

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: P333085-930

Luminaire Tested: **S124RDIW-S1020D1050U930-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333085-930
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-S1020D1050U930-4F0-1E-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: 6820.8 lumens
Efficiency: N/A
Efficacy: 111.5 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

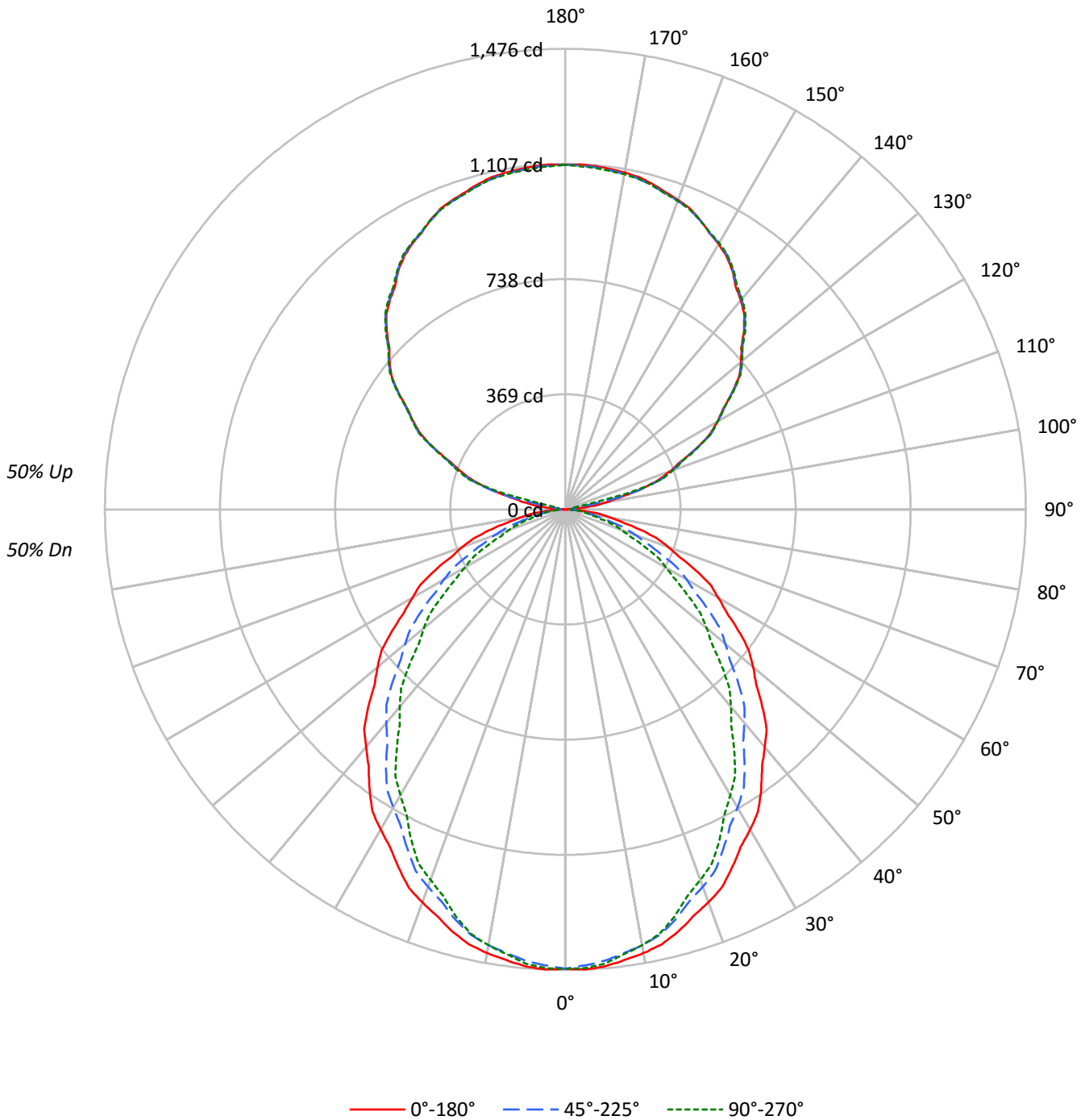
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P333085-930

