

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: P170859

Luminaire Tested: **LDA4A13935D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170859
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: LDA4A13935D010TE 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: 1017.0 lumens
Efficiency: N/A
Efficacy: 45.7 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

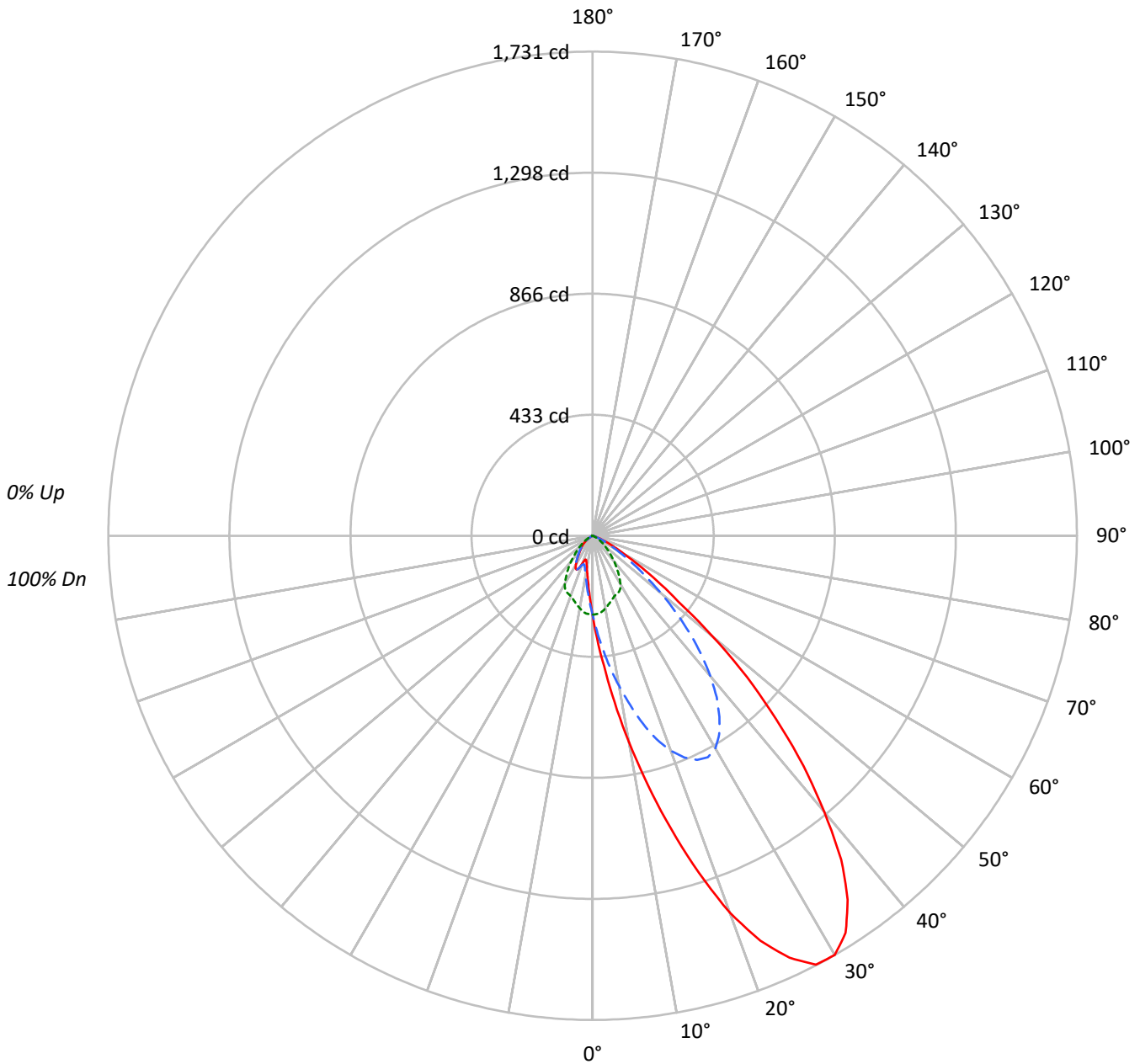
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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					100			
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90					90			
2	104	98	93	88	102	96	91	87	93	89	85	90	86	84	87	84	82	80					80			
3	97	89	82	77	95	87	81	76	84	79	75	82	77	74	79	76	73	71					71			
4	90	80	73	67	88	79	72	67	77	71	66	74	69	65	72	68	65	63					63			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56					56			
6	78	66	58	53	76	65	58	53	64	57	52	62	56	52	61	55	52	50					50			
7	72	60	53	47	71	60	52	47	58	52	47	57	51	47	56	50	46	45					45			
8	67	55	48	43	66	55	47	42	53	47	42	52	46	42	51	46	42	40					40			
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36					36			
10	59	47	40	35	58	46	39	35	45	39	35	45	39	34	44	38	34	33					33			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	34771	34771	34771
5°	57860	34495	21717
10°	93673	32990	14667
15°	138525	31273	11403
20°	188177	30059	13467
25°	226533	30173	18291
30°	246499	28286	17063
35°	239282	23821	13657
40°	207276	19177	11191
45°	161633	14775	9577
50°	107191	11053	7369
55°	59783	8107	4408
60°	31502	5378	1801
65°	16986	2714	204
70°	8114	938	252
75°	2859	620	334
80°	923	923	0
85°	2830	1840	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.1	3.0
10°-20°	118.7	11.7
20°-30°	244.1	24.0
30°-40°	291.6	28.7
40°-50°	215.3	21.2
50°-60°	90.6	8.9
60°-70°	22.3	2.2
70°-80°	3.0	0.3
80°-90°	1.2	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°	392.9	38.6
0°-40°	684.5	67.3
0°-60°	990.4	97.4
0°-90°	1017.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1017.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	282	282	282	282	282	
5°	467	402	279	200	175	53
15°	1085	696	245	111	89	318
25°	1664	884	222	134	134	761
35°	1589	790	158	95	91	975
45°	927	487	85	56	55	711
55°	278	181	38	24	20	265
65°	58	40	9	2	1	63
75°	6	3	1	1	1	8
85°	2	2	1	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°	281.9	281.9	281.9	281.9	281.9	281.9	281.9	281.9	281.9	281.9	281.9
