

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: P332488-830

Luminaire Tested: **S123RDIW-S1165D1535U830-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332488-830  
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: S123RDIW-S1165D1535U830-4F0-1E-UDD-F  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1535 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9916.0 lumens  
Efficiency: N/A  
Efficacy: 119.6 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

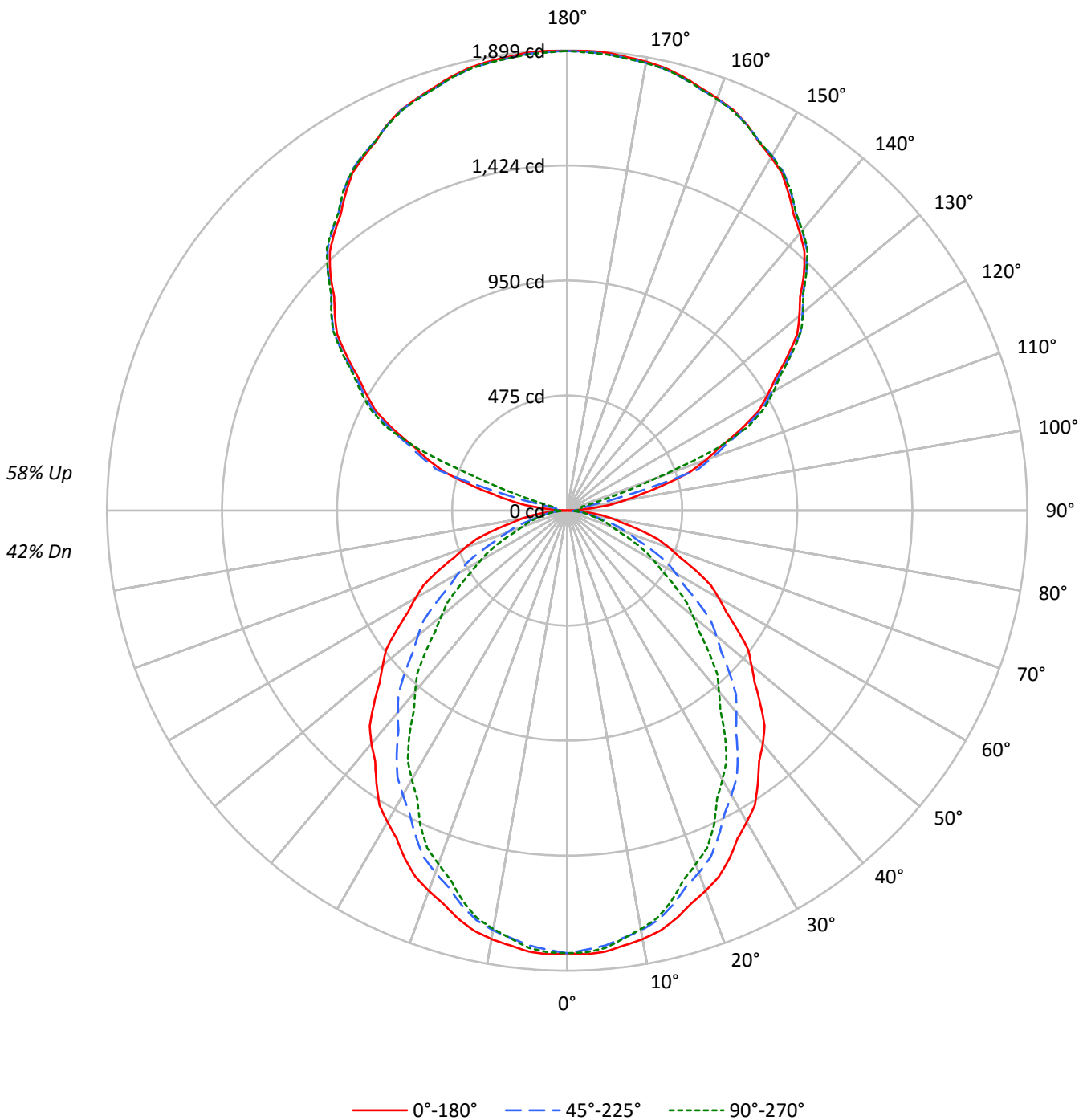
Input Watts (W): 82.9  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	48	48	48	42
1	96	92	88	85	88	84	81	78	69	67	65	56	54	53	43	42	41	36
2	88	81	75	70	80	74	69	64	61	57	54	49	47	45	38	37	35	30
3	80	71	64	58	73	65	59	54	54	50	46	44	41	38	34	32	30	26
4	73	63	55	50	67	58	51	46	48	43	39	39	36	33	31	28	26	22
5	67	56	48	43	61	52	45	40	43	38	34	35	31	28	28	25	23	20
6	62	50	43	37	57	46	40	34	39	34	30	32	28	25	25	23	20	17
7	58	46	38	32	52	42	35	30	35	30	26	29	25	22	23	20	18	16
8	53	41	34	29	49	38	32	27	32	27	23	27	23	20	21	18	16	14
9	50	38	30	26	45	35	28	24	30	24	21	24	21	18	20	17	15	13
10	46	35	28	23	42	32	26	22	27	22	19	23	19	16	18	15	13	12

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

	0°	45°	90°
0°	19664	19664	19664
5°	19739	19466	19578
10°	19627	19223	19158
15°	19417	18773	18574
20°	19126	18211	17786
25°	18828	17579	17016
30°	18434	16850	15929
35°	18029	16119	14933
40°	17654	15260	13699
45°	17163	14411	12584
50°	16623	13447	11338
55°	16071	12344	10175
60°	15565	11164	8900
65°	14905	9885	7623
70°	14080	8299	6156
75°	12876	6529	5793
80°	11480	5783	5331
85°	9695	5125	4755



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	171.5	1.7
10°-20°	477.3	4.8
20°-30°	687.3	6.9
30°-40°	774.2	7.8
40°-50°	740.6	7.5
50°-60°	606.5	6.1
60°-70°	409.2	4.1
70°-80°	205.9	2.1
80°-90°	59.8	0.6
90°-100°	69.0	0.7
100°-110°	328.6	3.3
110°-120°	789.4	8.0
120°-130°	1005.2	10.1
130°-140°	1074.1	10.8
140°-150°	1004.4	10.1
150°-160°	810.1	8.2
160°-170°	522.9	5.3
170°-180°	180.2	1.8
0°-30°	1336.1	13.5
0°-40°	2110.3	21.3
0°-60°	3457.4	34.9
0°-90°	4132.2	41.7
90°-120°	1187.0	12.0
90°-150°	4270.6	43.1
90°-180°	5784.0	58.3
