

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: P333097-935

Luminaire Tested: **S124RDIW-S1195D470U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333097-935  
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-S1195D470U935-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 470 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5763.8 lumens  
Efficiency: N/A  
Efficacy: 110.0 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: Semi-Direct

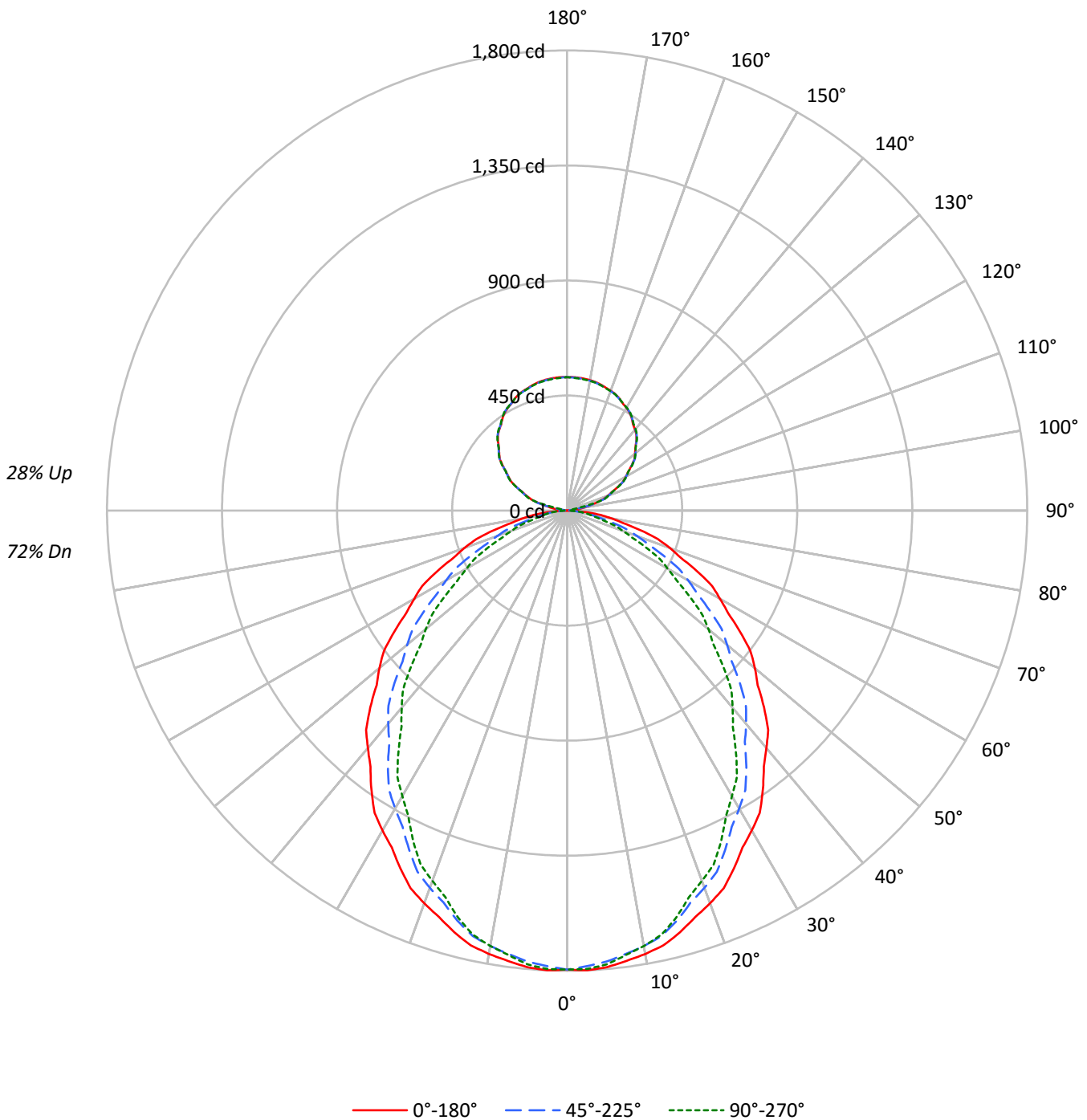
Input Watts (W): 52.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P333097-935

