

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: P332209-840

Luminaire Tested: **S123DIW-S1000D1535U840-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332209-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S1000D1535U840-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1000 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9536.2 lumens  
Efficiency: N/A  
Efficacy: 124.5 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse

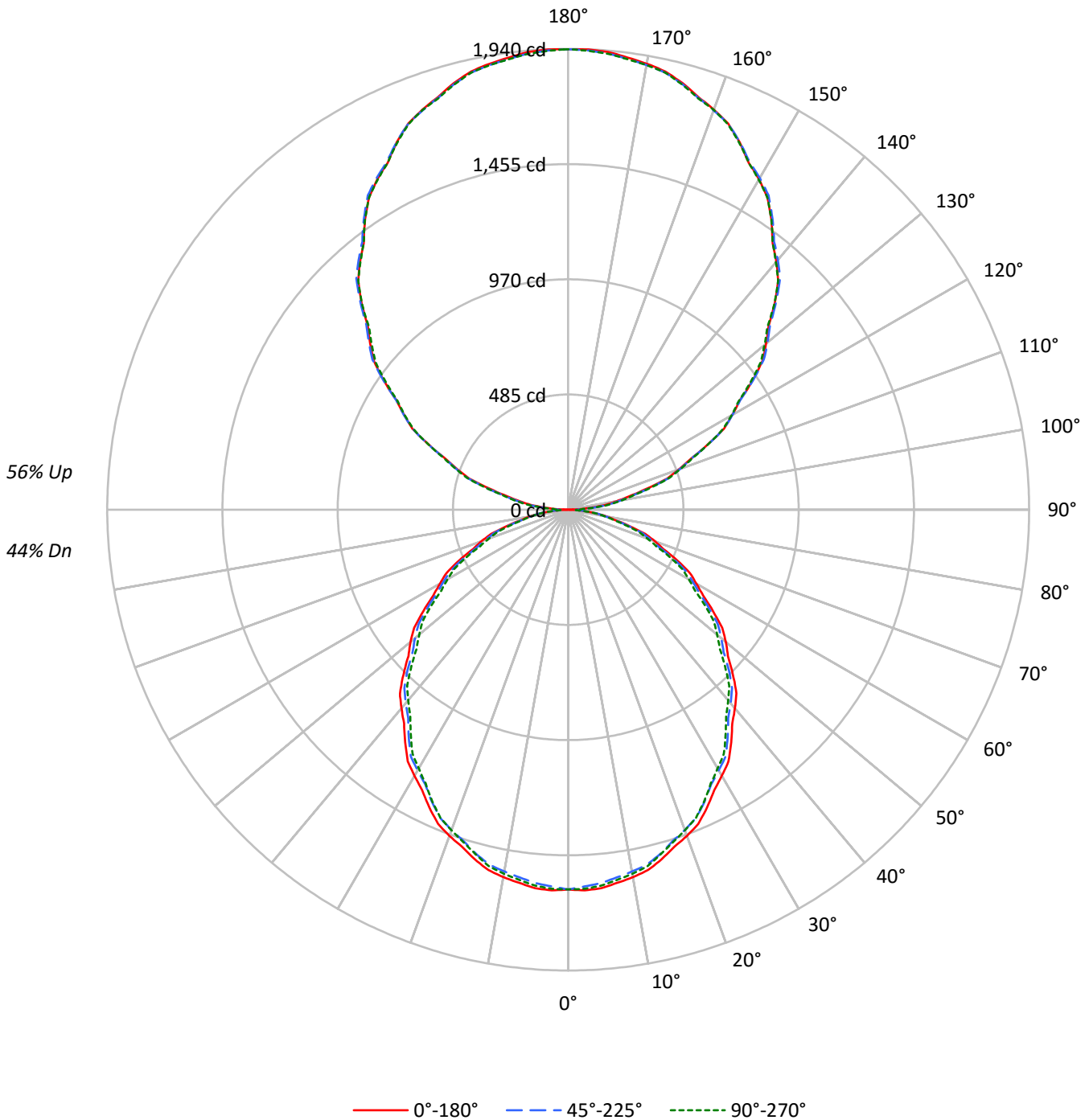
Input Watts (W): 76.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	44
1	96	92	88	85	88	84	81	78	70	67	65	57	55	53	44	43	42	37
2	88	80	74	69	80	74	68	64	61	57	54	50	47	45	39	37	36	31
3	80	71	63	57	73	65	58	53	54	49	45	44	41	38	35	32	30	26
4	73	62	55	49	67	57	50	45	48	43	39	39	35	32	31	28	26	22
5	67	55	47	41	61	51	44	39	43	37	33	35	31	28	28	25	23	19
6	62	50	42	36	56	46	39	34	38	33	29	32	28	24	25	22	20	17
7	57	45	37	31	52	41	34	29	35	29	25	29	25	22	23	20	18	15
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16	13
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14	12
10	46	34	27	22	42	31	25	21	27	22	18	22	18	16	18	15	13	11

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

	0°	45°	90°
0°	17206	17206	17206
5°	17286	17049	17168
10°	17171	16901	17006
15°	16971	16710	16741
20°	16736	16436	16452
25°	16422	16112	16079
30°	16075	15751	15631
35°	15713	15369	15172
40°	15336	14948	14716
45°	14918	14562	14206
50°	14502	14086	13695
55°	13955	13594	13181
60°	13403	13020	12605
65°	12918	12394	12006
70°	12198	11679	11160
75°	11146	10746	10289
80°	10054	9627	9540
85°	8830	8497	8139



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	150.6	1.6
10°-20°	425.2	4.5
20°-30°	628.0	6.6
30°-40°	733.6	7.7
40°-50°	737.6	7.7
50°-60°	647.9	6.8
60°-70°	482.7	5.1
70°-80°	275.0	2.9
80°-90°	84.7	0.9
90°-100°	126.3	1.3
100°-110°	378.0	4.0
110°-120°	642.9	6.7
120°-130°	845.6	8.9
130°-140°	950.5	10.0
140°-150°	934.3	9.8
150°-160°	786.5	8.2
160°-170°	523.6	5.5
170°-180°	183.3	1.9
0°-30°	1203.8	12.6
0°-40°	1937.4	20.3
0°-60°	3322.8	34.8
0°-90°	4165.2	43.7
90°-120°	1147.2	12.0
90°-150°	3877.6	40.7
