

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: P333078-927

Luminaire Tested: **S124RDIW-S1020D470U927-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333078-927
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: S124RDIW-S1020D470U927-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 470 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4594.0 lumens
Efficiency: N/A
Efficacy: 99.4 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: Semi-Direct

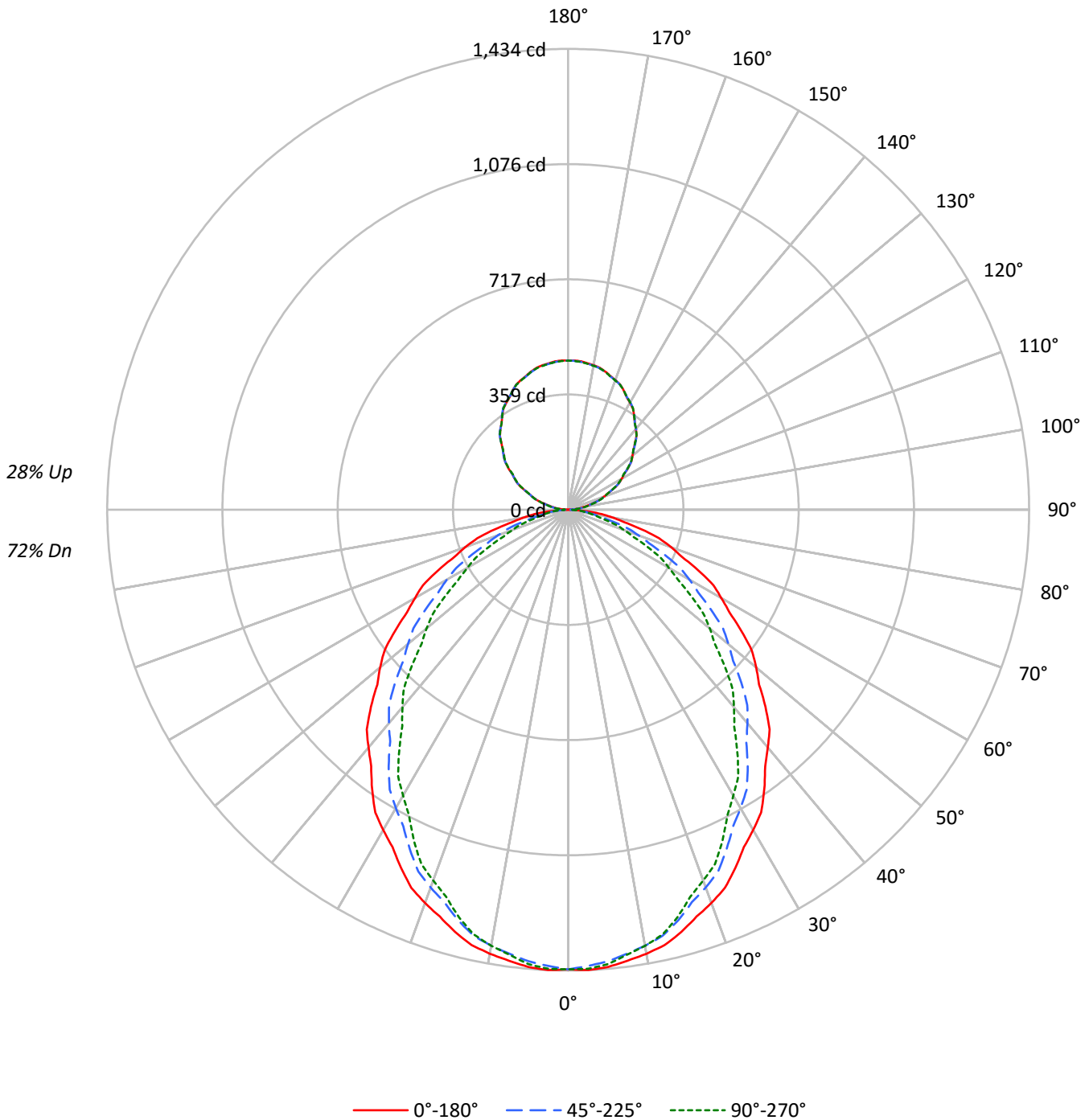
Input Watts (W): 46.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P333078-927

