

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: P333033-940

Luminaire Tested: **S124RDIW-S350D1560U940-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333033-940  
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: S124RDIW-S350D1560U940-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1560 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6840.3 lumens  
Efficiency: N/A  
Efficacy: 128.1 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: Semi-Indirect

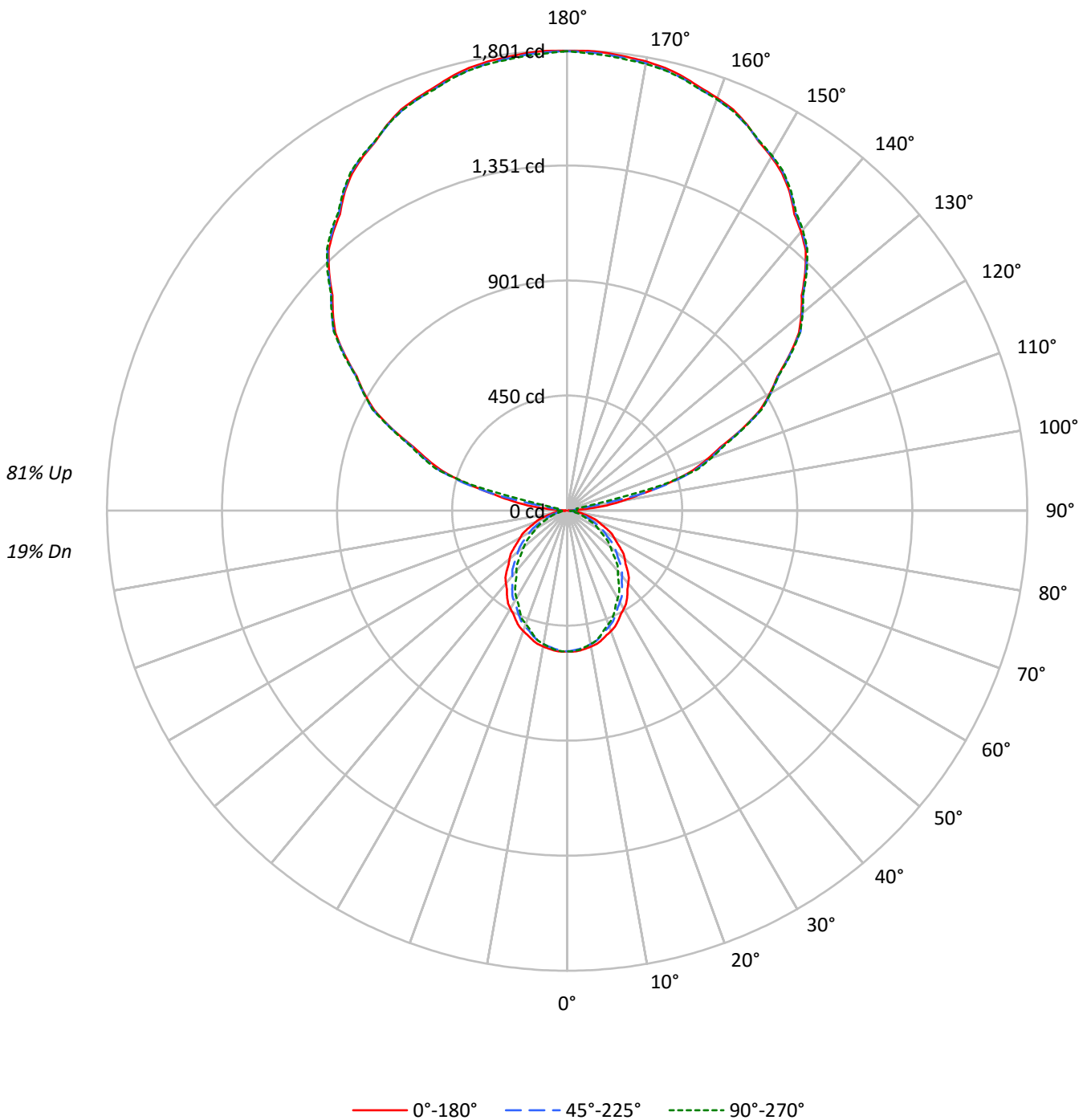
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	88	88	88	88	66	66	66	46	46	46	27	27	27	19
1	91	87	83	80	80	77	74	71	58	56	54	40	39	38	24	24	23	16
2	83	76	70	65	73	67	62	58	51	47	45	35	34	32	21	20	20	13
3	75	67	60	54	66	59	53	49	45	41	38	31	29	27	19	18	17	12
4	69	59	51	46	61	52	46	41	40	35	32	28	25	23	17	16	15	10
5	63	52	45	39	55	46	40	35	35	31	27	25	22	20	15	14	13	9
6	58	47	39	34	51	42	35	30	32	27	24	23	20	17	14	12	11	8
7	54	42	34	29	47	37	31	26	29	24	21	20	17	15	13	11	10	7
8	50	38	31	26	44	34	28	23	26	21	18	19	16	14	12	10	9	6
9	46	34	27	23	40	31	25	20	24	19	16	17	14	12	11	9	8	6
10	43	31	25	20	38	28	22	18	22	17	14	16	13	11	10	8	7	5

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

	0°	45°	90°
0°	4451	4451	4451
5°	4460	4406	4433
10°	4432	4353	4353
15°	4381	4262	4229
20°	4312	4141	4064
25°	4222	4000	3899
30°	4135	3852	3691
35°	4039	3698	3482
40°	3923	3523	3256
45°	3817	3350	3027
50°	3695	3149	2783
55°	3564	2940	2519
60°	3421	2713	2249
65°	3289	2428	1983
70°	3099	2110	1683
75°	2857	1753	1369
80°	2492	1334	1255
85°	2112	1213	1130



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	51.8	0.8
10°-20°	144.4	2.1
20°-30°	208.5	3.0
30°-40°	236.4	3.5
40°-50°	228.2	3.3
50°-60°	189.8	2.8
60°-70°	131.1	1.9
70°-80°	66.4	1.0
80°-90°	22.2	0.3
90°-100°	61.5	0.9
100°-110°	392.1	5.7
110°-120°	750.0	11.0
120°-130°	952.1	13.9
130°-140°	1018.7	14.9
140°-150°	952.6	13.9
150°-160°	768.2	11.2
160°-170°	495.5	7.2
170°-180°	170.8	2.5
0°-30°	404.7	5.9
0°-40°	641.0	9.4
0°-60°	1059.1	15.5
0°-90°	1278.8	18.7