2.5°	366.7	362.0	362.0	363.4	367.3	364.0	361.4	358.7	361.4	355.4	357.4
5°	467.3	466.6	466.6	461.3	465.9	466.6	461.3	456.7	458.0	449.4	449.4
7.5°	599.6	595.7	594.3	587.1	592.4	591.7	583.1	575.1	575.1	561.2	557.9
10°	747.9	742.6	739.9	730.7	735.3	732.7	720.1	708.2	704.9	685.0	677.7
12.5°	911.4	908.0	904.1	892.2	896.1	890.8	873.0	855.8	848.5	822.0	809.4
15°	1084.8	1090.1	1083.4	1069.5	1072.2	1062.9	1039.8	1015.9	1004.7	968.9	950.4
17.5°	1263.5	1270.1	1262.8	1246.9	1246.3	1233.7	1201.9	1172.8	1156.2	1110.6	1086.1
20°	1433.6	1435.5	1426.3	1409.1	1405.1	1387.9	1349.5	1308.5	1292.6	1236.3	1205.2
22.5°	1567.2	1574.5	1563.3	1550.7	1538.1	1516.3	1471.3	1426.3	1403.8	1339.6	1301.8
25°	1664.5	1681.1	1667.8	1653.3	1639.4	1613.6	1563.3	1515.0	1487.2	1415.7	1372.7
27.5°	1728.7	1744.6	1730.1	1713.5	1699.0	1669.2	1614.2	1567.9	1534.2	1456.1	1409.7
30°	1730.7	1749.9	1734.7	1716.8	1702.9	1673.1	1616.9	1569.2	1531.5	1453.4	1405.1
32.5°	1683.1	1698.3	1683.1	1667.8	1652.0	1623.5	1567.2	1521.6	1481.9	1407.1	1358.8
35°	1589.1	1602.3	1587.1	1569.2	1558.0	1532.8	1479.2	1435.5	1395.8	1327.0	1284.6
37.5°	1459.4	1471.3	1457.4	1447.5	1430.9	1408.4	1359.4	1320.4	1282.7	1220.4	1182.7
40°	1287.3	1312.4	1299.2	1292.6	1277.4	1258.2	1215.1	1180.7	1146.3	1092.0	1060.9
42.5°	1115.2	1139.0	1127.1	1122.5	1109.3	1092.7	1057.0	1027.8	996.1	951.1	924.6
45°	926.6	951.7	940.5	938.5	927.2	914.7	876.3	861.1	833.3	790.9	778.3
47.5°	749.2	753.8	743.3	743.9	736.0	727.4	696.3	687.0	673.1	640.7	626.1
50°	558.6	561.9	553.3	555.9	550.7	545.4	524.2	519.5	510.9	489.1	480.5
52.5°	384.5	399.8	393.8	396.4	393.8	391.8	383.2	375.3	371.3	357.4	353.4
55°	278.0	279.3	274.7	277.3	275.3	274.7	269.4	264.7	262.8	254.1	252.8
57.5°	192.6	193.9	193.9	192.6	191.9	190.6	187.3	184.7	183.3	181.3	177.4
60°	127.7	133.0	131.0	132.4	131.7	131.7	129.1	127.1	126.4	122.4	122.4
62.5°	87.4	90.7	89.3	90.0	89.3	89.3	87.4	86.0	86.0	85.4	83.4
65°	58.2	60.2	58.9	59.6	59.6	59.6	58.2	56.9	56.9	56.3	54.9
67.5°	37.1	38.4	37.7	38.4	37.7	38.4	37.1	36.4	35.7	35.7	35.1
70°	22.5	23.2	22.5	23.2	22.5	22.5	21.8	21.8	21.2	20.5	20.5
72.5°	11.9	12.6	12.6	12.6	12.6	12.6	11.9	11.3	11.3	11.3	10.6
75°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.3	5.3	5.3
77.5°	2.6	2.6	2.6	2.6	3.3	2.6	2.6	2.6	2.6	2.6	2.6
80°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
85°	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6	2.6	2.0
