

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: P332822-930

Luminaire Tested: **S124DIW-S1020D1050U930-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332822-930
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: S124DIW-S1020D1050U930-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1050 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6576.1 lumens
Efficiency: N/A
Efficacy: 107.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

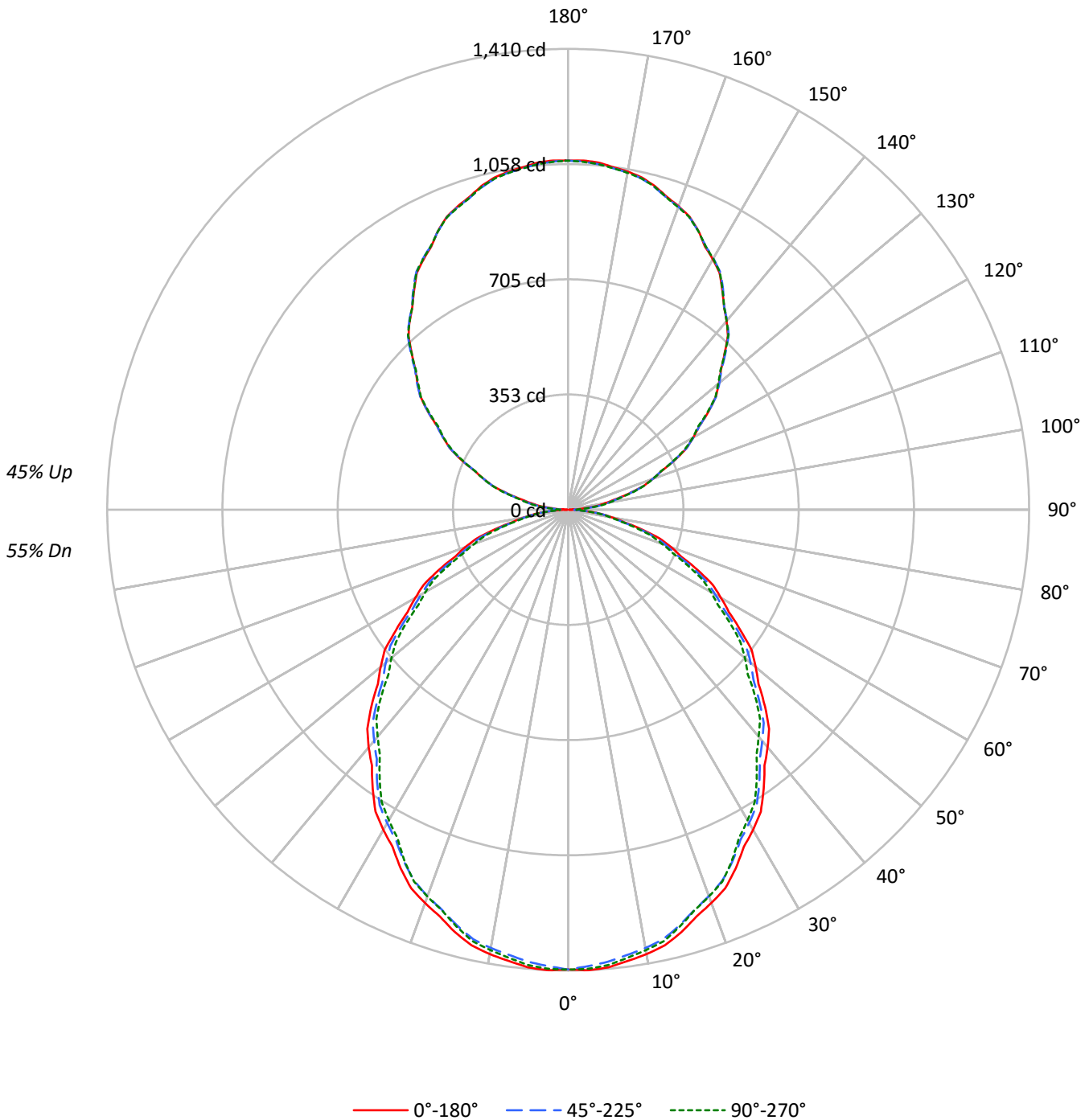
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55
1	99	94	91	87	92	88	84	81	75	73	71	64	62	61	54	52	51	46
2	90	82	76	71	83	77	71	67	66	62	58	56	53	51	47	45	43	39
3	82	73	65	59	76	68	61	56	58	53	49	50	46	43	42	39	37	33
4	75	64	56	50	69	60	53	47	52	46	42	44	40	37	37	34	32	28
5	69	57	49	43	64	53	46	41	46	41	36	40	35	32	34	30	28	24
6	64	51	43	37	59	48	41	35	42	36	32	36	31	28	31	27	24	21
7	59	46	38	33	54	43	36	31	38	32	28	33	28	25	28	24	22	19
8	55	42	34	29	51	40	32	28	35	29	25	30	25	22	26	22	19	17
9	51	39	31	26	47	36	29	25	32	26	22	28	23	20	24	20	17	15
10	48	35	28	23	44	33	27	22	29	24	20	26	21	18	22	18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11357	11357	11357
5°	11391	11255	11336
10°	11320	11163	11218
15°	11183	11004	11032
20°	11001	10808	10817
25°	10794	10583	10553
30°	10540	10318	10224
35°	10276	10042	9909
40°	10003	9729	9551
45°	9717	9421	9240
50°	9401	9146	8862
55°	9060	8790	8504
60°	8719	8391	8136
65°	8334	8010	7687
70°	7903	7504	7211
75°	7243	6890	6716
80°	6448	6183	6025
85°	5641	5428	5326



