

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: P333029-840

Luminaire Tested: **S124RDIW-S350D1340U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333029-840  
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-S350D1340U840-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1340 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6864.6 lumens  
Efficiency: N/A  
Efficacy: 147.3 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-Indirect

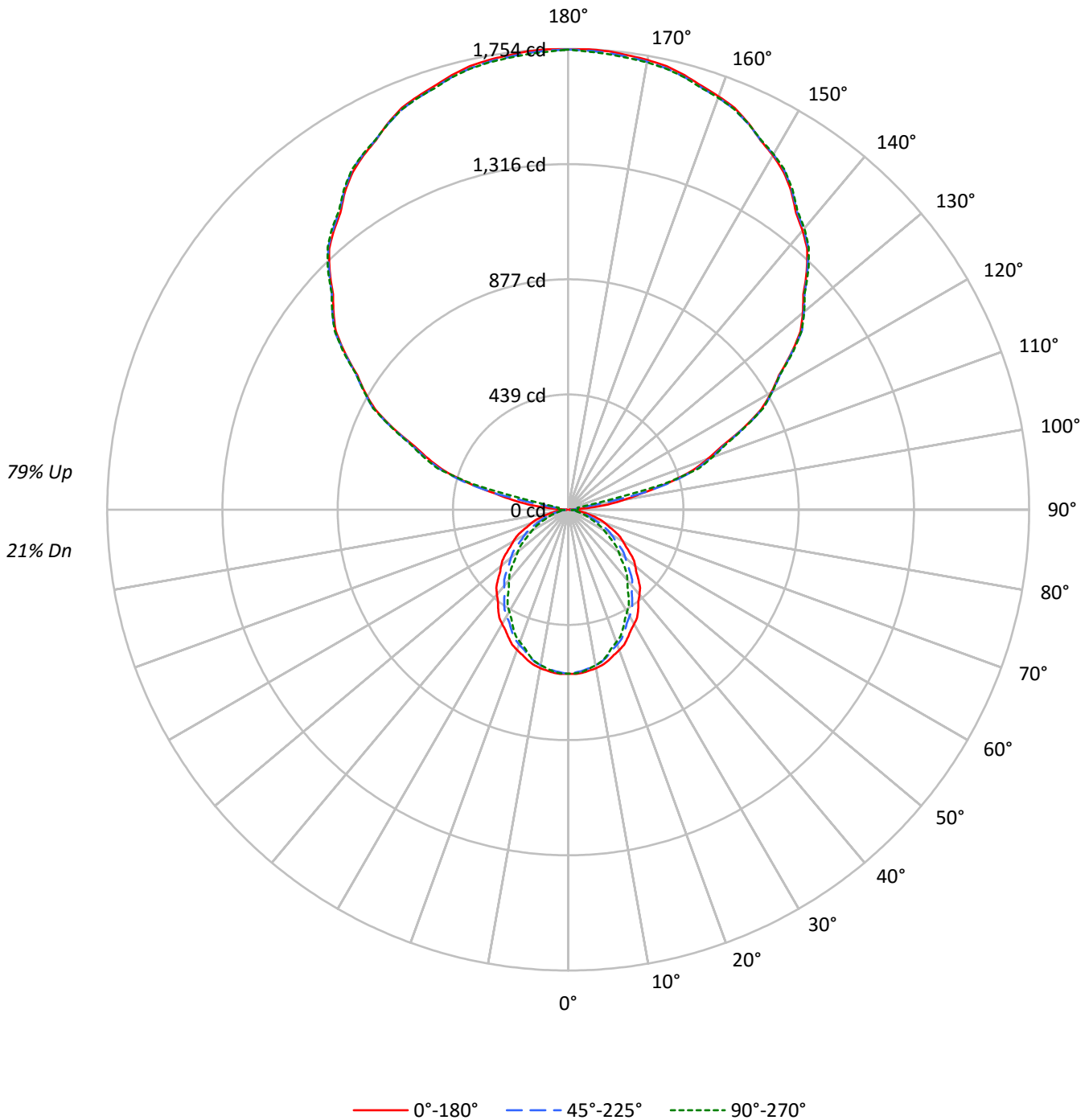
Input Watts (W): 46.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	67	67	67	48	48	48	30	30	30	21
1	91	87	84	80	81	77	74	72	59	57	55	42	41	40	26	26	25	18
2	83	76	71	66	73	68	63	59	52	48	46	37	35	33	23	22	21	15
3	76	67	60	55	67	60	54	49	46	42	38	33	30	28	21	19	18	13
4	69	59	52	46	61	53	46	42	40	36	33	29	26	24	18	17	16	11
5	64	53	45	39	56	47	40	36	36	32	28	26	23	21	17	15	14	10
6	58	47	39	34	52	42	35	31	32	28	24	23	20	18	15	13	12	9
7	54	42	35	30	48	38	31	27	29	25	21	21	18	16	14	12	11	8
8	50	38	31	26	44	34	28	24	27	22	19	19	16	14	13	11	10	7
9	46	35	28	23	41	31	25	21	24	20	17	18	15	13	12	10	9	6
10	43	32	25	20	38	28	23	19	22	18	15	16	13	11	11	9	8	6

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

	0°	45°	90°
0°	5040	5040	5040
5°	5051	4989	5020
10°	5019	4930	4930
15°	4962	4826	4790
20°	4883	4689	4603
25°	4782	4530	4415
30°	4683	4363	4180
35°	4574	4188	3943
40°	4443	3990	3687
45°	4322	3793	3427
50°	4185	3567	3152
55°	4037	3330	2853
60°	3873	3073	2546
65°	3725	2749	2245
70°	3510	2391	1907
75°	3235	1984	1550
80°	2822	1511	1423
85°	2399	1371	1278



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	58.6	0.9
10°-20°	163.5	2.4
20°-30°	236.1	3.4
30°-40°	267.7	3.9
40°-50°	258.5	3.8
50°-60°	214.9	3.1
60°-70°	148.4	2.2
70°-80°	75.2	1.1
80°-90°	24.3	0.4
90°-100°	59.9	0.9
100°-110°	381.9	5.6
110°-120°	730.6	10.6
120°-130°	927.4	13.5
130°-140°	992.3	14.5
140°-150°	927.9	13.5
150°-160°	748.3	10.9
160°-170°	482.6	7.0
170°-180°	166.3	2.4
0°-30°	458.3	6.7
0°-40°	726.0	10.6
0°-60°	1199.4	17.5
0°-90°	1447.4	21.1