0°-180°	9916.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1827	1827	1827	1827	1827	
5°	1827	1819	1802	1814	1812	173
15°	1742	1725	1685	1677	1667	491
25°	1585	1547	1480	1450	1433	729
35°	1372	1316	1227	1165	1136	858
45°	1128	1058	947	865	827	870
55°	856	781	658	575	542	768
65°	585	502	388	319	299	579
75°	310	238	157	143	139	330
85°	78	48	42	39	38	88
90°	1	16	34	39	42	8
95°	86	32	44	53	54	106
105°	420	428	309	73	62	445
115°	788	796	809	822	829	777
125°	1110	1121	1127	1130	1133	991
135°	1382	1391	1396	1400	1396	1064
145°	1595	1604	1608	1610	1611	998
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°	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8
2.5°	1832.8	1831.6	1830.6	1829.6	1828.5	1826.4	1823.3	1820.0	1816.9	1813.7	1816.7
5°	1826.8	1825.1	1823.5	1821.8	1820.2	1817.4	1813.5	1809.5	1805.5	1801.6	1804.6
7.5°	1809.9	1808.2	1806.4	1804.6	1802.8	1799.3	1794.2	1789.0	1784.0	1778.8	1780.5
10°	1795.7	1793.4	1791.1	1788.8	1786.5	1782.3	1776.4	1770.5	1764.5	1758.7	1759.0
12.5°	1775.6	1773.0	1770.4	1767.8	1765.3	1760.4	1753.1	1745.9	1738.6	1731.4	1731.2
15°	1742.4	1738.7	1735.1	1731.5	1727.9	1721.5	1712.2	1703.0	1693.7	1684.6	1682.9
17.5°	1700.5	1696.4	1692.1	1687.9	1683.8	1675.7	1664.1	1652.3	1640.6	1628.9	1625.4
20°	1669.7	1664.5	1659.3	1654.0	1648.7	1639.8	1627.3	1614.8	1602.2	1589.8	1585.5
22.5°	1635.4	1629.3	1623.2	1617.2	1611.2	1601.5	1588.2	1574.9	1561.6	1548.2	1542.9
25°	1585.3	1577.1	1568.9	1560.6	1552.4	1540.7	1525.5	1510.4	1495.2	1480.1	1473.2
27.5°	1524.6	1515.5	1506.4	1497.3	1488.2	1475.3	1458.4	1441.5	1424.7	1407.8	1398.2
30°	1483.1	1473.2	1463.3	1453.4	1443.6	1429.4	1411.0	1392.5	1374.1	1355.7	1344.4
32.5°	1441.6	1430.4	1419.2	1408.0	1396.8	1381.5	1362.0	1342.5	1323.0	1303.5	1291.3
35°	1372.0	1360.1	1348.2	1336.4	1324.6	1308.4	1288.0	1267.6	1247.2	1226.7	1212.6
37.5°	1301.5	1288.3	1275.1	1261.9	1248.8	1231.2	1209.5	1187.7	1165.9	1144.1	1128.0
40°	1256.4	1241.9	1227.4	1213.0	1198.4	1179.5	1156.1	1132.7	1109.4	1086.0	1068.8
42.5°	1205.4	1190.9	1176.5	1162.0	1147.5	1128.1	1104.0	1079.8	1055.6	1031.5	1012.8
45°	1127.5	1112.7	1097.9	1083.1	1068.2	1048.1	1022.8	997.4	972.0	946.7	927.9
47.5°	1049.5	1033.3	1017.0	1000.8	984.5	963.7	938.3	912.9	887.6	862.3	841.9