TEST NUMBER: P332822-930

CATALOG NUMBER: S124DIW-S1020D1050U930-4F0-1E-UDD-F1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	132.5	2.0
10°-20°	373.3	5.7
20°-30°	549.4	8.4
30°-40°	638.7	9.7
40°-50°	638.7	9.7
50°-60°	558.7	8.5
60°-70°	414.9	6.3
70°-80°	235.7	3.6
80°-90°	71.2	1.1
90°-100°	70.4	1.1
100°-110°	208.7	3.2
110°-120°	354.2	5.4
120°-130°	467.0	7.1
130°-140°	524.5	8.0
140°-150°	515.4	7.8
150°-160°	433.5	6.6
160°-170°	288.4	4.4
170°-180°	101.0	1.5
0°-30°	1055.2	16.0
0°-40°	1693.9	25.8
0°-60°	2891.3	44.0
0°-90°	3613.2	54.9
90°-120°	633.2	9.6
90°-150°	2140.1	32.5
90°-180°	2963.0	45.1
0°-180°	6576.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1407	1407	1407	1407	1407	
5°	1406	1401	1389	1400	1399	133
15°	1338	1333	1317	1323	1320	377
25°	1212	1204	1188	1189	1185	557
35°	1043	1034	1019	1011	1006	652
45°	851	843	825	813	809	656
55°	644	640	624	611	604	576
65°	436	430	419	408	402	432
75°	232	227	221	217	215	247
85°	61	61	59	59	58	67
90°	2	11	18	23	25	6
95°	50	57	63	65	65	55
105°	192	193	197	199	202	204
115°	360	360	358	358	357	355
125°	524	524	524	522	520	467
135°	676	681	681	680	677	523
145°	822	825	826	825	823	514
155°	942	942	941	944	941	433
165°	1025	1023	1021	1025	1022	289
175°	1066	1062	1061	1066	1061	101
180°	1068	1068	1068	1068	1068	



