	1	11
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°	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3
2.5°	454.3	448.5	448.5	450.2	455.1	451.0	447.7	444.4	447.7	440.3	442.8
5°	578.9	578.1	578.1	571.5	577.3	578.1	571.5	565.8	567.4	556.8	556.8
7.5°	742.9	738.0	736.3	727.3	733.9	733.1	722.4	712.6	712.6	695.3	691.2
10°	926.6	920.0	916.7	905.2	911.0	907.7	892.1	877.4	873.3	848.7	839.6
12.5°	1129.1	1125.0	1120.1	1105.3	1110.2	1103.7	1081.5	1060.2	1051.2	1018.4	1002.8
15°	1343.9	1350.5	1342.3	1325.1	1328.3	1316.9	1288.2	1258.6	1244.7	1200.4	1177.5
17.5°	1565.3	1573.5	1564.5	1544.8	1544.0	1528.4	1489.1	1453.0	1432.5	1375.9	1345.6
20°	1776.0	1778.5	1767.0	1745.7	1740.8	1719.5	1671.9	1621.1	1601.4	1531.7	1493.2
22.5°	1941.7	1950.7	1936.8	1921.2	1905.6	1878.5	1822.8	1767.0	1739.1	1659.6	1612.9
25°	2062.2	2082.7	2066.3	2048.3	2031.1	1999.1	1936.8	1876.9	1842.5	1753.9	1700.6
27.5°	2141.8	2161.4	2143.4	2122.9	2104.9	2068.0	1999.9	1942.5	1900.7	1803.9	1746.5
30°	2144.2	2168.0	2149.1	2127.0	2109.8	2072.9	2003.2	1944.1	1897.4	1800.6	1740.8
32.5°	2085.2	2104.0	2085.2	2066.3	2046.6	2011.4	1941.7	1885.1	1835.9	1743.2	1683.4
35°	1968.7	1985.1	1966.3	1944.1	1930.2	1899.0	1832.6	1778.5	1729.3	1644.0	1591.6
37.5°	1808.0	1822.8	1805.6	1793.3	1772.8	1744.9	1684.2	1635.8	1589.1	1512.0	1465.3
40°	1594.8	1626.0	1609.6	1601.4	1582.5	1558.8	1505.5	1462.8	1420.2	1352.9	1314.4
42.5°	1381.6	1411.2	1396.4	1390.7	1374.3	1353.8	1309.5	1273.4	1234.0	1178.3	1145.5
45°	1148.0	1179.1	1165.2	1162.7	1148.8	1133.2	1085.6	1066.8	1032.3	979.9	964.3
47.5°	928.2	933.9	920.8	921.6	911.8	901.1	862.6	851.1	833.9	793.7	775.7
50°	692.1	696.2	685.5	688.8	682.2	675.7	649.4	643.7	633.0	606.0	595.3
52.5°	476.4	495.3	487.9	491.2	487.9	485.4	474.8	464.9	460.0	442.8	437.9
55°	344.4	346.0	340.3	343.6	341.1	340.3	333.7	328.0	325.5	314.9	313.2
57.5°	238.6	240.3	240.3	238.6	237.8	236.2	232.1	228.8	227.1	224.7	219.8
60°	158.3	164.8	162.4	164.0	163.2	163.2	159.9	157.4	156.6	151.7	151.7
62.5°	108.2	112.3	110.7	111.5	110.7	110.7	108.2	106.6	106.6	105.8	103.3
65°	72.2	74.6	73.0	73.8	73.8	73.8	72.2	70.5	70.5	69.7	68.1
67.5°	45.9	47.6	46.7	47.6	46.7	47.6	45.9	45.1	44.3	44.3	43.5
70°	27.9	28.7	27.9	28.7	27.9	27.9	27.1	27.1	26.2	25.4	25.4
72.5°	14.8	15.6	15.6	15.6	15.6	15.6	14.8	13.9	13.9	13.9	13.1
75°	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	6.6	6.6	6.6
77.5°	3.3	3.3	3.3	3.3	4.1	3.3	3.3	3.3	3.3	3.3	3.3
80°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
82.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
85°	2.5	2.5	2.5	2.5	2.5	2.5	3.3	3.3	3.3	3.3	2.5
87.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	4.1	4.1	3.3	3.3
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°	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3
2.5°	436.2	432.1	430.5	427.2	423.1	420.6	418.2	419.0	413.3	409.2	403.4
5°	546.1	537.1	532.2	524.8	515.8	508.4	501.8	498.5	487.9	480.5	464.9
7.5°	675.7	660.1	650.2	637.1	621.5	608.4	595.3	586.3	569.9	555.9	532.2
10°	817.5	793.7	776.5	756.8	733.1	711.7	692.1	675.7	651.1	629.7	598.6
12.5°	972.5	938.9	914.3	885.6	851.9	822.4	787.2	768.3	734.7	705.2	665.0
15°	1137.3	1093.0	1058.6	1019.2	974.9	935.6	890.5	862.6	818.3	780.6	730.6
