

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: P333085

Luminaire Tested: **S124RDIW-S1020D1050U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333085
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-S1020D1050U835-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1050 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8366.0 lumens
Efficiency: N/A
Efficacy: 136.7 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

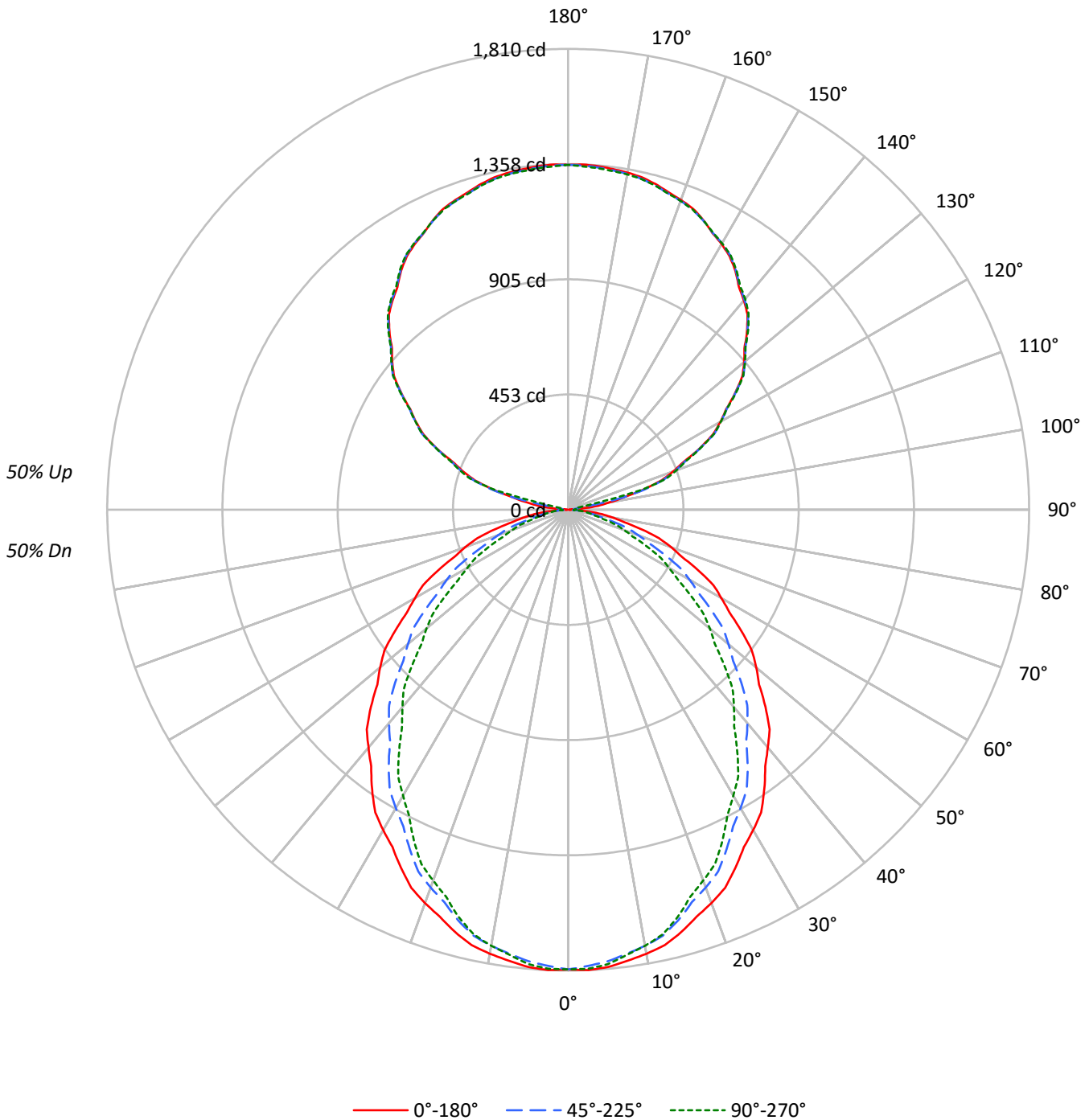
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50				
1	98	94	90	87	90	87	83	81	73	71	69	61	60	58	50	49	48	43				
2	89	82	76	71	82	76	71	66	65	61	57	54	51	49	44	42	41	36				
3	82	72	65	60	75	67	61	56	57	53	49	48	45	42	39	37	35	31				
4	75	64	57	51	69	60	53	48	51	46	42	43	39	36	35	33	30	27				
5	69	57	49	43	63	53	46	41	46	40	36	39	34	31	32	29	27	23				
6	63	52	44	38	58	48	41	36	41	36	32	35	31	27	29	26	23	21				
7	59	47	39	33	54	43	36	31	37	32	28	32	28	24	27	23	21	18				
8	55	42	35	29	50	40	33	28	34	29	25	29	25	22	25	21	19	16				
9	51	39	31	26	47	36	30	25	31	26	22	27	23	20	23	19	17	15				
10	48	36	28	24	44	33	27	22	29	24	20	25	21	18	21	18	16	14				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14577	14577	14577
5°	14610	14431	14521
10°	14519	14258	14258
15°	14352	13959	13855
20°	14123	13564	13315
25°	13831	13104	12772
30°	13546	12618	12089
35°	13231	12113	11404
40°	12852	11540	10666
45°	12501	10970	9913
50°	12103	10315	9117
55°	11676	9633	8251
60°	11207	8885	7367
65°	10776	7950	6497
70°	10150	6918	5516
75°	9357	5736	4485
80°	8164	4370	4114
85°	6919	3974	3714



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	169.6	2.0
10°-20°	473.0	5.7
20°-30°	683.0	8.2
30°-40°	774.2	9.3
40°-50°	747.6	8.9
50°-60°	621.7	7.4
60°-70°	429.3	5.1
70°-80°	217.6	2.6
80°-90°	59.7	0.7
90°-100°	46.3	0.6
100°-110°	295.4	3.5
110°-120°	565.1	6.8
120°-130°	717.4	8.6
130°-140°	767.5	9.2
140°-150°	717.7	8.6
150°-160°	578.8	6.9
160°-170°	373.3	4.5
170°-180°	128.7	1.5
0°-30°	1325.6	15.8
0°-40°	2099.9	25.1
0°-60°	3469.2	41.5
0°-90°	4175.8	49.9
90°-120°	906.8	10.8
90°-150°	3109.5	37.2