90°-120°	1172.4	17.1
90°-150°	4020.0	58.6
90°-180°	5417.0	78.9
0°-180°	6864.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	624	624	624	624	624	
5°	623	621	616	620	620	59
15°	594	589	577	576	573	167
25°	537	528	509	501	496	247
35°	464	448	425	409	400	290
45°	379	360	332	310	300	292
55°	287	267	237	213	203	256
65°	195	174	144	124	118	193
75°	104	86	64	53	50	110
85°	26	17	15	14	14	29
90°	4	18	29	36	39	5
95°	72	30	29	36	38	93
105°	394	402	409	417	373	413
115°	736	740	739	741	741	724
125°	1035	1040	1037	1041	1043	924
135°	1284	1283	1288	1290	1293	989
145°	1480	1484	1484	1485	1488	925
155°	1623	1624	1620	1625	1622	748
165°	1712	1706	1706	1715	1704	484
175°	1751	1744	1745	1755	1741	167
180°	1751	1751	1751	1751	1751	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	624.3	624.3	624.3	624.3	624.3	624.3	624.3	624.3	624.3	624.3	624.3
2.5°	625.8	625.4	625.1	624.8	624.4	623.8	622.9	622.0	621.0	620.1	621.0
5°	623.3	622.9	622.5	622.1	621.6	620.8	619.5	618.2	616.9	615.7	616.7
7.5°	617.6	617.2	616.8	616.3	615.9	614.8	613.2	611.5	609.9	608.2	608.8
10°	612.3	611.8	611.3	610.8	610.2	608.9	607.0	605.1	603.2	601.4	601.8
12.5°	605.4	604.8	604.2	603.6	603.0	601.6	599.3	597.0	594.8	592.5	592.8
15°	593.7	592.7	591.8	590.8	589.9	588.0	585.4	582.7	580.1	577.4	577.2
17.5°	579.5	578.0	576.6	575.3	573.9	571.6	568.5	565.2	562.1	558.9	558.3
20°	568.4	566.9	565.6	564.2	562.8	560.4	556.7	553.1	549.5	545.8	545.0
22.5°	556.1	554.5	553.0	551.5	549.9	547.1	543.3	539.5	535.6	531.7	530.5
25°	536.8	534.9	533.0	531.1	529.2	526.0	521.7	517.4	512.9	508.6	506.8
27.5°	516.5	514.1	511.7	509.4	507.0	503.4	498.8	494.1	489.5	484.8	482.5
30°	502.4	499.7	497.1	494.4	491.8	488.0	482.9	478.0	472.9	468.0	465.3
32.5°	487.5	484.4	481.5	478.5	475.4	471.4	466.3	461.1	456.0	450.8	447.7
35°	464.1	460.7	457.4	453.9	450.5	446.2	440.9	435.6	430.3	425.0	421.3
37.5°	439.2	435.7	432.2	428.7	425.2	420.5	414.5	408.7	402.8	397.0	392.9
40°	421.6	418.1	414.5	411.1	407.6	402.8	396.8	390.7	384.7	378.6	374.2
42.5°	404.8	401.1	397.4	393.7	390.1	385.1	378.8	372.4	366.2	359.8	355.3
