

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: P333001-840

Luminaire Tested: **SA4XXRDIP-C1195D810U840-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P333001-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
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-F1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 810 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

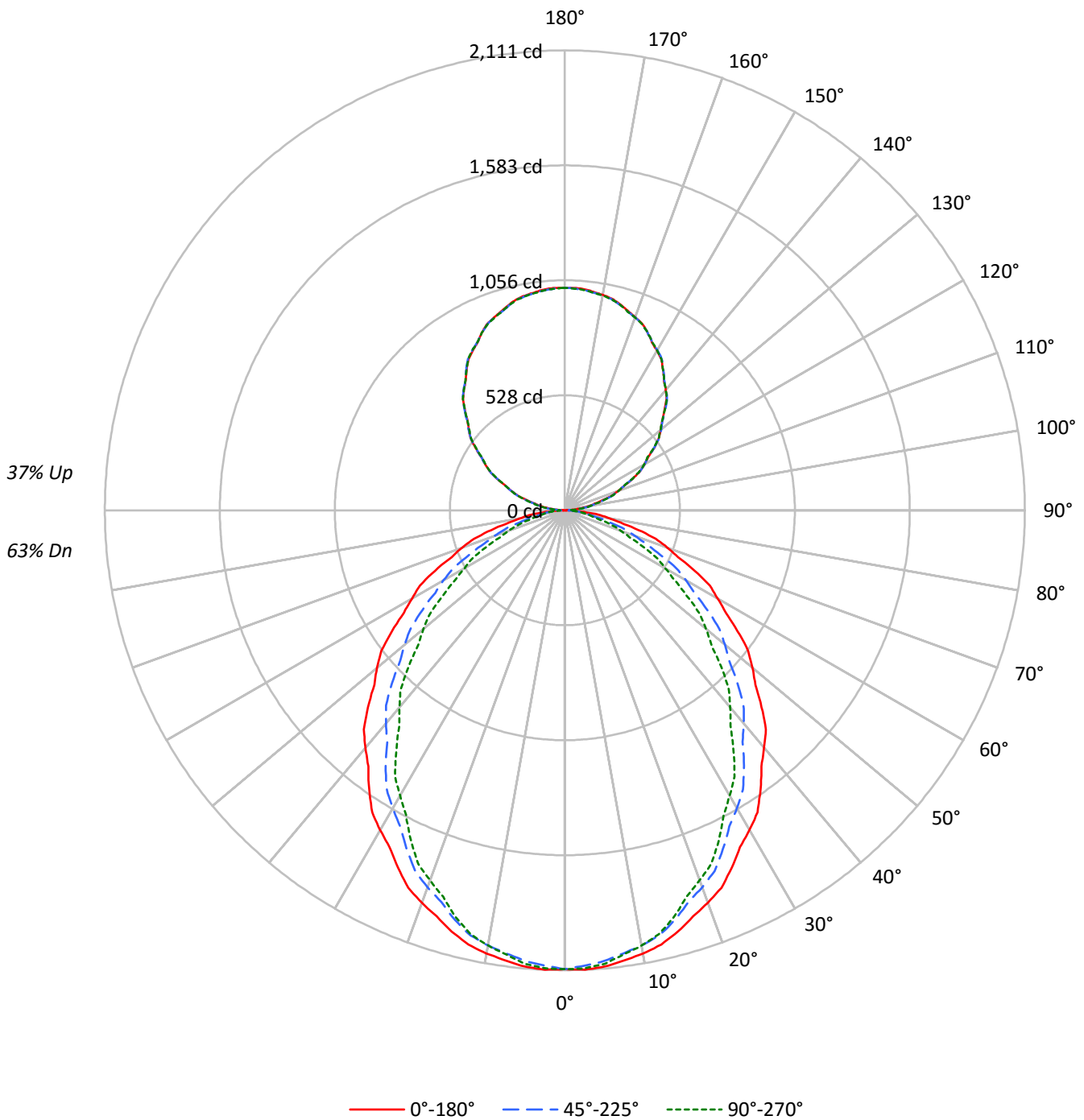
Lumens per Lamp: N/A
Luminaire Lumens: 7701.0 lumens
Efficiency: N/A
Efficacy: 126.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68	63				
1	101	97	93	90	95	91	88	85	80	78	75	70	68	67	61	60	58	54				
2	92	85	79	74	86	80	75	70	71	66	63	62	59	56	54	52	50	46				
3	84	75	68	62	79	71	64	59	63	57	53	55	51	48	48	45	43	39				
4	77	67	59	53	72	63	56	50	56	50	46	49	45	41	43	40	37	34				
5	71	60	51	45	67	56	49	43	50	44	40	44	40	36	39	35	32	30				
6	66	54	45	40	62	51	43	38	45	39	35	40	35	32	36	32	29	26				
7	61	49	41	35	57	46	39	34	41	35	31	37	32	28	33	29	26	23				
8	57	44	36	31	53	42	35	30	38	32	28	34	29	25	30	26	23	21				
9	53	41	33	28	50	39	32	27	35	29	25	31	26	23	28	24	21	19				
10	50	37	30	25	47	36	29	24	32	26	23	29	24	21	26	22	19	17				

