

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: P170864

Luminaire Tested: **LDA4A28840D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P170864  
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: LDA4A28840D010TE LAR25NF 4LLWW1  
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 25° Narrow Flood Optic,  
at 30° tilt  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2468.3 lumens  
Efficiency: N/A  
Efficacy: 55.5 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

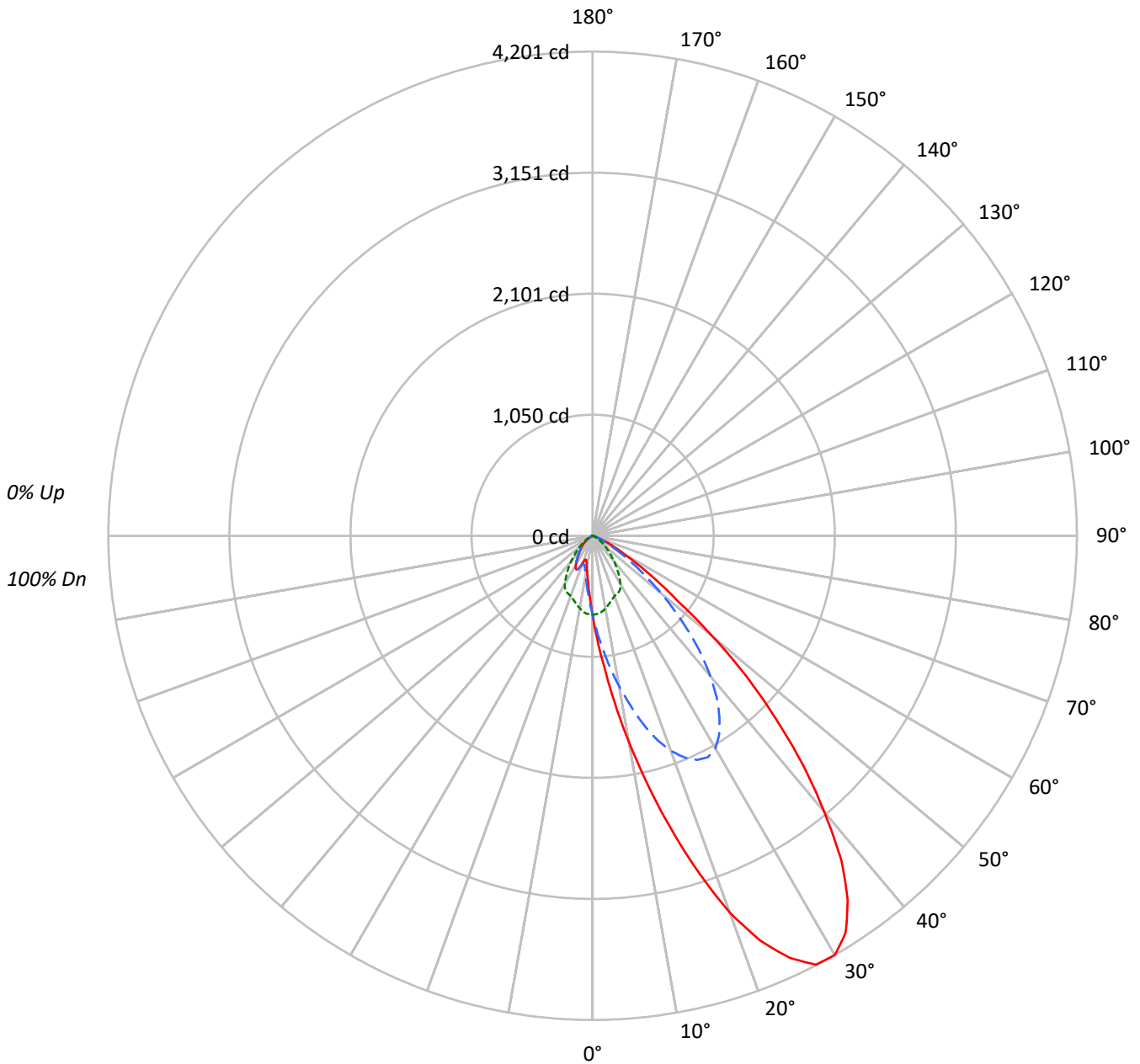
Input Watts (W): 44.49  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									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°	84405	84405	84405
5°	140421	83737	52709
10°	227351	80084	35608
15°	336213	75903	27697
20°	456725	72955	32684
25°	549845	73234	44381
30°	598308	68636	41418
35°	580776	57807	33142
40°	503095	46566	27163
45°	392309	35864	23252
50°	260167	26826	17884
55°	145092	19698	10709
60°	76474	13075	4366
65°	41269	6567	467
70°	19691	2308	577
75°	6910	1525	763
80°	2273	2273	0
85°	6793	4529	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	73.0	3.0
10°-20°	288.1	11.7
20°-30°	592.5	24.0
30°-40°	707.7	28.7
40°-50°	522.6	21.2
50°-60°	220.0	8.9
60°-70°	54.0	2.2
70°-80°	7.4	0.3
80°-90°	2.9	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°	953.6	38.6
0°-40°	1661.4	67.3
0°-60°	2403.9	97.4
0°-90°	2468.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2468.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	684	684	684	684	684	
5°	1134	977	676	485	426	130
15°	2633	1690	594	270	217	773
25°	4040	2146	538	324	326	1848
35°	3857	1918	384	230	220	2366
45°	2249	1182	206	135	133	1727
55°	675	439	92	58	50	644
65°	141	96	22	5	2	154
75°	14	8	3	2	2	21
85°	5	5	3	2	0	4
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°	684.3	684.3	684.3	684.3	684.3	684.3	684.3	684.3	684.3	684.3	684.3
2.5°	890.0	878.7	878.7	881.9	891.6	883.5	877.1	870.7	877.1	862.6	867.5
5°	1134.1	1132.5	1132.5	1119.7	1130.9	1132.5	1119.7	1108.4	1111.6	1090.8	1090.8
7.5°	1455.4	1445.8	1442.6	1424.9	1437.7	1436.1	1415.3	1396.0	1396.0	1362.2	1354.2
10°	1815.2	1802.4	1796.0	1773.5	1784.7	1778.3	1747.8	1718.9	1710.8	1662.6	1645.0
12.5°	2212.0	2204.0	2194.4	2165.4	2175.1	2162.2	2118.9	2077.1	2059.4	1995.2	1964.6
15°	2632.9	2645.8	2629.7	2596.0	2602.4	2579.9	2523.7	2465.8	2438.5	2351.8	2306.8