50°	992.7	977.2	961.7	946.2	930.8	909.7	883.1	856.4	829.7	803.0	782.6
52.5°	941.7	924.9	908.1	891.4	874.5	852.9	826.5	800.1	773.7	747.3	726.1
55°	856.4	840.2	824.1	807.9	791.8	769.8	741.8	713.8	685.8	657.8	638.8
57.5°	777.5	760.0	742.3	724.8	707.2	684.4	656.3	628.1	600.0	571.9	553.8
60°	723.0	704.9	686.8	668.7	650.5	627.8	600.5	573.3	545.9	518.6	500.8
62.5°	668.5	650.4	632.3	614.2	596.1	573.3	546.0	518.7	491.3	464.0	447.3
65°	585.2	567.1	549.0	530.9	512.8	490.9	465.2	439.5	413.9	388.1	372.0
67.5°	502.0	483.6	465.3	447.0	428.8	407.3	382.7	358.0	333.4	308.8	296.7
70°	447.4	429.7	411.9	394.1	376.4	355.9	332.9	309.8	286.8	263.7	252.2
72.5°	392.9	375.4	357.9	340.4	322.8	303.6	282.7	261.7	240.8	219.9	210.5
75°	309.6	293.9	278.1	262.2	246.5	229.5	211.4	193.2	175.1	157.0	153.7
77.5°	233.8	219.5	205.2	191.0	176.6	163.6	152.0	140.3	128.7	117.1	115.3
80°	185.2	171.7	158.2	144.7	131.2	121.0	114.0	107.2	100.3	93.3	92.4
82.5°	138.9	127.3	115.6	104.0	92.4	84.9	81.7	78.4	75.2	72.0	71.0
85°	78.5	71.3	64.0	56.8	49.6	45.4	44.5	43.5	42.5	41.5	40.8
87.5°	28.7	26.5	24.2	22.0	19.6	18.9	19.7	20.5	21.4	22.1	22.1
90°	1.4	4.5	7.6	10.8	13.9	17.5	21.6	25.6	29.8	33.8	35.1
92.5°	26.2	25.4	24.4	23.6	22.7	23.8	26.9	30.0	33.0	36.1	38.1
95°	86.0	73.1	60.3	47.4	34.6	29.9	33.4	36.8	40.2	43.6	45.9
97.5°	172.8	167.0	161.3	155.4	149.7	135.5	113.0	90.5	68.0	45.3	47.9
100°	238.2	244.4	250.6	256.9	263.2	241.9	193.0	144.2	95.4	46.5	49.0
102.5°	312.5	317.1	321.6	326.0	330.5	306.1	252.8	199.4	146.1	92.7	84.9
105°	419.9	423.4	426.8	430.3	433.7	421.3	393.1	365.0	336.8	308.6	253.2
107.5°	533.2	535.9	538.7	541.5	544.2	547.8	552.2	556.8	561.2	565.6	525.0
110°	608.7	611.2	613.7	616.2	618.8	621.7	625.2	628.6	632.1	635.5	625.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	680.9	683.2	685.4	687.7	689.8	692.8	696.2	699.6	703.0	706.5	706.7
115°	787.7	789.6	791.5	793.3	795.2	797.6	800.4	803.1	806.0	808.8	811.9
117.5°	891.1	893.4	895.7	898.1	900.4	902.3	903.7	905.1	906.5	908.0	910.5
120°	955.4	958.2	961.0	963.8	966.7	968.6	969.4	970.3	971.3	972.2	974.8
122.5°	1020.8	1023.0	1025.4	1027.7	1030.0	1031.8	1032.9	1034.2	1035.3	1036.5	1038.3
125°	1110.3	1112.9	1115.4	1117.9	1120.4	1122.3	1123.5	1124.7	1126.1	1127.3	1127.9
