

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: P333101-935

Luminaire Tested: **S124RDIW-S1195D770U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333101-935
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-S1195D770U935-4F0-1E-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: 6794.2 lumens
Efficiency: N/A
Efficacy: 113.6 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

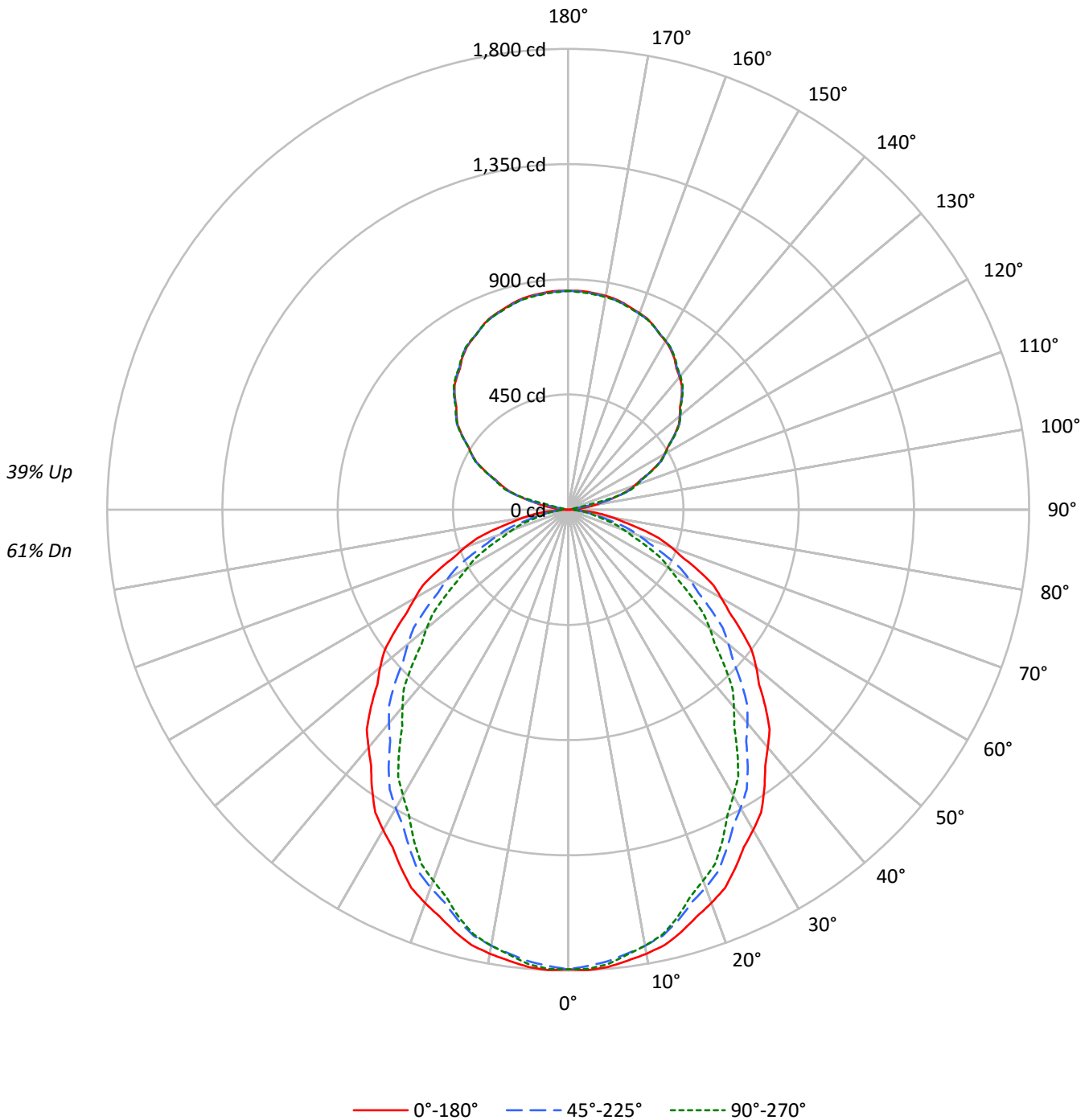
Input Watts (W): 59.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	14495	14495	14495
5°	14528	14350	14439
10°	14437	14178	14178
15°	14271	13881	13778
20°	14044	13489	13241
25°	13752	13030	12699
30°	13470	12547	12021
35°	13157	12046	11340
40°	12779	11475	10606
45°	12432	10909	9857
50°	12036	10257	9065
55°	11610	9578	8204
60°	11144	8835	7325
65°	10714	7904	6460
70°	10093	6878	5486
75°	9304	5705	4460
80°	8117	4347	4091
85°	6873	3946	3696



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	168.7	2.5
10°-20°	470.4	6.9
20°-30°	679.2	10.0
30°-40°	769.9	11.3
40°-50°	743.4	10.9
50°-60°	618.2	9.1
60°-70°	426.9	6.3
70°-80°	216.4	3.2
80°-90°	58.0	0.9
90°-100°	29.2	0.4
100°-110°	186.3	2.7
110°-120°	356.5	5.2
120°-130°	452.5	6.7
130°-140°	484.2	7.1
140°-150°	452.7	6.7
150°-160°	365.1	5.4
160°-170°	235.5	3.5
170°-180°	81.2	1.2
0°-30°	1318.2	19.4
0°-40°	2088.1	30.7
0°-60°	3449.7	50.8
0°-90°	4151.0	61.1
90°-120°	572.0	8.4
90°-150°	1961.4	28.9
90°-180°	2643.0	38.9
0°-180°	6794.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1796	1796	1796	1796	1796	
5°	1793	1787	1771	1784	1782	170
15°	1708	1694	1661	1658	1648	481
25°	1544	1517	1463	1440	1426	711
35°	1335	1290	1222	1177	1151	834
45°	1089	1036	956	890	863	839
55°	825	768	680	612	583	738
65°	561	500	414	357	338	554
75°	298	247	183	152	143	315
85°	74	48	43	40	40	84
90°	2	9	14	18	19	5
95°	35	15	14	18	18	45
105°	192	196	199	204	182	201
115°	359	361	360	362	362	353
125°	505	507	506	508	509	451
135°	626	626	628	630	631	482
145°	722	724	724	725	726	451
155°	792	792	791	793	791	365
165°	835	832	832	837	832	236
175°	854	851	851	856	849	81
180°	854	854	854	854	854	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5
2.5°	1799.9	1799.0	1798.0	1797.0	1796.0	1794.2	1791.6	1788.8	1786.1	1783.5	1786.1
5°	1792.8	1791.6	1790.4	1789.2	1788.0	1785.5	1781.8	1778.1	1774.5	1770.8	1773.8
