

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: P332468-840

Luminaire Tested: **S123RDIW-S1000D1535U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332468-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDIW-S1000D1535U840-4F0-1E-UDD-F  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1000 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1535 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10031.2 lumens  
Efficiency: N/A  
Efficacy: 131.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

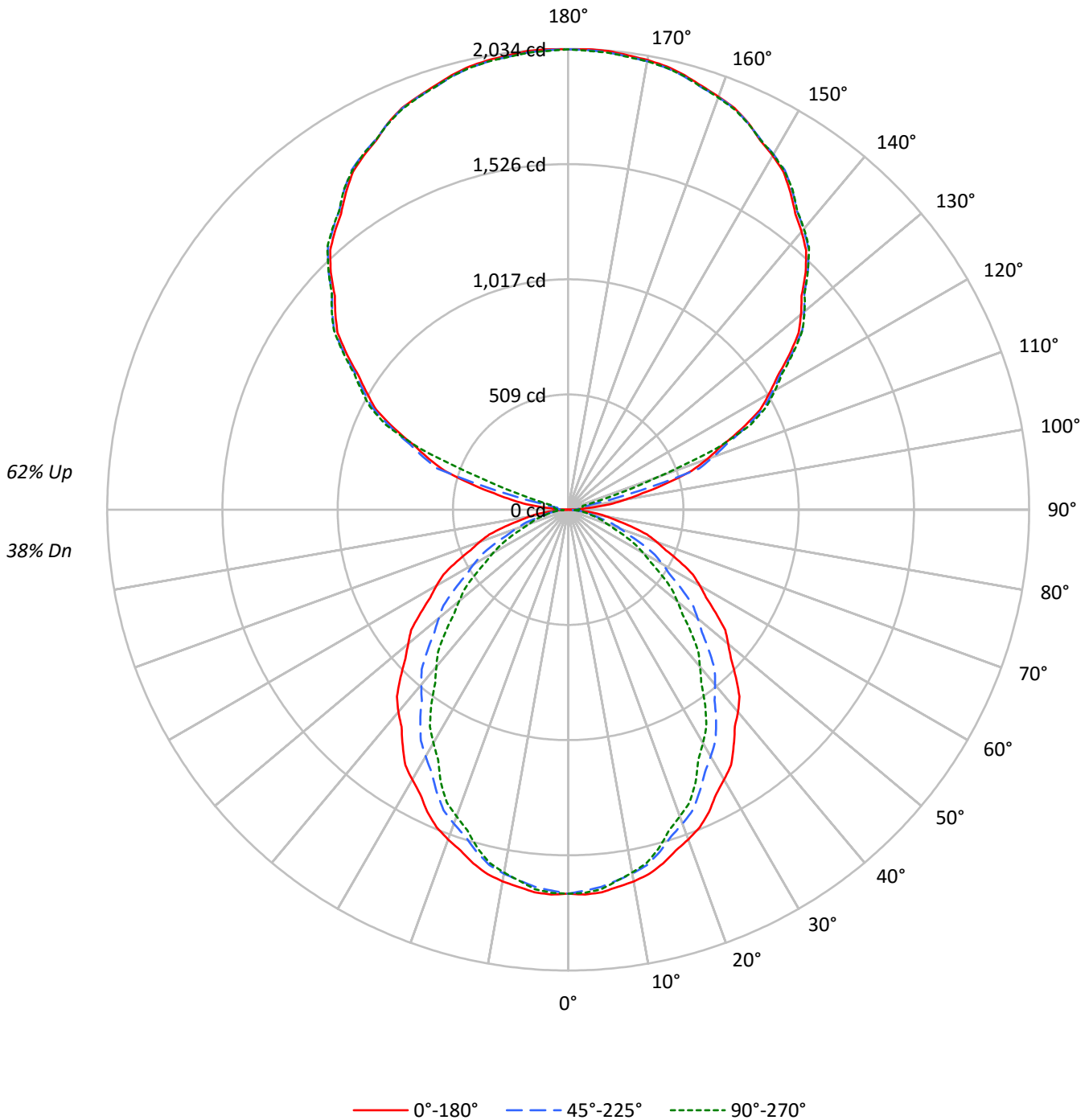
Input Watts (W): 76.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45	38
1	95	91	88	84	86	83	80	77	68	65	63	53	52	51	40	40	39	33
2	87	80	74	69	79	73	68	64	59	56	53	47	45	43	36	34	33	28
3	80	70	63	58	72	64	58	53	53	48	45	42	39	36	32	30	28	24
4	73	62	55	49	66	57	50	45	47	42	38	37	34	31	29	26	25	21
5	67	56	48	42	61	51	44	39	42	37	33	34	30	27	26	23	22	18
6	62	50	42	36	56	46	39	34	38	33	29	30	27	24	24	21	19	16
7	57	45	37	32	52	41	35	30	34	29	25	28	24	21	22	19	17	14
8	53	41	33	28	48	38	31	26	31	26	23	25	22	19	20	17	15	13
9	49	37	30	25	45	34	28	23	29	24	20	23	20	17	18	16	14	12
10	46	34	27	22	42	31	25	21	26	22	18	22	18	15	17	14	13	11

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	18243	18243	18243
5°	18312	18058	18163
10°	18208	17832	17772
15°	18013	17415	17231
20°	17743	16893	16501
25°	17467	16308	15785
30°	17100	15632	14777
35°	16724	14954	13853
40°	16378	14155	12708
45°	15923	13370	11676
50°	15421	12476	10518
55°	14910	11453	9439
60°	14441	10357	8254
65°	13827	9172	7070
70°	13064	7701	5712
75°	11948	6059	5373
80°	10649	5362	4940
85°	8991	4755	4409



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	159.1	1.6
10°-20°	442.8	4.4
20°-30°	637.6	6.4
30°-40°	718.2	7.2
40°-50°	687.1	6.8
50°-60°	562.6	5.6
60°-70°	379.6	3.8
70°-80°	191.0	1.9
80°-90°	56.2	0.6
90°-100°	73.9	0.7
100°-110°	352.1	3.5
110°-120°	845.8	8.4
120°-130°	1077.0	10.7
130°-140°	1150.8	11.5
140°-150°	1076.1	10.7
150°-160°	868.0	8.7
160°-170°	560.2	5.6
170°-180°	193.1	1.9
0°-30°	1239.5	12.4
0°-40°	1957.7	19.5
0°-60°	3207.4	32.0
0°-90°	3834.2	38.2
