

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: P332741-935

Luminaire Tested: **S124DIW-S350D1560U935-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332741-935  
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-S350D1560U935-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1560 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6615.6 lumens  
Efficiency: N/A  
Efficacy: 123.9 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

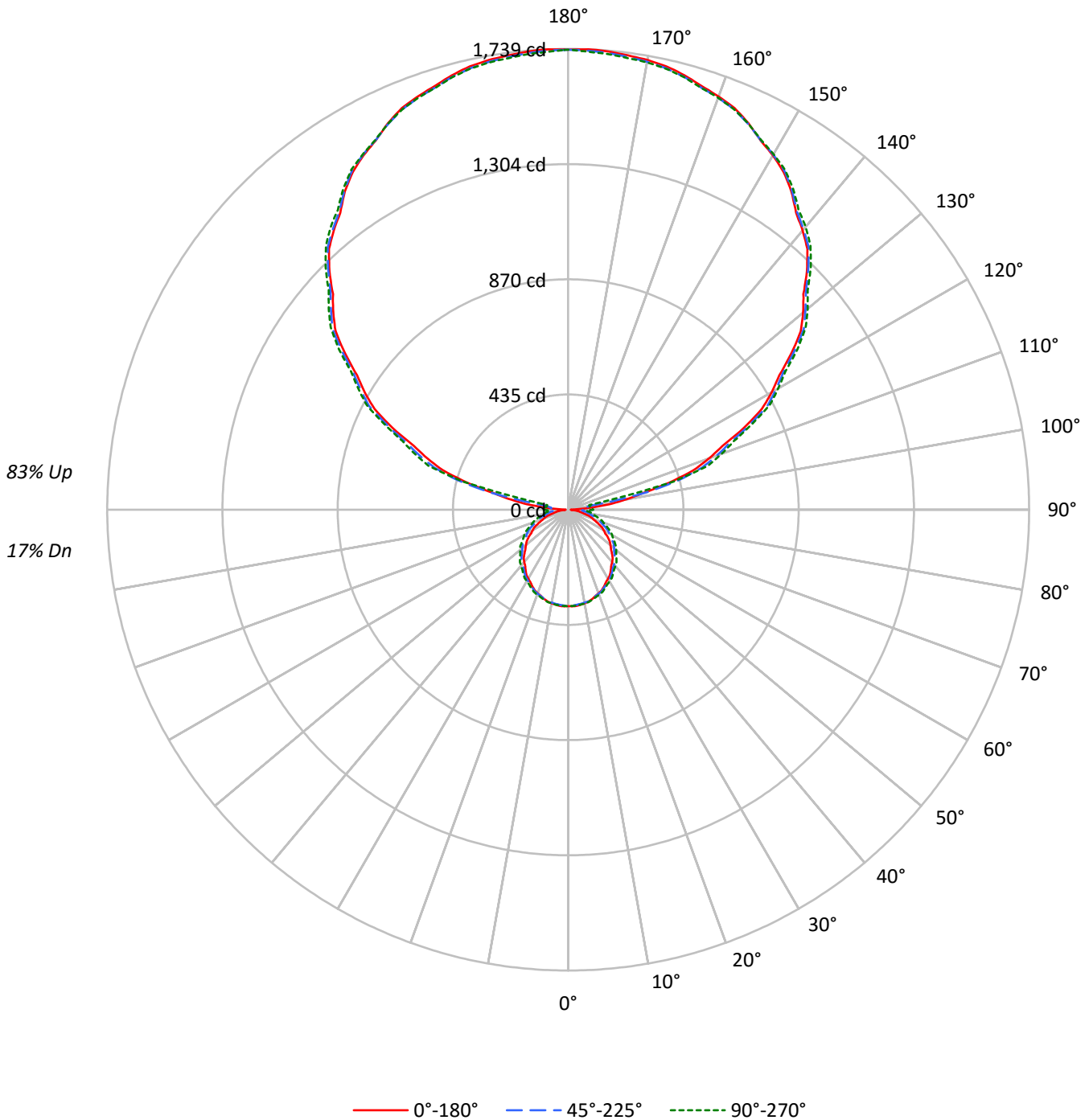
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332741-935

