

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: P332208-830

Luminaire Tested: **S123DIW-S1000D1535U830-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332208-830  
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: S123DIW-S1000D1535U830-4F0-1E-UDD-F  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1000 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1535 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9671.3 lumens  
Efficiency: N/A  
Efficacy: 126.3 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

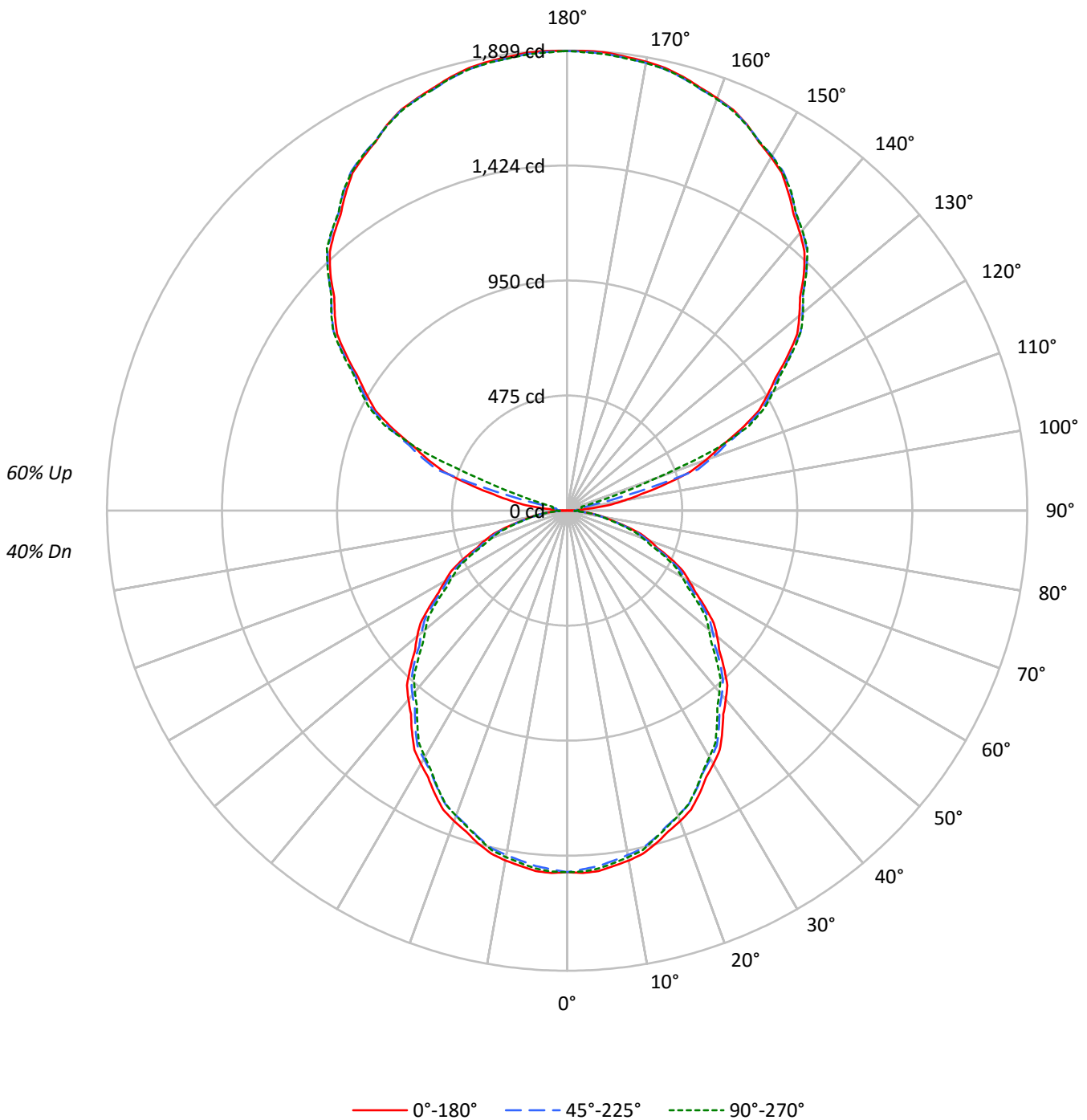
Input Watts (W): 76.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47	40
1	96	91	87	84	87	83	80	77	68	66	64	54	53	51	42	41	40	34
2	87	80	74	68	79	73	67	63	60	56	53	48	45	43	37	35	33	28
3	79	70	63	57	72	64	58	53	53	48	44	42	39	36	32	30	28	24
4	72	62	54	48	66	57	50	45	47	42	38	37	34	31	29	26	24	20
5	66	55	47	41	60	50	43	38	42	36	32	34	30	27	26	23	21	18
6	61	49	41	36	55	45	38	33	37	32	28	30	26	23	24	21	19	16
7	56	44	37	31	51	41	34	29	34	29	25	28	24	21	21	19	17	14
8	52	40	33	27	48	37	30	26	31	26	22	25	21	18	20	17	15	12
9	49	37	29	24	44	34	27	23	28	23	20	23	19	16	18	15	13	11
10	45	34	26	22	41	31	25	20	26	21	18	21	18	15	17	14	12	10

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

	0°	45°	90°
0°	16060	16060	16060
5°	16134	15913	16024
10°	16027	15774	15872
15°	15840	15597	15624
20°	15621	15341	15356
25°	15327	15037	15007
30°	15003	14701	14588
35°	14666	14345	14160
40°	14313	13952	13735
45°	13922	13592	13259
50°	13534	13147	12782
55°	13024	12688	12301
60°	12510	12152	11765
65°	12055	11566	11207
70°	11383	10902	10414
75°	10405	10031	9603
80°	9385	8988	8901
85°	8238	7929	7595



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	140.5	1.5
10°-20°	396.8	4.1
20°-30°	586.2	6.1
30°-40°	684.7	7.1
40°-50°	688.4	7.1
50°-60°	604.7	6.3
60°-70°	450.5	4.7
70°-80°	256.7	2.7
80°-90°	79.0	0.8
90°-100°	69.0	0.7
100°-110°	328.6	3.4
110°-120°	789.4	8.2
120°-130°	1005.2	10.4
130°-140°	1074.1	11.1
140°-150°	1004.4	10.4
150°-160°	810.1	8.4
160°-170°	522.9	5.4
170°-180°	180.2	1.9
0°-30°	1123.5	11.6
0°-40°	1808.2	18.7
0°-60°	3101.3	32.1
0°-90°	3887.5	40.2
