

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: P333077-927

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333077-927
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-S1020D470U927-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 470 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4791.1 lumens
Efficiency: N/A
Efficacy: 103.7 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

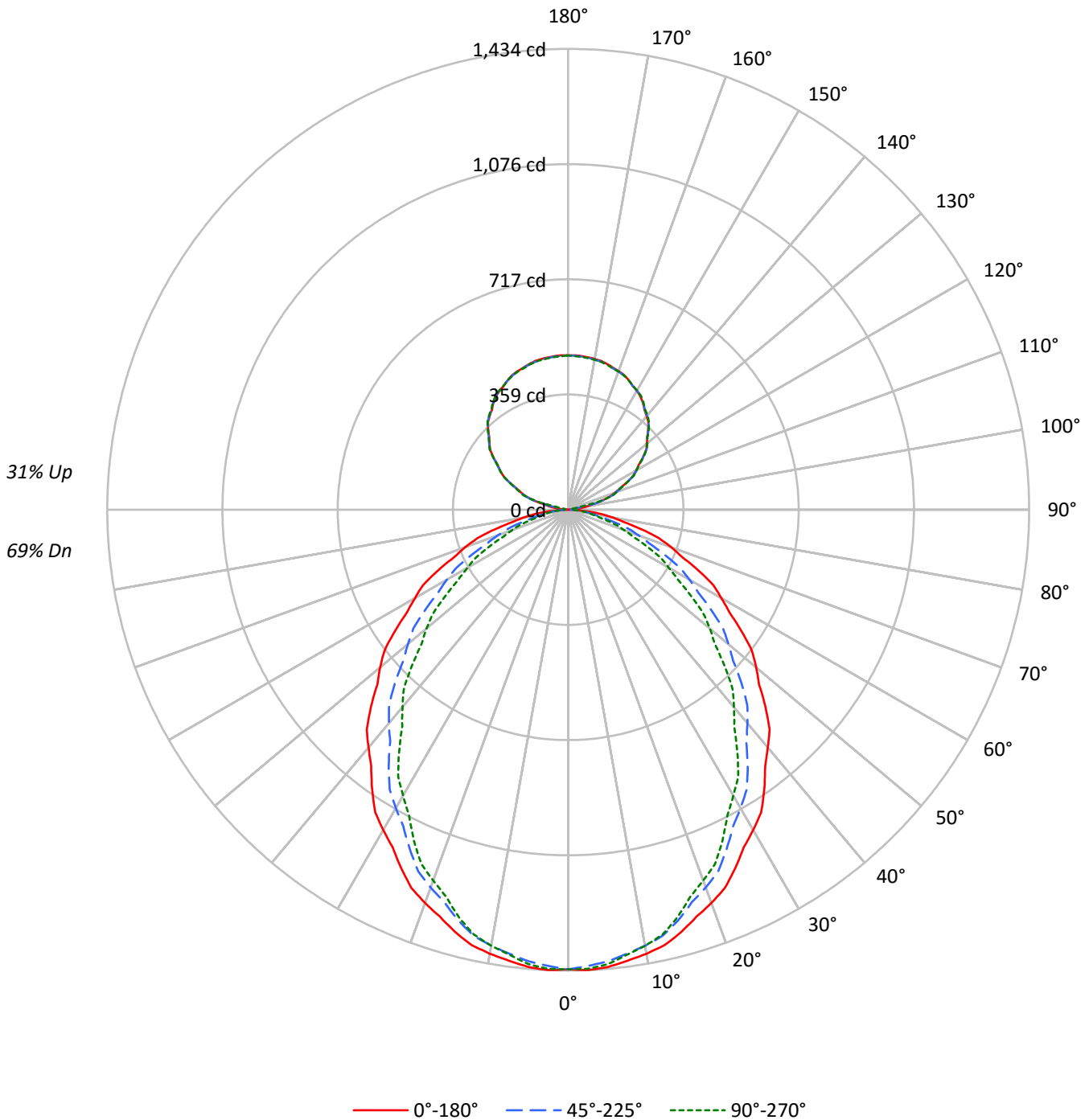
Input Watts (W): 46.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0		
RCR																										
0	112	112	112	112	105	105	105	105	94	94	94	83	83	83	74	74	74	69								
1	102	98	94	91	97	93	89	86	83	80	78	74	72	70	66	64	63	59								
2	94	86	80	75	88	82	76	72	73	69	65	65	62	59	58	56	54	50								
3	86	76	69	63	81	72	66	60	65	60	55	58	54	51	52	49	46	43								
4	79	68	60	54	74	64	57	51	58	52	48	52	47	44	47	43	40	37								
5	72	61	52	46	68	58	50	45	52	46	41	47	42	38	42	38	35	32								
6	67	55	46	40	63	52	44	39	47	41	36	43	38	34	38	34	31	28								
7	62	49	41	36	58	47	40	35	43	37	32	39	34	30	35	31	28	25								
8	58	45	37	32	54	43	36	31	39	33	29	36	31	27	32	28	25	23								
9	54	41	34	29	51	40	33	28	36	30	26	33	28	24	30	26	23	21								
10	50	38	31	26	48	36	30	25	33	28	24	31	26	22	28	24	21	19								

