

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: P332983-927

Luminaire Tested: **S124RDIP-S1020D1205U927-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332983-927
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: S124RDIP-S1020D1205U927-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1205 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6610.1 lumens
Efficiency: N/A
Efficacy: 101.1 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

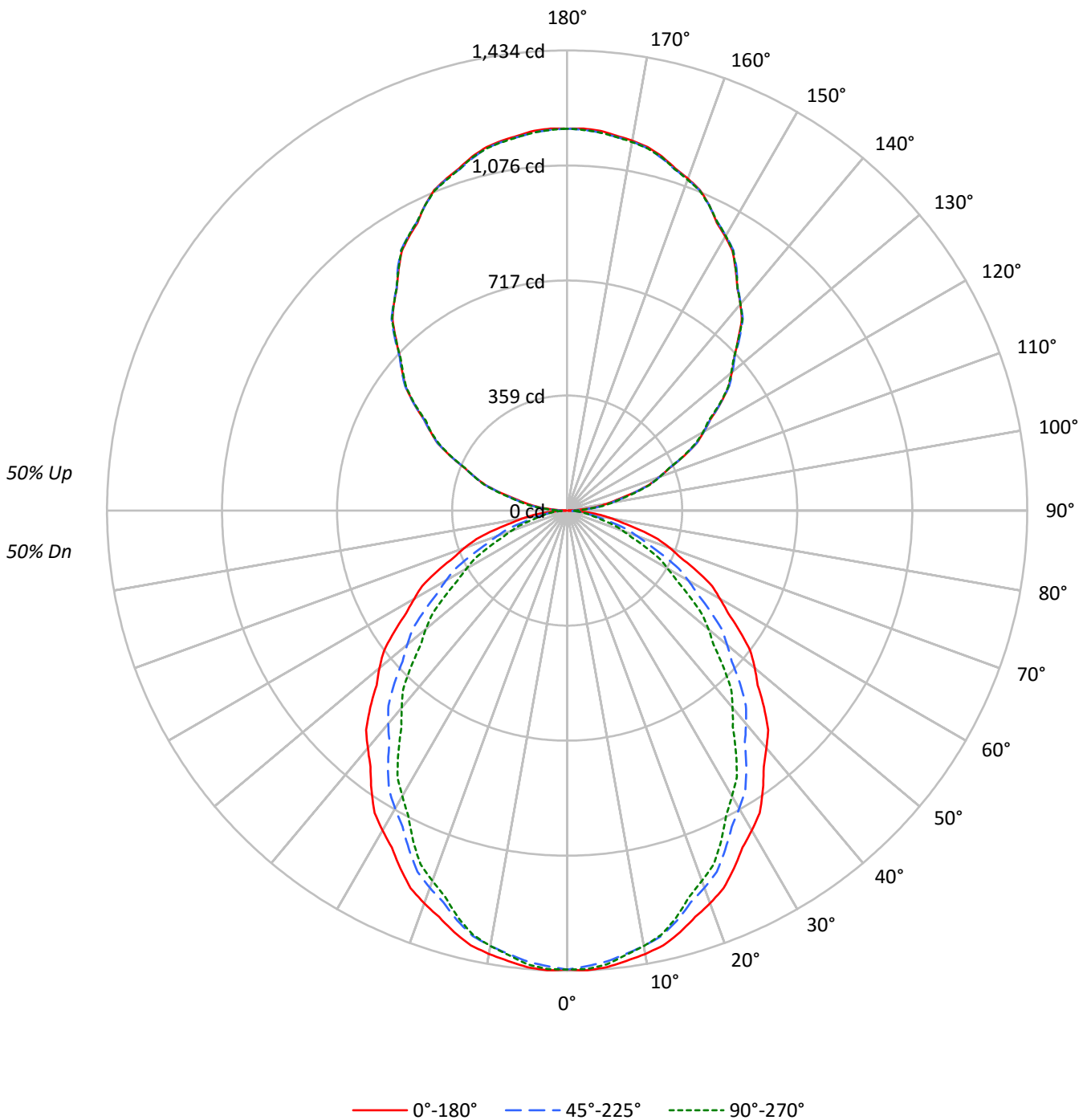
Input Watts (W): 65.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332983-927

