

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: P332488-935

Luminaire Tested: **S123RDIW-S1165D1535U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332488-935  
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-S1165D1535U935-4F0-1E-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: 9058.2 lumens  
Efficiency: N/A  
Efficacy: 109.3 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

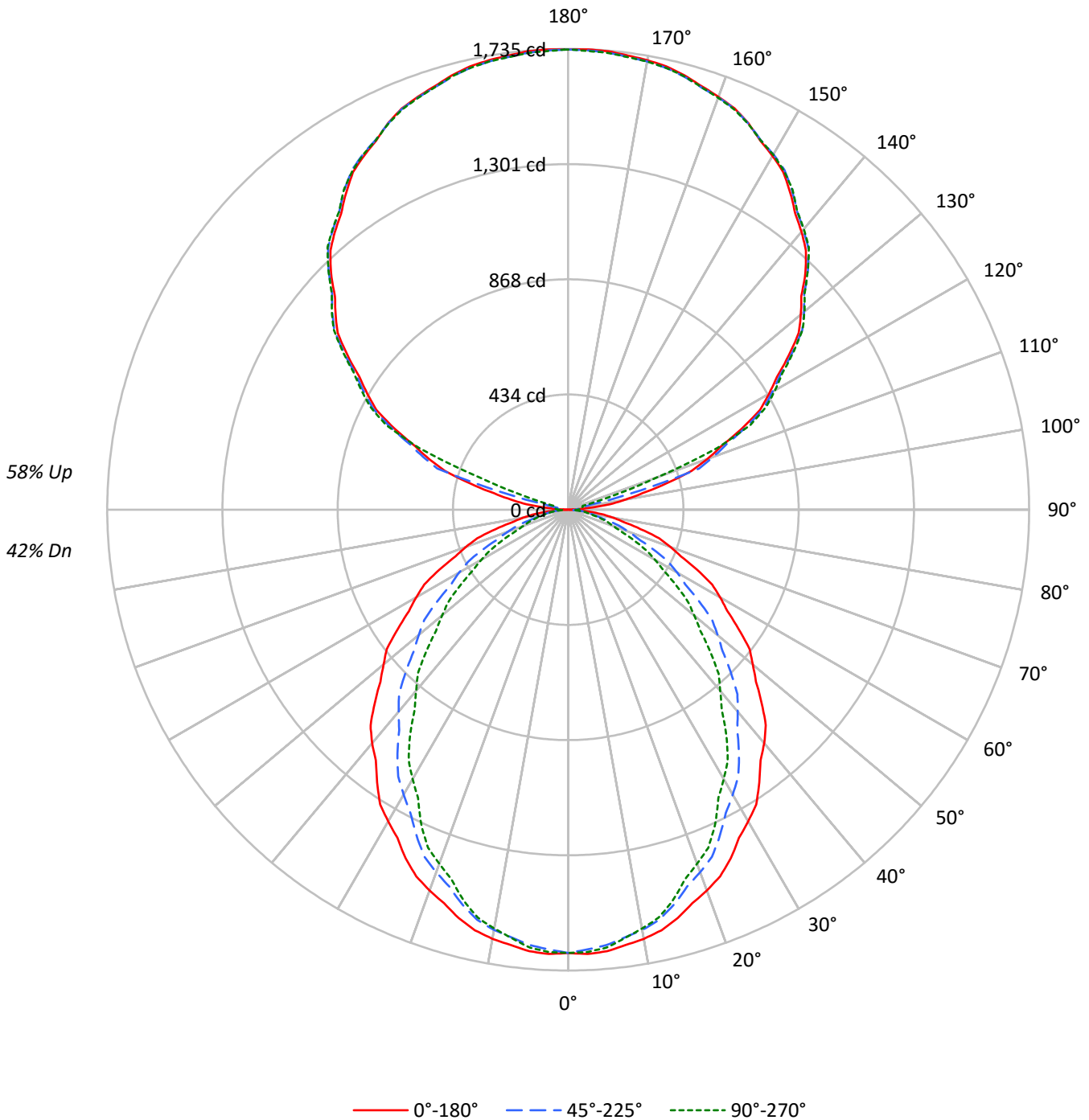
Input Watts (W): 82.9  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	17963	17963	17963
5°	18031	17782	17884
10°	17930	17559	17500
15°	17736	17149	16967
20°	17472	16635	16247
25°	17199	16057	15543
30°	16839	15392	14551
35°	16469	14725	13641
40°	16127	13939	12513
45°	15678	13164	11496
50°	15185	12285	10357
55°	14681	11277	9295
60°	14219	10198	8129
65°	13616	9032	6963
70°	12862	7582	5624
75°	11761	5964	5294
80°	10488	5281	4866
85°	8855	4681	4347



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	156.7	1.7
10°-20°	436.0	4.8
20°-30°	627.8	6.9
30°-40°	707.2	7.8
40°-50°	676.5	7.5
50°-60°	554.0	6.1
60°-70°	373.8	4.1
70°-80°	188.1	2.1
80°-90°	54.6	0.6
90°-100°	63.0	0.7
100°-110°	300.2	3.3
110°-120°	721.1	8.0
120°-130°	918.3	10.1
130°-140°	981.1	10.8
140°-150°	917.5	10.1
150°-160°	740.1	8.2
160°-170°	477.6	5.3
170°-180°	164.6	1.8
0°-30°	1220.5	13.5
0°-40°	1927.7	21.3
0°-60°	3158.3	34.9
0°-90°	3774.7	41.7
90°-120°	1084.3	12.0
90°-150°	3901.2	43.1
90°-180°	5283.0	58.3
0°-180°	9058.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1669	1669	1669	1669	1669	
5°	1669	1662	1646	1657	1655	158
15°	1592	1575	1539	1532	1523	448
25°	1448	1413	1352	1324	1309	666
35°	1253	1203	1121	1064	1038	784
45°	1030	967	865	790	755	794
55°	782	713	601	525	495	701
65°	535	458	355	291	273	529
75°	283	217	143	131	127	302
85°	72	43	38	35	35	81
90°	1	14	31	36	39	7
95°	78	29	40	48	49	97
105°	384	390	282	67	57	407
115°	720	728	739	751	757	710
125°	1014	1024	1030	1032	1035	905
135°	1263	1270	1276	1279	1276	972
145°	1457	1466	1469	1471	1471	912