90°-120°	1203.6	17.6
90°-150°	4127.0	60.3
90°-180°	5561.0	81.3
0°-180°	6840.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	551	551	551	551	551	
5°	550	548	544	548	547	52
15°	524	520	510	509	506	148
25°	474	466	449	442	438	218
35°	410	396	375	361	353	256
45°	334	318	293	273	265	258
55°	253	236	209	188	179	226
65°	172	154	127	110	104	170
75°	92	76	56	47	44	97
85°	23	15	13	12	12	26
90°	4	19	30	37	40	5
95°	74	31	30	37	39	95
105°	405	413	420	428	383	423
115°	756	759	758	761	761	743
125°	1062	1067	1065	1069	1070	948
135°	1318	1317	1322	1325	1327	1015
145°	1520	1523	1524	1525	1528	949
155°	1666	1667	1663	1668	1665	768
165°	1758	1751	1751	1760	1750	496
175°	1798	1790	1791	1802	1787	171
180°	1798	1798	1798	1798	1798	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	551.3	551.3	551.3	551.3	551.3	551.3	551.3	551.3	551.3	551.3	551.3
2.5°	552.6	552.2	552.0	551.7	551.3	550.8	550.0	549.2	548.3	547.5	548.3
5°	550.4	550.0	549.7	549.3	548.8	548.1	547.0	545.9	544.7	543.7	544.6
7.5°	545.4	545.0	544.7	544.2	543.9	542.9	541.4	539.9	538.5	537.1	537.6
10°	540.6	540.2	539.8	539.3	538.8	537.7	536.0	534.3	532.6	531.0	531.4
12.5°	534.6	534.0	533.5	533.0	532.4	531.2	529.1	527.2	525.2	523.2	523.4
15°	524.2	523.3	522.5	521.7	520.8	519.2	516.9	514.5	512.2	509.9	509.7
17.5°	511.7	510.4	509.2	508.0	506.8	504.7	501.9	499.1	496.3	493.5	492.9
20°	501.9	500.6	499.4	498.2	497.0	494.8	491.6	488.4	485.2	482.0	481.3
22.5°	491.1	489.6	488.3	487.0	485.5	483.1	479.7	476.4	473.0	469.5	468.4
25°	474.0	472.3	470.6	469.0	467.3	464.5	460.7	456.8	452.9	449.1	447.5
27.5°	456.1	454.0	451.8	449.8	447.6	444.5	440.4	436.3	432.2	428.1	426.1
30°	443.6	441.2	438.9	436.6	434.3	430.9	426.4	422.0	417.6	413.2	410.9
32.5°	430.4	427.8	425.2	422.5	419.8	416.3	411.7	407.2	402.6	398.1	395.3
35°	409.8	406.8	403.9	400.8	397.8	394.0	389.3	384.6	380.0	375.2	372.0
37.5°	387.8	384.7	381.7	378.5	375.4	371.3	366.0	360.9	355.7	350.5	347.0
40°	372.3	369.2	366.0	363.0	359.9	355.7	350.4	345.0	339.7	334.3	330.4
42.5°	357.4	354.2	350.9	347.7	344.5	340.0	334.5	328.9	323.3	317.7	313.7
