

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: P332485

Luminaire Tested: **S123RDIW-S1165D1320U835-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332485  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDIW-S1165D1320U835-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1320 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8957.8 lumens  
Efficiency: N/A  
Efficacy: 117.6 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse

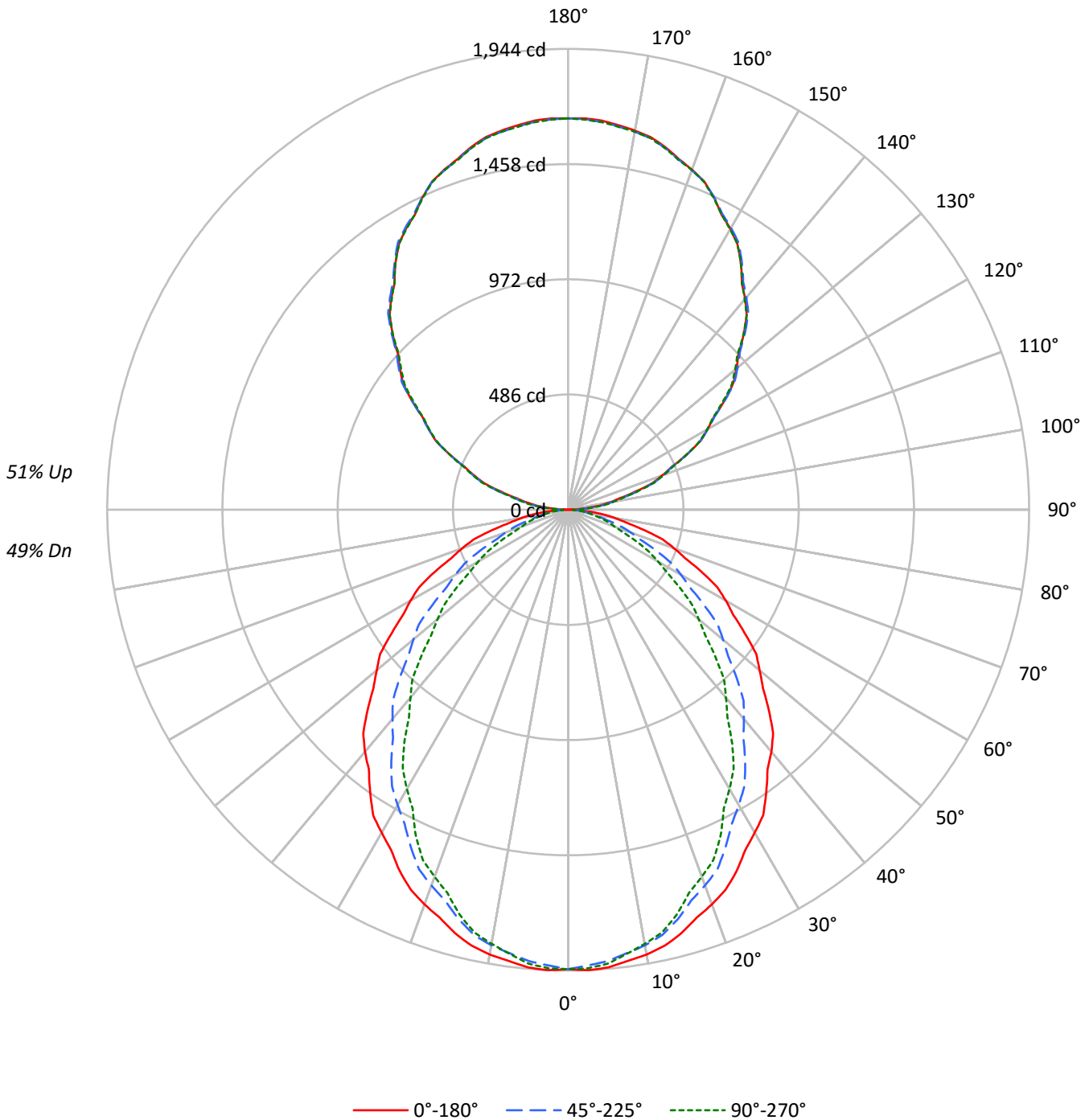
Input Watts (W): 76.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	107	107	107	107	98	98	98	98	83	83	83	68	68	68	55	55	55	49
1	98	94	90	87	90	86	83	80	73	71	69	61	59	58	49	48	47	42
2	89	82	76	71	82	76	71	66	64	61	57	54	51	49	44	42	40	36
3	82	72	65	60	75	67	61	56	57	52	48	48	44	41	39	37	35	30
4	75	64	57	51	69	60	53	48	51	46	42	43	39	36	35	32	30	26
5	69	57	49	44	63	53	46	41	46	40	36	38	34	31	32	29	26	23
6	63	52	44	38	58	48	41	36	41	36	32	35	31	27	29	26	23	20
7	59	47	39	33	54	43	36	32	37	32	28	32	27	24	26	23	21	18
8	55	42	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19	16
9	51	39	31	26	47	36	30	25	31	26	22	27	23	20	22	19	17	15
10	47	36	28	24	44	33	27	23	29	24	20	25	21	18	21	18	15	14

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

	0°	45°	90°
0°	20863	20863	20863
5°	20942	20653	20772
10°	20824	20394	20325
15°	20600	19917	19706
20°	20292	19321	18871
25°	19975	18650	18053
30°	19557	17877	16900
35°	19127	17102	15843
40°	18730	16190	14533
45°	18209	15289	13352
50°	17637	14267	12030
55°	17051	13097	10796
60°	16514	11845	9442
65°	15814	10488	8087
70°	14940	8806	6530
75°	13662	6929	6147
80°	12180	6137	5653
85°	10288	5434	5051



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	182.0	2.0
10°-20°	506.4	5.7
20°-30°	729.2	8.1
30°-40°	821.3	9.2
40°-50°	785.8	8.8
50°-60°	643.5	7.2
60°-70°	434.1	4.8
70°-80°	218.4	2.4
80°-90°	62.7	0.7
90°-100°	107.6	1.2
100°-110°	321.9	3.6
110°-120°	547.5	6.1
120°-130°	720.2	8.0
130°-140°	809.5	9.0
140°-150°	795.7	8.9
150°-160°	669.9	7.5
160°-170°	445.9	5.0
170°-180°	156.2	1.7
0°-30°	1417.6	15.8
0°-40°	2238.9	25.0
0°-60°	3668.1	40.9
0°-90°	4383.4	48.9