17.5°	3066.6	3082.7	3065.0	3026.5	3024.9	2994.4	2917.2	2846.6	2806.4	2695.6	2636.1
20°	3479.5	3484.3	3461.8	3420.1	3410.4	3368.7	3275.5	3175.9	3137.3	3000.8	2925.3
22.5°	3804.0	3821.7	3794.4	3763.8	3733.3	3680.3	3571.1	3461.8	3407.2	3251.4	3159.8
25°	4040.1	4080.3	4048.2	4012.8	3979.1	3916.4	3794.4	3677.1	3609.6	3436.1	3331.7
27.5°	4196.0	4234.5	4199.2	4159.0	4123.7	4051.4	3918.0	3805.6	3723.7	3534.1	3421.7
30°	4200.8	4247.4	4210.4	4167.0	4133.3	4061.0	3924.5	3808.8	3717.2	3527.7	3410.4
32.5°	4085.1	4122.1	4085.1	4048.2	4009.6	3940.5	3804.0	3693.1	3596.8	3415.2	3298.0
35°	3857.0	3889.1	3852.2	3808.8	3781.5	3720.5	3590.3	3484.3	3387.9	3220.9	3118.0
37.5°	3542.1	3571.1	3537.3	3513.2	3473.1	3418.4	3299.6	3204.8	3113.2	2962.2	2870.7
40°	3124.5	3185.5	3153.4	3137.3	3100.4	3053.8	2949.4	2865.8	2782.3	2650.6	2575.1
42.5°	2706.8	2764.6	2735.7	2724.5	2692.4	2652.2	2565.4	2494.8	2417.7	2308.4	2244.2
45°	2249.0	2310.0	2282.7	2277.9	2250.6	2220.1	2126.9	2089.9	2022.5	1919.7	1889.1
47.5°	1818.5	1829.7	1804.0	1805.6	1786.3	1765.4	1689.9	1667.5	1633.7	1555.0	1519.7
50°	1355.8	1363.8	1343.0	1349.4	1336.5	1323.7	1272.3	1261.0	1240.2	1187.1	1166.3
52.5°	933.3	970.3	955.8	962.2	955.8	951.0	930.1	910.8	901.2	867.5	857.8
55°	674.7	677.9	666.7	673.1	668.3	666.7	653.8	642.6	637.7	616.9	613.7
57.5°	467.5	470.7	470.7	467.5	465.9	462.6	454.6	448.2	445.0	440.2	430.5
60°	310.0	322.9	318.1	321.3	319.7	319.7	313.3	308.4	306.8	297.2	297.2
62.5°	212.0	220.1	216.9	218.5	216.9	216.9	212.0	208.8	208.8	207.2	202.4
65°	141.4	146.2	143.0	144.6	144.6	144.6	141.4	138.2	138.2	136.5	133.3
67.5°	90.0	93.2	91.6	93.2	91.6	93.2	90.0	88.4	86.7	86.7	85.1
70°	54.6	56.2	54.6	56.2	54.6	54.6	53.0	53.0	51.4	49.8	49.8
72.5°	28.9	30.5	30.5	30.5	30.5	30.5	28.9	27.3	27.3	27.3	25.7
75°	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	12.9	12.9	12.9
77.5°	6.4	6.4	6.4	6.4	8.0	6.4	6.4	6.4	6.4	6.4	6.4
80°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
82.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
85°	4.8	4.8	4.8	4.8	4.8	4.8	6.4	6.4	6.4	6.4	4.8
87.5°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	8.0	8.0	6.4	6.4
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):**

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°	50°	52.5°
0°	684.3	684.3	684.3	684.3	684.3	684.3	684.3	684.3	684.3	684.3	684.3
2.5°	854.6	846.6	843.4	836.9	828.9	824.1	819.3	820.9	809.6	801.6	790.4
