

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: NEO-RAY

Report Number: P333859

Luminaire Tested: **SA2XXRDP-C1005D840-4F0-1E-UDD-A**

Issue Date: 10/11/2019

Test Information

Test Method: LM-79-08
Report Number: P333859
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-29)
Test Lab: INNOVATIONS CENTER
Issue Date: 10/11/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDP-C1005D840-4F0-1E-UDD-A
Description: DEFINE 2 REGRESSED DIRECT LED LUMINAIRE, ASYMMETRIC DIFFUSER
PENDANT/SURFACE/WALL MOUNT, 1005 LUMENS PER FOOT
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

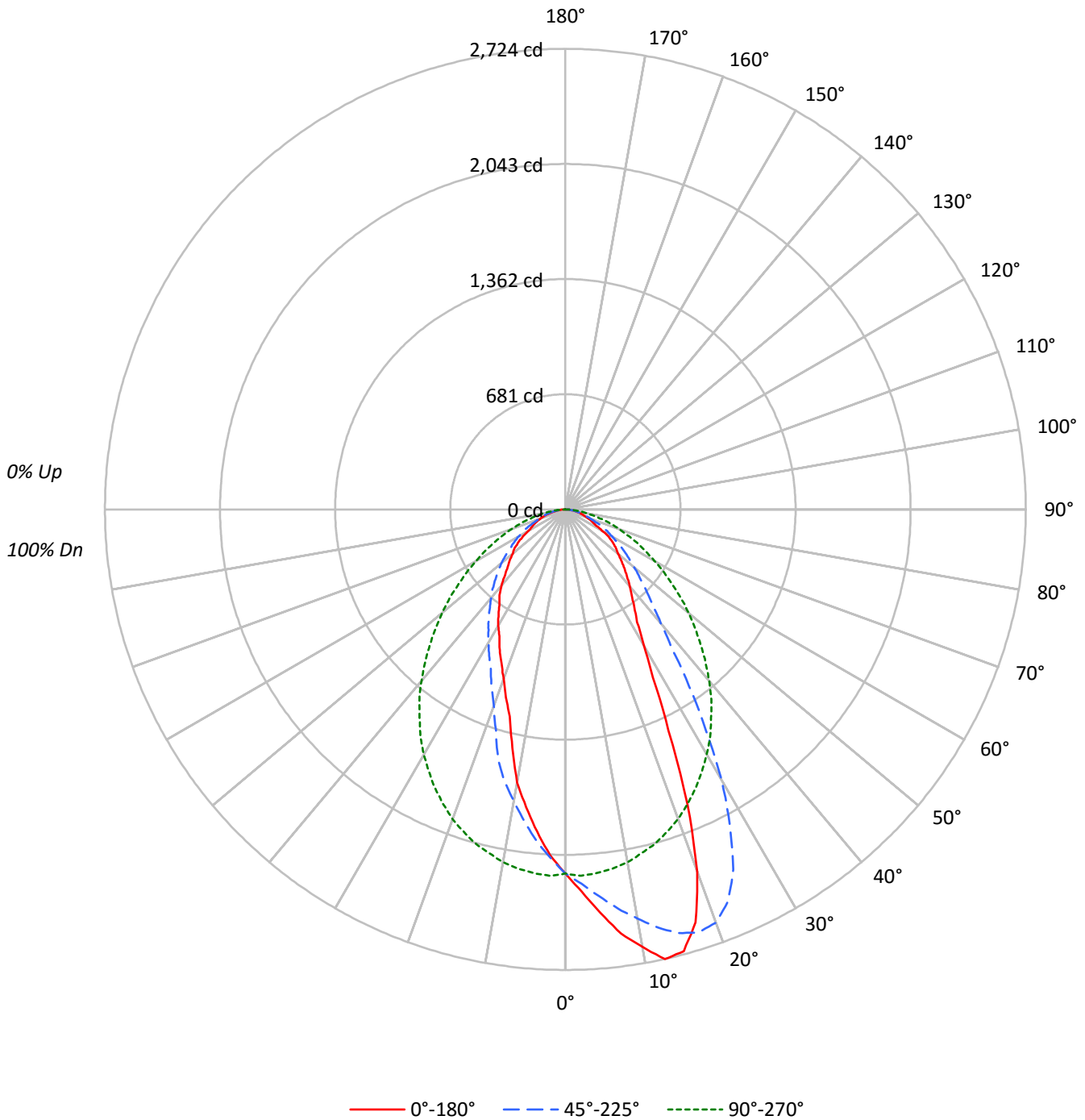
Lumens per Lamp: N/A
Luminaire Lumens: 3721.9 lumens
Efficiency: N/A
Efficacy: 90.6 lumens/watt
Spacing Criteria (0/90/45): 0.85 / 1.16 / 1.02
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (Ain): 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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	111	106	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89	87
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76
3	94	85	78	72	92	84	77	72	81	75	71	78	73	69	76	72	68	66
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60	59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	39
9	62	50	43	38	61	50	42	37	49	42	37	47	41	37	47	41	37	35
10	59	47	39	35	58	46	39	35	45	39	34	44	38	34	44	38	34	33