CATALOG NUMBER: S124RDIW-S1020D470U927-4F0-1E-UDD-F1

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	112	112	112	112	107	107	107	107	96	96	96	86	86	86	76	76	76	76	76	76	72	
1	103	99	95	91	98	94	90	87	85	82	80	76	74	72	68	67	65	65	65	65	61	
2	94	87	81	75	89	83	77	72	75	70	66	67	64	61	60	58	56	56	56	56	52	
3	86	77	69	63	81	73	66	61	66	61	56	60	56	52	54	51	48	48	48	48	45	
4	79	68	60	54	75	65	58	52	59	53	48	54	49	45	48	45	41	41	41	41	38	
5	73	61	53	47	69	58	51	45	53	47	42	48	43	39	44	40	36	36	36	36	34	
6	67	55	47	41	64	53	45	40	48	42	37	44	39	35	40	36	32	32	32	32	30	
7	62	50	42	36	59	48	40	35	44	37	33	40	35	31	36	32	29	29	29	29	26	
8	58	46	38	32	55	44	36	31	40	34	29	37	31	28	34	29	26	26	26	26	24	
9	54	42	34	29	51	40	33	28	37	31	27	34	29	25	31	27	23	23	23	23	21	
10	51	38	31	26	48	37	30	25	34	28	24	31	26	23	29	25	21	21	21	21	20	

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



TEST NUMBER: P333078-927

CATALOG NUMBER: S124RDIW-S1020D470U927-4F0-1E-UDD-F1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	134.4	2.9
10°-20°	374.7	8.2
20°-30°	541.1	11.8
30°-40°	613.3	13.4
40°-50°	592.3	12.9
50°-60°	492.5	10.7
60°-70°	340.1	7.4
70°-80°	172.4	3.8
80°-90°	45.6	1.0
90°-100°	30.6	0.7
100°-110°	90.7	2.0
110°-120°	153.9	3.4
120°-130°	203.0	4.4
130°-140°	227.9	5.0
140°-150°	224.0	4.9
150°-160°	188.4	4.1
160°-170°	125.3	2.7
170°-180°	43.9	1.0
0°-30°	1050.1	22.9
0°-40°	1663.5	36.2
0°-60°	2748.2	59.8
0°-90°	3306.3	72.0
90°-120°	275.2	6.0
90°-150°	930.1	20.2
90°-180°	1288.0	28.0
0°-180°	4594.0	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°	1	5	8	10	11	4
95°	22	25	27	28	28	24
105°	84	84	85	87	88	89
115°	156	156	156	155	155	154
125°	228	228	228	227	226	203
135°	294	296	296	295	294	227
145°	357	359	359	359	358	223
155°	409	409	409	410	409	188
165°	445	444	444	446	444	126
175°	463	462	461	464	461	44
180°	464	464	464	464	464	



TEST NUMBER: P333078-927

CATALOG NUMBER: S124RDIW-S1020D470U927-4F0-1E-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°	20.4	19.0	17.6	16.2	14.8	14.1	14.0	13.9	13.9	13.9	13.8
90°	1.1	2.0	2.9	3.7	4.6	5.3	6.0	6.7	7.3	7.9	8.4
92.5°	7.7	8.7	9.7	10.7	11.7	12.4	12.9	13.3	13.8	14.2	14.5
95°	21.5	22.3	23.0	23.7	24.4	25.0	25.6	26.1	26.7	27.3	27.5
97.5°	37.6	38.2	38.7	39.4	39.9	40.6	41.2	41.8	42.5	43.2	43.4
100°	50.2	50.5	50.9	51.2	51.6	52.0	52.8	53.5	54.2	54.9	55.1
102.5°	63.5	63.6	63.7	63.8	64.0	64.4	65.0	65.7	66.3	67.0	67.2
105°	83.7	83.7	83.8	83.9	84.0	84.1	84.4	84.8	85.1	85.4	85.6
107.5°	104.8	104.9	105.0	105.1	105.2	105.3	105.4	105.4	105.4	105.4	105.7
110°	119.1	119.3	119.5	119.6	119.8	119.9	119.8	119.7	119.6	119.5	119.4