90°-120°	1187.0	12.3
90°-150°	4270.6	44.2
90°-180°	5784.0	59.8
0°-180°	9671.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1492	1492	1492	1492	1492	
5°	1493	1486	1473	1485	1483	141
15°	1421	1416	1400	1409	1402	401
25°	1290	1282	1266	1267	1264	594
35°	1116	1108	1092	1084	1078	698
45°	915	909	893	878	871	706
55°	694	692	676	662	656	621
65°	473	467	454	444	440	467
75°	250	245	241	235	231	267
85°	67	64	64	62	62	73
90°	1	16	34	39	42	8
95°	86	32	44	53	54	106
105°	420	428	309	73	62	445
115°	788	796	809	822	829	777
125°	1110	1121	1127	1130	1133	991
135°	1382	1391	1396	1400	1396	1064
145°	1595	1604	1608	1610	1611	998
155°	1757	1754	1756	1762	1754	809
165°	1853	1849	1847	1857	1849	523
175°	1897	1890	1891	1900	1890	180
180°	1897	1897	1897	1897	1897	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1492.0	1492.0	1492.0	1492.0	1492.0	1492.0	1492.0	1492.0	1492.0	1492.0	1492.0
2.5°	1497.0	1496.2	1495.2	1494.3	1493.5	1491.7	1489.2	1486.7	1484.2	1481.7	1483.9
5°	1493.2	1491.8	1490.3	1488.9	1487.5	1485.3	1482.1	1478.9	1475.8	1472.7	1475.6
7.5°	1478.6	1477.2	1475.7	1474.3	1472.9	1470.6	1467.4	1464.1	1460.8	1457.5	1460.1
10°	1466.3	1464.9	1463.4	1462.0	1460.6	1458.0	1454.3	1450.6	1446.9	1443.2	1445.8
12.5°	1449.8	1448.7	1447.5	1446.2	1445.1	1442.7	1439.3	1435.8	1432.3	1428.8	1430.7
15°	1421.4	1420.2	1419.1	1418.0	1416.8	1414.4	1410.7	1407.0	1403.3	1399.6	1401.8
17.5°	1388.3	1386.8	1385.3	1383.8	1382.3	1379.8	1376.0	1372.3	1368.7	1364.9	1366.5
20°	1363.7	1362.0	1360.3	1358.5	1356.8	1354.1	1350.4	1346.7	1343.0	1339.3	1340.4
22.5°	1336.0	1334.3	1332.6	1330.8	1329.1	1326.4	1322.7	1319.0	1315.3	1311.5	1312.5
25°	1290.5	1288.8	1287.1	1285.4	1283.6	1281.0	1277.2	1273.6	1269.9	1266.1	1266.4
27.5°	1242.1	1240.4	1238.7	1237.1	1235.4	1232.6	1228.6	1224.6	1220.6	1216.6	1216.8
30°	1207.1	1205.7	1204.3	1202.9	1201.5	1198.7	1194.8	1190.7	1186.8	1182.8	1182.8
32.5°	1172.2	1170.4	1168.5	1166.6	1164.7	1162.2	1159.1	1156.1	1153.0	1149.9	1148.3
35°	1116.1	1114.4	1112.7	1111.0	1109.2	1106.5	1102.8	1099.1	1095.4	1091.7	1090.0
37.5°	1058.6	1056.4	1054.2	1052.1	1049.9	1047.0	1043.2	1039.4	1035.7	1031.9	1029.8
