

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: PORTFOLIO

Report Number: P880577

Luminaire Tested: **LD4C45D010 EU4459027 4LBDWNH**

Issue Date: 10/4/2024

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



Test Information

Test Method: LM-79-08
Report Number: P880577
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P251940)
Test Lab: INNOVATION CENTER
Issue Date: 10/4/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: PORTFOLIO
Catalog Number: LD4C45D010 EU4459027 4LBDWNH
Description: 4 INCH 4500 LUMEN PORTFOLIO LED DOWNLIGHT WITH, 2700K, 90CRI LEDS
AND 4LBDWN TRIM WITH H FINISH
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

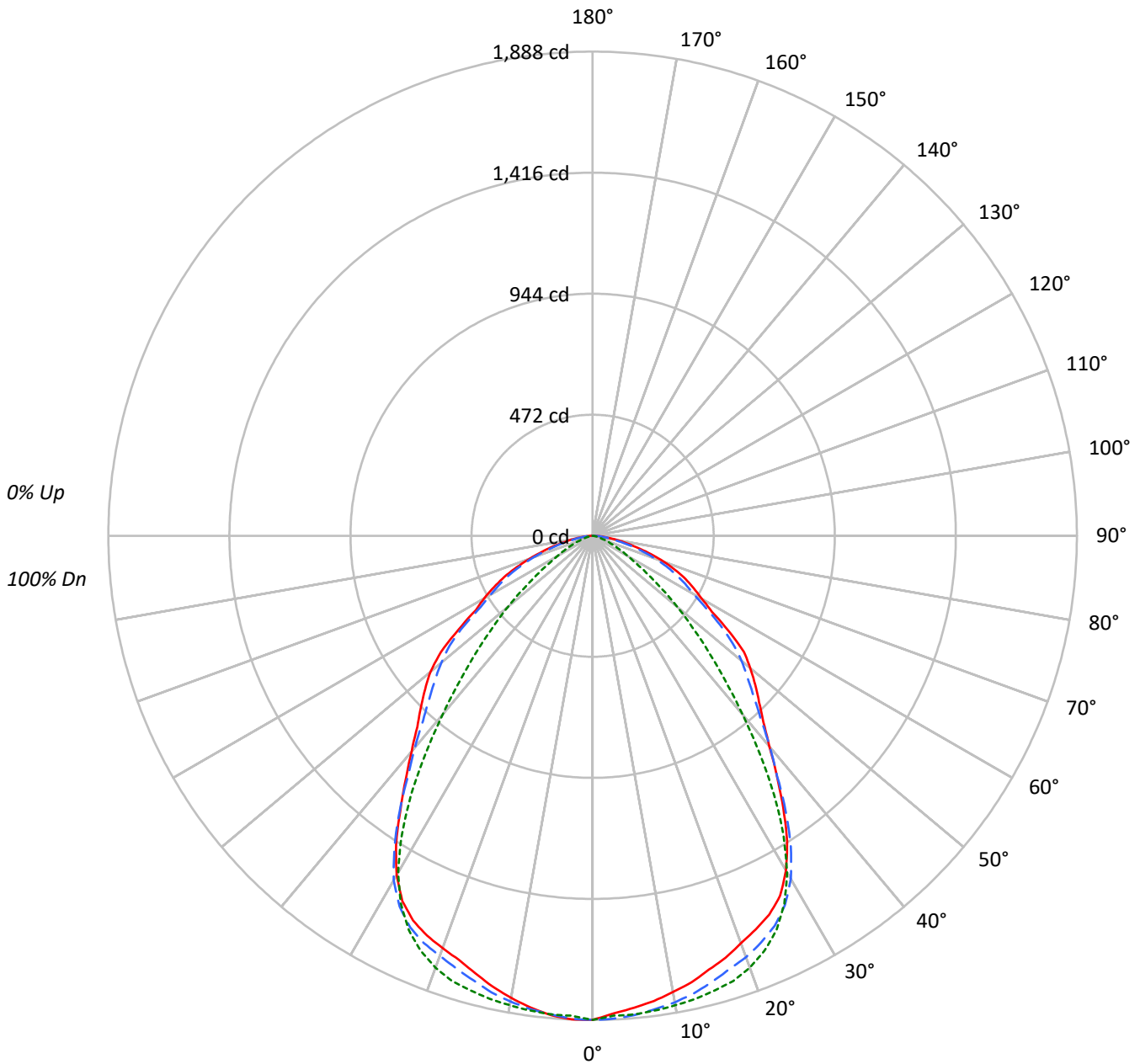
Lumens per Lamp: N/A
Luminaire Lumens: 3842.0 lumens
Efficiency: N/A
Efficacy: 77.5 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 49.6
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	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100				
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88				88				
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76				76				
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66				66				
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58				58				
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51				51				
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46				46				
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41				41				
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37				37				
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34				34				
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31				31				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	231923	231923	231923
5°	227802	231021	231378
10°	225359	231883	228253
15°	222743	233440	224587
20°	220973	234282	223640
25°	220858	229913	224396
30°	213824	215072	216718
35°	194264	185131	196004
40°	171873	145780	176058
45°	159442	111003	164498
50°	153207	82165	157641
55°	138730	56610	136845
60°	120593	38527	119905
65°	116511	27878	110581
70°	105353	18786	93859
75°	86817	12389	74428
80°	69900	8207	55467
85°	57370	4088	36790