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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	84	81	73	71	69	61	60	58	50	49	48	43				
2	90	82	76	71	82	76	71	67	65	61	58	54	51	49	44	42	41	36				
3	82	73	65	60	75	67	61	56	57	53	49	48	45	42	40	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	35	31	32	29	27	23				
6	64	52	44	38	58	48	41	36	41	36	32	35	31	28	29	26	24	21				
7	59	47	39	33	54	43	36	31	38	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	17				
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°	11548	11548	11548
5°	11574	11432	11503
10°	11501	11294	11294
15°	11369	11058	10975
20°	11188	10746	10548
25°	10956	10381	10117
30°	10730	9996	9577
35°	10481	9596	9034
40°	10181	9141	8450
45°	9903	8691	7854
50°	9588	8171	7222
55°	9250	7631	6536
60°	8879	7038	5837
65°	8537	6298	5146
70°	8039	5481	4369
75°	7414	4545	3553
80°	6467	3464	3259
85°	5483	3149	2946



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	134.4	2.0
10°-20°	374.7	5.7
20°-30°	541.1	8.2
30°-40°	613.3	9.3
40°-50°	592.3	9.0
50°-60°	492.5	7.5
60°-70°	340.1	5.1
70°-80°	172.4	2.6
80°-90°	47.8	0.7
90°-100°	78.5	1.2
100°-110°	232.5	3.5
110°-120°	394.6	6.0
120°-130°	520.4	7.9
130°-140°	584.4	8.8
140°-150°	574.3	8.7
150°-160°	483.0	7.3
160°-170°	321.4	4.9
170°-180°	112.5	1.7
0°-30°	1050.1	15.9
0°-40°	1663.5	25.2
0°-60°	2748.2	41.6
0°-90°	3308.4	50.1
90°-120°	705.6	10.7
90°-150°	2384.7	36.1
90°-180°	3302.0	50.0
0°-180°	6610.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1430	1430	1430	1430	1430	
5°	1428	1423	1411	1421	1420	135
15°	1360	1349	1323	1321	1313	383
25°	1230	1209	1165	1147	1136	566
35°	1064	1027	974	937	917	664
45°	867	826	761	709	688	669
55°	657	612	542	487	464	588
65°	447	398	330	284	269	441
75°	238	197	146	122	114	251
85°	59	38	34	32	32	67
90°	3	13	20	26	28	6
95°	55	63	70	73	73	61
105°	214	216	219	222	225	228
115°	401	401	399	398	398	396
125°	584	584	584	582	580	521
135°	754	759	759	757	755	583
145°	916	919	920	919	917	573
155°	1049	1049	1048	1052	1048	483
165°	1142	1139	1138	1143	1139	322
175°	1188	1184	1183	1188	1183	113
180°	1190	1190	1190	1190	1190	



