

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: P333090-930

Luminaire Tested: **S124RDIW-S1020D1340U930-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333090-930  
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-S1020D1340U930-4F0-1E-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**

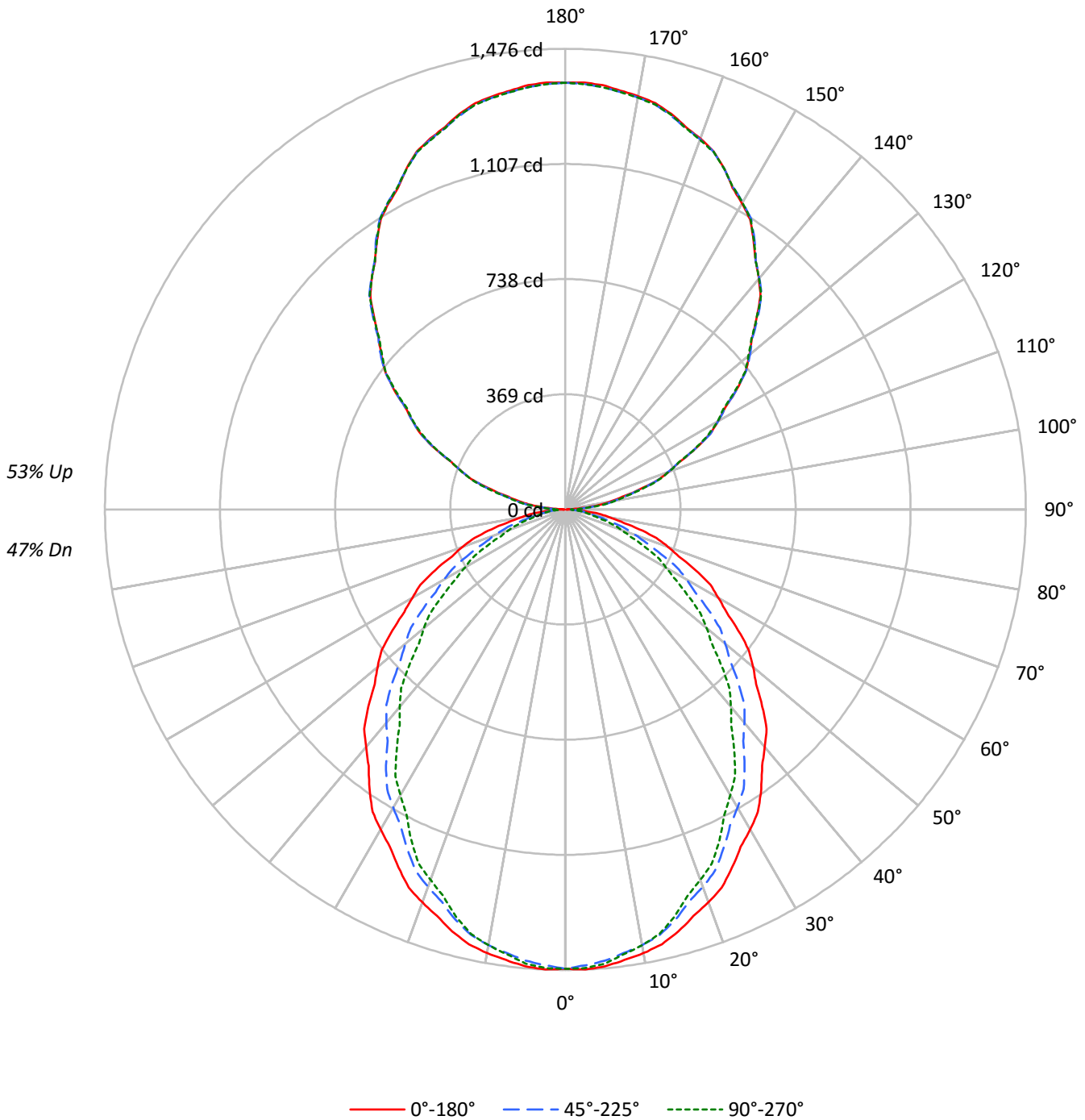
Lumens per Lamp: N/A  
Luminaire Lumens: 7198.5 lumens  
Efficiency: N/A  
Efficacy: 103.1 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: General Diffuse  
  
Input Watts (W): 69.8  
Input Voltage (V): 120  
Input Current (Ain): 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	98	98	98	98	82	82	82	67	67	67	54	54	54	47				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°	11885	11885	11885
5°	11912	11766	11839
10°	11837	11625	11625
15°	11701	11381	11295
20°	11515	11059	10856
25°	11276	10684	10413
30°	11044	10288	9857
35°	10787	9876	9298
40°	10478	9409	8696
45°	10193	8944	8082
50°	9868	8410	7433
55°	9520	7854	6726
60°	9137	7245	6006
65°	8785	6481	5297
70°	8275	5641	4497
75°	7629	4676	3656
80°	6657	3561	3357
85°	5641	3242	3029



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	138.3	1.9
10°-20°	385.6	5.4
20°-30°	556.9	7.7
30°-40°	631.2	8.8
40°-50°	609.5	8.5
50°-60°	506.9	7.0
60°-70°	350.0	4.9
70°-80°	177.4	2.5
80°-90°	49.6	0.7
90°-100°	90.2	1.3
100°-110°	267.1	3.7
110°-120°	453.4	6.3
120°-130°	597.8	8.3
130°-140°	671.4	9.3
140°-150°	659.8	9.2
150°-160°	554.9	7.7
160°-170°	369.2	5.1
170°-180°	129.3	1.8
0°-30°	1080.8	15.0
0°-40°	1712.0	23.8
0°-60°	2828.4	39.3
0°-90°	3405.4	47.3
90°-120°	810.7	11.3
90°-150°	2739.7	38.1
90°-180°	3793.0	52.7
0°-180°	7198.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1472	1472	1472	1472	1472	
5°	1470	1465	1452	1462	1461	139
15°	1400	1389	1362	1359	1352	394
25°	1266	1244	1199	1181	1169	583
35°	1094	1057	1002	965	944	684
45°	893	850	783	730	708	688
55°	676	630	558	501	478	605
65°	460	410	339	293	277	454
75°	245	202	150	125	117	258
85°	61	39	35	33	33	69
90°	3	15	23	29	32	7