45°	334.3	330.8	327.3	323.9	320.4	315.8	310.2	304.6	299.0	293.4	288.7
47.5°	310.4	306.8	303.3	299.6	296.0	291.3	285.5	279.6	273.8	268.0	263.1
50°	294.2	290.5	286.9	283.2	279.6	274.7	268.8	262.7	256.7	250.7	246.0
52.5°	277.7	274.0	270.5	266.9	263.3	258.4	252.3	246.1	240.0	233.8	229.1
55°	253.2	249.5	245.8	242.0	238.3	233.3	227.2	221.1	215.0	208.9	204.0
57.5°	229.1	225.2	221.3	217.4	213.5	208.6	202.5	196.5	190.6	184.5	179.6
60°	211.9	208.1	204.4	200.6	196.9	192.0	186.0	179.9	174.0	168.0	163.1
62.5°	196.4	192.4	188.5	184.7	180.7	175.8	169.6	163.5	157.3	151.1	146.6
65°	172.2	168.2	164.2	160.2	156.0	151.1	145.1	139.0	133.0	127.1	123.1
67.5°	147.1	143.3	139.4	135.5	131.7	127.0	121.4	115.8	110.2	104.7	101.2
70°	131.3	127.3	123.4	119.5	115.5	110.8	105.5	100.1	94.8	89.4	86.4
72.5°	114.4	110.8	107.3	103.7	100.1	95.9	90.8	85.7	80.7	75.6	73.0
75°	91.6	88.1	84.6	81.1	77.7	73.7	69.4	64.9	60.5	56.2	53.9
77.5°	68.5	65.5	62.6	59.7	56.7	53.4	49.8	46.3	42.7	39.1	37.9
80°	53.6	50.9	48.2	45.5	42.7	39.9	37.2	34.3	31.5	28.7	28.4
82.5°	40.8	38.3	35.8	33.3	30.8	28.7	27.1	25.5	23.9	22.3	22.1
85°	22.8	21.0	19.1	17.1	15.2	14.2	13.9	13.6	13.4	13.1	12.9
87.5°	8.6	8.6	8.6	8.7	8.8	9.0	9.5	9.8	10.3	10.6	11.0
90°	4.0	7.3	10.6	13.9	17.2	20.1	22.4	24.8	27.2	29.6	31.4
92.5°	16.9	17.1	17.3	17.5	17.7	18.9	21.3	23.7	26.1	28.5	30.3
95°	73.9	63.8	53.7	43.5	33.3	28.4	28.7	29.0	29.2	29.6	31.4
97.5°	157.0	163.4	169.7	176.1	182.4	168.9	135.5	102.2	68.8	35.5	35.7
100°	220.5	226.0	231.3	236.7	242.0	224.1	182.9	141.6	100.4	59.2	54.1
102.5°	291.5	295.5	299.4	303.4	307.3	306.6	301.2	295.9	290.4	285.1	230.2
105°	404.7	406.5	408.3	410.2	412.0	413.6	415.1	416.6	418.0	419.5	422.2
107.5°	509.9	510.9	511.8	512.6	513.5	515.0	517.0	519.1	521.0	523.1	524.4
110°	580.9	581.8	582.7	583.6	584.5	585.9	587.6	589.4	591.2	593.0	593.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	649.8	651.4	653.0	654.6	656.2	657.5	658.3	659.2	660.0	660.8	660.7
115°	755.7	756.6	757.5	758.4	759.3	759.6	759.3	759.0	758.8	758.4	759.0
117.5°	851.2	852.4	853.6	854.8	856.0	856.9	857.6	858.3	858.9	859.5	859.4