TEST NUMBER: P332983-927

CATALOG NUMBER: S124RDIP-S1020D1205U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4
2.5°	1433.9	1433.1	1432.3	1431.6	1430.8	1429.3	1427.2	1425.1	1422.9	1420.8	1422.9
5°	1428.2	1427.3	1426.3	1425.3	1424.3	1422.4	1419.5	1416.6	1413.6	1410.7	1413.2
7.5°	1415.3	1414.3	1413.3	1412.2	1411.2	1408.8	1405.0	1401.2	1397.4	1393.6	1395.2
10°	1403.0	1401.8	1400.6	1399.4	1398.2	1395.3	1391.0	1386.6	1382.2	1377.8	1378.8
12.5°	1387.3	1385.8	1384.4	1383.1	1381.6	1378.3	1373.2	1368.0	1362.9	1357.7	1358.3
15°	1360.3	1358.1	1356.0	1353.8	1351.5	1347.4	1341.3	1335.2	1329.2	1323.1	1322.6
17.5°	1327.7	1324.5	1321.4	1318.2	1315.0	1309.8	1302.5	1295.2	1287.9	1280.6	1279.2
20°	1302.3	1299.1	1295.9	1292.8	1289.6	1283.9	1275.7	1267.3	1259.1	1250.8	1248.9
22.5°	1274.2	1270.7	1267.1	1263.6	1260.0	1253.8	1245.0	1236.1	1227.2	1218.4	1215.4
25°	1230.0	1225.6	1221.2	1216.9	1212.4	1205.3	1195.3	1185.3	1175.4	1165.4	1161.3
27.5°	1183.5	1178.1	1172.6	1167.0	1161.6	1153.5	1142.8	1132.2	1121.5	1110.8	1105.7
30°	1151.1	1145.0	1139.0	1132.9	1126.8	1118.0	1106.6	1095.1	1083.7	1072.3	1066.2
32.5°	1117.0	1110.1	1103.2	1096.4	1089.5	1080.1	1068.3	1056.5	1044.7	1032.8	1025.8
35°	1063.5	1055.7	1047.9	1040.1	1032.4	1022.4	1010.2	998.1	985.9	973.7	965.4
37.5°	1006.3	998.3	990.3	982.2	974.2	963.5	950.0	936.5	923.0	909.5	900.2
40°	966.1	958.0	950.0	941.9	933.9	923.0	909.1	895.2	881.3	867.4	857.2
42.5°	927.5	919.1	910.6	902.2	893.8	882.3	867.9	853.4	839.0	824.5	814.1
45°	867.4	858.5	849.5	840.4	831.4	819.6	805.0	790.4	775.8	761.2	749.3
47.5°	805.5	796.1	786.9	777.6	768.3	756.1	740.8	725.6	710.4	695.3	682.9
50°	763.4	753.9	744.4	734.9	725.4	712.9	697.4	681.8	666.1	650.6	638.4
52.5°	720.5	711.1	701.9	692.6	683.3	670.7	654.7	638.7	622.7	606.8	594.5
55°	657.2	647.5	637.7	628.0	618.2	605.5	589.6	573.8	558.0	542.2	529.5
57.5°	594.5	584.4	574.3	564.1	554.1	541.1	525.6	510.0	494.4	478.9	466.0
60°	549.9	540.1	530.4	520.6	510.9	498.2	482.7	467.1	451.5	435.9	423.3
62.5°	509.5	499.4	489.3	479.1	469.1	456.0	440.0	424.1	408.1	392.1	380.4
65°	446.9	436.4	426.0	415.5	405.0	392.0	376.4	360.8	345.2	329.7	319.2
67.5°	381.8	371.8	361.8	351.7	341.7	329.5	315.0	300.6	286.1	271.6	262.6
70°	340.6	330.4	320.2	310.0	299.8	287.7	273.9	259.9	246.1	232.2	224.2
72.5°	296.8	287.6	278.3	269.1	259.8	248.7	235.6	222.4	209.4	196.3	189.4
75°	237.7	228.7	219.7	210.6	201.7	191.4	180.0	168.6	157.1	145.7	140.1
77.5°	177.7	170.0	162.4	154.7	147.1	138.6	129.4	120.2	110.9	101.6	98.4
80°	139.1	132.1	125.0	118.0	110.9	103.7	96.4	89.1	81.8	74.5	73.8
82.5°	105.8	99.3	92.8	86.3	79.9	74.5	70.4	66.2	62.0	57.8	57.3
85°	59.2	54.3	49.4	44.5	39.7	36.8	36.1	35.4	34.7	34.0	33.4
87.5°	20.7	19.6	18.5	17.3	16.2	15.8	15.9	16.1	16.2	16.3	16.4
90°	2.8	5.0	7.3	9.5	11.7	13.7	15.4	17.0	18.6	20.3	21.5
92.5°	19.7	22.3	24.9	27.4	30.0	31.8	33.0	34.1	35.3	36.4	37.2
95°	55.2	57.0	58.9	60.8	62.6	64.2	65.7	67.1	68.5	69.9	70.6
97.5°	96.5	97.9	99.4	100.8	102.3	103.9	105.6	107.3	108.9	110.6	111.4
100°	128.9	129.7	130.5	131.3	132.1	133.5	135.3	137.1	138.9	140.9	141.2
102.5°	162.7	163.0	163.3	163.7	164.1	165.0	166.7	168.4	170.1	171.7	172.3
105°	214.4	214.7	214.8	215.1	215.2	215.8	216.6	217.4	218.2	219.0	219.7
107.5°	268.7	269.0	269.3	269.5	269.7	269.9	270.1	270.1	270.3	270.4	271.0
110°	305.5	305.9	306.3	306.8	307.2	307.3	307.1	306.9	306.7	306.5	306.1