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	178.2	4.6
10°-20°	509.5	13.3
20°-30°	769.8	20.0
30°-40°	805.6	21.0
40°-50°	652.5	17.0
50°-60°	474.6	12.4
60°-70°	292.7	7.6
70°-80°	132.2	3.4
80°-90°	26.9	0.7
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°	1457.5	37.9
0°-40°	2263.1	58.9
0°-60°	3390.2	88.2
0°-90°	3842.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3842.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1888	1888	1888	1888	1888	
5°	1847	1876	1873	1873	1876	175
15°	1751	1801	1835	1795	1766	495
25°	1629	1679	1696	1684	1655	747
35°	1295	1313	1234	1313	1307	807
45°	918	889	639	900	947	713
55°	648	607	264	613	639	578
65°	401	360	96	354	380	392
75°	183	157	26	136	157	199
85°	41	32	3	23	26	47
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8
2.5°	1864.6	1864.6	1882.1	1902.2	1884.9	1867.4	1879.0	1873.3	1893.7	1893.7	1884.9
5°	1847.2	1852.9	1867.4	1884.9	1870.5	1852.9	1867.4	1861.7	1882.1	1882.1	1876.2
7.5°	1829.7	1832.6	1850.1	1870.5	1855.8	1838.5	1850.1	1847.2	1864.6	1867.4	1861.7
10°	1806.5	1809.4	1826.9	1847.2	1832.6	1818.1	1829.7	1826.9	1850.1	1850.1	1847.2
12.5°	1783.3	1786.1	1803.6	1821.0	1806.5	1792.0	1803.6	1803.6	1826.9	1829.7	1826.9
15°	1751.3	1757.0	1771.7	1789.0	1780.4	1762.9	1774.5	1774.5	1794.9	1800.6	1800.6
17.5°	1725.2	1728.1	1742.6	1760.1	1748.5	1733.8	1745.4	1745.4	1765.8	1771.7	1771.7
20°	1690.2	1696.1	1710.6	1728.1	1719.3	1707.7	1716.5	1716.5	1739.7	1745.4	1748.5
22.5°	1661.3	1667.0	1678.6	1702.0	1687.4	1678.6	1690.2	1687.4	1713.6	1716.5	1716.5
25°	1629.3	1635.2	1649.7	1664.2	1655.4	1646.8	1655.4	1655.4	1675.8	1678.6	1678.6
27.5°	1582.9	1585.7	1600.2	1614.9	1606.1	1594.5	1606.1	1603.2	1623.4	1626.5	1623.4
30°	1507.3	1513.2	1518.9	1539.3	1530.5	1521.8	1533.4	1527.7	1548.1	1548.1	1545.0
32.5°	1411.4	1411.4	1423.2	1437.7	1426.1	1420.2	1428.9	1431.8	1446.4	1446.4	1437.7
35°	1295.3	1301.2	1309.8	1318.5	1309.8	1304.1	1312.8	1309.8	1327.3	1321.4	1312.8
37.5°	1179.2	1182.1	1190.8	1202.4	1190.8	1182.1	1184.9	1182.1	1196.5	1196.5	1182.1
40°	1071.7	1077.6	1083.3	1094.9	1083.3	1077.6	1080.4	1071.7	1089.2	1083.3	1074.5
42.5°	984.5	987.4	996.1	1002.0	990.4	987.4	990.4	984.5	993.3	987.4	970.1
45°	917.7	917.7	920.8	929.3	917.7	914.9	914.9	909.0	917.7	906.1	888.8
