

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: P333000-840

Luminaire Tested: **SA4XXRDIP-C1195D810U840-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P333000-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA4XXRDIP-C1195D810U840-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 810 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

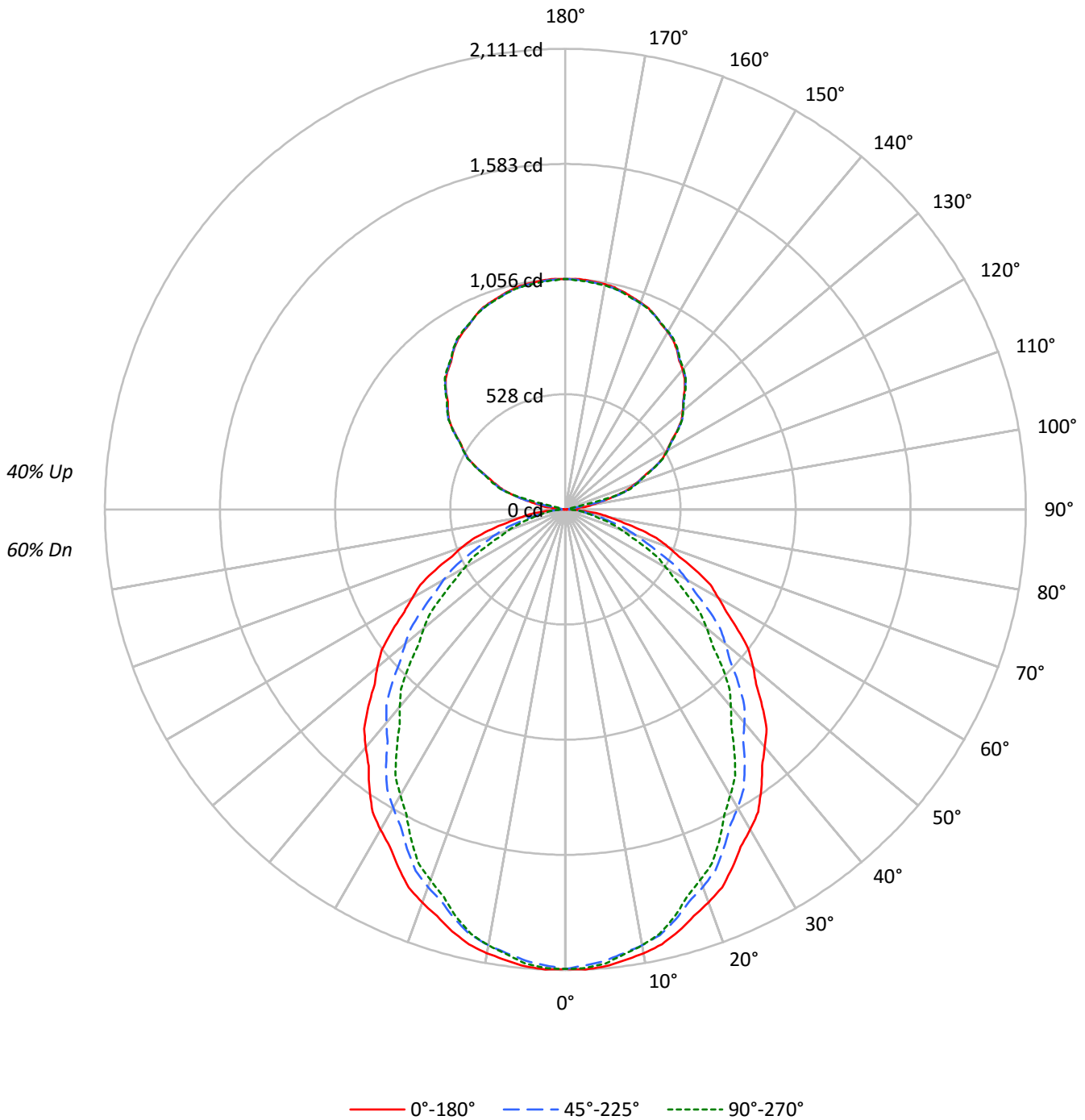
Lumens per Lamp: N/A
Luminaire Lumens: 8134.4 lumens
Efficiency: N/A
Efficacy: 134.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 60.7
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	50	30	10	0	
RCR																						
0	109	109	109	109	102	102	102	102	89	89	89	76	76	76	65	65	65	60				
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56	51				
2	92	84	78	73	85	79	74	69	69	65	62	60	57	54	52	49	47	43				
3	84	74	67	61	78	70	63	58	61	56	52	53	49	46	46	43	41	37				
4	77	66	58	52	72	62	55	50	55	49	45	48	43	40	41	38	35	32				
5	71	59	51	45	66	56	48	43	49	43	39	43	38	35	37	34	31	28				
6	65	53	45	39	61	50	43	37	44	38	34	39	34	31	34	30	27	25				
7	60	48	40	35	56	45	38	33	40	34	30	36	31	27	31	27	24	22				
8	56	44	36	31	52	41	34	29	37	31	27	33	28	24	29	25	22	20				
9	52	40	33	27	49	38	31	26	34	28	24	30	25	22	26	23	20	18				
10	49	37	30	25	46	35	28	24	31	26	22	28	23	20	25	21	18	16				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17002	17002	17002
5°	17040	16832	16936
10°	16934	16629	16629
15°	16739	16280	16160
20°	16472	15821	15530
25°	16131	15284	14895
30°	15800	14716	14100
35°	15431	14128	13302
40°	14989	13460	12440
45°	14582	12795	11562
50°	14117	12031	10633
55°	13619	11234	9623
60°	13070	10362	8591
65°	12567	9270	7578
70°	11837	8068	6434
75°	10914	6691	5231
80°	9521	5100	4798
85°	8068	4631	4335