5°	1069.9	1052.2	1042.6	1028.1	1010.4	996.0	983.1	976.7	955.8	941.4	910.8
7.5°	1323.7	1293.2	1273.9	1248.2	1217.7	1192.0	1166.3	1148.6	1116.5	1089.1	1042.6
10°	1601.6	1555.0	1521.3	1482.7	1436.1	1394.4	1355.8	1323.7	1275.5	1233.7	1172.7
12.5°	1905.2	1839.3	1791.2	1734.9	1669.1	1611.2	1542.2	1505.2	1439.3	1381.5	1302.8
15°	2228.1	2141.4	2073.9	1996.8	1910.0	1832.9	1744.6	1689.9	1603.2	1529.3	1431.3
17.5°	2538.1	2428.9	2340.5	2242.6	2134.9	2035.3	1930.9	1853.8	1747.8	1656.2	1538.9
20°	2808.0	2677.9	2570.3	2451.4	2324.5	2202.4	2088.3	1985.5	1861.8	1754.2	1620.9
22.5°	3028.1	2877.1	2753.4	2615.2	2469.1	2330.9	2200.8	2083.5	1942.2	1823.3	1677.1
25°	3187.1	3021.7	2883.5	2730.9	2570.3	2412.8	2274.7	2146.2	1992.0	1865.0	1709.2
27.5°	3270.7	3095.6	2949.4	2785.5	2615.2	2451.4	2302.0	2165.4	2003.2	1869.9	1709.2
30°	3256.2	3077.9	2926.9	2758.2	2586.3	2422.5	2266.7	2130.1	1963.0	1828.1	1667.5
32.5°	3145.4	2970.3	2822.5	2658.6	2489.9	2330.9	2175.1	2043.4	1876.3	1744.6	1588.7
35°	2962.2	2796.8	2657.0	2501.2	2342.2	2192.8	2051.4	1918.1	1757.4	1632.1	1485.9
37.5°	2724.5	2573.5	2446.6	2302.0	2155.8	2020.9	1881.1	1767.1	1624.1	1506.8	1363.8
40°	2440.1	2306.8	2194.4	2065.8	1934.1	1816.9	1699.6	1588.7	1449.0	1344.6	1222.5
42.5°	2126.9	2012.8	1916.5	1804.0	1689.9	1590.4	1489.1	1392.8	1277.1	1182.3	1068.3
45°	1789.5	1693.2	1614.4	1524.5	1429.7	1336.5	1262.6	1182.3	1074.7	1004.0	907.6
47.5°	1441.0	1367.1	1307.6	1238.5	1163.0	1105.2	1034.5	970.3	891.6	825.7	747.0
50°	1110.0	1058.6	1016.9	968.7	914.0	861.0	819.3	769.5	710.0	657.0	594.4
52.5°	820.9	787.1	761.4	729.3	692.4	665.1	626.5	589.6	544.6	504.4	456.2
55°	587.9	568.7	552.6	533.3	507.6	483.5	464.3	438.6	406.4	375.9	340.6
57.5°	422.5	401.6	400.0	379.1	369.5	351.8	334.1	314.9	292.4	271.5	245.8
60°	292.4	277.9	271.5	263.5	252.2	241.0	232.9	220.1	204.0	189.6	170.3
62.5°	197.6	188.0	184.7	181.5	171.9	167.1	157.4	149.4	138.2	126.9	114.1
65°	130.1	123.7	120.5	115.7	110.8	107.6	102.8	96.4	86.7	80.3	72.3
67.5°	81.9	77.1	73.9	72.3	67.5	65.9	61.0	57.8	51.4	48.2	43.4
70°	46.6	45.0	41.8	41.8	38.6	35.3	33.7	30.5	28.9	25.7	24.1
72.5°	24.1	24.1	22.5	20.9	19.3	19.3	17.7	16.1	14.5	12.9	12.9
75°	11.2	11.2	11.2	9.6	9.6	9.6	8.0	8.0	8.0	6.4	6.4
77.5°	6.4	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	3.2	3.2
80°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
