

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: P333113-935

Luminaire Tested: **S124RDIW-S1195D1560U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333113-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDIW-S1195D1560U935-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1560 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9523.5 lumens
Efficiency: N/A
Efficacy: 114.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

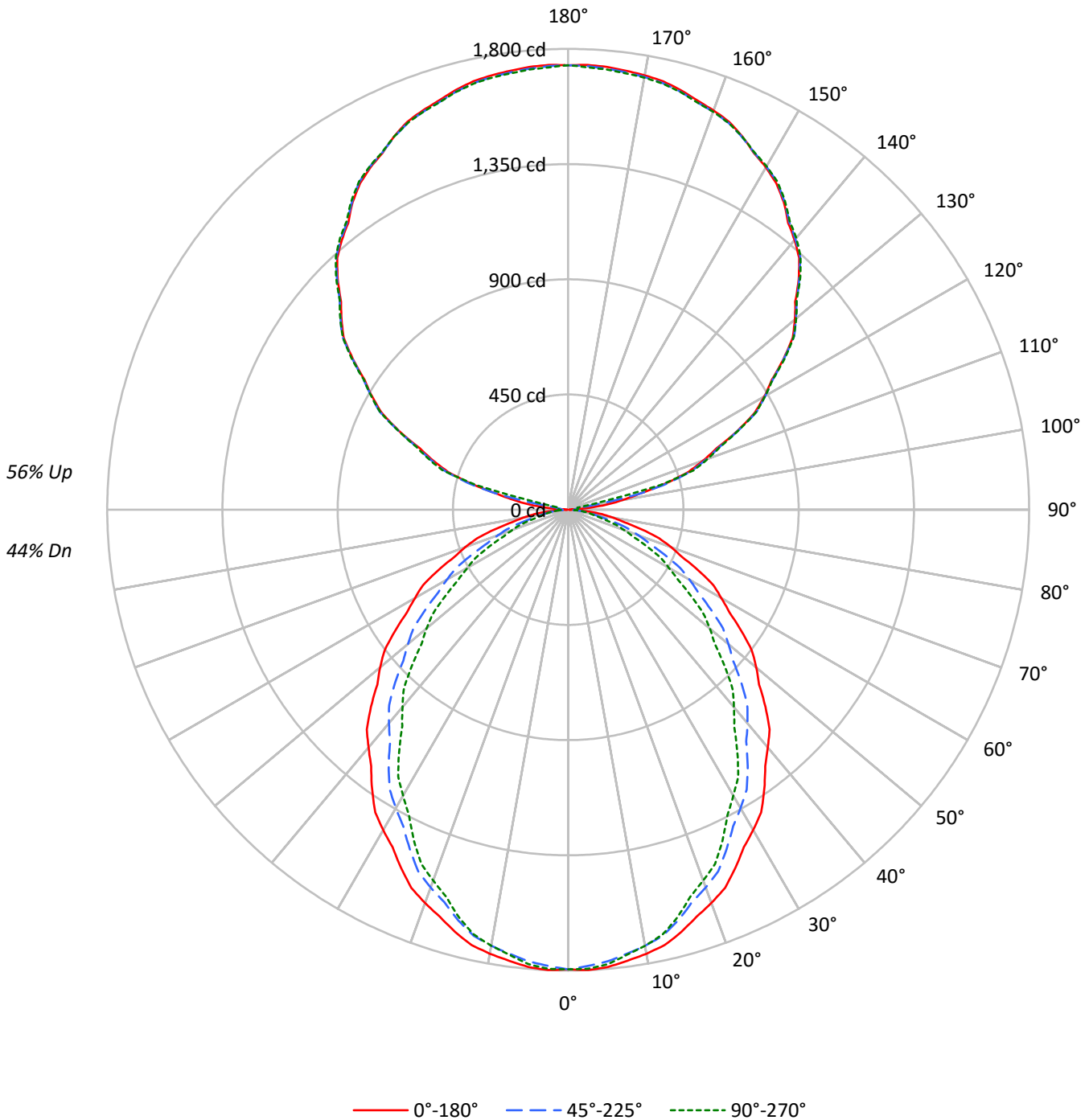
Input Watts (W): 82.9
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				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	80	80	80	64	64	64	50	50	50	44
1	97	92	89	85	88	85	81	79	70	68	66	57	55	54	45	44	43	37
2	88	81	75	70	80	74	69	65	62	58	55	50	48	45	40	38	36	32
3	80	71	64	58	73	66	59	54	55	50	46	45	41	39	35	33	31	27
4	74	63	55	50	67	58	51	46	49	44	40	40	36	33	32	29	27	23
5	68	56	48	43	62	52	45	40	44	38	34	36	32	29	29	26	24	20
6	62	51	43	37	57	47	40	35	39	34	30	32	28	25	26	23	21	18
7	58	46	38	32	53	42	35	30	36	30	26	30	26	23	24	21	19	16
8	54	41	34	29	49	38	32	27	33	27	24	27	23	20	22	19	17	14
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	17	15	13
10	47	35	28	23	43	32	26	22	27	22	19	23	19	16	19	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14495	14495	14495
5°	14528	14350	14439
10°	14437	14178	14178
15°	14271	13881	13778
20°	14044	13489	13241
25°	13752	13030	12699
30°	13470	12547	12021
35°	13157	12046	11340
40°	12779	11475	10606
45°	12432	10909	9857
50°	12036	10257	9065
55°	11610	9578	8204
60°	11144	8835	7325
65°	10714	7904	6460
70°	10093	6878	5486
75°	9304	5705	4460
80°	8117	4347	4091
85°	6873	3946	3696



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	168.7	1.8
10°-20°	470.4	4.9
20°-30°	679.2	7.1
30°-40°	769.9	8.1
40°-50°	743.4	7.8
50°-60°	618.2	6.5
60°-70°	426.9	4.5
70°-80°	216.4	2.3
80°-90°	60.5	0.6
90°-100°	59.4	0.6
100°-110°	378.6	4.0
110°-120°	724.2	7.6
120°-130°	919.3	9.7
130°-140°	983.6	10.3
140°-150°	919.8	9.7
150°-160°	741.8	7.8
160°-170°	478.4	5.0
170°-180°	164.9	1.7
0°-30°	1318.2	13.8
0°-40°	2088.1	21.9
0°-60°	3449.7	36.2
0°-90°	4153.5	43.6