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



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	197.8	2.6
10°-20°	551.7	7.2
20°-30°	796.6	10.3
30°-40°	903.0	11.7
40°-50°	872.0	11.3
50°-60°	725.1	9.4
60°-70°	500.7	6.5
70°-80°	253.8	3.3
80°-90°	68.2	0.9
90°-100°	67.3	0.9
100°-110°	199.5	2.6
110°-120°	338.5	4.4
120°-130°	446.4	5.8
130°-140°	501.3	6.5
140°-150°	492.6	6.4
150°-160°	414.3	5.4
160°-170°	275.7	3.6
170°-180°	96.5	1.3
0°-30°	1546.1	20.1
0°-40°	2449.1	31.8
0°-60°	4046.2	52.5
0°-90°	4868.8	63.2
90°-120°	605.4	7.9
90°-150°	2045.7	26.6
90°-180°	2832.0	36.8
0°-180°	7701.0	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	7
95°	47	54	60	62	62	53
105°	184	185	188	190	193	195
115°	344	344	343	342	341	339
125°	501	501	501	499	497	447
135°	647	651	651	650	647	500
145°	786	789	790	789	786	491
155°	900	900	899	902	899	414
165°	980	977	976	980	977	276
175°	1019	1015	1014	1020	1014	97
180°	1021	1021	1021	1021	1021	



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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°	16.9	19.1	21.3	23.5	25.8	27.4	28.3	29.3	30.3	31.3	31.9
95°	47.4	49.0	50.5	52.1	53.7	55.1	56.4	57.6	58.8	60.0	60.5
97.5°	82.7	84.0	85.2	86.5	87.8	89.2	90.6	92.0	93.4	94.9	95.5
100°	110.6	111.2	111.9	112.6	113.3	114.5	116.0	117.6	119.2	120.8	121.2
102.5°	139.6	139.9	140.2	140.5	140.7	141.6	143.0	144.4	145.9	147.3	147.8
105°	184.0	184.1	184.3	184.5	184.7	185.1	185.8	186.5	187.2	187.9	188.4
107.5°	230.6	230.8	231.0	231.2	231.4	231.6	231.7	231.8	231.9	232.0	232.5
110°	262.2	262.5	262.8	263.2	263.5	263.6	263.5	263.3	263.1	262.9	262.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	295.0	295.0	295.1	295.2	295.3	295.1	294.8	294.5	294.2	293.9	293.8
115°	344.3	344.3	344.3	344.3	344.3	344.1	343.7	343.4	343.0	342.6	342.4
117.5°	390.6	390.8	390.9	391.0	391.2	391.1	390.9	390.6	390.4	390.2	389.6
120°	421.6	422.3	423.0	423.7	424.4	424.4	423.9	423.4	422.9	422.4	421.5
122.5°	453.8	454.0	454.3	454.6	454.9	454.9	454.7	454.4	454.2	453.9	453.3
125°	501.3	501.3	501.3	501.3	501.3	501.2	501.1	500.9	500.7	500.6	500.2
127.5°	544.4	544.9	545.5	546.0	546.5	546.6	546.3	546.1	545.8	545.5	545.2
130°	574.7	575.3	575.8	576.3	576.8	577.1	577.1	577.1	577.1	577.1	576.7
132.5°	605.7	606.1	606.5	606.8	607.2	607.3	607.2	607.1	606.9	606.8	606.4
135°	646.6	647.6	648.7	649.7	650.9	651.4	651.4	651.4	651.4	651.4	651.0
137.5°	691.2	691.7	692.1	692.6	693.1	693.5	693.8	694.1	694.3	694.6	694.2
140°	720.8	721.1	721.5	721.9	722.3	722.4	722.4	722.4	722.4	722.4	722.3
142.5°	748.0	748.3	748.7	749.0	749.4	749.5	749.3	749.2	749.0	748.9	748.9
145°	785.6	786.3	787.0	787.7	788.4	788.8	789.0	789.1	789.3	789.5	789.3
147.5°	822.8	823.6	824.5	825.4	826.2	826.6	826.4	826.3	826.1	826.0	825.9
150°	845.6	846.3	847.0	847.7	848.4	848.7	848.7	848.7	848.7	848.7	848.7
152.5°	867.1	867.5	867.9	868.3	868.7	869.0	869.1	869.3	869.4	869.6	870.0
155°	900.0	900.0	900.0	900.0	900.0	899.9	899.8	899.6	899.4	899.3	899.9
157.5°	927.9	927.5	927.2	926.9	926.6	926.3	926.3	926.3	926.2	926.2	926.8
160°	944.2	944.0	943.9	943.7	943.5	943.3	943.2	943.0	942.8	942.7	943.2
162.5°	959.4	959.0	958.5	958.1	957.6	957.3	957.0	956.9	956.7	956.5	957.6
165°	979.8	979.3	978.8	978.2	977.7	977.2	976.8	976.5	976.1	975.8	976.8
167.5°	995.4	994.6	993.9	993.2	992.5	992.1	992.1	992.2	992.2	992.2	993.3
170°	1004.2	1003.4	1002.5	1001.6	1000.8	1000.4	1000.6	1000.8	1000.9	1001.1	1002.1
172.5°	1010.6	1009.9	1009.1	1008.4	1007.6	1007.2	1007.3	1007.3	1007.3	1007.4	1008.6
175°	1019.3	1018.3	1017.4	1016.6	1015.7	1015.2	1015.0	1014.8	1014.7	1014.5	1015.7
177.5°	1022.1	1021.4	1020.7	1020.0	1019.3	1019.0	1019.0	1019.0	1019.0	1019.0	1019.9
180°	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8