CATALOG NUMBER: S124RDIW-S1195D470U935-4F0-1E-UDD-F

### Luminous Intensity Polar Plot





TEST NUMBER: P333097-935

CATALOG NUMBER: S124RDIW-S1195D470U935-4F0-1E-UDD-F

**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	112	112	112	112	107	107	107	107	96	96	96	86	86	86	76	76	76	72
1	103	99	95	91	98	94	90	87	85	82	80	76	74	72	68	67	65	61
2	94	87	81	75	89	83	77	72	75	70	66	67	64	61	60	58	56	52
3	86	77	69	63	81	73	66	61	66	61	56	60	56	52	54	51	48	45
4	79	68	60	54	75	65	58	52	59	53	48	54	49	45	48	45	41	38
5	73	61	53	47	69	58	51	45	53	47	42	48	43	39	44	40	36	34
6	67	55	47	41	64	53	45	40	48	42	37	44	39	35	40	36	32	30
7	62	50	42	36	59	48	40	35	44	37	33	40	35	31	36	32	29	26
8	58	46	38	32	55	44	36	31	40	34	29	37	31	28	34	29	26	24
9	54	42	34	29	51	40	33	28	37	31	27	34	29	25	31	27	23	22
10	51	38	31	26	48	37	30	25	34	28	24	31	26	23	29	25	21	20

**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



TEST NUMBER: P333097-935

CATALOG NUMBER: S124RDIW-S1195D470U935-4F0-1E-UDD-F

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	168.7	2.9
10°-20°	470.4	8.2
20°-30°	679.2	11.8
30°-40°	769.9	13.4
40°-50°	743.4	12.9
50°-60°	618.2	10.7
60°-70°	426.9	7.4
70°-80°	216.4	3.8
80°-90°	57.0	1.0
90°-100°	17.8	0.3
100°-110°	113.8	2.0
110°-120°	217.6	3.8
120°-130°	276.3	4.8
130°-140°	295.6	5.1
140°-150°	276.4	4.8
150°-160°	222.9	3.9
160°-170°	143.8	2.5
170°-180°	49.6	0.9
0°-30°	1318.2	22.9
0°-40°	2088.1	36.2
0°-60°	3449.7	59.9
0°-90°	4150.0	72.0
90°-120°	349.2	6.1
90°-150°	1197.5	20.8
90°-180°	1614.0	28.0
0°-180°	5763.8	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°	1	5	9	11	12	5
95°	21	9	9	11	11	28
105°	117	120	122	124	111	123
115°	219	220	220	221	221	216
125°	308	310	309	310	311	275
135°	382	382	384	384	385	295
145°	441	442	442	443	443	275
155°	484	484	483	484	483	223
165°	510	508	508	511	508	144
175°	522	520	520	523	519	50
180°	522	522	522	522	522	



TEST NUMBER: P333097-935

CATALOG NUMBER: S124RDIW-S1195D470U935-4F0-1E-UDD-F

**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°	25.6	23.8	22.0	20.2	18.5	17.6	17.4	17.3	17.2	17.1	17.0
90°	1.2	2.2	3.1	4.0	5.0	5.8	6.5	7.2	7.9	8.6	9.1
92.5°	4.9	5.0	5.0	5.1	5.2	5.5	6.2	6.9	7.6	8.3	8.8
95°	21.4	18.5	15.6	12.7	9.6	8.3	8.4	8.4	8.5	8.6	9.1
97.5°	45.5	47.4	49.2	51.1	53.0	49.0	39.3	29.6	20.0	10.3	10.3
100°	64.0	65.5	67.2	68.7	70.3	65.0	53.0	41.1	29.1	17.1	15.7
102.5°	84.6	85.8	86.9	88.0	89.2	88.9	87.4	85.8	84.3	82.7	66.8
105°	117.4	118.0	118.5	119.0	119.5	120.0	120.5	120.9	121.3	121.7	122.5
107.5°	148.0	148.3	148.5	148.8	149.0	149.5	150.0	150.6	151.2	151.8	152.1
110°	168.6	168.8	169.1	169.4	169.6	170.0	170.5	171.1	171.6	172.1	172.3



