

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: P331843-840

Luminaire Tested: **S122RDIW-S865D1440U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331843-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122RDIW-S865D1440U840-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1440 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8867.3 lumens  
Efficiency: N/A  
Efficacy: 115.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

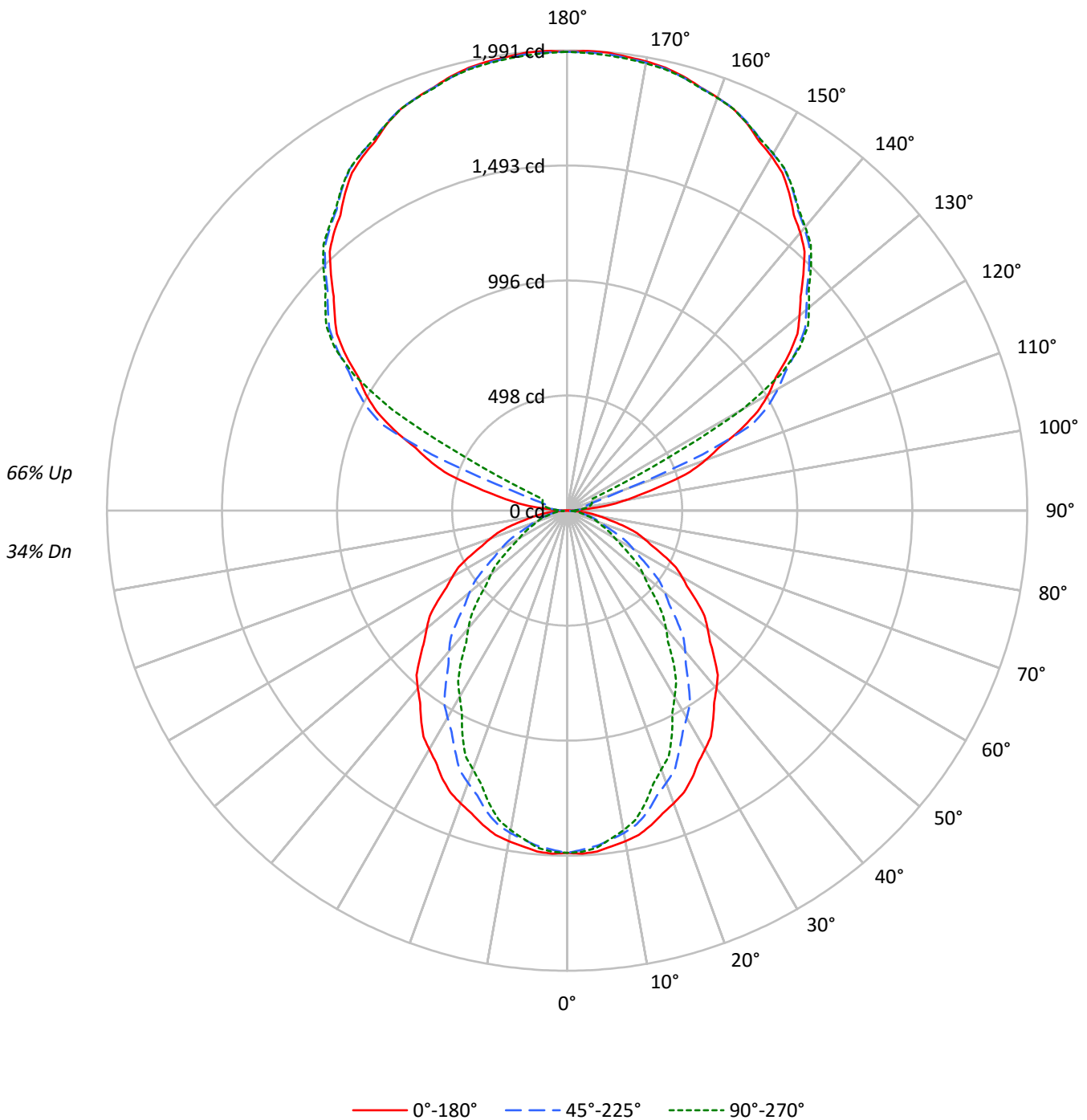
Input Watts (W): 76.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	103	103	103	103	93	93	93	93	75	75	75	58	58	58	42	42	42	34
1	95	91	87	84	85	82	79	76	66	64	62	51	50	48	37	37	36	30
2	86	79	74	69	78	72	67	63	58	55	52	45	43	41	33	32	31	25
3	79	70	63	58	71	64	58	53	51	47	44	40	37	35	30	28	26	22
4	72	62	55	49	65	56	50	45	46	41	38	36	33	30	27	25	23	19
5	66	55	48	42	60	50	44	39	41	36	32	32	29	26	24	22	20	17
6	61	50	42	36	55	45	39	34	37	32	28	29	26	23	22	20	18	15
7	57	45	37	32	51	41	34	30	34	29	25	27	23	21	20	18	16	13
8	53	41	33	28	47	37	31	26	31	26	22	25	21	18	19	16	15	12
9	49	37	30	25	44	34	28	23	28	23	20	23	19	17	17	15	13	11
10	46	34	27	22	41	31	25	21	26	21	18	21	17	15	16	14	12	10

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

	0°	45°	90°
0°	23909	23909	23909
5°	24000	23608	23738
10°	23815	23222	23023
15°	23542	22534	21884
20°	23163	21551	20469
25°	22775	20436	19099
30°	22236	19287	17339
35°	21711	18039	15794
40°	21182	16750	14010
45°	20562	15299	12392
50°	19926	13835	10803
55°	19277	12262	9278
60°	18519	10601	7702
65°	17662	8909	7014
70°	16636	7336	6449
75°	15384	6687	6014
80°	13575	5979	5486
85°	10689	4705	4705



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	138.6	1.6
10°-20°	380.6	4.3
20°-30°	534.4	6.0
30°-40°	582.7	6.6
40°-50°	535.8	6.0
50°-60°	420.8	4.7
60°-70°	274.4	3.1
70°-80°	141.5	1.6
80°-90°	41.6	0.5
90°-100°	66.2	0.7
100°-110°	242.8	2.7
110°-120°	649.0	7.3
120°-130°	1071.4	12.1
130°-140°	1139.4	12.8
140°-150°	1059.0	11.9
150°-160°	851.5	9.6
160°-170°	548.7	6.2
170°-180°	188.9	2.1
0°-30°	1053.6	11.9
0°-40°	1636.3	18.5
0°-60°	2593.0	29.2