90°-180°	5371.0	56.3
0°-180°	9536.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1598	1598	1598	1598	1598	
5°	1600	1593	1578	1591	1589	152
15°	1523	1517	1500	1509	1502	429
25°	1383	1374	1357	1358	1354	637
35°	1196	1187	1170	1162	1155	748
45°	980	974	957	941	933	756
55°	744	741	724	710	702	666
65°	507	500	487	476	471	500
75°	268	263	258	252	247	287
85°	72	69	69	66	66	78
90°	2	17	37	42	46	9
95°	90	101	113	118	119	101
105°	343	346	359	360	362	367
115°	647	651	649	650	649	640
125°	947	951	949	943	936	844
135°	1229	1238	1237	1231	1227	947
145°	1491	1494	1498	1497	1491	931
155°	1707	1707	1709	1714	1704	785
165°	1859	1855	1855	1863	1853	524
175°	1934	1928	1928	1936	1926	184
180°	1938	1938	1938	1938	1938	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5
2.5°	1604.0	1603.1	1602.0	1601.0	1600.1	1598.2	1595.6	1592.9	1590.2	1587.5	1589.9
5°	1599.8	1598.3	1596.8	1595.3	1593.8	1591.3	1588.0	1584.6	1581.2	1577.9	1580.9
7.5°	1584.2	1582.7	1581.1	1579.6	1578.1	1575.6	1572.2	1568.6	1565.2	1561.7	1564.4
10°	1571.0	1569.5	1567.9	1566.4	1564.9	1562.2	1558.2	1554.2	1550.2	1546.3	1549.0
12.5°	1553.4	1552.2	1550.8	1549.5	1548.3	1545.8	1542.1	1538.3	1534.6	1530.9	1532.9
15°	1522.9	1521.7	1520.5	1519.2	1518.0	1515.4	1511.5	1507.5	1503.5	1499.5	1502.0
17.5°	1487.4	1485.8	1484.3	1482.7	1481.1	1478.3	1474.3	1470.4	1466.4	1462.4	1464.1
20°	1461.1	1459.3	1457.4	1455.5	1453.7	1450.8	1446.8	1442.9	1439.0	1434.9	1436.1
22.5°	1431.4	1429.6	1427.7	1425.8	1424.0	1421.2	1417.1	1413.2	1409.3	1405.2	1406.2
25°	1382.7	1380.9	1379.1	1377.3	1375.3	1372.5	1368.5	1364.5	1360.6	1356.6	1356.9
27.5°	1330.8	1329.0	1327.2	1325.4	1323.6	1320.6	1316.4	1312.1	1307.8	1303.5	1303.7
30°	1293.3	1291.8	1290.3	1288.8	1287.3	1284.3	1280.1	1275.8	1271.5	1267.3	1267.3
32.5°	1256.0	1253.9	1251.9	1249.9	1247.9	1245.3	1241.9	1238.7	1235.4	1232.0	1230.3
35°	1195.8	1194.0	1192.1	1190.3	1188.4	1185.6	1181.5	1177.6	1173.7	1169.6	1167.8
37.5°	1134.2	1131.9	1129.5	1127.2	1124.9	1121.8	1117.7	1113.7	1109.6	1105.6	1103.4
40°	1091.4	1089.4	1087.6	1085.8	1084.0	1081.0	1076.6	1072.4	1068.1	1063.8	1061.4