82.5°	3.2	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
85°	4.8	3.2	3.2	3.2	3.2	4.8	4.8	4.8	4.8	4.8	4.8
87.5°	4.8	4.8	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
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):**

	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77.5°	80°
0°	684.3	684.3	684.3	684.3	684.3	684.3	684.3	684.3	684.3	684.3	684.3
2.5°	782.3	779.1	771.1	769.5	751.8	748.6	739.0	724.5	713.2	710.0	713.2
5°	899.6	885.1	861.0	856.2	827.3	817.7	796.8	774.3	755.0	743.8	739.0
7.5°	1020.1	996.0	960.6	943.0	901.2	880.3	849.8	817.7	787.1	766.3	753.4
10°	1135.7	1097.2	1032.9	1018.5	967.1	933.3	891.6	848.2	809.6	780.7	759.8
12.5°	1245.0	1198.4	1132.5	1092.4	1024.9	981.5	928.5	875.5	827.3	788.7	759.8
15°	1357.4	1296.4	1214.4	1158.2	1081.1	1023.3	959.0	898.0	841.8	793.6	758.2
17.5°	1450.6	1375.1	1278.7	1211.2	1121.3	1052.2	978.3	907.6	846.6	792.0	751.8
20°	1519.7	1431.3	1322.1	1243.4	1143.8	1066.7	986.3	909.2	841.8	782.3	739.0
22.5°	1566.3	1465.0	1346.2	1259.4	1155.0	1071.5	984.7	904.4	835.3	774.3	727.7
25°	1588.7	1479.5	1355.8	1262.6	1153.4	1066.7	976.7	894.8	824.1	761.4	716.5
27.5°	1585.5	1469.9	1343.0	1245.0	1134.1	1044.2	952.6	870.7	801.6	739.0	692.4
30°	1538.9	1424.9	1296.4	1196.8	1087.5	997.6	906.0	825.7	758.2	694.0	650.6
32.5°	1466.7	1349.4	1224.1	1113.2	1020.1	931.7	845.0	763.0	698.8	636.1	594.4
35°	1368.7	1256.2	1135.7	1041.0	939.8	854.6	771.1	694.0	632.9	571.9	533.3
37.5°	1254.6	1147.0	1036.1	938.1	849.8	771.1	692.4	623.3	562.2	507.6	470.7
40°	1122.9	1023.3	922.1	838.5	751.8	679.5	607.2	539.8	490.0	440.2	408.0
42.5°	979.9	891.6	800.0	727.7	649.0	584.7	515.7	467.5	419.3	374.3	348.6
45°	830.5	753.4	676.3	610.4	546.2	490.0	430.5	385.5	348.6	311.6	289.2
47.5°	682.7	616.9	554.2	501.2	445.0	398.4	356.6	316.5	281.1	250.6	232.9
50°	533.3	490.0	440.2	396.8	351.8	313.3	274.7	245.8	218.5	196.0	184.7
52.5°	416.1	375.9	335.7	300.4	268.3	236.1	210.4	186.3	167.1	152.6	144.6
55°	310.0	277.9	247.4	220.1	194.4	173.5	155.8	141.4	128.5	117.3	114.1
57.5°	221.7	197.6	176.7	155.8	139.8	126.9	115.7	106.0	98.0	90.0	88.4
60°	154.2	136.5	123.7	110.8	101.2	91.6	85.1	78.7	72.3	67.5	65.9
62.5°	102.8	93.2	83.5	77.1	72.3	64.3	61.0	56.2	53.0	48.2	46.6
65°	65.9	59.4	54.6	49.8	46.6	43.4	40.2	36.9	33.7	30.5	30.5
67.5°	40.2	35.3	33.7	30.5	27.3	25.7	24.1	20.9	19.3	19.3	17.7
70°	22.5	19.3	17.7	16.1	14.5	14.5	12.9	11.2	11.2	9.6	9.6