90°-120°	977.1	10.9
90°-150°	3302.5	36.9
90°-180°	4574.0	51.1
0°-180°	8957.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1938	1938	1938	1938	1938	
5°	1938	1930	1911	1925	1922	184
15°	1849	1830	1787	1779	1768	521
25°	1682	1641	1570	1538	1520	773
35°	1456	1397	1302	1236	1206	911
45°	1196	1123	1004	918	877	923
55°	909	828	698	610	575	814
65°	621	532	412	338	318	614
75°	328	252	167	152	148	350
85°	83	50	44	41	41	94
90°	1	14	31	36	39	9
95°	76	86	96	101	101	86
105°	292	295	306	306	309	313
115°	551	555	552	554	552	545
125°	807	810	808	803	798	719
135°	1047	1054	1053	1048	1045	806
145°	1270	1272	1276	1275	1270	793
155°	1454	1454	1455	1460	1451	669
165°	1584	1580	1580	1587	1578	446
175°	1647	1642	1642	1649	1641	156
180°	1651	1651	1651	1651	1651	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1938.2	1938.2	1938.2	1938.2	1938.2	1938.2	1938.2	1938.2	1938.2	1938.2	1938.2
2.5°	1944.5	1943.3	1942.2	1941.1	1940.0	1937.7	1934.4	1931.0	1927.7	1924.3	1927.4
5°	1938.2	1936.4	1934.7	1932.9	1931.2	1928.2	1924.0	1919.8	1915.6	1911.4	1914.6
7.5°	1920.2	1918.4	1916.5	1914.6	1912.7	1909.0	1903.6	1898.1	1892.7	1887.2	1889.0
10°	1905.2	1902.7	1900.3	1897.8	1895.4	1891.0	1884.7	1878.4	1872.1	1865.9	1866.2
12.5°	1883.8	1881.1	1878.3	1875.6	1872.9	1867.7	1860.0	1852.3	1844.6	1836.9	1836.7
15°	1848.6	1844.7	1840.9	1837.0	1833.2	1826.4	1816.6	1806.8	1797.0	1787.3	1785.5
17.5°	1804.2	1799.8	1795.3	1790.8	1786.4	1777.9	1765.5	1753.0	1740.6	1728.2	1724.5
20°	1771.5	1766.0	1760.4	1754.8	1749.2	1739.8	1726.5	1713.2	1699.9	1686.7	1682.1
22.5°	1735.1	1728.6	1722.2	1715.8	1709.4	1699.1	1685.0	1670.9	1656.8	1642.6	1637.0
25°	1681.9	1673.2	1664.5	1655.7	1647.0	1634.6	1618.5	1602.5	1586.4	1570.3	1563.0
27.5°	1617.5	1607.9	1598.2	1588.6	1578.9	1565.2	1547.3	1529.4	1511.5	1493.6	1483.4
30°	1573.5	1563.0	1552.5	1542.0	1531.6	1516.5	1497.0	1477.4	1457.9	1438.3	1426.4
32.5°	1529.5	1517.6	1505.7	1493.8	1482.0	1465.7	1445.0	1424.3	1403.6	1383.0	1370.0
35°	1455.6	1443.0	1430.4	1417.9	1405.3	1388.2	1366.5	1344.9	1323.2	1301.5	1286.5
37.5°	1380.8	1366.8	1352.8	1338.8	1324.9	1306.3	1283.2	1260.1	1237.0	1213.8	1196.8