7.5°	1776.6	1775.3	1774.0	1772.7	1771.4	1768.4	1763.7	1758.9	1754.1	1749.4	1751.4
10°	1761.2	1759.6	1758.2	1756.6	1755.1	1751.5	1746.1	1740.6	1735.1	1729.6	1730.8
12.5°	1741.4	1739.7	1737.8	1736.0	1734.3	1730.2	1723.7	1717.3	1710.7	1704.3	1705.0
15°	1707.5	1704.8	1702.1	1699.4	1696.6	1691.3	1683.8	1676.1	1668.4	1660.8	1660.2
17.5°	1666.6	1662.6	1658.6	1654.7	1650.7	1644.2	1635.0	1625.8	1616.6	1607.5	1605.8
20°	1634.7	1630.7	1626.8	1622.8	1618.9	1611.6	1601.3	1590.9	1580.5	1570.1	1567.6
22.5°	1599.5	1595.1	1590.6	1586.1	1581.7	1573.9	1562.7	1551.6	1540.5	1529.4	1525.7
25°	1543.9	1538.4	1532.9	1527.5	1522.0	1512.9	1500.5	1487.9	1475.4	1462.8	1457.7
27.5°	1485.7	1478.8	1471.9	1465.0	1458.0	1447.9	1434.5	1421.2	1407.7	1394.4	1387.9
30°	1445.0	1437.4	1429.7	1422.0	1414.5	1403.4	1389.1	1374.7	1360.4	1346.0	1338.3
32.5°	1402.1	1393.4	1384.8	1376.2	1367.6	1355.9	1341.0	1326.2	1311.3	1296.5	1287.6
35°	1335.0	1325.2	1315.4	1305.6	1295.9	1283.3	1268.1	1252.8	1237.5	1222.3	1211.9
37.5°	1263.3	1253.1	1243.0	1233.0	1222.9	1209.4	1192.5	1175.5	1158.6	1141.7	1130.1
40°	1212.6	1202.6	1192.5	1182.4	1172.3	1158.6	1141.2	1123.7	1106.3	1088.9	1076.1
42.5°	1164.2	1153.7	1143.1	1132.5	1122.0	1107.6	1089.4	1071.3	1053.2	1035.0	1021.9
45°	1088.9	1077.5	1066.3	1055.0	1043.7	1028.8	1010.6	992.2	973.9	955.5	940.6
47.5°	1011.1	999.4	987.7	976.0	964.4	949.0	930.0	910.9	891.8	872.8	857.2
50°	958.3	946.3	934.4	922.6	910.6	894.8	875.3	855.7	836.2	816.7	801.4
52.5°	904.4	892.7	881.1	869.4	857.7	841.8	821.8	801.8	781.7	761.6	746.1
55°	824.9	812.7	800.5	788.2	776.0	760.0	740.1	720.3	700.4	680.5	664.7
57.5°	746.2	733.6	720.8	708.2	695.4	679.3	659.8	640.2	620.6	601.1	585.0
60°	690.2	678.0	665.7	653.5	641.3	625.4	605.9	586.3	566.7	547.2	531.3
62.5°	639.6	626.9	614.2	601.5	588.8	572.4	552.3	532.3	512.2	492.2	477.5
65°	560.9	547.8	534.7	521.5	508.4	492.1	472.5	453.0	433.4	413.8	400.7
67.5°	479.2	466.7	454.1	441.5	429.0	413.5	395.4	377.3	359.1	341.0	329.7
70°	427.6	414.7	401.9	389.1	376.3	361.1	343.7	326.3	308.9	291.4	281.4
72.5°	372.6	361.0	349.4	337.8	326.1	312.1	295.7	279.2	262.8	246.3	237.7
75°	298.3	287.1	275.7	264.4	253.1	240.3	225.9	211.5	197.3	182.9	175.8
77.5°	223.0	213.4	203.8	194.2	184.6	174.0	162.4	150.8	139.2	127.6	123.5
80°	174.6	165.7	156.9	148.0	139.1	130.2	121.0	111.8	102.6	93.5	92.6