TEST NUMBER: P333000-840

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	197.8	2.4
10°-20°	551.7	6.8
20°-30°	796.6	9.8
30°-40°	903.0	11.1
40°-50°	872.0	10.7
50°-60°	725.1	8.9
60°-70°	500.7	6.2
70°-80°	253.8	3.1
80°-90°	68.2	0.8
90°-100°	36.1	0.4
100°-110°	230.2	2.8
110°-120°	440.4	5.4
120°-130°	559.1	6.9
130°-140°	598.2	7.4
140°-150°	559.3	6.9
150°-160°	451.1	5.5
160°-170°	290.9	3.6
170°-180°	100.3	1.2
0°-30°	1546.1	19.0
0°-40°	2449.1	30.1
0°-60°	4046.2	49.7
0°-90°	4868.8	59.9
90°-120°	706.7	8.7
90°-150°	2423.3	29.8
90°-180°	3266.0	40.2
0°-180°	8134.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2106	2106	2106	2106	2106	
5°	2103	2096	2077	2092	2090	199
15°	2003	1987	1948	1944	1934	564
25°	1811	1780	1716	1689	1672	834
35°	1566	1513	1434	1380	1350	978
45°	1277	1215	1121	1044	1013	984
55°	968	901	798	717	684	865
65°	658	587	485	419	397	649
75°	350	289	214	179	168	369
85°	87	56	50	47	47	98
90°	2	11	17	22	24	6
95°	43	18	17	22	23	56
105°	238	242	246	252	225	249
115°	444	446	445	447	447	437
125°	624	627	625	628	628	557
135°	774	773	776	778	779	596
145°	892	894	895	895	897	557
155°	978	979	977	980	978	451
165°	1032	1028	1028	1034	1027	292
175°	1056	1051	1052	1058	1049	100
180°	1056	1056	1056	1056	1056	



