

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: P332489-830

Luminaire Tested: **S123RDIW-S1165D1535U830-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332489-830  
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-S1165D1535U830-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9145.2 lumens  
Efficiency: N/A  
Efficacy: 110.3 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

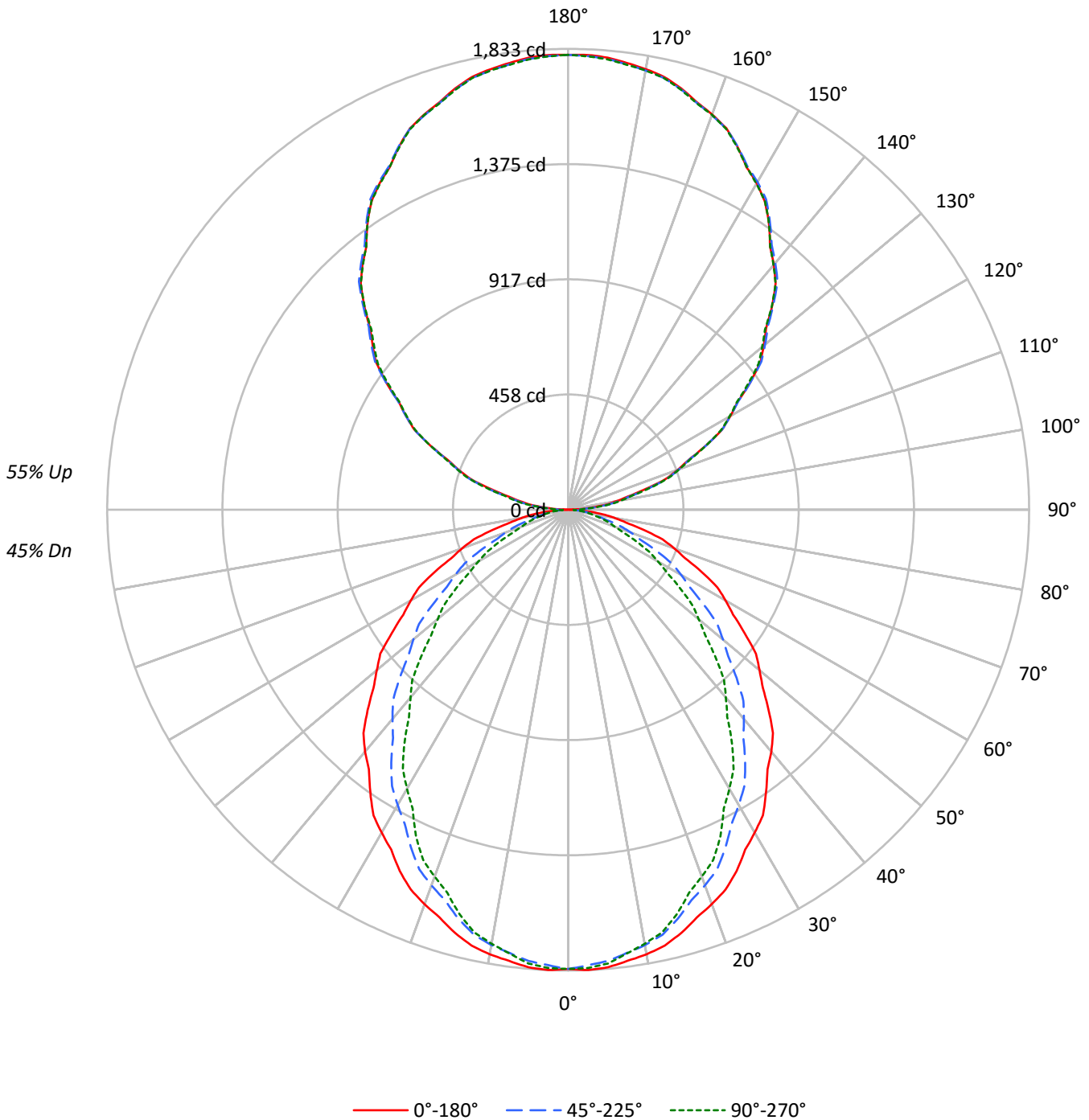
Input Watts (W): 82.9  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332489-830