90°-120°	1162.1	12.2
90°-150°	3984.9	41.8
90°-180°	5370.0	56.4
0°-180°	9523.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1796	1796	1796	1796	1796	
5°	1793	1787	1771	1784	1782	170
15°	1708	1694	1661	1658	1648	481
25°	1544	1517	1463	1440	1426	711
35°	1335	1290	1222	1177	1151	834
45°	1089	1036	956	890	863	839
55°	825	768	680	612	583	738
65°	561	500	414	357	338	554
75°	298	247	183	152	143	315
85°	74	48	43	40	40	84
90°	4	18	29	36	39	7
95°	71	30	29	36	38	92
105°	391	399	405	414	370	409
115°	730	733	732	735	735	718
125°	1026	1030	1028	1032	1034	915
135°	1272	1272	1276	1279	1282	980
145°	1467	1471	1471	1472	1475	916
155°	1609	1610	1606	1611	1608	741
165°	1697	1691	1691	1700	1689	479
175°	1736	1729	1730	1740	1726	165
180°	1736	1736	1736	1736	1736	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5
2.5°	1799.9	1799.0	1798.0	1797.0	1796.0	1794.2	1791.6	1788.8	1786.1	1783.5	1786.1
5°	1792.8	1791.6	1790.4	1789.2	1788.0	1785.5	1781.8	1778.1	1774.5	1770.8	1773.8
7.5°	1776.6	1775.3	1774.0	1772.7	1771.4	1768.4	1763.7	1758.9	1754.1	1749.4	1751.4
10°	1761.2	1759.6	1758.2	1756.6	1755.1	1751.5	1746.1	1740.6	1735.1	1729.6	1730.8
12.5°	1741.4	1739.7	1737.8	1736.0	1734.3	1730.2	1723.7	1717.3	1710.7	1704.3	1705.0
15°	1707.5	1704.8	1702.1	1699.4	1696.6	1691.3	1683.8	1676.1	1668.4	1660.8	1660.2
17.5°	1666.6	1662.6	1658.6	1654.7	1650.7	1644.2	1635.0	1625.8	1616.6	1607.5	1605.8
20°	1634.7	1630.7	1626.8	1622.8	1618.9	1611.6	1601.3	1590.9	1580.5	1570.1	1567.6
22.5°	1599.5	1595.1	1590.6	1586.1	1581.7	1573.9	1562.7	1551.6	1540.5	1529.4	1525.7
25°	1543.9	1538.4	1532.9	1527.5	1522.0	1512.9	1500.5	1487.9	1475.4	1462.8	1457.7
27.5°	1485.7	1478.8	1471.9	1465.0	1458.0	1447.9	1434.5	1421.2	1407.7	1394.4	1387.9
30°	1445.0	1437.4	1429.7	1422.0	1414.5	1403.4	1389.1	1374.7	1360.4	1346.0	1338.3
32.5°	1402.1	1393.4	1384.8	1376.2	1367.6	1355.9	1341.0	1326.2	1311.3	1296.5	1287.6
35°	1335.0	1325.2	1315.4	1305.6	1295.9	1283.3	1268.1	1252.8	1237.5	1222.3	1211.9
37.5°	1263.3	1253.1	1243.0	1233.0	1222.9	1209.4	1192.5	1175.5	1158.6	1141.7	1130.1
40°	1212.6	1202.6	1192.5	1182.4	1172.3	1158.6	1141.2	1123.7	1106.3	1088.9	1076.1