45°	378.6	374.7	370.7	366.8	362.8	357.7	351.3	345.0	338.6	332.2	327.0
47.5°	351.5	347.5	343.5	339.3	335.3	329.9	323.4	316.7	310.0	303.5	298.0
50°	333.2	329.0	324.9	320.7	316.6	311.1	304.4	297.5	290.7	284.0	278.6
52.5°	314.5	310.3	306.3	302.3	298.2	292.7	285.7	278.7	271.8	264.8	259.4
55°	286.8	282.6	278.3	274.1	269.8	264.2	257.3	250.4	243.5	236.6	231.1
57.5°	259.4	255.0	250.6	246.2	241.8	236.2	229.3	222.6	215.8	208.9	203.4
60°	239.9	235.7	231.5	227.2	223.0	217.4	210.7	203.8	197.0	190.3	184.7
62.5°	222.4	217.9	213.5	209.1	204.7	199.0	192.1	185.1	178.1	171.2	166.0
65°	195.0	190.5	185.9	181.4	176.7	171.1	164.3	157.4	150.7	143.9	139.4
67.5°	166.6	162.3	157.8	153.5	149.2	143.8	137.4	131.2	124.8	118.6	114.6
70°	148.7	144.2	139.8	135.3	130.8	125.5	119.5	113.4	107.3	101.3	97.9
72.5°	129.6	125.5	121.5	117.4	113.4	108.6	102.8	97.0	91.4	85.6	82.7
75°	103.7	99.8	95.8	91.9	88.0	83.5	78.6	73.5	68.6	63.6	61.1
77.5°	77.6	74.2	70.9	67.6	64.2	60.5	56.5	52.4	48.4	44.3	42.9
80°	60.7	57.7	54.5	51.5	48.4	45.2	42.1	38.9	35.6	32.5	32.2
82.5°	46.2	43.3	40.5	37.7	34.8	32.5	30.7	28.9	27.1	25.2	25.0
85°	25.9	23.7	21.6	19.4	17.3	16.1	15.8	15.5	15.1	14.8	14.6
87.5°	9.6	9.5	9.5	9.5	9.4	9.6	10.0	10.4	10.7	11.1	11.4
90°	3.9	7.2	10.3	13.5	16.8	19.5	21.8	24.1	26.5	28.8	30.6
92.5°	16.5	16.7	16.9	17.1	17.2	18.5	20.8	23.1	25.4	27.8	29.5
95°	72.0	62.1	52.2	42.3	32.4	27.7	28.0	28.3	28.5	28.8	30.6
97.5°	153.0	159.2	165.3	171.5	177.6	164.5	132.0	99.6	67.1	34.5	34.7
100°	214.8	220.0	225.3	230.6	235.8	218.3	178.1	137.9	97.8	57.7	52.7
102.5°	284.0	287.8	291.6	295.5	299.3	298.6	293.4	288.2	283.0	277.7	224.3
105°	394.3	396.0	397.8	399.5	401.2	402.8	404.3	405.8	407.2	408.7	411.3
107.5°	496.7	497.6	498.5	499.3	500.2	501.6	503.6	505.5	507.6	509.6	510.8
110°	565.8	566.7	567.6	568.5	569.4	570.7	572.4	574.1	575.9	577.6	578.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	632.9	634.5	636.1	637.6	639.2	640.4	641.3	642.1	642.9	643.7	643.6
115°	736.1	737.0	737.9	738.7	739.6	739.9	739.6	739.3	739.0	738.7	739.3
117.5°	829.1	830.3	831.4	832.6	833.7	834.7	835.4	836.0	836.6	837.3	837.2