0°-90°	3050.4	34.4
90°-120°	958.1	10.8
90°-150°	4227.9	47.7
90°-180°	5817.0	65.6
0°-180°	8867.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1481	1481	1481	1481	1481	
5°	1481	1473	1457	1468	1465	140
15°	1408	1392	1348	1323	1309	397
25°	1278	1233	1147	1094	1072	588
35°	1102	1030	915	834	801	689
45°	900	808	670	578	543	695
55°	685	578	436	358	330	612
65°	462	353	233	190	184	458
75°	247	155	107	98	96	261
85°	58	31	25	25	25	68
90°	1	17	29	36	39	7
95°	93	49	56	63	62	114
105°	437	456	88	103	109	467
115°	826	851	886	252	118	813
125°	1168	1187	1214	1223	1228	1041
135°	1445	1467	1481	1494	1492	1116
145°	1676	1676	1699	1708	1702	1048
155°	1846	1834	1850	1857	1847	850
165°	1945	1937	1940	1949	1940	549
175°	1989	1980	1982	1991	1978	189
180°	1985	1985	1985	1985	1985	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8
2.5°	1486.1	1484.9	1483.7	1482.5	1481.4	1479.5	1476.8	1474.2	1471.6	1468.9	1471.4
5°	1480.8	1479.3	1477.7	1476.2	1474.8	1472.1	1468.2	1464.4	1460.5	1456.6	1459.3
7.5°	1465.4	1463.6	1461.8	1460.0	1458.0	1454.9	1450.4	1445.8	1441.3	1436.7	1437.5
10°	1452.6	1450.5	1448.4	1446.3	1444.2	1440.3	1434.3	1428.4	1422.4	1416.4	1415.5
12.5°	1436.5	1433.9	1431.4	1428.9	1426.2	1421.2	1413.5	1405.9	1398.3	1390.7	1389.1
15°	1408.4	1405.1	1401.8	1398.6	1395.2	1388.6	1378.5	1368.4	1358.2	1348.1	1342.4
17.5°	1373.8	1368.8	1363.8	1358.8	1353.8	1344.8	1331.8	1318.8	1305.9	1292.8	1286.2
20°	1348.1	1342.1	1336.2	1330.2	1324.2	1313.8	1298.9	1284.0	1269.2	1254.3	1246.8
22.5°	1320.2	1313.5	1306.9	1300.2	1293.5	1281.8	1265.0	1248.2	1231.4	1214.6	1205.0
25°	1278.4	1268.9	1259.3	1249.8	1240.3	1225.7	1206.0	1186.4	1166.7	1147.1	1134.9
27.5°	1228.0	1217.6	1207.3	1196.9	1186.6	1170.3	1148.1	1126.0	1103.8	1081.7	1067.4
30°	1192.7	1181.3	1170.0	1158.7	1147.4	1129.8	1106.0	1082.2	1058.3	1034.5	1019.4
32.5°	1158.3	1145.1	1131.9	1118.6	1105.4	1086.7	1062.4	1038.0	1013.8	989.5	972.2
35°	1101.5	1086.3	1071.2	1055.9	1040.8	1020.1	993.8	967.7	941.5	915.2	896.5
37.5°	1044.7	1028.0	1011.4	994.6	978.0	955.6	927.8	899.8	871.9	843.9	823.2
40°	1005.0	987.1	969.3	951.4	933.5	910.2	881.3	852.4	823.5	794.7	773.5