TEST NUMBER: P333000-840

CATALOG NUMBER: SA4XXRDIP-C1195D810U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0
2.5°	2111.1	2110.0	2108.9	2107.7	2106.6	2104.5	2101.3	2098.1	2095.0	2091.8	2095.0
5°	2102.7	2101.3	2099.9	2098.5	2097.1	2094.2	2089.9	2085.6	2081.3	2077.0	2080.5
7.5°	2083.8	2082.2	2080.7	2079.2	2077.7	2074.2	2068.6	2063.1	2057.4	2051.8	2054.2
10°	2065.7	2063.9	2062.1	2060.3	2058.5	2054.4	2048.0	2041.5	2035.1	2028.6	2030.0
12.5°	2042.5	2040.4	2038.3	2036.2	2034.2	2029.3	2021.7	2014.2	2006.5	1998.9	1999.8
15°	2002.8	1999.5	1996.4	1993.2	1989.9	1983.8	1974.9	1965.9	1956.9	1947.9	1947.2
17.5°	1954.8	1950.0	1945.4	1940.8	1936.1	1928.4	1917.6	1906.9	1896.1	1885.4	1883.4
20°	1917.3	1912.7	1908.0	1903.4	1898.7	1890.3	1878.1	1865.9	1853.7	1841.6	1838.7
22.5°	1876.0	1870.9	1865.6	1860.4	1855.1	1846.0	1832.9	1819.9	1806.9	1793.8	1789.5
25°	1810.9	1804.4	1798.0	1791.6	1785.1	1774.5	1759.9	1745.1	1730.5	1715.8	1709.7
27.5°	1742.5	1734.4	1726.4	1718.3	1710.1	1698.3	1682.5	1666.9	1651.1	1635.5	1627.9
30°	1694.9	1685.9	1676.9	1667.9	1659.0	1646.1	1629.2	1612.4	1595.6	1578.7	1569.7
32.5°	1644.5	1634.4	1624.3	1614.2	1604.1	1590.3	1572.9	1555.5	1538.0	1520.7	1510.3
35°	1565.8	1554.3	1542.9	1531.4	1519.9	1505.2	1487.3	1469.5	1451.5	1433.6	1421.4
37.5°	1481.7	1469.8	1457.9	1446.1	1434.3	1418.5	1398.7	1378.8	1359.0	1339.1	1325.4
40°	1422.3	1410.5	1398.7	1386.8	1374.9	1358.9	1338.5	1318.0	1297.6	1277.2	1262.1
42.5°	1365.5	1353.1	1340.7	1328.3	1316.0	1299.1	1277.8	1256.5	1235.3	1214.0	1198.6
45°	1277.2	1263.8	1250.6	1237.4	1224.2	1206.7	1185.3	1163.8	1142.3	1120.7	1103.2
47.5°	1185.9	1172.2	1158.5	1144.8	1131.1	1113.1	1090.8	1068.3	1046.0	1023.7	1005.4
50°	1124.0	1109.9	1096.0	1082.1	1068.0	1049.6	1026.6	1003.7	980.8	957.9	940.0
52.5°	1060.8	1047.0	1033.4	1019.7	1006.0	987.3	963.9	940.4	916.9	893.3	875.1
55°	967.6	953.2	938.9	924.5	910.2	891.4	868.1	844.9	821.5	798.2	779.6
57.5°	875.3	860.4	845.5	830.6	815.7	796.8	773.9	750.8	727.9	705.0	686.1
60°	809.5	795.2	780.8	766.5	752.1	733.6	710.6	687.7	664.7	641.8	623.2
62.5°	750.1	735.3	720.3	705.5	690.5	671.4	647.8	624.3	600.8	577.3	560.1
65°	657.9	642.5	627.1	611.7	596.3	577.1	554.2	531.3	508.4	485.3	470.0
67.5°	562.1	547.3	532.6	517.9	503.1	485.0	463.7	442.5	421.2	399.9	386.7
70°	501.5	486.5	471.4	456.4	441.3	423.5	403.1	382.7	362.3	341.8	330.0
72.5°	437.0	423.4	409.8	396.2	382.5	366.1	346.8	327.5	308.2	288.9	278.8
75°	349.9	336.7	323.4	310.1	296.9	281.9	265.0	248.1	231.4	214.5	206.2
77.5°	261.6	250.3	239.0	227.8	216.5	204.1	190.5	176.9	163.3	149.7	144.8
80°	204.8	194.4	184.0	173.6	163.2	152.7	141.9	131.2	120.4	109.7	108.6
82.5°	155.8	146.2	136.7	127.1	117.6	109.8	103.6	97.5	91.3	85.1	84.3
85°	87.1	79.9	72.7	65.5	58.4	54.3	53.2	52.1	51.1	50.0	49.3
87.5°	30.2	28.3	26.4	24.4	22.5	21.5	21.5	21.5	21.5	21.5	21.4
90°	2.3	4.3	6.3	8.2	10.1	11.7	13.1	14.5	16.0	17.4	18.4
92.5°	10.0	10.1	10.2	10.3	10.4	11.1	12.5	13.9	15.3	16.8	17.8
95°	43.4	37.5	31.5	25.5	19.6	16.7	16.9	17.1	17.2	17.4	18.4
97.5°	92.2	95.9	99.7	103.4	107.1	99.2	79.6	60.0	40.4	20.8	20.9
100°	129.5	132.7	135.8	139.0	142.1	131.6	107.3	83.2	59.0	34.7	31.7
102.5°	171.2	173.5	175.8	178.1	180.5	180.1	176.8	173.7	170.6	167.4	135.2
105°	237.6	238.7	239.7	240.9	241.9	242.9	243.7	244.6	245.5	246.3	247.9
107.5°	299.4	299.9	300.4	301.0	301.5	302.4	303.6	304.8	306.0	307.2	307.9
110°	341.1	341.6	342.1	342.6	343.3	344.0	345.1	346.1	347.2	348.2	348.6