120°	915.8	916.9	918.2	919.4	920.5	921.0	920.7	920.4	920.1	919.8	920.4
122.5°	976.0	976.7	977.4	978.1	978.9	979.5	979.9	980.3	980.7	981.1	981.5
125°	1062.4	1063.5	1064.7	1066.0	1067.1	1067.4	1066.8	1066.2	1065.6	1065.1	1066.0
127.5°	1144.1	1144.4	1144.7	1145.0	1145.3	1146.1	1147.5	1148.9	1150.2	1151.6	1151.5
130°	1196.9	1197.1	1197.4	1197.7	1198.0	1198.6	1199.5	1200.4	1201.3	1202.2	1202.5
132.5°	1245.2	1245.7	1246.3	1246.9	1247.4	1248.2	1249.4	1250.4	1251.6	1252.8	1253.0
135°	1317.9	1317.5	1317.2	1317.0	1316.6	1317.1	1318.3	1319.5	1320.7	1321.9	1322.5
137.5°	1382.2	1382.2	1382.3	1382.5	1382.6	1383.3	1384.6	1386.0	1387.2	1388.6	1389.2
140°	1424.1	1424.7	1425.3	1425.8	1426.5	1427.1	1427.6	1428.3	1428.9	1429.4	1430.4
142.5°	1461.7	1462.8	1463.9	1465.0	1466.1	1466.8	1467.1	1467.5	1467.8	1468.2	1468.8
145°	1519.6	1520.5	1521.3	1522.2	1523.1	1523.6	1523.6	1523.6	1523.6	1523.6	1523.8
147.5°	1565.6	1567.2	1568.9	1570.6	1572.3	1572.9	1572.6	1572.4	1572.0	1571.7	1572.0
150°	1598.9	1600.1	1601.2	1602.5	1603.7	1604.1	1603.8	1603.6	1603.2	1602.9	1602.9
152.5°	1626.8	1627.8	1628.8	1629.7	1630.7	1630.9	1630.3	1629.8	1629.2	1628.7	1629.2
155°	1666.2	1666.4	1666.7	1667.1	1667.3	1667.1	1666.2	1665.3	1664.4	1663.4	1664.6
157.5°	1699.2	1699.1	1698.9	1698.7	1698.5	1697.9	1696.8	1695.9	1694.9	1693.8	1695.4
160°	1718.6	1717.7	1716.8	1715.9	1715.0	1714.4	1714.0	1713.8	1713.5	1713.2	1715.0
162.5°	1735.8	1734.6	1733.5	1732.4	1731.3	1730.5	1730.2	1729.9	1729.7	1729.3	1731.1
165°	1757.6	1756.0	1754.6	1753.1	1751.6	1750.9	1750.9	1750.9	1750.9	1750.9	1753.2
167.5°	1774.8	1773.3	1771.7	1770.1	1768.5	1767.7	1767.5	1767.4	1767.2	1767.0	1769.6
170°	1784.5	1782.7	1780.8	1779.1	1777.3	1776.6	1776.8	1777.2	1777.4	1777.7	1780.1
172.5°	1790.9	1789.1	1787.3	1785.6	1783.8	1783.0	1783.3	1783.6	1783.9	1784.2	1786.5
175°	1797.9	1796.1	1794.3	1792.5	1790.7	1790.0	1790.3	1790.6	1790.9	1791.2	1793.9
177.5°	1801.2	1799.5	1797.8	1796.1	1794.5	1793.9	1794.3	1794.8	1795.3	1795.7	1797.7
180°	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	551.3	551.3	551.3	551.3	551.3	551.3	551.3	551.3
