

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: P332737-940

Luminaire Tested: **S124DIW-S350D1340U940-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332737-940  
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: S124DIW-S350D1340U940-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1340 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6139.6 lumens  
Efficiency: N/A  
Efficacy: 131.8 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: Semi-Indirect

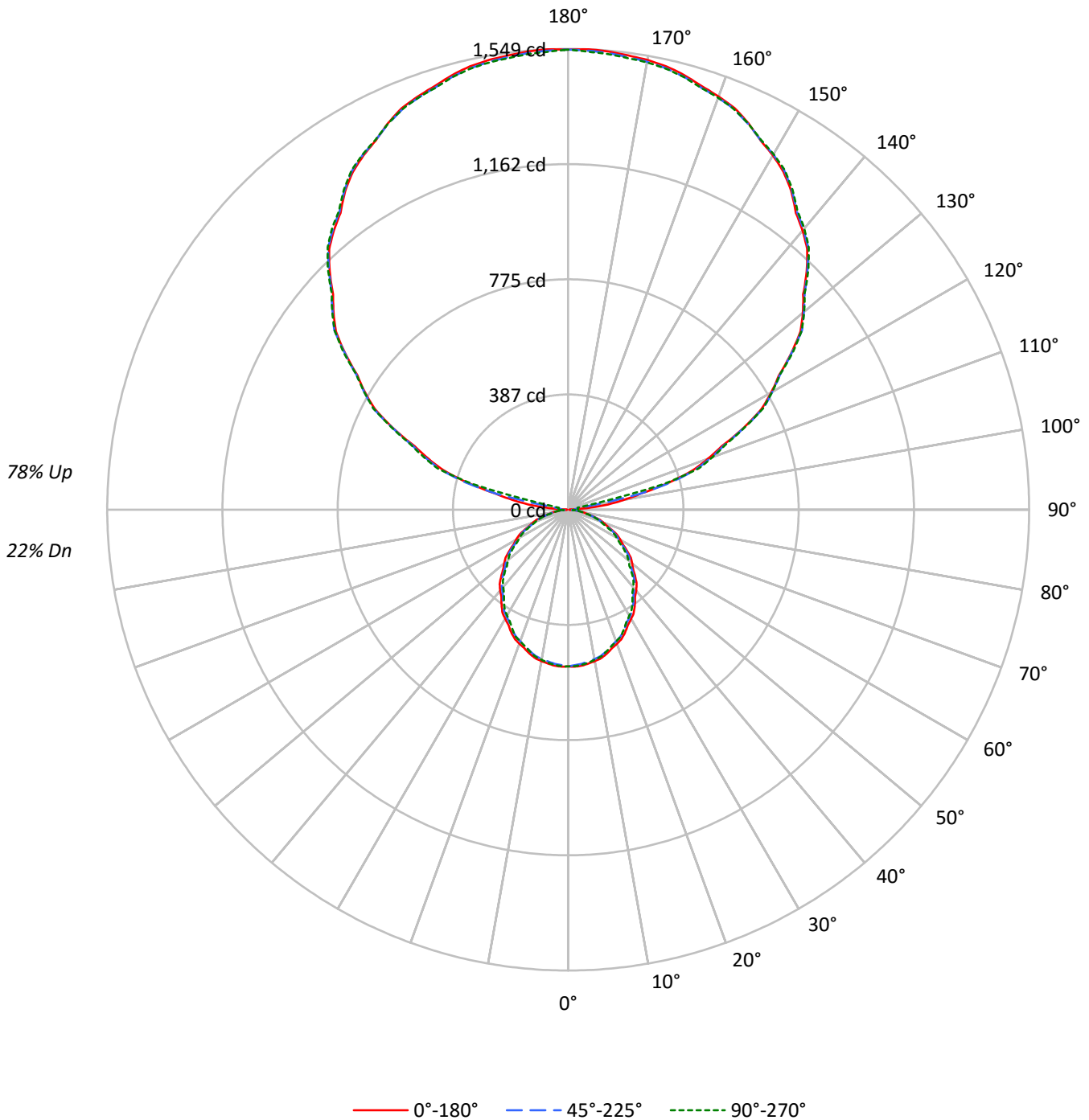
Input Watts (W): 46.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	100	100	100	100	89	89	89	89	68	68	68	48	48	48	30	30	30	22
1	92	87	84	80	81	78	74	72	59	57	55	42	41	40	27	26	26	19
2	83	76	70	65	74	68	63	59	52	49	46	37	35	33	24	22	22	16
3	76	67	60	54	67	60	54	49	46	42	38	33	30	28	21	19	18	13
4	69	59	52	46	61	53	46	41	40	36	33	29	26	24	19	17	16	11
5	63	52	45	39	56	47	40	35	36	31	28	26	23	21	17	15	14	10
6	58	47	39	34	51	42	35	30	32	28	24	23	20	18	15	13	12	9
7	54	42	35	29	48	38	31	26	29	25	21	21	18	16	14	12	11	8
8	50	38	31	26	44	34	28	23	26	22	19	19	16	14	13	11	9	7
9	46	35	27	23	41	31	25	21	24	20	16	18	15	12	12	10	9	6
10	43	32	25	20	38	28	22	18	22	18	15	16	13	11	11	9	8	6

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4252	4252	4252
5°	4265	4214	4245
10°	4238	4180	4200
15°	4187	4120	4131
20°	4119	4046	4050
25°	4041	3963	3951
30°	3947	3864	3828
35°	3847	3761	3710
40°	3744	3643	3577
45°	3639	3528	3460
50°	3520	3425	3318
55°	3392	3291	3184
60°	3265	3142	3047
65°	3121	2999	2879
70°	2960	2809	2700
75°	2711	2583	2514
80°	2413	2315	2255
85°	2112	2029	1991



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	49.6	0.8
10°-20°	139.8	2.3
20°-30°	205.7	3.4
30°-40°	239.2	3.9
40°-50°	239.2	3.9
50°-60°	209.2	3.4
60°-70°	155.4	2.5
70°-80°	88.3	1.4
80°-90°	29.9	0.5
90°-100°	52.9	0.9
100°-110°	337.2	5.5
110°-120°	645.1	10.5
120°-130°	818.9	13.3
130°-140°	876.2	14.3
140°-150°	819.3	13.3
150°-160°	660.7	10.8
160°-170°	426.2	6.9
170°-180°	146.9	2.4
0°-30°	395.1	6.4
0°-40°	634.2	10.3
0°-60°	1082.6	17.6
0°-90°	1356.2	22.1