40°	1333.0	1317.6	1302.2	1286.9	1271.5	1251.4	1226.6	1201.8	1177.0	1152.2	1134.0
42.5°	1278.9	1263.5	1248.2	1232.8	1217.4	1196.9	1171.3	1145.6	1120.0	1094.4	1074.5
45°	1196.2	1180.5	1164.8	1149.1	1133.3	1112.0	1085.1	1058.2	1031.3	1004.4	984.5
47.5°	1113.5	1096.3	1079.0	1061.8	1044.5	1022.4	995.5	968.6	941.7	914.9	893.2
50°	1053.2	1036.8	1020.3	1003.9	987.5	965.2	936.9	908.6	880.3	852.0	830.3
52.5°	999.1	981.3	963.5	945.7	927.8	904.9	876.9	848.9	820.9	792.9	770.4
55°	908.6	891.4	874.3	857.2	840.1	816.7	787.0	757.3	727.6	697.9	677.7
57.5°	824.9	806.3	787.6	769.0	750.3	726.1	696.3	666.4	636.6	606.8	587.6
60°	767.1	747.9	728.7	709.5	690.2	666.1	637.1	608.2	579.2	550.2	531.3
62.5°	709.2	690.0	670.8	651.6	632.4	608.3	579.3	550.3	521.3	492.3	474.6
65°	620.9	601.7	582.5	563.3	544.1	520.8	493.6	466.3	439.1	411.8	394.7
67.5°	532.6	513.1	493.7	474.3	454.9	432.1	406.0	379.8	353.7	327.6	314.8
70°	474.7	455.9	437.0	418.1	399.3	377.6	353.2	328.7	304.3	279.8	267.6
72.5°	416.9	398.3	379.7	361.1	342.5	322.1	299.9	277.7	255.5	233.3	223.3
75°	328.5	311.8	295.0	278.2	261.5	243.5	224.3	205.0	185.8	166.6	163.1
77.5°	248.0	232.9	217.7	202.6	187.4	173.6	161.3	148.9	136.5	124.2	122.3
80°	196.5	182.2	167.8	153.5	139.2	128.4	121.0	113.7	106.4	99.0	98.0
82.5°	147.4	135.1	122.7	110.3	98.0	90.1	86.7	83.2	79.8	76.4	75.3
85°	83.3	75.6	67.9	60.3	52.6	48.2	47.2	46.1	45.1	44.0	43.3
87.5°	30.4	27.9	25.4	22.9	20.4	19.6	20.3	21.1	21.8	22.6	22.5
90°	1.3	4.2	7.1	9.9	12.8	16.1	19.9	23.6	27.4	31.1	32.3
92.5°	31.4	33.3	35.3	37.3	39.2	41.3	43.4	45.5	47.7	49.8	50.7
95°	76.5	78.5	80.6	82.6	84.6	86.8	89.1	91.4	93.7	96.0	97.1
97.5°	135.9	137.4	138.9	140.4	141.9	143.5	145.2	146.8	148.5	150.2	151.5
100°	176.4	178.1	179.8	181.6	183.3	184.9	186.3	187.8	189.2	190.7	191.5
102.5°	223.1	224.1	225.2	226.2	227.2	228.7	230.6	232.5	234.4	236.3	237.2
105°	291.8	292.4	293.0	293.5	294.1	295.7	298.3	300.9	303.5	306.1	306.1
107.5°	371.7	372.1	372.4	372.8	373.1	373.8	374.8	375.9	376.9	377.9	378.9
110°	421.5	422.1	422.7	423.2	423.8	424.4	425.0	425.6	426.1	426.7	427.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	473.4	473.7	474.1	474.4	474.8	475.0	475.1	475.2	475.4	475.5	476.9
