

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: P333090-940

Luminaire Tested: **S124RDIW-S1020D1340U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333090-940  
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-S1020D1340U940-4F0-1E-UDD-F1  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7873.1 lumens  
Efficiency: N/A  
Efficacy: 112.8 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

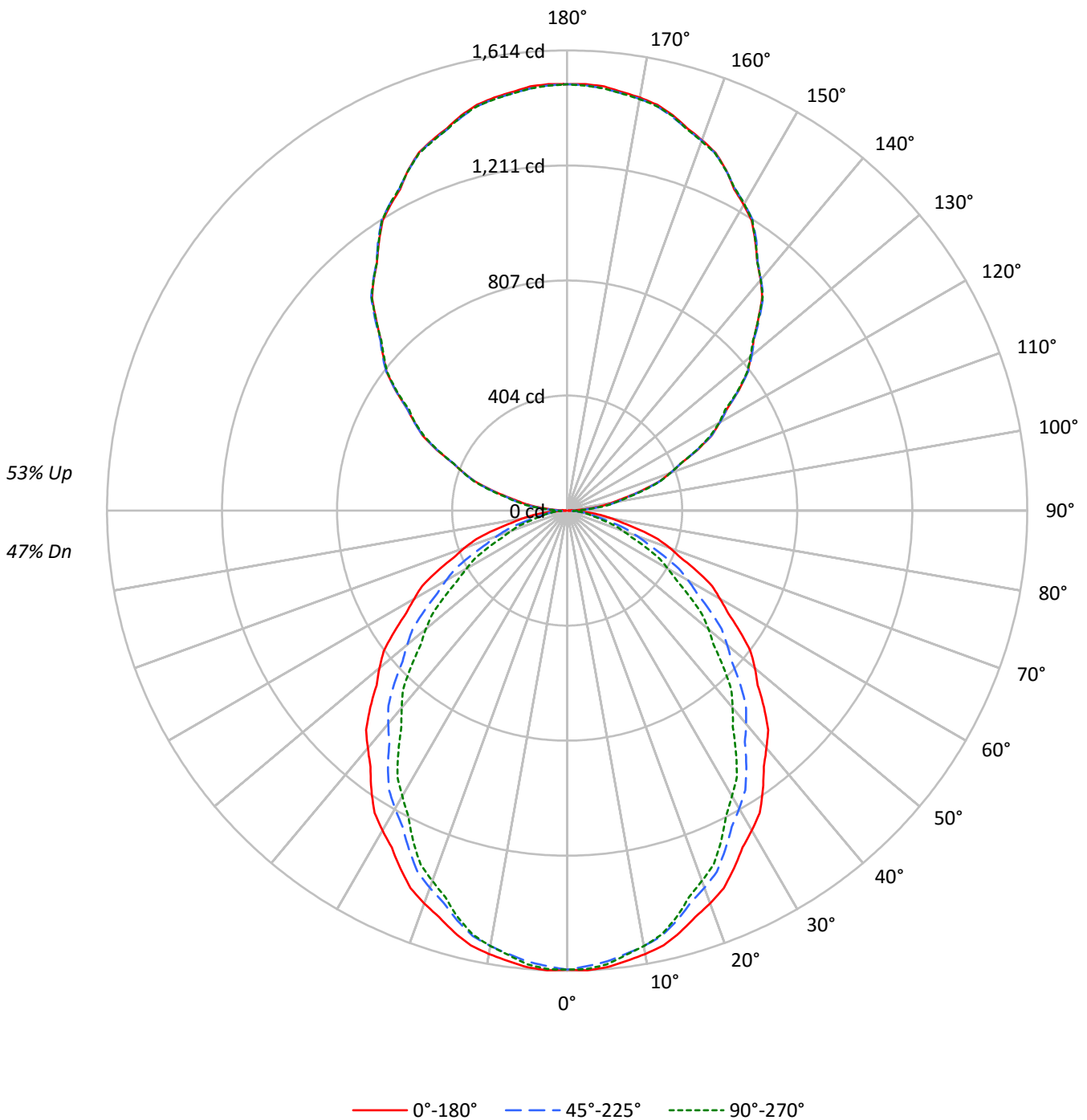
Input Watts (W): 69.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	107	107	107	107	98	98	98	98	82	82	82	67	67	67	54	54	54	47
1	97	93	89	86	89	86	83	80	72	70	68	59	58	56	48	47	46	40
2	89	82	76	71	82	75	70	66	63	60	56	52	50	47	42	41	39	34
3	81	72	65	59	74	67	60	55	56	52	48	47	43	40	38	35	33	29
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	34	31	29	25
5	68	57	49	43	63	53	46	40	45	39	35	37	33	30	31	28	25	22
6	63	51	43	37	58	47	40	35	40	35	31	34	30	27	28	25	22	19
7	58	46	38	33	54	43	36	31	37	31	27	31	27	24	25	22	20	17
8	54	42	34	29	50	39	32	28	34	28	24	28	24	21	23	20	18	16
9	50	38	31	26	46	36	29	25	31	25	22	26	22	19	22	19	16	14
10	47	35	28	23	43	33	26	22	28	23	20	24	20	17	20	17	15	13

