

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: P331613-840

Luminaire Tested: **S122DIW-S1005D1440U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331613-840  
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: S122DIW-S1005D1440U840-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1005 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1440 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9916.7 lumens  
Efficiency: N/A  
Efficacy: 119.6 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: General Diffuse

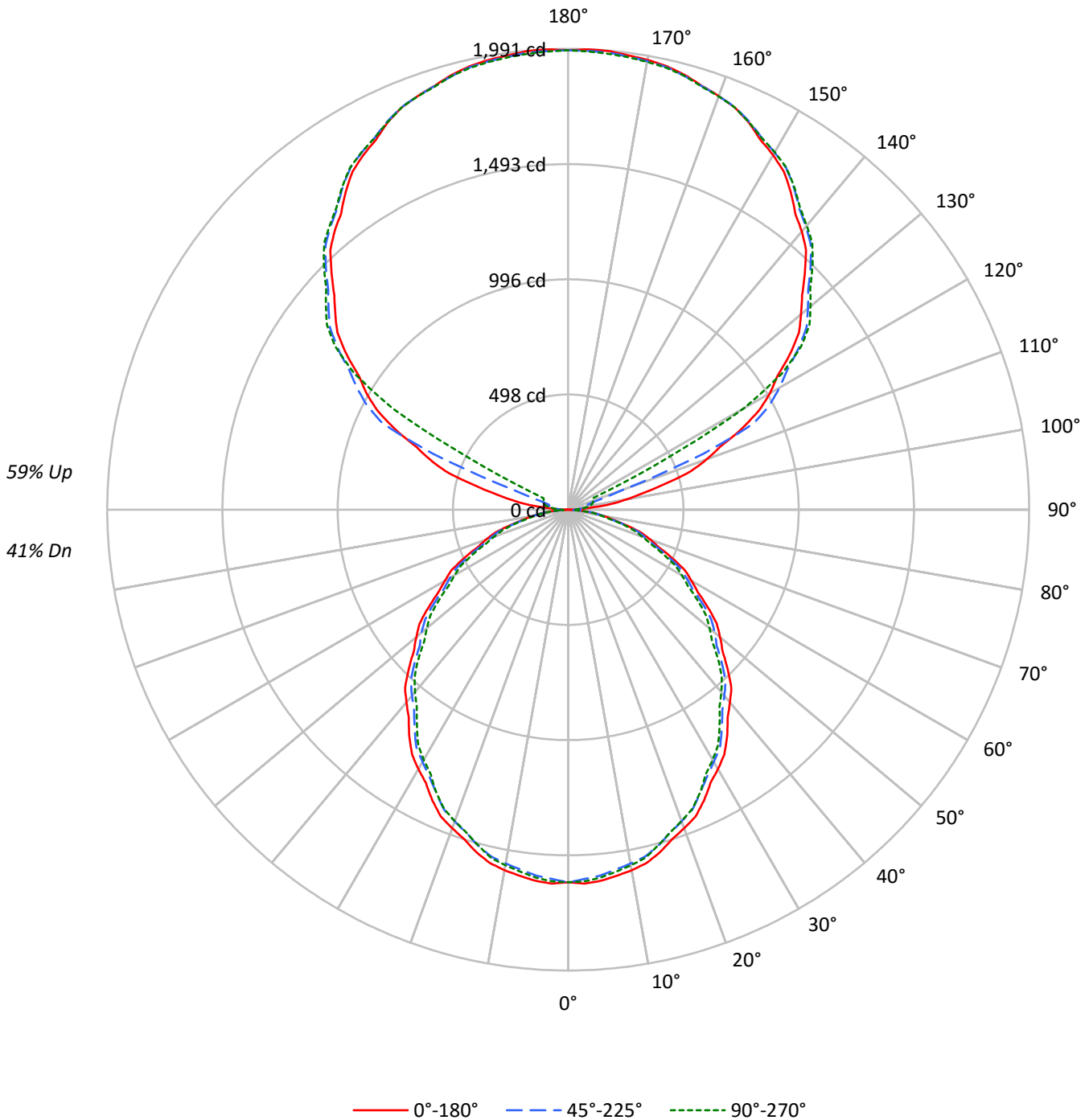
Input Watts (W): 82.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	96	96	96	96	79	79	79	63	63	63	48	48	48	41
1	96	92	88	84	87	84	80	77	69	66	64	55	54	52	43	42	41	35
2	87	80	74	69	79	73	68	63	60	57	53	48	46	44	37	36	34	29
3	80	70	63	57	72	64	58	53	53	49	45	43	40	37	33	31	29	25
4	73	62	54	48	66	57	50	45	47	42	38	38	34	32	30	27	25	21
5	67	55	47	41	61	51	44	38	42	37	33	34	30	27	27	24	22	18
6	61	50	42	36	56	46	38	33	38	33	29	31	27	24	24	21	19	16
7	57	45	37	31	52	41	34	29	34	29	25	28	24	21	22	19	17	14
8	53	40	33	28	48	37	31	26	31	26	22	26	22	19	20	17	15	13
9	49	37	30	25	45	34	27	23	29	24	20	24	20	17	19	16	14	12
10	46	34	27	22	42	31	25	21	26	21	18	22	18	15	17	15	13	11

