

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: P332200-840

Luminaire Tested: **S123DIW-S1000D1320U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332200-840  
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-S1000D1320U840-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1000 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1320 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9574.9 lumens  
Efficiency: N/A  
Efficacy: 137.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

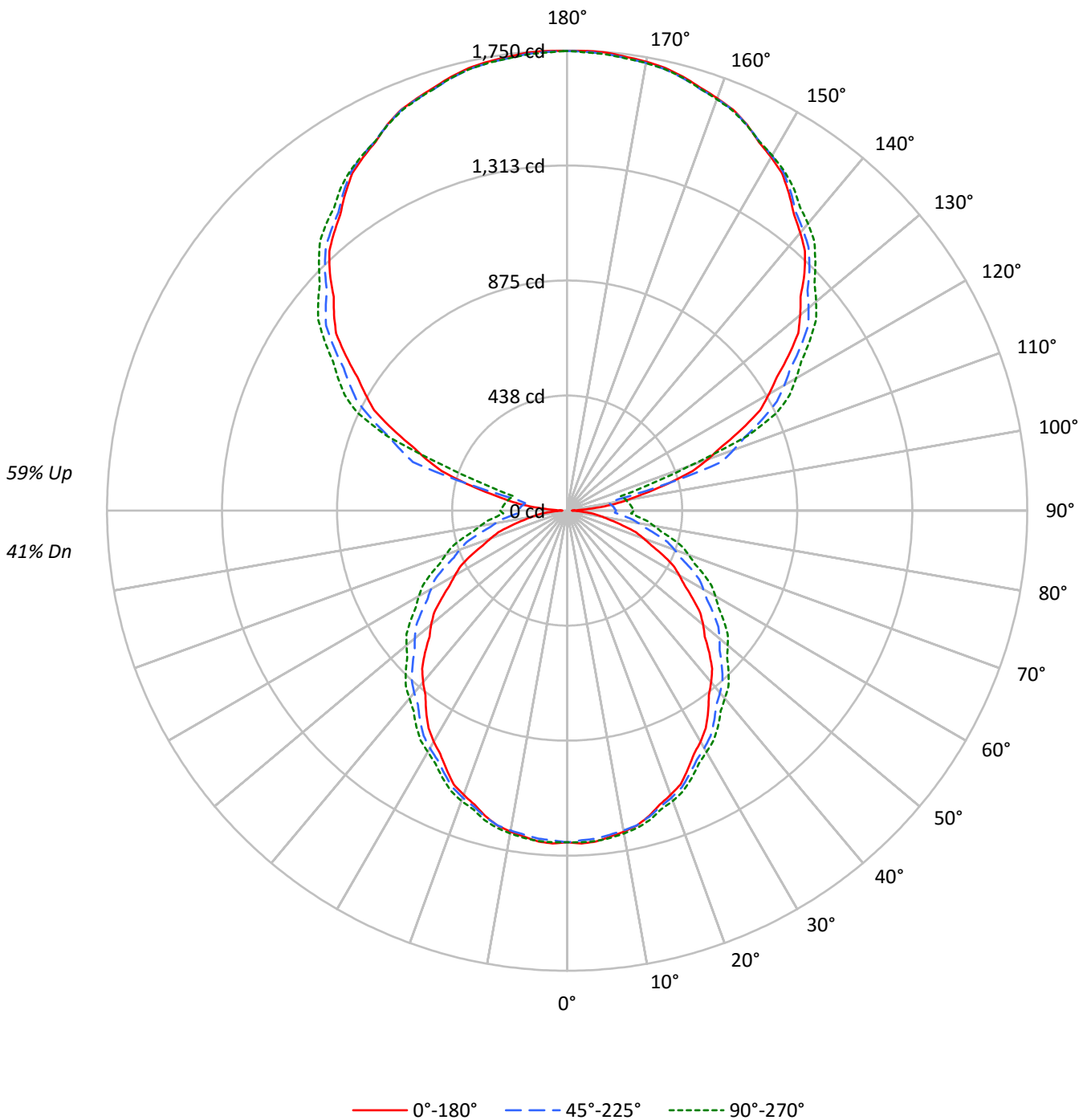
Input Watts (W): 69.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	105	105	105	105	96	96	96	96	78	78	78	62	62	62	48	48	48	41				
1	95	90	86	82	86	82	79	75	67	65	62	53	52	50	41	39	38	32				
2	86	78	72	66	78	71	66	61	58	54	51	46	43	41	35	33	32	26				
3	78	68	61	55	71	62	56	51	51	46	42	41	37	34	31	29	27	22				
4	71	60	52	46	65	55	48	43	45	40	36	36	32	29	27	25	23	19				
5	65	54	45	39	59	49	42	36	40	35	31	32	28	25	25	22	20	16				
6	60	48	40	34	54	44	37	31	36	31	27	29	25	22	22	19	17	14				
7	56	43	35	30	50	40	32	27	33	27	23	26	22	19	20	17	15	12				
8	51	39	31	26	47	36	29	24	30	24	21	24	20	17	19	16	13	11				
9	48	36	28	23	43	33	26	21	27	22	18	22	18	15	17	14	12	10				
10	45	33	25	21	41	30	23	19	25	20	16	20	16	14	16	13	11	9				

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

	0°	45°	90°
0°	13581	13581	13581
5°	13623	13239	13246
10°	13501	12935	12870
15°	13327	12588	12458
20°	13078	12192	12005
25°	12772	11738	11529
30°	12457	11328	11046
35°	12104	10895	10660
40°	11767	10501	10247
45°	11396	10122	9918
50°	11028	9750	9554
55°	10621	9366	9226
60°	10225	8977	8892
65°	9818	8564	8493
70°	9204	8097	8084
75°	8432	7563	7667
80°	7539	7041	7193
85°	6723	6680	6917



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	119.6	1.2
10°-20°	341.0	3.6
20°-30°	510.0	5.3
30°-40°	609.0	6.4
40°-50°	637.2	6.7
50°-60°	598.0	6.2
60°-70°	499.4	5.2
70°-80°	357.3	3.7
80°-90°	218.0	2.3
90°-100°	197.2	2.1
100°-110°	401.1	4.2
110°-120°	793.1	8.3
120°-130°	963.8	10.1
130°-140°	1006.6	10.5
140°-150°	929.1	9.7
150°-160°	746.6	7.8
160°-170°	481.8	5.0
170°-180°	166.1	1.7
0°-30°	970.6	10.1