87.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.3	3.3	2.6	2.6
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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CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°	50°	52.5°
0°	281.9	281.9	281.9	281.9	281.9	281.9	281.9	281.9	281.9	281.9	281.9
2.5°	352.1	348.8	347.5	344.8	341.5	339.5	337.5	338.2	333.6	330.3	325.6
5°	440.8	433.5	429.5	423.6	416.3	410.3	405.0	402.4	393.8	387.8	375.3
7.5°	545.4	532.8	524.8	514.3	501.7	491.1	480.5	473.2	460.0	448.7	429.5
10°	659.9	640.7	626.8	610.9	591.7	574.5	558.6	545.4	525.5	508.3	483.1
12.5°	784.9	757.8	738.0	714.8	687.7	663.8	635.4	620.1	593.0	569.2	536.8
15°	918.0	882.2	854.4	822.7	786.9	755.2	718.8	696.3	660.5	630.1	589.7
17.5°	1045.7	1000.7	964.3	923.9	879.6	838.6	795.5	763.8	720.1	682.4	634.0
20°	1156.9	1103.3	1059.0	1010.0	957.7	907.4	860.4	818.0	767.1	722.7	667.8
22.5°	1247.6	1185.4	1134.4	1077.5	1017.3	960.3	906.7	858.4	800.2	751.2	691.0
25°	1313.1	1244.9	1188.0	1125.1	1059.0	994.1	937.2	884.2	820.7	768.4	704.2
27.5°	1347.5	1275.4	1215.1	1147.6	1077.5	1010.0	948.4	892.2	825.3	770.4	704.2
30°	1341.6	1268.1	1205.9	1136.4	1065.6	998.1	933.9	877.6	808.8	753.2	687.0
32.5°	1295.9	1223.7	1162.9	1095.4	1025.9	960.3	896.1	841.9	773.0	718.8	654.6
35°	1220.4	1152.3	1094.7	1030.5	965.0	903.4	845.2	790.2	724.1	672.4	612.2
37.5°	1122.5	1060.3	1008.0	948.4	888.2	832.6	775.0	728.0	669.1	620.8	561.9
40°	1005.3	950.4	904.1	851.1	796.9	748.5	700.2	654.6	597.0	554.0	503.7
42.5°	876.3	829.3	789.6	743.3	696.3	655.2	613.5	573.8	526.2	487.1	440.1
45°	737.3	697.6	665.2	628.1	589.0	550.7	520.2	487.1	442.8	413.7	373.9
47.5°	593.7	563.2	538.7	510.3	479.2	455.3	426.2	399.8	367.3	340.2	307.8
50°	457.3	436.2	418.9	399.1	376.6	354.7	337.5	317.0	292.5	270.7	244.9
52.5°	338.2	324.3	313.7	300.5	285.3	274.0	258.1	242.9	224.4	207.8	188.0
55°	242.2	234.3	227.7	219.7	209.1	199.2	191.3	180.7	167.4	154.9	140.3
57.5°	174.1	165.5	164.8	156.2	152.2	144.9	137.7	129.7	120.5	111.9	101.3
60°	120.5	114.5	111.9	108.5	103.9	99.3	96.0	90.7	84.1	78.1	70.2
62.5°	81.4	77.4	76.1	74.8	70.8	68.8	64.9	61.6	56.9	52.3	47.0
65°	53.6	51.0	49.6	47.7	45.7	44.3	42.4	39.7	35.7	33.1	29.8
67.5°	33.8	31.8	30.4	29.8	27.8	27.1	25.2	23.8	21.2	19.9	17.9
70°	19.2	18.5	17.2	17.2	15.9	14.6	13.9	12.6	11.9	10.6	9.9
72.5°	9.9	9.9	9.3	8.6	7.9	7.9	7.3	6.6	6.0	5.3	5.3
75°	4.6	4.6	4.6	4.0	4.0	4.0	3.3	3.3	3.3	2.6	2.6