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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°	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	2.0
10°-20°	385.6	5.7
20°-30°	556.9	8.2
30°-40°	631.2	9.3
40°-50°	609.5	8.9
50°-60°	506.9	7.4
60°-70°	350.0	5.1
70°-80°	177.4	2.6
80°-90°	48.7	0.7
90°-100°	37.8	0.6
100°-110°	240.8	3.5
110°-120°	460.7	6.8
120°-130°	584.9	8.6
130°-140°	625.8	9.2
140°-150°	585.2	8.6
150°-160°	471.9	6.9
160°-170°	304.4	4.5
170°-180°	104.9	1.5
0°-30°	1080.8	15.8
0°-40°	1712.0	25.1
0°-60°	2828.4	41.5
0°-90°	3404.5	49.9
90°-120°	739.3	10.8
90°-150°	2535.2	37.2
90°-180°	3416.0	50.1
0°-180°	6820.8	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°	2	11	18	23	25	5
95°	45	19	18	23	24	58
105°	249	254	258	263	236	260
115°	464	466	466	467	468	457
125°	653	656	654	657	658	582
135°	810	809	812	814	815	623
145°	933	936	936	937	938	583
155°	1023	1024	1022	1025	1023	472
165°	1080	1076	1076	1081	1075	305
175°	1104	1100	1100	1107	1098	105
180°	1104	1104	1104	1104	1104	



TEST NUMBER: P333085-930

CATALOG NUMBER: S124RDIW-S1020D1050U930-4F0-1E-UDD-F

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°	21.2	20.1	18.8	17.6	16.5	15.9	16.0	16.1	16.1	16.2	16.3
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°	10.4	10.5	10.6	10.8	10.8	11.7	13.1	14.6	16.1	17.5	18.6
95°	45.4	39.2	32.9	26.7	20.5	17.4	17.6	17.8	18.0	18.2	19.2
97.5°	96.4	100.4	104.3	108.2	112.0	103.8	83.2	62.8	42.3	21.8	21.9
100°	135.5	138.8	142.1	145.4	148.7	137.7	112.3	87.0	61.7	36.4	33.3
102.5°	179.1	181.5	183.9	186.4	188.7	188.3	185.1	181.7	178.4	175.1	141.5
105°	248.7	249.7	250.9	251.9	253.1	254.0	254.9	255.9	256.8	257.7	259.3
107.5°	313.2	313.8	314.3	314.9	315.4	316.3	317.6	318.9	320.1	321.3	322.1
110°	356.9	357.4	357.9	358.5	359.1	359.9	361.0	362.1	363.2	364.3	364.7



TEST NUMBER: P333085-930

CATALOG NUMBER: S124RDIW-S1020D1050U930-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	399.2	400.1	401.1	402.1	403.1	403.9	404.4	404.9	405.4	405.9	405.9
115°	464.2	464.8	465.4	465.9	466.4	466.6	466.4	466.3	466.1	465.9	466.3
117.5°	522.9	523.6	524.3	525.1	525.8	526.4	526.8	527.2	527.6	528.0	527.9
120°	562.6	563.3	564.0	564.8	565.5	565.7	565.6	565.4	565.2	565.0	565.4
122.5°	599.6	600.0	600.4	600.9	601.3	601.7	601.9	602.2	602.4	602.7	602.9
125°	652.6	653.3	654.0	654.8	655.5	655.7	655.3	654.9	654.6	654.2	654.8
127.5°	702.8	703.0	703.2	703.4	703.5	704.0	704.9	705.7	706.5	707.4	707.4
130°	735.2	735.4	735.6	735.7	735.9	736.3	736.9	737.4	737.9	738.5	738.7
132.5°	764.9	765.2	765.6	765.9	766.2	766.8	767.4	768.2	768.8	769.6	769.7
135°	809.5	809.3	809.2	808.9	808.8	809.1	809.8	810.6	811.3	812.0	812.4
137.5°	849.0	849.1	849.1	849.2	849.3	849.7	850.5	851.3	852.2	853.0	853.4
140°	874.8	875.1	875.5	875.9	876.3	876.6	877.0	877.3	877.8	878.1	878.6
142.5°	897.9	898.5	899.2	899.9	900.6	901.0	901.2	901.4	901.6	901.9	902.3
145°	933.4	934.0	934.5	935.1	935.6	935.9	935.9	935.9	935.9	935.9	936.1
147.5°	961.6	962.7	963.8	964.7	965.8	966.2	966.0	965.9	965.6	965.5	965.6
150°	982.2	982.9	983.7	984.4	985.1	985.4	985.2	985.0	984.8	984.6	984.6
152.5°	999.3	1000.0	1000.5	1001.1	1001.7	1001.8	1001.5	1001.2	1000.9	1000.5	1000.8
155°	1023.4	1023.7	1023.9	1024.0	1024.2	1024.0	1023.4	1023.0	1022.4	1021.8	1022.5
157.5°	1043.8	1043.7	1043.6	1043.4	1043.3	1043.0	1042.4	1041.7	1041.1	1040.5	1041.5
160°	1055.6	1055.2	1054.6	1054.0	1053.4	1053.1	1053.0	1052.7	1052.6	1052.4	1053.4
162.5°	1066.2	1065.6	1064.9	1064.1	1063.5	1063.0	1062.8	1062.7	1062.5	1062.3	1063.4
165°	1079.6	1078.7	1077.8	1076.8	1076.0	1075.5	1075.5	1075.5	1075.5	1075.5	1077.0
167.5°	1090.2	1089.2	1088.3	1087.4	1086.4	1085.9	1085.7	1085.7	1085.6	1085.4	1087.0
170°	1096.2	1095.0	1094.0	1092.8	1091.8	1091.3	1091.4	1091.7	1091.8	1092.0	1093.5
172.5°	1100.1	1099.0	1097.9	1096.8	1095.7	1095.3	1095.4	1095.6	1095.8	1096.0	1097.5
175°	1104.4	1103.3	1102.2	1101.1	1100.0	1099.6	1099.8	1099.9	1100.1	1100.3	1102.0
177.5°	1106.4	1105.4	1104.3	1103.3	1102.3	1102.0	1102.2	1102.5	1102.8	1103.1	1104.2
180°	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4