TEST NUMBER: P332983-927

CATALOG NUMBER: S124RDIP-S1020D1205U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	343.8	344.0	344.0	344.1	344.2	344.0	343.6	343.3	342.9	342.5	342.5
115°	401.2	401.2	401.2	401.2	401.2	401.1	400.7	400.3	399.8	399.4	399.3
117.5°	455.4	455.6	455.7	455.9	456.1	456.0	455.7	455.4	455.1	454.9	454.2
120°	491.5	492.3	493.1	493.9	494.7	494.9	494.2	493.6	493.0	492.4	491.4
122.5°	529.0	529.3	529.7	530.0	530.4	530.4	530.0	529.8	529.5	529.2	528.5
125°	584.4	584.4	584.4	584.4	584.4	584.3	584.2	583.9	583.7	583.5	583.1
127.5°	634.7	635.3	635.9	636.5	637.2	637.3	636.9	636.6	636.3	636.0	635.6
130°	670.0	670.7	671.2	671.8	672.5	672.8	672.8	672.8	672.8	672.8	672.4
132.5°	706.1	706.5	707.0	707.4	707.9	708.1	707.9	707.7	707.6	707.4	706.9
135°	753.8	755.0	756.2	757.5	758.7	759.3	759.3	759.3	759.3	759.3	758.9
137.5°	805.6	806.3	806.8	807.4	807.9	808.4	808.7	809.1	809.4	809.7	809.2
140°	840.3	840.7	841.1	841.5	841.9	842.1	842.1	842.1	842.1	842.1	841.9
142.5°	872.0	872.4	872.7	873.1	873.6	873.7	873.5	873.4	873.2	873.1	873.0
145°	915.8	916.6	917.4	918.2	919.0	919.6	919.7	920.0	920.1	920.4	920.1
147.5°	959.2	960.2	961.2	962.1	963.1	963.5	963.4	963.2	963.1	962.9	962.7
150°	985.7	986.5	987.4	988.2	989.0	989.4	989.4	989.4	989.4	989.4	989.4
152.5°	1010.7	1011.2	1011.7	1012.2	1012.7	1013.0	1013.2	1013.4	1013.5	1013.7	1014.2
155°	1049.2	1049.2	1049.2	1049.2	1049.2	1049.1	1048.9	1048.7	1048.5	1048.3	1049.1
157.5°	1081.6	1081.2	1080.9	1080.5	1080.1	1079.9	1079.9	1079.8	1079.8	1079.7	1080.4
160°	1100.7	1100.6	1100.3	1100.1	1099.9	1099.7	1099.5	1099.3	1099.1	1098.9	1099.5
162.5°	1118.4	1117.8	1117.4	1116.8	1116.3	1115.9	1115.7	1115.6	1115.3	1115.1	1116.2
165°	1142.2	1141.5	1140.9	1140.3	1139.7	1139.2	1138.8	1138.4	1138.0	1137.6	1138.8
167.5°	1160.4	1159.5	1158.6	1157.8	1157.0	1156.5	1156.6	1156.6	1156.7	1156.7	1157.9
170°	1170.7	1169.7	1168.6	1167.6	1166.6	1166.2	1166.4	1166.6	1166.8	1167.0	1168.2
172.5°	1178.1	1177.2	1176.3	1175.4	1174.6	1174.2	1174.3	1174.3	1174.3	1174.4	1175.8
175°	1188.2	1187.2	1186.1	1185.1	1184.1	1183.4	1183.3	1183.0	1182.9	1182.6	1184.1
177.5°	1191.5	1190.6	1189.9	1189.1	1188.2	1187.8	1187.8	1187.8	1187.8	1187.8	1189.0
180°	1190.0	1190.0	1190.0	1190.0	1190.0	1190.0	1190.0	1190.0	1190.0	1190.0	1190.0