42.5°	1048.4	1046.3	1044.3	1042.2	1040.2	1036.9	1032.7	1028.4	1024.1	1019.9	1017.4
45°	980.0	978.8	977.5	976.3	975.1	972.5	968.6	964.5	960.6	956.6	953.0
47.5°	912.1	910.3	908.6	906.8	905.0	902.2	898.6	894.8	891.1	887.4	883.7
50°	866.0	864.3	862.8	861.3	859.8	857.1	853.0	849.1	845.2	841.2	837.8
52.5°	817.5	816.5	815.5	814.5	813.3	810.7	806.6	802.3	798.1	793.9	791.0
55°	743.6	743.3	743.0	742.7	742.4	740.2	736.3	732.3	728.3	724.4	720.9
57.5°	673.2	672.2	671.2	670.1	669.0	666.9	663.8	660.6	657.4	654.3	651.3
60°	622.6	622.3	622.0	621.7	621.4	619.5	615.7	612.1	608.4	604.8	602.0
62.5°	577.5	576.7	575.9	575.1	574.4	572.2	568.5	564.8	561.2	557.4	554.7
65°	507.2	505.6	504.1	502.6	501.1	498.8	495.7	492.7	489.6	486.6	484.1
67.5°	432.7	431.3	430.0	428.7	427.3	425.5	423.1	420.8	418.5	416.2	414.0
70°	387.6	385.8	384.0	382.1	380.3	378.4	376.6	374.8	372.9	371.1	369.0
72.5°	340.3	339.0	337.6	336.3	335.0	333.3	331.1	329.1	327.0	324.9	323.1
75°	268.0	266.8	265.6	264.4	263.2	262.1	261.2	260.2	259.3	258.4	256.9
77.5°	204.0	203.3	202.6	202.0	201.3	200.4	199.3	198.2	197.1	196.0	195.0
80°	162.2	161.3	160.4	159.5	158.5	157.7	157.1	156.5	155.9	155.3	155.0
82.5°	121.5	121.3	121.2	121.0	120.8	120.6	120.5	120.4	120.3	120.2	119.6
85°	71.5	70.9	70.3	69.7	69.1	68.8	68.8	68.8	68.8	68.8	68.1
87.5°	28.9	28.9	28.8	28.7	28.7	29.0	29.6	30.2	30.9	31.5	31.5
90°	1.5	4.9	8.3	11.7	15.0	19.0	23.3	27.8	32.1	36.6	37.9
92.5°	36.9	39.2	41.4	43.7	46.0	48.5	51.0	53.4	55.9	58.5	59.6
95°	89.9	92.2	94.6	96.9	99.4	101.9	104.5	107.2	110.0	112.7	114.0
97.5°	159.6	161.4	163.1	164.9	166.6	168.4	170.5	172.4	174.4	176.3	177.9
100°	207.1	209.1	211.2	213.2	215.2	217.1	218.7	220.5	222.2	223.9	224.9
102.5°	262.0	263.2	264.4	265.6	266.8	268.5	270.7	273.0	275.2	277.4	278.5
105°	342.6	343.4	344.0	344.7	345.4	347.2	350.2	353.3	356.4	359.4	359.4
107.5°	436.5	436.9	437.3	437.7	438.1	438.9	440.1	441.3	442.5	443.7	444.8
110°	494.9	495.6	496.2	497.0	497.7	498.3	499.0	499.7	500.3	501.0	502.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	555.8	556.2	556.6	557.0	557.4	557.7	557.8	558.0	558.2	558.3	559.9
115°	647.2	648.2	649.2	650.3	651.3	651.5	650.8	650.1	649.4	648.7	649.0
