

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: P332236-830

Luminaire Tested: **S123DIW-S1165D1535U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332236-830  
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-S1165D1535U830-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1535 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10359.7 lumens  
Efficiency: N/A  
Efficacy: 125.0 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

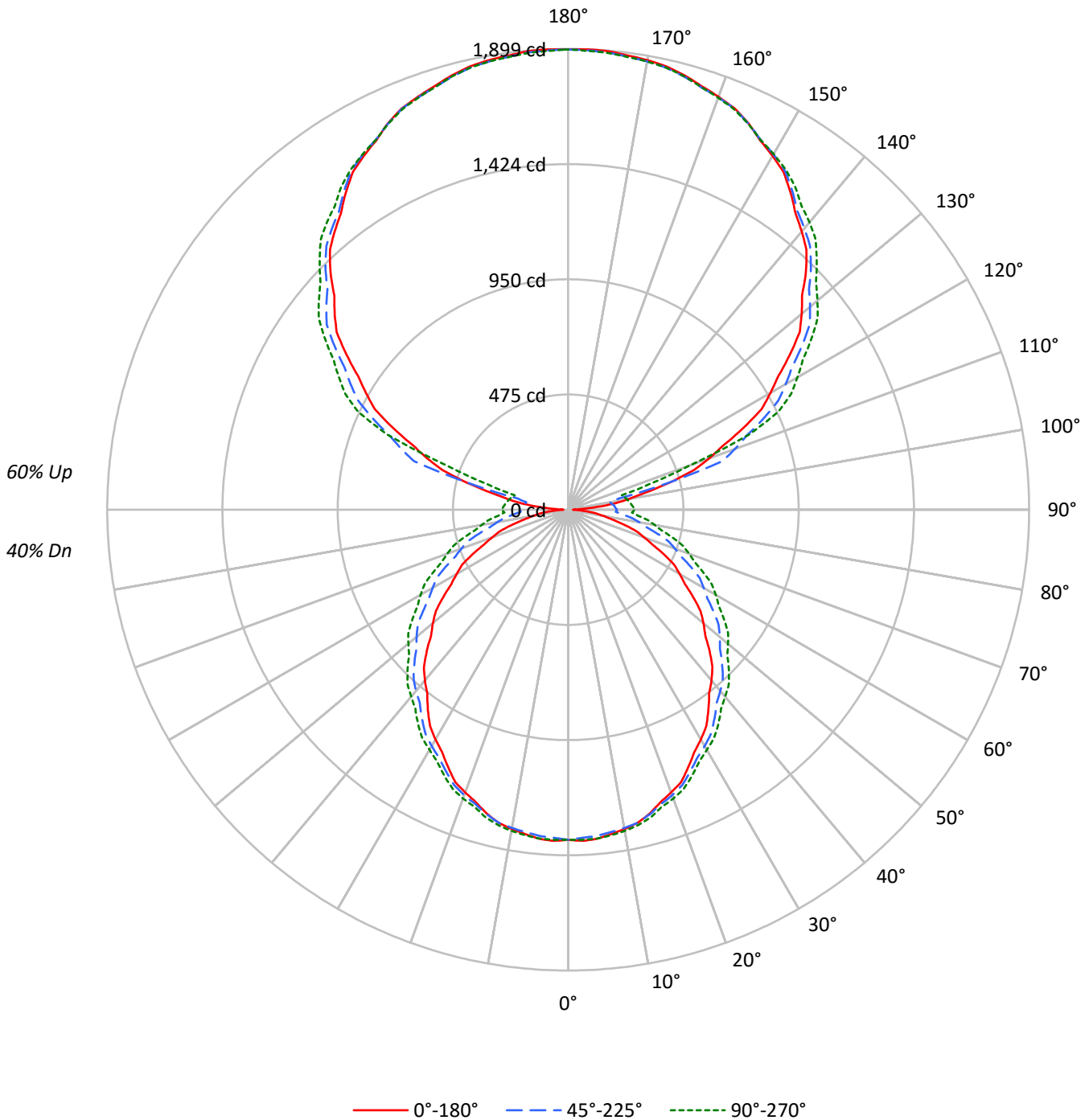
Input Watts (W): 82.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332236-830

