

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: P333101-830

Luminaire Tested: **S124RDIW-S1195D770U830-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333101-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDIW-S1195D770U830-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 770 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7437.6 lumens
Efficiency: N/A
Efficacy: 124.4 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

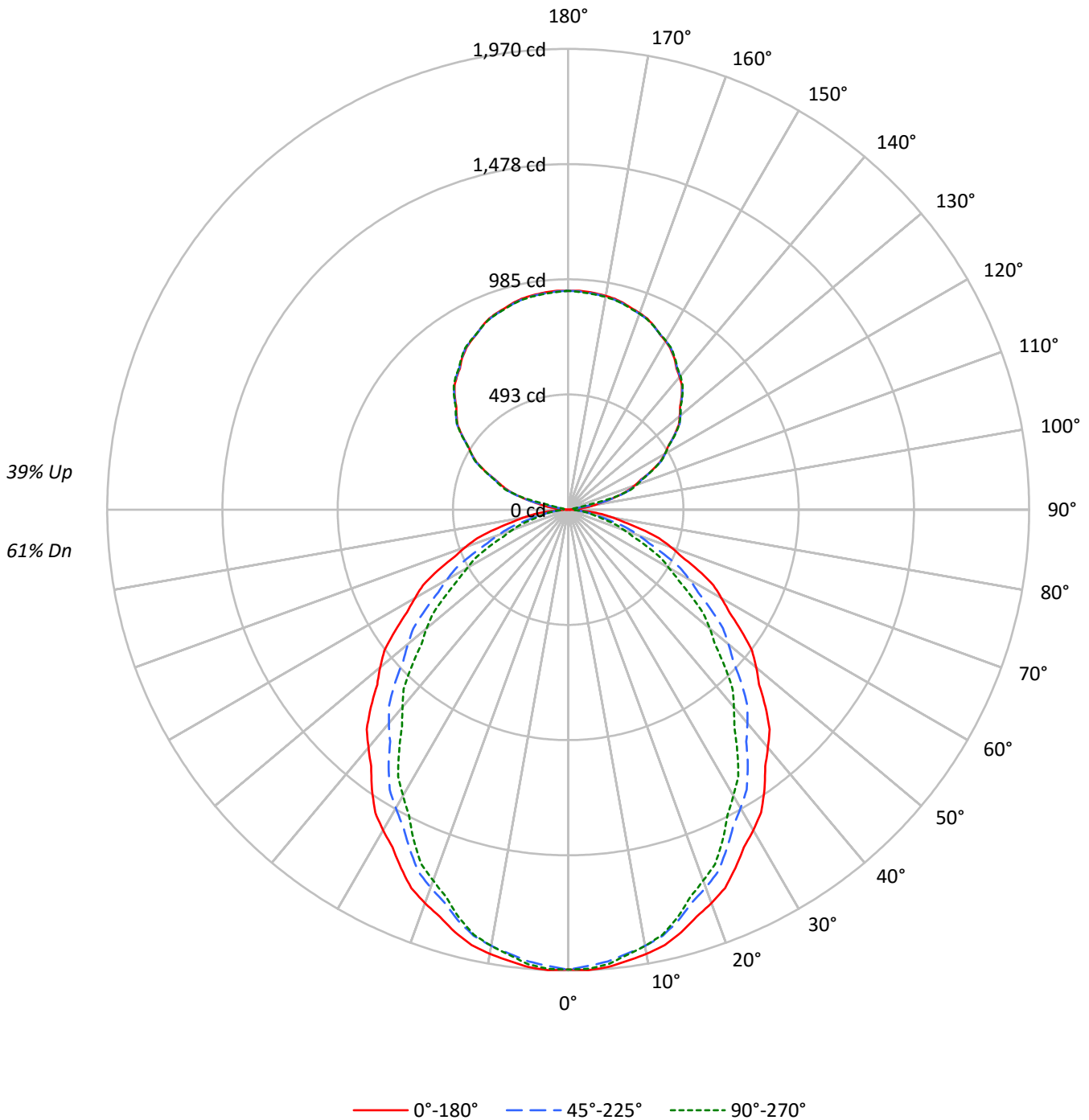
Input Watts (W): 59.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66	61
1	101	96	93	89	94	90	87	84	79	77	74	69	67	65	59	58	57	52
2	92	85	78	73	86	79	74	69	70	66	62	61	58	55	52	50	48	44
3	84	75	67	61	78	70	64	58	62	57	53	54	50	47	47	44	41	38
4	77	66	58	52	72	62	55	50	55	49	45	48	44	40	42	39	36	33
5	71	59	51	45	66	56	49	43	49	44	39	44	39	35	38	34	31	29
6	65	53	45	39	61	50	43	38	45	39	34	39	35	31	35	31	28	25
7	61	48	40	35	57	46	38	33	41	35	30	36	31	28	32	28	25	22
8	56	44	36	31	53	42	35	30	37	31	27	33	28	25	29	25	22	20
9	53	40	33	28	49	38	31	27	34	28	24	30	26	22	27	23	20	18
10	49	37	30	25	46	35	28	24	32	26	22	28	24	20	25	21	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	15868	15868	15868
5°	15904	15709	15807
10°	15805	15521	15521
15°	15623	15195	15082
20°	15374	14766	14495
25°	15055	14264	13903
30°	14746	13736	13160
35°	14402	13186	12415
40°	13990	12562	11610
45°	13609	11942	10791
50°	13175	11228	9923
55°	12711	10486	8981
60°	12198	9671	8018
65°	11731	8653	7072
70°	11049	7532	6005
75°	10187	6245	4885
80°	8884	4761	4477
85°	7521	4326	4039



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.6	2.5
10°-20°	514.9	6.9
20°-30°	743.5	10.0
30°-40°	842.8	11.3
40°-50°	813.8	10.9
50°-60°	676.7	9.1
60°-70°	467.3	6.3
70°-80°	236.9	3.2
80°-90°	63.5	0.9
90°-100°	32.0	0.4
100°-110°	204.0	2.7
110°-120°	390.2	5.2
120°-130°	495.4	6.7
130°-140°	530.0	7.1
140°-150°	495.6	6.7
150°-160°	399.7	5.4
160°-170°	257.8	3.5
170°-180°	88.8	1.2
0°-30°	1443.1	19.4
0°-40°	2285.8	30.7
0°-60°	3776.4	50.8
0°-90°	4544.1	61.1