47.5°	859.7	862.5	865.6	871.3	862.5	854.0	856.8	845.2	850.9	842.2	818.9
50°	801.6	807.3	810.4	816.1	807.3	801.6	804.5	792.9	792.9	778.4	758.0
52.5°	743.6	746.4	743.6	749.3	743.6	734.8	737.7	726.1	726.1	708.7	688.4
55°	647.7	650.5	653.6	659.3	653.6	644.8	650.5	641.9	641.9	630.2	606.9
57.5°	551.7	554.8	557.6	560.5	560.5	554.8	557.6	551.7	548.9	540.1	522.8
60°	490.8	490.8	490.8	493.7	490.8	488.0	488.0	482.1	482.1	470.5	453.1
62.5°	444.4	447.3	447.3	450.1	447.3	444.4	441.5	435.6	432.8	421.2	406.5
65°	400.8	400.8	398.0	403.7	400.8	398.0	398.0	392.1	386.3	374.7	360.1
67.5°	348.5	351.3	348.5	351.3	351.3	348.5	345.6	339.7	336.9	328.1	310.8
70°	293.3	293.3	293.3	296.3	293.3	293.3	296.3	287.6	284.7	272.9	258.5
72.5°	238.1	241.1	241.1	238.1	241.1	235.2	235.2	235.2	232.4	220.8	206.1
75°	182.9	185.9	185.9	188.8	185.9	182.9	182.9	180.0	177.2	168.4	156.8
77.5°	136.5	136.5	139.3	139.3	139.3	136.5	136.5	130.7	130.7	124.9	113.2
80°	98.8	98.8	95.9	98.8	98.8	95.9	95.9	92.9	92.9	87.2	78.4
82.5°	63.9	66.8	66.8	66.8	66.8	63.9	63.9	63.9	60.9	58.0	52.3
85°	40.7	40.7	40.7	40.7	43.6	40.7	43.6	40.7	40.7	34.8	32.0
87.5°	17.5	17.5	17.5	20.4	20.4	17.5	17.5	17.5	17.5	17.5	14.5
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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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8
2.5°	1884.9	1887.8	1879.0	1890.6	1882.1	1884.9	1887.8	1884.9	1873.3	1873.3	1905.3
5°	1873.3	1879.0	1870.5	1884.9	1879.0	1879.0	1884.9	1882.1	1870.5	1873.3	1902.2
7.5°	1861.7	1870.5	1864.6	1879.0	1870.5	1870.5	1876.2	1876.2	1864.6	1867.4	1893.7
10°	1844.2	1855.8	1852.9	1867.4	1858.8	1858.8	1867.4	1867.4	1855.8	1858.8	1884.9
12.5°	1829.7	1841.3	1838.5	1852.9	1847.2	1850.1	1852.9	1858.8	1844.2	1850.1	1873.3
15°	1806.5	1818.1	1818.1	1832.6	1826.9	1832.6	1838.5	1847.2	1835.4	1835.4	1858.8
17.5°	1780.4	1794.9	1794.9	1806.5	1806.5	1809.4	1821.0	1829.7	1818.1	1821.0	1841.3
20°	1751.3	1768.8	1768.8	1783.3	1780.4	1786.1	1794.9	1803.6	1792.0	1792.0	1815.3
22.5°	1722.2	1736.8	1739.7	1748.5	1748.5	1751.3	1760.1	1765.8	1751.3	1751.3	1774.5
25°	1681.7	1696.1	1699.0	1704.9	1699.0	1699.0	1704.9	1710.6	1696.1	1696.1	1716.5