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

	0°	45°	90°
0°	25987	25987	25987
5°	26086	25710	25861
10°	25932	25450	25576
15°	25611	25120	25095
20°	25156	24624	24598
25°	24704	24015	24015
30°	24121	23457	23256
35°	23580	22787	22450
40°	22898	22118	21692
45°	22229	21450	20922
50°	21499	20760	20022
55°	20738	19952	19212
60°	19888	18991	18290
65°	18980	18032	17207
70°	17825	16877	16074
75°	16220	15540	15159
80°	14393	13966	13240
85°	11745	11189	10022



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	151.3	1.5
10°-20°	425.9	4.3
20°-30°	626.0	6.3
30°-40°	727.1	7.3
40°-50°	726.3	7.3
50°-60°	633.4	6.4
60°-70°	468.3	4.7
70°-80°	265.3	2.7
80°-90°	76.2	0.8
90°-100°	66.2	0.7
100°-110°	242.8	2.4
110°-120°	649.0	6.5
120°-130°	1071.4	10.8
130°-140°	1139.4	11.5
140°-150°	1059.0	10.7
150°-160°	851.5	8.6
160°-170°	548.7	5.5
170°-180°	188.9	1.9
0°-30°	1203.2	12.1
0°-40°	1930.3	19.5
0°-60°	3290.0	33.2
0°-90°	4099.8	41.3
90°-120°	958.1	9.7
90°-150°	4227.9	42.6
90°-180°	5817.0	58.7
0°-180°	9916.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1610	1610	1610	1610	1610	
5°	1610	1603	1586	1598	1596	153
15°	1532	1522	1503	1508	1501	431
25°	1387	1374	1348	1351	1348	638
35°	1196	1180	1156	1147	1139	747
45°	974	962	939	923	916	751
55°	737	727	709	691	682	658
65°	497	487	472	458	450	491
75°	260	257	249	241	243	278
85°	63	62	60	56	54	73
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°	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5
2.5°	1617.0	1615.6	1614.3	1612.9	1611.4	1609.3	1606.3	1603.3	1600.2	1597.2	1599.9
5°	1609.5	1608.2	1606.8	1605.4	1604.1	1601.4	1597.7	1593.9	1590.1	1586.3	1589.1
7.5°	1595.3	1593.2	1591.0	1588.9	1586.8	1583.8	1579.9	1576.1	1572.3	1568.4	1571.1
10°	1581.7	1579.3	1576.9	1574.5	1572.1	1568.8	1564.7	1560.5	1556.4	1552.3	1555.1
12.5°	1563.2	1560.9	1558.8	1556.7	1554.6	1551.5	1547.3	1543.2	1539.1	1535.0	1536.9
15°	1532.2	1530.1	1528.0	1526.0	1523.9	1520.7	1516.2	1511.7	1507.2	1502.8	1504.2
17.5°	1492.6	1490.5	1488.4	1486.3	1484.3	1481.0	1476.4	1471.9	1467.3	1462.9	1464.4
20°	1464.1	1462.0	1460.0	1457.8	1455.8	1452.4	1447.5	1442.8	1437.9	1433.1	1434.1