TEST NUMBER: P332822-930

CATALOG NUMBER: S124DIW-S1020D1050U930-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8
2.5°	1410.4	1409.8	1409.2	1408.6	1408.0	1406.6	1404.4	1402.2	1400.0	1397.7	1399.8
5°	1405.7	1404.7	1403.7	1402.6	1401.7	1399.8	1397.0	1394.2	1391.6	1388.8	1391.6
7.5°	1392.6	1391.6	1390.6	1389.6	1388.6	1386.6	1383.5	1380.5	1377.4	1374.4	1376.6
10°	1380.9	1379.9	1378.8	1377.9	1376.9	1374.8	1371.5	1368.2	1365.0	1361.7	1363.7
12.5°	1365.5	1364.6	1363.5	1362.5	1361.5	1359.3	1355.8	1352.4	1348.9	1345.5	1347.7
15°	1338.1	1337.0	1336.0	1335.1	1334.0	1331.6	1327.9	1324.1	1320.4	1316.6	1318.1
17.5°	1304.9	1303.7	1302.4	1301.1	1299.9	1297.5	1293.9	1290.4	1286.8	1283.3	1284.2
20°	1280.5	1279.3	1278.1	1276.8	1275.5	1273.0	1269.3	1265.5	1261.8	1258.0	1258.7
22.5°	1254.4	1252.7	1251.1	1249.4	1247.8	1245.0	1241.3	1237.5	1233.8	1230.0	1231.4
25°	1211.8	1210.1	1208.3	1206.5	1204.8	1202.2	1198.7	1195.1	1191.6	1188.1	1188.4
27.5°	1163.1	1161.3	1159.4	1157.6	1155.8	1153.3	1150.1	1146.8	1143.5	1140.3	1139.7
30°	1130.7	1128.6	1126.6	1124.6	1122.6	1120.0	1116.7	1113.5	1110.2	1106.9	1106.0
32.5°	1096.3	1094.5	1092.7	1091.0	1089.2	1086.5	1083.0	1079.6	1076.1	1072.7	1071.5
35°	1042.7	1041.0	1039.2	1037.5	1035.7	1033.1	1029.6	1026.1	1022.5	1019.0	1017.2
37.5°	986.1	984.5	982.9	981.3	979.7	977.1	973.2	969.5	965.7	962.0	960.1
40°	949.2	947.1	945.1	943.1	941.1	938.2	934.5	930.7	927.0	923.2	920.7
42.5°	909.5	908.2	907.0	905.9	904.7	902.0	897.8	893.6	889.5	885.3	882.4
45°	851.1	849.3	847.6	845.8	844.1	841.1	837.1	833.2	829.2	825.2	822.4
47.5°	789.9	788.8	787.6	786.4	785.1	782.7	779.0	775.3	771.6	767.8	764.8
50°	748.5	747.5	746.5	745.5	744.4	742.2	738.7	735.2	731.7	728.2	724.7
52.5°	707.9	706.7	705.5	704.3	703.1	700.7	696.9	693.2	689.5	685.8	682.7
55°	643.7	642.9	642.1	641.4	640.7	638.5	635.0	631.5	628.0	624.5	621.5
57.5°	582.4	581.5	580.7	579.8	578.9	576.7	573.3	569.9	566.4	563.0	560.1
60°	540.0	538.7	537.4	536.2	534.9	532.7	529.5	526.2	522.9	519.7	517.4
62.5°	498.5	497.4	496.4	495.3	494.2	492.0	488.5	485.1	481.6	478.2	476.1
65°	436.3	435.0	433.7	432.5	431.2	429.3	426.8	424.4	421.8	419.3	416.9
67.5°	373.6	372.4	371.3	370.1	368.9	367.2	364.8	362.4	360.0	357.6	355.1
70°	334.8	333.0	331.3	329.5	327.8	325.9	323.9	321.9	319.9	317.9	315.8
72.5°	293.3	291.6	289.8	288.0	286.3	284.6	283.0	281.4	279.8	278.2	276.6
75°	232.2	231.0	229.7	228.4	227.2	225.9	224.7	223.5	222.2	220.9	220.0
77.5°	173.8	173.3	172.7	172.2	171.6	170.8	169.7	168.6	167.5	166.4	166.1
80°	138.7	137.9	137.1	136.4	135.7	135.0	134.5	134.0	133.5	133.0	132.5
82.5°	104.4	104.0	103.7	103.3	103.0	102.7	102.6	102.6	102.5	102.3	102.1
85°	60.9	60.9	60.9	60.9	60.9	60.7	60.1	59.6	59.1	58.6	58.6
87.5°	24.0	24.1	24.4	24.5	24.8	24.9	25.0	25.1	25.2	25.3	25.5
90°	2.4	4.5	6.5	8.6	10.5	12.3	13.8	15.2	16.7	18.2	19.2
92.5°	17.7	20.0	22.3	24.6	26.9	28.6	29.6	30.7	31.7	32.7	33.3
95°	49.6	51.2	52.8	54.5	56.2	57.6	58.9	60.2	61.5	62.8	63.3
97.5°	86.6	87.9	89.2	90.5	91.9	93.3	94.7	96.3	97.8	99.3	100.0
100°	115.6	116.3	117.1	117.8	118.5	119.8	121.4	123.0	124.7	126.4	126.7
102.5°	146.0	146.3	146.6	146.9	147.2	148.1	149.6	151.1	152.6	154.1	154.7
105°	192.4	192.7	192.8	193.0	193.1	193.6	194.4	195.1	195.8	196.6	197.1
107.5°	241.2	241.4	241.6	241.8	242.1	242.2	242.3	242.5	242.6	242.6	243.2
110°	274.2	274.6	274.9	275.3	275.7	275.7	275.6	275.4	275.2	275.0	274.7