40°	1018.6	1016.8	1015.1	1013.4	1011.7	1008.9	1004.8	1000.9	996.9	992.9	990.6
42.5°	978.5	976.6	974.7	972.7	970.8	967.8	963.8	959.9	955.8	951.9	949.6
45°	914.6	913.5	912.4	911.3	910.1	907.7	904.0	900.2	896.5	892.9	889.5
47.5°	851.3	849.6	848.0	846.3	844.7	842.1	838.7	835.2	831.7	828.2	824.8
50°	808.2	806.7	805.3	803.9	802.5	799.9	796.2	792.5	788.8	785.1	781.9
52.5°	763.0	762.0	761.1	760.2	759.1	756.7	752.8	748.9	744.9	740.9	738.3
55°	694.0	693.7	693.4	693.1	692.9	690.9	687.2	683.4	679.8	676.1	672.9
57.5°	628.3	627.4	626.4	625.5	624.4	622.5	619.5	616.5	613.6	610.7	607.8
60°	581.1	580.8	580.5	580.2	579.9	578.2	574.7	571.3	567.9	564.5	561.8
62.5°	539.0	538.3	537.5	536.8	536.1	534.0	530.6	527.2	523.8	520.3	517.7
65°	473.3	471.9	470.5	469.1	467.7	465.5	462.7	459.9	456.9	454.1	451.9
67.5°	403.9	402.6	401.3	400.1	398.8	397.1	394.9	392.8	390.6	388.4	386.4
70°	361.7	360.1	358.4	356.7	355.0	353.2	351.5	349.8	348.1	346.4	344.4
72.5°	317.6	316.4	315.1	313.9	312.6	311.0	309.1	307.2	305.2	303.2	301.5
75°	250.2	249.0	247.9	246.8	245.6	244.6	243.7	242.9	242.0	241.2	239.8
77.5°	190.4	189.7	189.1	188.5	187.8	187.0	186.1	185.0	184.0	182.9	182.0
80°	151.4	150.5	149.7	148.8	148.0	147.2	146.7	146.1	145.5	145.0	144.7
82.5°	113.4	113.2	113.1	112.9	112.7	112.5	112.4	112.4	112.3	112.2	111.6
85°	66.7	66.2	65.6	65.0	64.5	64.2	64.2	64.2	64.2	64.2	63.5
87.5°	27.0	26.9	26.9	26.8	26.8	27.0	27.6	28.2	28.7	29.3	29.4
90°	1.4	4.5	7.6	10.8	13.9	17.5	21.6	25.6	29.8	33.8	35.1
92.5°	26.2	25.4	24.4	23.6	22.7	23.8	26.9	30.0	33.0	36.1	38.1
95°	86.0	73.1	60.3	47.4	34.6	29.9	33.4	36.8	40.2	43.6	45.9
97.5°	172.8	167.0	161.3	155.4	149.7	135.5	113.0	90.5	68.0	45.3	47.9
100°	238.2	244.4	250.6	256.9	263.2	241.9	193.0	144.2	95.4	46.5	49.0
102.5°	312.5	317.1	321.6	326.0	330.5	306.1	252.8	199.4	146.1	92.7	84.9
105°	419.9	423.4	426.8	430.3	433.7	421.3	393.1	365.0	336.8	308.6	253.2
107.5°	533.2	535.9	538.7	541.5	544.2	547.8	552.2	556.8	561.2	565.6	525.0
110°	608.7	611.2	613.7	616.2	618.8	621.7	625.2	628.6	632.1	635.5	625.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	680.9	683.2	685.4	687.7	689.8	692.8	696.2	699.6	703.0	706.5	706.7
115°	787.7	789.6	791.5	793.3	795.2	797.6	800.4	803.1	806.0	808.8	811.9
