

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: P333086-940

Luminaire Tested: **S124RDIW-S1020D1050U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333086-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDIW-S1020D1050U940-4F0-1E-UDD-F1
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, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6964.2 lumens
Efficiency: N/A
Efficacy: 113.8 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

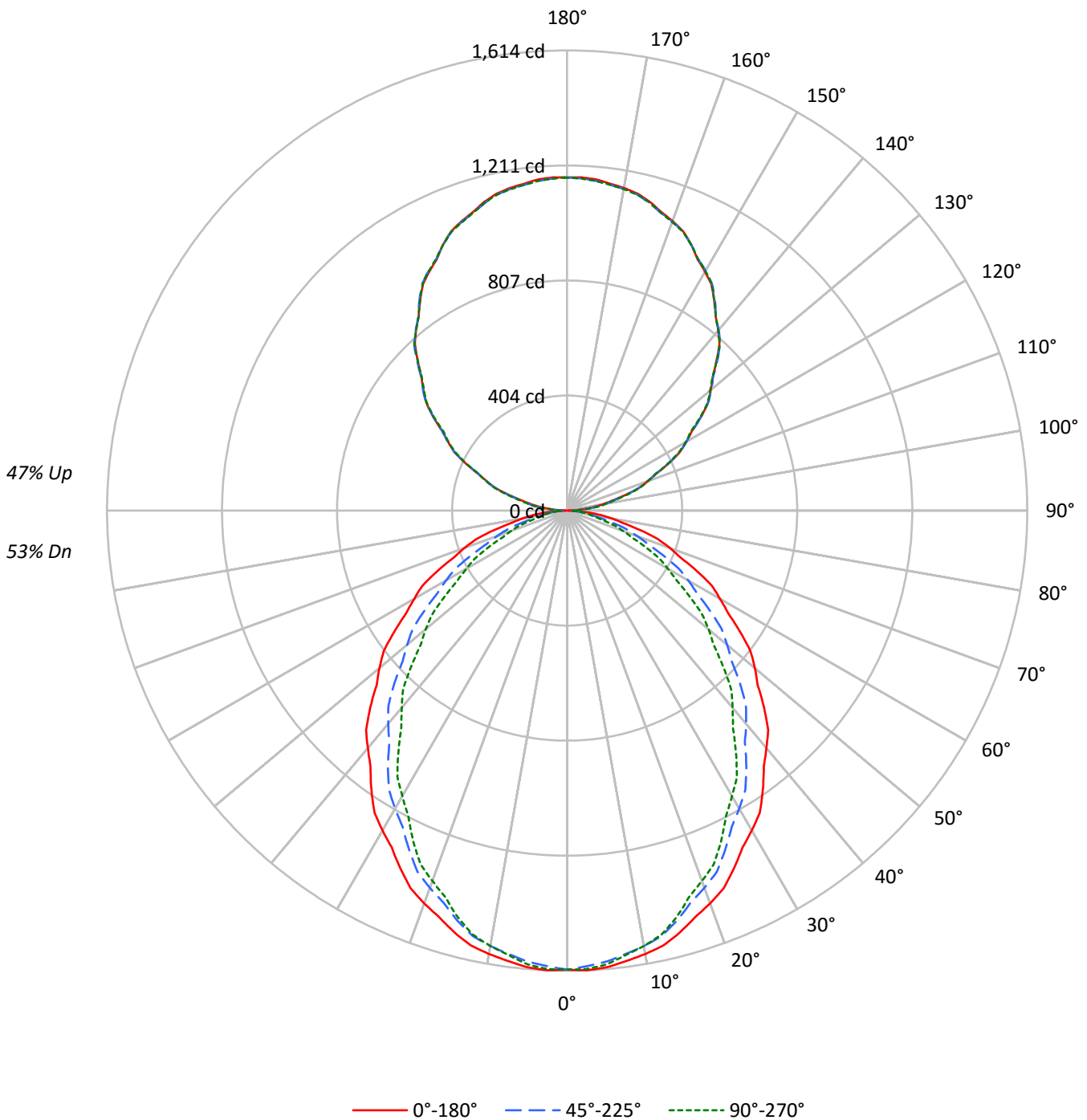
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P333086-940