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	34777	34777	34777
5°	38838	34994	31028
10°	43091	34747	26896
15°	45210	34238	21192
20°	39194	33484	18337
25°	25705	32452	16372
30°	17301	31198	14818
35°	14014	29621	13364
40°	12461	27904	12366
45°	11278	25889	11040
50°	10263	23893	10226
55°	9650	21678	9523
60°	8073	19646	7976
65°	6804	17841	7721
70°	6288	15932	7279
75°	5883	13868	6725
80°	5430	11409	5988
85°	4983	9003	5261



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	204.3	5.5
10°-20°	570.2	15.3
20°-30°	733.9	19.7
30°-40°	696.2	18.7
40°-50°	596.6	16.0
50°-60°	454.4	12.2
60°-70°	286.6	7.7
70°-80°	143.0	3.8
80°-90°	36.8	1.0
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°	1508.4	40.5
0°-40°	2204.6	59.2
0°-60°	3255.5	87.5
0°-90°	3721.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3721.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2154	2154	2154	2154	2154	
5°	2396	2298	2159	1968	1914	236
15°	2705	2594	2048	1534	1268	735
25°	1443	2351	1822	1043	919	681
35°	711	1278	1503	792	678	452
45°	494	674	1134	584	484	382
55°	343	419	770	396	338	302
65°	178	240	467	238	202	180
75°	94	106	222	121	108	100
85°	27	28	49	28	28	30
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9
2.5°	2263.1	2265.4	2267.6	2262.4	2262.4	2257.9	2248.2	2240.7	2219.7	2216.7	2216.7
5°	2396.3	2394.8	2397.8	2388.1	2374.6	2371.6	2357.4	2338.7	2319.3	2297.6	2293.1
7.5°	2531.1	2522.1	2518.3	2522.8	2508.6	2489.1	2465.2	2442.7	2409.1	2381.4	2364.2
10°	2628.3	2653.0	2638.1	2611.9	2617.1	2581.9	2563.2	2531.1	2504.1	2457.0	2446.5
12.5°	2724.1	2730.1	2727.9	2715.9	2706.2	2684.5	2657.5	2630.6	2575.2	2534.0	2490.6
15°	2704.7	2718.9	2722.6	2718.2	2721.9	2720.4	2706.9	2683.7	2640.3	2593.9	2553.5
17.5°	2561.0	2577.5	2590.9	2602.9	2621.6	2658.3	2669.5	2674.0	2656.0	2623.1	2589.4
20°	2281.1	2264.6	2333.5	2368.7	2398.6	2473.4	2537.8	2562.5	2602.2	2601.4	2593.9
22.5°	1884.4	1893.4	1957.8	2001.2	2103.0	2177.8	2253.4	2363.4	2449.5	2513.1	2552.0
25°	1442.9	1471.3	1536.4	1593.3	1690.6	1829.8	1956.3	2103.0	2241.4	2350.7	2454.7
27.5°	1122.6	1126.3	1185.4	1243.1	1302.9	1423.4	1592.6	1768.4	1966.0	2108.2	2287.8
30°	928.0	923.5	945.2	977.4	1026.8	1115.1	1234.8	1407.0	1603.8	1849.3	2067.8
32.5°	790.3	791.8	806.8	828.5	867.4	919.8	992.4	1124.1	1307.4	1547.7	1813.3
35°	711.0	710.2	722.2	739.4	756.6	794.8	850.9	924.3	1052.2	1277.5	1539.4
37.5°	645.1	648.9	654.1	665.3	686.3	708.7	743.9	795.5	892.8	1032.8	1267.8
40°	591.2	592.7	601.0	609.9	621.2	637.6	665.3	705.0	771.6	877.9	1038.8
42.5°	541.8	543.3	548.6	556.8	565.0	581.5	603.2	636.1	687.0	764.1	889.8
45°	493.9	493.9	499.2	502.9	512.6	527.6	546.3	574.8	612.2	673.6	761.9
47.5°	447.5	447.5	451.3	458.0	464.7	476.7	496.2	520.1	547.1	597.2	675.8
50°	408.6	409.4	411.6	416.9	420.6	431.1	445.3	465.5	493.9	530.6	593.5
52.5°	377.2	376.4	379.4	380.9	383.2	389.9	399.6	416.9	441.5	472.2	521.6
55°	342.8	339.8	344.3	348.0	350.2	353.2	359.2	370.5	392.2	419.1	458.0
57.5°	302.3	300.9	303.1	306.8	313.6	321.1	324.8	332.3	343.5	364.5	405.6
60°	250.0	250.0	256.7	258.9	267.2	277.7	288.1	294.1	305.3	318.1	346.5
