

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: P332488-840

Luminaire Tested: **S123RDIW-S1165D1535U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332488-840
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-S1165D1535U840-4F0-1E-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: 10624.3 lumens
Efficiency: N/A
Efficacy: 128.2 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

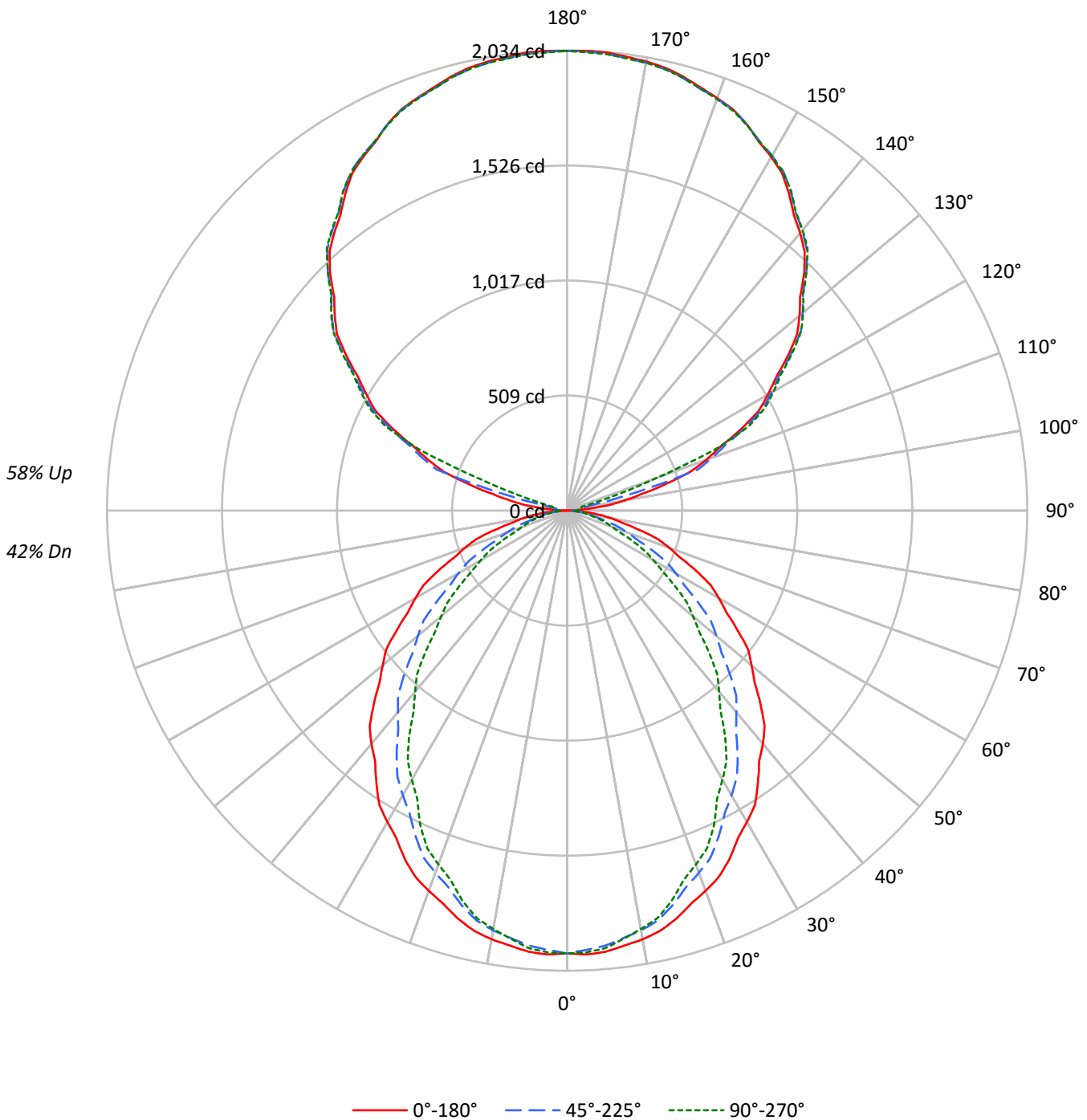
Input Watts (W): 82.9
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20										
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	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°	21068	21068	21068
5°	21149	20857	20977
10°	21029	20595	20525
15°	20803	20113	19900
20°	20492	19511	19057
25°	20173	18834	18231
30°	19750	18053	17066
35°	19316	17270	16000
40°	18916	16350	14677
45°	18389	15440	13484
50°	17811	14408	12149
55°	17220	13226	10903
60°	16678	11961	9535
65°	15969	10593	8166
70°	15087	8894	6593
75°	13795	6995	6209
80°	12298	6199	5709
85°	10387	5483	5101



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	183.8	1.7
10°-20°	511.4	4.8
20°-30°	736.4	6.9
30°-40°	829.4	7.8
40°-50°	793.5	7.5
50°-60°	649.8	6.1
60°-70°	438.4	4.1
70°-80°	220.6	2.1
80°-90°	64.0	0.6
90°-100°	73.9	0.7
100°-110°	352.1	3.3
110°-120°	845.8	8.0
120°-130°	1077.0	10.1
130°-140°	1150.8	10.8
140°-150°	1076.1	10.1
150°-160°	868.0	8.2
160°-170°	560.2	5.3
170°-180°	193.1	1.8
0°-30°	1431.6	13.5
0°-40°	2261.0	21.3
0°-60°	3704.3	34.9
0°-90°	4427.3	41.7
90°-120°	1271.8	12.0
90°-150°	4575.6	43.1
90°-180°	6197.0	58.3
0°-180°	10624.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1957	1957	1957	1957	1957	
5°	1957	1949	1930	1944	1941	186
15°	1867	1848	1805	1797	1786	526
25°	1698	1657	1586	1553	1535	781
35°	1470	1411	1314	1248	1218	920
45°	1208	1134	1014	927	886	932
55°	918	837	705	616	581	822
65°	627	538	416	342	321	620
75°	332	255	168	153	149	354
85°	84	51	44	41	41	95
90°	2	17	36	42	45	8
95°	92	35	47	57	57	114
105°	450	458	331	78	66	477
115°	844	853	867	881	888	833
125°	1190	1201	1208	1211	1214	1062