155°	1605	1603	1604	1610	1603	739
165°	1693	1689	1688	1697	1689	478
175°	1732	1726	1727	1735	1726	165
180°	1732	1732	1732	1732	1732	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1668.8	1668.8	1668.8	1668.8	1668.8	1668.8	1668.8	1668.8	1668.8	1668.8	1668.8
2.5°	1674.2	1673.2	1672.2	1671.3	1670.3	1668.4	1665.5	1662.6	1659.7	1656.8	1659.5
5°	1668.8	1667.2	1665.8	1664.2	1662.8	1660.2	1656.6	1652.9	1649.3	1645.7	1648.5
7.5°	1653.3	1651.7	1650.1	1648.5	1646.8	1643.6	1639.0	1634.3	1629.6	1624.9	1626.4
10°	1640.4	1638.2	1636.2	1634.0	1631.9	1628.2	1622.7	1617.3	1611.9	1606.5	1606.8
12.5°	1622.0	1619.6	1617.2	1614.9	1612.6	1608.1	1601.5	1594.8	1588.2	1581.6	1581.4
15°	1591.6	1588.3	1585.0	1581.7	1578.4	1572.5	1564.1	1555.7	1547.2	1538.9	1537.3
17.5°	1553.4	1549.6	1545.8	1541.9	1538.1	1530.8	1520.1	1509.3	1498.7	1488.0	1484.8
20°	1525.3	1520.5	1515.7	1510.9	1506.1	1498.0	1486.5	1475.1	1463.6	1452.2	1448.3
22.5°	1493.9	1488.3	1482.8	1477.3	1471.8	1462.9	1450.8	1438.6	1426.5	1414.3	1409.5
25°	1448.1	1440.6	1433.1	1425.6	1418.1	1407.4	1393.5	1379.8	1365.9	1352.0	1345.7
27.5°	1392.7	1384.4	1376.1	1367.8	1359.4	1347.6	1332.2	1316.8	1301.4	1286.0	1277.2
30°	1354.8	1345.7	1336.7	1327.7	1318.7	1305.7	1288.9	1272.0	1255.3	1238.4	1228.1
32.5°	1316.9	1306.7	1296.4	1286.2	1276.0	1262.0	1244.1	1226.3	1208.5	1190.8	1179.6
35°	1253.3	1242.4	1231.6	1220.8	1210.0	1195.2	1176.6	1158.0	1139.3	1120.6	1107.7
37.5°	1188.9	1176.8	1164.8	1152.7	1140.7	1124.7	1104.8	1084.9	1065.1	1045.1	1030.4
40°	1147.7	1134.5	1121.2	1108.0	1094.8	1077.5	1056.1	1034.7	1013.4	992.0	976.4
42.5°	1101.1	1087.9	1074.7	1061.4	1048.2	1030.5	1008.5	986.4	964.3	942.3	925.1
45°	1029.9	1016.4	1002.9	989.4	975.8	957.4	934.3	911.1	887.9	864.8	847.7
47.5°	958.7	943.9	929.0	914.2	899.3	880.3	857.1	834.0	810.8	787.7	769.0
50°	906.8	892.7	878.5	864.4	850.2	831.0	806.7	782.3	757.9	733.6	714.9
52.5°	860.2	844.9	829.6	814.2	798.8	779.1	755.0	730.9	706.8	682.7	663.3
55°	782.3	767.5	752.8	738.0	723.3	703.2	677.6	652.0	626.5	600.9	583.5