62.5°	203.6	204.3	206.6	208.8	212.5	226.0	241.7	256.7	267.2	279.1	295.6
65°	178.1	179.6	179.6	181.1	184.1	187.1	193.1	203.6	222.3	239.5	253.7
67.5°	155.7	155.7	156.4	157.9	158.7	162.4	164.6	169.9	173.6	193.1	212.5
70°	133.2	135.5	134.7	136.2	137.0	138.5	141.4	143.7	150.4	154.2	164.6
72.5°	112.3	113.8	113.8	114.5	116.7	116.7	119.0	121.2	125.0	128.0	132.5
75°	94.3	93.5	94.3	95.8	96.5	97.3	97.3	100.3	102.5	105.5	109.3
77.5°	76.3	77.1	77.1	77.1	77.1	78.6	78.6	80.1	82.3	83.8	86.1
80°	58.4	59.1	58.4	59.1	59.9	60.6	59.9	60.6	62.9	64.4	64.4
82.5°	41.9	41.9	42.7	42.7	42.7	42.7	44.2	44.2	45.7	44.9	45.7
85°	26.9	26.2	26.2	26.2	26.9	27.7	26.9	26.9	27.7	27.7	27.7
87.5°	12.0	12.7	12.7	12.7	12.7	12.7	12.7	13.5	12.7	13.5	12.7
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°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9
2.5°	2218.2	2212.2	2207.0	2193.5	2186.8	2171.8	2169.6	2168.8	2149.4	2130.7	2125.4
5°	2281.1	2269.1	2251.2	2230.2	2208.5	2186.0	2171.1	2159.1	2129.2	2100.7	2084.3
7.5°	2343.2	2321.5	2293.1	2257.1	2226.5	2190.5	2165.8	2143.4	2102.2	2064.8	2040.1
10°	2414.3	2372.4	2331.2	2276.6	2233.9	2192.0	2153.1	2119.4	2071.5	2017.7	1979.5
12.5°	2458.5	2411.3	2350.7	2297.6	2239.2	2183.1	2127.7	2082.0	2023.6	1967.5	1920.4
15°	2497.4	2448.0	2379.1	2302.8	2231.7	2162.1	2102.2	2048.3	1975.0	1908.4	1853.0
17.5°	2533.3	2465.2	2394.1	2305.8	2227.2	2142.6	2067.1	1999.7	1919.6	1841.0	1778.2
20°	2549.0	2481.7	2396.3	2308.0	2210.7	2106.7	2023.6	1948.8	1861.2	1773.7	1698.8
22.5°	2539.3	2490.6	2393.3	2283.3	2183.1	2073.0	1976.5	1886.7	1787.2	1697.3	1607.5
25°	2488.4	2470.4	2380.6	2265.4	2151.6	2025.1	1916.6	1821.6	1710.8	1615.0	1520.7
27.5°	2394.8	2421.0	2357.4	2232.4	2109.7	1973.5	1855.3	1748.2	1635.2	1528.2	1433.9
30°	2246.7	2335.7	2311.8	2198.0	2056.6	1923.4	1786.4	1673.4	1550.7	1439.9	1347.1
32.5°	2043.9	2205.5	2240.7	2150.1	2002.7	1853.0	1707.8	1595.6	1466.1	1347.8	1258.0
35°	1826.1	2046.1	2147.1	2086.5	1939.8	1781.9	1633.7	1502.8	1374.0	1258.8	1169.0
37.5°	1567.9	1861.2	2016.9	2010.2	1870.2	1709.3	1548.4	1418.9	1286.5	1172.7	1079.2
40°	1317.9	1642.7	1862.0	1910.6	1796.9	1619.5	1456.4	1323.9	1195.2	1084.4	972.9
42.5°	1093.4	1416.7	1698.8	1792.4	1707.8	1532.0	1368.1	1228.1	1103.9	1000.6	886.1
45°	920.5	1203.4	1500.5	1651.7	1601.6	1438.4	1265.5	1133.8	1016.3	925.8	816.5
47.5°	797.0	1002.8	1301.4	1499.0	1493.0	1338.1	1166.0	1039.5	928.8	844.9	752.1
50°	694.5	868.1	1111.4	1343.4	1362.8	1237.8	1076.2	951.2	849.4	760.4	689.3
52.5°	602.5	737.9	950.5	1170.5	1234.8	1130.8	975.2	862.1	764.1	684.0	625.7
55°	524.6	635.4	801.5	1009.6	1093.4	1017.1	877.9	770.1	690.0	621.2	568.8
57.5°	456.5	543.3	681.8	856.2	951.2	899.6	780.6	691.5	620.4	556.1	514.1
60°	392.9	461.0	574.0	714.0	821.7	788.1	690.0	608.4	550.1	496.2	457.3
62.5°	333.0	389.2	482.0	589.0	685.5	676.5	601.0	535.8	486.5	438.6	407.1
65°	277.7	320.3	395.9	485.0	564.3	571.0	513.4	467.0	421.3	382.4	353.2
67.5°	229.8	258.9	315.8	394.4	455.0	476.0	437.1	399.6	362.2	330.8	304.6
70°	186.3	208.8	247.7	308.3	363.0	385.4	365.2	337.5	306.1	281.4	259.7
72.5°	142.2	163.9	190.1	230.5	275.4	300.1	296.4	278.4	254.5	235.0	214.8