TEST NUMBER: P333078-927

CATALOG NUMBER: S124RDIW-S1020D470U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	134.1	134.1	134.2	134.2	134.3	134.2	134.0	133.9	133.7	133.6	133.6
115°	156.5	156.5	156.5	156.5	156.5	156.5	156.3	156.1	156.0	155.8	155.7
117.5°	177.6	177.7	177.8	177.8	177.8	177.8	177.8	177.6	177.5	177.4	177.1
120°	191.7	192.0	192.3	192.7	193.0	193.0	192.7	192.5	192.3	192.0	191.6
122.5°	206.4	206.4	206.6	206.7	206.8	206.8	206.8	206.6	206.5	206.4	206.1
125°	227.9	227.9	227.9	227.9	227.9	227.9	227.8	227.8	227.7	227.6	227.4
127.5°	247.6	247.8	248.0	248.3	248.5	248.6	248.4	248.3	248.2	248.0	247.9
130°	261.3	261.6	261.8	262.1	262.3	262.4	262.4	262.4	262.4	262.4	262.2
132.5°	275.4	275.6	275.8	275.9	276.1	276.2	276.1	276.0	276.0	275.9	275.8
135°	294.0	294.5	294.9	295.4	295.9	296.1	296.1	296.1	296.1	296.1	296.0
137.5°	314.3	314.5	314.7	314.9	315.1	315.3	315.4	315.6	315.7	315.8	315.6
140°	327.7	327.9	328.0	328.2	328.4	328.4	328.4	328.4	328.4	328.4	328.4
142.5°	340.1	340.2	340.4	340.6	340.7	340.8	340.7	340.6	340.6	340.5	340.5
145°	357.2	357.5	357.8	358.1	358.5	358.6	358.7	358.8	358.9	358.9	358.9
147.5°	374.1	374.5	374.9	375.3	375.7	375.8	375.7	375.7	375.7	375.6	375.5
150°	384.4	384.8	385.1	385.4	385.7	385.9	385.9	385.9	385.9	385.9	385.9
152.5°	394.2	394.4	394.6	394.8	395.0	395.1	395.1	395.2	395.3	395.4	395.5
155°	409.2	409.2	409.2	409.2	409.2	409.2	409.1	409.0	408.9	408.8	409.2
157.5°	421.8	421.7	421.6	421.4	421.3	421.2	421.2	421.2	421.1	421.1	421.4
160°	429.4	429.3	429.2	429.1	429.0	429.0	428.9	428.8	428.7	428.6	428.9
162.5°	436.3	436.0	435.8	435.6	435.4	435.2	435.1	435.1	435.0	434.9	435.4
165°	445.4	445.2	445.0	444.7	444.5	444.3	444.2	444.0	443.9	443.7	444.2
167.5°	452.6	452.3	451.9	451.6	451.2	451.1	451.1	451.1	451.1	451.1	451.6
170°	456.6	456.2	455.8	455.4	455.0	454.9	455.0	455.0	455.1	455.2	455.7
172.5°	459.5	459.1	458.8	458.5	458.1	458.0	458.0	458.0	458.0	458.0	458.6
175°	463.4	463.0	462.6	462.2	461.8	461.6	461.5	461.4	461.4	461.3	461.8
177.5°	464.7	464.4	464.1	463.7	463.4	463.3	463.3	463.3	463.3	463.3	463.7
180°	464.1	464.1	464.1	464.1	464.1	464.1	464.1	464.1	464.1	464.1	464.1