120°	892.0	893.1	894.3	895.5	896.7	897.1	896.9	896.6	896.3	896.0	896.6
122.5°	950.7	951.4	952.1	952.8	953.5	954.0	954.4	954.8	955.2	955.6	956.0
125°	1034.8	1035.9	1037.1	1038.2	1039.5	1039.8	1039.2	1038.5	1037.9	1037.4	1038.2
127.5°	1114.4	1114.7	1115.0	1115.3	1115.6	1116.4	1117.7	1119.0	1120.4	1121.8	1121.6
130°	1165.8	1166.1	1166.4	1166.6	1166.9	1167.5	1168.4	1169.2	1170.1	1171.0	1171.3
132.5°	1212.9	1213.5	1214.0	1214.5	1215.0	1215.9	1217.0	1218.0	1219.1	1220.2	1220.5
135°	1283.6	1283.3	1283.0	1282.8	1282.5	1282.9	1284.0	1285.3	1286.5	1287.6	1288.2
137.5°	1346.3	1346.4	1346.5	1346.7	1346.8	1347.5	1348.7	1350.0	1351.3	1352.5	1353.2
140°	1387.2	1387.8	1388.3	1388.9	1389.5	1390.1	1390.6	1391.2	1391.8	1392.4	1393.2
142.5°	1423.8	1424.8	1425.9	1426.9	1428.1	1428.7	1429.1	1429.4	1429.8	1430.1	1430.8
145°	1480.2	1481.0	1481.9	1482.8	1483.6	1484.1	1484.1	1484.1	1484.1	1484.1	1484.4
147.5°	1524.9	1526.5	1528.2	1529.8	1531.5	1532.2	1531.9	1531.6	1531.3	1531.0	1531.2
150°	1557.4	1558.6	1559.7	1560.9	1562.1	1562.5	1562.3	1562.0	1561.7	1561.4	1561.4
152.5°	1584.7	1585.6	1586.5	1587.4	1588.4	1588.6	1588.1	1587.5	1587.0	1586.5	1587.0
155°	1623.0	1623.2	1623.5	1623.8	1624.1	1623.8	1623.0	1622.0	1621.1	1620.3	1621.4
157.5°	1655.2	1655.0	1654.8	1654.6	1654.5	1653.9	1652.8	1651.8	1650.9	1649.9	1651.4
160°	1674.0	1673.1	1672.2	1671.3	1670.5	1669.9	1669.6	1669.3	1669.0	1668.8	1670.5
162.5°	1690.7	1689.6	1688.6	1687.5	1686.4	1685.7	1685.4	1685.1	1684.8	1684.5	1686.2
165°	1712.0	1710.5	1709.1	1707.6	1706.2	1705.5	1705.5	1705.5	1705.5	1705.5	1707.8
167.5°	1728.8	1727.3	1725.8	1724.2	1722.7	1721.8	1721.7	1721.5	1721.3	1721.1	1723.7
170°	1738.2	1736.5	1734.6	1732.9	1731.2	1730.5	1730.7	1731.0	1731.3	1731.6	1733.9
172.5°	1744.4	1742.7	1741.0	1739.2	1737.5	1736.8	1737.1	1737.4	1737.6	1737.9	1740.2
175°	1751.3	1749.5	1747.8	1746.1	1744.2	1743.5	1743.8	1744.1	1744.4	1744.7	1747.4
177.5°	1754.4	1752.8	1751.1	1749.5	1747.9	1747.3	1747.8	1748.3	1748.7	1749.2	1751.0
180°	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	624.3	624.3	624.3	624.3	624.3	624.3	624.3	624.3