90°-120°	626.2	8.4
90°-150°	2147.2	28.9
90°-180°	2894.0	38.9
0°-180°	7437.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1966	1966	1966	1966	1966	
5°	1963	1956	1938	1953	1951	186
15°	1869	1854	1818	1815	1805	526
25°	1690	1661	1601	1576	1561	778
35°	1461	1412	1338	1288	1260	913
45°	1192	1134	1046	975	945	919
55°	903	841	745	669	638	807
65°	614	548	453	391	370	606
75°	327	270	200	167	157	345
85°	81	53	47	44	44	91
90°	2	10	15	19	21	6
95°	38	16	15	19	20	49
105°	211	215	218	223	199	220
115°	393	395	394	396	396	387
125°	553	555	554	556	557	493
135°	686	685	688	689	690	528
145°	791	793	793	793	795	494
155°	867	867	865	868	866	400
165°	914	911	911	916	910	258
175°	935	932	932	937	930	89
180°	935	935	935	935	935	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6
2.5°	1970.4	1969.3	1968.3	1967.2	1966.1	1964.2	1961.2	1958.2	1955.3	1952.4	1955.3
5°	1962.6	1961.2	1959.9	1958.6	1957.3	1954.6	1950.6	1946.5	1942.6	1938.5	1941.8
7.5°	1944.8	1943.4	1942.0	1940.6	1939.2	1935.9	1930.7	1925.5	1920.2	1915.1	1917.2
10°	1928.0	1926.3	1924.7	1923.0	1921.3	1917.4	1911.5	1905.4	1899.4	1893.4	1894.7
12.5°	1906.3	1904.4	1902.4	1900.4	1898.6	1894.0	1887.0	1879.9	1872.7	1865.7	1866.5
15°	1869.3	1866.2	1863.3	1860.3	1857.3	1851.5	1843.2	1834.8	1826.5	1818.1	1817.4
17.5°	1824.5	1820.0	1815.7	1811.4	1807.0	1799.9	1789.8	1779.8	1769.7	1759.7	1757.8
20°	1789.5	1785.2	1780.8	1776.5	1772.2	1764.3	1752.9	1741.5	1730.1	1718.8	1716.1
22.5°	1751.0	1746.2	1741.3	1736.4	1731.5	1723.0	1710.7	1698.6	1686.4	1674.2	1670.2
25°	1690.2	1684.1	1678.1	1672.2	1666.1	1656.2	1642.6	1628.8	1615.1	1601.4	1595.7
27.5°	1626.4	1618.8	1611.3	1603.7	1596.1	1585.1	1570.4	1555.8	1541.1	1526.4	1519.4
30°	1581.9	1573.5	1565.1	1556.7	1548.4	1536.3	1520.6	1504.9	1489.2	1473.5	1465.1
32.5°	1534.8	1525.4	1516.0	1506.6	1497.1	1484.3	1468.0	1451.8	1435.5	1419.3	1409.6
35°	1461.4	1450.7	1440.0	1429.3	1418.6	1404.9	1388.2	1371.5	1354.7	1338.0	1326.6
37.5°	1382.9	1371.8	1360.7	1349.7	1338.7	1323.9	1305.4	1286.9	1268.4	1249.8	1237.1