0°-40°	1579.6	16.5
0°-60°	2814.7	29.4
0°-90°	3889.4	40.6
90°-120°	1391.4	14.5
90°-150°	4291.0	44.8
90°-180°	5685.0	59.4
0°-180°	9574.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1262	1262	1262	1262	1262	
5°	1263	1260	1252	1262	1262	120
15°	1203	1206	1205	1218	1218	339
25°	1086	1099	1104	1121	1122	500
35°	935	956	974	994	1001	584
45°	764	797	832	857	869	589
55°	583	628	678	713	726	522
65°	403	457	517	556	572	398
75°	218	283	352	396	414	233
85°	67	136	209	254	269	71
90°	19	100	186	236	255	16
95°	94	99	176	226	242	110
105°	398	439	388	208	211	421
115°	733	759	818	863	880	723
125°	1027	1040	1083	1113	1126	918
135°	1277	1284	1303	1331	1335	982
145°	1471	1479	1482	1495	1501	920
155°	1619	1617	1618	1624	1617	746
165°	1708	1704	1702	1712	1704	482
175°	1748	1742	1743	1751	1741	166
180°	1748	1748	1748	1748	1748	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7
2.5°	1267.3	1266.6	1265.8	1265.1	1264.4	1262.9	1261.0	1259.1	1257.1	1255.2	1257.1
5°	1263.1	1262.5	1261.9	1261.3	1260.7	1259.5	1257.7	1255.8	1253.9	1252.1	1254.6
7.5°	1250.7	1250.9	1251.0	1251.1	1251.2	1250.4	1248.7	1246.9	1245.1	1243.3	1246.4
10°	1239.8	1240.4	1241.0	1241.6	1242.2	1241.7	1240.2	1238.7	1237.2	1235.7	1238.7
12.5°	1226.6	1227.4	1228.3	1229.1	1230.0	1229.9	1228.9	1227.8	1226.8	1225.8	1228.6
15°	1202.6	1203.6	1204.5	1205.4	1206.3	1206.6	1206.3	1206.0	1205.7	1205.4	1208.5
17.5°	1172.5	1174.3	1176.1	1177.9	1179.7	1180.6	1180.5	1180.3	1180.2	1180.1	1182.9
20°	1150.4	1152.3	1154.1	1155.9	1157.7	1159.0	1159.6	1160.2	1160.8	1161.4	1164.2
22.5°	1127.3	1129.1	1131.0	1132.9	1134.7	1136.0	1136.9	1137.7	1138.6	1139.4	1142.9
25°	1085.8	1088.8	1092.0	1095.0	1098.0	1100.0	1101.0	1101.9	1102.8	1103.7	1107.6
27.5°	1044.0	1047.5	1051.0	1054.5	1057.9	1060.7	1062.7	1064.6	1066.5	1068.5	1072.0
30°	1014.3	1018.3	1022.3	1026.2	1030.3	1033.4	1035.9	1038.3	1040.8	1043.2	1046.9
32.5°	981.4	985.8	990.3	994.7	999.2	1003.0	1006.2	1009.4	1012.6	1015.7	1019.7
35°	934.6	939.5	944.4	949.3	954.2	958.6	962.6	966.5	970.5	974.5	979.1
37.5°	885.1	890.7	896.2	901.6	907.2	912.3	917.3	922.1	927.0	931.9	937.1
40°	852.1	857.7	863.1	868.7	874.1	880.0	886.1	892.2	898.3	904.4	909.6