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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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59	53
1	99	95	91	87	91	88	85	82	75	73	71	64	62	60	53	52	51	46
2	90	83	77	72	83	77	72	67	66	62	59	56	53	51	47	45	43	39
3	82	73	66	60	76	68	62	57	59	54	50	50	46	43	42	39	37	33
4	76	65	57	51	70	61	54	48	52	47	43	45	41	37	37	35	32	29
5	69	58	50	44	64	54	47	42	47	41	37	40	36	33	34	31	28	25
6	64	52	44	38	59	49	42	36	42	37	32	36	32	29	31	27	25	22
7	59	47	39	34	55	44	37	32	38	33	29	33	29	25	28	25	22	20
8	55	43	35	30	51	40	33	28	35	30	26	30	26	23	26	23	20	18
9	51	39	32	27	48	37	30	25	32	27	23	28	24	21	24	21	18	16
10	48	36	29	24	45	34	27	23	30	24	21	26	22	19	22	19	16	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12999	12999	12999
5°	13028	12869	12949
10°	12946	12714	12714
15°	12797	12447	12354
20°	12594	12095	11874
25°	12333	11685	11388
30°	12078	11251	10781
35°	11798	10801	10170
40°	11460	10290	9511
45°	11147	9782	8840
50°	10792	9198	8130
55°	10412	8590	7357
60°	9993	7923	6570
65°	9608	7089	5794
70°	9050	6170	4919
75°	8344	5115	3999
80°	7280	3896	3668
85°	6169	3548	3316



TEST NUMBER: P333086-940

CATALOG NUMBER: S124RDIW-S1020D1050U940-4F0-1E-UDD-F1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.3	2.2
10°-20°	421.8	6.1
20°-30°	609.1	8.7
30°-40°	690.4	9.9
40°-50°	666.7	9.6
50°-60°	554.4	8.0
60°-70°	382.8	5.5
70°-80°	194.0	2.8
80°-90°	53.3	0.8
90°-100°	77.0	1.1
100°-110°	228.2	3.3
110°-120°	387.4	5.6
120°-130°	510.8	7.3
130°-140°	573.6	8.2
140°-150°	563.7	8.1
150°-160°	474.1	6.8
160°-170°	315.4	4.5
170°-180°	110.5	1.6
0°-30°	1182.1	17.0
0°-40°	1872.5	26.9
0°-60°	3093.5	44.4
0°-90°	3723.6	53.5
90°-120°	692.6	9.9
90°-150°	2340.6	33.6
90°-180°	3241.0	46.5
0°-180°	6964.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1610	1610	1610	1610	1610	
5°	1608	1602	1588	1599	1598	152
15°	1531	1519	1489	1486	1478	431
25°	1385	1361	1312	1291	1278	638
35°	1197	1156	1096	1055	1032	748
45°	976	929	857	799	774	753
55°	740	689	610	548	523	661
65°	503	449	371	320	303	497
75°	268	221	164	137	128	282
85°	67	43	38	36	36	75
90°	3	12	20	25	27	7
95°	54	62	69	71	71	60
105°	210	212	215	218	220	223
115°	394	394	392	391	390	388
125°	574	574	573	571	569	511
135°	740	745	745	743	741	572
145°	899	902	903	902	900	562
155°	1030	1030	1029	1032	1029	474
165°	1121	1118	1116	1121	1118	316
175°	1166	1162	1161	1166	1161	111
180°	1168	1168	1168	1168	1168	