17.5°	1295.5	1239.8	1194.7	1144.7	1089.7	1038.9	985.6	946.2	892.1	845.4	785.5
20°	1433.3	1366.9	1311.9	1251.3	1186.5	1124.2	1066.0	1013.5	950.3	895.4	827.3
22.5°	1545.6	1468.6	1405.4	1334.9	1260.3	1189.8	1123.4	1063.5	991.3	930.7	856.0
25°	1626.8	1542.4	1471.8	1393.9	1311.9	1231.6	1161.1	1095.5	1016.8	952.0	872.4
27.5°	1669.5	1580.1	1505.5	1421.8	1334.9	1251.3	1175.0	1105.3	1022.5	954.4	872.4
30°	1662.1	1571.1	1494.0	1407.9	1320.1	1236.5	1157.0	1087.3	1002.0	933.1	851.1
32.5°	1605.5	1516.1	1440.7	1357.0	1270.9	1189.8	1110.2	1043.0	957.7	890.5	810.9
35°	1512.0	1427.6	1356.2	1276.7	1195.5	1119.3	1047.1	979.0	897.0	833.1	758.5
37.5°	1390.7	1313.6	1248.8	1175.0	1100.4	1031.5	960.2	902.0	829.0	769.1	696.2
40°	1245.5	1177.5	1120.1	1054.5	987.2	927.4	867.5	810.9	739.6	686.3	624.0
42.5°	1085.6	1027.4	978.2	920.8	862.6	811.8	760.1	710.9	651.9	603.5	545.3
45°	913.4	864.2	824.1	778.1	729.8	682.2	644.5	603.5	548.6	512.5	463.3
47.5°	735.5	697.8	667.5	632.2	593.7	564.1	528.1	495.3	455.1	421.5	381.3
50°	566.6	540.4	519.0	494.4	466.6	439.5	418.2	392.8	362.4	335.4	303.4
52.5°	419.0	401.8	388.7	372.3	353.4	339.5	319.8	300.9	278.0	257.5	232.9
55°	300.1	290.3	282.1	272.2	259.1	246.8	237.0	223.9	207.5	191.9	173.8
57.5°	215.7	205.0	204.2	193.5	188.6	179.6	170.6	160.7	149.2	138.6	125.5
60°	149.2	141.9	138.6	134.5	128.7	123.0	118.9	112.3	104.1	96.8	86.9
62.5°	100.9	95.9	94.3	92.7	87.7	85.3	80.4	76.3	70.5	64.8	58.2
65°	66.4	63.1	61.5	59.0	56.6	54.9	52.5	49.2	44.3	41.0	36.9
67.5°	41.8	39.4	37.7	36.9	34.4	33.6	31.2	29.5	26.2	24.6	22.1
70°	23.8	23.0	21.3	21.3	19.7	18.0	17.2	15.6	14.8	13.1	12.3
72.5°	12.3	12.3	11.5	10.7	9.8	9.8	9.0	8.2	7.4	6.6	6.6
75°	5.7	5.7	5.7	4.9	4.9	4.9	4.1	4.1	4.1	3.3	3.3
77.5°	3.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.6	1.6
80°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
82.5°	1.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85°	2.5	1.6	1.6	1.6	1.6	2.5	2.5	2.5	2.5	2.5	2.5
87.5°	2.5	2.5	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
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°	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3
2.5°	399.3	397.7	393.6	392.8	383.7	382.1	377.2	369.8	364.1	362.4	364.1
5°	459.2	451.8	439.5	437.0	422.3	417.4	406.7	395.2	385.4	379.6	377.2
7.5°	520.7	508.4	490.3	481.3	460.0	449.3	433.8	417.4	401.8	391.1	384.6
10°	579.7	560.0	527.2	519.9	493.6	476.4	455.1	432.9	413.3	398.5	387.8
12.5°	635.5	611.7	578.1	557.6	523.1	501.0	473.9	446.9	422.3	402.6	387.8
15°	692.9	661.7	619.9	591.2	551.8	522.3	489.5	458.4	429.7	405.1	387.0
17.5°	740.4	701.9	652.7	618.3	572.3	537.1	499.4	463.3	432.1	404.2	383.7
20°	775.7	730.6	674.8	634.7	583.8	544.5	503.5	464.1	429.7	399.3	377.2
22.5°	799.5	747.8	687.1	642.9	589.6	546.9	502.6	461.6	426.4	395.2	371.4
25°	810.9	755.2	692.1	644.5	588.7	544.5	498.5	456.7	420.6	388.7	365.7
27.5°	809.3	750.3	685.5	635.5	578.9	533.0	486.2	444.4	409.2	377.2	353.4
30°	785.5	727.3	661.7	610.9	555.1	509.2	462.5	421.5	387.0	354.2	332.1
32.5°	748.6	688.8	624.8	568.2	520.7	475.6	431.3	389.5	356.7	324.7	303.4
35°	698.6	641.2	579.7	531.3	479.7	436.2	393.6	354.2	323.1	291.9	272.2
37.5°	640.4	585.5	528.9	478.9	433.8	393.6	353.4	318.1	287.0	259.1	240.3