135°	1481	1490	1496	1500	1496	1140
145°	1709	1719	1723	1726	1726	1069
155°	1883	1880	1881	1888	1880	867
165°	1985	1981	1979	1990	1981	561
175°	2032	2025	2026	2035	2025	193
180°	2032	2032	2032	2032	2032	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1957.3	1957.3	1957.3	1957.3	1957.3	1957.3	1957.3	1957.3	1957.3	1957.3	1957.3
2.5°	1963.7	1962.5	1961.4	1960.2	1959.1	1956.8	1953.5	1950.0	1946.7	1943.3	1946.4
5°	1957.3	1955.5	1953.8	1952.0	1950.3	1947.2	1943.0	1938.7	1934.5	1930.3	1933.5
7.5°	1939.1	1937.3	1935.4	1933.5	1931.6	1927.8	1922.4	1916.8	1911.4	1905.8	1907.6
10°	1924.0	1921.5	1919.0	1916.5	1914.1	1909.7	1903.3	1896.9	1890.6	1884.3	1884.6
12.5°	1902.4	1899.7	1896.8	1894.1	1891.4	1886.1	1878.3	1870.6	1862.8	1855.0	1854.8
15°	1866.8	1862.9	1859.1	1855.1	1851.3	1844.4	1834.5	1824.6	1814.7	1804.9	1803.1
17.5°	1822.0	1817.6	1813.0	1808.5	1804.0	1795.4	1782.9	1770.3	1757.8	1745.2	1741.5
20°	1789.0	1783.4	1777.8	1772.1	1766.5	1757.0	1743.5	1730.1	1716.7	1703.3	1698.7
22.5°	1752.2	1745.7	1739.2	1732.7	1726.3	1715.9	1701.6	1687.4	1673.1	1658.8	1653.1
25°	1698.5	1689.7	1680.9	1672.0	1663.2	1650.7	1634.5	1618.3	1602.0	1585.8	1578.4
27.5°	1633.5	1623.8	1614.0	1604.3	1594.5	1580.6	1562.6	1544.5	1526.4	1508.3	1498.0
30°	1589.0	1578.4	1567.8	1557.2	1546.7	1531.5	1511.8	1492.0	1472.3	1452.5	1440.5
32.5°	1544.6	1532.6	1520.6	1508.5	1496.6	1480.2	1459.3	1438.4	1417.4	1396.6	1383.5
35°	1470.0	1457.2	1444.5	1431.9	1419.2	1401.9	1380.0	1358.2	1336.3	1314.3	1299.2
37.5°	1394.4	1380.3	1366.1	1352.0	1338.0	1319.2	1295.9	1272.5	1249.2	1225.8	1208.6
40°	1346.2	1330.6	1315.0	1299.6	1284.0	1263.7	1238.7	1213.7	1188.6	1163.6	1145.2
42.5°	1291.5	1276.0	1260.5	1245.0	1229.4	1208.7	1182.9	1156.9	1131.0	1105.2	1085.1
45°	1208.0	1192.1	1176.3	1160.4	1144.5	1123.0	1095.8	1068.6	1041.5	1014.3	994.2
47.5°	1124.5	1107.1	1089.6	1072.3	1054.8	1032.5	1005.3	978.2	951.0	923.9	902.0
50°	1063.6	1047.0	1030.4	1013.8	997.2	974.7	946.1	917.6	889.0	860.4	838.5
52.5°	1009.0	991.0	973.0	955.0	937.0	913.8	885.6	857.3	829.0	800.7	778.0