90°-180°	4190.0	50.1
0°-180°	8366.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1806	1806	1806	1806	1806	
5°	1803	1797	1781	1794	1792	171
15°	1717	1704	1670	1667	1658	484
25°	1553	1526	1471	1448	1434	715
35°	1342	1297	1229	1183	1157	839
45°	1095	1042	961	896	868	844
55°	830	772	684	615	586	742
65°	564	503	416	359	340	557
75°	300	248	184	153	144	317
85°	75	48	43	40	40	84
90°	3	14	22	28	30	6
95°	56	23	22	28	29	72
105°	305	311	316	323	289	319
115°	569	572	571	573	574	560
125°	800	804	802	805	806	714
135°	993	992	996	998	1000	765
145°	1145	1148	1148	1149	1151	715
155°	1255	1256	1253	1257	1254	579
165°	1324	1319	1319	1326	1318	374
175°	1355	1349	1350	1358	1346	129
180°	1355	1355	1355	1355	1355	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7
2.5°	1810.1	1809.1	1808.1	1807.2	1806.2	1804.3	1801.6	1798.9	1796.2	1793.5	1796.2
5°	1802.9	1801.7	1800.5	1799.2	1798.0	1795.5	1791.9	1788.2	1784.5	1780.8	1783.9
7.5°	1786.6	1785.3	1784.0	1782.7	1781.4	1778.4	1773.6	1768.8	1764.0	1759.2	1761.2
10°	1771.1	1769.6	1768.0	1766.5	1765.0	1761.4	1755.9	1750.4	1744.8	1739.3	1740.5
12.5°	1751.2	1749.4	1747.6	1745.9	1744.1	1739.9	1733.4	1726.9	1720.4	1713.9	1714.6
15°	1717.2	1714.4	1711.7	1708.9	1706.1	1700.9	1693.2	1685.5	1677.9	1670.2	1669.6
17.5°	1676.0	1672.0	1668.0	1664.0	1660.0	1653.4	1644.2	1635.0	1625.8	1616.5	1614.8
20°	1643.9	1639.9	1635.9	1631.9	1627.9	1620.7	1610.3	1599.8	1589.4	1578.9	1576.5
22.5°	1608.5	1604.0	1599.5	1595.1	1590.6	1582.7	1571.6	1560.4	1549.2	1538.0	1534.3
25°	1552.7	1547.1	1541.6	1536.1	1530.5	1521.5	1508.9	1496.3	1483.7	1471.1	1465.9
27.5°	1494.0	1487.1	1480.2	1473.2	1466.3	1456.1	1442.6	1429.2	1415.7	1402.2	1395.8
30°	1453.1	1445.4	1437.8	1430.1	1422.4	1411.3	1396.9	1382.4	1368.0	1353.6	1345.9
32.5°	1410.0	1401.3	1392.6	1384.0	1375.3	1363.5	1348.6	1333.7	1318.7	1303.8	1294.9
35°	1342.5	1332.7	1322.8	1313.0	1303.2	1290.6	1275.2	1259.9	1244.5	1229.1	1218.7
37.5°	1270.3	1260.2	1250.1	1239.9	1229.8	1216.2	1199.2	1182.2	1165.1	1148.1	1136.4
40°	1219.5	1209.3	1199.2	1189.0	1178.9	1165.1	1147.6	1130.0	1112.5	1095.0	1082.1