40°	573.2	522.3	470.7	428.0	383.7	346.8	309.9	275.5	250.1	224.7	208.3
42.5°	500.2	455.1	408.3	371.4	331.3	298.5	263.2	238.6	214.0	191.1	177.9
45°	423.9	384.6	345.2	311.6	278.8	250.1	219.8	196.8	177.9	159.1	147.6
47.5°	348.5	314.9	282.9	255.8	227.1	203.4	182.0	161.5	143.5	127.9	118.9
50°	272.2	250.1	224.7	202.5	179.6	159.9	140.2	125.5	111.5	100.0	94.3
52.5°	212.4	191.9	171.4	153.3	136.9	120.5	107.4	95.1	85.3	77.9	73.8
55°	158.3	141.9	126.3	112.3	99.2	88.6	79.5	72.2	65.6	59.9	58.2
57.5°	113.2	100.9	90.2	79.5	71.3	64.8	59.0	54.1	50.0	45.9	45.1
60°	78.7	69.7	63.1	56.6	51.7	46.7	43.5	40.2	36.9	34.4	33.6
62.5°	52.5	47.6	42.6	39.4	36.9	32.8	31.2	28.7	27.1	24.6	23.8
65°	33.6	30.3	27.9	25.4	23.8	22.1	20.5	18.9	17.2	15.6	15.6
67.5°	20.5	18.0	17.2	15.6	13.9	13.1	12.3	10.7	9.8	9.8	9.0
70°	11.5	9.8	9.0	8.2	7.4	7.4	6.6	5.7	5.7	4.9	4.9
72.5°	5.7	5.7	4.9	4.9	4.1	4.1	3.3	3.3	3.3	2.5	2.5
75°	3.3	3.3	2.5	2.5	2.5	2.5	2.5	2.5	1.6	1.6	1.6
77.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
80°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
82.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
85°	2.5	2.5	2.5	2.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6
87.5°	2.5	2.5	2.5	2.5	2.5	1.6	1.6	1.6	1.6	1.6	1.6
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: LDA4A18935D010TE LAR25NF 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	349.3	349.3	349.3	349.3	349.3	349.3	349.3	349.3
2.5°	357.5	349.3	347.7	347.7	313.2	292.7	277.1	273.0
5°	365.7	354.2	348.5	345.2	283.7	247.6	223.9	217.3
7.5°	369.8	353.4	344.4	337.0	255.0	208.3	182.9	175.5
10°	368.2	348.5	336.2	326.3	228.8	177.9	151.7	145.1
12.5°	364.9	342.7	327.2	314.9	206.6	154.2	130.4	123.8
15°	361.6	336.2	318.1	303.4	188.6	137.8	116.4	110.7
17.5°	355.0	328.8	308.3	292.7	177.1	131.2	113.2	109.9
20°	347.7	320.6	299.3	283.7	173.8	137.8	127.1	127.1
22.5°	342.7	314.9	294.4	278.8	179.6	153.3	149.2	151.7
25°	336.2	309.9	289.4	274.7	185.3	165.6	163.2	166.5
27.5°	325.5	299.3	279.6	264.8	182.0	164.0	161.5	163.2
30°	304.2	278.8	261.6	246.0	168.9	151.7	147.6	148.4
32.5°	277.1	252.5	236.2	221.4	150.1	133.7	129.6	129.6
35°	247.6	224.7	209.1	196.0	132.0	117.3	113.2	112.3
37.5°	218.1	196.8	183.7	171.4	115.6	102.5	98.4	97.6
40°	188.6	169.7	157.4	147.6	101.7	91.0	86.9	86.1
42.5°	160.7	144.3	133.7	125.5	88.6	80.4	77.1	76.3
45°	132.8	119.7	111.5	105.0	77.1	68.9	68.1	68.1
47.5°	107.4	96.8	91.0	86.9	65.6	59.0	58.2	59.0
50°	86.1	78.7	74.6	71.3	55.8	50.0	47.6	47.6
52.5°	68.1	63.1	60.7	58.2	45.9	40.2	36.9	36.1
55°	54.1	50.0	48.4	46.7	36.1	29.5	26.2	25.4
57.5°	42.6	39.4	37.7	36.1	27.1	20.5	17.2	16.4
60°	32.0	29.5	27.9	27.1	18.9	12.3	9.8	9.0
62.5°	23.0	21.3	19.7	18.9	11.5	6.6	4.1	3.3
65°	13.9	13.9	12.3	11.5	5.7	2.5	1.6	0.8
67.5°	8.2	7.4	6.6	6.6	2.5	1.6	0.8	0.8
70°	4.1	4.1	3.3	3.3	1.6	0.8	0.8	0.8
72.5°	2.5	2.5	2.5	1.6	1.6	0.8	0.8	0.8
75°	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.8
77.5°	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.0
80°	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.0
82.5°	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.8
85°	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.0
87.5°	1.6	1.6	1.6	1.6	1.6	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)