55°	917.6	900.2	882.9	865.7	848.4	824.8	794.8	764.8	734.8	704.8	684.4
57.5°	833.0	814.3	795.4	776.6	757.7	733.3	703.2	673.0	642.9	612.8	593.4
60°	774.7	755.3	735.9	716.5	697.0	672.7	643.4	614.2	584.9	555.6	536.5
62.5°	716.2	696.8	677.4	658.0	638.6	614.3	585.0	555.7	526.4	497.2	479.3
65°	627.0	607.6	588.2	568.9	549.5	525.9	498.5	470.9	443.4	415.9	398.6
67.5°	537.9	518.2	498.6	479.0	459.4	436.4	410.0	383.5	357.2	330.8	317.9
70°	479.4	460.4	441.3	422.2	403.2	381.3	356.7	331.9	307.3	282.6	270.2
72.5°	421.0	402.2	383.4	364.7	345.9	325.3	302.9	280.4	258.0	235.6	225.5
75°	331.7	314.9	297.9	280.9	264.1	245.9	226.5	207.0	187.6	168.2	164.7
77.5°	250.4	235.2	219.8	204.6	189.2	175.3	162.9	150.4	137.8	125.4	123.5
80°	198.4	184.0	169.5	155.0	140.6	129.7	122.2	114.8	107.4	100.0	99.0
82.5°	148.9	136.4	123.9	111.4	99.0	91.0	87.6	84.0	80.6	77.2	76.0
85°	84.1	76.3	68.6	60.9	53.1	48.7	47.7	46.6	45.5	44.4	43.7
87.5°	30.8	28.4	26.0	23.5	21.0	20.3	21.1	22.0	22.9	23.7	23.7
90°	1.5	4.8	8.2	11.6	14.9	18.8	23.1	27.5	31.9	36.3	37.6
92.5°	28.1	27.2	26.2	25.2	24.3	25.4	28.8	32.1	35.3	38.7	40.8
95°	92.1	78.4	64.6	50.8	37.1	32.0	35.7	39.4	43.1	46.8	49.2
97.5°	185.1	178.9	172.8	166.5	160.4	145.2	121.1	96.9	72.8	48.6	51.3
100°	255.2	261.9	268.5	275.3	282.0	259.1	206.8	154.5	102.2	49.8	52.5
102.5°	334.9	339.7	344.6	349.3	354.2	328.0	270.8	213.7	156.5	99.4	91.0
105°	449.9	453.6	457.3	461.0	464.6	451.4	421.2	391.0	360.8	330.6	271.2
107.5°	571.3	574.2	577.1	580.2	583.1	586.9	591.7	596.5	601.3	606.0	562.5
110°	652.2	654.9	657.5	660.2	663.0	666.1	669.8	673.5	677.2	680.9	669.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	729.5	732.0	734.4	736.8	739.1	742.3	745.9	749.6	753.3	757.0	757.2
115°	843.9	846.0	848.0	850.0	852.0	854.5	857.6	860.5	863.5	866.6	869.9
117.5°	954.7	957.3	959.7	962.2	964.7	966.7	968.3	969.8	971.3	972.9	975.5
120°	1023.6	1026.6	1029.7	1032.7	1035.7	1037.7	1038.6	1039.7	1040.7	1041.7	1044.4
122.5°	1093.7	1096.1	1098.6	1101.1	1103.6	1105.5	1106.7	1108.0	1109.2	1110.5	1112.5
125°	1189.6	1192.3	1195.1	1197.7	1200.4	1202.4	1203.8	1205.1	1206.5	1207.8	1208.5