42.5°	815.9	822.6	829.3	836.1	842.7	849.3	855.7	862.0	868.4	874.7	880.4
45°	764.2	771.5	778.9	786.2	793.6	801.0	808.6	816.3	823.9	831.5	837.4
47.5°	710.0	718.3	726.7	735.0	743.3	751.8	760.5	769.3	778.0	786.8	793.2
50°	674.9	683.4	692.0	700.5	709.0	718.1	727.5	737.0	746.5	756.0	763.0
52.5°	637.4	646.5	655.6	664.6	673.7	683.4	693.9	704.3	714.7	725.2	732.5
55°	582.8	592.9	602.9	613.0	623.1	633.6	644.6	655.6	666.6	677.6	685.9
57.5°	529.5	540.0	550.5	561.0	571.5	582.8	594.8	606.8	618.8	630.9	639.1
60°	492.1	503.0	514.0	525.0	536.0	547.8	560.3	572.9	585.4	597.9	606.4
62.5°	456.9	468.1	479.4	490.6	501.8	514.1	527.4	540.6	553.8	567.1	575.6
65°	402.7	414.7	426.6	438.5	450.4	463.0	476.5	489.9	503.3	516.8	525.9
67.5°	347.7	360.4	373.0	385.7	398.3	411.5	425.2	438.9	452.5	466.3	476.3
70°	309.2	322.3	335.5	348.7	361.8	375.7	390.3	405.1	419.7	434.3	444.1
72.5°	274.1	287.2	300.3	313.5	326.6	340.7	355.9	371.0	386.2	401.3	411.3
75°	218.5	232.9	247.2	261.7	276.0	290.7	306.1	321.3	336.6	351.8	361.9
77.5°	170.2	184.6	199.1	213.6	228.0	243.0	258.4	273.8	289.2	304.6	315.2
80°	136.0	151.1	166.0	181.0	195.9	211.4	227.2	243.2	259.0	274.9	285.3
82.5°	106.3	121.6	136.8	152.0	167.2	182.9	199.0	215.1	231.3	247.4	257.8
85°	67.4	82.6	97.9	113.2	128.5	144.2	160.4	176.5	192.7	208.9	219.3
87.5°	36.9	52.6	68.4	84.2	100.0	116.0	132.4	148.7	165.0	181.4	192.0
90°	19.2	37.1	54.8	72.7	90.6	109.2	128.5	147.8	167.1	186.5	198.0
92.5°	40.9	53.6	66.3	79.0	91.7	107.1	125.3	143.4	161.6	179.8	191.8
95°	94.3	94.4	94.5	94.5	94.6	103.8	121.9	140.1	158.1	176.3	187.8
97.5°	172.7	178.1	183.6	188.9	194.4	193.9	187.4	181.0	174.5	167.9	179.4
100°	231.9	247.3	262.9	278.4	294.0	286.3	255.3	224.4	193.4	162.4	173.6
102.5°	299.3	312.3	325.2	338.1	351.1	339.9	304.5	269.1	233.8	198.4	199.9
105°	398.0	408.5	419.0	429.5	440.0	438.8	426.0	413.1	400.3	387.5	345.0
107.5°	500.7	509.5	518.3	527.0	535.8	548.5	565.0	581.6	598.1	614.7	585.4
110°	569.2	577.0	584.8	592.6	600.5	612.0	627.4	642.8	658.2	673.6	672.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	635.7	642.3	648.8	655.5	662.1	672.9	687.7	702.7	717.5	732.5	740.3
115°	732.8	738.1	743.6	748.9	754.4	763.9	777.4	791.0	804.6	818.2	828.4