TEST NUMBER: P332822-930

CATALOG NUMBER: S124DIW-S1020D1050U930-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	308.6	308.7	308.8	308.8	308.8	308.8	308.4	308.1	307.8	307.4	307.4
115°	360.1	360.1	360.1	360.1	360.1	360.0	359.5	359.2	358.8	358.5	358.2
117.5°	408.7	408.8	409.0	409.1	409.3	409.2	409.0	408.7	408.5	408.1	407.6
120°	441.1	441.8	442.5	443.3	444.0	444.1	443.5	443.0	442.5	441.9	441.0
122.5°	474.7	475.1	475.3	475.6	475.9	476.0	475.6	475.4	475.2	474.9	474.3
125°	524.5	524.5	524.5	524.5	524.5	524.4	524.2	524.0	523.8	523.7	523.3
127.5°	569.6	570.1	570.6	571.2	571.8	571.9	571.6	571.3	571.0	570.7	570.4
130°	601.3	601.9	602.3	602.9	603.5	603.7	603.7	603.7	603.7	603.7	603.4
132.5°	633.7	634.1	634.5	634.9	635.3	635.4	635.3	635.1	635.0	634.8	634.5
135°	676.5	677.5	678.7	679.7	680.9	681.4	681.4	681.4	681.4	681.4	681.0
137.5°	723.0	723.5	724.1	724.6	725.0	725.5	725.8	726.1	726.4	726.7	726.2
140°	754.1	754.5	754.8	755.2	755.5	755.7	755.7	755.7	755.7	755.7	755.5
142.5°	782.5	782.9	783.3	783.6	784.0	784.1	783.9	783.7	783.7	783.5	783.4
145°	821.8	822.6	823.3	824.0	824.8	825.2	825.4	825.6	825.7	825.9	825.7
147.5°	860.8	861.7	862.6	863.4	864.3	864.7	864.5	864.4	864.2	864.1	864.0
150°	884.6	885.3	886.1	886.8	887.5	887.9	887.9	887.9	887.9	887.9	887.9
152.5°	907.0	907.5	907.9	908.3	908.8	909.1	909.2	909.4	909.5	909.7	910.1
155°	941.6	941.6	941.6	941.6	941.6	941.5	941.3	941.1	940.9	940.8	941.5
157.5°	970.6	970.3	970.0	969.6	969.3	969.1	969.1	969.1	969.0	969.0	969.6
160°	987.8	987.7	987.4	987.2	987.1	986.9	986.7	986.5	986.3	986.2	986.7
162.5°	1003.6	1003.2	1002.7	1002.2	1001.8	1001.4	1001.3	1001.1	1000.9	1000.7	1001.7
165°	1025.0	1024.4	1023.9	1023.4	1022.8	1022.3	1022.0	1021.6	1021.2	1020.8	1022.0
167.5°	1041.3	1040.6	1039.8	1039.0	1038.3	1037.9	1038.0	1038.0	1038.0	1038.0	1039.1
170°	1050.6	1049.7	1048.7	1047.8	1046.9	1046.5	1046.8	1046.9	1047.1	1047.3	1048.4
172.5°	1057.2	1056.4	1055.6	1054.9	1054.1	1053.8	1053.8	1053.9	1053.9	1053.9	1055.2
175°	1066.2	1065.4	1064.5	1063.6	1062.6	1062.1	1061.8	1061.7	1061.5	1061.4	1062.6
177.5°	1069.3	1068.5	1067.8	1067.1	1066.3	1065.9	1065.9	1065.9	1065.9	1065.9	1067.0
180°	1068.0	1068.0	1068.0	1068.0	1068.0	1068.0	1068.0	1068.0	1068.0	1068.0	1068.0