40°	1327.5	1316.4	1305.4	1294.4	1283.3	1268.3	1249.2	1230.1	1211.1	1192.0	1178.0
42.5°	1274.5	1262.9	1251.3	1239.7	1228.2	1212.5	1192.6	1172.7	1152.9	1133.0	1118.7
45°	1192.0	1179.6	1167.2	1154.9	1142.6	1126.2	1106.3	1086.2	1066.1	1046.0	1029.6
47.5°	1106.8	1094.0	1081.3	1068.5	1055.7	1038.9	1018.0	997.1	976.3	955.5	938.4
50°	1049.0	1035.9	1022.9	1009.9	996.8	979.6	958.2	936.8	915.4	894.0	877.3
52.5°	990.0	977.2	964.5	951.7	939.0	921.5	899.7	877.7	855.7	833.8	816.8
55°	903.1	889.7	876.3	862.9	849.5	832.0	810.2	788.5	766.8	745.0	727.6
57.5°	816.9	803.0	789.1	775.2	761.3	743.7	722.3	700.8	679.4	658.0	640.4
60°	755.5	742.2	728.8	715.4	702.0	684.7	663.3	641.9	620.4	599.0	581.6
62.5°	700.1	686.3	672.3	658.5	644.5	626.6	604.6	582.7	560.7	538.9	522.7
65°	614.1	599.6	585.3	570.9	556.6	538.7	517.3	495.9	474.5	453.0	438.7
67.5°	524.6	510.9	497.1	483.3	469.6	452.7	432.8	413.0	393.1	373.2	360.9
70°	468.1	454.0	440.0	425.9	411.9	395.3	376.3	357.2	338.2	319.1	308.0
72.5°	407.8	395.2	382.5	369.8	357.0	341.7	323.7	305.7	287.7	269.7	260.2
75°	326.6	314.2	301.8	289.5	277.1	263.1	247.3	231.6	215.9	200.2	192.5
77.5°	244.1	233.7	223.1	212.6	202.1	190.5	177.8	165.1	152.4	139.7	135.2
80°	191.1	181.4	171.7	162.0	152.3	142.5	132.4	122.4	112.4	102.4	101.3
82.5°	145.4	136.5	127.6	118.7	109.8	102.5	96.7	91.0	85.2	79.5	78.7
85°	81.2	74.6	67.9	61.2	54.5	50.7	49.7	48.6	47.7	46.7	46.0
87.5°	28.1	26.3	24.5	22.7	20.9	20.0	20.0	20.0	20.0	20.0	19.9
90°	2.1	3.8	5.6	7.3	9.0	10.5	11.7	12.9	14.1	15.4	16.3
92.5°	8.9	9.0	9.0	9.0	9.1	9.9	11.1	12.3	13.6	14.8	15.7
95°	38.5	33.2	27.9	22.6	17.3	14.8	14.9	15.1	15.3	15.4	16.3
97.5°	81.7	85.0	88.3	91.6	94.9	87.8	70.5	53.2	35.8	18.5	18.6
100°	114.7	117.5	120.4	123.1	125.9	116.6	95.2	73.7	52.2	30.8	28.2
102.5°	151.7	153.7	155.8	157.9	159.9	159.5	156.7	153.9	151.1	148.4	119.8
105°	210.6	211.5	212.4	213.4	214.3	215.2	215.9	216.7	217.5	218.3	219.7
107.5°	265.3	265.8	266.3	266.7	267.2	268.0	269.0	270.0	271.1	272.1	272.9
110°	302.3	302.7	303.2	303.7	304.1	304.8	305.8	306.7	307.6	308.5	308.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	338.1	338.9	339.8	340.5	341.4	342.0	342.5	342.9	343.4	343.8	343.7