90°-120°	1035.2	16.9
90°-150°	3549.6	57.8
90°-180°	4783.0	77.9
0°-180°	6139.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	527	527	527	527	527	
5°	526	524	520	524	524	50
15°	501	499	493	495	494	141
25°	454	451	445	445	444	209
35°	390	387	382	379	376	244
45°	319	316	309	305	303	246
55°	241	240	234	229	226	216
65°	163	161	157	153	151	162
75°	87	85	83	81	81	92
85°	23	23	22	22	22	25
90°	4	16	25	32	35	4
95°	64	26	25	32	34	82
105°	348	355	361	368	330	364
115°	650	653	652	654	655	639
125°	914	918	916	919	921	815
135°	1134	1133	1137	1139	1142	873
145°	1307	1310	1310	1312	1314	816
155°	1433	1434	1431	1435	1432	660
165°	1512	1506	1506	1514	1505	427
175°	1546	1540	1541	1550	1537	147
180°	1546	1546	1546	1546	1546	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	526.7	526.7	526.7	526.7	526.7	526.7	526.7	526.7	526.7	526.7	526.7
2.5°	528.1	527.9	527.6	527.4	527.2	526.6	525.8	525.0	524.2	523.3	524.1
5°	526.3	525.9	525.6	525.2	524.9	524.1	523.1	522.1	521.0	520.0	521.0
7.5°	521.5	521.0	520.7	520.3	520.0	519.2	518.0	516.9	515.8	514.6	515.4
10°	517.0	516.7	516.3	515.9	515.6	514.8	513.5	512.3	511.1	509.9	510.6
12.5°	511.3	511.0	510.6	510.1	509.8	509.0	507.7	506.4	505.1	503.8	504.6
15°	501.0	500.6	500.2	499.9	499.5	498.6	497.2	495.8	494.4	493.0	493.6
17.5°	488.6	488.1	487.7	487.2	486.7	485.8	484.5	483.1	481.8	480.5	480.8
20°	479.5	479.0	478.6	478.0	477.6	476.7	475.3	473.9	472.4	471.0	471.4
22.5°	469.7	469.0	468.4	467.8	467.2	466.2	464.8	463.4	462.0	460.6	461.1
25°	453.7	453.1	452.5	451.7	451.1	450.1	448.8	447.5	446.2	444.9	445.0
27.5°	435.5	434.8	434.2	433.5	432.8	431.9	430.6	429.4	428.2	427.0	426.8
30°	423.4	422.6	421.9	421.1	420.4	419.4	418.1	416.9	415.7	414.5	414.1
32.5°	410.5	409.8	409.1	408.5	407.8	406.8	405.6	404.2	403.0	401.6	401.2
35°	390.4	389.8	389.1	388.4	387.8	386.8	385.5	384.1	382.9	381.6	380.9
37.5°	369.3	368.6	368.0	367.5	366.8	365.9	364.4	363.0	361.6	360.2	359.4
40°	355.3	354.6	353.9	353.1	352.4	351.3	349.9	348.5	347.1	345.7	344.7
42.5°	340.5	340.1	339.7	339.2	338.8	337.7	336.2	334.6	333.1	331.5	330.4