2.5°	549.2	550.0	550.8	551.2	551.1	551.1	551.0	550.9
5°	545.5	546.4	547.4	547.8	547.6	547.4	547.2	547.0
7.5°	538.2	538.9	539.5	539.6	539.3	539.0	538.7	538.4
10°	531.7	532.1	532.4	532.4	532.1	531.7	531.4	531.0
12.5°	523.6	523.9	524.1	524.0	523.4	522.9	522.4	521.8
15°	509.5	509.3	509.1	508.7	508.0	507.4	506.8	506.0
17.5°	492.4	492.0	491.4	490.6	489.6	488.7	487.7	486.7
20°	480.5	479.7	479.0	478.0	476.8	475.5	474.4	473.1
22.5°	467.3	466.1	465.0	464.0	463.0	462.0	461.0	459.9
25°	445.9	444.3	442.7	441.5	440.5	439.5	438.6	437.7
27.5°	424.1	422.1	420.2	418.6	417.1	415.8	414.5	413.1
30°	408.5	406.2	403.9	401.9	400.4	399.0	397.4	395.9
32.5°	392.6	389.9	387.2	385.0	383.6	382.2	380.8	379.3
35°	368.8	365.7	362.5	360.1	358.4	356.7	355.0	353.3
37.5°	343.4	339.8	336.3	333.6	331.9	330.2	328.5	326.8
40°	326.4	322.4	318.5	315.8	314.1	312.4	310.7	309.0
42.5°	309.7	305.7	301.7	298.8	297.0	295.2	293.5	291.8
45°	284.2	279.6	274.9	271.8	270.1	268.4	266.7	265.1
47.5°	258.4	253.6	248.9	245.6	243.7	241.8	240.0	238.2
50°	241.3	236.7	231.9	228.7	226.9	225.2	223.4	221.6
52.5°	224.3	219.5	214.8	211.4	209.6	207.8	205.9	204.0
55°	199.2	194.3	189.4	186.1	184.3	182.5	180.7	179.0
57.5°	174.6	169.7	164.7	161.6	160.2	158.9	157.5	156.1
60°	158.2	153.4	148.5	145.3	143.7	142.3	140.8	139.3
62.5°	142.1	137.6	133.1	130.3	129.0	127.9	126.6	125.5
65°	119.0	114.9	110.9	108.3	107.2	106.1	105.0	103.8
67.5°	97.7	94.3	90.8	88.5	87.2	86.0	84.7	83.5
70°	83.3	80.2	77.1	75.1	74.1	73.2	72.2	71.3
72.5°	70.4	67.7	65.1	63.3	62.4	61.6	60.7	59.8
75°	51.8	49.7	47.5	46.2	45.6	45.0	44.5	43.9
77.5°	36.6	35.4	34.2	33.4	33.3	33.1	32.9	32.7
80°	28.2	27.8	27.6	27.4	27.3	27.2	27.1	27.0
82.5°	21.8	21.7	21.5	21.3	21.2	21.1	21.0	21.0
85°	12.8	12.5	12.3	12.2	12.2	12.2	12.2	12.2
87.5°	11.2	11.5	11.8	12.0	12.2	12.4	12.6	12.8
90°	33.2	35.0	36.7	38.0	38.5	39.1	39.8	40.3
92.5°	32.1	33.9	35.7	36.6	36.7	36.9	37.0	37.1
95°	33.2	35.0	36.7	37.8	38.1	38.4	38.7	39.0
97.5°	35.8	36.0	36.2	36.5	36.7	37.1	37.4	37.6
100°	49.0	44.0	38.9	36.5	36.7	37.1	37.4	37.6