115°	393.2	393.7	394.2	394.5	395.0	395.2	395.0	394.9	394.7	394.5	394.9
117.5°	442.9	443.5	444.1	444.7	445.4	445.8	446.2	446.5	446.9	447.2	447.1
120°	476.5	477.1	477.7	478.3	478.9	479.2	479.0	478.9	478.7	478.5	478.9
122.5°	507.8	508.1	508.5	508.9	509.3	509.5	509.8	510.0	510.2	510.5	510.7
125°	552.7	553.4	553.9	554.6	555.2	555.3	555.1	554.8	554.4	554.1	554.6
127.5°	595.2	595.4	595.6	595.7	595.9	596.3	597.0	597.8	598.4	599.2	599.1
130°	622.6	622.8	623.0	623.1	623.3	623.6	624.1	624.5	625.0	625.5	625.7
132.5°	647.9	648.2	648.5	648.7	648.9	649.4	650.0	650.6	651.2	651.8	652.0
135°	685.6	685.5	685.3	685.1	685.0	685.2	685.9	686.5	687.1	687.8	688.1
137.5°	719.1	719.2	719.3	719.3	719.3	719.7	720.4	721.0	721.8	722.5	722.7
140°	740.9	741.2	741.5	741.9	742.2	742.4	742.8	743.1	743.4	743.8	744.1
142.5°	760.5	761.1	761.7	762.1	762.7	763.1	763.3	763.5	763.6	763.8	764.2
145°	790.6	791.1	791.5	792.0	792.5	792.7	792.7	792.7	792.7	792.7	792.9
147.5°	814.5	815.4	816.2	817.1	818.0	818.3	818.2	818.0	817.8	817.7	817.8
150°	831.9	832.5	833.1	833.8	834.3	834.6	834.4	834.2	834.2	834.0	834.0
152.5°	846.4	846.9	847.4	847.9	848.4	848.5	848.2	848.0	847.7	847.4	847.6
155°	866.9	867.0	867.1	867.3	867.5	867.3	866.9	866.4	865.9	865.4	866.1
157.5°	884.1	884.0	883.9	883.8	883.7	883.4	882.9	882.3	881.7	881.3	882.0
160°	894.1	893.6	893.2	892.8	892.3	891.9	891.8	891.6	891.5	891.4	892.3
162.5°	903.1	902.5	901.9	901.4	900.7	900.3	900.2	900.0	899.8	899.8	900.7
165°	914.5	913.6	912.9	912.1	911.3	911.0	911.0	911.0	911.0	911.0	912.2
167.5°	923.4	922.6	921.8	921.0	920.1	919.7	919.6	919.5	919.5	919.4	920.7
170°	928.4	927.5	926.5	925.6	924.7	924.3	924.4	924.6	924.7	924.9	926.1
172.5°	931.8	930.9	929.9	929.0	928.0	927.7	927.8	927.9	928.1	928.3	929.5
175°	935.4	934.4	933.6	932.6	931.7	931.3	931.4	931.6	931.8	931.9	933.3
177.5°	937.1	936.2	935.4	934.4	933.6	933.3	933.6	933.8	934.1	934.2	935.3
180°	935.4	935.4	935.4	935.4	935.4	935.4	935.4	935.4	935.4	935.4	935.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6