TEST NUMBER: P333086-940

CATALOG NUMBER: S124RDIW-S1020D1050U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2
2.5°	1614.1	1613.2	1612.3	1611.5	1610.6	1608.9	1606.5	1604.1	1601.7	1599.3	1601.7
5°	1607.7	1606.6	1605.5	1604.4	1603.3	1601.1	1597.9	1594.6	1591.3	1588.0	1590.7
7.5°	1593.1	1592.0	1590.8	1589.7	1588.5	1585.8	1581.5	1577.3	1573.0	1568.7	1570.5
10°	1579.3	1578.0	1576.5	1575.2	1573.9	1570.7	1565.8	1560.9	1555.9	1551.0	1552.0
12.5°	1561.6	1560.0	1558.4	1556.8	1555.2	1551.5	1545.7	1539.9	1534.1	1528.3	1528.9
15°	1531.2	1528.7	1526.3	1523.8	1521.3	1516.7	1509.8	1503.0	1496.2	1489.3	1488.8
17.5°	1494.5	1490.9	1487.4	1483.8	1480.2	1474.4	1466.2	1457.9	1449.7	1441.5	1439.9
20°	1465.9	1462.3	1458.7	1455.2	1451.6	1445.2	1435.9	1426.6	1417.3	1407.9	1405.8
22.5°	1434.3	1430.3	1426.3	1422.4	1418.4	1411.3	1401.4	1391.4	1381.4	1371.5	1368.2
25°	1384.6	1379.6	1374.7	1369.8	1364.8	1356.7	1345.5	1334.3	1323.0	1311.8	1307.2
27.5°	1332.2	1326.1	1319.9	1313.7	1307.5	1298.4	1286.4	1274.4	1262.4	1250.4	1244.6
30°	1295.7	1288.9	1282.1	1275.2	1268.4	1258.5	1245.6	1232.7	1219.9	1207.0	1200.2
32.5°	1257.3	1249.6	1241.8	1234.1	1226.4	1215.8	1202.6	1189.3	1175.9	1162.6	1154.7
35°	1197.1	1188.4	1179.6	1170.8	1162.1	1150.8	1137.1	1123.5	1109.7	1096.0	1086.7
37.5°	1132.7	1123.7	1114.7	1105.6	1096.6	1084.5	1069.3	1054.2	1038.9	1023.8	1013.3
40°	1087.4	1078.3	1069.3	1060.2	1051.2	1038.9	1023.3	1007.6	992.0	976.4	964.9
42.5°	1044.0	1034.6	1025.0	1015.6	1006.1	993.2	977.0	960.6	944.4	928.1	916.4
45°	976.4	966.3	956.2	946.0	935.9	922.6	906.2	889.7	873.3	856.8	843.5
47.5°	906.7	896.2	885.7	875.3	864.8	851.0	833.9	816.8	799.7	782.7	768.7
50°	859.3	848.6	837.9	827.2	816.5	802.5	785.0	767.4	749.8	732.4	718.6
52.5°	811.0	800.5	790.1	779.6	769.1	754.9	736.9	719.0	701.0	683.1	669.1
55°	739.8	728.8	717.8	706.9	695.9	681.5	663.7	645.9	628.1	610.3	596.0
57.5°	669.2	657.8	646.4	635.0	623.7	609.1	591.7	574.1	556.5	539.0	524.6
60°	618.9	608.0	597.0	586.0	575.1	560.8	543.3	525.8	508.2	490.7	476.4
62.5°	573.5	562.1	550.7	539.3	528.0	513.3	495.3	477.3	459.3	441.4	428.2
65°	503.0	491.2	479.5	467.7	455.9	441.2	423.7	406.2	388.6	371.1	359.4
67.5°	429.8	418.5	407.2	395.9	384.6	370.9	354.5	338.3	322.0	305.8	295.6
70°	383.4	371.9	360.4	348.9	337.4	323.9	308.3	292.6	277.0	261.4	252.4
72.5°	334.1	323.7	313.3	302.9	292.5	279.9	265.2	250.4	235.7	221.0	213.2
75°	267.5	257.4	247.3	237.1	227.0	215.4	202.6	189.8	176.8	164.0	157.7
77.5°	200.0	191.4	182.8	174.2	165.6	156.0	145.6	135.3	124.8	114.4	110.8
80°	156.6	148.6	140.7	132.8	124.8	116.7	108.5	100.3	92.0	83.8	83.0
82.5°	119.1	111.8	104.5	97.2	90.0	83.9	79.3	74.5	69.8	65.1	64.5
85°	66.6	61.1	55.6	50.1	44.7	41.5	40.7	39.9	39.1	38.3	37.6
87.5°	23.2	21.9	20.6	19.3	18.0	17.4	17.5	17.6	17.7	17.7	17.8
90°	2.7	4.9	7.1	9.4	11.5	13.5	15.1	16.7	18.3	19.9	21.0
92.5°	19.4	21.8	24.4	26.9	29.4	31.3	32.4	33.5	34.7	35.8	36.5
95°	54.2	56.0	57.8	59.7	61.4	63.0	64.5	65.8	67.2	68.7	69.3
97.5°	94.7	96.1	97.6	99.0	100.5	102.0	103.6	105.3	106.9	108.6	109.3
100°	126.4	127.2	128.0	128.9	129.7	131.0	132.8	134.6	136.4	138.2	138.6
102.5°	159.7	160.1	160.3	160.7	161.0	161.9	163.6	165.2	166.9	168.5	169.2
105°	210.4	210.7	210.9	211.1	211.2	211.8	212.6	213.4	214.2	215.0	215.6
107.5°	263.8	264.0	264.2	264.5	264.7	264.9	265.0	265.2	265.3	265.4	266.0
110°	299.9	300.3	300.7	301.1	301.5	301.6	301.4	301.2	301.0	300.8	300.4