102.5°	175.5	120.6	65.9	38.5	38.5	38.6	38.7	38.7
105°	424.9	427.7	430.3	426.2	415.5	404.7	394.0	383.3
107.5°	525.8	527.1	528.3	529.6	530.7	531.8	533.0	534.1
110°	594.2	594.9	595.4	596.2	597.1	598.0	598.9	599.8





TEST NUMBER: P333033-940

CATALOG NUMBER: S124RDIW-S350D1560U940-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	660.6	660.4	660.3	660.8	662.0	663.1	664.2	665.4
115°	759.6	760.2	760.8	761.2	761.2	761.2	761.2	761.2
117.5°	859.3	859.2	859.1	859.0	858.8	858.7	858.6	858.4
120°	921.0	921.6	922.2	922.2	921.6	921.0	920.4	919.8
122.5°	981.9	982.2	982.6	982.4	981.9	981.2	980.6	980.1
125°	1066.8	1067.7	1068.6	1069.3	1069.5	1069.8	1070.1	1070.4
127.5°	1151.3	1151.1	1150.9	1150.7	1150.5	1150.2	1150.0	1149.8
130°	1202.8	1203.1	1203.4	1203.5	1203.5	1203.5	1203.5	1203.5
132.5°	1253.4	1253.7	1253.9	1254.0	1253.7	1253.5	1253.3	1253.0
135°	1323.0	1323.7	1324.3	1324.9	1325.4	1326.1	1326.7	1327.2
137.5°	1389.9	1390.5	1391.2	1391.4	1391.2	1391.1	1390.9	1390.7
140°	1431.3	1432.2	1433.1	1433.6	1434.0	1434.2	1434.5	1434.9
142.5°	1469.5	1470.2	1470.8	1471.1	1471.2	1471.3	1471.3	1471.4
145°	1524.2	1524.5	1524.7	1525.3	1525.8	1526.4	1527.1	1527.6
147.5°	1572.2	1572.4	1572.7	1573.0	1573.2	1573.5	1573.9	1574.1
150°	1602.9	1602.9	1602.9	1603.1	1603.4	1603.7	1604.0	1604.3
152.5°	1629.7	1630.1	1630.7	1630.8	1630.6	1630.4	1630.2	1630.0
155°	1665.8	1667.1	1668.2	1668.4	1667.5	1666.6	1665.7	1664.8
157.5°	1696.9	1698.5	1700.0	1700.0	1698.5	1696.9	1695.4	1693.8
160°	1716.8	1718.6	1720.4	1720.4	1718.6	1716.8	1715.0	1713.2
162.5°	1733.0	1734.7	1736.5	1736.3	1734.4	1732.3	1730.3	1728.2
165°	1755.6	1758.0	1760.4	1760.2	1757.6	1754.9	1752.2	1749.5
167.5°	1772.3	1774.9	1777.5	1777.4	1774.3	1771.4	1768.4	1765.4
170°	1782.5	1784.9	1787.3	1787.0	1784.0	1781.0	1778.1	1775.0
172.5°	1789.0	1791.4	1793.8	1793.3	1790.1	1786.9	1783.7	1780.4
175°	1796.5	1799.3	1802.0	1801.5	1797.9	1794.3	1790.7	1787.2
177.5°	1799.6	1801.5	1803.4	1803.0	1800.1	1797.2	1794.3	1791.4
180°	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9

(END OF REPORT)