TEST NUMBER: P332983-927

CATALOG NUMBER: S124RDIP-S1020D1205U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4
2.5°	1425.1	1427.2	1429.3	1430.4	1430.1	1430.0	1429.7	1429.6
5°	1415.6	1418.0	1420.5	1421.4	1420.9	1420.5	1420.0	1419.5
7.5°	1396.8	1398.3	1399.9	1400.3	1399.5	1398.7	1397.9	1397.1
10°	1379.8	1380.8	1381.7	1381.7	1380.8	1379.8	1378.8	1377.8
12.5°	1358.8	1359.5	1360.0	1359.6	1358.3	1356.9	1355.6	1354.2
15°	1322.2	1321.6	1321.1	1320.0	1318.3	1316.6	1314.9	1313.2
17.5°	1277.9	1276.5	1275.2	1273.2	1270.6	1268.0	1265.4	1262.8
20°	1246.9	1245.0	1243.0	1240.5	1237.3	1234.1	1231.0	1227.8
22.5°	1212.5	1209.6	1206.7	1204.0	1201.3	1198.8	1196.2	1193.7
25°	1157.1	1152.9	1148.8	1145.5	1143.1	1140.7	1138.2	1135.8
27.5°	1100.6	1095.5	1090.4	1086.1	1082.6	1079.0	1075.5	1072.1
30°	1060.1	1054.0	1047.9	1042.9	1039.0	1035.1	1031.3	1027.4
32.5°	1018.7	1011.7	1004.6	999.3	995.5	991.8	988.2	984.4
35°	957.1	948.9	940.6	934.3	929.9	925.5	921.1	916.7
37.5°	891.0	881.8	872.5	865.7	861.3	856.9	852.5	848.2
40°	847.0	836.8	826.6	819.3	814.9	810.5	806.1	801.8
42.5°	803.7	793.3	782.8	775.4	770.8	766.2	761.6	757.1
45°	737.4	725.4	713.5	705.4	701.0	696.6	692.2	687.9
47.5°	670.6	658.2	645.8	637.2	632.4	627.6	622.7	618.0
50°	626.2	614.1	601.9	593.5	588.9	584.2	579.6	575.0
52.5°	582.0	569.7	557.3	548.7	543.9	539.1	534.2	529.5
55°	516.8	504.2	491.5	482.9	478.2	473.6	469.1	464.4
57.5°	453.1	440.3	427.5	419.3	415.7	412.3	408.8	405.3
60°	410.6	397.9	385.3	377.0	373.1	369.2	365.4	361.5
62.5°	368.8	357.0	345.4	337.9	334.9	331.8	328.6	325.5
65°	308.7	298.3	287.8	281.1	278.2	275.3	272.4	269.4
67.5°	253.6	244.6	235.6	229.5	226.2	223.1	219.8	216.7
70°	216.1	208.1	200.1	194.8	192.4	190.0	187.5	185.1
72.5°	182.5	175.7	168.8	164.3	162.0	159.8	157.6	155.3
75°	134.5	128.9	123.3	119.8	118.3	116.8	115.3	113.9
77.5°	95.1	91.9	88.6	86.7	86.3	85.9	85.4	85.0
80°	73.0	72.3	71.5	71.1	70.8	70.6	70.3	70.1
82.5°	56.7	56.2	55.7	55.3	55.1	54.8	54.6	54.3
85°	33.0	32.5	32.0	31.8	31.8	31.8	31.8	31.8
87.5°	16.4	16.5	16.6	16.7	17.0	17.3	17.5	17.8
90°	22.7	23.9	25.2	26.0	26.4	26.8	27.2	27.6
92.5°	37.9	38.7	39.4	39.8	40.2	40.4	40.6	40.9
95°	71.1	71.8	72.4	72.7	72.7	72.7	72.7	72.7
97.5°	112.1	112.8	113.6	113.9	113.9	113.9	113.9	113.9
100°	141.6	142.0	142.4	142.7	142.7	142.7	142.7	142.7
102.5°	172.9	173.5	174.0	174.4	174.6	174.8	174.9	175.1
105°	220.3	220.9	221.5	222.1	222.8	223.3	223.9	224.6
107.5°	271.6	272.1	272.7	273.0	272.9	272.9	272.8	272.8
110°	305.6	305.2	304.8	304.9	305.5	306.2	306.8	307.4