**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



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	151.3	1.9
10°-20°	421.8	5.4
20°-30°	609.1	7.7
30°-40°	690.4	8.8
40°-50°	666.7	8.5
50°-60°	554.4	7.0
60°-70°	382.8	4.9
70°-80°	194.0	2.5
80°-90°	54.2	0.7
90°-100°	98.6	1.3
100°-110°	292.2	3.7
110°-120°	495.9	6.3
120°-130°	653.9	8.3
130°-140°	734.3	9.3
140°-150°	721.6	9.2
150°-160°	606.9	7.7
160°-170°	403.8	5.1
170°-180°	141.4	1.8
0°-30°	1182.1	15.0
0°-40°	1872.5	23.8
0°-60°	3093.5	39.3
0°-90°	3724.6	47.3
90°-120°	886.7	11.3
90°-150°	2996.4	38.1
90°-180°	4149.0	52.7
0°-180°	7873.1	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°	4	16	25	32	35	8
95°	69	80	88	91	91	77
105°	270	271	275	279	282	286
115°	504	504	502	501	500	497
125°	734	734	733	731	728	654
135°	947	954	954	952	948	732
145°	1151	1155	1156	1155	1152	720
155°	1318	1318	1317	1321	1317	606
165°	1435	1432	1429	1436	1432	404
175°	1493	1487	1486	1493	1486	142
180°	1495	1495	1495	1495	1495	



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**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°	23.4	22.2	21.0	19.8	18.6	18.1	18.3	18.5	18.7	18.9	19.0
90°	3.5	6.3	9.1	11.9	14.8	17.2	19.3	21.3	23.4	25.4	27.0
92.5°	24.8	28.0	31.2	34.4	37.7	40.0	41.5	42.9	44.3	45.8	46.7
95°	69.4	71.7	74.0	76.3	78.6	80.7	82.5	84.3	86.1	87.9	88.6
97.5°	121.2	123.1	124.9	126.7	128.6	130.5	132.7	134.8	136.9	139.0	139.9
100°	161.9	162.9	164.0	165.0	166.0	167.6	170.0	172.3	174.6	176.9	177.5
102.5°	204.5	204.9	205.3	205.7	206.1	207.3	209.5	211.6	213.7	215.8	216.5
105°	269.5	269.7	270.0	270.2	270.5	271.1	272.2	273.2	274.2	275.3	276.0
107.5°	337.7	338.0	338.3	338.6	338.9	339.1	339.3	339.5	339.7	339.7	340.5
110°	384.0	384.4	385.0	385.5	386.0	386.1	385.8	385.6	385.4	385.1	384.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	432.0	432.1	432.2	432.4	432.5	432.3	431.9	431.3	430.9	430.4	430.3
115°	504.2	504.2	504.2	504.2	504.2	504.0	503.5	502.9	502.4	501.9	501.7
117.5°	572.2	572.4	572.7	572.8	573.0	572.9	572.6	572.2	571.9	571.5	570.6
120°	617.5	618.6	619.6	620.6	621.6	621.8	621.0	620.3	619.5	618.7	617.4
122.5°	664.7	665.1	665.6	665.9	666.4	666.4	666.0	665.7	665.3	664.9	664.1
125°	734.3	734.3	734.3	734.3	734.3	734.2	734.0	733.7	733.4	733.2	732.6
127.5°	797.5	798.3	799.1	799.8	800.6	800.8	800.3	800.0	799.5	799.1	798.6
130°	841.9	842.7	843.5	844.2	845.0	845.3	845.3	845.3	845.3	845.3	844.8
132.5°	887.3	887.8	888.3	888.9	889.5	889.7	889.5	889.2	889.0	888.9	888.3
135°	947.1	948.7	950.2	951.7	953.3	954.0	954.0	954.0	954.0	954.0	953.6
137.5°	1012.4	1013.1	1013.8	1014.5	1015.2	1015.8	1016.2	1016.6	1017.0	1017.4	1016.7
140°	1055.9	1056.3	1056.9	1057.4	1057.9	1058.1	1058.1	1058.1	1058.1	1058.1	1057.9
142.5°	1095.6	1096.1	1096.6	1097.2	1097.7	1097.8	1097.6	1097.4	1097.3	1097.0	1097.0
145°	1150.7	1151.7	1152.7	1153.8	1154.8	1155.4	1155.7	1155.9	1156.2	1156.5	1156.2
147.5°	1205.2	1206.5	1207.7	1209.0	1210.1	1210.7	1210.5	1210.3	1210.1	1209.9	1209.7
150°	1238.6	1239.6	1240.6	1241.6	1242.7	1243.1	1243.1	1243.1	1243.1	1243.1	1243.1
152.5°	1270.0	1270.6	1271.2	1271.8	1272.5	1272.9	1273.1	1273.3	1273.5	1273.7	1274.3
155°	1318.3	1318.3	1318.3	1318.3	1318.3	1318.2	1317.9	1317.7	1317.4	1317.2	1318.2
157.5°	1359.1	1358.6	1358.2	1357.6	1357.2	1356.9	1356.9	1356.8	1356.8	1356.7	1357.5
160°	1383.1	1382.9	1382.6	1382.3	1382.1	1381.8	1381.5	1381.3	1381.1	1380.8	1381.5
162.5°	1405.3	1404.6	1404.0	1403.3	1402.7	1402.2	1401.9	1401.7	1401.4	1401.1	1402.6
165°	1435.1	1434.4	1433.6	1432.8	1432.1	1431.5	1430.9	1430.4	1429.9	1429.3	1430.9
167.5°	1458.0	1457.0	1455.9	1454.8	1453.8	1453.2	1453.3	1453.3	1453.4	1453.4	1455.0
170°	1471.0	1469.7	1468.5	1467.1	1465.9	1465.3	1465.6	1465.9	1466.2	1466.3	1467.9
172.5°	1480.2	1479.2	1478.1	1477.0	1476.0	1475.4	1475.5	1475.5	1475.6	1475.6	1477.4
175°	1493.0	1491.7	1490.4	1489.2	1487.8	1487.0	1486.8	1486.6	1486.3	1486.0	1487.8
177.5°	1497.1	1496.1	1495.0	1494.1	1493.0	1492.5	1492.5	1492.5	1492.5	1492.5	1494.0
180°	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3