117.5°	739.2	739.8	740.5	741.2	741.8	741.7	740.9	740.0	739.1	738.3	738.2
120°	796.5	798.5	800.5	802.5	804.6	804.8	803.0	801.3	799.6	798.0	797.6
122.5°	856.2	857.6	859.1	860.6	862.1	862.4	861.5	860.6	859.8	858.9	858.0
125°	947.2	948.2	949.3	950.3	951.3	951.4	950.8	950.1	949.4	948.8	947.4
127.5°	1031.3	1033.4	1035.6	1037.7	1040.0	1040.7	1039.9	1039.2	1038.4	1037.6	1035.7
130°	1087.3	1090.0	1092.7	1095.4	1098.1	1098.9	1097.9	1096.9	1095.9	1094.9	1093.6
132.5°	1143.4	1146.0	1148.7	1151.4	1154.2	1155.2	1154.4	1153.7	1152.9	1152.2	1150.5
135°	1228.9	1230.9	1232.9	1235.0	1237.1	1237.9	1237.6	1237.2	1236.9	1236.6	1235.2
137.5°	1308.1	1309.8	1311.5	1313.2	1314.8	1316.2	1317.1	1317.9	1318.8	1319.7	1318.3
140°	1362.9	1364.6	1366.3	1368.0	1369.7	1370.7	1371.1	1371.4	1371.7	1372.1	1371.7
142.5°	1412.9	1414.5	1416.2	1418.0	1419.7	1420.8	1421.4	1422.0	1422.6	1423.2	1422.9
145°	1490.9	1491.6	1492.2	1492.9	1493.6	1494.4	1495.4	1496.4	1497.4	1498.4	1498.1
147.5°	1559.0	1560.2	1561.5	1562.8	1564.0	1565.0	1566.0	1566.9	1567.8	1568.8	1568.8
150°	1606.6	1607.3	1607.9	1608.6	1609.3	1609.9	1610.6	1611.3	1611.9	1612.7	1612.7
152.5°	1645.6	1646.5	1647.5	1648.4	1649.3	1650.0	1650.4	1650.8	1651.2	1651.6	1652.2
155°	1707.1	1707.1	1707.1	1707.1	1707.1	1707.3	1707.6	1707.9	1708.3	1708.6	1710.0
157.5°	1759.5	1759.1	1758.7	1758.3	1757.9	1757.8	1758.1	1758.3	1758.6	1758.9	1760.3
160°	1792.4	1791.7	1791.0	1790.3	1789.7	1789.3	1789.3	1789.3	1789.3	1789.3	1791.0
162.5°	1821.6	1820.7	1819.7	1818.8	1817.9	1817.5	1817.8	1818.1	1818.3	1818.6	1820.3
165°	1859.4	1858.4	1857.3	1856.3	1855.3	1854.8	1854.8	1854.8	1854.8	1854.8	1856.8
167.5°	1889.6	1888.1	1886.8	1885.4	1884.1	1883.6	1883.8	1884.1	1884.4	1884.6	1886.7
170°	1906.5	1905.2	1903.9	1902.5	1901.2	1900.5	1900.5	1900.5	1900.5	1900.5	1902.9
172.5°	1920.0	1918.6	1917.2	1915.9	1914.6	1913.9	1913.9	1913.9	1913.9	1913.9	1916.0
175°	1934.0	1932.7	1931.3	1930.0	1928.5	1927.9	1927.9	1927.9	1927.9	1927.9	1930.0
177.5°	1939.7	1938.7	1937.6	1936.5	1935.4	1934.9	1934.9	1934.9	1934.9	1934.9	1936.5
180°	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5
2.5°	1592.4	1594.9	1597.3	1598.4	1598.1	1597.9	1597.6	1597.4