TEST NUMBER: P333086-940

CATALOG NUMBER: S124RDIW-S1020D1050U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	337.5	337.6	337.7	337.7	337.8	337.7	337.3	337.0	336.6	336.3	336.2
115°	393.9	393.9	393.9	393.9	393.9	393.7	393.2	392.9	392.4	392.1	391.8
117.5°	447.0	447.1	447.3	447.5	447.6	447.5	447.3	447.0	446.7	446.4	445.8
120°	482.4	483.2	484.0	484.8	485.6	485.7	485.1	484.5	483.9	483.3	482.3
122.5°	519.2	519.6	519.9	520.2	520.5	520.6	520.2	520.0	519.7	519.4	518.7
125°	573.6	573.6	573.6	573.6	573.6	573.5	573.3	573.1	572.9	572.7	572.3
127.5°	622.9	623.6	624.1	624.7	625.4	625.5	625.2	624.8	624.6	624.2	623.8
130°	657.6	658.3	658.8	659.4	660.0	660.3	660.3	660.3	660.3	660.3	660.0
132.5°	693.0	693.5	693.9	694.4	694.8	694.9	694.8	694.6	694.5	694.3	693.9
135°	739.9	741.0	742.3	743.4	744.7	745.3	745.3	745.3	745.3	745.3	744.8
137.5°	790.8	791.3	791.9	792.5	793.0	793.4	793.8	794.2	794.4	794.8	794.2
140°	824.7	825.2	825.5	826.0	826.3	826.5	826.5	826.5	826.5	826.5	826.3
142.5°	855.9	856.2	856.7	857.0	857.5	857.6	857.4	857.2	857.1	856.9	856.8
145°	898.8	899.6	900.4	901.3	902.1	902.5	902.8	902.9	903.1	903.3	903.1
147.5°	941.5	942.4	943.4	944.3	945.3	945.7	945.6	945.4	945.2	945.0	944.9
150°	967.5	968.3	969.1	969.9	970.7	971.1	971.1	971.1	971.1	971.1	971.1
152.5°	992.0	992.6	993.0	993.5	994.0	994.3	994.4	994.6	994.8	995.0	995.4
155°	1029.8	1029.8	1029.8	1029.8	1029.8	1029.7	1029.5	1029.3	1029.1	1028.9	1029.7
157.5°	1061.6	1061.2	1060.9	1060.5	1060.2	1060.0	1059.9	1059.9	1059.8	1059.8	1060.4
160°	1080.4	1080.2	1080.0	1079.8	1079.6	1079.4	1079.1	1079.0	1078.8	1078.6	1079.1
162.5°	1097.7	1097.3	1096.7	1096.2	1095.6	1095.3	1095.1	1094.9	1094.7	1094.5	1095.6
165°	1121.1	1120.4	1119.8	1119.3	1118.7	1118.1	1117.8	1117.3	1117.0	1116.5	1117.8
167.5°	1138.9	1138.1	1137.3	1136.4	1135.6	1135.1	1135.2	1135.2	1135.2	1135.3	1136.5
170°	1149.1	1148.1	1147.0	1146.0	1145.0	1144.6	1144.9	1145.0	1145.2	1145.4	1146.7
172.5°	1156.3	1155.4	1154.6	1153.8	1152.9	1152.5	1152.5	1152.6	1152.6	1152.6	1154.1
175°	1166.2	1165.2	1164.2	1163.2	1162.2	1161.6	1161.4	1161.2	1161.0	1160.8	1162.2
177.5°	1169.5	1168.7	1167.9	1167.1	1166.3	1165.8	1165.8	1165.8	1165.8	1165.8	1167.0
180°	1168.1	1168.1	1168.1	1168.1	1168.1	1168.1	1168.1	1168.1	1168.1	1168.1	1168.1