42.5°	1170.8	1160.2	1149.5	1138.9	1128.3	1113.8	1095.6	1077.3	1059.1	1040.8	1027.7
45°	1095.0	1083.7	1072.3	1060.9	1049.5	1034.6	1016.2	997.8	979.3	960.9	945.9
47.5°	1016.8	1005.0	993.3	981.6	969.8	954.4	935.2	916.0	896.8	877.7	862.1
50°	963.7	951.7	939.7	927.7	915.7	899.9	880.3	860.6	840.9	821.3	805.9
52.5°	909.5	897.7	886.0	874.3	862.5	846.6	826.4	806.3	786.1	766.0	750.4
55°	829.6	817.3	805.0	792.7	780.4	764.3	744.3	724.3	704.4	684.4	668.4
57.5°	750.5	737.7	724.9	712.1	699.4	683.1	663.5	643.8	624.1	604.5	588.3
60°	694.1	681.8	669.5	657.2	644.9	628.9	609.3	589.6	569.9	550.3	534.3
62.5°	643.2	630.4	617.6	604.8	592.1	575.6	555.4	535.3	515.1	495.0	480.2
65°	564.1	550.9	537.7	524.5	511.3	494.8	475.2	455.5	435.8	416.2	403.0
67.5°	482.0	469.3	456.7	444.0	431.3	415.9	397.6	379.4	361.1	342.9	331.5
70°	430.0	417.1	404.2	391.3	378.4	363.2	345.7	328.1	310.6	293.1	283.0
72.5°	374.7	363.0	351.3	339.7	328.0	313.9	297.4	280.8	264.3	247.8	239.1
75°	300.0	288.7	277.3	265.9	254.6	241.6	227.2	212.8	198.3	183.9	176.8
77.5°	224.3	214.6	205.0	195.3	185.7	175.0	163.3	151.7	140.0	128.3	124.2
80°	175.6	166.7	157.8	148.9	140.0	130.9	121.7	112.5	103.2	94.0	93.1
82.5°	133.6	125.4	117.2	109.0	100.9	94.1	88.9	83.6	78.3	73.0	72.3
85°	74.7	68.5	62.4	56.2	50.1	46.5	45.6	44.7	43.8	42.9	42.2
87.5°	26.0	24.6	23.1	21.6	20.2	19.5	19.6	19.7	19.8	19.9	20.0
90°	3.0	5.5	8.0	10.5	12.9	15.1	16.9	18.7	20.5	22.3	23.6
92.5°	12.8	12.9	13.0	13.2	13.3	14.3	16.1	17.9	19.7	21.5	22.8
95°	55.7	48.1	40.4	32.8	25.1	21.4	21.6	21.8	22.1	22.3	23.6
97.5°	118.3	123.1	127.9	132.7	137.4	127.3	102.1	77.0	51.9	26.7	26.9
100°	166.2	170.2	174.3	178.3	182.4	168.9	137.8	106.7	75.7	44.6	40.8
102.5°	219.7	222.6	225.6	228.6	231.5	231.0	227.0	222.9	218.8	214.8	173.5
105°	305.0	306.3	307.7	309.0	310.4	311.6	312.7	313.9	315.0	316.1	318.1
107.5°	384.2	384.9	385.5	386.2	386.9	388.0	389.5	391.1	392.6	394.1	395.1
110°	437.7	438.4	439.0	439.7	440.4	441.4	442.8	444.1	445.5	446.8	447.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	489.6	490.8	492.0	493.2	494.4	495.4	496.0	496.6	497.2	497.9	497.8
115°	569.4	570.1	570.8	571.4	572.1	572.3	572.1	571.9	571.7	571.4	571.9