2.5°	1958.2	1961.2	1964.2	1965.5	1965.2	1964.9	1964.6	1964.4
5°	1945.2	1948.5	1951.9	1953.2	1952.6	1951.9	1951.3	1950.6
7.5°	1919.3	1921.5	1923.6	1924.1	1923.1	1922.0	1920.9	1919.9
10°	1896.0	1897.3	1898.8	1898.8	1897.3	1896.0	1894.7	1893.4
12.5°	1867.3	1868.1	1868.9	1868.3	1866.5	1864.6	1862.7	1860.9
15°	1816.8	1816.1	1815.4	1813.9	1811.6	1809.2	1806.9	1804.6
17.5°	1756.0	1754.1	1752.2	1749.5	1746.0	1742.4	1738.9	1735.3
20°	1713.4	1710.7	1708.1	1704.6	1700.3	1695.9	1691.5	1687.2
22.5°	1666.2	1662.2	1658.2	1654.4	1650.9	1647.3	1643.8	1640.2
25°	1590.0	1584.3	1578.7	1574.1	1570.7	1567.4	1564.1	1560.8
27.5°	1512.4	1505.3	1498.4	1492.4	1487.6	1482.8	1478.0	1473.2
30°	1456.7	1448.4	1440.0	1433.1	1427.8	1422.5	1417.1	1411.7
32.5°	1399.9	1390.2	1380.4	1373.1	1368.0	1362.9	1357.8	1352.7
35°	1315.2	1303.9	1292.5	1283.8	1277.8	1271.8	1265.7	1259.7
37.5°	1224.4	1211.6	1199.0	1189.6	1183.6	1177.5	1171.6	1165.5
40°	1163.9	1149.9	1135.9	1125.8	1119.7	1113.7	1107.8	1101.7
42.5°	1104.4	1090.1	1075.7	1065.5	1059.1	1052.9	1046.6	1040.3
45°	1013.2	996.8	980.4	969.2	963.3	957.2	951.2	945.2
47.5°	921.4	904.5	887.5	875.6	869.0	862.4	855.7	849.1
50°	860.5	843.9	827.1	815.6	809.3	802.9	796.5	790.1
52.5°	799.8	782.9	765.8	754.0	747.4	740.8	734.1	727.5
55°	710.2	692.9	675.4	663.5	657.2	650.8	644.5	638.1
57.5°	622.7	605.0	587.4	576.2	571.4	566.5	561.7	556.9
60°	564.2	546.9	529.4	518.1	512.7	507.4	502.0	496.6
62.5°	506.7	490.7	474.6	464.4	460.1	455.9	451.6	447.3
65°	424.2	409.9	395.5	386.3	382.3	378.2	374.3	370.2
67.5°	348.6	336.1	323.8	315.4	310.9	306.5	302.1	297.7
70°	297.0	286.0	274.9	267.8	264.4	261.1	257.7	254.4
72.5°	250.8	241.4	232.0	225.7	222.6	219.6	216.5	213.4
75°	184.8	177.1	169.4	164.6	162.6	160.5	158.5	156.6
77.5°	130.7	126.2	121.8	119.2	118.6	118.0	117.4	116.8
80°	100.4	99.3	98.3	97.6	97.4	97.0	96.7	96.3
82.5°	78.0	77.3	76.5	76.0	75.7	75.3	75.0	74.6
85°	45.3	44.7	44.0	43.6	43.6	43.6	43.6	43.6
87.5°	19.8	19.7	19.6	19.7	20.1	20.4	20.7	21.0