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### Luminous Intensity Polar Plot





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CATALOG NUMBER: S123DIW-S1165D1535U830-4F0-1E-UDD-D

**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	96	96	96	96	78	78	78	62	62	62	47	47	47	40
1	95	90	86	82	86	82	79	75	67	65	62	53	51	50	40	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	28	26	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	55	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°	14640	14640	14640
5°	14685	14271	14279
10°	14553	13942	13872
15°	14366	13569	13429
20°	14098	13143	12941
25°	13767	12652	12427
30°	13428	12211	11906
35°	13049	11744	11491
40°	12686	11320	11046
45°	12284	10913	10690
50°	11887	10508	10298
55°	11448	10097	9946
60°	11021	9677	9585
65°	10584	9230	9154
70°	9925	8729	8713
75°	9088	8154	8264
80°	8133	7589	7753
85°	7242	7201	7456



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	128.9	1.2
10°-20°	367.5	3.5
20°-30°	549.7	5.3
30°-40°	656.5	6.3
40°-50°	686.9	6.6
50°-60°	644.6	6.2
60°-70°	538.3	5.2
70°-80°	385.2	3.7
80°-90°	235.0	2.3
90°-100°	213.1	2.1
100°-110°	434.6	4.2
110°-120°	860.1	8.3
120°-130°	1045.6	10.1
130°-140°	1092.2	10.5
140°-150°	1008.2	9.7
150°-160°	810.2	7.8
160°-170°	522.9	5.0
170°-180°	180.2	1.7
0°-30°	1046.2	10.1
0°-40°	1702.7	16.4
0°-60°	3034.1	29.3
0°-90°	4192.6	40.5
90°-120°	1507.8	14.6
90°-150°	4653.8	44.9
90°-180°	6167.0	59.5
0°-180°	10359.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1360	1360	1360	1360	1360	
5°	1362	1358	1350	1361	1360	129
15°	1296	1300	1299	1313	1313	365
25°	1170	1185	1190	1208	1209	539
35°	1008	1031	1050	1072	1079	630
45°	824	859	896	924	936	635
55°	628	677	730	769	782	562
65°	434	492	557	600	616	429
75°	236	305	379	426	446	252
85°	73	147	225	274	290	76
90°	21	108	201	255	275	17
95°	102	107	190	244	261	119
105°	432	476	420	224	228	457
115°	795	824	887	935	954	785
125°	1115	1128	1175	1207	1222	996
135°	1385	1393	1414	1444	1448	1066
145°	1597	1605	1608	1622	1628	999
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°	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1
2.5°	1366.0	1365.3	1364.4	1363.7	1362.8	1361.4	1359.3	1357.2	1355.1	1353.0	1355.1
5°	1361.6	1360.9	1360.3	1359.6	1359.0	1357.6	1355.7	1353.7	1351.7	1349.7	1352.4
7.5°	1348.2	1348.4	1348.5	1348.7	1348.8	1347.9	1346.0	1344.1	1342.2	1340.2	1343.5
10°	1336.4	1337.1	1337.8	1338.4	1339.1	1338.5	1336.9	1335.2	1333.6	1331.9	1335.2
12.5°	1322.2	1323.0	1324.0	1324.9	1325.9	1325.8	1324.6	1323.5	1322.4	1321.3	1324.3
15°	1296.4	1297.4	1298.4	1299.4	1300.3	1300.7	1300.3	1300.0	1299.7	1299.4	1302.7
17.5°	1263.8	1265.7	1267.7	1269.7	1271.7	1272.6	1272.5	1272.3	1272.2	1272.1	1275.1
20°	1240.1	1242.1	1244.1	1246.0	1248.0	1249.3	1250.0	1250.7	1251.3	1252.0	1254.9
22.5°	1215.2	1217.2	1219.2	1221.2	1223.1	1224.6	1225.5	1226.4	1227.3	1228.2	1232.0
25°	1170.4	1173.7	1177.0	1180.3	1183.6	1185.7	1186.8	1187.7	1188.7	1189.7	1194.0
27.5°	1125.4	1129.2	1132.9	1136.7	1140.4	1143.4	1145.5	1147.5	1149.7	1151.8	1155.5
30°	1093.4	1097.7	1101.9	1106.3	1110.5	1114.0	1116.6	1119.3	1121.9	1124.5	1128.5