117.5°	641.3	642.2	643.1	644.0	644.9	645.6	646.1	646.6	647.1	647.6	647.5
120°	690.0	690.9	691.8	692.7	693.6	693.9	693.7	693.5	693.2	693.0	693.5
122.5°	735.4	735.9	736.4	737.0	737.5	738.0	738.3	738.6	738.9	739.2	739.5
125°	800.4	801.3	802.2	803.1	804.0	804.2	803.8	803.3	802.9	802.4	803.1
127.5°	862.0	862.2	862.5	862.7	862.9	863.5	864.6	865.6	866.6	867.7	867.6
130°	901.7	902.0	902.2	902.4	902.6	903.1	903.8	904.4	905.1	905.8	906.0
132.5°	938.2	938.6	939.0	939.4	939.8	940.5	941.3	942.2	943.0	943.9	944.1
135°	992.9	992.7	992.5	992.2	992.0	992.4	993.3	994.2	995.1	996.0	996.4
137.5°	1041.3	1041.4	1041.5	1041.6	1041.7	1042.2	1043.2	1044.2	1045.2	1046.2	1046.7
140°	1073.0	1073.4	1073.9	1074.3	1074.8	1075.2	1075.7	1076.1	1076.6	1077.0	1077.7
142.5°	1101.3	1102.1	1102.9	1103.8	1104.6	1105.1	1105.4	1105.6	1105.9	1106.2	1106.7
145°	1144.9	1145.6	1146.2	1146.9	1147.6	1147.9	1147.9	1147.9	1147.9	1147.9	1148.2
147.5°	1179.5	1180.8	1182.1	1183.3	1184.6	1185.1	1184.9	1184.7	1184.4	1184.2	1184.4
150°	1204.7	1205.6	1206.5	1207.4	1208.3	1208.6	1208.4	1208.2	1207.9	1207.7	1207.7
152.5°	1225.7	1226.5	1227.2	1227.9	1228.6	1228.8	1228.4	1228.0	1227.6	1227.2	1227.5
155°	1255.3	1255.6	1255.8	1256.0	1256.2	1256.0	1255.3	1254.7	1254.0	1253.3	1254.2
157.5°	1280.3	1280.1	1280.0	1279.8	1279.7	1279.3	1278.5	1277.7	1277.0	1276.2	1277.4
160°	1294.8	1294.2	1293.5	1292.8	1292.1	1291.7	1291.5	1291.2	1291.0	1290.8	1292.1
162.5°	1307.8	1307.0	1306.1	1305.2	1304.4	1303.8	1303.6	1303.4	1303.2	1302.9	1304.3
165°	1324.2	1323.1	1322.0	1320.8	1319.7	1319.2	1319.2	1319.2	1319.2	1319.2	1321.0
167.5°	1337.2	1336.0	1334.9	1333.7	1332.5	1331.9	1331.7	1331.6	1331.5	1331.3	1333.3
170°	1344.5	1343.1	1341.8	1340.4	1339.1	1338.5	1338.7	1339.0	1339.2	1339.4	1341.2
172.5°	1349.3	1348.0	1346.6	1345.3	1343.9	1343.4	1343.6	1343.8	1344.1	1344.3	1346.1
175°	1354.6	1353.3	1351.9	1350.6	1349.2	1348.7	1348.9	1349.1	1349.3	1349.6	1351.6
177.5°	1357.0	1355.8	1354.5	1353.3	1352.0	1351.6	1351.9	1352.3	1352.6	1353.0	1354.4
180°	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7