95°	63	73	80	83	84	71
105°	246	248	252	255	258	261
115°	461	461	459	458	457	454
125°	671	671	670	668	666	598
135°	866	872	872	870	867	670
145°	1052	1056	1057	1056	1053	658
155°	1205	1205	1204	1208	1204	554
165°	1312	1309	1307	1313	1309	370
175°	1365	1360	1359	1365	1359	130
180°	1367	1367	1367	1367	1367	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2
2.5°	1475.8	1475.0	1474.1	1473.4	1472.6	1471.0	1468.8	1466.6	1464.4	1462.2	1464.4
5°	1469.9	1468.9	1467.9	1466.9	1465.9	1463.9	1460.9	1457.9	1454.9	1451.9	1454.4
7.5°	1456.6	1455.6	1454.5	1453.4	1452.4	1449.9	1446.0	1442.1	1438.2	1434.3	1435.9
10°	1444.0	1442.8	1441.4	1440.2	1439.0	1436.1	1431.6	1427.1	1422.5	1418.1	1419.0
12.5°	1427.8	1426.3	1424.8	1423.4	1422.0	1418.5	1413.2	1407.9	1402.6	1397.3	1397.9
15°	1400.0	1397.7	1395.5	1393.3	1391.0	1386.7	1380.5	1374.2	1368.0	1361.7	1361.2
17.5°	1366.4	1363.2	1359.9	1356.7	1353.4	1348.0	1340.5	1333.0	1325.5	1317.9	1316.5
20°	1340.3	1337.0	1333.7	1330.5	1327.2	1321.4	1312.9	1304.3	1295.8	1287.3	1285.3
22.5°	1311.4	1307.7	1304.1	1300.5	1296.8	1290.4	1281.3	1272.2	1263.1	1253.9	1250.9
25°	1265.9	1261.3	1256.9	1252.4	1247.8	1240.5	1230.2	1219.9	1209.7	1199.4	1195.1
27.5°	1218.1	1212.4	1206.8	1201.1	1195.5	1187.2	1176.2	1165.2	1154.2	1143.2	1138.0
30°	1184.7	1178.4	1172.2	1166.0	1159.7	1150.6	1138.9	1127.1	1115.3	1103.6	1097.3
32.5°	1149.6	1142.5	1135.4	1128.4	1121.3	1111.7	1099.5	1087.4	1075.1	1063.0	1055.7
35°	1094.5	1086.5	1078.5	1070.5	1062.5	1052.2	1039.7	1027.2	1014.6	1002.1	993.6
37.5°	1035.7	1027.4	1019.2	1010.9	1002.7	991.6	977.7	963.8	949.9	936.0	926.5
40°	994.3	985.9	977.7	969.4	961.2	949.9	935.6	921.3	907.0	892.8	882.2
42.5°	954.6	945.9	937.2	928.5	919.9	908.1	893.2	878.3	863.5	848.6	837.9
45°	892.8	883.5	874.2	865.0	855.7	843.5	828.5	813.5	798.4	783.4	771.2
47.5°	829.0	819.4	809.8	800.3	790.7	778.1	762.5	746.8	731.2	715.6	702.9
50°	785.7	775.9	766.1	756.4	746.6	733.7	717.7	701.6	685.6	669.6	657.0
52.5°	741.5	731.9	722.4	712.8	703.2	690.2	673.8	657.4	640.9	624.5	611.8