57.5°	710.2	694.2	678.1	662.1	646.0	625.2	599.5	573.8	548.1	522.5	505.9
60°	660.5	643.9	627.4	610.9	594.3	573.5	548.5	523.7	498.7	473.7	457.4
62.5°	610.6	594.1	577.6	561.0	544.5	523.7	498.8	473.8	448.8	423.9	408.6
65°	534.6	518.1	501.5	485.0	468.5	448.4	425.0	401.5	378.1	354.6	339.8
67.5°	458.6	441.8	425.1	408.4	391.7	372.0	349.6	327.0	304.5	282.1	271.0
70°	408.7	392.5	376.3	360.0	343.8	325.1	304.1	283.0	262.0	240.9	230.4
72.5°	359.0	342.9	326.9	310.9	294.9	277.3	258.2	239.1	220.0	200.9	192.3
75°	282.8	268.5	254.0	239.5	225.2	209.7	193.1	176.5	160.0	143.4	140.4
77.5°	213.5	200.5	187.4	174.4	161.4	149.5	138.9	128.2	117.5	106.9	105.3
80°	169.2	156.9	144.5	132.2	119.9	110.6	104.2	97.9	91.6	85.2	84.4
82.5°	126.9	116.3	105.6	95.0	84.4	77.6	74.6	71.6	68.7	65.8	64.8
85°	71.7	65.1	58.5	51.9	45.3	41.5	40.6	39.7	38.8	37.9	37.3
87.5°	26.3	24.2	22.1	20.1	17.9	17.3	18.0	18.8	19.5	20.2	20.2
90°	1.3	4.1	7.0	9.9	12.7	16.0	19.7	23.4	27.2	30.9	32.0
92.5°	23.9	23.2	22.3	21.5	20.8	21.7	24.5	27.4	30.1	33.0	34.8
95°	78.5	66.8	55.1	43.3	31.6	27.3	30.5	33.6	36.8	39.9	41.9
97.5°	157.8	152.6	147.3	142.0	136.7	123.8	103.2	82.7	62.1	41.4	43.7
100°	217.6	223.3	228.9	234.7	240.4	220.9	176.3	131.7	87.1	42.4	44.8
102.5°	285.5	289.6	293.8	297.8	302.0	279.7	230.9	182.2	133.5	84.7	77.6
105°	383.6	386.8	389.9	393.0	396.1	384.9	359.1	333.4	307.6	281.9	231.3
107.5°	487.1	489.6	492.1	494.6	497.1	500.4	504.5	508.6	512.6	516.7	479.6
110°	556.0	558.4	560.6	562.9	565.2	567.9	571.1	574.2	577.4	580.5	571.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	622.0	624.1	626.1	628.2	630.2	632.8	635.9	639.1	642.2	645.4	645.6
115°	719.5	721.3	723.0	724.7	726.4	728.6	731.2	733.7	736.2	738.8	741.7
117.5°	814.0	816.1	818.2	820.4	822.5	824.2	825.5	826.8	828.1	829.5	831.7
120°	872.7	875.3	877.9	880.5	883.0	884.8	885.5	886.4	887.3	888.1	890.4
122.5°	932.5	934.5	936.7	938.7	940.9	942.5	943.6	944.7	945.7	946.8	948.5
125°	1014.3	1016.6	1018.9	1021.1	1023.5	1025.2	1026.3	1027.4	1028.6	1029.8	1030.4