2.5°	622.0	622.9	623.8	624.2	624.1	624.1	624.0	623.9
5°	617.8	618.8	620.0	620.4	620.2	620.0	619.7	619.5
7.5°	609.6	610.3	611.0	611.1	610.8	610.5	610.1	609.8
10°	602.2	602.6	603.0	603.0	602.6	602.2	601.8	601.4
12.5°	593.0	593.3	593.6	593.4	592.8	592.2	591.6	591.0
15°	577.0	576.8	576.5	576.1	575.3	574.6	573.9	573.1
17.5°	557.6	557.1	556.5	555.6	554.5	553.4	552.3	551.2
20°	544.2	543.3	542.5	541.4	540.0	538.6	537.2	535.8
22.5°	529.2	527.9	526.6	525.4	524.3	523.2	522.1	520.9
25°	504.9	503.2	501.4	500.0	498.9	497.8	496.8	495.6
27.5°	480.3	478.1	475.8	474.0	472.4	470.9	469.4	467.9
30°	462.6	460.0	457.4	455.1	453.4	451.8	450.1	448.4
32.5°	444.6	441.5	438.5	436.1	434.4	432.8	431.2	429.6
35°	417.7	414.1	410.5	407.8	405.9	403.9	402.0	400.1
37.5°	388.9	384.9	380.8	377.8	375.9	374.0	372.0	370.1
40°	369.6	365.2	360.7	357.6	355.7	353.8	351.8	349.9
42.5°	350.7	346.2	341.6	338.4	336.4	334.4	332.3	330.4
45°	321.8	316.6	311.3	307.8	305.9	304.0	302.1	300.2
47.5°	292.7	287.2	281.9	278.1	276.0	273.9	271.8	269.7
50°	273.3	268.0	262.7	259.0	257.0	255.0	253.0	251.0
52.5°	254.0	248.6	243.3	239.4	237.4	235.3	233.2	231.1
55°	225.6	220.0	214.5	210.8	208.7	206.7	204.7	202.7
57.5°	197.7	192.2	186.5	183.0	181.5	180.0	178.3	176.8
60°	179.2	173.7	168.1	164.5	162.8	161.2	159.5	157.7
62.5°	161.0	155.8	150.8	147.5	146.1	144.8	143.4	142.1
65°	134.7	130.2	125.6	122.7	121.4	120.2	118.9	117.5
67.5°	110.7	106.7	102.8	100.2	98.8	97.4	95.9	94.5
70°	94.3	90.8	87.4	85.0	83.9	82.9	81.8	80.8
72.5°	79.7	76.6	73.7	71.7	70.7	69.8	68.8	67.8
75°	58.7	56.2	53.8	52.3	51.6	51.0	50.4	49.7
77.5°	41.5	40.1	38.7	37.9	37.7	37.5	37.3	37.1
80°	31.9	31.5	31.2	31.0	30.9	30.8	30.7	30.6
82.5°	24.7	24.5	24.3	24.1	24.0	23.9	23.8	23.7
85°	14.4	14.1	13.9	13.8	13.8	13.8	13.8	13.8
87.5°	11.6	11.9	12.2	12.4	12.6	12.8	13.0	13.2
90°	32.3	34.0	35.9	37.0	37.6	38.2	38.7	39.3
92.5°	31.3	33.0	34.7	35.6	35.9	36.0	36.1	36.2
95°	32.3	34.0	35.9	36.9	37.1	37.4	37.7	38.0
97.5°	34.9	35.1	35.2	35.5	35.9	36.1	36.4	36.7
100°	47.8	42.8	37.9	35.5	35.9	36.1	36.4	36.7