82.5°	132.9	124.7	116.6	108.4	100.3	93.6	88.3	83.1	77.8	72.6	71.9
85°	74.2	68.1	62.0	55.9	49.8	46.3	45.4	44.4	43.6	42.6	42.0
87.5°	25.7	24.0	22.4	20.8	19.1	18.3	18.3	18.3	18.3	18.3	18.2
90°	1.9	3.4	5.1	6.6	8.2	9.6	10.7	11.8	12.9	14.0	14.9
92.5°	8.1	8.2	8.3	8.3	8.4	9.0	10.2	11.3	12.4	13.5	14.4
95°	35.1	30.3	25.5	20.7	15.8	13.5	13.6	13.8	13.9	14.0	14.9
97.5°	74.6	77.7	80.7	83.7	86.7	80.2	64.4	48.6	32.7	16.9	17.0
100°	104.8	107.4	109.9	112.4	115.0	106.5	87.0	67.3	47.7	28.2	25.7
102.5°	138.5	140.4	142.3	144.2	146.0	145.7	143.2	140.6	138.0	135.5	109.4
105°	192.3	193.2	194.1	194.9	195.8	196.6	197.3	197.9	198.7	199.4	200.7
107.5°	242.4	242.8	243.2	243.7	244.1	244.8	245.7	246.7	247.6	248.6	249.3
110°	276.1	276.6	277.0	277.4	277.8	278.4	279.3	280.2	281.0	281.8	282.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	308.8	309.6	310.4	311.1	311.9	312.5	312.9	313.2	313.7	314.1	314.0
115°	359.2	359.6	360.1	360.4	360.8	361.0	360.8	360.8	360.6	360.4	360.8
117.5°	404.6	405.1	405.7	406.2	406.8	407.3	407.6	407.9	408.2	408.5	408.5
120°	435.2	435.8	436.4	437.0	437.5	437.7	437.6	437.5	437.3	437.1	437.5
122.5°	463.9	464.2	464.5	464.9	465.2	465.5	465.7	465.9	466.1	466.3	466.5
125°	504.9	505.5	506.0	506.6	507.1	507.3	507.0	506.8	506.4	506.2	506.6
127.5°	543.7	543.9	544.1	544.2	544.3	544.8	545.4	546.0	546.6	547.3	547.3
130°	568.8	568.9	569.1	569.2	569.4	569.6	570.1	570.5	570.9	571.4	571.5
132.5°	591.9	592.1	592.4	592.5	592.8	593.2	593.7	594.3	594.9	595.4	595.6
135°	626.3	626.2	626.0	625.9	625.8	625.9	626.5	627.1	627.7	628.3	628.5
137.5°	656.9	656.9	657.0	657.0	657.1	657.5	658.1	658.7	659.4	660.0	660.2
140°	676.8	677.1	677.3	677.7	678.0	678.2	678.6	678.8	679.1	679.4	679.8
142.5°	694.7	695.3	695.8	696.2	696.7	697.1	697.2	697.4	697.6	697.8	698.1
145°	722.2	722.6	723.1	723.5	723.9	724.1	724.1	724.1	724.1	724.1	724.3
147.5°	744.1	744.9	745.6	746.4	747.3	747.5	747.4	747.3	747.1	747.0	747.1
150°	759.9	760.4	761.0	761.6	762.2	762.4	762.2	762.1	762.0	761.8	761.8
152.5°	773.2	773.6	774.1	774.6	775.0	775.1	774.8	774.6	774.4	774.1	774.3
155°	791.9	792.0	792.1	792.3	792.5	792.3	791.9	791.4	791.0	790.6	791.2
157.5°	807.6	807.5	807.4	807.4	807.3	806.9	806.5	806.0	805.5	805.0	805.7
160°	816.7	816.3	816.0	815.5	815.1	814.8	814.7	814.5	814.3	814.2	815.1