42.5°	1164.2	1153.7	1143.1	1132.5	1122.0	1107.6	1089.4	1071.3	1053.2	1035.0	1021.9
45°	1088.9	1077.5	1066.3	1055.0	1043.7	1028.8	1010.6	992.2	973.9	955.5	940.6
47.5°	1011.1	999.4	987.7	976.0	964.4	949.0	930.0	910.9	891.8	872.8	857.2
50°	958.3	946.3	934.4	922.6	910.6	894.8	875.3	855.7	836.2	816.7	801.4
52.5°	904.4	892.7	881.1	869.4	857.7	841.8	821.8	801.8	781.7	761.6	746.1
55°	824.9	812.7	800.5	788.2	776.0	760.0	740.1	720.3	700.4	680.5	664.7
57.5°	746.2	733.6	720.8	708.2	695.4	679.3	659.8	640.2	620.6	601.1	585.0
60°	690.2	678.0	665.7	653.5	641.3	625.4	605.9	586.3	566.7	547.2	531.3
62.5°	639.6	626.9	614.2	601.5	588.8	572.4	552.3	532.3	512.2	492.2	477.5
65°	560.9	547.8	534.7	521.5	508.4	492.1	472.5	453.0	433.4	413.8	400.7
67.5°	479.2	466.7	454.1	441.5	429.0	413.5	395.4	377.3	359.1	341.0	329.7
70°	427.6	414.7	401.9	389.1	376.3	361.1	343.7	326.3	308.9	291.4	281.4
72.5°	372.6	361.0	349.4	337.8	326.1	312.1	295.7	279.2	262.8	246.3	237.7
75°	298.3	287.1	275.7	264.4	253.1	240.3	225.9	211.5	197.3	182.9	175.8
77.5°	223.0	213.4	203.8	194.2	184.6	174.0	162.4	150.8	139.2	127.6	123.5
80°	174.6	165.7	156.9	148.0	139.1	130.2	121.0	111.8	102.6	93.5	92.6
82.5°	132.9	124.7	116.6	108.4	100.3	93.6	88.3	83.1	77.8	72.6	71.9
85°	74.2	68.1	62.0	55.9	49.8	46.3	45.4	44.4	43.6	42.6	42.0
87.5°	26.1	24.8	23.4	22.1	20.8	20.2	20.5	20.7	20.9	21.1	21.2
90°	3.9	7.1	10.2	13.4	16.6	19.4	21.6	23.9	26.3	28.6	30.3
92.5°	16.4	16.5	16.7	16.9	17.0	18.3	20.6	22.9	25.2	27.6	29.3
95°	71.4	61.6	51.8	42.0	32.2	27.4	27.7	28.0	28.2	28.6	30.3
97.5°	151.6	157.7	163.8	170.0	176.2	163.1	130.9	98.7	66.5	34.3	34.4
100°	212.9	218.2	223.3	228.5	233.7	216.4	176.6	136.7	96.9	57.2	52.3
102.5°	281.5	285.3	289.1	292.9	296.7	296.0	290.8	285.7	280.4	275.3	222.3
105°	390.8	392.5	394.3	396.1	397.8	399.3	400.8	402.3	403.6	405.1	407.7
107.5°	492.3	493.3	494.1	495.0	495.8	497.2	499.2	501.2	503.1	505.1	506.4
110°	560.9	561.8	562.7	563.5	564.4	565.7	567.4	569.1	570.8	572.6	573.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	627.4	629.0	630.5	632.1	633.6	634.8	635.6	636.5	637.2	638.1	637.9
115°	729.7	730.6	731.4	732.3	733.1	733.5	733.1	732.9	732.6	732.3	732.9