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**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°	19.1	19.2	19.3	19.4	19.8	20.1	20.4	20.8
90°	28.5	30.1	31.6	32.6	33.2	33.7	34.2	34.7
92.5°	47.6	48.6	49.5	50.1	50.4	50.7	51.0	51.4
95°	89.4	90.2	91.0	91.4	91.4	91.4	91.4	91.4
97.5°	140.9	141.8	142.7	143.2	143.2	143.2	143.2	143.2
100°	178.0	178.5	179.0	179.2	179.2	179.2	179.2	179.2
102.5°	217.2	217.9	218.6	219.1	219.4	219.5	219.7	220.0
105°	276.8	277.6	278.3	279.1	279.8	280.6	281.4	282.1
107.5°	341.2	341.9	342.7	343.0	343.0	342.9	342.9	342.8
110°	384.1	383.5	383.1	383.2	384.0	384.7	385.5	386.3





TEST NUMBER: P333090-940

CATALOG NUMBER: S124RDIW-S1020D1340U940-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	430.3	430.2	430.0	430.1	430.2	430.3	430.5	430.7
115°	501.4	501.1	500.9	500.6	500.3	500.1	499.8	499.6
117.5°	569.8	568.9	568.0	567.3	566.8	566.3	565.8	565.3
120°	616.2	614.8	613.6	613.1	613.7	614.2	614.7	615.2
122.5°	663.2	662.4	661.5	660.6	659.6	658.7	657.8	656.8
125°	732.2	731.6	731.1	730.6	730.1	729.6	729.1	728.5
127.5°	798.1	797.5	797.0	796.6	796.2	795.8	795.3	795.0
130°	844.4	843.8	843.3	842.6	841.5	840.4	839.5	838.4
132.5°	887.8	887.3	886.8	886.4	885.9	885.5	885.1	884.7
135°	953.1	952.5	952.0	951.4	950.6	949.9	949.0	948.2
137.5°	1016.1	1015.5	1014.8	1014.5	1014.7	1014.9	1014.9	1015.1
140°	1057.7	1057.4	1057.1	1056.9	1056.6	1056.3	1056.1	1055.9
142.5°	1096.9	1096.9	1096.8	1096.7	1096.7	1096.6	1096.6	1096.5
145°	1155.9	1155.7	1155.4	1154.9	1154.1	1153.3	1152.6	1151.8
147.5°	1209.4	1209.2	1209.1	1208.8	1208.5	1208.3	1208.1	1207.8
150°	1243.1	1243.1	1243.1	1243.0	1242.8	1242.5	1242.2	1242.1
152.5°	1275.0	1275.6	1276.2	1276.1	1275.5	1274.8	1274.2	1273.5
155°	1319.3	1320.3	1321.3	1321.3	1320.3	1319.3	1318.2	1317.2
157.5°	1358.3	1359.1	1359.9	1359.8	1358.9	1358.0	1357.2	1356.3
160°	1382.3	1383.1	1383.8	1383.6	1382.3	1381.1	1379.7	1378.5
162.5°	1403.9	1405.3	1406.7	1406.8	1405.4	1404.2	1402.9	1401.6
165°	1432.4	1434.0	1435.6	1435.8	1434.8	1433.7	1432.7	1431.6
167.5°	1456.5	1458.0	1459.6	1459.6	1457.9	1456.3	1454.8	1453.2
170°	1469.5	1471.0	1472.6	1472.4	1470.6	1468.8	1467.0	1465.3
172.5°	1479.1	1480.9	1482.6	1482.6	1480.8	1479.0	1477.2	1475.4
175°	1489.6	1491.4	1493.3	1493.3	1491.4	1489.6	1487.8	1486.0
177.5°	1495.4	1496.8	1498.3	1498.2	1496.6	1494.9	1493.3	1491.6
180°	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3

(END OF REPORT)