127.5°	1197.1	1199.7	1202.2	1204.7	1207.2	1209.2	1210.7	1212.2	1213.7	1215.2	1216.2
130°	1251.2	1253.8	1256.3	1258.8	1261.3	1263.2	1264.4	1265.6	1267.0	1268.2	1269.4
132.5°	1303.2	1305.6	1308.2	1310.6	1313.2	1314.9	1315.9	1316.9	1317.9	1318.9	1320.1
135°	1382.3	1384.2	1386.1	1388.0	1389.9	1391.4	1392.6	1393.9	1395.2	1396.4	1397.3
137.5°	1449.9	1452.4	1454.7	1457.1	1459.4	1461.0	1461.7	1462.4	1463.1	1463.8	1465.3
140°	1495.1	1496.9	1498.8	1500.7	1502.6	1503.9	1504.9	1505.8	1506.7	1507.7	1509.0
142.5°	1536.7	1538.6	1540.5	1542.4	1544.3	1545.7	1546.6	1547.6	1548.5	1549.4	1550.4
145°	1595.1	1597.2	1599.5	1601.7	1603.8	1605.2	1605.9	1606.5	1607.1	1607.8	1608.4
147.5°	1650.0	1651.5	1652.9	1654.4	1655.8	1656.8	1657.5	1658.1	1658.7	1659.3	1660.0
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°	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8	1826.8
2.5°	1819.6	1822.5	1825.3	1826.6	1826.0	1825.5	1825.0	1824.4
5°	1807.5	1810.5	1813.5	1814.6	1813.9	1813.3	1812.6	1811.9
7.5°	1782.1	1783.8	1785.4	1785.6	1784.5	1783.4	1782.3	1781.1
10°	1759.3	1759.6	1760.0	1759.3	1757.7	1756.1	1754.4	1752.8
12.5°	1731.0	1730.8	1730.6	1729.6	1727.7	1725.7	1723.8	1721.9
15°	1681.3	1679.6	1678.0	1676.0	1673.7	1671.4	1669.1	1666.8
17.5°	1621.9	1618.3	1614.9	1611.5	1608.0	1604.6	1601.2	1597.7
20°	1581.2	1576.9	1572.6	1568.5	1564.5	1560.6	1556.7	1552.7
22.5°	1537.6	1532.3	1526.9	1522.4	1518.7	1515.0	1511.4	1507.7
25°	1466.3	1459.3	1452.5	1447.2	1443.6	1439.9	1436.3	1432.7
27.5°	1388.6	1378.9	1369.3	1361.8	1356.2	1350.8	1345.2	1339.6
30°	1333.2	1322.1	1310.9	1302.7	1297.4	1292.1	1286.9	1281.6
32.5°	1279.0	1266.8	1254.5	1245.7	1240.1	1234.5	1229.1	1223.5
35°	1198.4	1184.3	1170.2	1160.1	1154.1	1148.2	1142.3	1136.4
37.5°	1111.9	1095.9	1079.8	1068.1	1060.8	1053.5	1046.2	1038.9
40°	1051.8	1034.6	1017.6	1005.2	997.6	990.0	982.5	974.9
42.5°	994.1	975.3	956.7	944.0	937.2	930.4	923.6	916.8
45°	909.2	890.4	871.7	858.4	850.5	842.5	834.6	826.7
47.5°	821.4	801.1	780.6	766.9	759.9	752.8	745.7	738.8
50°	762.2	741.8	721.3	707.4	699.8	692.2	684.7	677.1
52.5°	704.9	683.7	662.5	648.5	641.7	635.0	628.2	621.4
55°	619.6	600.5	581.5	568.6	562.0	555.4	548.8	542.2
57.5°	535.8	517.7	499.7	487.9	482.3	476.7	471.1	465.5