55°	676.4	666.3	656.3	646.3	636.3	623.1	606.8	590.5	574.3	558.0	544.9
57.5°	611.9	601.4	591.0	580.6	570.2	556.9	541.0	524.9	508.8	492.8	479.6
60°	565.9	555.9	545.8	535.8	525.8	512.7	496.8	480.7	464.6	448.7	435.6
62.5°	524.4	514.0	503.5	493.1	482.7	469.3	452.8	436.4	420.0	403.6	391.5
65°	459.9	449.1	438.4	427.6	416.9	403.4	387.4	371.4	355.3	339.3	328.6
67.5°	393.0	382.6	372.3	362.0	351.6	339.1	324.2	309.3	294.4	279.6	270.3
70°	350.6	340.1	329.5	319.0	308.5	296.1	281.8	267.5	253.2	239.0	230.7
72.5°	305.5	296.0	286.4	277.0	267.4	255.9	242.5	228.9	215.5	202.0	194.9
75°	244.6	235.4	226.1	216.8	207.6	197.0	185.2	173.5	161.7	149.9	144.1
77.5°	182.9	175.0	167.1	159.2	151.4	142.7	133.1	123.7	114.1	104.6	101.3
80°	143.2	135.9	128.7	121.4	114.1	106.7	99.2	91.7	84.1	76.6	75.9
82.5°	108.9	102.2	95.6	88.9	82.3	76.7	72.5	68.2	63.8	59.5	58.9
85°	60.9	55.8	50.9	45.8	40.8	37.9	37.2	36.4	35.7	35.0	34.4
87.5°	21.4	20.3	19.2	18.1	17.0	16.6	16.7	17.0	17.1	17.3	17.4
90°	3.2	5.8	8.3	10.9	13.5	15.7	17.6	19.5	21.4	23.2	24.7
92.5°	22.7	25.6	28.5	31.5	34.5	36.6	37.9	39.2	40.5	41.9	42.7
95°	63.4	65.6	67.7	69.8	71.9	73.8	75.4	77.0	78.7	80.4	81.0
97.5°	110.8	112.5	114.2	115.9	117.6	119.4	121.3	123.3	125.1	127.1	127.9
100°	148.1	149.0	149.9	150.8	151.8	153.3	155.4	157.5	159.6	161.8	162.2
102.5°	186.9	187.4	187.7	188.1	188.4	189.6	191.5	193.5	195.3	197.3	198.0
105°	246.4	246.6	246.9	247.0	247.3	247.9	248.8	249.8	250.7	251.7	252.3
107.5°	308.8	309.0	309.3	309.6	309.9	310.1	310.2	310.4	310.5	310.6	311.3
110°	351.1	351.5	352.0	352.5	352.9	353.0	352.8	352.5	352.4	352.1	351.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	395.0	395.1	395.2	395.3	395.4	395.3	394.8	394.4	394.0	393.5	393.5
115°	461.0	461.0	461.0	461.0	461.0	460.8	460.3	459.8	459.3	458.9	458.7
117.5°	523.2	523.3	523.6	523.7	523.9	523.8	523.5	523.2	522.9	522.5	521.7
120°	564.6	565.6	566.5	567.4	568.3	568.5	567.8	567.1	566.4	565.7	564.5
122.5°	607.7	608.1	608.5	608.9	609.3	609.3	608.9	608.6	608.3	608.0	607.2