77.5°	2.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.3	1.3
80°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	1.3	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
85°	2.0	1.3	1.3	1.3	1.3	2.0	2.0	2.0	2.0	2.0	2.0
87.5°	2.0	2.0	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
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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CANDELA DISTRIBUTION (continued):

	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77.5°	80°
0°	281.9	281.9	281.9	281.9	281.9	281.9	281.9	281.9	281.9	281.9	281.9
2.5°	322.3	321.0	317.7	317.0	309.7	308.4	304.4	298.5	293.9	292.5	293.9
5°	370.6	364.7	354.7	352.8	340.8	336.9	328.3	319.0	311.1	306.4	304.4
7.5°	420.3	410.3	395.8	388.5	371.3	362.7	350.1	336.9	324.3	315.7	310.4
10°	467.9	452.0	425.6	419.6	398.4	384.5	367.3	349.5	333.6	321.7	313.1
12.5°	512.9	493.7	466.6	450.1	422.3	404.4	382.5	360.7	340.8	325.0	313.1
15°	559.3	534.1	500.4	477.2	445.4	421.6	395.1	370.0	346.8	327.0	312.4
17.5°	597.6	566.5	526.8	499.0	462.0	433.5	403.1	373.9	348.8	326.3	309.7
20°	626.1	589.7	544.7	512.3	471.2	439.5	406.4	374.6	346.8	322.3	304.4
22.5°	645.3	603.6	554.6	518.9	475.9	441.4	405.7	372.6	344.2	319.0	299.8
25°	654.6	609.6	558.6	520.2	475.2	439.5	402.4	368.6	339.5	313.7	295.2
27.5°	653.2	605.6	553.3	512.9	467.3	430.2	392.5	358.7	330.3	304.4	285.3
30°	634.0	587.1	534.1	493.1	448.1	411.0	373.3	340.2	312.4	285.9	268.0
32.5°	604.3	555.9	504.3	458.7	420.3	383.9	348.1	314.4	287.9	262.1	244.9
35°	563.9	517.6	467.9	428.9	387.2	352.1	317.7	285.9	260.8	235.6	219.7
37.5°	516.9	472.6	426.9	386.5	350.1	317.7	285.3	256.8	231.6	209.1	193.9
40°	462.6	421.6	379.9	345.5	309.7	280.0	250.2	222.4	201.9	181.3	168.1
42.5°	403.7	367.3	329.6	299.8	267.4	240.9	212.5	192.6	172.7	154.2	143.6
45°	342.2	310.4	278.6	251.5	225.0	201.9	177.4	158.8	143.6	128.4	119.1
47.5°	281.3	254.1	228.3	206.5	183.3	164.1	146.9	130.4	115.8	103.2	96.0
50°	219.7	201.9	181.3	163.5	144.9	129.1	113.2	101.3	90.0	80.7	76.1
52.5°	171.4	154.9	138.3	123.8	110.5	97.3	86.7	76.8	68.8	62.9	59.6
55°	127.7	114.5	101.9	90.7	80.1	71.5	64.2	58.2	52.9	48.3	47.0
57.5°	91.3	81.4	72.8	64.2	57.6	52.3	47.7	43.7	40.4	37.1	36.4
60°	63.5	56.3	51.0	45.7	41.7	37.7	35.1	32.4	29.8	27.8	27.1
62.5°	42.4	38.4	34.4	31.8	29.8	26.5	25.2	23.2	21.8	19.9	19.2
65°	27.1	24.5	22.5	20.5	19.2	17.9	16.5	15.2	13.9	12.6	12.6