45°	318.7	318.0	317.4	316.7	316.0	315.0	313.4	311.9	310.5	309.0	307.9
47.5°	295.8	295.3	294.9	294.4	294.0	293.1	291.7	290.3	288.9	287.5	286.3
50°	280.3	279.9	279.6	279.1	278.7	277.9	276.6	275.3	273.9	272.7	271.3
52.5°	265.1	264.6	264.1	263.7	263.2	262.3	260.9	259.6	258.2	256.8	255.7
55°	241.0	240.8	240.4	240.1	239.9	239.1	237.7	236.5	235.1	233.8	232.7
57.5°	218.0	217.8	217.4	217.1	216.8	216.0	214.6	213.4	212.0	210.8	209.7
60°	202.2	201.7	201.3	200.7	200.3	199.5	198.2	197.0	195.8	194.6	193.8
62.5°	186.6	186.3	185.8	185.5	185.0	184.2	182.9	181.6	180.3	179.1	178.3
65°	163.4	162.9	162.4	161.9	161.5	160.8	159.8	158.9	157.9	157.0	156.0
67.5°	139.9	139.5	139.0	138.6	138.1	137.5	136.6	135.7	134.8	133.8	133.0
70°	125.4	124.7	124.0	123.4	122.7	122.0	121.3	120.6	119.8	119.0	118.2
72.5°	109.9	109.1	108.5	107.9	107.2	106.6	105.9	105.4	104.8	104.2	103.5
75°	86.9	86.5	86.1	85.5	85.1	84.6	84.2	83.6	83.2	82.8	82.4
77.5°	65.1	64.9	64.6	64.5	64.3	63.9	63.6	63.1	62.7	62.3	62.2
80°	51.9	51.6	51.4	51.1	50.8	50.6	50.4	50.2	50.0	49.8	49.6
82.5°	39.1	39.0	38.8	38.7	38.5	38.4	38.4	38.4	38.3	38.3	38.3
85°	22.8	22.8	22.8	22.8	22.8	22.7	22.5	22.3	22.1	21.9	21.9
87.5°	9.5	10.0	10.4	11.0	11.4	11.9	12.2	12.5	12.8	13.2	13.5
90°	3.5	6.3	9.1	11.9	14.8	17.2	19.3	21.3	23.4	25.4	27.0
92.5°	14.5	14.7	14.9	15.1	15.2	16.3	18.4	20.4	22.5	24.5	26.0
95°	63.6	54.8	46.1	37.4	28.6	24.4	24.7	25.0	25.1	25.4	27.0
97.5°	135.1	140.5	146.0	151.4	156.9	145.3	116.5	87.9	59.2	30.5	30.7
100°	189.7	194.3	198.9	203.6	208.2	192.8	157.3	121.8	86.3	50.9	46.5
102.5°	250.7	254.1	257.5	260.9	264.3	263.7	259.0	254.5	249.9	245.2	198.0
105°	348.1	349.6	351.2	352.8	354.3	355.7	357.0	358.3	359.5	360.9	363.2
107.5°	438.5	439.3	440.1	440.9	441.7	442.9	444.7	446.4	448.2	450.0	451.0
110°	499.6	500.4	501.2	501.9	502.7	503.9	505.4	506.9	508.5	510.1	510.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	558.8	560.3	561.7	563.0	564.5	565.4	566.2	566.9	567.7	568.4	568.3
115°	650.0	650.8	651.6	652.3	653.1	653.4	653.1	652.8	652.6	652.3	652.8
117.5°	732.1	733.2	734.1	735.2	736.2	737.0	737.6	738.2	738.7	739.3	739.2