CATALOG NUMBER: S124DIW-S350D1560U935-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P332741-935

CATALOG NUMBER: S124DIW-S350D1560U935-4F0-1E-UDD-D

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	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	99	99	99	99	87	87	87	87	65	65	65	45	45	45	26	26	26	17																				
1	90	86	82	79	79	76	72	70	56	54	52	39	38	36	22	22	21	14																				
2	82	75	69	64	72	66	61	57	49	46	43	34	32	30	20	19	18	11																				
3	74	65	58	53	65	58	52	47	43	39	36	30	27	25	17	16	15	9																				
4	68	58	50	44	59	51	45	40	38	34	30	26	24	21	15	14	13	8																				
5	62	51	43	38	54	45	39	34	34	29	26	23	21	18	14	12	11	7																				
6	57	46	38	32	50	40	34	29	30	26	22	21	18	16	12	11	9	6																				
7	53	41	33	28	46	36	30	25	27	23	19	19	16	14	11	10	8	5																				
8	49	37	29	24	43	33	26	22	25	20	17	17	14	12	10	9	7	5																				
9	45	33	26	21	40	30	24	19	23	18	15	16	13	11	9	8	7	4																				
10	42	30	24	19	37	27	21	17	21	16	13	14	12	10	9	7	6	4																				

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

	0°	45°	90°
0°	2938	2938	2938
5°	2948	2871	2880
10°	2929	2825	2823
15°	2902	2770	2755
20°	2863	2710	2690
25°	2819	2643	2617
30°	2770	2576	2543
35°	2716	2507	2478
40°	2672	2442	2410
45°	2607	2382	2352
50°	2553	2313	2291
55°	2496	2248	2220
60°	2408	2164	2153
65°	2309	2076	2073
70°	2192	1973	1979
75°	2029	1861	1894
80°	1846	1754	1809
85°	1616	1659	1762



TEST NUMBER: P332741-935

CATALOG NUMBER: S124DIW-S350D1560U935-4F0-1E-UDD-D

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	34.5	0.5
10°-20°	98.7	1.5
20°-30°	149.3	2.3
30°-40°	180.7	2.7
40°-50°	191.0	2.9
50°-60°	179.7	2.7
60°-70°	149.1	2.3
70°-80°	104.7	1.6
80°-90°	64.2	1.0
90°-100°	94.5	1.4
100°-110°	404.6	6.1
110°-120°	741.7	11.2
120°-130°	929.2	14.0
130°-140°	987.9	14.9
140°-150°	920.7	13.9
150°-160°	741.8	11.2
160°-170°	478.4	7.2
170°-180°	164.9	2.5
0°-30°	282.5	4.3
0°-40°	463.2	7.0
0°-60°	833.9	12.6
0°-90°	1152.0	17.4
90°-120°	1240.8	18.8
90°-150°	4078.5	61.7
90°-180°	5464.0	82.6
0°-180°	6615.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	364	364	364	364	364	
5°	364	363	360	363	363	35
15°	349	350	348	352	352	98
25°	320	322	323	327	328	147
35°	280	284	288	294	296	175
45°	233	241	249	255	258	180
55°	183	191	203	211	214	163
65°	126	139	153	163	167	125
75°	70	85	102	113	117	75
85°	22	39	57	69	73	23
90°	10	41	69	88	94	8
95°	77	49	64	82	88	96
105°	394	411	432	450	410	413
115°	732	740	752	763	766	720
125°	1027	1032	1040	1051	1055	917
135°	1273	1272	1280	1289	1294	981
145°	1468	1471	1471	1475	1479	917
155°	1609	1610	1606	1611	1608	741
165°	1697	1691	1691	1700	1689	479
175°	1736	1729	1730	1740	1726	165
180°	1736	1736	1736	1736	1736	