127.5°	1282.6	1285.4	1288.1	1290.7	1293.4	1295.6	1297.2	1298.8	1300.4	1302.0	1303.0
130°	1340.6	1343.3	1346.0	1348.7	1351.4	1353.4	1354.7	1356.0	1357.5	1358.8	1360.1
132.5°	1396.2	1398.9	1401.6	1404.2	1406.9	1408.9	1409.9	1411.0	1412.0	1413.1	1414.4
135°	1481.1	1483.1	1485.1	1487.1	1489.1	1490.8	1492.1	1493.5	1494.8	1496.1	1497.1
137.5°	1553.5	1556.1	1558.6	1561.2	1563.7	1565.4	1566.1	1566.8	1567.6	1568.3	1569.9
140°	1601.8	1603.9	1605.9	1607.9	1609.9	1611.3	1612.4	1613.4	1614.4	1615.4	1616.8
142.5°	1646.5	1648.5	1650.5	1652.5	1654.6	1656.1	1657.1	1658.1	1659.1	1660.1	1661.1
145°	1709.0	1711.3	1713.7	1716.1	1718.4	1719.9	1720.6	1721.2	1721.9	1722.6	1723.2
147.5°	1767.9	1769.5	1771.0	1772.5	1774.0	1775.1	1775.8	1776.6	1777.2	1777.9	1778.6
150°	1804.1	1805.1	1806.1	1807.2	1808.2	1809.0	1809.7	1810.4	1811.0	1811.7	1812.3
152.5°	1836.7	1837.2	1837.7	1838.2	1838.7	1839.1	1839.5	1839.9	1840.3	1840.7	1841.9
155°	1882.6	1882.0	1881.3	1880.7	1880.0	1879.8	1880.2	1880.5	1880.8	1881.1	1882.8
157.5°	1918.2	1918.2	1918.1	1918.0	1918.0	1917.8	1917.4	1917.1	1916.8	1916.4	1918.4
160°	1940.1	1939.6	1939.3	1939.0	1938.6	1938.3	1938.0	1937.6	1937.3	1937.0	1939.0
162.5°	1960.6	1959.6	1958.8	1957.9	1957.0	1956.4	1956.1	1955.8	1955.4	1955.1	1957.4
165°	1985.3	1984.3	1983.3	1982.3	1981.3	1980.6	1980.2	1979.9	1979.6	1979.2	1982.0
167.5°	2004.6	2003.3	2002.0	2000.6	1999.2	1998.6	1998.6	1998.6	1998.6	1998.6	2001.2
170°	2015.5	2014.2	2012.8	2011.4	2010.1	2009.4	2009.4	2009.4	2009.4	2009.4	2012.2
172.5°	2022.8	2021.1	2019.5	2017.9	2016.3	2015.6	2015.9	2016.2	2016.4	2016.7	2019.4
175°	2032.1	2030.4	2028.7	2027.1	2025.4	2024.7	2025.1	2025.4	2025.7	2026.1	2028.4
177.5°	2034.5	2033.2	2031.8	2030.5	2029.1	2028.6	2028.9	2029.1	2029.4	2029.7	2031.8
180°	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1957.3	1957.3	1957.3	1957.3	1957.3	1957.3	1957.3	1957.3
2.5°	1949.5	1952.7	1955.7	1957.0	1956.4	1955.9	1955.3	1954.7
5°	1936.6	1939.8	1943.0	1944.2	1943.5	1942.8	1942.1	1941.4