117.5°	827.8	832.1	836.6	840.9	845.4	853.3	865.1	876.7	888.4	900.0	909.6
120°	885.9	890.0	894.1	898.3	902.4	909.9	920.9	931.8	942.7	953.7	963.0
122.5°	946.1	949.1	952.0	954.9	957.9	964.6	975.3	986.0	996.7	1007.4	1015.8
125°	1027.3	1029.7	1032.0	1034.3	1036.6	1042.8	1052.8	1062.8	1072.8	1082.8	1089.7
127.5°	1107.3	1109.3	1111.4	1113.4	1115.4	1120.7	1129.4	1138.1	1146.9	1155.6	1162.6
130°	1157.2	1159.2	1161.2	1163.2	1165.2	1169.8	1177.1	1184.4	1191.6	1198.9	1205.9
132.5°	1203.9	1206.2	1208.4	1210.6	1212.8	1216.9	1222.7	1228.5	1234.4	1240.1	1246.9
135°	1276.6	1278.0	1279.4	1280.9	1282.3	1285.3	1289.8	1294.2	1298.8	1303.3	1309.7
137.5°	1338.7	1340.6	1342.5	1344.5	1346.5	1348.7	1351.2	1353.7	1356.2	1358.8	1365.0
140°	1379.1	1380.8	1382.6	1384.3	1386.0	1387.8	1389.6	1391.4	1393.1	1394.9	1400.7
142.5°	1417.5	1419.1	1420.5	1422.0	1423.5	1424.7	1425.8	1426.8	1427.8	1429.0	1434.0
145°	1471.3	1473.0	1474.7	1476.4	1478.1	1479.3	1479.9	1480.5	1481.1	1481.6	1484.6
147.5°	1520.6	1521.9	1523.2	1524.5	1525.9	1526.8	1527.4	1527.9	1528.5	1529.1	1530.5
150°	1551.8	1552.6	1553.5	1554.3	1555.2	1555.9	1556.5	1557.0	1557.6	1558.2	1558.8
152.5°	1579.7	1580.1	1580.5	1580.9	1581.3	1581.8	1582.2	1582.5	1582.8	1583.2	1584.2
155°	1619.2	1618.7	1618.1	1617.5	1616.9	1616.8	1617.1	1617.4	1617.7	1617.9	1619.4
157.5°	1649.9	1649.8	1649.8	1649.7	1649.6	1649.5	1649.2	1648.9	1648.6	1648.3	1650.0
160°	1668.6	1668.3	1668.0	1667.7	1667.4	1667.2	1666.9	1666.6	1666.3	1666.0	1667.7
162.5°	1686.3	1685.5	1684.8	1683.9	1683.2	1682.7	1682.4	1682.1	1681.8	1681.5	1683.5
165°	1707.6	1706.7	1705.8	1705.0	1704.0	1703.5	1703.2	1702.9	1702.6	1702.3	1704.7
167.5°	1724.1	1723.0	1721.8	1720.7	1719.5	1719.0	1719.0	1719.0	1719.0	1719.0	1721.3
170°	1733.5	1732.3	1731.2	1730.1	1728.9	1728.3	1728.3	1728.3	1728.3	1728.3	1730.6
172.5°	1739.8	1738.4	1737.0	1735.6	1734.2	1733.6	1733.8	1734.1	1734.3	1734.5	1736.9
175°	1747.8	1746.4	1744.9	1743.4	1742.0	1741.4	1741.7	1742.0	1742.3	1742.6	1744.6
177.5°	1749.9	1748.7	1747.6	1746.5	1745.2	1744.8	1745.0	1745.2	1745.5	1745.8	1747.6
180°	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7