27.5°	1626.5	1640.9	1640.9	1638.1	1632.2	1635.2	1632.2	1635.2	1620.6	1617.7	1638.1
30°	1545.0	1553.8	1553.8	1550.9	1542.2	1542.2	1533.4	1536.4	1516.1	1516.1	1533.4
32.5°	1434.8	1443.4	1437.7	1431.8	1420.2	1414.4	1408.6	1405.7	1385.3	1385.3	1405.7
35°	1304.1	1309.8	1301.2	1289.6	1275.0	1266.2	1257.6	1246.0	1231.4	1234.4	1246.0
37.5°	1170.5	1170.5	1158.9	1135.6	1124.0	1109.4	1094.9	1094.9	1071.7	1068.8	1077.6
40°	1057.2	1045.6	1025.2	993.3	972.9	958.4	938.1	926.5	909.0	909.0	923.6
42.5°	955.6	932.4	906.1	862.5	842.2	824.8	798.8	787.2	766.8	763.8	772.5
45°	865.6	842.2	804.5	758.0	732.0	711.6	673.7	659.3	641.9	638.9	644.8
47.5°	792.9	766.8	720.4	659.3	633.2	606.9	569.2	548.9	534.4	525.7	534.4
50°	728.9	694.1	644.8	580.9	546.0	522.8	476.4	456.0	435.6	429.9	432.8
52.5°	659.3	624.4	572.1	505.3	473.3	438.5	394.9	366.0	348.5	339.7	348.5
55°	583.7	548.9	496.7	429.9	394.9	363.1	316.5	293.3	272.9	264.3	272.9
57.5°	502.4	470.5	424.0	357.2	325.3	296.3	252.7	229.5	209.2	203.3	209.2
60°	432.8	406.5	360.1	296.3	270.1	238.1	200.4	177.2	159.7	156.8	159.7
62.5°	386.3	357.2	313.6	252.7	226.5	200.4	165.6	142.4	127.7	124.9	127.7
65°	339.7	307.9	267.2	214.9	188.8	168.4	133.6	113.2	98.8	95.9	98.8
67.5°	287.6	258.5	223.6	177.2	156.8	136.5	107.5	87.2	75.6	72.7	75.6
70°	238.1	212.0	177.2	142.4	122.0	107.5	81.3	66.8	55.2	52.3	55.2
72.5°	188.8	165.6	136.5	107.5	95.9	81.3	63.9	49.3	40.7	37.7	40.7
75°	145.2	127.7	104.5	78.4	69.7	60.9	43.6	34.8	29.1	26.1	29.1
77.5°	101.6	90.0	72.7	58.0	49.3	43.6	32.0	23.2	20.4	17.5	20.4
80°	69.7	60.9	49.3	37.7	32.0	26.1	20.4	14.5	11.6	11.6	11.6
82.5°	46.4	37.7	29.1	23.2	20.4	17.5	11.6	8.8	8.8	5.9	5.9
85°	26.1	23.2	17.5	14.5	11.6	8.8	5.9	5.9	2.9	2.9	2.9
87.5°	11.6	8.8	5.9	5.9	2.9	2.9	2.9	2.9	0.0	0.0	0.0
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8
2.5°	1896.5	1887.8	1899.4	1887.8	1882.1	1887.8	1882.1	1899.4	1884.9	1873.3	1884.9
5°	1893.7	1882.1	1893.7	1884.9	1876.2	1879.0	1873.3	1890.6	1873.3	1864.6	1870.5
7.5°	1887.8	1879.0	1884.9	1876.2	1867.4	1870.5	1864.6	1879.0	1861.7	1852.9	1858.8
10°	1879.0	1870.5	1873.3	1867.4	1858.8	1858.8	1852.9	1864.6	1844.2	1832.6	1838.5
12.5°	1867.4	1855.8	1861.7	1852.9	1841.3	1841.3	1835.4	1844.2	1823.8	1812.2	1815.3