TEST NUMBER: P332741-935

CATALOG NUMBER: S124DIW-S350D1560U935-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9
2.5°	365.2	365.0	364.8	364.5	364.4	363.9	363.4	362.8	362.2	361.6	362.1
5°	364.4	364.0	363.8	363.5	363.3	362.8	362.1	361.5	360.9	360.2	361.0
7.5°	361.3	361.1	360.9	360.8	360.6	360.2	359.7	359.2	358.7	358.2	359.0
10°	358.6	358.5	358.4	358.3	358.3	358.0	357.6	357.1	356.6	356.2	357.0
12.5°	355.1	355.0	355.0	355.0	355.0	354.8	354.5	354.2	353.9	353.6	354.3
15°	349.2	349.4	349.5	349.6	349.7	349.6	349.2	349.0	348.7	348.4	349.2
17.5°	341.4	341.6	341.9	342.2	342.4	342.6	342.5	342.4	342.4	342.3	343.2
20°	335.8	336.0	336.4	336.7	336.9	337.1	337.2	337.3	337.3	337.4	338.4
22.5°	329.6	329.9	330.3	330.6	331.0	331.2	331.4	331.6	331.7	331.9	332.8
25°	319.5	320.0	320.6	321.2	321.7	322.1	322.4	322.6	322.9	323.2	324.2
27.5°	308.2	309.1	309.9	310.6	311.4	312.0	312.5	312.9	313.3	313.7	314.6
30°	300.7	301.5	302.2	302.9	303.7	304.4	305.0	305.6	306.3	306.9	307.9
32.5°	292.7	293.5	294.4	295.2	296.1	296.9	297.6	298.3	299.0	299.7	300.8
35°	279.6	280.7	281.7	282.8	284.0	284.9	285.9	286.7	287.7	288.5	289.8
37.5°	266.5	267.7	269.0	270.2	271.5	272.6	273.8	274.9	276.0	277.2	278.4
40°	258.0	259.2	260.4	261.5	262.7	263.9	265.2	266.5	267.7	269.0	270.4
42.5°	248.2	249.5	250.8	252.2	253.5	254.9	256.4	257.9	259.3	260.8	262.3
45°	233.1	234.8	236.5	238.2	240.0	241.7	243.4	245.1	246.8	248.6	250.1
47.5°	218.7	220.5	222.2	224.0	225.8	227.6	229.6	231.7	233.7	235.7	237.2
50°	208.3	210.3	212.2	214.2	216.2	218.2	220.2	222.2	224.2	226.2	228.0
52.5°	197.9	199.8	201.8	203.8	205.8	207.9	210.2	212.5	214.7	217.1	218.9
55°	182.6	184.5	186.4	188.3	190.2	192.5	195.2	197.9	200.6	203.4	205.2
57.5°	165.6	167.9	170.2	172.6	175.0	177.5	180.2	182.9	185.5	188.3	190.5
60°	154.5	156.8	159.2	161.5	163.8	166.5	169.5	172.5	175.5	178.5	180.6
62.5°	143.7	146.3	148.9	151.4	153.9	156.8	159.7	162.7	165.7	168.8	170.8
65°	126.3	129.2	132.2	135.0	137.9	140.9	144.0	147.1	150.2	153.3	155.5
67.5°	109.6	112.7	115.8	118.9	121.9	125.1	128.5	131.7	135.0	138.3	140.6
70°	98.2	101.3	104.4	107.5	110.6	113.8	117.3	120.7	124.2	127.6	130.0
72.5°	87.1	90.3	93.4	96.6	99.7	103.1	106.8	110.5	114.1	117.8	120.1
75°	70.1	73.4	76.8	80.2	83.5	87.0	90.9	94.7	98.5	102.3	104.9
77.5°	54.2	57.8	61.3	64.8	68.4	72.2	76.1	80.2	84.1	88.1	90.7
80°	44.4	48.0	51.7	55.3	58.9	62.7	66.7	70.7	74.6	78.7	81.4
82.5°	34.6	38.4	42.2	46.0	49.7	53.6	57.6	61.6	65.5	69.6	72.3
85°	21.6	25.4	29.2	33.0	36.9	40.7	44.9	48.9	53.0	57.1	59.8
87.5°	12.8	17.1	21.5	25.8	30.1	34.5	39.0	43.4	47.8	52.3	55.2
90°	10.4	17.2	24.0	30.8	37.6	44.1	50.3	56.5	62.7	68.9	73.3
92.5°	22.6	26.0	29.4	32.9	36.2	41.1	47.3	53.6	59.8	66.0	70.2
95°	76.7	69.9	63.0	56.2	49.4	48.0	52.0	56.1	60.0	64.1	68.2
97.5°	156.4	165.1	173.8	182.5	191.2	181.3	152.7	124.2	95.7	67.2	69.7
100°	217.4	225.0	232.6	240.0	247.6	233.2	197.0	160.7	124.4	88.1	85.7
102.5°	285.9	291.9	297.7	303.6	309.4	311.5	309.8	308.1	306.3	304.6	254.1
105°	394.5	398.0	401.6	405.1	408.6	412.8	417.6	422.4	427.2	432.0	436.9
107.5°	495.9	498.3	500.7	503.0	505.3	509.1	514.2	519.4	524.5	529.6	533.1
110°	564.2	566.3	568.4	570.6	572.7	576.3	581.1	586.0	590.9	595.8	598.5