42.5°	964.3	945.4	926.7	907.9	889.0	864.6	834.9	805.0	775.2	745.3	723.5
45°	900.5	880.5	860.6	840.6	820.7	795.1	763.9	732.6	701.3	670.0	648.8
47.5°	838.3	817.2	796.1	774.9	753.8	727.0	694.8	662.5	630.2	597.9	576.9
50°	793.3	772.1	751.0	729.8	708.7	681.8	649.0	616.2	583.5	550.8	530.2
52.5°	749.3	727.2	705.2	683.1	661.0	633.9	601.9	569.8	537.8	505.7	485.8
55°	684.8	661.6	638.3	615.1	591.9	564.1	532.0	499.8	467.7	435.6	417.7
57.5°	618.5	594.7	570.9	547.0	523.3	495.9	464.9	434.0	403.1	372.2	355.9
60°	573.5	549.7	525.9	502.1	478.3	451.0	420.3	389.6	359.0	328.3	313.2
62.5°	529.6	505.7	481.9	458.1	434.2	407.8	378.5	349.3	320.0	290.7	276.3
65°	462.3	438.2	414.0	389.9	365.9	340.3	313.6	286.8	259.9	233.2	223.1
67.5°	397.5	373.5	349.6	325.6	301.6	277.6	253.6	229.4	205.3	181.2	176.5
70°	352.4	329.2	306.0	282.8	259.5	237.6	217.1	196.5	176.0	155.4	152.5
72.5°	309.5	287.3	265.0	242.8	220.5	201.1	184.6	168.0	151.6	135.1	132.6
75°	246.6	225.7	204.9	184.0	163.2	147.7	137.5	127.4	117.3	107.2	105.1
77.5°	184.7	166.3	148.0	129.8	111.5	100.0	95.0	90.2	85.3	80.4	79.2
80°	146.0	130.9	115.7	100.5	85.3	76.2	73.2	70.3	67.3	64.3	63.1
82.5°	110.7	98.9	86.9	75.1	63.3	56.4	54.3	52.3	50.3	48.3	47.6
85°	57.7	51.4	45.1	38.9	32.6	29.1	28.2	27.3	26.4	25.4	25.4
87.5°	17.5	16.3	15.0	13.8	12.6	12.3	12.8	13.3	13.8	14.3	14.4
90°	1.4	4.9	8.5	12.0	15.5	18.5	21.1	23.6	26.2	28.7	30.3
92.5°	29.0	28.7	28.4	28.1	27.8	28.2	29.5	30.8	32.0	33.3	34.1
95°	93.3	82.8	72.3	61.8	51.2	47.1	49.3	51.5	53.8	56.0	57.6
97.5°	185.3	155.6	125.9	96.2	66.6	54.3	59.5	64.6	69.8	74.9	76.2
100°	254.2	210.5	166.7	123.0	79.3	60.2	65.5	71.0	76.4	81.9	84.4
102.5°	330.0	320.8	311.5	302.3	293.1	265.7	220.4	174.9	129.6	84.1	87.5
105°	436.7	446.2	455.8	465.3	474.9	436.2	349.0	261.9	174.7	87.7	91.1
107.5°	558.2	565.8	573.6	581.3	589.1	540.7	436.2	331.6	227.1	122.7	119.1
110°	636.3	643.0	649.6	656.4	663.1	620.3	528.1	435.9	343.6	251.4	219.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	709.8	715.7	721.6	727.6	733.6	725.1	702.4	679.5	656.7	634.0	517.6
115°	825.9	831.3	836.7	842.1	847.6	854.2	862.2	870.2	878.2	886.2	738.4
