

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: P333098-935

Luminaire Tested: **S124RDIW-S1195D470U935-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333098-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,  
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-F1  
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, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5549.6 lumens  
Efficiency: N/A  
Efficacy: 105.9 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

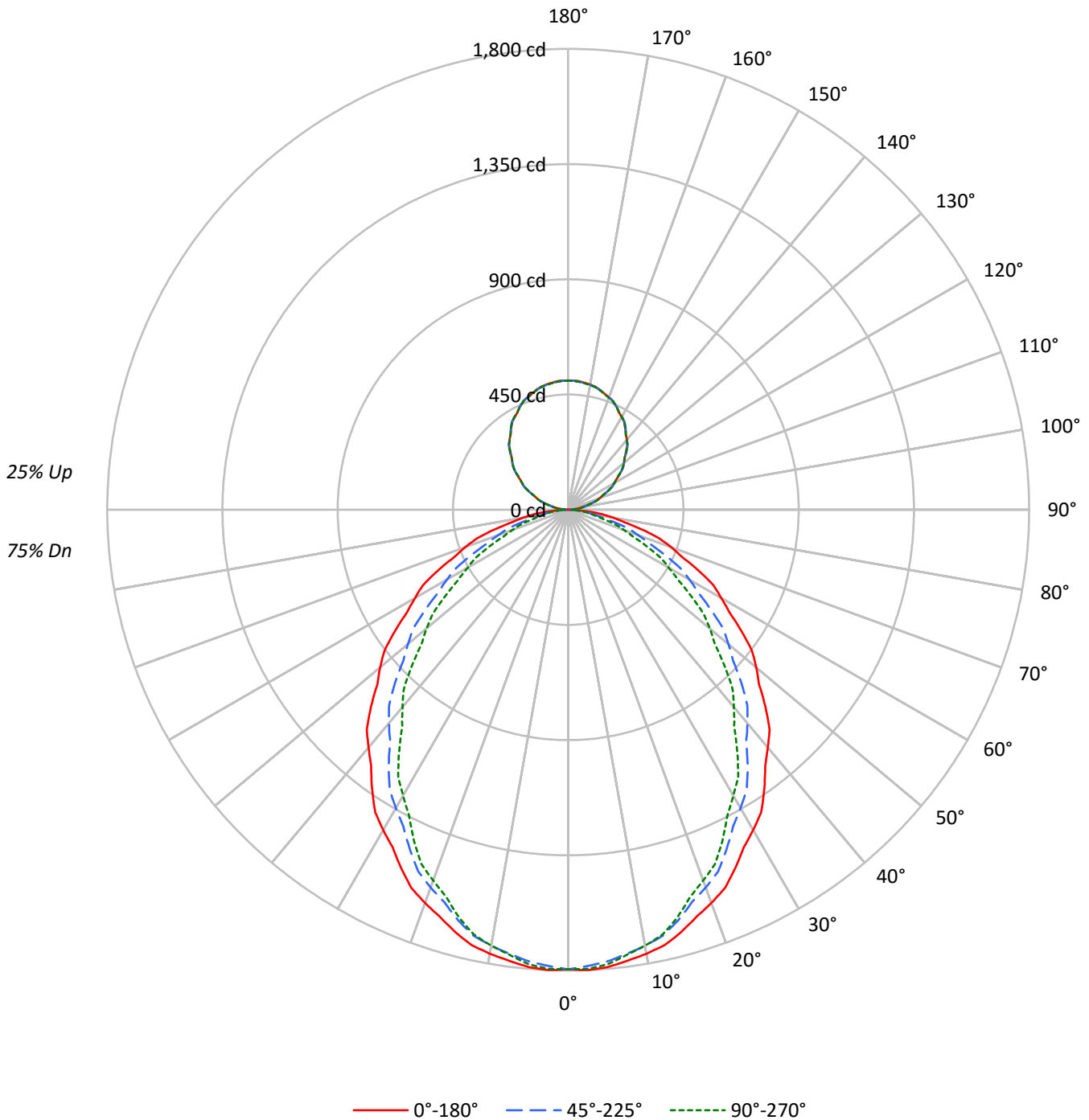
Input Watts (W): 52.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	113	113	113	113	107	107	107	107	97	97	97	88	88	88	79	79	79	75
1	104	99	96	92	99	95	91	88	86	83	81	78	76	74	70	69	68	64
2	95	87	81	76	90	83	78	73	76	71	68	69	65	62	62	60	57	54
3	87	77	70	64	82	74	67	62	67	62	57	61	57	53	56	52	49	46
4	80	69	61	54	76	66	58	53	60	54	49	55	50	46	50	46	43	40
5	73	61	53	47	70	59	51	46	54	48	43	49	44	40	45	41	38	35
6	68	55	47	41	64	53	46	40	49	43	38	45	40	35	41	37	33	31
7	63	50	42	36	60	48	41	35	45	38	34	41	36	32	38	33	30	27
8	59	46	38	33	56	44	37	32	41	35	30	38	32	28	35	30	27	25
9	55	42	34	29	52	41	33	29	38	31	27	35	29	26	32	28	24	22
10	51	39	31	26	49	37	31	26	35	29	25	32	27	23	30	25	22	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