117.5°	821.9	823.0	824.2	825.4	826.6	827.4	828.0	828.7	829.3	829.9	829.8
120°	884.2	885.4	886.6	887.7	888.8	889.2	889.0	888.7	888.4	888.1	888.7
122.5°	942.4	943.1	943.7	944.4	945.2	945.7	946.2	946.5	946.9	947.4	947.7
125°	1025.8	1026.9	1028.0	1029.2	1030.4	1030.6	1030.1	1029.5	1028.9	1028.4	1029.2
127.5°	1104.7	1105.0	1105.3	1105.5	1105.9	1106.6	1108.0	1109.3	1110.6	1112.0	1111.8
130°	1155.6	1155.9	1156.2	1156.5	1156.8	1157.4	1158.2	1159.1	1159.9	1160.8	1161.1
132.5°	1202.3	1202.8	1203.4	1203.9	1204.5	1205.2	1206.3	1207.4	1208.5	1209.6	1209.9
135°	1272.5	1272.1	1271.9	1271.6	1271.3	1271.7	1272.9	1274.0	1275.2	1276.3	1276.9
137.5°	1334.6	1334.6	1334.7	1334.9	1335.0	1335.7	1337.0	1338.3	1339.5	1340.7	1341.4
140°	1375.0	1375.6	1376.2	1376.7	1377.3	1377.9	1378.5	1379.1	1379.7	1380.2	1381.1
142.5°	1411.4	1412.4	1413.5	1414.5	1415.6	1416.3	1416.6	1416.9	1417.3	1417.6	1418.2
145°	1467.2	1468.1	1469.0	1469.8	1470.7	1471.1	1471.1	1471.1	1471.1	1471.1	1471.4
147.5°	1511.7	1513.2	1514.8	1516.5	1518.1	1518.7	1518.5	1518.2	1517.9	1517.6	1517.9
150°	1543.9	1545.0	1546.1	1547.3	1548.4	1548.9	1548.6	1548.3	1548.0	1547.7	1547.7
152.5°	1570.8	1571.8	1572.7	1573.6	1574.5	1574.8	1574.2	1573.6	1573.1	1572.6	1573.1
155°	1608.8	1609.0	1609.3	1609.6	1609.9	1609.6	1608.8	1607.9	1607.1	1606.1	1607.3
157.5°	1640.7	1640.5	1640.4	1640.2	1640.0	1639.4	1638.4	1637.4	1636.5	1635.5	1637.0
160°	1659.4	1658.5	1657.7	1656.8	1656.0	1655.4	1655.0	1654.8	1654.5	1654.2	1656.0
162.5°	1676.0	1674.9	1673.8	1672.8	1671.6	1670.9	1670.6	1670.3	1670.1	1669.7	1671.5
165°	1697.0	1695.6	1694.2	1692.7	1691.3	1690.6	1690.6	1690.6	1690.6	1690.6	1692.8
167.5°	1713.6	1712.2	1710.6	1709.2	1707.6	1706.8	1706.7	1706.5	1706.3	1706.2	1708.7
170°	1723.0	1721.3	1719.5	1717.8	1716.1	1715.4	1715.6	1716.0	1716.2	1716.5	1718.8
172.5°	1729.2	1727.5	1725.8	1724.1	1722.3	1721.6	1721.9	1722.2	1722.4	1722.8	1725.0
175°	1735.9	1734.2	1732.5	1730.8	1729.1	1728.4	1728.6	1728.9	1729.2	1729.5	1732.1
177.5°	1739.1	1737.5	1735.9	1734.2	1732.7	1732.1	1732.5	1733.0	1733.5	1733.9	1735.8
180°	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5	1795.5