90°-120°	1271.8	12.7
90°-150°	4575.6	45.6
90°-180°	6197.0	61.8
0°-180°	10031.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1695	1695	1695	1695	1695	
5°	1695	1687	1671	1683	1681	161
15°	1616	1600	1563	1556	1546	455
25°	1471	1435	1373	1345	1329	676
35°	1273	1221	1138	1081	1054	796
45°	1046	982	878	802	767	807
55°	794	724	610	533	503	712
65°	543	466	360	296	278	537
75°	287	221	146	133	129	306
85°	73	44	38	36	36	82
90°	2	17	36	42	45	8
95°	92	35	47	57	57	114
105°	450	458	331	78	66	477
115°	844	853	867	881	888	833
125°	1190	1201	1208	1211	1214	1062
135°	1481	1490	1496	1500	1496	1140
145°	1709	1719	1723	1726	1726	1069
155°	1883	1880	1881	1888	1880	867
165°	1985	1981	1979	1990	1981	561
175°	2032	2025	2026	2035	2025	193
180°	2032	2032	2032	2032	2032	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8
2.5°	1700.2	1699.2	1698.3	1697.3	1696.3	1694.4	1691.4	1688.5	1685.6	1682.6	1685.3
5°	1694.8	1693.1	1691.6	1690.1	1688.6	1686.0	1682.3	1678.7	1675.1	1671.3	1674.1
7.5°	1679.0	1677.4	1675.8	1674.1	1672.4	1669.2	1664.5	1659.7	1655.0	1650.2	1651.7
10°	1665.9	1663.8	1661.5	1659.4	1657.3	1653.5	1648.0	1642.4	1637.0	1631.5	1631.8
12.5°	1647.2	1644.8	1642.4	1640.0	1637.6	1633.1	1626.4	1619.6	1613.0	1606.2	1606.0
15°	1616.4	1613.1	1609.6	1606.3	1603.0	1597.0	1588.4	1579.8	1571.3	1562.8	1561.3
17.5°	1577.6	1573.7	1569.8	1565.9	1562.0	1554.6	1543.7	1532.9	1522.0	1511.1	1507.8
20°	1549.0	1544.2	1539.2	1534.4	1529.4	1521.3	1509.6	1498.0	1486.4	1474.8	1470.9
22.5°	1517.1	1511.6	1505.9	1500.3	1494.7	1485.7	1473.3	1461.0	1448.7	1436.3	1431.4
25°	1470.7	1463.1	1455.4	1447.7	1440.2	1429.3	1415.2	1401.2	1387.2	1373.1	1366.7
27.5°	1414.3	1405.9	1397.5	1389.1	1380.6	1368.6	1352.9	1337.3	1321.6	1306.1	1297.1
30°	1375.8	1366.7	1357.6	1348.4	1339.2	1326.1	1309.0	1291.8	1274.8	1257.7	1247.3
32.5°	1337.4	1327.0	1316.6	1306.2	1295.9	1281.6	1263.5	1245.5	1227.3	1209.2	1197.9
35°	1272.7	1261.7	1250.7	1239.8	1228.8	1213.8	1194.9	1175.9	1157.0	1138.0	1124.9
37.5°	1207.3	1195.1	1182.9	1170.6	1158.4	1142.3	1122.1	1101.8	1081.6	1061.4	1046.4
40°	1165.6	1152.2	1138.6	1125.2	1111.8	1094.2	1072.6	1050.9	1029.2	1007.4	991.6