60°	483.0	465.2	447.4	435.7	430.2	424.5	419.0	413.4
62.5°	430.6	413.9	397.1	385.9	379.9	374.1	368.3	362.4
65°	355.9	339.8	323.7	313.8	310.2	306.5	302.9	299.3
67.5°	284.6	272.6	260.5	252.6	248.7	244.8	240.9	237.0
70°	240.6	229.1	217.6	210.1	206.4	202.8	199.2	195.6
72.5°	201.0	191.6	182.2	176.7	175.2	173.7	172.2	170.7
75°	150.4	147.1	143.8	141.9	141.3	140.6	140.0	139.3
77.5°	113.5	111.7	109.9	108.7	108.0	107.4	106.7	106.0
80°	91.3	90.4	89.4	88.6	87.9	87.3	86.6	86.0
82.5°	70.0	69.1	68.1	67.5	67.4	67.2	67.1	67.0
85°	40.2	39.5	38.8	38.5	38.5	38.5	38.5	38.5
87.5°	22.1	22.1	22.1	22.1	21.9	21.8	21.6	21.5
90°	36.3	37.6	38.8	39.8	40.4	41.0	41.7	42.2
92.5°	40.1	42.1	44.1	45.2	45.6	46.0	46.4	46.8
95°	48.1	50.2	52.4	53.5	53.5	53.5	53.5	53.5
97.5°	50.4	52.9	55.4	56.8	57.1	57.4	57.8	58.1
100°	51.5	54.0	56.6	58.0	58.2	58.5	58.9	59.2
102.5°	77.2	69.5	61.6	58.1	58.6	59.2	59.8	60.3
105°	197.7	142.3	86.9	59.5	60.1	60.8	61.4	62.0
107.5°	484.3	443.7	403.0	361.8	320.1	278.2	236.5	194.7
110°	614.8	604.5	594.2	566.6	521.8	477.0	432.3	387.5





TEST NUMBER: P332488-830

CATALOG NUMBER: S123RDIW-S1165D1535U830-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	706.9	707.1	707.3	702.7	693.1	683.7	674.3	664.8
115°	815.1	818.2	821.3	823.5	824.8	826.0	827.3	828.6
117.5°	913.0	915.5	918.0	919.5	919.6	919.9	920.2	920.4
120°	977.3	979.8	982.3	983.5	983.5	983.5	983.5	983.5
122.5°	1040.0	1041.8	1043.6	1044.5	1044.8	1045.0	1045.3	1045.6
125°	1128.5	1129.2	1129.7	1130.4	1131.1	1131.6	1132.3	1132.9
127.5°	1217.2	1218.2	1219.2	1219.4	1218.8	1218.1	1217.5	1216.9
130°	1270.6	1272.0	1273.2	1273.5	1272.9	1272.2	1271.6	1271.0
132.5°	1321.4	1322.7	1323.9	1324.1	1323.2	1322.4	1321.4	1320.6
135°	1398.3	1399.2	1400.1	1400.1	1399.2	1398.3	1397.3	1396.4
137.5°	1466.8	1468.3	1469.8	1470.2	1469.6	1469.0	1468.3	1467.7
140°	1510.2	1511.5	1512.7	1513.1	1512.4	1511.8	1511.2	1510.5
142.5°	1551.4	1552.5	1553.4	1553.5	1552.7	1551.7	1550.9	1550.0
145°	1609.0	1609.7	1610.2	1610.6	1610.6	1610.6	1610.6	1610.6
147.5°	1660.6	1661.2	1661.9	1661.4	1660.0	1658.6	1657.1	1655.7
150°	1692.1	1692.8	1693.4	1693.3	1692.3	1691.4	1690.5	1689.5
152.5°	1720.2	1721.4	1722.5	1722.3	1720.9	1719.4	1718.0	1716.6
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)