TEST NUMBER: P332741-935

CATALOG NUMBER: S124DIW-S350D1560U935-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	630.3	633.0	635.7	638.3	641.0	644.3	648.2	651.9	655.8	659.6	661.5
115°	732.2	733.8	735.6	737.2	738.9	741.1	743.6	746.2	748.9	751.5	754.1
117.5°	824.2	825.9	827.6	829.2	830.9	833.4	836.6	840.0	843.3	846.6	848.4
120°	886.2	887.7	889.2	890.5	892.0	893.9	896.2	898.5	900.9	903.2	905.6
122.5°	944.4	945.2	945.9	946.7	947.4	949.3	952.1	955.0	957.9	960.8	962.9
125°	1027.3	1028.5	1029.5	1030.6	1031.7	1033.0	1034.7	1036.4	1038.1	1039.7	1042.3
127.5°	1106.2	1106.5	1106.6	1106.8	1107.1	1108.7	1111.7	1114.8	1117.8	1120.9	1122.4
130°	1156.8	1157.0	1157.2	1157.4	1157.6	1158.9	1161.1	1163.5	1165.8	1168.1	1170.0
132.5°	1203.6	1204.0	1204.5	1204.9	1205.3	1206.6	1208.8	1211.2	1213.4	1215.6	1217.5
135°	1273.2	1273.0	1272.7	1272.4	1272.1	1272.9	1274.6	1276.4	1278.2	1280.0	1282.0
137.5°	1335.3	1335.3	1335.4	1335.4	1335.4	1336.3	1337.8	1339.4	1341.0	1342.6	1344.5
140°	1375.9	1376.3	1376.8	1377.3	1377.8	1378.4	1379.1	1379.7	1380.4	1381.0	1383.1
142.5°	1411.9	1412.9	1413.9	1415.0	1415.9	1416.6	1416.9	1417.2	1417.5	1417.8	1419.4
145°	1467.7	1468.4	1469.2	1470.0	1470.8	1471.1	1471.1	1471.1	1471.1	1471.1	1472.0
147.5°	1512.0	1513.6	1515.1	1516.6	1518.1	1518.7	1518.5	1518.2	1517.9	1517.6	1517.9
150°	1544.2	1545.3	1546.4	1547.4	1548.5	1548.9	1548.6	1548.3	1548.0	1547.7	1547.7
152.5°	1570.9	1571.8	1572.7	1573.6	1574.5	1574.8	1574.2	1573.6	1573.1	1572.6	1573.1
155°	1608.8	1609.0	1609.3	1609.6	1609.9	1609.6	1608.8	1607.9	1607.1	1606.1	1607.3
157.5°	1640.7	1640.5	1640.4	1640.2	1640.0	1639.4	1638.4	1637.4	1636.5	1635.5	1637.0
160°	1659.4	1658.5	1657.7	1656.8	1656.0	1655.4	1655.0	1654.8	1654.5	1654.2	1656.0
162.5°	1676.0	1674.9	1673.8	1672.8	1671.6	1670.9	1670.6	1670.3	1670.1	1669.7	1671.5
165°	1697.0	1695.6	1694.2	1692.7	1691.3	1690.6	1690.6	1690.6	1690.6	1690.6	1692.8
167.5°	1713.6	1712.2	1710.6	1709.2	1707.6	1706.8	1706.7	1706.5	1706.3	1706.2	1708.7
170°	1723.0	1721.3	1719.5	1717.8	1716.1	1715.4	1715.6	1716.0	1716.2	1716.5	1718.8
172.5°	1729.2	1727.5	1725.8	1724.1	1722.3	1721.6	1721.9	1722.2	1722.4	1722.8	1725.0
175°	1735.9	1734.2	1732.5	1730.8	1729.1	1728.4	1728.6	1728.9	1729.2	1729.5	1732.1
177.5°	1739.1	1737.5	1735.9	1734.2	1732.7	1732.1	1732.5	1733.0	1733.5	1733.9	1735.8
180°	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9