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	2.8
10°-20°	374.7	7.8
20°-30°	541.1	11.3
30°-40°	613.3	12.8
40°-50°	592.3	12.4
50°-60°	492.5	10.3
60°-70°	340.1	7.1
70°-80°	172.4	3.6
80°-90°	45.6	1.0
90°-100°	16.4	0.3
100°-110°	104.7	2.2
110°-120°	200.2	4.2
120°-130°	254.2	5.3
130°-140°	272.0	5.7
140°-150°	254.3	5.3
150°-160°	205.1	4.3
160°-170°	132.3	2.8
170°-180°	45.6	1.0
0°-30°	1050.1	21.9
0°-40°	1663.5	34.7
0°-60°	2748.2	57.4
0°-90°	3306.3	69.0
90°-120°	321.3	6.7
90°-150°	1101.8	23.0
90°-180°	1485.0	31.0
0°-180°	4791.1	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°	1	5	8	10	11	4
95°	20	8	8	10	10	25
105°	108	110	112	114	102	113
115°	202	203	202	203	203	199
125°	284	285	284	285	286	253
135°	352	352	353	354	354	271
145°	406	407	407	407	408	253
155°	445	445	444	445	444	205
165°	469	468	468	470	467	133
175°	480	478	478	481	477	46
180°	480	480	480	480	480	



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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°	4.5	4.6	4.6	4.7	4.8	5.1	5.7	6.3	7.0	7.6	8.1
95°	19.7	17.0	14.3	11.6	8.9	7.6	7.7	7.8	7.8	7.9	8.4
97.5°	41.9	43.6	45.3	47.0	48.7	45.1	36.2	27.3	18.4	9.5	9.5
100°	58.9	60.3	61.8	63.2	64.6	59.8	48.8	37.8	26.8	15.8	14.4
102.5°	77.9	78.9	79.9	81.0	82.1	81.8	80.4	79.0	77.6	76.1	61.5
105°	108.1	108.5	109.0	109.5	110.0	110.4	110.8	111.2	111.6	112.0	112.7
107.5°	136.2	136.4	136.7	136.9	137.1	137.5	138.0	138.6	139.1	139.7	140.0
110°	155.1	155.3	155.6	155.8	156.1	156.4	156.9	157.4	157.9	158.4	158.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	173.5	173.9	174.4	174.8	175.2	175.5	175.8	175.9	176.2	176.4	176.4
115°	201.8	202.0	202.2	202.5	202.7	202.8	202.7	202.6	202.6	202.5	202.6
117.5°	227.3	227.6	227.9	228.2	228.5	228.8	228.9	229.1	229.3	229.5	229.4
120°	244.5	244.8	245.1	245.4	245.7	245.9	245.8	245.7	245.7	245.6	245.7
122.5°	260.5	260.8	260.9	261.2	261.3	261.5	261.6	261.7	261.8	262.0	262.1
125°	283.6	283.9	284.2	284.6	284.9	284.9	284.8	284.6	284.5	284.3	284.6
127.5°	305.5	305.5	305.6	305.7	305.8	306.0	306.3	306.7	307.1	307.4	307.4
130°	319.5	319.6	319.7	319.8	319.9	320.0	320.3	320.5	320.8	321.0	321.1
132.5°	332.5	332.6	332.7	332.9	333.0	333.3	333.6	333.8	334.1	334.5	334.5
135°	351.8	351.7	351.6	351.6	351.5	351.6	352.0	352.3	352.6	352.9	353.1
137.5°	369.0	369.0	369.1	369.1	369.2	369.3	369.6	370.0	370.3	370.7	370.9
140°	380.2	380.3	380.5	380.6	380.8	381.0	381.1	381.4	381.5	381.7	381.9
142.5°	390.2	390.5	390.9	391.1	391.4	391.6	391.7	391.8	391.9	392.0	392.1
145°	405.7	405.9	406.2	406.4	406.6	406.8	406.8	406.8	406.8	406.8	406.9
147.5°	418.0	418.4	418.8	419.3	419.8	419.9	419.9	419.8	419.7	419.6	419.7
150°	426.9	427.2	427.5	427.9	428.2	428.3	428.2	428.1	428.0	427.9	427.9
152.5°	434.4	434.6	434.8	435.1	435.4	435.4	435.3	435.1	435.0	434.8	435.0
155°	444.8	444.9	445.0	445.0	445.1	445.0	444.8	444.6	444.3	444.1	444.4
157.5°	453.7	453.6	453.5	453.5	453.4	453.3	453.0	452.7	452.5	452.3	452.7
160°	458.8	458.6	458.4	458.1	457.9	457.7	457.6	457.6	457.5	457.4	457.9
162.5°	463.4	463.1	462.8	462.5	462.2	462.0	461.9	461.8	461.8	461.7	462.2
165°	469.2	468.8	468.4	468.0	467.6	467.5	467.5	467.5	467.5	467.5	468.1
167.5°	473.8	473.4	473.0	472.6	472.1	471.9	471.9	471.8	471.8	471.7	472.5
170°	476.4	475.9	475.5	475.0	474.5	474.3	474.4	474.4	474.5	474.6	475.2
172.5°	478.2	477.7	477.2	476.7	476.3	476.0	476.1	476.2	476.3	476.3	477.0
175°	480.0	479.5	479.0	478.6	478.1	477.9	478.0	478.1	478.2	478.2	479.0
177.5°	480.9	480.5	480.0	479.5	479.1	479.0	479.0	479.2	479.3	479.4	479.9
180°	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0