TEST NUMBER: P333000-840

CATALOG NUMBER: SA4XXRDIP-C1195D810U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	381.5	382.4	383.4	384.4	385.4	386.1	386.6	387.0	387.5	388.0	388.0
115°	443.7	444.2	444.8	445.4	445.9	446.1	445.9	445.7	445.6	445.4	445.7
117.5°	499.8	500.5	501.2	501.9	502.6	503.2	503.5	503.9	504.3	504.7	504.6
120°	537.8	538.5	539.2	539.9	540.5	540.8	540.6	540.5	540.3	540.1	540.5
122.5°	573.1	573.5	573.9	574.3	574.8	575.1	575.3	575.6	575.8	576.1	576.3
125°	623.8	624.5	625.2	625.9	626.6	626.7	626.4	626.1	625.7	625.4	625.9
127.5°	671.8	672.0	672.2	672.4	672.5	673.0	673.8	674.6	675.4	676.2	676.1
130°	702.8	703.0	703.1	703.3	703.5	703.8	704.3	704.9	705.4	705.9	706.1
132.5°	731.1	731.4	731.8	732.2	732.5	733.0	733.6	734.3	734.9	735.6	735.8
135°	773.9	773.7	773.5	773.3	773.2	773.4	774.1	774.8	775.5	776.2	776.5
137.5°	811.5	811.6	811.7	811.7	811.8	812.2	813.0	813.9	814.6	815.4	815.8
140°	836.2	836.6	836.9	837.3	837.6	838.0	838.3	838.7	839.0	839.3	839.9
142.5°	858.3	858.9	859.6	860.2	860.8	861.2	861.4	861.7	861.9	862.1	862.5
145°	892.2	892.8	893.3	893.8	894.3	894.6	894.6	894.6	894.6	894.6	894.8
147.5°	919.3	920.3	921.2	922.2	923.2	923.6	923.4	923.2	923.0	922.9	923.0
150°	938.9	939.6	940.3	941.0	941.6	941.9	941.7	941.6	941.4	941.2	941.2
152.5°	955.2	955.8	956.3	956.9	957.6	957.7	957.4	957.0	956.6	956.3	956.6
155°	978.4	978.5	978.7	978.9	979.1	978.9	978.4	977.8	977.2	976.7	977.4
157.5°	997.7	997.6	997.5	997.4	997.3	996.9	996.3	995.8	995.2	994.6	995.5
160°	1009.2	1008.6	1008.0	1007.5	1007.0	1006.6	1006.5	1006.3	1006.1	1005.9	1007.0
162.5°	1019.3	1018.5	1017.8	1017.2	1016.5	1016.1	1015.9	1015.8	1015.6	1015.4	1016.5
165°	1032.0	1031.2	1030.3	1029.4	1028.5	1028.0	1028.0	1028.0	1028.0	1028.0	1029.5
167.5°	1042.1	1041.2	1040.3	1039.4	1038.4	1037.9	1037.8	1037.7	1037.6	1037.5	1039.1
170°	1047.8	1046.7	1045.7	1044.6	1043.6	1043.2	1043.3	1043.5	1043.7	1043.9	1045.2
172.5°	1051.6	1050.6	1049.5	1048.4	1047.4	1046.9	1047.1	1047.3	1047.4	1047.6	1049.0
175°	1055.7	1054.6	1053.6	1052.6	1051.5	1051.1	1051.3	1051.4	1051.6	1051.8	1053.3
177.5°	1057.6	1056.6	1055.6	1054.6	1053.7	1053.3	1053.6	1053.9	1054.2	1054.4	1055.5
180°	1055.7	1055.7	1055.7	1055.7	1055.7	1055.7	1055.7	1055.7	1055.7	1055.7	1055.7