75°	113.8	120.5	139.9	169.9	206.6	227.5	232.7	222.3	202.1	186.3	174.4
77.5°	88.3	92.8	103.3	121.2	146.7	165.4	173.6	172.1	157.2	146.7	135.5
80°	67.4	69.6	74.1	80.8	98.8	117.5	122.7	122.7	113.0	109.3	98.0
82.5°	47.1	48.6	50.9	53.9	59.9	75.6	81.6	83.1	77.8	72.6	64.4
85°	29.2	28.4	29.9	32.2	33.7	38.2	47.1	48.6	47.1	41.2	38.9
87.5°	12.7	13.5	13.5	12.7	13.5	14.2	18.0	21.7	18.7	16.5	15.0
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9	2153.9
2.5°	2115.7	2110.5	2100.7	2085.8	2076.8	2061.1	2050.6	2056.6	2058.1	2056.6	2055.1
5°	2066.3	2050.6	2028.9	2007.9	1988.5	1967.5	1955.5	1950.3	1939.8	1933.8	1930.8
7.5°	2010.2	1987.0	1956.3	1922.6	1891.2	1861.2	1847.8	1837.3	1817.8	1807.4	1797.6
10°	1945.8	1903.2	1872.5	1824.6	1795.4	1752.7	1723.5	1724.3	1695.1	1678.6	1666.7
12.5°	1874.7	1826.8	1770.7	1728.8	1685.4	1653.2	1616.5	1598.6	1567.1	1551.4	1514.0
15°	1794.6	1740.0	1686.1	1627.7	1586.6	1533.5	1482.6	1420.4	1370.3	1326.9	1314.9
17.5°	1709.3	1642.0	1588.8	1529.0	1464.6	1368.1	1305.2	1267.0	1237.1	1214.6	1196.7
20°	1621.0	1552.2	1494.5	1391.3	1296.2	1235.6	1192.2	1164.5	1133.1	1108.4	1094.9
22.5°	1528.2	1455.6	1371.8	1253.6	1184.7	1139.0	1101.6	1068.7	1050.0	1032.0	1020.1
25°	1441.4	1362.8	1233.3	1154.0	1094.1	1043.3	1016.3	996.9	974.4	948.2	936.2
27.5°	1350.8	1225.9	1127.8	1070.2	1008.8	976.6	953.4	921.3	901.1	891.3	877.9
30°	1246.8	1121.8	1049.2	984.9	944.5	907.8	879.4	862.9	843.4	823.2	815.0
32.5°	1130.8	1037.3	968.4	917.5	876.4	846.4	825.5	796.3	783.6	773.1	753.6
35°	1038.8	963.2	899.6	856.2	817.2	791.8	765.6	749.9	724.4	714.0	707.2
37.5°	954.9	889.1	841.2	793.3	763.4	733.4	718.5	692.3	682.5	666.1	652.6
40°	886.1	821.7	776.1	738.7	704.2	683.3	663.1	642.9	626.4	619.7	602.5
42.5°	815.7	766.4	720.7	678.8	658.6	636.1	609.2	595.7	578.5	566.5	557.6
45°	752.1	705.7	666.8	633.1	607.7	584.5	568.0	543.3	533.6	511.9	502.9
47.5°	696.0	651.1	613.7	580.8	555.3	541.8	517.9	496.2	482.7	467.7	455.0
50°	635.4	599.5	563.5	535.1	512.6	490.9	466.2	456.5	432.6	425.8	419.1
52.5°	580.0	546.3	514.1	486.5	464.0	443.0	422.1	408.6	394.4	387.7	383.2
55°	529.1	496.2	464.7	440.1	417.6	395.9	382.4	366.7	359.2	354.0	348.0
57.5°	476.7	446.8	422.1	396.6	374.2	356.2	339.8	330.8	323.3	317.3	309.1
60°	427.3	398.9	377.2	354.0	330.8	316.6	304.6	293.4	284.4	273.9	270.9
62.5°	374.9	351.0	331.5	309.1	289.6	276.9	265.7	255.2	244.0	227.5	223.0
65°	327.8	308.3	287.4	268.7	250.7	238.0	221.5	209.5	205.1	203.6	202.8
67.5°	284.4	265.7	247.7	228.3	211.8	197.6	187.8	186.3	183.4	182.6	180.4
70°	241.0	223.8	205.8	187.8	172.1	169.9	166.9	163.9	160.2	158.7	157.2
72.5°	202.1	184.1	166.1	152.7	148.2	145.2	142.2	139.2	137.0	135.5	134.7
75°	160.9	144.4	132.5	127.2	123.5	121.2	116.7	114.5	113.0	110.8	110.0
77.5°	122.7	112.3	106.3	103.3	98.8	96.5	93.5	91.3	89.1	89.1	87.6
80°	88.3	83.8	80.1	75.6	74.1	71.1	70.3	68.1	68.9	66.6	66.6
82.5°	63.6	57.6	54.6	53.1	51.6	49.4	48.6	47.9	47.9	46.4	46.4
85°	35.2	33.7	32.2	30.7	30.7	28.4	29.2	28.4	28.4	26.9	26.2
87.5°	14.2	13.5	12.0	12.0	12.0	11.2	11.2	10.5	10.5	10.5	9.7
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: P333859

