

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: P332208-840

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332208-840  
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: S123DIW-S1000D1535U840-4F0-1E-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: 10362.1 lumens  
Efficiency: N/A  
Efficacy: 135.3 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

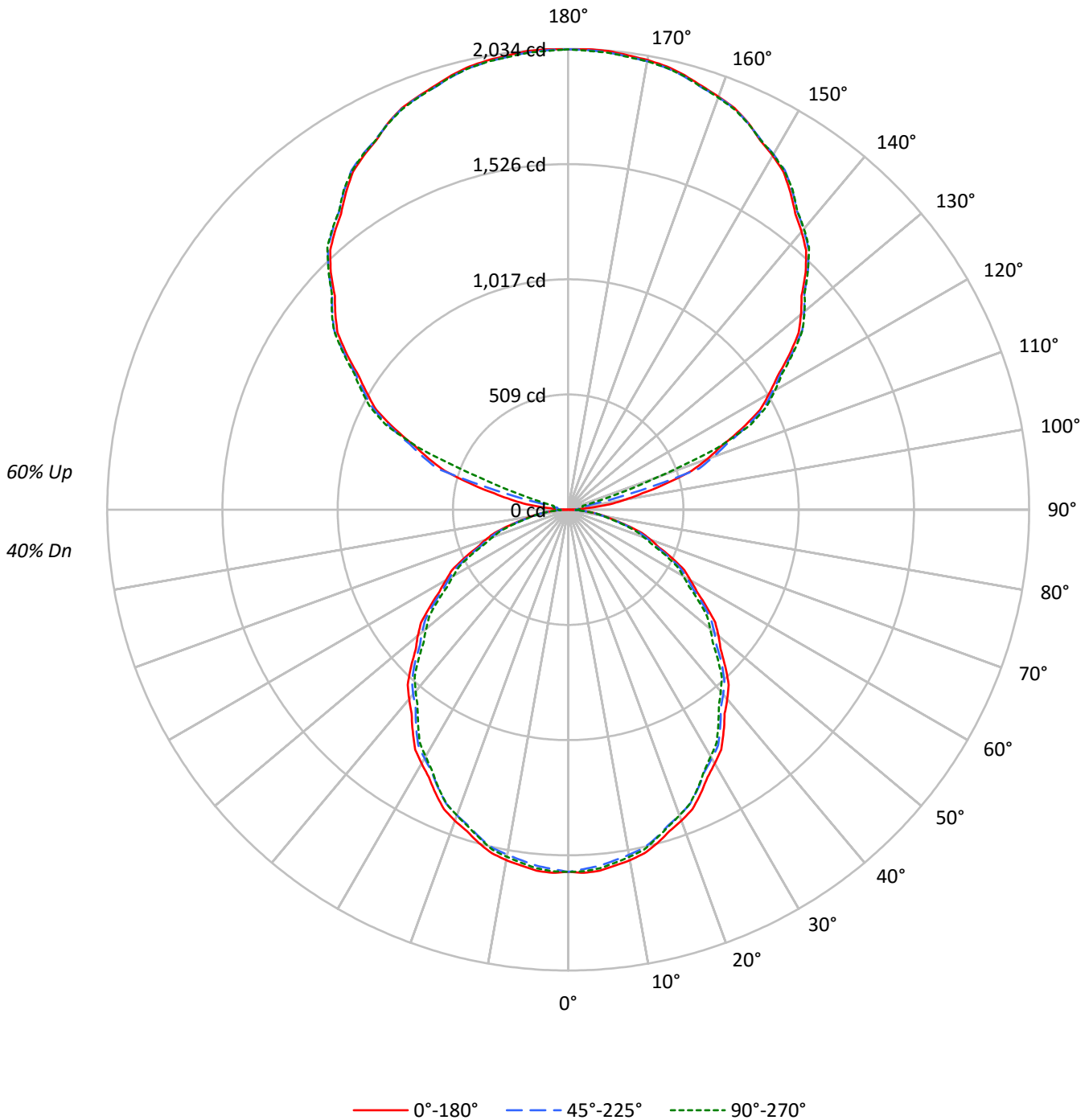
Input Watts (W): 76.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	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	1.5
10°-20°	425.2	4.1
20°-30°	628.0	6.1
30°-40°	733.6	7.1
40°-50°	737.6	7.1
50°-60°	647.9	6.3
60°-70°	482.7	4.7
70°-80°	275.0	2.7
80°-90°	84.6	0.8
90°-100°	73.9	0.7
100°-110°	352.1	3.4
110°-120°	845.8	8.2
120°-130°	1077.0	10.4
130°-140°	1150.8	11.1
140°-150°	1076.1	10.4
150°-160°	868.0	8.4
160°-170°	560.2	5.4
170°-180°	193.1	1.9
0°-30°	1203.8	11.6
0°-40°	1937.4	18.7
0°-60°	3322.8	32.1
0°-90°	4165.1	40.2
90°-120°	1271.8	12.3
90°-150°	4575.6	44.2
90°-180°	6197.0	59.8
0°-180°	10362.1	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	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°	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	28.8	28.8	28.7	28.7	28.9	29.6	30.2	30.8	31.4	31.5
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°	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	31.5	31.5	31.6	31.7	31.9	32.0	32.1
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: P332208-840

CATALOG NUMBER: S123DIW-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)