125°	671.4	671.4	671.4	671.4	671.4	671.3	671.1	670.8	670.6	670.3	669.8
127.5°	729.1	729.9	730.6	731.2	732.0	732.1	731.7	731.4	731.0	730.6	730.2
130°	769.7	770.5	771.2	771.8	772.6	772.9	772.9	772.9	772.9	772.9	772.4
132.5°	811.2	811.7	812.2	812.8	813.3	813.4	813.3	813.0	812.9	812.7	812.2
135°	865.9	867.4	868.8	870.2	871.6	872.3	872.3	872.3	872.3	872.3	871.9
137.5°	925.6	926.3	926.9	927.6	928.2	928.8	929.1	929.5	929.8	930.3	929.6
140°	965.4	965.8	966.3	966.8	967.3	967.4	967.4	967.4	967.4	967.4	967.3
142.5°	1001.8	1002.2	1002.7	1003.1	1003.6	1003.7	1003.6	1003.4	1003.2	1003.0	1003.0
145°	1052.1	1053.0	1053.9	1054.9	1055.8	1056.4	1056.6	1056.9	1057.1	1057.4	1057.1
147.5°	1102.0	1103.1	1104.2	1105.4	1106.4	1106.9	1106.8	1106.6	1106.4	1106.2	1106.0
150°	1132.5	1133.3	1134.3	1135.2	1136.2	1136.6	1136.6	1136.6	1136.6	1136.6	1136.6
152.5°	1161.1	1161.7	1162.3	1162.9	1163.4	1163.8	1164.0	1164.2	1164.4	1164.6	1165.1
155°	1205.3	1205.3	1205.3	1205.3	1205.3	1205.3	1205.0	1204.8	1204.5	1204.4	1205.3
157.5°	1242.6	1242.2	1241.8	1241.3	1240.9	1240.6	1240.6	1240.6	1240.6	1240.5	1241.2
160°	1264.6	1264.4	1264.1	1263.9	1263.6	1263.4	1263.1	1263.0	1262.7	1262.5	1263.1
162.5°	1284.9	1284.3	1283.7	1283.0	1282.5	1282.1	1281.8	1281.6	1281.3	1281.1	1282.4
165°	1312.1	1311.5	1310.8	1310.0	1309.4	1308.8	1308.3	1307.8	1307.3	1306.8	1308.3
167.5°	1333.1	1332.1	1331.1	1330.2	1329.2	1328.7	1328.8	1328.8	1328.9	1328.9	1330.3
170°	1344.9	1343.8	1342.6	1341.4	1340.3	1339.8	1340.0	1340.3	1340.5	1340.7	1342.1
172.5°	1353.4	1352.4	1351.4	1350.5	1349.5	1349.0	1349.1	1349.1	1349.2	1349.2	1350.8
175°	1365.1	1363.8	1362.7	1361.5	1360.3	1359.6	1359.4	1359.2	1358.9	1358.7	1360.3
177.5°	1368.8	1367.9	1366.9	1366.0	1365.1	1364.6	1364.6	1364.6	1364.6	1364.6	1366.0
180°	1367.2	1367.2	1367.2	1367.2	1367.2	1367.2	1367.2	1367.2	1367.2	1367.2	1367.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2
2.5°	1466.6	1468.8	1471.0	1472.1	1471.9	1471.7	1471.5	1471.3
5°	1456.9	1459.4	1461.9	1462.9	1462.4	1461.9	1461.4	1460.9