117.5°	891.1	893.4	895.7	898.1	900.4	902.3	903.7	905.1	906.5	908.0	910.5
120°	955.4	958.2	961.0	963.8	966.7	968.6	969.4	970.3	971.3	972.2	974.8
122.5°	1020.8	1023.0	1025.4	1027.7	1030.0	1031.8	1032.9	1034.2	1035.3	1036.5	1038.3
125°	1110.3	1112.9	1115.4	1117.9	1120.4	1122.3	1123.5	1124.7	1126.1	1127.3	1127.9
127.5°	1197.1	1199.7	1202.2	1204.7	1207.2	1209.2	1210.7	1212.2	1213.7	1215.2	1216.2
130°	1251.2	1253.8	1256.3	1258.8	1261.3	1263.2	1264.4	1265.6	1267.0	1268.2	1269.4
132.5°	1303.2	1305.6	1308.2	1310.6	1313.2	1314.9	1315.9	1316.9	1317.9	1318.9	1320.1
135°	1382.3	1384.2	1386.1	1388.0	1389.9	1391.4	1392.6	1393.9	1395.2	1396.4	1397.3
137.5°	1449.9	1452.4	1454.7	1457.1	1459.4	1461.0	1461.7	1462.4	1463.1	1463.8	1465.3
140°	1495.1	1496.9	1498.8	1500.7	1502.6	1503.9	1504.9	1505.8	1506.7	1507.7	1509.0
142.5°	1536.7	1538.6	1540.5	1542.4	1544.3	1545.7	1546.6	1547.6	1548.5	1549.4	1550.4
145°	1595.1	1597.2	1599.5	1601.7	1603.8	1605.2	1605.9	1606.5	1607.1	1607.8	1608.4
147.5°	1650.0	1651.5	1652.9	1654.4	1655.8	1656.8	1657.5	1658.1	1658.7	1659.3	1660.0
150°	1683.9	1684.8	1685.7	1686.7	1687.6	1688.4	1689.0	1689.7	1690.3	1690.9	1691.5
152.5°	1714.3	1714.8	1715.1	1715.6	1716.1	1716.5	1716.8	1717.2	1717.6	1718.0	1719.1
155°	1757.1	1756.5	1755.9	1755.3	1754.6	1754.4	1754.8	1755.1	1755.4	1755.7	1757.3
157.5°	1790.4	1790.4	1790.3	1790.2	1790.2	1790.0	1789.6	1789.3	1789.0	1788.7	1790.5
160°	1810.7	1810.3	1810.1	1809.8	1809.4	1809.1	1808.8	1808.5	1808.2	1807.9	1809.8
162.5°	1829.9	1829.0	1828.2	1827.4	1826.6	1826.0	1825.7	1825.4	1825.0	1824.8	1826.9
165°	1852.9	1852.0	1851.1	1850.1	1849.2	1848.6	1848.2	1847.9	1847.7	1847.3	1849.8
167.5°	1870.9	1869.7	1868.5	1867.3	1866.0	1865.4	1865.4	1865.4	1865.4	1865.4	1867.8
170°	1881.1	1879.9	1878.6	1877.4	1876.1	1875.5	1875.5	1875.5	1875.5	1875.5	1878.0
172.5°	1887.9	1886.4	1884.9	1883.4	1881.9	1881.2	1881.5	1881.8	1882.0	1882.3	1884.8
175°	1896.6	1895.1	1893.5	1892.0	1890.4	1889.7	1890.1	1890.4	1890.6	1891.0	1893.2
177.5°	1898.8	1897.6	1896.4	1895.2	1893.9	1893.4	1893.7	1893.9	1894.1	1894.4	1896.4
180°	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1492.0	1492.0	1492.0	1492.0	1492.0	1492.0	1492.0	1492.0