2.5°	1798.9	1801.6	1804.3	1805.6	1805.3	1805.1	1804.8	1804.6
5°	1786.9	1790.0	1793.1	1794.3	1793.7	1793.1	1792.5	1791.9
7.5°	1763.2	1765.1	1767.1	1767.6	1766.6	1765.6	1764.6	1763.6
10°	1741.8	1743.0	1744.2	1744.2	1743.0	1741.8	1740.5	1739.3
12.5°	1715.3	1716.1	1716.8	1716.3	1714.6	1712.9	1711.2	1709.5
15°	1669.0	1668.3	1667.7	1666.3	1664.2	1662.0	1659.9	1657.7
17.5°	1613.1	1611.4	1609.7	1607.2	1603.9	1600.7	1597.4	1594.1
20°	1574.0	1571.6	1569.1	1565.9	1561.9	1557.9	1553.9	1549.9
22.5°	1530.6	1526.9	1523.3	1519.8	1516.5	1513.3	1510.0	1506.8
25°	1460.6	1455.4	1450.2	1446.0	1443.0	1439.9	1436.8	1433.8
27.5°	1389.3	1382.9	1376.4	1371.0	1366.6	1362.1	1357.7	1353.3
30°	1338.2	1330.5	1322.8	1316.5	1311.6	1306.7	1301.8	1296.9
32.5°	1286.0	1277.1	1268.2	1261.4	1256.7	1252.0	1247.4	1242.7
35°	1208.2	1197.8	1187.3	1179.4	1173.8	1168.3	1162.8	1157.2
37.5°	1124.8	1113.1	1101.4	1092.8	1087.3	1081.7	1076.2	1070.7
40°	1069.2	1056.3	1043.4	1034.2	1028.7	1023.1	1017.6	1012.1
42.5°	1014.5	1001.4	988.2	978.8	973.0	967.2	961.4	955.7
45°	930.8	915.7	900.7	890.4	884.9	879.3	873.8	868.3
47.5°	846.5	830.9	815.2	804.4	798.3	792.2	786.1	780.1
50°	790.5	775.2	759.8	749.2	743.4	737.5	731.7	725.9
52.5°	734.7	719.1	703.5	692.7	686.6	680.5	674.4	668.4
55°	652.4	636.5	620.5	609.6	603.7	597.9	592.1	586.2
57.5°	572.0	555.8	539.6	529.3	524.8	520.4	516.0	511.6
60°	518.3	502.3	486.4	475.9	471.0	466.1	461.2	456.3
62.5°	465.5	450.7	436.0	426.6	422.7	418.8	414.8	410.9
65°	389.7	376.5	363.3	354.9	351.2	347.5	343.8	340.1
67.5°	320.1	308.8	297.4	289.7	285.6	281.6	277.5	273.5
70°	272.8	262.7	252.6	245.9	242.9	239.8	236.7	233.7
72.5°	230.4	221.8	213.1	207.4	204.5	201.7	198.9	196.1
75°	169.8	162.7	155.6	151.2	149.3	147.5	145.6	143.8
77.5°	120.1	116.0	111.8	109.5	108.9	108.4	107.8	107.3
80°	92.2	91.3	90.3	89.7	89.4	89.1	88.8	88.5
82.5°	71.6	71.0	70.3	69.8	69.5	69.2	68.9	68.6
85°	41.6	41.0	40.4	40.1	40.1	40.1	40.1	40.1
87.5°	20.0	20.0	20.0	20.2	20.6	20.9	21.2	21.6
90°	25.0	26.3	27.7	28.6	29.0	29.5	29.9	30.4
92.5°	24.2	25.5	26.9	27.6	27.7	27.8	27.9	28.0
95°	25.0	26.3	27.7	28.5	28.7	28.9	29.2	29.4