2.5°	1259.1	1261.0	1262.9	1263.8	1263.5	1263.3	1263.1	1262.8
5°	1257.0	1259.5	1261.9	1262.9	1262.6	1262.3	1262.0	1261.7
7.5°	1249.4	1252.5	1255.6	1256.9	1256.6	1256.2	1255.8	1255.5
10°	1241.7	1244.8	1247.9	1249.1	1248.5	1247.9	1247.3	1246.7
12.5°	1231.3	1234.2	1237.0	1238.1	1237.5	1236.9	1236.3	1235.7
15°	1211.5	1214.6	1217.6	1219.0	1218.7	1218.4	1218.1	1217.8
17.5°	1185.6	1188.4	1191.1	1192.2	1191.8	1191.4	1191.0	1190.5
20°	1166.9	1169.6	1172.5	1174.0	1174.3	1174.6	1174.9	1175.2
22.5°	1146.4	1149.8	1153.4	1155.0	1154.8	1154.7	1154.5	1154.3
25°	1111.7	1115.6	1119.5	1121.6	1121.6	1121.6	1121.6	1121.6
27.5°	1075.3	1078.7	1082.2	1084.0	1084.3	1084.5	1084.8	1085.0
30°	1050.6	1054.2	1057.8	1059.8	1059.8	1059.8	1059.8	1059.8
32.5°	1023.6	1027.4	1031.4	1033.7	1034.4	1035.1	1035.9	1036.6
35°	983.6	988.3	992.8	995.7	996.9	998.2	999.4	1000.6
37.5°	942.3	947.5	952.7	955.7	956.7	957.7	958.7	959.7
40°	914.7	920.0	925.1	928.4	929.6	930.8	932.0	933.2
42.5°	886.1	891.7	897.5	901.1	902.8	904.5	906.3	908.0
45°	843.1	849.0	854.7	858.9	861.3	863.7	866.3	868.7
47.5°	799.8	806.4	812.8	817.1	819.0	820.9	822.7	824.7
50°	770.0	777.0	784.1	788.6	790.8	792.9	795.1	797.2
52.5°	739.7	747.0	754.3	759.2	761.8	764.5	767.1	769.7
55°	694.1	702.4	710.6	715.9	718.4	720.8	723.3	725.7
57.5°	647.5	655.8	664.1	669.7	672.6	675.4	678.3	681.2
60°	615.0	623.6	632.1	638.0	641.5	644.8	648.1	651.5
62.5°	584.2	592.8	601.3	607.1	610.3	613.4	616.5	619.7
65°	535.1	544.3	553.4	559.6	562.6	565.6	568.8	571.8
67.5°	486.3	496.2	506.2	512.6	515.1	517.8	520.3	522.8
70°	453.8	463.6	473.4	479.9	482.9	485.9	489.0	492.1
72.5°	421.4	431.4	441.4	448.0	451.0	454.0	457.2	460.2
75°	372.0	382.1	392.1	399.1	402.7	406.4	410.0	413.7
77.5°	325.9	336.5	347.1	353.9	356.6	359.4	362.2	365.1
80°	295.7	306.1	316.4	323.2	326.2	329.2	332.3	335.4
82.5°	268.2	278.5	288.9	295.7	298.7	301.7	304.8	307.9
85°	229.6	240.0	250.4	257.2	260.2	263.3	266.3	269.4
87.5°	202.6	213.2	223.8	230.7	233.9	237.0	240.2	243.4
90°	209.5	221.1	232.7	240.2	243.9	247.5	251.2	254.8
92.5°	203.7	215.7	227.7	235.3	238.4	241.6	244.8	247.9
95°	199.3	210.8	222.3	229.5	232.6	235.7	238.7	241.8