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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°	8.6	9.0	9.5	9.7	9.8	9.8	9.9	9.9
95°	8.9	9.3	9.8	10.1	10.1	10.2	10.3	10.4
97.5°	9.6	9.6	9.7	9.7	9.8	9.9	10.0	10.1
100°	13.1	11.7	10.4	9.7	9.8	9.9	10.0	10.1
102.5°	46.8	32.2	17.6	10.3	10.3	10.3	10.3	10.4
105°	113.4	114.2	114.9	113.8	110.9	108.1	105.2	102.3
107.5°	140.4	140.7	141.1	141.4	141.7	142.0	142.3	142.6
110°	158.7	158.8	159.0	159.1	159.4	159.6	159.9	160.1



TEST NUMBER: P333077-927

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	176.3	176.3	176.3	176.4	176.7	177.1	177.4	177.6
115°	202.8	203.0	203.1	203.2	203.2	203.2	203.2	203.2
117.5°	229.4	229.4	229.3	229.3	229.3	229.3	229.3	229.2
120°	245.9	246.1	246.2	246.2	246.1	245.9	245.7	245.6
122.5°	262.1	262.2	262.3	262.3	262.1	262.0	261.8	261.7
125°	284.8	285.0	285.3	285.4	285.5	285.6	285.7	285.7
127.5°	307.4	307.3	307.3	307.2	307.1	307.0	307.0	307.0
130°	321.2	321.2	321.3	321.3	321.3	321.3	321.3	321.3
132.5°	334.6	334.7	334.8	334.8	334.7	334.7	334.6	334.5
135°	353.2	353.4	353.6	353.7	353.9	354.0	354.2	354.3
137.5°	371.1	371.2	371.5	371.5	371.5	371.4	371.4	371.3
140°	382.1	382.4	382.6	382.8	382.9	382.9	383.0	383.1
142.5°	392.3	392.5	392.7	392.8	392.8	392.8	392.8	392.8
145°	406.9	407.0	407.1	407.2	407.3	407.5	407.7	407.8
147.5°	419.8	419.8	419.9	419.9	420.0	420.1	420.2	420.3
150°	427.9	427.9	427.9	428.0	428.1	428.2	428.3	428.3
152.5°	435.1	435.2	435.4	435.4	435.4	435.3	435.2	435.2
155°	444.7	445.0	445.4	445.4	445.2	445.0	444.7	444.5
157.5°	453.0	453.4	453.8	453.8	453.4	453.0	452.7	452.3
160°	458.4	458.8	459.3	459.3	458.8	458.4	457.9	457.4
162.5°	462.6	463.1	463.6	463.6	463.0	462.5	461.9	461.4
165°	468.7	469.4	470.0	469.9	469.2	468.5	467.8	467.1
167.5°	473.2	473.9	474.6	474.5	473.7	472.9	472.1	471.3
170°	475.9	476.5	477.2	477.1	476.3	475.5	474.7	473.9
172.5°	477.6	478.2	478.9	478.8	477.9	477.1	476.2	475.3
175°	479.7	480.4	481.1	480.9	480.0	479.0	478.1	477.1
177.5°	480.5	480.9	481.5	481.3	480.6	479.8	479.0	478.3
180°	480.0	480.0	480.0	480.0	480.0	480.0	480.0	480.0

(END OF REPORT)