117.5°	929.6	935.6	941.7	947.8	953.8	959.6	965.0	970.6	976.0	981.6	945.8
120°	1005.4	1010.2	1014.9	1019.8	1024.5	1029.8	1035.5	1041.3	1047.0	1052.8	1056.6
122.5°	1069.8	1074.8	1079.8	1084.9	1089.9	1095.6	1101.8	1108.0	1114.3	1120.5	1122.9
125°	1167.7	1171.8	1176.0	1180.1	1184.3	1189.4	1195.5	1201.5	1207.6	1213.7	1215.9
127.5°	1256.5	1261.0	1265.7	1270.2	1274.9	1279.4	1283.9	1288.5	1293.0	1297.6	1300.8
130°	1312.7	1317.9	1322.9	1328.1	1333.2	1337.5	1341.0	1344.5	1348.0	1351.5	1355.0
132.5°	1370.2	1374.5	1378.9	1383.2	1387.6	1391.5	1395.0	1398.5	1402.0	1405.5	1408.6
135°	1444.9	1450.0	1455.1	1460.2	1465.3	1469.3	1472.2	1475.0	1477.9	1480.8	1484.0
137.5°	1520.5	1524.0	1527.6	1531.2	1534.7	1538.1	1541.4	1544.7	1547.9	1551.2	1554.3
140°	1569.8	1572.4	1575.0	1577.5	1580.0	1583.1	1586.6	1590.1	1593.7	1597.1	1600.0
142.5°	1611.2	1613.5	1615.8	1618.1	1620.4	1623.6	1627.6	1631.6	1635.6	1639.6	1642.2
145°	1676.2	1675.8	1675.5	1675.2	1674.9	1677.4	1682.8	1688.3	1693.6	1699.1	1701.3
147.5°	1732.7	1731.5	1730.3	1729.1	1727.9	1729.9	1735.3	1740.7	1746.1	1751.4	1753.0
150°	1769.5	1767.3	1765.0	1762.8	1760.5	1762.0	1767.1	1772.2	1777.3	1782.4	1784.3
152.5°	1800.5	1798.1	1795.5	1793.0	1790.6	1791.7	1796.5	1801.4	1806.2	1811.1	1813.0
155°	1845.6	1842.7	1839.9	1836.9	1834.1	1834.6	1838.5	1842.3	1846.1	1849.9	1851.8
157.5°	1881.0	1878.6	1876.1	1873.7	1871.3	1871.4	1874.0	1876.7	1879.4	1882.1	1884.3
160°	1901.6	1899.7	1897.8	1895.9	1894.0	1894.0	1895.9	1897.8	1899.7	1901.6	1903.5
162.5°	1920.0	1918.1	1916.2	1914.3	1912.4	1912.2	1913.9	1915.5	1917.2	1918.8	1921.1
165°	1944.7	1942.8	1940.9	1938.9	1937.0	1936.6	1937.5	1938.4	1939.4	1940.4	1942.7
167.5°	1963.1	1961.2	1959.2	1957.3	1955.4	1954.9	1955.8	1956.7	1957.6	1958.5	1960.8
170°	1973.5	1971.6	1969.6	1967.7	1965.8	1965.1	1965.8	1966.4	1967.0	1967.7	1969.9
172.5°	1980.3	1978.4	1976.5	1974.6	1972.7	1972.1	1972.7	1973.3	1974.0	1974.6	1976.8
175°	1989.2	1987.0	1984.8	1982.6	1980.3	1979.5	1980.1	1980.7	1981.5	1982.1	1984.3
177.5°	1990.6	1988.9	1987.1	1985.3	1983.5	1982.8	1983.0	1983.3	1983.5	1983.8	1985.6
180°	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8