102.5°	171.0	117.5	64.1	37.5	37.6	37.6	37.7	37.8
105°	413.9	416.6	419.2	415.3	404.8	394.3	383.7	373.3
107.5°	512.1	513.4	514.6	515.8	516.9	518.1	519.2	520.3
110°	578.9	579.4	580.0	580.7	581.6	582.5	583.3	584.2





TEST NUMBER: P333029-840

CATALOG NUMBER: S124RDIW-S350D1340U840-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	643.4	643.3	643.2	643.7	644.8	645.9	647.0	648.1
115°	739.9	740.5	741.0	741.3	741.3	741.3	741.3	741.3
117.5°	837.0	836.9	836.8	836.7	836.6	836.5	836.4	836.2
120°	897.1	897.7	898.3	898.3	897.7	897.1	896.6	896.0
122.5°	956.3	956.7	957.0	956.9	956.3	955.7	955.2	954.6
125°	1039.2	1040.1	1040.9	1041.5	1041.8	1042.1	1042.4	1042.7
127.5°	1121.5	1121.3	1121.1	1120.8	1120.6	1120.3	1120.1	1119.9
130°	1171.5	1171.8	1172.2	1172.4	1172.4	1172.4	1172.4	1172.4
132.5°	1220.8	1221.1	1221.4	1221.4	1221.2	1221.0	1220.7	1220.5
135°	1288.8	1289.3	1289.9	1290.5	1291.1	1291.6	1292.2	1292.8
137.5°	1353.8	1354.4	1355.1	1355.3	1355.1	1355.0	1354.8	1354.6
140°	1394.1	1395.0	1395.8	1396.4	1396.7	1397.0	1397.4	1397.7
142.5°	1431.4	1432.0	1432.7	1433.0	1433.1	1433.1	1433.2	1433.2
145°	1484.6	1484.9	1485.2	1485.7	1486.2	1486.8	1487.4	1488.0
147.5°	1531.5	1531.7	1531.9	1532.2	1532.5	1532.8	1533.0	1533.3
150°	1561.4	1561.4	1561.4	1561.5	1561.8	1562.1	1562.4	1562.7
152.5°	1587.4	1587.9	1588.3	1588.5	1588.3	1588.1	1588.0	1587.8
155°	1622.7	1623.8	1625.0	1625.1	1624.3	1623.4	1622.4	1621.6
157.5°	1652.9	1654.5	1656.0	1656.0	1654.5	1652.9	1651.4	1649.9
160°	1672.2	1674.0	1675.8	1675.8	1674.0	1672.2	1670.5	1668.8
162.5°	1688.0	1689.7	1691.4	1691.3	1689.4	1687.4	1685.4	1683.4
165°	1710.1	1712.4	1714.8	1714.5	1712.0	1709.4	1706.8	1704.1
167.5°	1726.3	1728.8	1731.4	1731.2	1728.3	1725.4	1722.5	1719.6
170°	1736.3	1738.6	1740.9	1740.6	1737.8	1734.8	1731.9	1729.0
172.5°	1742.5	1744.9	1747.3	1746.9	1743.6	1740.5	1737.4	1734.2
175°	1750.0	1752.6	1755.2	1754.7	1751.3	1747.8	1744.2	1740.8
177.5°	1752.9	1754.7	1756.7	1756.2	1753.3	1750.6	1747.8	1744.9
180°	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3

(END OF REPORT)