7.5°	1909.4	1911.2	1912.9	1913.2	1912.0	1910.8	1909.6	1908.3
10°	1885.0	1885.3	1885.7	1885.0	1883.2	1881.5	1879.7	1877.9
12.5°	1854.6	1854.4	1854.2	1853.1	1851.1	1849.0	1846.9	1844.9
15°	1801.4	1799.6	1797.9	1795.7	1793.2	1790.8	1788.3	1785.8
17.5°	1737.8	1733.9	1730.2	1726.6	1722.8	1719.2	1715.6	1711.8
20°	1694.1	1689.5	1685.0	1680.5	1676.3	1672.0	1667.9	1663.7
22.5°	1647.4	1641.7	1636.0	1631.1	1627.2	1623.3	1619.3	1615.4
25°	1571.0	1563.6	1556.2	1550.5	1546.7	1542.8	1538.9	1535.0
27.5°	1487.7	1477.4	1467.1	1459.1	1453.1	1447.2	1441.3	1435.3
30°	1428.5	1416.5	1404.5	1395.7	1390.1	1384.4	1378.8	1373.1
32.5°	1370.4	1357.3	1344.1	1334.6	1328.7	1322.7	1316.9	1310.9
35°	1284.0	1268.9	1253.7	1242.9	1236.6	1230.2	1223.9	1217.6
37.5°	1191.3	1174.2	1156.9	1144.4	1136.6	1128.7	1121.0	1113.1
40°	1126.9	1108.5	1090.3	1077.0	1068.8	1060.8	1052.7	1044.5
42.5°	1065.1	1045.0	1025.0	1011.4	1004.1	996.8	989.6	982.3
45°	974.1	954.0	933.9	919.7	911.2	902.7	894.2	885.8
47.5°	880.1	858.3	836.4	821.7	814.2	806.6	799.0	791.5
50°	816.7	794.8	772.8	757.9	749.8	741.6	733.6	725.5
52.5°	755.3	732.6	709.8	694.8	687.5	680.3	673.1	665.8
55°	663.9	643.4	623.0	609.3	602.2	595.1	588.0	581.0
57.5°	574.1	554.7	535.4	522.7	516.7	510.8	504.7	498.8
60°	517.5	498.5	479.4	466.9	460.9	454.8	448.9	442.9
62.5°	461.3	443.4	425.5	413.4	407.1	400.8	394.6	388.3
65°	381.3	364.1	346.8	336.2	332.3	328.4	324.6	320.6
67.5°	305.0	292.1	279.1	270.6	266.5	262.3	258.1	254.0
70°	257.8	245.5	233.2	225.1	221.2	217.3	213.4	209.5
72.5°	215.4	205.3	195.2	189.3	187.7	186.1	184.5	182.9
75°	161.2	157.6	154.1	152.1	151.4	150.7	150.0	149.3
77.5°	121.6	119.7	117.8	116.4	115.7	115.0	114.3	113.6
80°	97.9	96.8	95.7	94.9	94.2	93.5	92.8	92.1
82.5°	75.0	74.0	72.9	72.3	72.2	72.0	71.9	71.8
85°	43.0	42.3	41.6	41.3	41.3	41.3	41.3	41.3
87.5°	23.7	23.7	23.7	23.6	23.4	23.3	23.1	23.0
90°	38.9	40.3	41.6	42.6	43.3	43.9	44.6	45.2
92.5°	42.9	45.1	47.3	48.5	48.9	49.3	49.7	50.1
95°	51.5	53.8	56.1	57.4	57.4	57.4	57.4	57.4
97.5°	54.0	56.7	59.4	60.9	61.2	61.5	61.9	62.2
100°	55.1	57.9	60.6	62.1	62.4	62.7	63.1	63.4