127.5°	1093.6	1095.9	1098.2	1100.4	1102.8	1104.6	1106.0	1107.3	1108.7	1110.1	1110.9
130°	1143.0	1145.3	1147.6	1149.9	1152.2	1153.9	1155.0	1156.2	1157.4	1158.5	1159.6
132.5°	1190.4	1192.7	1195.0	1197.2	1199.5	1201.2	1202.0	1203.0	1203.9	1204.8	1205.9
135°	1262.7	1264.5	1266.2	1267.9	1269.6	1271.0	1272.1	1273.3	1274.5	1275.6	1276.4
137.5°	1324.5	1326.7	1328.9	1331.0	1333.2	1334.6	1335.2	1335.8	1336.5	1337.1	1338.5
140°	1365.7	1367.4	1369.2	1370.9	1372.6	1373.8	1374.7	1375.5	1376.4	1377.3	1378.5
142.5°	1403.8	1405.5	1407.2	1408.9	1410.7	1412.0	1412.8	1413.7	1414.5	1415.4	1416.3
145°	1457.1	1459.1	1461.1	1463.1	1465.1	1466.4	1467.0	1467.5	1468.1	1468.7	1469.2
147.5°	1507.3	1508.6	1509.9	1511.2	1512.5	1513.5	1514.1	1514.7	1515.2	1515.8	1516.4
150°	1538.2	1539.0	1539.9	1540.8	1541.6	1542.3	1542.9	1543.5	1544.0	1544.6	1545.2
152.5°	1566.0	1566.4	1566.8	1567.2	1567.6	1568.0	1568.3	1568.7	1569.0	1569.3	1570.4
155°	1605.1	1604.6	1604.0	1603.4	1602.8	1602.7	1603.0	1603.3	1603.5	1603.8	1605.2
157.5°	1635.5	1635.5	1635.4	1635.3	1635.3	1635.1	1634.8	1634.5	1634.3	1633.9	1635.6
160°	1654.1	1653.7	1653.5	1653.2	1652.9	1652.6	1652.3	1652.0	1651.7	1651.5	1653.2
162.5°	1671.5	1670.8	1670.1	1669.3	1668.5	1668.0	1667.8	1667.5	1667.2	1666.9	1668.9
165°	1692.6	1691.8	1690.9	1690.1	1689.2	1688.7	1688.3	1688.1	1687.8	1687.5	1689.8
167.5°	1709.1	1708.0	1706.8	1705.7	1704.5	1704.0	1704.0	1704.0	1704.0	1704.0	1706.2
170°	1718.4	1717.3	1716.1	1714.9	1713.8	1713.2	1713.2	1713.2	1713.2	1713.2	1715.5
172.5°	1724.6	1723.2	1721.8	1720.5	1719.1	1718.5	1718.7	1719.0	1719.2	1719.4	1721.7
175°	1732.5	1731.1	1729.7	1728.3	1726.8	1726.2	1726.6	1726.8	1727.1	1727.4	1729.4
177.5°	1734.6	1733.5	1732.3	1731.2	1730.0	1729.6	1729.8	1730.0	1730.3	1730.5	1732.3
180°	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1668.8	1668.8	1668.8	1668.8	1668.8	1668.8	1668.8	1668.8
2.5°	1662.2	1664.8	1667.4	1668.5	1668.0	1667.6	1667.1	1666.6
5°	1651.1	1653.9	1656.6	1657.6	1657.0	1656.4	1655.8	1655.2
7.5°	1627.9	1629.4	1630.9	1631.2	1630.1	1629.1	1628.1	1627.0