22.5°	1435.6	1432.7	1429.9	1426.9	1424.0	1420.4	1415.8	1411.3	1406.7	1402.2	1402.4
25°	1386.7	1383.9	1381.2	1378.5	1375.7	1371.4	1365.5	1359.7	1353.8	1348.0	1348.7
27.5°	1331.0	1328.5	1326.1	1323.5	1321.1	1317.6	1312.9	1308.3	1303.7	1299.1	1298.1
30°	1293.8	1291.1	1288.3	1285.6	1282.8	1278.9	1273.7	1268.6	1263.4	1258.2	1257.2
32.5°	1254.3	1252.0	1249.8	1247.6	1245.4	1241.6	1236.2	1230.7	1225.3	1219.8	1218.0
35°	1196.3	1192.9	1189.4	1186.0	1182.6	1178.1	1172.6	1167.1	1161.6	1156.1	1154.1
37.5°	1131.0	1128.0	1125.0	1122.0	1118.9	1114.7	1109.1	1103.7	1098.1	1092.7	1090.0
40°	1086.4	1083.7	1081.0	1078.2	1075.4	1071.4	1065.8	1060.4	1054.8	1049.4	1046.2
42.5°	1043.1	1040.4	1037.6	1034.9	1032.1	1027.9	1022.5	1016.9	1011.5	1005.9	1002.6
45°	973.5	971.1	968.7	966.2	963.8	960.1	954.9	949.8	944.6	939.4	935.6
47.5°	904.1	901.9	899.6	897.4	895.0	891.2	885.9	880.5	875.1	869.8	865.8
50°	855.9	854.1	852.4	850.7	849.0	845.7	840.9	836.1	831.2	826.5	821.6
52.5°	808.8	806.6	804.3	802.0	799.7	796.3	791.7	787.2	782.7	778.2	774.2
55°	736.7	734.6	732.6	730.5	728.4	725.3	721.2	717.1	713.0	708.8	704.7
57.5°	664.3	662.6	661.0	659.3	657.6	654.6	650.1	645.5	641.0	636.4	632.4
60°	615.9	614.6	613.2	611.9	610.5	607.3	602.6	597.7	592.9	588.1	584.3
62.5°	569.0	566.7	564.5	562.3	560.1	557.1	553.4	549.8	546.0	542.3	538.8
65°	496.8	494.7	492.7	490.6	488.6	485.7	482.3	478.9	475.4	472.0	469.0
67.5°	423.4	421.8	420.1	418.5	416.9	414.4	411.3	408.3	405.2	402.1	399.7
70°	377.6	376.3	374.9	373.5	372.1	369.9	366.8	363.7	360.6	357.5	355.1
72.5°	330.5	329.2	327.8	326.5	325.1	323.4	321.4	319.4	317.4	315.4	313.0
75°	260.0	259.3	258.6	257.9	257.2	256.0	254.3	252.6	250.9	249.1	247.1
77.5°	196.8	195.7	194.5	193.4	192.2	191.3	190.6	189.9	189.1	188.5	187.4
80°	154.8	154.4	154.1	153.7	153.4	152.9	152.2	151.5	150.8	150.2	149.1
82.5°	115.1	115.1	115.0	114.9	114.8	114.6	114.2	113.8	113.4	113.0	111.7
85°	63.4	63.1	62.8	62.4	62.1	61.7	61.4	61.0	60.7	60.4	59.3
87.5°	22.6	22.7	22.9	23.0	23.2	23.2	23.2	23.1	23.1	23.1	22.6
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°	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5