TEST NUMBER: P333086-940

CATALOG NUMBER: S124RDIW-S1020D1050U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2
2.5°	1604.1	1606.5	1608.9	1610.1	1609.8	1609.6	1609.4	1609.2
5°	1593.4	1596.2	1598.9	1600.0	1599.5	1598.9	1598.4	1597.9
7.5°	1572.3	1574.0	1575.7	1576.2	1575.3	1574.4	1573.5	1572.6
10°	1553.2	1554.3	1555.3	1555.3	1554.3	1553.2	1552.0	1551.0
12.5°	1529.6	1530.3	1530.9	1530.4	1528.9	1527.4	1525.9	1524.4
15°	1488.3	1487.6	1487.1	1485.9	1484.0	1482.0	1480.2	1478.2
17.5°	1438.4	1436.9	1435.4	1433.2	1430.2	1427.4	1424.4	1421.5
20°	1403.6	1401.4	1399.2	1396.3	1392.8	1389.2	1385.6	1382.1
22.5°	1364.9	1361.6	1358.3	1355.2	1352.3	1349.4	1346.5	1343.6
25°	1302.4	1297.8	1293.2	1289.4	1286.7	1284.0	1281.2	1278.5
27.5°	1238.9	1233.1	1227.4	1222.5	1218.6	1214.6	1210.7	1206.8
30°	1193.3	1186.4	1179.6	1173.9	1169.6	1165.2	1160.8	1156.5
32.5°	1146.7	1138.8	1130.9	1124.8	1120.6	1116.4	1112.3	1108.1
35°	1077.4	1068.1	1058.7	1051.7	1046.7	1041.8	1036.9	1031.9
37.5°	1003.0	992.6	982.1	974.5	969.6	964.6	959.7	954.8
40°	953.4	941.9	930.4	922.2	917.3	912.3	907.4	902.5
42.5°	904.6	893.0	881.2	872.8	867.6	862.5	857.3	852.2
45°	830.0	816.5	803.2	794.0	789.1	784.1	779.2	774.3
47.5°	754.8	740.9	726.9	717.3	711.9	706.4	701.0	695.6
50°	704.9	691.3	677.5	668.1	662.9	657.6	652.5	647.3
52.5°	655.1	641.2	627.3	617.7	612.2	606.8	601.4	596.0
55°	581.8	567.6	553.3	543.6	538.3	533.2	528.0	522.7
57.5°	510.1	495.6	481.2	472.0	468.0	464.0	460.1	456.2
60°	462.2	447.9	433.7	424.4	420.0	415.6	411.3	406.9
62.5°	415.1	401.9	388.8	380.4	376.9	373.4	369.9	366.4
65°	347.5	335.7	324.0	316.5	313.2	309.9	306.6	303.3
67.5°	285.4	275.4	265.2	258.3	254.7	251.1	247.4	243.9
70°	243.3	234.3	225.2	219.3	216.6	213.8	211.1	208.4
72.5°	205.5	197.8	190.0	184.9	182.4	179.9	177.4	174.9
75°	151.4	145.1	138.8	134.8	133.1	131.5	129.8	128.2
77.5°	107.1	103.4	99.7	97.6	97.1	96.7	96.1	95.7
80°	82.2	81.4	80.5	80.0	79.7	79.5	79.2	78.9
82.5°	63.8	63.3	62.7	62.2	62.0	61.7	61.4	61.2
85°	37.1	36.6	36.0	35.8	35.8	35.8	35.8	35.8
87.5°	17.8	17.8	17.8	18.0	18.4	18.6	18.9	19.3
90°	22.3	23.5	24.7	25.5	25.9	26.3	26.7	27.1
92.5°	37.2	37.9	38.7	39.1	39.4	39.6	39.9	40.1
95°	69.8	70.4	71.1	71.3	71.3	71.3	71.3	71.3
97.5°	110.0	110.8	111.5	111.8	111.8	111.8	111.8	111.8
100°	139.0	139.4	139.8	140.0	140.0	140.0	140.0	140.0
102.5°	169.7	170.2	170.9	171.2	171.3	171.5	171.7	171.8
105°	216.2	216.8	217.4	218.0	218.6	219.2	219.8	220.4
107.5°	266.5	267.1	267.7	267.9	267.9	267.9	267.8	267.8
110°	300.0	299.6	299.2	299.3	299.9	300.5	301.1	301.8