42.5°	1118.2	1104.8	1091.4	1077.9	1064.5	1046.6	1024.2	1001.8	979.4	956.9	939.6
45°	1046.0	1032.2	1018.4	1004.7	991.0	972.4	948.9	925.3	901.8	878.3	860.9
47.5°	973.7	958.6	943.5	928.4	913.3	894.0	870.5	847.0	823.4	799.9	781.0
50°	920.9	906.6	892.2	877.9	863.4	843.9	819.2	794.5	769.7	745.0	726.0
52.5°	873.6	858.1	842.4	826.9	811.3	791.2	766.8	742.3	717.8	693.3	673.6
55°	794.5	779.5	764.5	749.5	734.6	714.1	688.1	662.2	636.2	610.3	592.6
57.5°	721.3	705.0	688.7	672.4	656.1	634.9	608.7	582.7	556.6	530.6	513.8
60°	670.8	654.0	637.1	620.4	603.5	582.5	557.1	531.8	506.4	481.1	464.5
62.5°	620.2	603.4	586.5	569.8	553.0	531.9	506.5	481.2	455.9	430.5	415.0
65°	542.9	526.1	509.3	492.5	475.7	455.4	431.6	407.8	384.0	360.1	345.2
67.5°	465.6	448.7	431.7	414.8	397.8	377.8	355.0	332.1	309.3	286.4	275.3
70°	415.1	398.6	382.1	365.6	349.1	330.2	308.8	287.4	266.0	244.7	234.0
72.5°	364.5	348.3	332.0	315.8	299.5	281.7	262.3	242.9	223.4	204.0	195.2
75°	287.3	272.6	257.9	243.3	228.6	212.9	196.1	179.3	162.5	145.7	142.6
77.5°	216.9	203.6	190.4	177.1	163.9	151.8	141.0	130.2	119.4	108.6	106.9
80°	171.8	159.3	146.7	134.2	121.7	112.3	105.8	99.4	93.0	86.5	85.6
82.5°	129.0	118.2	107.3	96.4	85.6	78.8	75.7	72.8	69.8	66.8	65.8
85°	72.8	66.1	59.4	52.7	45.9	42.1	41.2	40.3	39.4	38.5	37.9
87.5°	26.7	24.6	22.6	20.6	18.6	18.1	18.9	19.8	20.7	21.5	21.6
90°	1.5	4.8	8.2	11.6	14.9	18.8	23.1	27.5	31.9	36.3	37.6
92.5°	28.1	27.2	26.2	25.2	24.3	25.4	28.8	32.1	35.3	38.7	40.8
95°	92.1	78.4	64.6	50.8	37.1	32.0	35.7	39.4	43.1	46.8	49.2
97.5°	185.1	178.9	172.8	166.5	160.4	145.2	121.1	96.9	72.8	48.6	51.3
100°	255.2	261.9	268.5	275.3	282.0	259.1	206.8	154.5	102.2	49.8	52.5
102.5°	334.9	339.7	344.6	349.3	354.2	328.0	270.8	213.7	156.5	99.4	91.0
105°	449.9	453.6	457.3	461.0	464.6	451.4	421.2	391.0	360.8	330.6	271.2
107.5°	571.3	574.2	577.1	580.2	583.1	586.9	591.7	596.5	601.3	606.0	562.5
110°	652.2	654.9	657.5	660.2	663.0	666.1	669.8	673.5	677.2	680.9	669.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	729.5	732.0	734.4	736.8	739.1	742.3	745.9	749.6	753.3	757.0	757.2
115°	843.9	846.0	848.0	850.0	852.0	854.5	857.6	860.5	863.5	866.6	869.9