162.5°	824.9	824.4	823.9	823.4	822.8	822.4	822.3	822.2	822.0	821.9	822.8
165°	835.3	834.6	833.9	833.2	832.5	832.2	832.2	832.2	832.2	832.2	833.3
167.5°	843.5	842.7	842.1	841.3	840.5	840.2	840.1	840.0	839.9	839.8	841.0
170°	848.1	847.2	846.4	845.5	844.7	844.3	844.5	844.6	844.7	844.9	846.0
172.5°	851.2	850.3	849.5	848.6	847.7	847.4	847.6	847.7	847.8	848.0	849.1
175°	854.5	853.6	852.8	852.0	851.1	850.8	850.8	851.0	851.2	851.3	852.6
177.5°	856.0	855.2	854.5	853.6	852.8	852.6	852.8	853.0	853.3	853.4	854.4
180°	854.5	854.5	854.5	854.5	854.5	854.5	854.5	854.5	854.5	854.5	854.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5
2.5°	1788.8	1791.6	1794.2	1795.4	1795.2	1794.9	1794.7	1794.5
5°	1776.9	1779.9	1783.0	1784.3	1783.6	1783.0	1782.4	1781.8
7.5°	1753.3	1755.2	1757.2	1757.6	1756.7	1755.8	1754.7	1753.8
10°	1732.0	1733.2	1734.5	1734.5	1733.2	1732.0	1730.8	1729.6
12.5°	1705.7	1706.5	1707.2	1706.7	1705.0	1703.3	1701.6	1699.9
15°	1659.6	1659.0	1658.4	1657.0	1654.8	1652.7	1650.6	1648.5
17.5°	1604.0	1602.3	1600.6	1598.2	1594.9	1591.6	1588.5	1585.2
20°	1565.2	1562.7	1560.3	1557.1	1553.2	1549.2	1545.2	1541.2
22.5°	1522.1	1518.4	1514.8	1511.3	1508.0	1504.8	1501.6	1498.3
25°	1452.4	1447.3	1442.1	1438.0	1434.9	1431.8	1428.7	1425.7
27.5°	1381.6	1375.1	1368.7	1363.3	1358.9	1354.5	1350.1	1345.7
30°	1330.7	1323.1	1315.4	1309.2	1304.2	1299.4	1294.5	1289.6
32.5°	1278.8	1269.9	1261.0	1254.3	1249.7	1245.0	1240.4	1235.7
35°	1201.4	1191.1	1180.7	1172.8	1167.3	1161.7	1156.2	1150.7
37.5°	1118.4	1106.8	1095.3	1086.7	1081.2	1075.6	1070.2	1064.7
40°	1063.2	1050.4	1037.6	1028.4	1022.9	1017.4	1011.9	1006.4
42.5°	1008.8	995.7	982.7	973.3	967.5	961.8	956.1	950.3
45°	925.6	910.6	895.6	885.4	879.9	874.4	868.9	863.4
47.5°	841.7	826.2	810.7	799.9	793.8	787.8	781.7	775.7
50°	786.1	770.9	755.5	745.0	739.3	733.4	727.6	721.8
52.5°	730.6	715.1	699.6	688.8	682.8	676.7	670.6	664.6
55°	648.8	632.9	617.0	606.1	600.4	594.5	588.8	582.9
57.5°	568.9	552.7	536.6	526.3	521.9	517.5	513.1	508.7
60°	515.4	499.6	483.6	473.3	468.4	463.5	458.6	453.7
62.5°	462.9	448.2	433.5	424.2	420.3	416.5	412.5	408.6
65°	387.5	374.4	361.3	352.8	349.2	345.5	341.9	338.2
67.5°	318.4	307.0	295.8	288.1	284.0	280.0	276.0	271.9
70°	271.3	261.2	251.2	244.6	241.5	238.5	235.4	232.4
72.5°	229.1	220.5	211.9	206.2	203.4	200.6	197.8	194.9
75°	168.8	161.8	154.7	150.3	148.5	146.6	144.8	143.0