90°	17.2	18.2	19.1	19.7	20.1	20.4	20.6	21.0
92.5°	16.7	17.6	18.6	19.0	19.1	19.2	19.2	19.3
95°	17.2	18.2	19.1	19.7	19.8	20.0	20.2	20.3
97.5°	18.7	18.8	18.9	18.9	19.1	19.3	19.4	19.6
100°	25.5	22.8	20.2	18.9	19.1	19.3	19.4	19.6
102.5°	91.3	62.8	34.3	20.0	20.1	20.1	20.1	20.2
105°	221.1	222.4	223.9	221.8	216.2	210.6	205.0	199.4
107.5°	273.5	274.2	274.9	275.5	276.2	276.7	277.3	277.9
110°	309.2	309.4	309.8	310.2	310.7	311.1	311.6	312.1



TEST NUMBER: P333101-830

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	343.7	343.7	343.6	343.8	344.4	345.0	345.6	346.2
115°	395.2	395.5	395.9	396.0	396.0	396.0	396.0	396.0
117.5°	447.0	447.0	447.0	446.9	446.9	446.8	446.7	446.7
120°	479.2	479.5	479.8	479.8	479.5	479.2	478.9	478.5
122.5°	510.9	511.0	511.2	511.1	510.9	510.5	510.2	509.9
125°	555.1	555.5	556.0	556.3	556.5	556.6	556.8	556.9
127.5°	599.0	598.9	598.8	598.7	598.6	598.4	598.3	598.2
130°	625.8	625.9	626.1	626.1	626.1	626.1	626.1	626.1
132.5°	652.1	652.2	652.4	652.4	652.3	652.1	652.1	652.0
135°	688.3	688.7	689.0	689.3	689.6	689.9	690.2	690.5
137.5°	723.1	723.5	723.8	724.0	723.9	723.8	723.7	723.6
140°	744.6	745.1	745.6	745.9	746.0	746.2	746.4	746.5
142.5°	764.6	764.9	765.3	765.4	765.4	765.4	765.5	765.5
145°	793.0	793.1	793.3	793.5	793.8	794.2	794.5	794.8
147.5°	817.9	818.1	818.2	818.4	818.5	818.7	818.9	819.0
150°	834.0	834.0	834.0	834.1	834.2	834.3	834.5	834.6
152.5°	847.9	848.1	848.4	848.5	848.4	848.3	848.2	848.1
155°	866.7	867.3	867.9	868.0	867.5	867.0	866.6	866.2
157.5°	882.9	883.7	884.5	884.5	883.7	882.9	882.0	881.3
160°	893.2	894.1	895.0	895.0	894.1	893.2	892.3	891.4
162.5°	901.6	902.5	903.4	903.4	902.4	901.3	900.2	899.2
165°	913.4	914.6	915.9	915.9	914.5	913.0	911.6	910.2
167.5°	922.1	923.4	924.8	924.7	923.1	921.6	920.0	918.5
170°	927.4	928.7	929.9	929.7	928.2	926.6	925.1	923.5
172.5°	930.8	932.0	933.2	933.0	931.3	929.7	928.0	926.3
175°	934.7	936.1	937.5	937.3	935.4	933.6	931.7	929.8
177.5°	936.3	937.3	938.3	938.0	936.5	935.0	933.6	932.1
180°	935.4	935.4	935.4	935.4	935.4	935.4	935.4	935.4

(END OF REPORT)