97.5°	27.0	27.2	27.3	27.5	27.7	27.9	28.1	28.4
100°	36.9	33.1	29.3	27.5	27.7	27.9	28.1	28.4
102.5°	132.2	90.9	49.6	29.0	29.0	29.1	29.1	29.2
105°	320.2	322.2	324.2	321.2	313.1	305.0	296.9	288.8
107.5°	396.1	397.1	398.1	399.0	399.9	400.7	401.6	402.4
110°	447.7	448.2	448.6	449.2	449.9	450.5	451.2	451.9



TEST NUMBER: P333085

CATALOG NUMBER: S124RDIW-S1020D1050U835-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	497.7	497.6	497.5	497.9	498.8	499.6	500.5	501.3
115°	572.3	572.8	573.2	573.5	573.5	573.5	573.5	573.5
117.5°	647.4	647.4	647.3	647.2	647.1	647.0	646.9	646.8
120°	693.9	694.4	694.8	694.8	694.4	693.9	693.5	693.0
122.5°	739.8	740.0	740.3	740.2	739.8	739.3	738.9	738.4
125°	803.8	804.5	805.1	805.6	805.8	806.0	806.3	806.5
127.5°	867.4	867.3	867.1	867.0	866.8	866.6	866.4	866.3
130°	906.2	906.5	906.7	906.8	906.8	906.8	906.8	906.8
132.5°	944.3	944.6	944.8	944.8	944.6	944.4	944.3	944.1
135°	996.9	997.3	997.8	998.2	998.7	999.1	999.6	1000.0
137.5°	1047.2	1047.7	1048.2	1048.4	1048.2	1048.1	1048.0	1047.8
140°	1078.4	1079.0	1079.7	1080.2	1080.4	1080.6	1080.8	1081.1
142.5°	1107.2	1107.7	1108.2	1108.4	1108.5	1108.5	1108.6	1108.6
145°	1148.4	1148.6	1148.8	1149.2	1149.6	1150.1	1150.5	1151.0
147.5°	1184.6	1184.7	1184.9	1185.1	1185.4	1185.6	1185.8	1186.0
150°	1207.7	1207.7	1207.7	1207.8	1208.0	1208.3	1208.5	1208.7
152.5°	1227.9	1228.2	1228.6	1228.7	1228.6	1228.4	1228.3	1228.2
155°	1255.1	1256.0	1256.9	1257.0	1256.3	1255.7	1255.0	1254.3
157.5°	1278.5	1279.7	1280.9	1280.9	1279.7	1278.5	1277.4	1276.2
160°	1293.5	1294.8	1296.2	1296.2	1294.8	1293.5	1292.1	1290.8
162.5°	1305.6	1307.0	1308.3	1308.3	1306.7	1305.2	1303.7	1302.1
165°	1322.8	1324.6	1326.4	1326.2	1324.2	1322.2	1320.2	1318.1
167.5°	1335.3	1337.3	1339.2	1339.1	1336.9	1334.6	1332.4	1330.1
170°	1343.0	1344.8	1346.6	1346.4	1344.1	1341.9	1339.6	1337.4
172.5°	1347.9	1349.7	1351.5	1351.2	1348.7	1346.3	1343.9	1341.4
175°	1353.6	1355.6	1357.7	1357.3	1354.6	1351.9	1349.2	1346.5
177.5°	1355.9	1357.3	1358.8	1358.4	1356.2	1354.1	1351.9	1349.8
180°	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6

(END OF REPORT)