TEST NUMBER: P333086-940

CATALOG NUMBER: S124RDIW-S1020D1050U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	336.1	336.0	335.9	335.9	336.1	336.2	336.3	336.4
115°	391.6	391.5	391.3	391.0	390.8	390.7	390.5	390.2
117.5°	445.1	444.3	443.7	443.2	442.7	442.4	441.9	441.6
120°	481.3	480.3	479.3	478.9	479.4	479.7	480.2	480.5
122.5°	518.1	517.4	516.7	515.9	515.2	514.5	513.8	513.1
125°	571.9	571.5	571.1	570.7	570.3	569.9	569.5	569.1
127.5°	623.4	623.0	622.6	622.2	621.9	621.6	621.3	621.0
130°	659.5	659.2	658.7	658.2	657.4	656.6	655.8	655.0
132.5°	693.5	693.1	692.7	692.3	692.1	691.7	691.3	691.1
135°	744.5	744.0	743.7	743.2	742.5	741.9	741.4	740.7
137.5°	793.7	793.2	792.6	792.5	792.6	792.7	792.8	792.9
140°	826.2	826.0	825.7	825.5	825.4	825.2	824.9	824.7
142.5°	856.8	856.8	856.8	856.7	856.7	856.7	856.6	856.6
145°	902.9	902.8	902.5	902.1	901.5	900.9	900.4	899.7
147.5°	944.8	944.6	944.4	944.2	944.1	943.9	943.6	943.4
150°	971.1	971.1	971.1	971.0	970.8	970.6	970.4	970.2
152.5°	995.9	996.4	996.8	996.8	996.3	995.8	995.2	994.8
155°	1030.6	1031.4	1032.2	1032.2	1031.4	1030.6	1029.7	1028.9
157.5°	1061.0	1061.6	1062.2	1062.2	1061.5	1060.8	1060.2	1059.4
160°	1079.8	1080.4	1081.0	1080.8	1079.8	1078.8	1077.8	1076.7
162.5°	1096.6	1097.7	1098.9	1098.9	1097.9	1096.9	1095.8	1094.8
165°	1118.9	1120.2	1121.3	1121.5	1120.7	1119.9	1119.1	1118.3
167.5°	1137.7	1138.9	1140.1	1140.1	1138.9	1137.6	1136.4	1135.1
170°	1147.8	1149.1	1150.2	1150.1	1148.8	1147.4	1145.9	1144.5
172.5°	1155.4	1156.7	1158.2	1158.1	1156.7	1155.3	1153.9	1152.4
175°	1163.6	1165.0	1166.4	1166.4	1165.0	1163.6	1162.2	1160.8
177.5°	1168.1	1169.2	1170.4	1170.3	1168.9	1167.7	1166.4	1165.1
180°	1168.1	1168.1	1168.1	1168.1	1168.1	1168.1	1168.1	1168.1

(END OF REPORT)