115°	551.2	552.1	552.9	553.8	554.7	554.8	554.2	553.7	553.1	552.5	552.8
117.5°	629.6	630.1	630.7	631.3	631.9	631.8	631.0	630.3	629.5	628.8	628.7
120°	678.3	680.0	681.8	683.5	685.2	685.4	683.9	682.5	681.1	679.6	679.3
122.5°	729.2	730.4	731.7	733.0	734.2	734.5	733.7	733.0	732.2	731.5	730.7
125°	806.7	807.6	808.4	809.3	810.2	810.3	809.7	809.2	808.6	808.0	806.9
127.5°	878.3	880.2	882.0	883.8	885.7	886.3	885.7	885.0	884.4	883.8	882.1
130°	926.0	928.3	930.7	933.0	935.3	936.0	935.1	934.3	933.4	932.5	931.4
132.5°	973.8	976.1	978.4	980.7	983.0	983.8	983.2	982.6	981.9	981.3	979.9
135°	1046.7	1048.4	1050.1	1051.8	1053.6	1054.3	1054.0	1053.7	1053.4	1053.1	1052.0
137.5°	1114.1	1115.5	1117.0	1118.4	1119.9	1121.0	1121.7	1122.5	1123.2	1124.0	1122.7
140°	1160.8	1162.2	1163.7	1165.1	1166.6	1167.4	1167.7	1168.0	1168.3	1168.6	1168.3
142.5°	1203.3	1204.8	1206.2	1207.7	1209.1	1210.1	1210.6	1211.1	1211.6	1212.2	1211.9
145°	1269.7	1270.3	1270.9	1271.5	1272.0	1272.8	1273.6	1274.5	1275.4	1276.2	1275.9
147.5°	1327.8	1328.9	1329.9	1331.0	1332.0	1332.9	1333.7	1334.5	1335.3	1336.1	1336.1
150°	1368.3	1368.9	1369.5	1370.0	1370.6	1371.2	1371.8	1372.3	1372.9	1373.5	1373.5
152.5°	1401.5	1402.3	1403.1	1403.9	1404.7	1405.3	1405.7	1406.0	1406.4	1406.7	1407.2
155°	1453.9	1453.9	1453.9	1453.9	1453.9	1454.1	1454.3	1454.6	1454.9	1455.2	1456.4
157.5°	1498.5	1498.2	1497.8	1497.5	1497.1	1497.1	1497.3	1497.5	1497.8	1498.0	1499.2
160°	1526.5	1526.0	1525.4	1524.8	1524.2	1523.9	1523.9	1523.9	1523.9	1523.9	1525.4
162.5°	1551.4	1550.6	1549.8	1549.0	1548.2	1547.9	1548.2	1548.4	1548.6	1548.8	1550.3
165°	1583.6	1582.7	1581.9	1581.0	1580.2	1579.7	1579.7	1579.7	1579.7	1579.7	1581.4
167.5°	1609.3	1608.1	1607.0	1605.8	1604.7	1604.2	1604.4	1604.7	1604.9	1605.1	1606.9
170°	1623.8	1622.7	1621.5	1620.4	1619.2	1618.6	1618.6	1618.6	1618.6	1618.6	1620.6
172.5°	1635.2	1634.1	1632.9	1631.8	1630.6	1630.0	1630.0	1630.0	1630.0	1630.0	1631.8
175°	1647.2	1646.0	1644.9	1643.7	1642.5	1642.0	1642.0	1642.0	1642.0	1642.0	1643.7
177.5°	1652.1	1651.2	1650.2	1649.3	1648.4	1647.9	1647.9	1647.9	1647.9	1647.9	1649.3
180°	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1938.2	1938.2	1938.2	1938.2	1938.2	1938.2	1938.2	1938.2