32.5°	1057.8	1062.6	1067.4	1072.2	1077.0	1081.2	1084.6	1088.1	1091.5	1094.9	1099.1
35°	1007.5	1012.8	1018.0	1023.3	1028.6	1033.3	1037.6	1041.9	1046.1	1050.5	1055.4
37.5°	954.1	960.1	966.0	971.9	977.9	983.4	988.7	994.0	999.3	1004.6	1010.1
40°	918.6	924.5	930.5	936.3	942.3	948.6	955.2	961.7	968.3	974.9	980.5
42.5°	879.5	886.7	894.0	901.2	908.4	915.5	922.4	929.2	936.0	942.9	949.0
45°	823.8	831.7	839.5	847.4	855.4	863.5	871.7	879.9	888.2	896.4	902.6
47.5°	765.3	774.3	783.3	792.3	801.3	810.4	819.8	829.2	838.7	848.1	855.1
50°	727.5	736.7	745.9	755.1	764.3	774.0	784.3	794.5	804.6	814.8	822.5
52.5°	687.2	696.9	706.6	716.4	726.1	736.7	747.9	759.1	770.4	781.7	789.6
55°	628.2	639.0	649.9	660.8	671.7	683.0	694.8	706.7	718.6	730.5	739.3
57.5°	570.7	582.0	593.3	604.6	616.0	628.2	641.1	654.1	667.0	680.0	689.0
60°	530.4	542.2	554.1	566.0	577.8	590.5	604.0	617.5	631.0	644.5	653.7
62.5°	492.5	504.6	516.7	528.9	540.9	554.1	568.4	582.7	597.0	611.3	620.5
65°	434.1	447.0	459.8	472.6	485.5	499.2	513.6	528.1	542.6	557.0	566.9
67.5°	374.8	388.5	402.1	415.8	429.3	443.6	458.3	473.1	487.8	502.6	513.3
70°	333.4	347.5	361.7	375.8	390.0	405.0	420.8	436.6	452.4	468.2	478.7
72.5°	295.4	309.6	323.8	337.9	352.0	367.3	383.6	399.9	416.3	432.6	443.5
75°	235.5	251.1	266.6	282.0	297.5	313.4	329.9	346.4	362.8	379.3	390.1
77.5°	183.4	199.1	214.6	230.3	245.8	261.9	278.5	295.1	311.7	328.3	339.8
80°	146.7	162.8	179.0	195.1	211.2	227.8	245.0	262.1	279.2	296.3	307.6
82.5°	114.7	131.1	147.5	163.9	180.2	197.2	214.5	232.0	249.3	266.6	277.9
85°	72.6	89.1	105.6	122.0	138.5	155.4	172.9	190.3	207.7	225.2	236.4
87.5°	39.7	56.7	73.7	90.8	107.8	125.1	142.7	160.3	178.0	195.5	207.0
90°	20.6	40.0	59.2	78.4	97.7	117.8	138.6	159.5	180.4	201.2	213.7
92.5°	44.3	58.0	71.6	85.3	99.0	115.6	135.3	154.9	174.4	194.0	207.0
95°	102.3	102.3	102.3	102.3	102.3	112.1	131.7	151.2	170.8	190.4	202.7
97.5°	187.3	193.1	199.0	204.7	210.6	209.9	202.8	195.7	188.5	181.3	193.7
100°	251.5	268.2	285.0	301.9	318.7	310.2	276.5	242.8	209.1	175.4	187.5
102.5°	324.7	338.7	352.7	366.6	380.7	368.4	329.9	291.4	253.0	214.5	216.0
105°	431.8	443.1	454.5	465.8	477.1	475.8	461.8	447.8	433.8	419.7	373.5
107.5°	543.3	552.7	562.2	571.7	581.2	594.8	612.7	630.6	648.5	666.4	634.5
110°	617.6	626.0	634.5	642.9	651.3	663.8	680.5	697.1	713.7	730.3	728.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	689.8	696.9	704.0	711.1	718.3	729.9	745.9	762.0	778.2	794.2	802.7
115°	795.1	800.9	806.7	812.6	818.4	828.7	843.3	858.0	872.7	887.3	898.3
117.5°	898.2	903.0	907.8	912.5	917.2	925.9	938.5	951.0	963.6	976.2	986.5
120°	961.3	965.7	970.3	974.7	979.1	987.3	999.1	1010.9	1022.7	1034.5	1044.6
122.5°	1026.7	1029.8	1033.0	1036.2	1039.3	1046.7	1058.2	1069.8	1081.3	1092.8	1101.9
125°	1114.8	1117.3	1119.8	1122.3	1124.8	1131.5	1142.3	1153.1	1163.9	1174.7	1182.2
127.5°	1201.6	1203.8	1206.0	1208.2	1210.3	1216.1	1225.5	1234.9	1244.3	1253.7	1261.2
130°	1255.7	1257.9	1260.1	1262.3	1264.4	1269.4	1277.2	1285.1	1293.0	1300.8	1308.2
132.5°	1306.4	1308.8	1311.3	1313.7	1316.2	1320.5	1326.7	1333.0	1339.3	1345.6	1352.8