10°	1607.1	1607.4	1607.7	1607.1	1605.6	1604.1	1602.6	1601.1
12.5°	1581.2	1581.1	1580.9	1579.9	1578.2	1576.4	1574.7	1573.0
15°	1535.9	1534.3	1532.8	1531.0	1528.9	1526.8	1524.7	1522.6
17.5°	1481.6	1478.3	1475.2	1472.1	1468.9	1465.8	1462.7	1459.5
20°	1444.4	1440.5	1436.6	1432.8	1429.2	1425.6	1422.0	1418.4
22.5°	1404.5	1399.7	1394.8	1390.7	1387.3	1384.0	1380.6	1377.3
25°	1339.5	1333.1	1326.8	1322.0	1318.7	1315.3	1312.1	1308.7
27.5°	1268.4	1259.6	1250.9	1244.0	1238.9	1233.9	1228.8	1223.7
30°	1217.9	1207.7	1197.5	1190.0	1185.2	1180.3	1175.5	1170.7
32.5°	1168.4	1157.2	1146.0	1137.9	1132.8	1127.7	1122.7	1117.7
35°	1094.8	1081.8	1068.9	1059.7	1054.3	1048.9	1043.4	1038.1
37.5°	1015.7	1001.1	986.4	975.7	969.1	962.3	955.7	949.0
40°	960.8	945.1	929.5	918.3	911.3	904.4	897.5	890.5
42.5°	908.1	891.0	873.9	862.3	856.1	849.9	843.7	837.5
45°	830.5	813.4	796.3	784.1	776.9	769.6	762.4	755.2
47.5°	750.4	731.8	713.1	700.6	694.1	687.7	681.2	674.9
50°	696.3	677.6	658.9	646.2	639.3	632.3	625.4	618.5
52.5°	643.9	624.6	605.2	592.4	586.2	580.1	573.9	567.7
55°	566.0	548.5	531.2	519.4	513.4	507.4	501.4	495.3
57.5°	489.5	472.9	456.5	445.7	440.6	435.5	430.3	425.2
60°	441.2	425.0	408.7	398.0	393.0	387.8	382.7	377.6
62.5°	393.3	378.1	362.7	352.5	347.1	341.7	336.4	331.1
65°	325.1	310.4	295.7	286.6	283.4	280.0	276.7	273.4
67.5°	260.0	249.0	238.0	230.7	227.2	223.6	220.1	216.5
70°	219.8	209.3	198.8	191.9	188.6	185.3	181.9	178.7
72.5°	183.7	175.0	166.4	161.4	160.1	158.7	157.3	155.9
75°	137.4	134.4	131.4	129.7	129.1	128.5	127.9	127.3
77.5°	103.7	102.0	100.4	99.3	98.7	98.1	97.5	96.9
80°	83.4	82.6	81.6	80.9	80.3	79.7	79.1	78.5
82.5°	64.0	63.1	62.2	61.6	61.6	61.4	61.3	61.2
85°	36.7	36.1	35.5	35.2	35.2	35.2	35.2	35.2
87.5°	20.2	20.2	20.2	20.1	20.0	19.9	19.7	19.6
90°	33.1	34.4	35.5	36.3	36.9	37.5	38.1	38.6
92.5°	36.6	38.5	40.3	41.3	41.7	42.0	42.4	42.7
95°	43.9	45.9	47.9	48.9	48.9	48.9	48.9	48.9
97.5°	46.1	48.3	50.6	51.9	52.2	52.4	52.8	53.0
100°	47.0	49.3	51.7	53.0	53.2	53.5	53.8	54.1
102.5°	70.5	63.5	56.3	53.0	53.6	54.1	54.6	55.1