2.5°	1602.7	1605.4	1608.2	1609.3	1608.7	1608.2	1607.6	1607.1
5°	1591.9	1594.6	1597.3	1598.4	1597.7	1597.0	1596.3	1595.6
7.5°	1573.9	1576.6	1579.4	1580.4	1579.6	1578.9	1578.1	1577.4
10°	1557.8	1560.5	1563.3	1564.2	1563.2	1562.1	1561.0	1560.0
12.5°	1538.8	1540.8	1542.7	1543.3	1542.5	1541.8	1541.0	1540.2
15°	1505.5	1506.9	1508.2	1508.1	1506.4	1504.7	1503.0	1501.3
17.5°	1466.0	1467.6	1469.2	1469.2	1467.4	1465.8	1464.2	1462.5
20°	1435.2	1436.2	1437.2	1437.0	1435.7	1434.3	1433.0	1431.6
22.5°	1402.6	1402.8	1403.0	1402.7	1401.9	1401.1	1400.2	1399.4
25°	1349.4	1350.1	1350.8	1350.8	1350.1	1349.4	1348.7	1348.0
27.5°	1297.1	1296.0	1294.9	1293.6	1292.0	1290.3	1288.7	1287.1
30°	1256.2	1255.2	1254.2	1252.9	1251.5	1250.1	1248.8	1247.4
32.5°	1216.2	1214.3	1212.4	1210.8	1209.4	1208.1	1206.7	1205.3
35°	1152.0	1149.9	1147.8	1146.0	1144.3	1142.6	1140.7	1139.0
37.5°	1087.5	1085.0	1082.5	1080.4	1078.7	1077.0	1075.4	1073.8
40°	1043.1	1040.1	1036.9	1034.7	1033.3	1032.0	1030.6	1029.2
42.5°	999.3	995.8	992.5	989.9	988.0	986.0	984.1	982.1
45°	931.9	928.1	924.3	921.7	920.3	919.0	917.6	916.3
47.5°	861.8	857.8	853.8	850.8	848.8	846.9	844.9	842.8
50°	816.8	812.0	807.2	804.0	802.2	800.5	798.8	797.1
52.5°	770.2	766.2	762.2	759.1	756.8	754.6	752.2	750.0
55°	700.5	696.4	692.4	689.4	687.7	686.0	684.3	682.5
57.5°	628.2	624.2	620.2	617.4	616.2	614.9	613.6	612.3
60°	580.6	576.7	573.0	570.6	569.6	568.6	567.4	566.4
62.5°	535.3	531.8	528.3	525.8	524.5	523.2	521.9	520.6
65°	465.9	462.7	459.7	457.3	455.6	453.8	452.1	450.4
67.5°	397.3	394.9	392.4	390.5	389.2	387.8	386.5	385.1
70°	352.6	350.3	347.9	346.0	344.6	343.3	341.8	340.5
72.5°	310.6	308.2	305.8	304.1	303.0	301.8	300.7	299.6
75°	245.1	243.0	241.0	240.2	241.0	241.6	242.3	243.0
77.5°	186.4	185.4	184.4	183.4	182.4	181.5	180.5	179.6
80°	148.0	147.0	146.0	145.1	144.4	143.8	143.1	142.4
82.5°	110.4	109.1	107.8	107.0	106.8	106.7	106.6	106.4
85°	58.3	57.3	56.2	55.5	55.2	54.8	54.5	54.1
87.5°	22.1	21.5	21.0	20.7	20.6	20.4	20.3	20.1
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: P331613-840

CATALOG NUMBER: S122DIW-S1005D1440U840-4F0-1E-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)