TEST NUMBER: P332983-927

CATALOG NUMBER: S124RDIP-S1020D1205U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	342.4	342.3	342.2	342.2	342.4	342.5	342.6	342.8
115°	399.0	398.8	398.6	398.4	398.2	398.0	397.8	397.6
117.5°	453.4	452.7	452.0	451.5	451.1	450.7	450.3	449.9
120°	490.4	489.3	488.3	488.0	488.4	488.8	489.3	489.6
122.5°	527.8	527.1	526.4	525.7	525.0	524.3	523.5	522.8
125°	582.7	582.3	581.9	581.5	581.1	580.7	580.2	579.8
127.5°	635.2	634.8	634.3	634.0	633.7	633.3	633.0	632.6
130°	671.9	671.5	671.1	670.5	669.7	668.9	668.0	667.3
132.5°	706.5	706.2	705.8	705.4	705.0	704.7	704.4	704.1
135°	758.5	758.0	757.6	757.2	756.5	755.9	755.3	754.7
137.5°	808.7	808.1	807.6	807.4	807.6	807.6	807.8	807.9
140°	841.7	841.5	841.3	841.1	840.9	840.7	840.5	840.3
142.5°	873.0	872.9	872.9	872.8	872.8	872.7	872.7	872.7
145°	920.0	919.7	919.6	919.1	918.5	917.9	917.3	916.7
147.5°	962.6	962.4	962.2	962.0	961.9	961.6	961.4	961.2
150°	989.4	989.4	989.4	989.3	989.0	988.9	988.6	988.5
152.5°	1014.6	1015.2	1015.7	1015.7	1015.1	1014.5	1014.0	1013.5
155°	1050.0	1050.8	1051.5	1051.5	1050.8	1050.0	1049.1	1048.3
157.5°	1081.0	1081.6	1082.2	1082.2	1081.5	1080.8	1080.1	1079.4
160°	1100.1	1100.7	1101.4	1101.1	1100.1	1099.1	1098.1	1097.1
162.5°	1117.3	1118.4	1119.5	1119.6	1118.6	1117.5	1116.5	1115.5
165°	1140.0	1141.2	1142.5	1142.6	1141.9	1141.1	1140.2	1139.4
167.5°	1159.1	1160.4	1161.6	1161.6	1160.3	1159.0	1157.8	1156.5
170°	1169.5	1170.7	1172.0	1171.8	1170.4	1168.9	1167.5	1166.1
172.5°	1177.2	1178.5	1180.0	1180.0	1178.5	1177.0	1175.6	1174.2
175°	1185.5	1186.9	1188.4	1188.4	1186.9	1185.5	1184.1	1182.6
177.5°	1190.1	1191.3	1192.4	1192.3	1191.0	1189.7	1188.4	1187.1
180°	1190.0	1190.0	1190.0	1190.0	1190.0	1190.0	1190.0	1190.0

(END OF REPORT)