2.5°	1930.5	1933.6	1936.6	1937.9	1937.3	1936.8	1936.2	1935.6
5°	1917.7	1920.9	1924.0	1925.2	1924.5	1923.8	1923.1	1922.4
7.5°	1890.7	1892.5	1894.2	1894.5	1893.3	1892.1	1890.9	1889.7
10°	1866.6	1866.9	1867.3	1866.6	1864.8	1863.1	1861.3	1859.6
12.5°	1836.5	1836.3	1836.1	1835.0	1833.0	1830.9	1828.9	1826.9
15°	1783.8	1782.0	1780.3	1778.2	1775.7	1773.3	1770.8	1768.4
17.5°	1720.8	1717.0	1713.3	1709.7	1706.0	1702.4	1698.8	1695.1
20°	1677.6	1673.0	1668.5	1664.1	1659.9	1655.7	1651.6	1647.4
22.5°	1631.3	1625.7	1620.0	1615.2	1611.3	1607.4	1603.5	1599.6
25°	1555.7	1548.3	1541.0	1535.4	1531.6	1527.7	1523.9	1520.0
27.5°	1473.2	1463.0	1452.8	1444.8	1438.9	1433.1	1427.2	1421.3
30°	1414.5	1402.7	1390.8	1382.1	1376.5	1370.9	1365.3	1359.7
32.5°	1357.0	1344.0	1331.0	1321.6	1315.7	1309.8	1304.0	1298.1
35°	1271.5	1256.5	1241.5	1230.8	1224.5	1218.2	1211.9	1205.7
37.5°	1179.7	1162.7	1145.6	1133.2	1125.5	1117.7	1110.0	1102.2
40°	1115.9	1097.7	1079.6	1066.5	1058.4	1050.4	1042.4	1034.3
42.5°	1054.7	1034.8	1015.0	1001.5	994.3	987.1	979.9	972.7
45°	964.6	944.7	924.8	910.7	902.3	893.9	885.5	877.1
47.5°	871.5	849.9	828.2	813.7	806.2	798.7	791.2	783.8
50°	808.7	787.0	765.3	750.5	742.5	734.4	726.4	718.4
52.5°	747.9	725.4	702.9	688.0	680.8	673.7	666.5	659.3
55°	657.4	637.1	616.9	603.3	596.3	589.3	582.3	575.3
57.5°	568.5	549.3	530.2	517.6	511.7	505.8	499.8	493.9
60°	512.4	493.6	474.7	462.3	456.4	450.4	444.5	438.6
62.5°	456.8	439.1	421.3	409.4	403.1	396.9	390.7	384.5
65°	377.6	360.5	343.4	332.9	329.1	325.2	321.4	317.5
67.5°	302.0	289.2	276.4	268.0	263.9	259.7	255.6	251.5
70°	255.3	243.1	230.9	222.9	219.0	215.2	211.3	207.5
72.5°	213.3	203.3	193.3	187.5	185.9	184.3	182.7	181.1
75°	159.6	156.1	152.6	150.6	149.9	149.2	148.5	147.8
77.5°	120.4	118.5	116.6	115.3	114.6	113.9	113.2	112.5
80°	96.9	95.9	94.8	94.0	93.3	92.6	91.9	91.2
82.5°	74.3	73.3	72.2	71.6	71.5	71.3	71.2	71.1
85°	42.6	41.9	41.2	40.9	40.9	40.9	40.9	40.9
87.5°	22.5	22.4	22.4	22.3	22.1	21.9	21.8	21.6
90°	33.4	34.6	35.7	36.6	37.2	37.8	38.3	38.9
92.5°	51.6	52.6	53.5	53.8	53.4	53.1	52.7	52.4
95°	98.3	99.4	100.6	101.2	101.2	101.2	101.2	101.2