117.5°	954.7	957.3	959.7	962.2	964.7	966.7	968.3	969.8	971.3	972.9	975.5
120°	1023.6	1026.6	1029.7	1032.7	1035.7	1037.7	1038.6	1039.7	1040.7	1041.7	1044.4
122.5°	1093.7	1096.1	1098.6	1101.1	1103.6	1105.5	1106.7	1108.0	1109.2	1110.5	1112.5
125°	1189.6	1192.3	1195.1	1197.7	1200.4	1202.4	1203.8	1205.1	1206.5	1207.8	1208.5
127.5°	1282.6	1285.4	1288.1	1290.7	1293.4	1295.6	1297.2	1298.8	1300.4	1302.0	1303.0
130°	1340.6	1343.3	1346.0	1348.7	1351.4	1353.4	1354.7	1356.0	1357.5	1358.8	1360.1
132.5°	1396.2	1398.9	1401.6	1404.2	1406.9	1408.9	1409.9	1411.0	1412.0	1413.1	1414.4
135°	1481.1	1483.1	1485.1	1487.1	1489.1	1490.8	1492.1	1493.5	1494.8	1496.1	1497.1
137.5°	1553.5	1556.1	1558.6	1561.2	1563.7	1565.4	1566.1	1566.8	1567.6	1568.3	1569.9
140°	1601.8	1603.9	1605.9	1607.9	1609.9	1611.3	1612.4	1613.4	1614.4	1615.4	1616.8
142.5°	1646.5	1648.5	1650.5	1652.5	1654.6	1656.1	1657.1	1658.1	1659.1	1660.1	1661.1
145°	1709.0	1711.3	1713.7	1716.1	1718.4	1719.9	1720.6	1721.2	1721.9	1722.6	1723.2
147.5°	1767.9	1769.5	1771.0	1772.5	1774.0	1775.1	1775.8	1776.6	1777.2	1777.9	1778.6
150°	1804.1	1805.1	1806.1	1807.2	1808.2	1809.0	1809.7	1810.4	1811.0	1811.7	1812.3
152.5°	1836.7	1837.2	1837.7	1838.2	1838.7	1839.1	1839.5	1839.9	1840.3	1840.7	1841.9
155°	1882.6	1882.0	1881.3	1880.7	1880.0	1879.8	1880.2	1880.5	1880.8	1881.1	1882.8
157.5°	1918.2	1918.2	1918.1	1918.0	1918.0	1917.8	1917.4	1917.1	1916.8	1916.4	1918.4
160°	1940.1	1939.6	1939.3	1939.0	1938.6	1938.3	1938.0	1937.6	1937.3	1937.0	1939.0
162.5°	1960.6	1959.6	1958.8	1957.9	1957.0	1956.4	1956.1	1955.8	1955.4	1955.1	1957.4
165°	1985.3	1984.3	1983.3	1982.3	1981.3	1980.6	1980.2	1979.9	1979.6	1979.2	1982.0
167.5°	2004.6	2003.3	2002.0	2000.6	1999.2	1998.6	1998.6	1998.6	1998.6	1998.6	2001.2
170°	2015.5	2014.2	2012.8	2011.4	2010.1	2009.4	2009.4	2009.4	2009.4	2009.4	2012.2
172.5°	2022.8	2021.1	2019.5	2017.9	2016.3	2015.6	2015.9	2016.2	2016.4	2016.7	2019.4
175°	2032.1	2030.4	2028.7	2027.1	2025.4	2024.7	2025.1	2025.4	2025.7	2026.1	2028.4
177.5°	2034.5	2033.2	2031.8	2030.5	2029.1	2028.6	2028.9	2029.1	2029.4	2029.7	2031.8
180°	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8