135°	1385.3	1386.9	1388.4	1390.0	1391.5	1394.7	1399.6	1404.4	1409.3	1414.2	1421.1
137.5°	1452.6	1454.7	1456.9	1459.0	1461.0	1463.5	1466.2	1469.0	1471.7	1474.4	1481.1
140°	1496.5	1498.4	1500.2	1502.1	1504.0	1505.9	1507.9	1509.8	1511.7	1513.6	1519.8
142.5°	1538.2	1539.8	1541.4	1543.0	1544.7	1546.1	1547.2	1548.3	1549.4	1550.6	1556.0
145°	1596.6	1598.5	1600.2	1602.1	1604.0	1605.2	1605.9	1606.5	1607.1	1607.8	1611.0
147.5°	1650.0	1651.5	1652.9	1654.4	1655.8	1656.8	1657.5	1658.1	1658.7	1659.3	1660.8
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°	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1
2.5°	1357.2	1359.3	1361.4	1362.4	1362.1	1361.8	1361.5	1361.3
5°	1355.0	1357.6	1360.3	1361.4	1361.1	1360.7	1360.5	1360.1
7.5°	1346.8	1350.1	1353.4	1354.9	1354.4	1354.1	1353.7	1353.3
10°	1338.5	1341.8	1345.1	1346.4	1345.8	1345.1	1344.4	1343.8
12.5°	1327.4	1330.4	1333.4	1334.5	1333.9	1333.2	1332.6	1331.9
15°	1305.9	1309.2	1312.5	1314.0	1313.7	1313.3	1313.1	1312.7
17.5°	1278.0	1281.0	1283.9	1285.2	1284.8	1284.3	1283.8	1283.4
20°	1257.8	1260.8	1263.8	1265.5	1265.7	1266.1	1266.4	1266.8
22.5°	1235.8	1239.5	1243.2	1245.0	1244.8	1244.6	1244.4	1244.3
25°	1198.3	1202.6	1206.8	1209.0	1209.0	1209.0	1209.0	1209.0
27.5°	1159.1	1162.8	1166.5	1168.5	1168.8	1169.0	1169.3	1169.6
30°	1132.5	1136.4	1140.3	1142.3	1142.3	1142.3	1142.3	1142.3
32.5°	1103.3	1107.6	1111.7	1114.3	1115.0	1115.9	1116.6	1117.4
35°	1060.4	1065.3	1070.2	1073.4	1074.7	1076.0	1077.3	1078.6
37.5°	1015.7	1021.3	1026.9	1030.2	1031.3	1032.4	1033.4	1034.4
40°	986.1	991.6	997.3	1000.7	1002.0	1003.3	1004.7	1006.0
42.5°	955.2	961.3	967.4	971.4	973.2	975.1	976.9	978.7
45°	908.9	915.1	921.4	925.9	928.5	931.1	933.8	936.3
47.5°	862.1	869.2	876.3	880.8	882.8	884.9	886.9	888.9
50°	830.0	837.6	845.2	850.1	852.4	854.7	857.1	859.3
52.5°	797.4	805.2	813.0	818.4	821.2	824.1	826.9	829.7
55°	748.2	757.1	766.0	771.8	774.4	777.0	779.7	782.3
57.5°	698.0	706.9	715.9	721.9	725.0	728.1	731.2	734.2
60°	662.9	672.1	681.4	687.8	691.4	695.0	698.6	702.3
62.5°	629.7	638.9	648.2	654.5	657.8	661.2	664.6	667.9
65°	576.8	586.7	596.6	603.1	606.4	609.7	613.0	616.3
67.5°	524.1	535.0	545.7	552.5	555.3	558.1	560.8	563.6
70°	489.3	499.8	510.3	517.3	520.6	523.9	527.1	530.4
72.5°	454.2	465.1	475.8	482.9	486.2	489.5	492.8	496.1
75°	401.1	411.9	422.7	430.2	434.1	438.1	442.1	445.9
77.5°	351.2	362.7	374.2	381.4	384.5	387.5	390.5	393.5
80°	318.7	329.9	341.1	348.4	351.7	355.0	358.3	361.5
82.5°	289.1	300.3	311.4	318.7	322.0	325.3	328.6	331.9
85°	247.6	258.8	269.9	277.2	280.5	283.8	287.1	290.4
87.5°	218.4	229.9	241.3	248.7	252.1	255.5	259.0	262.4
90°	226.1	238.6	251.0	259.2	263.2	267.0	271.0	274.8
92.5°	219.9	232.8	245.7	253.9	257.3	260.7	264.1	267.5
95°	215.2	227.5	240.0	247.8	251.1	254.4	257.7	261.0
97.5°	206.0	218.3	230.6	238.7	242.2	245.8	249.4	253.1
100°	199.5	211.6	223.6	231.4	235.1	238.7	242.2	245.8
102.5°	217.5	219.0	220.6	223.3	227.2	231.0	234.9	238.7
105°	327.3	281.1	234.9	213.6	217.2	220.7	224.3	227.9
107.5°	602.8	570.9	539.0	503.7	464.9	425.9	387.1	348.3
110°	726.8	725.0	723.2	701.3	659.1	617.0	574.9	532.7