5°	1584.0	1587.0	1590.1	1591.3	1590.7	1590.1	1589.5	1588.9
7.5°	1567.2	1569.9	1572.7	1573.9	1573.5	1573.2	1572.8	1572.4
10°	1551.8	1554.5	1557.3	1558.3	1557.7	1557.1	1556.5	1555.9
12.5°	1534.9	1536.9	1538.9	1539.7	1539.4	1539.0	1538.6	1538.3
15°	1504.4	1506.8	1509.3	1509.6	1507.8	1505.9	1504.1	1502.3
17.5°	1465.8	1467.5	1469.3	1469.8	1469.2	1468.4	1467.7	1467.1
20°	1437.3	1438.7	1439.9	1440.0	1439.1	1438.1	1437.2	1436.3
22.5°	1407.2	1408.2	1409.2	1409.1	1408.0	1406.7	1405.6	1404.4
25°	1357.2	1357.6	1357.9	1357.6	1356.6	1355.6	1354.7	1353.8
27.5°	1304.0	1304.2	1304.5	1304.0	1302.9	1301.7	1300.6	1299.4
30°	1267.3	1267.3	1267.3	1266.2	1264.0	1261.9	1259.8	1257.6
32.5°	1228.6	1227.0	1225.3	1223.8	1222.6	1221.4	1220.3	1219.1
35°	1166.0	1164.2	1162.4	1160.6	1159.1	1157.6	1156.1	1154.6
37.5°	1101.3	1099.0	1096.8	1095.2	1094.3	1093.3	1092.3	1091.4
40°	1058.9	1056.5	1054.1	1052.2	1051.0	1049.8	1048.5	1047.3
42.5°	1014.9	1012.5	1010.1	1008.2	1007.0	1005.8	1004.6	1003.4
45°	949.3	945.6	942.0	939.4	937.9	936.3	934.8	933.2
47.5°	880.1	876.6	872.9	870.5	869.1	867.8	866.5	865.1
50°	834.5	831.1	827.7	825.2	823.3	821.4	819.6	817.8
52.5°	788.1	785.3	782.4	780.0	778.2	776.4	774.6	772.7
55°	717.6	714.3	710.9	708.4	706.9	705.4	703.9	702.4
57.5°	648.2	645.3	642.3	639.9	638.1	636.3	634.6	632.8
60°	599.3	596.5	593.8	591.7	590.1	588.5	587.0	585.5
62.5°	552.0	549.3	546.4	544.6	543.5	542.5	541.5	540.5
65°	481.7	479.2	476.8	475.1	474.2	473.3	472.3	471.4
67.5°	411.9	409.8	407.7	406.0	404.7	403.3	402.0	400.8
70°	366.8	364.7	362.5	360.7	359.2	357.7	356.2	354.6
72.5°	321.1	319.2	317.3	316.0	315.2	314.4	313.7	312.9
75°	255.4	253.8	252.3	251.1	250.1	249.2	248.3	247.4
77.5°	193.9	192.9	191.9	191.4	191.4	191.4	191.4	191.4
80°	154.7	154.4	154.1	153.9	153.9	153.9	153.9	153.9
82.5°	119.1	118.5	118.0	117.5	117.2	117.0	116.8	116.5
85°	67.5	66.9	66.2	65.9	65.9	65.9	65.9	65.9
87.5°	31.5	31.6	31.6	31.7	31.8	31.9	32.1	32.2
90°	39.3	40.6	42.0	43.0	43.6	44.3	45.0	45.6
92.5°	60.6	61.7	62.8	63.1	62.7	62.3	61.9	61.5
95°	115.4	116.7	118.1	118.8	118.8	118.8	118.8	118.8
97.5°	179.5	181.0	182.6	183.3	183.2	183.0	182.9	182.8