15°	1852.9	1841.3	1841.3	1832.6	1821.0	1821.0	1809.4	1818.1	1794.9	1783.3	1783.3
17.5°	1835.4	1821.0	1821.0	1812.2	1797.8	1794.9	1786.1	1794.9	1768.8	1757.0	1757.0
20°	1809.4	1797.8	1794.9	1789.0	1774.5	1771.7	1760.1	1762.9	1742.6	1733.8	1731.0
22.5°	1774.5	1762.9	1765.8	1757.0	1745.4	1742.6	1731.0	1739.7	1719.3	1710.6	1713.6
25°	1713.6	1707.7	1713.6	1710.6	1702.0	1702.0	1696.1	1702.0	1684.5	1678.6	1681.7
27.5°	1643.8	1640.9	1643.8	1643.8	1638.1	1638.1	1638.1	1646.8	1629.3	1626.5	1626.5
30°	1542.2	1542.2	1545.0	1548.1	1548.1	1553.8	1550.9	1562.5	1550.9	1545.0	1550.9
32.5°	1408.6	1420.2	1428.9	1428.9	1428.9	1434.8	1440.5	1449.3	1437.7	1440.5	1440.5
35°	1257.6	1266.2	1272.1	1286.6	1278.0	1298.2	1304.1	1315.7	1312.8	1318.5	1315.7
37.5°	1089.2	1100.8	1112.4	1132.8	1129.7	1153.0	1164.6	1187.8	1182.1	1193.7	1199.4
40°	932.4	949.7	967.2	981.7	993.3	1016.5	1039.7	1068.8	1077.6	1086.2	1089.2
42.5°	781.3	798.8	827.7	848.1	865.6	903.3	935.2	970.1	978.8	996.1	1002.0
45°	659.3	673.7	708.7	734.8	749.3	804.5	842.2	885.7	900.4	920.8	929.3
47.5°	546.0	572.1	606.9	638.9	659.3	717.3	766.8	813.2	833.6	856.8	868.4
50°	447.3	476.4	522.8	551.7	580.9	644.8	700.0	749.3	769.7	795.7	807.3
52.5°	366.0	398.0	441.5	473.3	505.3	572.1	630.2	676.8	702.8	720.4	737.7
55°	287.6	322.4	366.0	400.8	426.9	499.6	548.9	595.3	612.8	627.3	636.0
57.5°	223.6	249.7	293.3	322.4	354.4	418.1	467.6	502.4	516.9	534.4	540.1
60°	174.3	200.4	241.1	270.1	299.2	360.1	409.6	444.4	458.9	473.3	482.1
62.5°	139.3	165.6	203.3	229.5	255.6	310.8	354.4	389.2	406.5	421.2	429.9
65°	110.4	133.6	165.6	191.7	212.0	261.3	304.9	336.9	354.4	368.8	377.6
67.5°	87.2	107.5	136.5	154.0	174.3	214.9	252.7	281.7	296.3	313.6	322.4
70°	66.8	81.3	107.5	122.0	136.5	171.3	200.4	229.5	244.0	255.6	261.3
72.5°	49.3	60.9	81.3	92.9	101.6	130.7	154.0	174.3	185.9	197.5	203.3
75°	34.8	43.6	58.0	66.8	72.7	92.9	113.2	127.7	136.5	145.2	154.0
77.5°	23.2	29.1	37.7	43.6	49.3	63.9	75.6	87.2	95.9	104.5	107.5
80°	14.5	20.4	26.1	29.1	32.0	40.7	52.3	58.0	63.9	69.7	72.7
82.5°	8.8	11.6	14.5	17.5	20.4	26.1	32.0	37.7	40.7	46.4	49.3
85°	2.9	5.9	5.9	8.8	8.8	14.5	17.5	20.4	23.2	26.1	29.1
87.5°	0.0	0.0	2.9	2.9	2.9	2.9	5.9	5.9	5.9	5.9	5.9
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: P880577