TEST NUMBER: P333085-930

CATALOG NUMBER: S124RDIW-S1020D1050U930-4F0-1E-UDD-F

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°	16.3	16.3	16.3	16.5	16.8	17.0	17.3	17.6
90°	20.4	21.4	22.6	23.3	23.6	24.1	24.4	24.8
92.5°	19.7	20.8	21.9	22.5	22.6	22.7	22.7	22.8
95°	20.4	21.4	22.6	23.2	23.4	23.6	23.8	24.0
97.5°	22.0	22.2	22.3	22.4	22.6	22.7	22.9	23.2
100°	30.1	27.0	23.9	22.4	22.6	22.7	22.9	23.2
102.5°	107.8	74.1	40.4	23.6	23.6	23.7	23.7	23.8
105°	261.1	262.7	264.3	261.9	255.3	248.7	242.1	235.5
107.5°	322.9	323.8	324.6	325.3	326.0	326.7	327.4	328.1
110°	365.0	365.4	365.7	366.2	366.8	367.3	367.9	368.4



TEST NUMBER: P333085-930

CATALOG NUMBER: S124RDIW-S1020D1050U930-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	405.8	405.7	405.6	405.9	406.7	407.3	408.1	408.7
115°	466.6	467.0	467.3	467.6	467.6	467.6	467.6	467.6
117.5°	527.8	527.8	527.7	527.7	527.6	527.5	527.4	527.3
120°	565.7	566.1	566.5	566.5	566.1	565.7	565.4	565.0
122.5°	603.2	603.3	603.6	603.5	603.2	602.8	602.4	602.0
125°	655.3	655.9	656.4	656.8	657.0	657.1	657.4	657.5
127.5°	707.2	707.1	706.9	706.9	706.7	706.5	706.4	706.3
130°	738.8	739.1	739.2	739.3	739.3	739.3	739.3	739.3
132.5°	769.9	770.1	770.3	770.3	770.1	770.0	769.9	769.7
135°	812.8	813.1	813.5	813.8	814.2	814.6	815.0	815.3
137.5°	853.8	854.2	854.6	854.8	854.6	854.5	854.4	854.3
140°	879.2	879.7	880.3	880.7	880.8	881.0	881.2	881.4
142.5°	902.7	903.1	903.5	903.7	903.8	903.8	903.8	903.8
145°	936.3	936.5	936.6	936.9	937.3	937.7	938.0	938.4
147.5°	965.8	965.9	966.0	966.2	966.5	966.6	966.8	966.9
150°	984.6	984.6	984.6	984.7	984.9	985.1	985.3	985.5
152.5°	1001.1	1001.4	1001.7	1001.8	1001.7	1001.5	1001.4	1001.4
155°	1023.3	1024.0	1024.7	1024.8	1024.3	1023.8	1023.2	1022.6
157.5°	1042.4	1043.3	1044.3	1044.3	1043.3	1042.4	1041.5	1040.5
160°	1054.6	1055.6	1056.8	1056.8	1055.6	1054.6	1053.4	1052.4
162.5°	1064.5	1065.6	1066.7	1066.7	1065.4	1064.1	1062.9	1061.6
165°	1078.5	1079.9	1081.4	1081.2	1079.6	1078.0	1076.4	1074.6
167.5°	1088.7	1090.3	1091.8	1091.8	1090.0	1088.1	1086.3	1084.4
170°	1094.9	1096.4	1097.9	1097.7	1095.8	1094.1	1092.2	1090.4
172.5°	1098.9	1100.4	1101.9	1101.6	1099.6	1097.6	1095.7	1093.6
175°	1103.6	1105.2	1106.9	1106.6	1104.4	1102.2	1100.0	1097.8
177.5°	1105.5	1106.6	1107.8	1107.5	1105.7	1104.0	1102.2	1100.5
180°	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4

(END OF REPORT)