2.5°	1473.7	1476.1	1478.4	1479.5	1478.9	1478.4	1478.0	1477.5
5°	1462.0	1464.6	1467.3	1468.2	1467.3	1466.4	1465.5	1464.6
7.5°	1438.4	1439.1	1439.9	1439.5	1437.9	1436.4	1434.8	1433.3
10°	1414.6	1413.7	1412.8	1411.5	1409.7	1408.0	1406.1	1404.3
12.5°	1387.5	1385.8	1384.2	1382.0	1379.0	1376.0	1373.0	1370.1
15°	1336.8	1331.1	1325.4	1321.1	1318.2	1315.1	1312.2	1309.2
17.5°	1279.4	1272.6	1266.0	1260.0	1254.9	1249.8	1244.7	1239.5
20°	1239.4	1231.9	1224.5	1217.5	1210.9	1204.4	1197.8	1191.3
22.5°	1195.5	1185.9	1176.3	1169.0	1164.2	1159.2	1154.4	1149.5
25°	1122.7	1110.4	1098.2	1089.8	1085.4	1081.0	1076.5	1072.1
27.5°	1053.2	1038.9	1024.7	1014.1	1007.0	999.9	992.8	985.7
30°	1004.1	989.0	973.7	962.1	954.1	946.0	938.1	930.0
32.5°	954.8	937.5	920.2	907.7	900.2	892.6	885.0	877.5
35°	877.7	859.0	840.2	827.6	821.0	814.5	807.9	801.3
37.5°	802.6	781.9	761.3	747.2	739.7	732.2	724.7	717.2
40°	752.3	731.2	710.0	695.6	687.9	680.1	672.4	664.7
42.5°	701.7	679.7	657.9	643.2	635.7	628.2	620.7	613.2
45°	627.7	606.6	585.4	571.3	564.1	557.0	549.9	542.7
47.5°	555.8	534.8	513.8	500.1	493.6	487.1	480.6	474.1
50°	509.7	489.1	468.6	455.1	448.9	442.6	436.4	430.1
52.5°	466.1	446.3	426.4	413.6	407.8	402.0	396.3	390.5
55°	399.8	381.9	364.1	352.2	346.6	340.9	335.3	329.6
57.5°	339.5	323.2	306.8	296.2	291.4	286.6	281.9	277.1
60°	297.9	282.8	267.5	257.6	252.8	248.0	243.3	238.5
62.5°	261.9	247.4	232.9	224.2	221.4	218.5	215.6	212.8
65°	212.9	202.8	192.7	187.1	186.2	185.4	184.5	183.6
67.5°	171.9	167.2	162.6	159.8	158.9	157.8	156.9	156.0
70°	149.5	146.5	143.5	141.5	140.3	139.1	137.8	136.6
72.5°	130.1	127.5	125.0	123.5	122.7	122.0	121.3	120.6
75°	103.0	101.0	98.9	97.7	97.4	97.0	96.7	96.4
77.5°	78.1	76.9	75.6	74.8	74.3	73.8	73.4	72.9
80°	61.9	60.8	59.6	59.0	59.0	59.0	59.0	59.0
82.5°	46.9	46.0	45.3	45.0	45.0	45.0	45.0	45.0
85°	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4
87.5°	14.4	14.5	14.6	14.7	14.8	15.0	15.1	15.2
90°	31.9	33.5	35.1	36.3	36.9	37.5	38.2	38.8
92.5°	34.9	35.9	36.7	37.3	37.7	38.0	38.4	38.8
95°	59.2	60.8	62.4	63.0	62.7	62.4	62.1	61.8
97.5°	77.6	78.8	80.1	80.9	81.3	81.7	82.1	82.4