TEST NUMBER: P332741-935

CATALOG NUMBER: S124DIW-S350D1560U935-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9
2.5°	362.7	363.2	363.7	363.9	363.9	363.8	363.7	363.6
5°	361.7	362.4	363.2	363.5	363.4	363.3	363.2	363.1
7.5°	359.8	360.6	361.4	361.8	361.7	361.6	361.5	361.4
10°	357.8	358.6	359.5	359.8	359.7	359.6	359.6	359.5
12.5°	355.1	355.9	356.5	356.9	356.9	356.9	356.9	356.8
15°	350.1	350.9	351.7	352.1	352.0	351.9	351.8	351.7
17.5°	344.0	344.8	345.7	346.0	345.9	345.9	345.9	345.8
20°	339.2	340.2	341.0	341.6	341.6	341.6	341.6	341.6
22.5°	333.7	334.6	335.5	336.0	336.2	336.3	336.5	336.7
25°	325.2	326.1	327.2	327.7	327.8	327.9	328.0	328.0
27.5°	315.6	316.5	317.5	318.0	318.1	318.1	318.2	318.4
30°	308.8	309.9	310.8	311.4	311.6	311.9	312.0	312.2
32.5°	302.0	303.2	304.3	305.0	305.1	305.3	305.5	305.7
35°	291.1	292.3	293.6	294.4	294.6	294.9	295.2	295.5
37.5°	279.7	280.9	282.2	283.1	283.4	283.6	284.0	284.2
40°	271.7	273.0	274.4	275.3	275.6	276.0	276.4	276.7
42.5°	263.8	265.4	266.8	267.8	268.0	268.3	268.6	268.9
45°	251.7	253.2	254.8	255.7	256.2	256.7	257.1	257.5
47.5°	238.8	240.4	242.0	243.1	243.7	244.2	244.7	245.3
50°	229.8	231.6	233.4	234.6	235.1	235.7	236.3	236.8
52.5°	220.7	222.5	224.3	225.5	226.0	226.5	227.1	227.6
55°	207.0	208.8	210.6	211.8	212.3	212.8	213.4	214.0
57.5°	192.6	194.8	196.9	198.2	198.7	199.2	199.8	200.3
60°	182.7	184.8	186.8	188.2	189.0	189.7	190.5	191.1
62.5°	172.9	175.0	177.0	178.5	179.2	179.9	180.6	181.3
65°	157.7	160.1	162.3	163.8	164.5	165.2	166.0	166.7
67.5°	142.9	145.3	147.5	149.0	149.7	150.4	151.1	151.9
70°	132.4	134.9	137.3	138.9	139.5	140.2	140.8	141.4
72.5°	122.5	124.9	127.3	128.8	129.5	130.2	131.0	131.6
75°	107.4	109.9	112.4	114.1	114.9	115.7	116.6	117.4
77.5°	93.2	95.8	98.4	100.1	101.0	101.9	102.7	103.6
80°	84.1	86.8	89.5	91.3	92.0	92.7	93.4	94.1
82.5°	75.1	77.9	80.7	82.5	83.3	84.0	84.9	85.7
85°	62.5	65.2	67.9	69.7	70.6	71.5	72.4	73.4
87.5°	58.2	61.1	64.1	66.1	67.0	67.9	68.8	69.7
90°	77.7	82.0	86.4	89.2	90.5	91.8	93.1	94.4
92.5°	74.5	78.8	83.1	85.6	86.4	87.3	88.2	88.9
95°	72.4	76.5	80.8	83.3	84.5	85.6	86.7	87.8
97.5°	72.3	74.8	77.4	79.2	80.2	81.4	82.4	83.4
100°	83.2	80.8	78.3	77.5	78.4	79.3	80.2	81.2
102.5°	203.5	153.0	102.5	77.6	78.3	79.0	79.8	80.6
105°	441.7	446.6	451.4	449.0	439.4	429.7	420.1	410.4
107.5°	536.6	540.1	543.6	546.2	547.9	549.7	551.5	553.2
110°	601.2	603.8	606.5	608.6	610.2	611.7	613.4	614.9