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	168.7	3.0
10°-20°	470.4	8.5
20°-30°	679.2	12.2
30°-40°	769.9	13.9
40°-50°	743.4	13.4
50°-60°	618.2	11.1
60°-70°	426.9	7.7
70°-80°	216.4	3.9
80°-90°	57.0	1.0
90°-100°	33.3	0.6
100°-110°	98.6	1.8
110°-120°	167.3	3.0
120°-130°	220.6	4.0
130°-140°	247.7	4.5
140°-150°	243.4	4.4
150°-160°	204.8	3.7
160°-170°	136.2	2.5
170°-180°	47.7	0.9
0°-30°	1318.2	23.8
0°-40°	2088.1	37.6
0°-60°	3449.7	62.2
0°-90°	4150.0	74.8
90°-120°	299.1	5.4
90°-150°	1010.9	18.2
90°-180°	1400.0	25.2
0°-180°	5549.6	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°	23	27	30	31	31	26
105°	91	91	93	94	95	96
115°	170	170	169	169	169	168
125°	248	248	247	247	246	221
135°	320	322	322	321	320	247
145°	388	390	390	390	389	243
155°	445	445	444	446	444	205
165°	484	483	482	484	483	136
175°	504	502	501	504	501	48
180°	504	504	504	504	504	



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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°	25.6	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°	8.4	9.5	10.5	11.6	12.7	13.5	14.0	14.5	15.0	15.4	15.8
95°	23.4	24.2	25.0	25.7	26.5	27.2	27.8	28.4	29.0	29.6	29.9
97.5°	40.9	41.5	42.1	42.8	43.4	44.1	44.8	45.5	46.1	46.9	47.2
100°	54.6	54.9	55.3	55.6	56.1	56.6	57.3	58.1	58.9	59.7	59.8
102.5°	69.0	69.1	69.2	69.4	69.6	70.0	70.7	71.4	72.1	72.8	73.0
105°	90.9	91.0	91.1	91.2	91.3	91.4	91.8	92.1	92.5	92.8	93.1
107.5°	113.9	114.0	114.2	114.3	114.3	114.4	114.5	114.5	114.6	114.6	114.9
110°	129.5	129.7	129.8	130.0	130.2	130.3	130.2	130.1	130.0	129.9	129.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	145.8	145.8	145.9	145.9	145.9	145.9	145.7	145.5	145.3	145.3	145.2
115°	170.1	170.1	170.1	170.1	170.1	170.0	169.9	169.7	169.5	169.4	169.3
117.5°	193.0	193.1	193.2	193.3	193.3	193.3	193.2	193.0	193.0	192.8	192.5
120°	208.4	208.7	209.1	209.4	209.7	209.7	209.5	209.2	209.0	208.7	208.3
122.5°	224.3	224.4	224.5	224.6	224.8	224.8	224.7	224.5	224.5	224.4	224.0
125°	247.7	247.7	247.7	247.7	247.7	247.7	247.6	247.5	247.5	247.4	247.2
127.5°	269.1	269.3	269.6	269.8	270.1	270.2	270.0	269.8	269.8	269.6	269.4
130°	284.0	284.3	284.6	284.8	285.1	285.2	285.2	285.2	285.2	285.2	285.0
132.5°	299.3	299.5	299.7	299.9	300.1	300.1	300.1	300.0	300.0	299.9	299.7
135°	319.5	320.0	320.6	321.1	321.6	321.8	321.8	321.8	321.8	321.8	321.7
137.5°	341.6	341.8	342.0	342.2	342.5	342.7	342.9	343.0	343.1	343.3	343.0
140°	356.2	356.4	356.5	356.7	356.9	357.0	357.0	357.0	357.0	357.0	356.9
142.5°	369.6	369.8	370.0	370.1	370.3	370.4	370.3	370.2	370.1	370.1	370.1
145°	388.2	388.6	388.9	389.3	389.6	389.8	389.9	389.9	390.0	390.1	390.0
147.5°	406.7	407.0	407.4	407.9	408.3	408.5	408.4	408.3	408.3	408.2	408.1
150°	417.8	418.2	418.5	418.9	419.2	419.4	419.4	419.4	419.4	419.4	419.4
152.5°	428.4	428.7	428.9	429.1	429.3	429.5	429.5	429.6	429.6	429.7	429.9
155°	444.8	444.8	444.8	444.8	444.8	444.7	444.6	444.5	444.4	444.4	444.7
157.5°	458.5	458.3	458.2	458.1	457.9	457.8	457.8	457.8	457.7	457.7	458.0
160°	466.7	466.6	466.5	466.4	466.3	466.2	466.1	466.1	466.0	465.9	466.1
162.5°	474.2	473.9	473.6	473.5	473.2	473.0	472.9	472.9	472.8	472.7	473.2
165°	484.1	483.9	483.6	483.4	483.1	482.9	482.8	482.6	482.4	482.2	482.8
167.5°	491.9	491.5	491.2	490.9	490.4	490.3	490.3	490.3	490.3	490.3	490.9
170°	496.3	495.8	495.4	495.0	494.6	494.4	494.5	494.6	494.6	494.7	495.2
172.5°	499.4	499.0	498.7	498.3	497.9	497.7	497.7	497.8	497.8	497.8	498.4
175°	503.7	503.3	502.8	502.4	502.0	501.7	501.6	501.5	501.4	501.4	502.0
177.5°	505.1	504.7	504.4	504.0	503.7	503.5	503.5	503.5	503.5	503.5	504.0
180°	504.5	504.5	504.5	504.5	504.5	504.5	504.5	504.5	504.5	504.5	504.5