100°	225.9	226.9	227.9	228.7	229.4	230.1	230.8	231.5
102.5°	279.5	280.5	281.6	282.0	281.9	281.7	281.6	281.4
105°	359.4	359.4	359.4	359.7	360.4	361.1	361.7	362.4
107.5°	446.0	447.0	448.1	448.4	448.0	447.6	447.2	446.8
110°	503.7	505.0	506.4	506.8	506.0	505.4	504.7	504.0





TEST NUMBER: P332209-840

CATALOG NUMBER: S123DIW-S1000D1535U840-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	561.5	563.1	564.7	565.5	565.4	565.2	565.1	564.9
115°	649.4	649.7	650.1	650.1	649.7	649.4	649.0	648.7
117.5°	738.1	738.1	738.0	737.5	736.5	735.6	734.7	733.7
120°	797.3	797.0	796.6	796.1	795.5	794.8	794.1	793.3
122.5°	857.1	856.3	855.4	854.4	853.5	852.5	851.6	850.6
125°	946.0	944.6	943.3	941.9	940.6	939.3	937.9	936.5
127.5°	1033.9	1032.0	1030.1	1028.3	1026.8	1025.2	1023.7	1022.1
130°	1092.2	1090.9	1089.5	1087.6	1085.3	1082.9	1080.6	1078.1
132.5°	1148.9	1147.3	1145.7	1144.0	1142.2	1140.3	1138.4	1136.6
135°	1233.9	1232.4	1231.1	1230.1	1229.4	1228.7	1228.1	1227.4
137.5°	1316.9	1315.5	1314.0	1312.6	1311.3	1310.1	1308.8	1307.5
140°	1371.4	1371.1	1370.7	1369.4	1367.0	1364.6	1362.2	1359.9
142.5°	1422.6	1422.2	1421.9	1420.8	1419.0	1417.1	1415.3	1413.5
145°	1497.7	1497.4	1497.1	1496.2	1494.9	1493.6	1492.2	1490.9
147.5°	1568.8	1568.8	1568.8	1567.8	1565.8	1563.8	1561.7	1559.6
150°	1612.7	1612.7	1612.7	1611.6	1609.6	1607.6	1605.6	1603.6
152.5°	1652.7	1653.3	1653.9	1653.3	1651.4	1649.7	1647.9	1646.2
155°	1711.3	1712.6	1714.0	1713.5	1711.1	1708.8	1706.4	1704.0
157.5°	1761.7	1763.1	1764.5	1764.3	1762.4	1760.5	1758.6	1756.8
160°	1792.7	1794.4	1796.0	1796.2	1794.9	1793.5	1792.2	1790.8
162.5°	1821.9	1823.6	1825.3	1825.1	1822.9	1820.8	1818.6	1816.4
165°	1858.9	1860.9	1862.9	1862.8	1860.4	1858.1	1855.6	1853.3
167.5°	1888.9	1891.0	1893.0	1893.0	1891.0	1888.9	1886.7	1884.6
170°	1905.2	1907.6	1910.0	1910.0	1907.6	1905.2	1902.9	1900.5
172.5°	1918.0	1920.2	1922.3	1922.2	1919.8	1917.4	1915.0	1912.7
175°	1932.0	1934.0	1936.0	1935.8	1933.5	1931.1	1928.7	1926.4
177.5°	1938.1	1939.7	1941.4	1941.3	1939.3	1937.4	1935.6	1933.7
180°	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5

(END OF REPORT)