TEST NUMBER: P333000-840

CATALOG NUMBER: SA4XXRDIP-C1195D810U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0
2.5°	2098.1	2101.3	2104.5	2105.9	2105.6	2105.3	2105.0	2104.8
5°	2084.2	2087.7	2091.3	2092.7	2092.0	2091.3	2090.6	2089.9
7.5°	2056.4	2058.7	2061.0	2061.5	2060.4	2059.3	2058.1	2057.0
10°	2031.4	2032.9	2034.4	2034.4	2032.9	2031.4	2030.0	2028.6
12.5°	2000.6	2001.6	2002.4	2001.8	1999.8	1997.8	1995.8	1993.8
15°	1946.5	1945.8	1945.1	1943.5	1941.0	1938.4	1936.0	1933.5
17.5°	1881.4	1879.4	1877.3	1874.5	1870.7	1866.8	1863.1	1859.3
20°	1835.8	1832.9	1830.1	1826.3	1821.7	1817.1	1812.3	1807.7
22.5°	1785.2	1780.9	1776.7	1772.6	1768.8	1764.9	1761.2	1757.4
25°	1703.5	1697.5	1691.4	1686.6	1682.9	1679.4	1675.8	1672.2
27.5°	1620.4	1612.9	1605.4	1599.0	1593.9	1588.7	1583.6	1578.4
30°	1560.7	1551.9	1542.9	1535.5	1529.7	1524.1	1518.3	1512.6
32.5°	1499.9	1489.4	1479.0	1471.2	1465.7	1460.3	1454.8	1449.4
35°	1409.2	1397.0	1384.8	1375.5	1369.1	1362.6	1356.1	1349.7
37.5°	1311.8	1298.2	1284.6	1274.6	1268.1	1261.6	1255.3	1248.8
40°	1247.1	1232.0	1217.0	1206.2	1199.7	1193.3	1186.9	1180.4
42.5°	1183.3	1167.9	1152.6	1141.6	1134.8	1128.1	1121.4	1114.6
45°	1085.6	1068.0	1050.5	1038.4	1032.1	1025.6	1019.2	1012.7
47.5°	987.2	969.1	950.9	938.2	931.1	924.0	916.9	909.8
50°	922.0	904.1	886.2	873.8	867.1	860.2	853.4	846.6
52.5°	857.0	838.8	820.5	807.9	800.8	793.8	786.6	779.5
55°	760.9	742.4	723.7	710.9	704.2	697.3	690.5	683.7
57.5°	667.2	648.2	629.3	617.3	612.2	606.9	601.8	596.6
60°	604.5	585.9	567.2	555.1	549.4	543.6	537.9	532.1
62.5°	542.9	525.7	508.5	497.6	493.0	488.5	483.8	479.3
65°	454.5	439.2	423.7	413.8	409.6	405.3	401.0	396.7
67.5°	373.4	360.1	346.9	337.9	333.2	328.4	323.7	318.9
70°	318.2	306.4	294.6	286.9	283.3	279.7	276.1	272.6
72.5°	268.7	258.6	248.5	241.9	238.5	235.3	232.0	228.6
75°	198.0	189.8	181.5	176.3	174.2	172.0	169.9	167.7
77.5°	140.1	135.2	130.5	127.7	127.0	126.4	125.8	125.1
80°	107.6	106.4	105.3	104.6	104.3	103.9	103.6	103.2
82.5°	83.6	82.8	82.0	81.4	81.1	80.7	80.4	80.0
85°	48.6	47.9	47.2	46.8	46.8	46.8	46.8	46.8
87.5°	21.4	21.3	21.2	21.4	21.7	22.1	22.4	22.8
90°	19.5	20.5	21.6	22.3	22.6	23.0	23.3	23.7
92.5°	18.9	19.9	20.9	21.5	21.6	21.6	21.7	21.8
95°	19.5	20.5	21.6	22.2	22.4	22.5	22.7	22.9
97.5°	21.1	21.2	21.3	21.4	21.6	21.7	21.9	22.1
100°	28.8	25.8	22.8	21.4	21.6	21.7	21.9	22.1
102.5°	103.0	70.9	38.7	22.6	22.6	22.6	22.7	22.7
105°	249.5	251.1	252.7	250.3	244.0	237.6	231.4	225.0
107.5°	308.7	309.4	310.2	310.9	311.6	312.3	313.0	313.7
110°	348.9	349.3	349.6	350.0	350.6	351.1	351.6	352.1