72.5°	11.2	11.2	9.6	9.6	8.0	8.0	6.4	6.4	6.4	4.8	4.8
75°	6.4	6.4	4.8	4.8	4.8	4.8	4.8	4.8	3.2	3.2	3.2
77.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
80°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
82.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
85°	4.8	4.8	4.8	4.8	3.2	3.2	3.2	3.2	3.2	3.2	3.2
87.5°	4.8	4.8	4.8	4.8	4.8	3.2	3.2	3.2	3.2	3.2	3.2
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: P170864

CATALOG NUMBER: LDA4A28840D010TE LAR25NF 4LLWW1

**CANDELA DISTRIBUTION (continued):**

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	684.3	684.3	684.3	684.3	684.3	684.3	684.3	684.3
2.5°	700.4	684.3	681.1	681.1	613.7	573.5	543.0	534.9
5°	716.5	694.0	682.7	676.3	555.8	485.1	438.6	425.7
7.5°	724.5	692.4	674.7	660.2	499.6	408.0	358.2	343.8
10°	721.3	682.7	658.6	639.4	448.2	348.6	297.2	284.3
12.5°	714.9	671.5	641.0	616.9	404.8	302.0	255.4	242.6
15°	708.4	658.6	623.3	594.4	369.5	269.9	228.1	216.9
17.5°	695.6	644.2	604.0	573.5	347.0	257.0	221.7	215.3
20°	681.1	628.1	586.3	555.8	340.6	269.9	249.0	249.0
22.5°	671.5	616.9	576.7	546.2	351.8	300.4	292.4	297.2
25°	658.6	607.2	567.1	538.1	363.0	324.5	319.7	326.1
27.5°	637.7	586.3	547.8	518.9	356.6	321.3	316.5	319.7
30°	596.0	546.2	512.4	481.9	330.9	297.2	289.2	290.8
32.5°	543.0	494.8	462.6	433.7	294.0	261.8	253.8	253.8
35°	485.1	440.2	409.6	383.9	258.6	229.7	221.7	220.1
37.5°	427.3	385.5	359.8	335.7	226.5	200.8	192.8	191.2
40°	369.5	332.5	308.4	289.2	199.2	178.3	170.3	168.7
42.5°	314.9	282.7	261.8	245.8	173.5	157.4	151.0	149.4
45°	260.2	234.5	218.5	205.6	151.0	134.9	133.3	133.3
47.5°	210.4	189.6	178.3	170.3	128.5	115.7	114.1	115.7
50°	168.7	154.2	146.2	139.8	109.2	98.0	93.2	93.2
52.5°	133.3	123.7	118.9	114.1	90.0	78.7	72.3	70.7
55°	106.0	98.0	94.8	91.6	70.7	57.8	51.4	49.8
57.5°	83.5	77.1	73.9	70.7	53.0	40.2	33.7	32.1
60°	62.7	57.8	54.6	53.0	36.9	24.1	19.3	17.7
62.5°	45.0	41.8	38.6	36.9	22.5	12.9	8.0	6.4
65°	27.3	27.3	24.1	22.5	11.2	4.8	3.2	1.6
67.5°	16.1	14.5	12.9	12.9	4.8	3.2	1.6	1.6
70°	8.0	8.0	6.4	6.4	3.2	1.6	1.6	1.6
72.5°	4.8	4.8	4.8	3.2	3.2	1.6	1.6	1.6
75°	3.2	3.2	3.2	3.2	3.2	1.6	1.6	1.6
77.5°	3.2	3.2	3.2	3.2	3.2	1.6	1.6	0.0
80°	3.2	3.2	3.2	3.2	3.2	1.6	1.6	0.0
82.5°	3.2	3.2	3.2	3.2	3.2	1.6	1.6	1.6
85°	3.2	3.2	3.2	3.2	3.2	1.6	1.6	0.0
87.5°	3.2	3.2	3.2	3.2	3.2	1.6	1.6	1.6
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)