7.5°	1437.5	1439.1	1440.7	1441.1	1440.3	1439.5	1438.7	1437.9
10°	1420.1	1421.1	1422.0	1422.0	1421.1	1420.1	1419.0	1418.1
12.5°	1398.5	1399.1	1399.7	1399.3	1397.9	1396.5	1395.1	1393.8
15°	1360.7	1360.2	1359.7	1358.5	1356.8	1355.0	1353.3	1351.5
17.5°	1315.2	1313.8	1312.4	1310.3	1307.7	1305.0	1302.4	1299.7
20°	1283.3	1281.3	1279.3	1276.7	1273.4	1270.2	1266.9	1263.6
22.5°	1247.9	1244.9	1241.9	1239.1	1236.4	1233.8	1231.1	1228.5
25°	1190.8	1186.6	1182.3	1178.9	1176.5	1173.9	1171.4	1169.0
27.5°	1132.7	1127.5	1122.2	1117.8	1114.2	1110.5	1106.9	1103.3
30°	1091.0	1084.8	1078.5	1073.3	1069.3	1065.4	1061.4	1057.4
32.5°	1048.5	1041.2	1034.0	1028.4	1024.6	1020.8	1017.0	1013.2
35°	985.0	976.6	968.0	961.6	957.0	952.5	948.0	943.5
37.5°	917.0	907.5	898.0	891.0	886.5	881.9	877.4	872.9
40°	871.7	861.2	850.7	843.2	838.7	834.1	829.6	825.2
42.5°	827.1	816.4	805.7	798.0	793.3	788.6	783.8	779.2
45°	758.9	746.6	734.3	725.9	721.5	716.9	712.4	707.9
47.5°	690.2	677.4	664.6	655.8	650.9	645.9	640.9	636.0
50°	644.5	632.0	619.5	610.8	606.1	601.3	596.6	591.8
52.5°	599.0	586.3	573.6	564.8	559.8	554.8	549.8	544.9
55°	531.9	518.9	505.9	497.0	492.2	487.5	482.7	477.9
57.5°	466.4	453.1	439.9	431.5	427.9	424.3	420.7	417.1
60°	422.6	409.5	396.6	388.0	384.0	380.0	376.0	372.0
62.5°	379.5	367.5	355.5	347.8	344.6	341.4	338.2	335.0
65°	317.7	307.0	296.2	289.3	286.3	283.3	280.3	277.3
67.5°	261.0	251.8	242.5	236.2	232.8	229.6	226.2	223.0
70°	222.4	214.2	205.9	200.5	198.0	195.5	193.0	190.5
72.5°	187.8	180.8	173.7	169.1	166.7	164.4	162.2	159.9
75°	138.4	132.6	126.9	123.3	121.7	120.3	118.7	117.2
77.5°	97.9	94.6	91.2	89.3	88.8	88.4	87.9	87.5
80°	75.2	74.4	73.6	73.1	72.9	72.6	72.4	72.2
82.5°	58.4	57.9	57.3	56.9	56.7	56.4	56.2	55.9
85°	33.9	33.4	32.9	32.7	32.7	32.7	32.7	32.7
87.5°	17.4	17.5	17.6	17.8	18.1	18.3	18.7	19.0
90°	26.1	27.5	28.9	29.8	30.3	30.8	31.2	31.7
92.5°	43.5	44.4	45.2	45.8	46.1	46.4	46.6	47.0
95°	81.8	82.5	83.2	83.6	83.6	83.6	83.6	83.6
97.5°	128.8	129.6	130.4	130.9	130.9	130.9	130.9	130.9
100°	162.7	163.2	163.6	163.9	163.9	163.9	163.9	163.9