2.5°	1486.2	1488.6	1490.8	1491.9	1491.6	1491.4	1491.1	1490.9
5°	1478.4	1481.2	1484.1	1485.3	1484.7	1484.1	1483.6	1483.0
7.5°	1462.7	1465.3	1467.8	1469.0	1468.6	1468.3	1467.9	1467.5
10°	1448.3	1450.9	1453.5	1454.4	1453.9	1453.3	1452.7	1452.2
12.5°	1432.6	1434.5	1436.3	1437.1	1436.8	1436.4	1436.1	1435.8
15°	1404.1	1406.4	1408.7	1409.0	1407.3	1405.5	1403.8	1402.1
17.5°	1368.1	1369.7	1371.3	1371.8	1371.2	1370.6	1369.9	1369.3
20°	1341.5	1342.7	1343.9	1344.0	1343.1	1342.3	1341.4	1340.6
22.5°	1313.4	1314.3	1315.2	1315.1	1314.1	1313.0	1311.9	1310.8
25°	1266.7	1267.1	1267.3	1267.1	1266.1	1265.3	1264.4	1263.6
27.5°	1217.1	1217.3	1217.6	1217.1	1216.1	1214.9	1213.9	1212.8
30°	1182.8	1182.8	1182.8	1181.8	1179.8	1177.8	1175.8	1173.7
32.5°	1146.7	1145.2	1143.6	1142.2	1141.1	1140.0	1139.0	1137.8
35°	1088.3	1086.6	1084.9	1083.3	1081.9	1080.4	1079.0	1077.6
37.5°	1027.8	1025.8	1023.7	1022.2	1021.3	1020.4	1019.5	1018.6
40°	988.4	986.1	983.8	982.0	980.9	979.8	978.6	977.5
42.5°	947.3	945.0	942.7	941.0	939.9	938.8	937.6	936.5
45°	886.0	882.6	879.2	876.8	875.3	873.9	872.5	871.0
47.5°	821.4	818.1	814.7	812.5	811.2	809.9	808.7	807.4
50°	778.8	775.7	772.5	770.2	768.5	766.7	765.0	763.3
52.5°	735.6	732.9	730.3	728.0	726.3	724.6	722.9	721.2
55°	669.8	666.7	663.5	661.2	659.8	658.4	657.0	655.5
57.5°	605.0	602.3	599.5	597.2	595.6	593.9	592.3	590.6
60°	559.3	556.8	554.2	552.2	550.7	549.3	547.9	546.5
62.5°	515.2	512.6	510.0	508.3	507.3	506.3	505.4	504.4
65°	449.6	447.2	445.0	443.5	442.6	441.8	440.8	440.0
67.5°	384.5	382.5	380.5	378.9	377.7	376.5	375.2	374.1
70°	342.3	340.4	338.4	336.7	335.3	333.8	332.4	330.9
72.5°	299.7	297.9	296.1	294.9	294.2	293.4	292.8	292.0
75°	238.4	236.9	235.4	234.3	233.5	232.6	231.8	230.9
77.5°	181.0	180.0	179.1	178.6	178.6	178.6	178.6	178.6
80°	144.4	144.1	143.8	143.6	143.6	143.6	143.6	143.6
82.5°	111.1	110.6	110.1	109.7	109.4	109.2	109.1	108.8
85°	63.0	62.4	61.8	61.5	61.5	61.5	61.5	61.5
87.5°	29.4	29.4	29.4	29.5	29.6	29.8	29.9	30.0
90°	36.3	37.6	38.8	39.8	40.4	41.0	41.7	42.2
92.5°	40.1	42.1	44.1	45.2	45.6	46.0	46.4	46.8
95°	48.1	50.2	52.4	53.5	53.5	53.5	53.5	53.5