CATALOG NUMBER: LD4C45D010 EU4459027 4LBDWNH

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8	1887.8
2.5°	1896.5	1887.8	1882.1	1879.0	1899.4	1873.3	1884.9	1887.8
5°	1884.9	1876.2	1870.5	1867.4	1884.9	1861.7	1870.5	1876.2
7.5°	1867.4	1861.7	1852.9	1850.1	1867.4	1841.3	1852.9	1855.8
10°	1847.2	1838.5	1832.6	1829.7	1844.2	1818.1	1829.7	1829.7
12.5°	1821.0	1815.3	1803.6	1803.6	1815.3	1792.0	1800.6	1800.6
15°	1786.1	1780.4	1768.8	1768.8	1780.4	1757.0	1765.8	1765.8
17.5°	1757.0	1751.3	1742.6	1739.7	1751.3	1728.1	1736.8	1733.8
20°	1733.8	1728.1	1716.5	1716.5	1725.2	1702.0	1710.6	1710.6
22.5°	1713.6	1710.6	1699.0	1699.0	1710.6	1687.4	1693.3	1687.4
25°	1681.7	1678.6	1667.0	1670.0	1675.8	1652.5	1661.3	1655.4
27.5°	1629.3	1629.3	1617.7	1614.9	1623.4	1603.2	1609.0	1606.1
30°	1548.1	1550.9	1536.4	1536.4	1539.3	1521.8	1530.5	1527.7
32.5°	1437.7	1440.5	1428.9	1426.1	1434.8	1420.2	1426.1	1426.1
35°	1315.7	1318.5	1309.8	1309.8	1318.5	1309.8	1309.8	1306.9
37.5°	1193.7	1199.4	1193.7	1196.5	1202.4	1193.7	1199.4	1196.5
40°	1094.9	1100.8	1092.0	1097.8	1103.7	1094.9	1103.7	1097.8
42.5°	1004.9	1013.6	1007.7	1013.6	1019.4	1013.6	1019.4	1010.8
45°	938.1	944.0	940.9	944.0	949.7	946.8	949.7	946.8
47.5°	874.1	885.7	880.0	885.7	894.5	888.8	894.5	885.7
50°	816.1	824.8	822.0	827.7	830.6	827.7	833.6	824.8
52.5°	740.5	749.3	746.4	746.4	752.1	746.4	752.1	746.4
55°	641.9	644.8	644.8	647.7	644.8	641.9	644.8	638.9
57.5°	546.0	551.7	543.2	551.7	548.9	546.0	546.0	540.1
60°	484.9	493.7	488.0	493.7	490.8	490.8	490.8	488.0
62.5°	435.6	441.5	435.6	438.5	438.5	438.5	435.6	432.8
65°	380.4	389.2	383.3	386.3	383.3	380.4	383.3	380.4
67.5°	325.3	328.1	328.1	325.3	325.3	325.3	325.3	319.5
70°	264.3	267.2	264.3	270.1	267.2	264.3	267.2	261.3
72.5°	206.1	209.2	206.1	209.2	206.1	206.1	206.1	206.1
75°	154.0	156.8	156.8	156.8	156.8	156.8	151.1	156.8
77.5°	110.4	110.4	110.4	113.2	110.4	110.4	110.4	110.4
80°	75.6	75.6	75.6	78.4	75.6	78.4	75.6	78.4
82.5°	49.3	49.3	49.3	49.3	49.3	49.3	49.3	49.3
85°	26.1	29.1	29.1	26.1	26.1	26.1	26.1	26.1
87.5°	5.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
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)