120°	787.6	788.6	789.7	790.8	791.8	792.1	791.9	791.7	791.4	791.1	791.7
122.5°	839.5	840.1	840.7	841.3	842.0	842.4	842.8	843.1	843.5	843.8	844.2
125°	913.7	914.7	915.8	916.8	917.8	918.1	917.6	917.0	916.5	916.1	916.8
127.5°	984.0	984.3	984.5	984.8	985.1	985.8	986.9	988.1	989.4	990.5	990.3
130°	1029.4	1029.7	1029.9	1030.1	1030.4	1030.9	1031.7	1032.4	1033.2	1034.0	1034.3
132.5°	1071.0	1071.5	1071.9	1072.4	1072.8	1073.6	1074.6	1075.5	1076.5	1077.5	1077.7
135°	1133.5	1133.2	1132.9	1132.7	1132.5	1132.8	1133.8	1134.9	1136.0	1136.9	1137.5
137.5°	1188.7	1188.8	1188.9	1189.1	1189.2	1189.8	1190.9	1192.0	1193.2	1194.3	1194.9
140°	1224.9	1225.4	1225.8	1226.4	1226.9	1227.4	1227.9	1228.4	1229.0	1229.5	1230.2
142.5°	1257.2	1258.1	1259.1	1260.0	1261.0	1261.5	1261.9	1262.1	1262.5	1262.8	1263.4
145°	1307.0	1307.7	1308.5	1309.3	1310.0	1310.5	1310.5	1310.5	1310.5	1310.5	1310.7
147.5°	1346.5	1347.9	1349.4	1350.9	1352.3	1352.9	1352.6	1352.4	1352.1	1351.8	1352.0
150°	1375.2	1376.3	1377.2	1378.3	1379.3	1379.7	1379.5	1379.2	1378.9	1378.7	1378.7
152.5°	1399.3	1400.1	1400.9	1401.7	1402.6	1402.8	1402.3	1401.8	1401.3	1400.9	1401.3
155°	1433.1	1433.2	1433.5	1433.8	1434.0	1433.8	1433.1	1432.3	1431.5	1430.7	1431.7
157.5°	1461.5	1461.3	1461.2	1461.0	1460.9	1460.4	1459.5	1458.6	1457.8	1456.9	1458.2
160°	1478.1	1477.4	1476.6	1475.8	1475.1	1474.5	1474.3	1474.0	1473.7	1473.6	1475.1
162.5°	1492.9	1491.9	1491.0	1490.0	1489.1	1488.4	1488.2	1487.9	1487.6	1487.4	1488.9
165°	1511.7	1510.4	1509.1	1507.8	1506.5	1505.9	1505.9	1505.9	1505.9	1505.9	1508.0
167.5°	1526.5	1525.2	1523.8	1522.5	1521.2	1520.4	1520.3	1520.1	1519.9	1519.7	1522.1
170°	1534.8	1533.3	1531.7	1530.2	1528.7	1528.0	1528.2	1528.5	1528.7	1529.0	1531.1
172.5°	1540.3	1538.8	1537.3	1535.7	1534.2	1533.6	1533.8	1534.1	1534.3	1534.5	1536.6
175°	1546.4	1544.8	1543.3	1541.8	1540.2	1539.5	1539.8	1540.1	1540.3	1540.6	1542.9
177.5°	1549.2	1547.7	1546.2	1544.8	1543.4	1542.8	1543.3	1543.7	1544.1	1544.5	1546.1
180°	1546.4	1546.4	1546.4	1546.4	1546.4	1546.4	1546.4	1546.4	1546.4	1546.4	1546.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	526.7	526.7	526.7	526.7	526.7	526.7	526.7	526.7