TEST NUMBER: P332741-935

CATALOG NUMBER: S124DIW-S350D1560U935-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	663.4	665.3	667.2	669.1	670.9	672.7	674.5	676.4
115°	756.6	759.1	761.7	763.4	764.0	764.7	765.3	765.9
117.5°	850.2	852.0	853.8	854.9	855.5	856.2	856.8	857.4
120°	908.0	910.3	912.7	914.0	914.2	914.3	914.5	914.6
122.5°	965.1	967.2	969.4	970.5	970.6	970.7	970.8	970.9
125°	1044.9	1047.5	1050.1	1051.8	1052.7	1053.5	1054.3	1055.2
127.5°	1123.9	1125.3	1126.8	1127.7	1128.1	1128.4	1128.9	1129.2
130°	1172.0	1173.9	1175.8	1177.1	1177.6	1178.1	1178.6	1179.2
132.5°	1219.3	1221.2	1223.1	1224.1	1224.4	1224.8	1225.0	1225.4
135°	1284.1	1286.1	1288.1	1289.7	1290.8	1291.9	1293.0	1294.2
137.5°	1346.4	1348.4	1350.4	1351.5	1351.8	1352.0	1352.3	1352.6
140°	1385.1	1387.2	1389.2	1390.6	1391.4	1392.1	1392.8	1393.5
142.5°	1421.1	1422.8	1424.4	1425.5	1425.9	1426.4	1426.8	1427.3
145°	1472.7	1473.6	1474.5	1475.3	1476.3	1477.2	1478.2	1479.1
147.5°	1518.2	1518.5	1518.8	1519.2	1519.8	1520.4	1521.0	1521.6
150°	1547.7	1547.7	1547.7	1547.9	1548.2	1548.4	1548.8	1549.0
152.5°	1573.6	1574.0	1574.5	1574.6	1574.4	1574.3	1574.1	1573.9
155°	1608.4	1609.6	1610.8	1610.9	1610.1	1609.2	1608.3	1607.5
157.5°	1638.5	1640.0	1641.5	1641.5	1640.0	1638.5	1637.0	1635.5
160°	1657.7	1659.4	1661.1	1661.1	1659.4	1657.7	1656.0	1654.2
162.5°	1673.3	1675.0	1676.7	1676.5	1674.6	1672.7	1670.7	1668.7
165°	1695.1	1697.5	1699.8	1699.6	1697.0	1694.4	1691.9	1689.3
167.5°	1711.2	1713.7	1716.3	1716.1	1713.2	1710.4	1707.4	1704.6
170°	1721.1	1723.5	1725.8	1725.4	1722.6	1719.7	1716.8	1713.9
172.5°	1727.3	1729.7	1732.0	1731.6	1728.5	1725.4	1722.3	1719.1
175°	1734.7	1737.3	1739.9	1739.5	1735.9	1732.5	1729.1	1725.6
177.5°	1737.6	1739.5	1741.3	1740.9	1738.1	1735.3	1732.5	1729.7
180°	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9

(END OF REPORT)