2.5°	1788.8	1791.6	1794.2	1795.4	1795.2	1794.9	1794.7	1794.5
5°	1776.9	1779.9	1783.0	1784.3	1783.6	1783.0	1782.4	1781.8
7.5°	1753.3	1755.2	1757.2	1757.6	1756.7	1755.8	1754.7	1753.8
10°	1732.0	1733.2	1734.5	1734.5	1733.2	1732.0	1730.8	1729.6
12.5°	1705.7	1706.5	1707.2	1706.7	1705.0	1703.3	1701.6	1699.9
15°	1659.6	1659.0	1658.4	1657.0	1654.8	1652.7	1650.6	1648.5
17.5°	1604.0	1602.3	1600.6	1598.2	1594.9	1591.6	1588.5	1585.2
20°	1565.2	1562.7	1560.3	1557.1	1553.2	1549.2	1545.2	1541.2
22.5°	1522.1	1518.4	1514.8	1511.3	1508.0	1504.8	1501.6	1498.3
25°	1452.4	1447.3	1442.1	1438.0	1434.9	1431.8	1428.7	1425.7
27.5°	1381.6	1375.1	1368.7	1363.3	1358.9	1354.5	1350.1	1345.7
30°	1330.7	1323.1	1315.4	1309.2	1304.2	1299.4	1294.5	1289.6
32.5°	1278.8	1269.9	1261.0	1254.3	1249.7	1245.0	1240.4	1235.7
35°	1201.4	1191.1	1180.7	1172.8	1167.3	1161.7	1156.2	1150.7
37.5°	1118.4	1106.8	1095.3	1086.7	1081.2	1075.6	1070.2	1064.7
40°	1063.2	1050.4	1037.6	1028.4	1022.9	1017.4	1011.9	1006.4
42.5°	1008.8	995.7	982.7	973.3	967.5	961.8	956.1	950.3
45°	925.6	910.6	895.6	885.4	879.9	874.4	868.9	863.4
47.5°	841.7	826.2	810.7	799.9	793.8	787.8	781.7	775.7
50°	786.1	770.9	755.5	745.0	739.3	733.4	727.6	721.8
52.5°	730.6	715.1	699.6	688.8	682.8	676.7	670.6	664.6
55°	648.8	632.9	617.0	606.1	600.4	594.5	588.8	582.9
57.5°	568.9	552.7	536.6	526.3	521.9	517.5	513.1	508.7
60°	515.4	499.6	483.6	473.3	468.4	463.5	458.6	453.7
62.5°	462.9	448.2	433.5	424.2	420.3	416.5	412.5	408.6
65°	387.5	374.4	361.3	352.8	349.2	345.5	341.9	338.2
67.5°	318.4	307.0	295.8	288.1	284.0	280.0	276.0	271.9
70°	271.3	261.2	251.2	244.6	241.5	238.5	235.4	232.4
72.5°	229.1	220.5	211.9	206.2	203.4	200.6	197.8	194.9
75°	168.8	161.8	154.7	150.3	148.5	146.6	144.8	143.0
77.5°	119.4	115.3	111.2	108.9	108.3	107.8	107.3	106.7
80°	91.7	90.7	89.8	89.2	88.9	88.6	88.3	88.0
82.5°	71.3	70.6	69.9	69.4	69.1	68.8	68.5	68.2
85°	41.4	40.8	40.2	39.9	39.9	39.9	39.9	39.9
87.5°	21.4	21.4	21.5	21.8	22.1	22.5	22.8	23.2
90°	32.0	33.8	35.5	36.7	37.2	37.8	38.4	38.9
92.5°	31.0	32.7	34.4	35.4	35.5	35.6	35.7	35.8
95°	32.0	33.8	35.5	36.5	36.8	37.1	37.4	37.6