2.5°	524.9	525.7	526.4	526.7	526.6	526.6	526.5	526.4
5°	522.1	523.1	524.1	524.5	524.3	524.1	524.0	523.8
7.5°	516.2	517.1	517.9	518.3	518.2	518.0	517.9	517.8
10°	511.4	512.1	512.9	513.2	513.0	512.7	512.6	512.4
12.5°	505.4	506.2	507.1	507.4	507.1	506.8	506.6	506.3
15°	494.1	494.6	495.3	495.3	495.1	494.8	494.5	494.3
17.5°	481.2	481.5	481.9	482.0	481.8	481.6	481.4	481.3
20°	471.6	471.9	472.2	472.3	472.0	471.8	471.6	471.4
22.5°	461.5	462.1	462.6	462.7	462.4	462.0	461.6	461.4
25°	445.1	445.1	445.2	445.1	444.7	444.3	444.0	443.6
27.5°	426.5	426.3	426.1	425.7	425.3	424.8	424.3	423.8
30°	413.8	413.4	413.0	412.6	412.1	411.6	411.2	410.7
32.5°	400.7	400.3	399.8	399.4	399.0	398.4	398.0	397.5
35°	380.2	379.6	378.9	378.4	377.9	377.5	376.9	376.5
37.5°	358.7	358.0	357.3	356.7	356.1	355.4	354.8	354.2
40°	343.8	342.9	342.0	341.3	340.7	340.3	339.8	339.4
42.5°	329.3	328.2	327.2	326.5	326.1	325.8	325.5	325.2
45°	306.9	305.9	304.9	304.2	303.9	303.6	303.4	303.1
47.5°	285.2	284.0	282.9	282.0	281.2	280.5	279.8	279.1
50°	270.0	268.8	267.4	266.4	265.9	265.4	264.7	264.2
52.5°	254.5	253.3	252.2	251.2	250.5	249.8	249.1	248.3
55°	231.6	230.4	229.3	228.5	227.9	227.4	226.8	226.2
57.5°	208.7	207.6	206.5	205.7	205.2	204.6	204.1	203.5
60°	192.9	192.1	191.2	190.6	190.1	189.6	189.1	188.7
62.5°	177.5	176.7	175.9	175.3	174.9	174.4	174.0	173.4
65°	155.2	154.2	153.3	152.6	152.1	151.6	151.1	150.7
67.5°	132.1	131.2	130.3	129.7	129.7	129.5	129.4	129.2
70°	117.5	116.8	116.0	115.5	115.2	114.9	114.7	114.4
72.5°	103.0	102.4	101.7	101.3	101.0	100.8	100.5	100.2
75°	81.9	81.6	81.2	81.0	80.9	80.8	80.7	80.6
77.5°	62.1	62.0	61.9	61.7	61.4	61.2	60.9	60.7
80°	49.4	49.2	49.0	49.0	48.8	48.7	48.6	48.5
82.5°	38.1	38.0	37.9	37.8	37.7	37.5	37.5	37.4
85°	21.9	21.9	21.9	21.9	21.8	21.8	21.6	21.5
87.5°	13.8	14.1	14.4	14.6	14.7	14.8	15.0	15.1
90°	28.5	30.1	31.7	32.6	33.2	33.7	34.2	34.7
92.5°	27.6	29.2	30.7	31.5	31.7	31.7	31.8	31.9
95°	28.5	30.1	31.7	32.5	32.7	33.0	33.3	33.5
97.5°	30.9	31.0	31.1	31.4	31.7	31.8	32.1	32.4