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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°	32.5	33.1	33.8	34.2	34.4	34.6	34.8	35.0
95°	61.1	61.6	62.1	62.4	62.4	62.4	62.4	62.4
97.5°	96.1	96.7	97.5	97.8	97.8	97.8	97.8	97.8
100°	121.5	121.9	122.2	122.4	122.4	122.4	122.4	122.4
102.5°	148.3	148.8	149.3	149.6	149.8	149.9	150.1	150.2
105°	188.9	189.5	190.0	190.6	191.1	191.6	192.1	192.7
107.5°	233.0	233.4	233.9	234.2	234.1	234.1	234.1	234.0
110°	262.2	261.9	261.5	261.6	262.2	262.7	263.2	263.7



TEST NUMBER: P333001-840

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	293.7	293.7	293.6	293.6	293.7	293.8	293.9	294.0
115°	342.2	342.1	341.9	341.7	341.6	341.4	341.2	341.0
117.5°	389.0	388.4	387.8	387.3	387.0	386.6	386.3	385.9
120°	420.6	419.7	418.9	418.6	419.0	419.3	419.7	420.0
122.5°	452.7	452.2	451.6	451.0	450.3	449.7	449.1	448.5
125°	499.9	499.5	499.2	498.8	498.5	498.1	497.8	497.4
127.5°	544.8	544.5	544.1	543.8	543.5	543.3	543.0	542.7
130°	576.4	576.0	575.7	575.2	574.5	573.8	573.1	572.4
132.5°	606.1	605.7	605.4	605.1	604.8	604.5	604.2	604.0
135°	650.7	650.3	649.9	649.4	648.9	648.4	647.9	647.4
137.5°	693.7	693.3	692.8	692.6	692.7	692.8	692.9	693.1
140°	722.1	721.9	721.6	721.5	721.3	721.1	720.9	720.8
142.5°	748.8	748.8	748.8	748.7	748.7	748.7	748.6	748.6
145°	789.1	789.0	788.8	788.4	787.9	787.4	786.9	786.4
147.5°	825.7	825.6	825.4	825.3	825.1	824.9	824.8	824.6
150°	848.7	848.7	848.7	848.6	848.5	848.3	848.1	847.9
152.5°	870.4	870.8	871.2	871.2	870.8	870.3	869.9	869.4
155°	900.6	901.3	902.0	902.0	901.3	900.6	899.9	899.3
157.5°	927.3	927.9	928.4	928.3	927.8	927.2	926.6	925.9
160°	943.7	944.2	944.7	944.6	943.7	942.8	942.0	941.1
162.5°	958.5	959.4	960.4	960.4	959.5	958.7	957.8	956.8
165°	978.0	979.0	980.1	980.2	979.5	978.8	978.1	977.4
167.5°	994.3	995.4	996.4	996.4	995.3	994.2	993.2	992.1
170°	1003.2	1004.2	1005.3	1005.2	1004.0	1002.8	1001.5	1000.3
172.5°	1009.8	1011.0	1012.2	1012.2	1011.0	1009.7	1008.5	1007.2
175°	1016.9	1018.1	1019.5	1019.5	1018.1	1016.9	1015.7	1014.5
177.5°	1020.9	1021.9	1022.9	1022.8	1021.7	1020.6	1019.5	1018.2
180°	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8

(END OF REPORT)