TEST NUMBER: P332822-930

CATALOG NUMBER: S124DIW-S1020D1050U930-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8
2.5°	1401.7	1403.8	1405.8	1406.7	1406.5	1406.3	1406.1	1405.9
5°	1394.2	1397.0	1399.8	1400.9	1400.4	1399.9	1399.4	1398.9
7.5°	1378.8	1381.0	1383.2	1384.1	1383.8	1383.5	1383.2	1382.9
10°	1365.7	1367.7	1369.7	1370.4	1369.9	1369.5	1369.0	1368.5
12.5°	1349.9	1352.1	1354.3	1355.0	1354.4	1353.6	1352.9	1352.3
15°	1319.6	1321.1	1322.7	1323.0	1322.3	1321.5	1320.8	1320.0
17.5°	1285.2	1286.1	1287.0	1287.3	1286.8	1286.3	1285.8	1285.2
20°	1259.5	1260.3	1261.0	1261.1	1260.6	1260.1	1259.6	1259.1
22.5°	1232.7	1234.1	1235.4	1235.7	1234.8	1233.9	1233.0	1232.1
25°	1188.6	1188.9	1189.1	1188.7	1187.7	1186.7	1185.7	1184.7
27.5°	1139.1	1138.5	1137.9	1137.0	1135.7	1134.5	1133.2	1132.0
30°	1105.0	1103.9	1102.9	1101.8	1100.6	1099.3	1098.0	1096.8
32.5°	1070.2	1069.1	1067.9	1066.7	1065.4	1064.1	1062.9	1061.6
35°	1015.5	1013.7	1012.0	1010.5	1009.3	1008.0	1006.7	1005.5
37.5°	958.1	956.3	954.4	952.6	951.0	949.3	947.6	946.0
40°	918.2	915.7	913.2	911.3	910.0	908.8	907.6	906.3
42.5°	879.5	876.6	873.7	871.8	871.0	870.1	869.3	868.5
45°	819.6	816.8	814.1	812.4	811.6	810.9	810.1	809.3
47.5°	761.7	758.6	755.5	752.9	751.1	749.1	747.2	745.3
50°	721.2	717.7	714.2	711.7	710.1	708.7	707.2	705.6
52.5°	679.6	676.5	673.4	670.9	669.0	667.1	665.2	663.2
55°	618.5	615.5	612.5	610.3	608.7	607.2	605.7	604.2
57.5°	557.3	554.4	551.5	549.3	547.9	546.5	545.0	543.6
60°	515.2	512.9	510.6	508.9	507.6	506.4	505.2	503.9
62.5°	474.1	472.0	469.9	468.3	467.1	465.8	464.6	463.3
65°	414.3	411.8	409.3	407.4	406.2	405.0	403.7	402.4
67.5°	352.8	350.3	348.0	346.6	346.2	345.8	345.5	345.2
70°	313.9	311.9	309.9	308.5	307.8	307.0	306.2	305.5
72.5°	275.0	273.4	271.8	270.6	269.9	269.1	268.4	267.6
75°	218.9	217.9	217.0	216.3	216.1	215.8	215.6	215.3
77.5°	165.8	165.5	165.2	164.7	164.0	163.4	162.7	162.1
80°	132.0	131.5	131.0	130.6	130.4	130.1	129.9	129.6
82.5°	101.7	101.4	101.2	100.9	100.6	100.4	100.1	99.9
85°	58.6	58.6	58.6	58.5	58.2	58.0	57.7	57.5
87.5°	25.7	25.9	26.2	26.3	26.4	26.4	26.5	26.6
90°	20.4	21.4	22.6	23.3	23.6	24.1	24.4	24.8
92.5°	34.0	34.7	35.4	35.8	36.0	36.2	36.4	36.7
95°	63.8	64.4	65.0	65.2	65.2	65.2	65.2	65.2
97.5°	100.6	101.3	101.9	102.2	102.2	102.2	102.2	102.2
100°	127.1	127.4	127.8	128.0	128.0	128.0	128.0	128.0
102.5°	155.2	155.6	156.2	156.5	156.6	156.8	156.9	157.1
105°	197.7	198.2	198.8	199.3	199.9	200.4	201.0	201.5
107.5°	243.7	244.2	244.8	244.9	244.9	244.9	244.8	244.8
110°	274.3	273.9	273.5	273.7	274.2	274.8	275.3	275.9