100°	42.2	37.8	33.4	31.4	31.7	31.8	32.1	32.4
102.5°	151.0	103.8	56.6	33.1	33.2	33.2	33.3	33.3
105°	365.5	367.8	370.1	366.7	357.4	348.1	338.9	329.7
107.5°	452.2	453.3	454.4	455.5	456.5	457.4	458.4	459.4
110°	511.1	511.6	512.1	512.7	513.5	514.3	515.1	515.9





TEST NUMBER: P332737-940

CATALOG NUMBER: S124DIW-S350D1340U940-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	568.1	568.0	567.9	568.4	569.4	570.3	571.3	572.3
115°	653.4	653.9	654.3	654.6	654.6	654.6	654.6	654.6
117.5°	739.0	739.0	738.9	738.8	738.7	738.6	738.5	738.3
120°	792.1	792.6	793.2	793.2	792.6	792.1	791.7	791.1
122.5°	844.5	844.8	845.1	845.0	844.5	843.9	843.5	842.9
125°	917.6	918.4	919.1	919.6	919.9	920.2	920.4	920.7
127.5°	990.2	990.1	989.9	989.7	989.5	989.3	989.1	988.9
130°	1034.5	1034.7	1035.0	1035.2	1035.2	1035.2	1035.2	1035.2
132.5°	1078.0	1078.3	1078.5	1078.5	1078.3	1078.2	1077.9	1077.7
135°	1138.0	1138.4	1139.0	1139.5	1140.1	1140.5	1141.0	1141.6
137.5°	1195.4	1196.0	1196.6	1196.8	1196.6	1196.5	1196.3	1196.1
140°	1231.0	1231.8	1232.5	1233.1	1233.3	1233.6	1233.9	1234.1
142.5°	1263.9	1264.4	1265.1	1265.3	1265.4	1265.4	1265.5	1265.5
145°	1310.9	1311.2	1311.4	1311.9	1312.3	1312.9	1313.4	1313.9
147.5°	1352.3	1352.5	1352.6	1352.9	1353.2	1353.4	1353.6	1353.9
150°	1378.7	1378.7	1378.7	1378.8	1379.0	1379.3	1379.6	1379.8
152.5°	1401.7	1402.1	1402.5	1402.7	1402.5	1402.3	1402.2	1402.0
155°	1432.8	1433.8	1434.9	1434.9	1434.2	1433.4	1432.6	1431.9
157.5°	1459.6	1460.9	1462.2	1462.2	1460.9	1459.6	1458.2	1456.9
160°	1476.6	1478.1	1479.7	1479.7	1478.1	1476.6	1475.1	1473.6
162.5°	1490.5	1492.0	1493.5	1493.4	1491.7	1490.0	1488.2	1486.5
165°	1510.0	1512.1	1514.1	1513.9	1511.7	1509.4	1507.1	1504.8
167.5°	1524.3	1526.5	1528.8	1528.7	1526.1	1523.5	1521.0	1518.4
170°	1533.1	1535.2	1537.2	1537.0	1534.5	1531.9	1529.3	1526.7
172.5°	1538.6	1540.8	1542.8	1542.5	1539.6	1536.9	1534.1	1531.3
175°	1545.2	1547.6	1549.9	1549.4	1546.4	1543.3	1540.2	1537.1
177.5°	1547.8	1549.4	1551.1	1550.7	1548.2	1545.8	1543.3	1540.8
180°	1546.4	1546.4	1546.4	1546.4	1546.4	1546.4	1546.4	1546.4

(END OF REPORT)