102.5°	198.6	199.3	199.9	200.3	200.6	200.7	200.9	201.1
105°	253.1	253.8	254.5	255.2	255.8	256.6	257.3	258.0
107.5°	311.9	312.6	313.3	313.6	313.6	313.5	313.5	313.4
110°	351.1	350.7	350.3	350.3	351.1	351.7	352.5	353.2





TEST NUMBER: P333090-930

CATALOG NUMBER: S124RDIW-S1020D1340U930-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	393.4	393.3	393.1	393.2	393.3	393.5	393.6	393.8
115°	458.4	458.2	458.0	457.7	457.5	457.2	457.0	456.8
117.5°	521.0	520.2	519.3	518.7	518.2	517.8	517.3	516.8
120°	563.4	562.1	561.0	560.6	561.1	561.6	562.1	562.5
122.5°	606.3	605.6	604.8	604.0	603.1	602.3	601.4	600.5
125°	669.4	669.0	668.5	668.0	667.6	667.1	666.6	666.1
127.5°	729.7	729.2	728.7	728.3	728.0	727.6	727.2	726.8
130°	772.0	771.5	771.0	770.4	769.4	768.4	767.5	766.5
132.5°	811.7	811.3	810.8	810.4	810.0	809.6	809.3	808.9
135°	871.4	870.9	870.4	869.8	869.1	868.5	867.7	867.0
137.5°	929.0	928.5	927.8	927.6	927.7	927.9	928.0	928.1
140°	967.0	966.8	966.5	966.3	966.0	965.8	965.6	965.4
142.5°	1002.9	1002.9	1002.8	1002.7	1002.7	1002.7	1002.7	1002.6
145°	1056.9	1056.6	1056.4	1056.0	1055.2	1054.5	1053.9	1053.1
147.5°	1105.8	1105.6	1105.5	1105.2	1105.0	1104.7	1104.6	1104.3
150°	1136.6	1136.6	1136.6	1136.5	1136.3	1136.0	1135.8	1135.6
152.5°	1165.7	1166.3	1166.9	1166.8	1166.2	1165.6	1165.0	1164.3
155°	1206.2	1207.1	1208.1	1208.1	1207.1	1206.2	1205.3	1204.4
157.5°	1241.9	1242.6	1243.3	1243.2	1242.4	1241.6	1240.9	1240.1
160°	1263.9	1264.6	1265.3	1265.0	1263.9	1262.7	1261.5	1260.4
162.5°	1283.6	1284.9	1286.1	1286.2	1285.0	1283.9	1282.7	1281.5
165°	1309.7	1311.1	1312.6	1312.8	1311.8	1310.8	1309.9	1309.0
167.5°	1331.7	1333.1	1334.5	1334.5	1333.0	1331.5	1330.2	1328.7
170°	1343.5	1344.9	1346.4	1346.2	1344.6	1343.0	1341.3	1339.7
172.5°	1352.3	1354.0	1355.6	1355.5	1353.9	1352.3	1350.6	1349.0
175°	1362.0	1363.6	1365.3	1365.3	1363.6	1362.0	1360.3	1358.7
177.5°	1367.3	1368.6	1369.9	1369.8	1368.3	1366.8	1365.3	1363.8
180°	1367.2	1367.2	1367.2	1367.2	1367.2	1367.2	1367.2	1367.2

(END OF REPORT)