97.5°	34.6	34.8	35.0	35.2	35.5	35.8	36.1	36.3
100°	47.4	42.4	37.5	35.2	35.5	35.8	36.1	36.3
102.5°	169.4	116.5	63.6	37.2	37.2	37.3	37.4	37.4
105°	410.3	412.9	415.5	411.6	401.2	390.8	380.5	370.1
107.5°	507.6	508.9	510.1	511.3	512.5	513.5	514.6	515.7
110°	573.8	574.4	574.9	575.7	576.5	577.4	578.2	579.1



TEST NUMBER: P333113-935

CATALOG NUMBER: S124RDIW-S1195D1560U935-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	637.8	637.7	637.6	638.1	639.2	640.2	641.4	642.5
115°	733.5	734.0	734.6	734.9	734.9	734.9	734.9	734.9
117.5°	829.7	829.6	829.5	829.4	829.2	829.1	829.1	828.9
120°	889.2	889.8	890.4	890.4	889.8	889.2	888.7	888.1
122.5°	948.0	948.4	948.7	948.6	948.0	947.4	946.8	946.3
125°	1030.1	1031.0	1031.8	1032.4	1032.7	1032.9	1033.3	1033.5
127.5°	1111.6	1111.5	1111.3	1111.0	1110.9	1110.6	1110.3	1110.2
130°	1161.4	1161.7	1161.9	1162.1	1162.1	1162.1	1162.1	1162.1
132.5°	1210.2	1210.5	1210.7	1210.8	1210.6	1210.3	1210.1	1209.9
135°	1277.5	1278.1	1278.7	1279.3	1279.8	1280.4	1281.0	1281.5
137.5°	1342.0	1342.6	1343.3	1343.5	1343.3	1343.2	1343.0	1342.8
140°	1382.0	1382.9	1383.7	1384.2	1384.6	1384.8	1385.1	1385.4
142.5°	1418.9	1419.5	1420.1	1420.5	1420.6	1420.6	1420.6	1420.7
145°	1471.7	1472.0	1472.2	1472.7	1473.3	1473.9	1474.5	1475.0
147.5°	1518.0	1518.3	1518.5	1518.8	1519.1	1519.3	1519.7	1519.9
150°	1547.7	1547.7	1547.7	1547.9	1548.2	1548.4	1548.8	1549.0
152.5°	1573.6	1574.0	1574.5	1574.6	1574.4	1574.3	1574.1	1573.9
155°	1608.4	1609.6	1610.8	1610.9	1610.1	1609.2	1608.3	1607.5
157.5°	1638.5	1640.0	1641.5	1641.5	1640.0	1638.5	1637.0	1635.5
160°	1657.7	1659.4	1661.1	1661.1	1659.4	1657.7	1656.0	1654.2
162.5°	1673.3	1675.0	1676.7	1676.5	1674.6	1672.7	1670.7	1668.7
165°	1695.1	1697.5	1699.8	1699.6	1697.0	1694.4	1691.9	1689.3
167.5°	1711.2	1713.7	1716.3	1716.1	1713.2	1710.4	1707.4	1704.6
170°	1721.1	1723.5	1725.8	1725.4	1722.6	1719.7	1716.8	1713.9
172.5°	1727.3	1729.7	1732.0	1731.6	1728.5	1725.4	1722.3	1719.1
175°	1734.7	1737.3	1739.9	1739.5	1735.9	1732.5	1729.1	1725.6
177.5°	1737.6	1739.5	1741.3	1740.9	1738.1	1735.3	1732.5	1729.7
180°	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9

(END OF REPORT)