TEST NUMBER: P333097-935

CATALOG NUMBER: S124RDIW-S1195D470U935-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	188.6	189.0	189.5	189.9	190.5	190.8	191.1	191.2	191.5	191.7	191.7
115°	219.3	219.6	219.8	220.1	220.3	220.4	220.3	220.2	220.2	220.1	220.2
117.5°	247.0	247.4	247.7	248.1	248.4	248.7	248.8	249.0	249.3	249.4	249.3
120°	265.7	266.0	266.4	266.7	267.1	267.3	267.2	267.1	267.0	266.9	267.1
122.5°	283.2	283.4	283.6	283.9	284.0	284.2	284.3	284.5	284.6	284.7	284.8
125°	308.2	308.6	308.9	309.3	309.6	309.7	309.5	309.4	309.2	309.0	309.3
127.5°	332.0	332.1	332.2	332.3	332.3	332.6	332.9	333.4	333.8	334.2	334.2
130°	347.2	347.3	347.5	347.6	347.7	347.8	348.1	348.4	348.6	348.9	349.0
132.5°	361.4	361.4	361.6	361.8	362.0	362.2	362.6	362.8	363.2	363.5	363.6
135°	382.4	382.3	382.2	382.1	382.0	382.2	382.5	382.9	383.2	383.6	383.7
137.5°	401.1	401.1	401.1	401.1	401.2	401.4	401.7	402.2	402.5	402.9	403.1
140°	413.2	413.4	413.5	413.7	413.9	414.1	414.2	414.5	414.7	414.8	415.1
142.5°	424.1	424.5	424.8	425.1	425.4	425.6	425.7	425.9	425.9	426.0	426.2
145°	440.9	441.2	441.4	441.7	442.0	442.1	442.1	442.1	442.1	442.1	442.2
147.5°	454.3	454.8	455.2	455.7	456.2	456.4	456.3	456.2	456.2	456.1	456.2
150°	464.0	464.3	464.7	465.0	465.4	465.5	465.4	465.3	465.2	465.1	465.1
152.5°	472.1	472.3	472.6	472.9	473.2	473.2	473.1	472.9	472.8	472.6	472.8
155°	483.5	483.5	483.6	483.7	483.8	483.7	483.5	483.2	482.9	482.7	483.0
157.5°	493.1	493.0	492.9	492.9	492.8	492.7	492.4	492.1	491.8	491.5	492.0
160°	498.7	498.4	498.2	497.9	497.7	497.5	497.4	497.3	497.2	497.1	497.7
162.5°	503.7	503.3	503.0	502.7	502.4	502.1	502.0	502.0	501.9	501.8	502.3
165°	510.0	509.5	509.1	508.7	508.2	508.1	508.1	508.1	508.1	508.1	508.8
167.5°	515.0	514.5	514.1	513.7	513.2	512.9	512.9	512.8	512.8	512.7	513.5
170°	517.8	517.3	516.8	516.3	515.7	515.5	515.6	515.7	515.7	515.8	516.5
172.5°	519.7	519.2	518.7	518.1	517.6	517.4	517.5	517.5	517.6	517.7	518.4
175°	521.7	521.2	520.6	520.1	519.6	519.4	519.5	519.6	519.7	519.8	520.6
177.5°	522.6	522.2	521.7	521.2	520.7	520.6	520.6	520.8	520.9	521.1	521.6
180°	521.7	521.7	521.7	521.7	521.7	521.7	521.7	521.7	521.7	521.7	521.7