97.5°	190.8	202.2	213.6	221.0	224.4	227.7	231.1	234.4
100°	184.8	195.9	207.1	214.4	217.7	221.1	224.4	227.7
102.5°	201.4	202.8	204.3	206.7	210.4	213.9	217.5	221.1
105°	302.5	259.9	217.3	197.7	201.1	204.4	207.7	211.1
107.5°	556.1	526.8	497.6	465.0	429.3	393.4	357.7	321.8
110°	670.4	668.8	667.3	647.0	608.2	569.5	530.6	491.8





TEST NUMBER: P332200-840

CATALOG NUMBER: S123DIW-S1000D1320U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	748.2	756.1	764.0	764.9	758.8	752.8	746.8	740.7
115°	838.6	848.8	859.1	866.0	869.6	873.1	876.8	880.4
117.5°	919.2	928.7	938.3	944.4	947.1	949.6	952.2	954.8
120°	972.4	981.7	991.1	996.7	999.0	1001.1	1003.2	1005.3
122.5°	1024.2	1032.6	1041.0	1046.4	1048.7	1051.2	1053.5	1055.8
125°	1096.8	1103.8	1110.8	1115.6	1118.3	1121.1	1123.8	1126.5
127.5°	1169.5	1176.5	1183.5	1187.7	1189.2	1190.7	1192.1	1193.7
130°	1212.8	1219.8	1226.7	1230.8	1232.1	1233.3	1234.6	1235.9
132.5°	1253.5	1260.3	1267.0	1271.0	1272.2	1273.5	1274.8	1276.1
135°	1316.1	1322.4	1328.8	1332.3	1332.9	1333.6	1334.2	1334.9
137.5°	1371.2	1377.5	1383.6	1387.3	1388.2	1389.1	1390.1	1391.0
140°	1406.3	1412.1	1417.9	1421.2	1422.1	1423.1	1424.0	1425.0
142.5°	1439.0	1444.0	1449.1	1451.9	1452.6	1453.3	1454.0	1454.7
145°	1487.6	1490.7	1493.7	1495.8	1497.0	1498.2	1499.4	1500.7
147.5°	1531.8	1533.1	1534.4	1534.9	1534.7	1534.5	1534.2	1534.0
150°	1559.3	1559.9	1560.5	1560.6	1560.4	1560.1	1559.9	1559.6
152.5°	1585.2	1586.3	1587.3	1587.2	1586.0	1584.8	1583.6	1582.4
155°	1620.8	1622.2	1623.8	1623.6	1621.8	1620.1	1618.4	1616.7
157.5°	1651.8	1653.6	1655.3	1655.0	1652.7	1650.5	1648.2	1646.0
160°	1669.4	1671.2	1672.9	1672.7	1670.7	1668.7	1666.7	1664.7
162.5°	1685.5	1687.5	1689.4	1689.5	1687.7	1686.0	1684.2	1682.3
165°	1707.0	1709.3	1711.6	1711.7	1709.7	1707.7	1705.7	1703.6
167.5°	1723.6	1725.9	1728.2	1728.2	1725.9	1723.6	1721.3	1719.0
170°	1732.9	1735.3	1737.6	1737.6	1735.3	1732.9	1730.6	1728.3
172.5°	1739.2	1741.5	1743.8	1743.6	1741.1	1738.6	1736.1	1733.5
175°	1746.7	1748.7	1750.7	1750.5	1748.3	1746.0	1743.6	1741.3
177.5°	1749.4	1751.3	1753.1	1752.9	1750.6	1748.3	1746.0	1743.6
180°	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8	1747.8

(END OF REPORT)