97.5°	50.4	52.9	55.4	56.8	57.1	57.4	57.8	58.1
100°	51.5	54.0	56.6	58.0	58.2	58.5	58.9	59.2
102.5°	77.2	69.5	61.6	58.1	58.6	59.2	59.8	60.3
105°	197.7	142.3	86.9	59.5	60.1	60.8	61.4	62.0
107.5°	484.3	443.7	403.0	361.8	320.1	278.2	236.5	194.7
110°	614.8	604.5	594.2	566.6	521.8	477.0	432.3	387.5





TEST NUMBER: P332208-830

CATALOG NUMBER: S123DIW-S1000D1535U830-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	706.9	707.1	707.3	702.7	693.1	683.7	674.3	664.8
115°	815.1	818.2	821.3	823.5	824.8	826.0	827.3	828.6
117.5°	913.0	915.5	918.0	919.5	919.6	919.9	920.2	920.4
120°	977.3	979.8	982.3	983.5	983.5	983.5	983.5	983.5
122.5°	1040.0	1041.8	1043.6	1044.5	1044.8	1045.0	1045.3	1045.6
125°	1128.5	1129.2	1129.7	1130.4	1131.1	1131.6	1132.3	1132.9
127.5°	1217.2	1218.2	1219.2	1219.4	1218.8	1218.1	1217.5	1216.9
130°	1270.6	1272.0	1273.2	1273.5	1272.9	1272.2	1271.6	1271.0
132.5°	1321.4	1322.7	1323.9	1324.1	1323.2	1322.4	1321.4	1320.6
135°	1398.3	1399.2	1400.1	1400.1	1399.2	1398.3	1397.3	1396.4
137.5°	1466.8	1468.3	1469.8	1470.2	1469.6	1469.0	1468.3	1467.7
140°	1510.2	1511.5	1512.7	1513.1	1512.4	1511.8	1511.2	1510.5
142.5°	1551.4	1552.5	1553.4	1553.5	1552.7	1551.7	1550.9	1550.0
145°	1609.0	1609.7	1610.2	1610.6	1610.6	1610.6	1610.6	1610.6
147.5°	1660.6	1661.2	1661.9	1661.4	1660.0	1658.6	1657.1	1655.7
150°	1692.1	1692.8	1693.4	1693.3	1692.3	1691.4	1690.5	1689.5
152.5°	1720.2	1721.4	1722.5	1722.3	1720.9	1719.4	1718.0	1716.6
155°	1758.9	1760.4	1762.0	1761.8	1759.9	1758.0	1756.1	1754.4
157.5°	1792.4	1794.3	1796.2	1795.9	1793.5	1791.0	1788.6	1786.1
160°	1811.7	1813.5	1815.3	1815.2	1813.0	1810.8	1808.6	1806.5
162.5°	1829.0	1831.2	1833.2	1833.3	1831.5	1829.5	1827.6	1825.6
165°	1852.3	1854.8	1857.4	1857.5	1855.3	1853.1	1850.9	1848.7
167.5°	1870.4	1872.8	1875.4	1875.4	1872.8	1870.4	1867.8	1865.4
170°	1880.5	1883.0	1885.6	1885.6	1883.0	1880.5	1878.0	1875.5
172.5°	1887.3	1889.8	1892.2	1892.2	1889.4	1886.7	1883.9	1881.1
175°	1895.4	1897.5	1899.8	1899.6	1897.1	1894.6	1892.1	1889.6
177.5°	1898.4	1900.4	1902.4	1902.1	1899.6	1897.1	1894.6	1892.2
180°	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6	1896.6

(END OF REPORT)