TEST NUMBER: P333097-935

CATALOG NUMBER: S124RDIW-S1195D470U935-4F0-1E-UDD-F

**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°	16.9	16.7	16.5	16.6	16.9	17.2	17.5	17.7
90°	9.6	10.2	10.7	11.0	11.2	11.4	11.5	11.7
92.5°	9.3	9.8	10.3	10.6	10.7	10.7	10.8	10.8
95°	9.6	10.2	10.7	10.9	11.0	11.1	11.2	11.3
97.5°	10.4	10.4	10.5	10.6	10.7	10.8	10.8	10.9
100°	14.2	12.7	11.3	10.6	10.7	10.8	10.8	10.9
102.5°	50.9	35.0	19.1	11.2	11.2	11.2	11.2	11.3
105°	123.3	124.1	124.8	123.7	120.5	117.4	114.3	111.2
107.5°	152.6	152.9	153.3	153.7	154.0	154.3	154.6	155.0
110°	172.5	172.6	172.8	173.0	173.2	173.5	173.7	174.0





TEST NUMBER: P333097-935

CATALOG NUMBER: S124RDIW-S1195D470U935-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	191.7	191.7	191.6	191.7	192.1	192.4	192.8	193.0
115°	220.4	220.6	220.8	220.8	220.8	220.8	220.8	220.8
117.5°	249.3	249.3	249.3	249.3	249.2	249.2	249.2	249.1
120°	267.3	267.4	267.6	267.6	267.4	267.3	267.1	266.9
122.5°	284.9	285.0	285.1	285.1	284.9	284.7	284.6	284.4
125°	309.5	309.8	310.0	310.2	310.3	310.4	310.5	310.6
127.5°	334.1	334.0	334.0	333.9	333.8	333.7	333.7	333.6
130°	349.0	349.1	349.2	349.2	349.2	349.2	349.2	349.2
132.5°	363.7	363.8	363.9	363.9	363.8	363.8	363.7	363.6
135°	383.9	384.1	384.3	384.4	384.6	384.8	385.0	385.1
137.5°	403.3	403.5	403.7	403.7	403.7	403.6	403.6	403.6
140°	415.3	415.6	415.9	416.0	416.1	416.2	416.3	416.4
142.5°	426.4	426.6	426.8	426.9	426.9	427.0	427.0	427.0
145°	442.3	442.4	442.5	442.6	442.7	442.9	443.1	443.2
147.5°	456.2	456.2	456.3	456.4	456.5	456.6	456.7	456.8
150°	465.1	465.1	465.1	465.2	465.3	465.4	465.5	465.5
152.5°	472.9	473.0	473.2	473.2	473.2	473.1	473.0	473.0
155°	483.4	483.7	484.1	484.1	483.9	483.6	483.4	483.1
157.5°	492.4	492.8	493.3	493.3	492.8	492.4	492.0	491.5
160°	498.2	498.7	499.2	499.2	498.7	498.2	497.7	497.1
162.5°	502.8	503.3	503.9	503.9	503.3	502.7	502.0	501.5
165°	509.5	510.1	510.8	510.7	510.0	509.2	508.4	507.6
167.5°	514.3	515.1	515.8	515.7	514.9	514.0	513.2	512.3
170°	517.2	517.9	518.7	518.6	517.6	516.8	515.9	515.1
172.5°	519.1	519.8	520.5	520.4	519.4	518.5	517.5	516.6
175°	521.3	522.1	522.9	522.7	521.7	520.6	519.6	518.6
177.5°	522.2	522.7	523.3	523.1	522.4	521.5	520.6	519.9
180°	521.7	521.7	521.7	521.7	521.7	521.7	521.7	521.7

(END OF REPORT)