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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°	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°	16.1	16.4	16.7	16.9	17.0	17.1	17.2	17.3
95°	30.1	30.4	30.7	30.8	30.8	30.8	30.8	30.8
97.5°	47.5	47.9	48.1	48.3	48.3	48.3	48.3	48.3
100°	60.0	60.2	60.4	60.4	60.4	60.4	60.4	60.4
102.5°	73.3	73.5	73.8	74.0	74.0	74.0	74.1	74.2
105°	93.4	93.7	93.9	94.2	94.5	94.7	95.0	95.2
107.5°	115.1	115.4	115.6	115.7	115.7	115.7	115.6	115.6
110°	129.6	129.4	129.2	129.2	129.5	129.8	130.0	130.3





TEST NUMBER: P333098-935

CATALOG NUMBER: S124RDIW-S1195D470U935-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	145.2	145.1	145.1	145.1	145.2	145.2	145.3	145.3
115°	169.2	169.1	169.0	168.9	168.8	168.8	168.7	168.6
117.5°	192.3	191.9	191.7	191.4	191.2	191.1	190.9	190.7
120°	207.8	207.4	207.0	206.9	207.1	207.2	207.4	207.6
122.5°	223.8	223.4	223.2	222.8	222.6	222.2	221.9	221.6
125°	247.0	246.8	246.7	246.5	246.3	246.2	246.0	245.8
127.5°	269.2	269.1	268.9	268.7	268.6	268.5	268.4	268.2
130°	284.8	284.6	284.5	284.2	283.9	283.5	283.2	282.8
132.5°	299.5	299.4	299.2	299.0	298.9	298.8	298.6	298.5
135°	321.5	321.3	321.2	321.0	320.7	320.5	320.2	319.9
137.5°	342.8	342.6	342.3	342.2	342.3	342.3	342.4	342.5
140°	356.8	356.7	356.6	356.5	356.5	356.4	356.3	356.2
142.5°	370.1	370.1	370.1	370.0	370.0	370.0	370.0	370.0
145°	389.9	389.9	389.8	389.6	389.3	389.1	388.8	388.6
147.5°	408.0	407.9	407.9	407.9	407.8	407.7	407.6	407.5
150°	419.4	419.4	419.4	419.4	419.3	419.2	419.1	419.0
152.5°	430.2	430.3	430.6	430.5	430.3	430.1	429.9	429.6
155°	445.1	445.4	445.7	445.7	445.4	445.1	444.7	444.4
157.5°	458.2	458.5	458.7	458.7	458.5	458.1	457.9	457.5
160°	466.4	466.7	466.9	466.8	466.4	466.0	465.5	465.0
162.5°	473.6	474.2	474.6	474.6	474.2	473.7	473.3	472.9
165°	483.3	483.8	484.3	484.4	484.1	483.7	483.4	483.0
167.5°	491.4	491.9	492.4	492.4	491.9	491.4	490.8	490.3
170°	495.8	496.3	496.8	496.7	496.1	495.5	494.9	494.3
172.5°	499.0	499.6	500.2	500.2	499.6	498.9	498.3	497.7
175°	502.6	503.2	503.8	503.8	503.2	502.6	502.0	501.4
177.5°	504.5	505.0	505.5	505.4	504.9	504.4	503.8	503.3
180°	504.5	504.5	504.5	504.5	504.5	504.5	504.5	504.5

(END OF REPORT)