TEST NUMBER: P333000-840

CATALOG NUMBER: SA4XXRDIP-C1195D810U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	387.9	387.8	387.7	388.0	388.7	389.4	390.0	390.7
115°	446.1	446.4	446.8	447.0	447.0	447.0	447.0	447.0
117.5°	504.5	504.5	504.4	504.3	504.3	504.2	504.1	504.1
120°	540.8	541.2	541.5	541.5	541.2	540.8	540.5	540.1
122.5°	576.5	576.7	576.9	576.8	576.5	576.1	575.8	575.4
125°	626.4	626.9	627.4	627.8	628.0	628.1	628.3	628.5
127.5°	676.0	675.9	675.8	675.7	675.5	675.4	675.3	675.1
130°	706.3	706.4	706.6	706.7	706.7	706.7	706.7	706.7
132.5°	736.0	736.1	736.3	736.3	736.2	736.0	735.9	735.8
135°	776.9	777.2	777.6	777.9	778.3	778.6	779.0	779.3
137.5°	816.1	816.5	816.9	817.0	816.9	816.8	816.7	816.6
140°	840.4	840.9	841.4	841.8	842.0	842.1	842.3	842.5
142.5°	862.8	863.2	863.6	863.8	863.8	863.9	863.9	863.9
145°	894.9	895.1	895.3	895.5	896.0	896.3	896.7	897.0
147.5°	923.2	923.3	923.4	923.6	923.8	923.9	924.1	924.3
150°	941.2	941.2	941.2	941.3	941.5	941.6	941.8	942.0
152.5°	956.9	957.3	957.5	957.6	957.5	957.4	957.3	957.2
155°	978.2	978.9	979.6	979.7	979.1	978.6	978.1	977.5
157.5°	996.4	997.3	998.3	998.3	997.3	996.4	995.5	994.6
160°	1008.0	1009.2	1010.2	1010.2	1009.2	1008.0	1007.0	1005.9
162.5°	1017.5	1018.5	1019.7	1019.6	1018.3	1017.1	1016.0	1014.8
165°	1030.9	1032.3	1033.7	1033.6	1032.0	1030.5	1028.9	1027.2
167.5°	1040.7	1042.2	1043.7	1043.6	1041.9	1040.1	1038.3	1036.6
170°	1046.6	1048.0	1049.5	1049.2	1047.5	1045.8	1044.0	1042.3
172.5°	1050.5	1051.9	1053.3	1053.0	1051.2	1049.2	1047.3	1045.4
175°	1054.9	1056.5	1058.0	1057.8	1055.7	1053.6	1051.5	1049.4
177.5°	1056.7	1057.8	1058.9	1058.6	1056.9	1055.3	1053.6	1051.9
180°	1055.7	1055.7	1055.7	1055.7	1055.7	1055.7	1055.7	1055.7

(END OF REPORT)