CATALOG NUMBER: S123RDIW-S1165D1535U830-4F0-1E-UDD-F1

### Luminous Intensity Polar Plot





TEST NUMBER: P332489-830

CATALOG NUMBER: S123RDIW-S1165D1535U830-4F0-1E-UDD-F1

**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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	45
1	97	93	89	86	89	85	82	79	71	69	67	58	57	55	46	45	44	39
2	89	81	75	70	81	75	70	65	63	59	56	51	49	46	41	39	38	33
3	81	72	65	59	74	66	60	55	55	51	47	46	42	40	37	34	32	28
4	74	64	56	50	68	59	52	47	49	44	40	41	37	34	33	30	28	24
5	68	57	49	43	62	52	46	40	44	39	35	37	33	30	30	27	25	21
6	63	51	43	37	57	47	40	35	40	35	31	33	29	26	27	24	22	19
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	25	22	19	17
8	54	42	34	29	49	39	32	27	33	28	24	28	24	21	23	20	18	15
9	50	38	31	26	46	36	29	24	30	25	22	26	22	19	21	18	16	14
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	14	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



TEST NUMBER: P332489-830

CATALOG NUMBER: S123RDIW-S1165D1535U830-4F0-1E-UDD-F1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	171.5	1.9
10°-20°	477.3	5.2
20°-30°	687.3	7.5
30°-40°	774.2	8.5
40°-50°	740.6	8.1
50°-60°	606.5	6.6
60°-70°	409.2	4.5
70°-80°	205.9	2.3
80°-90°	59.8	0.7
90°-100°	117.9	1.3
100°-110°	352.8	3.9
110°-120°	600.0	6.6
120°-130°	789.3	8.6
130°-140°	887.1	9.7
140°-150°	872.0	9.5
150°-160°	734.1	8.0
160°-170°	488.7	5.3
170°-180°	171.1	1.9
0°-30°	1336.1	14.6
0°-40°	2110.3	23.1
0°-60°	3457.4	37.8
0°-90°	4132.2	45.2
90°-120°	1070.7	11.7
90°-150°	3619.1	39.6
90°-180°	5013.0	54.8
0°-180°	9145.2	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	40	43	9
95°	84	94	105	110	111	94
105°	320	323	336	336	338	343
115°	604	608	606	607	606	597
125°	884	888	886	880	874	788
135°	1147	1155	1154	1149	1146	884
145°	1392	1394	1398	1397	1392	869
155°	1593	1593	1595	1600	1590	733
165°	1735	1731	1731	1739	1730	489
175°	1805	1800	1799	1807	1798	171
180°	1809	1809	1809	1809	1809	



TEST NUMBER: P332489-830

CATALOG NUMBER: S123RDIW-S1165D1535U830-4F0-1E-UDD-F1

**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	19.7	18.9	19.8	20.5	21.4	22.2	22.2
90°	1.4	4.6	7.7	10.9	14.0	17.7	21.8	25.9	30.0	34.1	35.3
92.5°	34.4	36.6	38.6	40.8	43.0	45.2	47.6	49.9	52.2	54.6	55.6
95°	83.9	86.1	88.3	90.5	92.7	95.1	97.6	100.1	102.6	105.2	106.4
97.5°	148.9	150.6	152.2	153.9	155.5	157.2	159.1	160.9	162.8	164.6	166.1
100°	193.3	195.2	197.1	199.0	200.9	202.6	204.2	205.8	207.4	209.0	209.9
102.5°	244.5	245.6	246.8	247.9	249.0	250.6	252.7	254.8	256.8	258.9	260.0
105°	319.8	320.5	321.0	321.7	322.3	324.0	326.9	329.7	332.6	335.5	335.5
107.5°	407.4	407.7	408.1	408.5	408.9	409.6	410.8	411.9	413.0	414.2	415.2
110°	461.9	462.6	463.2	463.8	464.5	465.1	465.7	466.4	466.9	467.6	468.9