97.5°	152.8	154.2	155.5	156.1	156.0	155.9	155.8	155.6
100°	192.4	193.2	194.1	194.8	195.4	196.0	196.6	197.1
102.5°	238.0	238.9	239.8	240.1	240.0	239.9	239.8	239.7
105°	306.1	306.1	306.1	306.4	307.0	307.5	308.1	308.7
107.5°	379.8	380.7	381.6	381.9	381.6	381.2	380.9	380.5
110°	429.0	430.2	431.3	431.6	431.0	430.5	429.9	429.3





TEST NUMBER: P332485

CATALOG NUMBER: S123RDIW-S1165D1320U835-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	478.2	479.6	481.0	481.6	481.5	481.4	481.3	481.2
115°	553.1	553.4	553.7	553.7	553.4	553.1	552.8	552.5
117.5°	628.7	628.6	628.5	628.1	627.3	626.5	625.7	624.9
120°	679.0	678.8	678.5	678.0	677.5	676.9	676.3	675.7
122.5°	730.0	729.2	728.5	727.7	726.9	726.1	725.3	724.5
125°	805.7	804.6	803.4	802.3	801.1	799.9	798.8	797.6
127.5°	880.5	878.9	877.3	875.8	874.5	873.2	871.9	870.5
130°	930.2	929.1	927.9	926.3	924.3	922.3	920.3	918.3
132.5°	978.5	977.1	975.8	974.3	972.7	971.2	969.6	968.1
135°	1050.8	1049.7	1048.5	1047.7	1047.1	1046.5	1045.9	1045.4
137.5°	1121.5	1120.3	1119.1	1118.0	1116.9	1115.8	1114.7	1113.6
140°	1168.0	1167.7	1167.4	1166.3	1164.3	1162.2	1160.2	1158.2
142.5°	1211.6	1211.3	1211.0	1210.1	1208.5	1207.0	1205.4	1203.9
145°	1275.6	1275.4	1275.1	1274.4	1273.2	1272.0	1270.9	1269.7
147.5°	1336.1	1336.1	1336.1	1335.3	1333.6	1331.8	1330.1	1328.4
150°	1373.5	1373.5	1373.5	1372.6	1370.9	1369.2	1367.4	1365.7
152.5°	1407.6	1408.1	1408.5	1408.0	1406.5	1405.0	1403.5	1402.0
155°	1457.5	1458.7	1459.8	1459.4	1457.4	1455.4	1453.3	1451.3
157.5°	1500.4	1501.6	1502.9	1502.6	1501.0	1499.4	1497.8	1496.2
160°	1526.8	1528.3	1529.7	1529.9	1528.7	1527.6	1526.4	1525.2
162.5°	1551.7	1553.2	1554.6	1554.4	1552.6	1550.7	1548.9	1547.0
165°	1583.2	1584.9	1586.6	1586.5	1584.5	1582.5	1580.4	1578.4
167.5°	1608.7	1610.5	1612.3	1612.3	1610.5	1608.7	1606.9	1605.1
170°	1622.7	1624.7	1626.7	1626.7	1624.7	1622.7	1620.6	1618.6
172.5°	1633.6	1635.4	1637.2	1637.1	1635.1	1633.0	1631.0	1629.0
175°	1645.4	1647.2	1648.9	1648.7	1646.7	1644.7	1642.7	1640.7
177.5°	1650.7	1652.1	1653.5	1653.4	1651.7	1650.1	1648.5	1646.9
180°	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1

(END OF REPORT)