TEST NUMBER: P332822-930

CATALOG NUMBER: S124DIW-S1020D1050U930-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	307.3	307.2	307.1	307.1	307.3	307.4	307.4	307.6
115°	358.1	357.9	357.8	357.5	357.3	357.2	357.0	356.8
117.5°	406.9	406.3	405.7	405.2	404.8	404.5	404.1	403.7
120°	440.0	439.1	438.2	437.9	438.3	438.6	439.0	439.4
122.5°	473.7	473.0	472.4	471.7	471.1	470.4	469.8	469.1
125°	522.9	522.5	522.2	521.8	521.5	521.1	520.7	520.3
127.5°	570.0	569.6	569.2	568.9	568.6	568.3	568.0	567.8
130°	603.0	602.7	602.3	601.8	601.0	600.3	599.6	598.8
132.5°	634.1	633.7	633.3	633.0	632.8	632.4	632.1	631.9
135°	680.7	680.3	680.0	679.5	678.9	678.3	677.8	677.3
137.5°	725.7	725.2	724.7	724.6	724.6	724.8	724.9	725.0
140°	755.4	755.2	755.0	754.8	754.6	754.5	754.2	754.1
142.5°	783.4	783.3	783.3	783.3	783.3	783.3	783.2	783.2
145°	825.6	825.4	825.2	824.8	824.3	823.7	823.2	822.6
147.5°	863.8	863.6	863.5	863.3	863.2	863.0	862.7	862.6
150°	887.9	887.9	887.9	887.8	887.6	887.5	887.2	887.0
152.5°	910.5	911.0	911.4	911.4	910.9	910.4	910.0	909.5
155°	942.2	943.0	943.7	943.7	943.0	942.2	941.5	940.8
157.5°	970.1	970.6	971.2	971.2	970.5	969.9	969.3	968.7
160°	987.2	987.8	988.4	988.1	987.2	986.3	985.5	984.5
162.5°	1002.7	1003.6	1004.7	1004.7	1003.8	1002.9	1001.9	1001.0
165°	1023.0	1024.2	1025.2	1025.4	1024.7	1023.9	1023.2	1022.5
167.5°	1040.2	1041.3	1042.4	1042.4	1041.3	1040.2	1039.0	1037.9
170°	1049.5	1050.6	1051.7	1051.6	1050.4	1049.0	1047.7	1046.4
172.5°	1056.4	1057.6	1058.9	1058.8	1057.6	1056.3	1055.0	1053.7
175°	1063.9	1065.2	1066.5	1066.5	1065.2	1063.9	1062.6	1061.4
177.5°	1068.0	1069.0	1070.1	1070.0	1068.8	1067.6	1066.5	1065.3
180°	1068.0	1068.0	1068.0	1068.0	1068.0	1068.0	1068.0	1068.0

(END OF REPORT)