2.5°	1688.0	1690.7	1693.3	1694.5	1693.9	1693.5	1693.0	1692.5
5°	1676.9	1679.6	1682.3	1683.4	1682.8	1682.2	1681.6	1681.0
7.5°	1653.3	1654.8	1656.3	1656.6	1655.5	1654.5	1653.5	1652.3
10°	1632.1	1632.4	1632.7	1632.1	1630.5	1629.0	1627.5	1626.0
12.5°	1605.8	1605.7	1605.5	1604.5	1602.8	1600.9	1599.2	1597.4
15°	1559.7	1558.2	1556.7	1554.8	1552.7	1550.5	1548.4	1546.3
17.5°	1504.6	1501.4	1498.1	1494.9	1491.8	1488.5	1485.4	1482.2
20°	1466.8	1462.9	1459.0	1455.1	1451.5	1447.7	1444.1	1440.5
22.5°	1426.4	1421.5	1416.5	1412.3	1409.0	1405.5	1402.1	1398.7
25°	1360.3	1353.8	1347.5	1342.5	1339.2	1335.8	1332.5	1329.1
27.5°	1288.2	1279.3	1270.3	1263.3	1258.2	1253.0	1247.9	1242.8
30°	1236.9	1226.5	1216.1	1208.5	1203.6	1198.7	1193.8	1188.9
32.5°	1186.5	1175.2	1163.8	1155.6	1150.4	1145.3	1140.1	1135.0
35°	1111.8	1098.6	1085.5	1076.2	1070.8	1065.2	1059.8	1054.2
37.5°	1031.6	1016.6	1001.8	990.9	984.1	977.3	970.6	963.8
40°	975.7	959.9	943.9	932.5	925.4	918.5	911.4	904.4
42.5°	922.2	904.8	887.5	875.7	869.4	863.1	856.8	850.5
45°	843.4	826.1	808.6	796.3	788.9	781.6	774.3	767.0
47.5°	762.0	743.2	724.2	711.4	704.9	698.4	691.9	685.3
50°	707.1	688.1	669.2	656.2	649.2	642.2	635.2	628.1
52.5°	654.0	634.3	614.6	601.6	595.3	589.1	582.8	576.4
55°	574.8	557.1	539.4	527.5	521.4	515.2	509.2	503.0
57.5°	497.1	480.3	463.6	452.6	447.5	442.2	437.1	431.8
60°	448.1	431.6	415.1	404.2	399.1	393.8	388.7	383.4
62.5°	399.4	384.0	368.4	357.9	352.5	347.1	341.6	336.2
65°	330.2	315.2	300.2	291.0	287.7	284.4	281.0	277.6
67.5°	264.1	252.9	241.8	234.3	230.8	227.1	223.5	219.9
70°	223.3	212.6	201.9	194.9	191.5	188.1	184.8	181.5
72.5°	186.5	177.7	169.1	164.0	162.6	161.2	159.8	158.3
75°	139.6	136.5	133.5	131.7	131.1	130.4	129.8	129.2
77.5°	105.3	103.6	102.0	100.9	100.3	99.7	99.1	98.5
80°	84.7	83.8	82.9	82.2	81.6	81.0	80.3	79.7
82.5°	64.9	64.0	63.1	62.6	62.5	62.4	62.2	62.1
85°	37.3	36.7	36.1	35.7	35.7	35.7	35.7	35.7
87.5°	21.6	21.6	21.6	21.6	21.5	21.4	21.3	21.1
90°	38.9	40.3	41.6	42.6	43.3	43.9	44.6	45.2
92.5°	42.9	45.1	47.3	48.5	48.9	49.3	49.7	50.1
95°	51.5	53.8	56.1	57.4	57.4	57.4	57.4	57.4
97.5°	54.0	56.7	59.4	60.9	61.2	61.5	61.9	62.2