67.5°	16.5	14.6	13.9	12.6	11.3	10.6	9.9	8.6	7.9	7.9	7.3
70°	9.3	7.9	7.3	6.6	6.0	6.0	5.3	4.6	4.6	4.0	4.0
72.5°	4.6	4.6	4.0	4.0	3.3	3.3	2.6	2.6	2.6	2.0	2.0
75°	2.6	2.6	2.0	2.0	2.0	2.0	2.0	2.0	1.3	1.3	1.3
77.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
80°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
85°	2.0	2.0	2.0	2.0	1.3	1.3	1.3	1.3	1.3	1.3	1.3
87.5°	2.0	2.0	2.0	2.0	2.0	1.3	1.3	1.3	1.3	1.3	1.3
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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CATALOG NUMBER: LDA4A13935D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (continued):

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	281.9	281.9	281.9	281.9	281.9	281.9	281.9	281.9
2.5°	288.6	281.9	280.6	280.6	252.8	236.3	223.7	220.4
5°	295.2	285.9	281.3	278.6	229.0	199.9	180.7	175.4
7.5°	298.5	285.3	278.0	272.0	205.8	168.1	147.6	141.6
10°	297.2	281.3	271.4	263.4	184.7	143.6	122.4	117.1
12.5°	294.5	276.7	264.1	254.1	166.8	124.4	105.2	99.9
15°	291.9	271.4	256.8	244.9	152.2	111.2	94.0	89.3
17.5°	286.6	265.4	248.9	236.3	143.0	105.9	91.3	88.7
20°	280.6	258.8	241.6	229.0	140.3	111.2	102.6	102.6
22.5°	276.7	254.1	237.6	225.0	144.9	123.8	120.5	122.4
25°	271.4	250.2	233.6	221.7	149.6	133.7	131.7	134.4
27.5°	262.8	241.6	225.7	213.8	146.9	132.4	130.4	131.7
30°	245.5	225.0	211.1	198.6	136.3	122.4	119.1	119.8
32.5°	223.7	203.8	190.6	178.7	121.1	107.9	104.6	104.6
35°	199.9	181.3	168.8	158.2	106.6	94.6	91.3	90.7
37.5°	176.1	158.8	148.3	138.3	93.3	82.7	79.4	78.8
40°	152.2	137.0	127.1	119.1	82.1	73.5	70.2	69.5
42.5°	129.7	116.5	107.9	101.3	71.5	64.9	62.2	61.6
45°	107.2	96.6	90.0	84.7	62.2	55.6	54.9	54.9
47.5°	86.7	78.1	73.5	70.2	52.9	47.7	47.0	47.7
50°	69.5	63.5	60.2	57.6	45.0	40.4	38.4	38.4
52.5°	54.9	51.0	49.0	47.0	37.1	32.4	29.8	29.1
55°	43.7	40.4	39.0	37.7	29.1	23.8	21.2	20.5
57.5°	34.4	31.8	30.4	29.1	21.8	16.5	13.9	13.2
60°	25.8	23.8	22.5	21.8	15.2	9.9	7.9	7.3
62.5°	18.5	17.2	15.9	15.2	9.3	5.3	3.3	2.6
65°	11.3	11.3	9.9	9.3	4.6	2.0	1.3	0.7
67.5°	6.6	6.0	5.3	5.3	2.0	1.3	0.7	0.7
70°	3.3	3.3	2.6	2.6	1.3	0.7	0.7	0.7
72.5°	2.0	2.0	2.0	1.3	1.3	0.7	0.7	0.7
75°	1.3	1.3	1.3	1.3	1.3	0.7	0.7	0.7
77.5°	1.3	1.3	1.3	1.3	1.3	0.7	0.7	0.0
80°	1.3	1.3	1.3	1.3	1.3	0.7	0.7	0.0
82.5°	1.3	1.3	1.3	1.3	1.3	0.7	0.7	0.7
85°	1.3	1.3	1.3	1.3	1.3	0.7	0.7	0.0
87.5°	1.3	1.3	1.3	1.3	1.3	0.7	0.7	0.7
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)