77.5°	119.4	115.3	111.2	108.9	108.3	107.8	107.3	106.7
80°	91.7	90.7	89.8	89.2	88.9	88.6	88.3	88.0
82.5°	71.3	70.6	69.9	69.4	69.1	68.8	68.5	68.2
85°	41.4	40.8	40.2	39.9	39.9	39.9	39.9	39.9
87.5°	18.1	18.0	17.9	18.0	18.3	18.6	18.9	19.2
90°	15.8	16.6	17.5	18.0	18.3	18.6	18.9	19.2
92.5°	15.2	16.1	17.0	17.4	17.5	17.6	17.6	17.7
95°	15.8	16.6	17.5	18.0	18.1	18.3	18.4	18.5
97.5°	17.0	17.1	17.2	17.3	17.5	17.7	17.7	17.9
100°	23.3	20.8	18.4	17.3	17.5	17.7	17.7	17.9
102.5°	83.4	57.3	31.3	18.3	18.3	18.3	18.3	18.4
105°	202.0	203.2	204.5	202.6	197.5	192.3	187.3	182.2
107.5°	249.9	250.5	251.2	251.7	252.3	252.8	253.3	253.8
110°	282.4	282.7	283.0	283.4	283.8	284.2	284.6	285.1



TEST NUMBER: P333101-935

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	313.9	313.9	313.8	314.1	314.6	315.1	315.7	316.2
115°	361.0	361.3	361.6	361.7	361.7	361.7	361.7	361.7
117.5°	408.4	408.4	408.3	408.2	408.2	408.1	408.0	408.0
120°	437.7	438.0	438.2	438.2	438.0	437.7	437.5	437.1
122.5°	466.7	466.8	467.0	466.9	466.7	466.3	466.1	465.8
125°	507.0	507.5	507.9	508.2	508.3	508.4	508.6	508.8
127.5°	547.2	547.1	547.0	546.9	546.8	546.6	546.6	546.5
130°	571.6	571.8	572.0	572.0	572.0	572.0	572.0	572.0
132.5°	595.6	595.8	596.0	596.0	595.9	595.7	595.6	595.6
135°	628.8	629.1	629.4	629.6	629.9	630.3	630.5	630.8
137.5°	660.6	660.9	661.2	661.3	661.2	661.2	661.1	661.0
140°	680.2	680.6	681.1	681.4	681.5	681.7	681.8	681.9
142.5°	698.4	698.7	699.0	699.2	699.2	699.2	699.3	699.3
145°	724.4	724.5	724.7	724.9	725.1	725.5	725.7	726.0
147.5°	747.2	747.3	747.4	747.6	747.7	747.9	748.0	748.1
150°	761.8	761.8	761.8	761.9	762.1	762.2	762.3	762.4
152.5°	774.6	774.7	775.0	775.1	775.0	774.9	774.8	774.7
155°	791.7	792.3	792.8	792.9	792.5	792.0	791.6	791.3
157.5°	806.5	807.3	808.0	808.0	807.3	806.5	805.7	805.0
160°	816.0	816.7	817.6	817.6	816.7	816.0	815.1	814.2
162.5°	823.6	824.4	825.3	825.3	824.3	823.3	822.3	821.4
165°	834.4	835.5	836.6	836.6	835.3	834.1	832.8	831.5
167.5°	842.3	843.5	844.8	844.7	843.3	841.9	840.4	839.0
170°	847.1	848.3	849.5	849.3	847.9	846.4	845.1	843.6
172.5°	850.2	851.4	852.5	852.3	850.8	849.3	847.7	846.2
175°	853.9	855.1	856.4	856.2	854.5	852.8	851.1	849.4
177.5°	855.3	856.2	857.1	856.9	855.5	854.1	852.8	851.4
180°	854.5	854.5	854.5	854.5	854.5	854.5	854.5	854.5

(END OF REPORT)