105°	180.6	130.0	79.4	54.3	54.9	55.5	56.1	56.7
107.5°	442.4	405.3	368.2	330.5	292.4	254.2	216.0	177.9
110°	561.6	552.2	542.8	517.5	476.6	435.8	394.9	354.0





TEST NUMBER: P332488-935

CATALOG NUMBER: S123RDIW-S1165D1535U935-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	645.8	645.9	646.1	641.9	633.2	624.6	616.0	607.3
115°	744.6	747.4	750.3	752.3	753.5	754.6	755.7	756.9
117.5°	834.1	836.3	838.6	839.9	840.1	840.3	840.6	840.8
120°	892.8	895.0	897.3	898.5	898.5	898.5	898.5	898.5
122.5°	950.0	951.7	953.3	954.2	954.4	954.6	954.8	955.1
125°	1030.9	1031.5	1032.0	1032.6	1033.2	1033.7	1034.3	1034.9
127.5°	1111.9	1112.8	1113.7	1113.9	1113.4	1112.8	1112.2	1111.6
130°	1160.7	1161.9	1163.0	1163.3	1162.8	1162.2	1161.6	1161.1
132.5°	1207.1	1208.2	1209.4	1209.5	1208.8	1208.0	1207.1	1206.3
135°	1277.3	1278.2	1279.0	1279.0	1278.2	1277.3	1276.4	1275.6
137.5°	1339.9	1341.3	1342.6	1343.0	1342.5	1341.9	1341.3	1340.7
140°	1379.6	1380.7	1381.8	1382.2	1381.6	1381.0	1380.4	1379.8
142.5°	1417.2	1418.2	1419.0	1419.1	1418.3	1417.5	1416.7	1415.9
145°	1469.8	1470.4	1470.9	1471.3	1471.3	1471.3	1471.3	1471.3
147.5°	1516.9	1517.5	1518.1	1517.7	1516.4	1515.1	1513.7	1512.4
150°	1545.8	1546.4	1546.9	1546.8	1545.9	1545.1	1544.2	1543.3
152.5°	1571.4	1572.4	1573.5	1573.3	1572.0	1570.6	1569.3	1568.1
155°	1606.7	1608.1	1609.6	1609.4	1607.7	1605.9	1604.2	1602.6
157.5°	1637.4	1639.1	1640.8	1640.5	1638.3	1636.1	1633.8	1631.6
160°	1654.9	1656.6	1658.3	1658.2	1656.1	1654.2	1652.2	1650.2
162.5°	1670.8	1672.8	1674.6	1674.7	1673.0	1671.2	1669.5	1667.7
165°	1692.0	1694.4	1696.7	1696.8	1694.8	1692.8	1690.7	1688.8
167.5°	1708.6	1710.8	1713.1	1713.1	1710.8	1708.6	1706.2	1704.0
170°	1717.8	1720.1	1722.4	1722.4	1720.1	1717.8	1715.5	1713.2
172.5°	1724.0	1726.3	1728.5	1728.5	1726.0	1723.5	1720.9	1718.4
175°	1731.4	1733.4	1735.4	1735.3	1732.9	1730.7	1728.4	1726.1
177.5°	1734.1	1735.9	1737.8	1737.6	1735.3	1733.0	1730.7	1728.5
180°	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5

(END OF REPORT)