100°	55.1	57.9	60.6	62.1	62.4	62.7	63.1	63.4
102.5°	82.7	74.4	66.0	62.2	62.8	63.4	64.0	64.6
105°	211.9	152.5	93.1	63.7	64.4	65.1	65.7	66.4
107.5°	518.9	475.3	431.8	387.7	343.0	298.1	253.4	208.6
110°	658.7	647.6	636.6	607.0	559.1	511.1	463.1	415.2





TEST NUMBER: P332468-840

CATALOG NUMBER: S123RDIW-S1000D1535U840-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	757.4	757.6	757.8	752.9	742.7	732.6	722.5	712.3
115°	873.3	876.7	880.0	882.3	883.7	885.0	886.4	887.8
117.5°	978.3	980.9	983.6	985.1	985.3	985.6	985.9	986.1
120°	1047.1	1049.8	1052.5	1053.8	1053.8	1053.8	1053.8	1053.8
122.5°	1114.3	1116.2	1118.1	1119.1	1119.4	1119.6	1119.9	1120.2
125°	1209.1	1209.8	1210.4	1211.1	1211.8	1212.4	1213.2	1213.9
127.5°	1304.1	1305.3	1306.3	1306.5	1305.9	1305.1	1304.4	1303.8
130°	1361.4	1362.8	1364.1	1364.4	1363.8	1363.1	1362.4	1361.8
132.5°	1415.8	1417.1	1418.5	1418.7	1417.7	1416.8	1415.8	1414.9
135°	1498.1	1499.1	1500.2	1500.2	1499.1	1498.1	1497.1	1496.1
137.5°	1571.6	1573.2	1574.8	1575.2	1574.6	1573.9	1573.2	1572.6
140°	1618.1	1619.4	1620.7	1621.1	1620.4	1619.8	1619.1	1618.4
142.5°	1662.2	1663.3	1664.4	1664.5	1663.6	1662.5	1661.6	1660.7
145°	1723.9	1724.6	1725.3	1725.7	1725.7	1725.7	1725.7	1725.7
147.5°	1779.2	1779.9	1780.6	1780.1	1778.6	1777.1	1775.4	1773.9
150°	1813.0	1813.7	1814.3	1814.2	1813.2	1812.2	1811.2	1810.2
152.5°	1843.1	1844.3	1845.5	1845.3	1843.8	1842.2	1840.7	1839.2
155°	1884.5	1886.1	1887.8	1887.6	1885.6	1883.6	1881.6	1879.7
157.5°	1920.5	1922.5	1924.5	1924.2	1921.6	1918.9	1916.3	1913.7
160°	1941.1	1943.0	1945.0	1944.9	1942.5	1940.2	1937.8	1935.5
162.5°	1959.6	1962.0	1964.2	1964.3	1962.3	1960.1	1958.1	1956.0
165°	1984.6	1987.3	1990.0	1990.1	1987.8	1985.5	1983.1	1980.7
167.5°	2004.0	2006.6	2009.3	2009.3	2006.6	2004.0	2001.2	1998.6
170°	2014.8	2017.5	2020.2	2020.2	2017.5	2014.8	2012.2	2009.4
172.5°	2022.1	2024.8	2027.4	2027.3	2024.4	2021.4	2018.4	2015.5
175°	2030.7	2033.1	2035.5	2035.3	2032.6	2029.9	2027.2	2024.6
177.5°	2034.0	2036.1	2038.3	2038.0	2035.3	2032.7	2029.9	2027.3
180°	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1

(END OF REPORT)