TEST NUMBER: P332236-830

CATALOG NUMBER: S123DIW-S1165D1535U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	811.2	819.6	828.1	829.2	822.6	816.1	809.5	802.9
115°	909.4	920.4	931.5	939.0	942.8	946.7	950.6	954.5
117.5°	996.8	1007.2	1017.6	1024.1	1026.9	1029.7	1032.6	1035.4
120°	1054.6	1064.7	1074.8	1081.0	1083.3	1085.6	1087.9	1090.2
122.5°	1111.0	1120.0	1129.1	1134.9	1137.5	1140.0	1142.6	1145.1
125°	1189.8	1197.3	1204.9	1210.0	1213.1	1216.0	1218.9	1221.8
127.5°	1268.8	1276.3	1283.8	1288.4	1290.0	1291.6	1293.2	1294.9
130°	1315.8	1323.3	1330.8	1335.2	1336.6	1337.9	1339.3	1340.7
132.5°	1360.1	1367.3	1374.5	1378.8	1380.3	1381.6	1382.9	1384.3
135°	1428.0	1434.7	1441.6	1445.4	1446.1	1446.8	1447.6	1448.2
137.5°	1487.8	1494.5	1501.3	1505.1	1506.1	1507.1	1508.2	1509.2
140°	1526.1	1532.2	1538.4	1542.0	1543.0	1544.1	1545.1	1546.1
142.5°	1561.4	1566.9	1572.3	1575.4	1576.1	1576.9	1577.6	1578.5
145°	1614.3	1617.6	1620.8	1623.1	1624.4	1625.7	1627.0	1628.3
147.5°	1662.2	1663.6	1665.0	1665.6	1665.3	1665.1	1664.8	1664.5
150°	1692.1	1692.8	1693.4	1693.6	1693.3	1693.0	1692.7	1692.4
152.5°	1720.2	1721.4	1722.5	1722.4	1721.1	1719.8	1718.4	1717.1
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)