TEST NUMBER: P333078-927

CATALOG NUMBER: S124RDIW-S1020D470U927-4F0-1E-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°	13.6	13.5	13.5	13.5	13.7	13.9	14.2	14.4
90°	8.9	9.3	9.8	10.1	10.3	10.5	10.6	10.8
92.5°	14.8	15.1	15.4	15.5	15.7	15.8	15.8	15.9
95°	27.7	28.0	28.2	28.4	28.4	28.4	28.4	28.4
97.5°	43.7	44.0	44.3	44.4	44.4	44.4	44.4	44.4
100°	55.2	55.4	55.5	55.6	55.6	55.6	55.6	55.6
102.5°	67.4	67.7	67.9	68.0	68.0	68.1	68.2	68.3
105°	86.0	86.2	86.4	86.7	86.9	87.1	87.4	87.6
107.5°	105.9	106.2	106.4	106.5	106.5	106.5	106.4	106.4
110°	119.2	119.1	118.9	118.9	119.1	119.4	119.6	119.9



TEST NUMBER: P333078-927

CATALOG NUMBER: S124RDIW-S1020D470U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	133.6	133.5	133.5	133.5	133.6	133.6	133.6	133.6
115°	155.7	155.6	155.5	155.4	155.3	155.3	155.2	155.1
117.5°	176.9	176.6	176.3	176.1	175.9	175.8	175.6	175.5
120°	191.2	190.8	190.4	190.4	190.5	190.7	190.8	191.0
122.5°	205.9	205.6	205.3	205.0	204.8	204.5	204.1	203.9
125°	227.3	227.1	227.0	226.8	226.6	226.5	226.3	226.2
127.5°	247.7	247.6	247.4	247.2	247.2	247.0	246.9	246.8
130°	262.1	261.9	261.7	261.5	261.2	260.9	260.5	260.2
132.5°	275.6	275.4	275.3	275.1	275.0	274.9	274.7	274.6
135°	295.8	295.6	295.5	295.3	295.1	294.9	294.6	294.4
137.5°	315.4	315.2	315.0	314.9	315.0	315.0	315.1	315.1
140°	328.3	328.2	328.1	328.0	328.0	327.9	327.8	327.7
142.5°	340.5	340.5	340.5	340.4	340.4	340.4	340.4	340.4
145°	358.8	358.7	358.6	358.5	358.2	358.0	357.7	357.5
147.5°	375.4	375.3	375.3	375.3	375.2	375.1	375.0	374.9
150°	385.9	385.9	385.9	385.9	385.8	385.7	385.6	385.6
152.5°	395.8	395.9	396.2	396.1	395.9	395.7	395.5	395.3
155°	409.5	409.8	410.1	410.1	409.8	409.5	409.2	408.8
157.5°	421.6	421.8	422.1	422.1	421.8	421.5	421.3	421.0
160°	429.1	429.4	429.6	429.5	429.1	428.7	428.3	427.9
162.5°	435.8	436.3	436.7	436.7	436.3	435.9	435.5	435.1
165°	444.7	445.1	445.6	445.7	445.4	445.0	444.7	444.4
167.5°	452.1	452.6	453.0	453.0	452.6	452.1	451.5	451.1
170°	456.1	456.6	457.1	457.0	456.5	455.9	455.3	454.8
172.5°	459.1	459.7	460.2	460.2	459.6	459.1	458.5	458.0
175°	462.4	463.0	463.5	463.5	463.0	462.4	461.8	461.3
177.5°	464.2	464.6	465.1	465.0	464.5	464.1	463.5	463.0
180°	464.1	464.1	464.1	464.1	464.1	464.1	464.1	464.1

(END OF REPORT)