102.5°	82.7	74.4	66.0	62.2	62.8	63.4	64.0	64.6
105°	211.9	152.5	93.1	63.7	64.4	65.1	65.7	66.4
107.5°	518.9	475.3	431.8	387.7	343.0	298.1	253.4	208.6
110°	658.7	647.6	636.6	607.0	559.1	511.1	463.1	415.2



TEST NUMBER: P332488-840

CATALOG NUMBER: S123RDIW-S1165D1535U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	757.4	757.6	757.8	752.9	742.7	732.6	722.5	712.3
115°	873.3	876.7	880.0	882.3	883.7	885.0	886.4	887.8
117.5°	978.3	980.9	983.6	985.1	985.3	985.6	985.9	986.1
120°	1047.1	1049.8	1052.5	1053.8	1053.8	1053.8	1053.8	1053.8
122.5°	1114.3	1116.2	1118.1	1119.1	1119.4	1119.6	1119.9	1120.2
125°	1209.1	1209.8	1210.4	1211.1	1211.8	1212.4	1213.2	1213.9
127.5°	1304.1	1305.3	1306.3	1306.5	1305.9	1305.1	1304.4	1303.8
130°	1361.4	1362.8	1364.1	1364.4	1363.8	1363.1	1362.4	1361.8
132.5°	1415.8	1417.1	1418.5	1418.7	1417.7	1416.8	1415.8	1414.9
135°	1498.1	1499.1	1500.2	1500.2	1499.1	1498.1	1497.1	1496.1
137.5°	1571.6	1573.2	1574.8	1575.2	1574.6	1573.9	1573.2	1572.6
140°	1618.1	1619.4	1620.7	1621.1	1620.4	1619.8	1619.1	1618.4
142.5°	1662.2	1663.3	1664.4	1664.5	1663.6	1662.5	1661.6	1660.7
145°	1723.9	1724.6	1725.3	1725.7	1725.7	1725.7	1725.7	1725.7
147.5°	1779.2	1779.9	1780.6	1780.1	1778.6	1777.1	1775.4	1773.9
150°	1813.0	1813.7	1814.3	1814.2	1813.2	1812.2	1811.2	1810.2
152.5°	1843.1	1844.3	1845.5	1845.3	1843.8	1842.2	1840.7	1839.2
155°	1884.5	1886.1	1887.8	1887.6	1885.6	1883.6	1881.6	1879.7
157.5°	1920.5	1922.5	1924.5	1924.2	1921.6	1918.9	1916.3	1913.7
160°	1941.1	1943.0	1945.0	1944.9	1942.5	1940.2	1937.8	1935.5
162.5°	1959.6	1962.0	1964.2	1964.3	1962.3	1960.1	1958.1	1956.0
165°	1984.6	1987.3	1990.0	1990.1	1987.8	1985.5	1983.1	1980.7
167.5°	2004.0	2006.6	2009.3	2009.3	2006.6	2004.0	2001.2	1998.6
170°	2014.8	2017.5	2020.2	2020.2	2017.5	2014.8	2012.2	2009.4
172.5°	2022.1	2024.8	2027.4	2027.3	2024.4	2021.4	2018.4	2015.5
175°	2030.7	2033.1	2035.5	2035.3	2032.6	2029.9	2027.2	2024.6
177.5°	2034.0	2036.1	2038.3	2038.0	2035.3	2032.7	2029.9	2027.3
180°	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1	2032.1

(END OF REPORT)