TEST NUMBER: P332489-830

CATALOG NUMBER: S123RDIW-S1165D1535U830-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	518.8	519.2	519.5	519.9	520.3	520.6	520.7	520.8	520.9	521.0	522.5
115°	604.1	605.0	606.0	606.9	607.8	608.0	607.4	606.7	606.1	605.5	605.8
117.5°	689.9	690.5	691.2	691.8	692.4	692.3	691.5	690.7	689.8	689.1	689.0
120°	743.4	745.3	747.2	749.0	750.9	751.1	749.5	747.9	746.3	744.8	744.4
122.5°	799.1	800.4	801.8	803.2	804.6	804.9	804.1	803.2	802.5	801.6	800.8
125°	884.0	885.0	886.0	886.9	887.9	888.0	887.4	886.7	886.1	885.5	884.2
127.5°	962.5	964.5	966.6	968.6	970.6	971.3	970.5	969.9	969.2	968.5	966.7
130°	1014.8	1017.4	1019.8	1022.4	1024.9	1025.7	1024.7	1023.8	1022.8	1021.9	1020.7
132.5°	1067.1	1069.6	1072.1	1074.7	1077.2	1078.2	1077.4	1076.8	1076.0	1075.3	1073.8
135°	1147.0	1148.9	1150.8	1152.6	1154.6	1155.4	1155.1	1154.7	1154.4	1154.1	1152.8
137.5°	1220.9	1222.5	1224.1	1225.7	1227.2	1228.4	1229.3	1230.0	1230.9	1231.7	1230.4
140°	1272.1	1273.7	1275.3	1276.8	1278.4	1279.3	1279.7	1280.0	1280.3	1280.6	1280.3
142.5°	1318.7	1320.2	1321.8	1323.4	1325.0	1326.1	1326.6	1327.2	1327.8	1328.3	1328.0
145°	1391.5	1392.1	1392.7	1393.4	1394.0	1394.8	1395.7	1396.7	1397.6	1398.5	1398.3
147.5°	1455.1	1456.2	1457.4	1458.6	1459.7	1460.7	1461.6	1462.4	1463.3	1464.2	1464.2
150°	1499.5	1500.2	1500.7	1501.4	1502.0	1502.6	1503.3	1503.9	1504.5	1505.1	1505.1
152.5°	1535.9	1536.7	1537.7	1538.5	1539.4	1540.0	1540.4	1540.8	1541.2	1541.5	1542.1
155°	1593.3	1593.3	1593.3	1593.3	1593.3	1593.5	1593.7	1594.0	1594.4	1594.7	1596.0
157.5°	1642.2	1641.8	1641.4	1641.1	1640.7	1640.6	1640.9	1641.1	1641.3	1641.6	1642.9
160°	1672.9	1672.3	1671.6	1670.9	1670.4	1670.0	1670.0	1670.0	1670.0	1670.0	1671.6
162.5°	1700.2	1699.3	1698.4	1697.5	1696.7	1696.3	1696.6	1696.9	1697.0	1697.3	1698.9
165°	1735.4	1734.5	1733.5	1732.6	1731.6	1731.2	1731.2	1731.2	1731.2	1731.2	1733.1
167.5°	1763.6	1762.3	1761.0	1759.7	1758.5	1758.0	1758.2	1758.5	1758.8	1759.0	1761.0
170°	1779.4	1778.2	1777.0	1775.7	1774.4	1773.8	1773.8	1773.8	1773.8	1773.8	1776.0
172.5°	1792.0	1790.7	1789.4	1788.2	1787.0	1786.3	1786.3	1786.3	1786.3	1786.3	1788.3
175°	1805.1	1803.8	1802.5	1801.3	1800.0	1799.4	1799.4	1799.4	1799.4	1799.4	1801.3
177.5°	1810.4	1809.5	1808.5	1807.4	1806.4	1805.9	1805.9	1805.9	1805.9	1805.9	1807.4
180°	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3