100°	86.9	89.6	92.1	93.7	94.3	94.9	95.6	96.2
102.5°	90.8	94.1	97.5	99.6	100.5	101.3	102.2	103.1
105°	94.6	98.2	101.7	104.0	105.3	106.6	107.9	109.2
107.5°	115.5	111.9	108.4	107.2	108.5	109.8	111.1	112.3
110°	187.5	155.6	123.7	108.4	109.7	110.9	112.2	113.5





TEST NUMBER: P331843-840

CATALOG NUMBER: S122RDIW-S865D1440U840-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	401.1	284.7	168.2	110.5	111.6	112.6	113.6	114.6
115°	590.7	442.8	295.1	209.6	186.7	163.7	140.8	117.8
117.5°	910.1	874.3	838.6	782.9	707.4	631.9	556.3	480.9
120°	1060.5	1064.3	1068.1	1048.4	1005.4	962.3	919.2	876.2
122.5°	1125.2	1127.5	1129.7	1126.7	1118.3	1110.0	1101.7	1093.3
125°	1218.1	1220.3	1222.5	1224.2	1225.2	1226.1	1227.1	1228.0
127.5°	1304.0	1307.3	1310.5	1312.3	1312.4	1312.6	1312.8	1313.0
130°	1358.6	1362.1	1365.5	1367.2	1366.9	1366.5	1366.2	1365.8
132.5°	1411.5	1414.5	1417.5	1418.9	1418.6	1418.3	1418.0	1417.5
135°	1487.1	1490.4	1493.6	1494.8	1494.2	1493.6	1492.9	1492.3
137.5°	1557.4	1560.5	1563.7	1564.7	1563.6	1562.6	1561.5	1560.3
140°	1602.9	1605.8	1608.6	1609.2	1607.7	1606.1	1604.5	1602.9
142.5°	1644.9	1647.5	1650.1	1650.6	1649.0	1647.4	1645.9	1644.3
145°	1703.5	1705.8	1708.1	1708.4	1706.8	1705.2	1703.5	1702.0
147.5°	1754.7	1756.4	1758.1	1758.2	1756.9	1755.5	1754.1	1752.8
150°	1786.2	1788.2	1790.1	1790.2	1788.7	1787.1	1785.4	1783.8
152.5°	1814.9	1816.8	1818.8	1818.7	1816.5	1814.5	1812.4	1810.3
155°	1853.7	1855.6	1857.5	1857.2	1854.7	1852.2	1849.6	1847.0
157.5°	1886.4	1888.5	1890.8	1890.6	1888.1	1885.6	1883.1	1880.7
160°	1905.4	1907.3	1909.3	1909.1	1906.9	1904.6	1902.4	1900.2
162.5°	1923.2	1925.4	1927.5	1927.2	1924.5	1921.8	1919.0	1916.3
165°	1944.9	1947.1	1949.3	1949.3	1947.1	1944.9	1942.7	1940.4
167.5°	1963.0	1965.2	1967.4	1967.1	1964.3	1961.4	1958.5	1955.6
170°	1972.2	1974.4	1976.6	1976.3	1973.5	1970.5	1967.7	1964.8
172.5°	1979.0	1981.3	1983.5	1983.2	1980.3	1977.4	1974.6	1971.7
175°	1986.5	1988.7	1990.9	1990.5	1987.3	1984.1	1981.0	1977.7
177.5°	1987.3	1989.1	1990.9	1990.6	1988.3	1986.1	1983.8	1981.5
180°	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9

(END OF REPORT)