CATALOG NUMBER: SA2XXRDP-C1005D840-4F0-1E-UDD-A

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	2153.9	2153.9	2153.9	2153.9
2.5°	2046.8	2048.3	2046.1	2047.6
5°	1927.1	1918.1	1916.6	1914.4
7.5°	1785.7	1784.9	1780.4	1775.2
10°	1650.2	1646.5	1645.7	1640.5
12.5°	1491.5	1462.4	1459.4	1444.4
15°	1297.0	1292.5	1277.5	1267.8
17.5°	1188.4	1173.5	1168.2	1166.0
20°	1084.4	1070.9	1068.7	1067.2
22.5°	1012.6	998.4	991.6	986.4
25°	928.8	923.5	920.5	919.0
27.5°	862.9	849.4	847.9	844.2
30°	808.3	804.5	799.3	794.8
32.5°	743.9	740.9	736.4	734.9
35°	699.7	689.3	684.8	678.0
37.5°	651.1	645.1	637.6	640.6
40°	592.7	589.0	587.5	586.7
42.5°	546.3	534.4	529.9	529.9
45°	499.2	489.4	482.7	483.5
47.5°	448.3	449.0	444.5	446.0
50°	413.9	409.4	406.4	407.1
52.5°	380.9	377.2	374.9	378.7
55°	344.3	339.8	339.0	338.3
57.5°	304.6	302.3	298.6	296.4
60°	261.2	255.2	247.7	247.0
62.5°	221.5	221.5	221.5	221.5
65°	201.3	200.6	201.3	202.1
67.5°	180.4	178.9	177.4	178.1
70°	155.7	154.9	154.2	154.2
72.5°	131.7	131.7	131.0	130.2
75°	109.3	107.8	107.8	107.8
77.5°	87.6	86.8	86.1	85.3
80°	65.9	65.1	64.4	64.4
82.5°	46.4	45.7	45.7	44.9
85°	26.9	27.7	26.9	28.4
87.5°	9.7	9.0	9.7	9.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)