TEST NUMBER: P332489-830

CATALOG NUMBER: S123RDIW-S1165D1535U830-4F0-1E-UDD-F1

**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°	22.2	22.2	22.1	22.1	22.0	21.9	21.7	21.6
90°	36.7	37.9	39.2	40.2	40.7	41.4	42.0	42.6
92.5°	56.6	57.6	58.6	58.9	58.5	58.2	57.8	57.4
95°	107.7	109.0	110.2	110.8	110.8	110.8	110.8	110.8
97.5°	167.5	168.9	170.4	171.1	171.0	170.8	170.7	170.6
100°	210.8	211.8	212.7	213.5	214.1	214.8	215.4	216.0
102.5°	260.9	261.8	262.8	263.2	263.1	262.9	262.8	262.7
105°	335.5	335.5	335.5	335.7	336.4	337.1	337.6	338.3
107.5°	416.2	417.2	418.2	418.5	418.1	417.7	417.4	417.0
110°	470.1	471.4	472.7	473.0	472.3	471.7	471.1	470.4





TEST NUMBER: P332489-830

CATALOG NUMBER: S123RDIW-S1165D1535U830-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	524.1	525.6	527.1	527.8	527.7	527.5	527.4	527.3
115°	606.1	606.4	606.7	606.7	606.4	606.1	605.8	605.5
117.5°	688.9	688.9	688.8	688.3	687.4	686.5	685.7	684.8
120°	744.1	743.9	743.5	743.0	742.4	741.8	741.1	740.5
122.5°	799.9	799.2	798.3	797.5	796.6	795.7	794.8	793.9
125°	883.0	881.7	880.4	879.1	877.9	876.7	875.3	874.1
127.5°	965.0	963.2	961.4	959.8	958.4	956.9	955.5	953.9
130°	1019.4	1018.1	1016.9	1015.1	1013.0	1010.7	1008.5	1006.3
132.5°	1072.3	1070.8	1069.3	1067.7	1066.0	1064.3	1062.5	1060.8
135°	1151.6	1150.3	1149.1	1148.1	1147.5	1146.8	1146.2	1145.6
137.5°	1229.1	1227.8	1226.4	1225.1	1223.9	1222.8	1221.5	1220.3
140°	1280.0	1279.7	1279.3	1278.1	1275.8	1273.7	1271.4	1269.2
142.5°	1327.8	1327.4	1327.1	1326.1	1324.4	1322.7	1321.0	1319.3
145°	1397.9	1397.6	1397.3	1396.5	1395.2	1394.0	1392.7	1391.5
147.5°	1464.2	1464.2	1464.2	1463.3	1461.4	1459.5	1457.5	1455.7
150°	1505.1	1505.1	1505.1	1504.2	1502.3	1500.4	1498.5	1496.7
152.5°	1542.6	1543.0	1543.6	1543.0	1541.3	1539.7	1538.0	1536.4
155°	1597.2	1598.5	1599.8	1599.3	1597.0	1594.9	1592.6	1590.4
157.5°	1644.3	1645.6	1646.9	1646.7	1644.9	1643.1	1641.3	1639.6
160°	1673.2	1674.8	1676.3	1676.5	1675.3	1674.0	1672.7	1671.4
162.5°	1700.4	1702.0	1703.6	1703.5	1701.4	1699.4	1697.3	1695.4
165°	1734.9	1736.8	1738.7	1738.6	1736.4	1734.2	1731.9	1729.8
167.5°	1762.9	1764.9	1766.8	1766.8	1764.9	1762.9	1761.0	1759.0
170°	1778.2	1780.5	1782.6	1782.6	1780.5	1778.2	1776.0	1773.8
172.5°	1790.2	1792.2	1794.1	1794.0	1791.8	1789.6	1787.3	1785.2
175°	1803.2	1805.1	1806.9	1806.8	1804.6	1802.3	1800.2	1798.0
177.5°	1808.9	1810.4	1811.9	1811.8	1810.1	1808.3	1806.6	1804.8
180°	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3

(END OF REPORT)