

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: P332741-830

Luminaire Tested: **S124DIW-S350D1560U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332741-830  
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-S350D1560U830-4F0-1E-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: 7242.1 lumens  
Efficiency: N/A  
Efficacy: 135.6 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

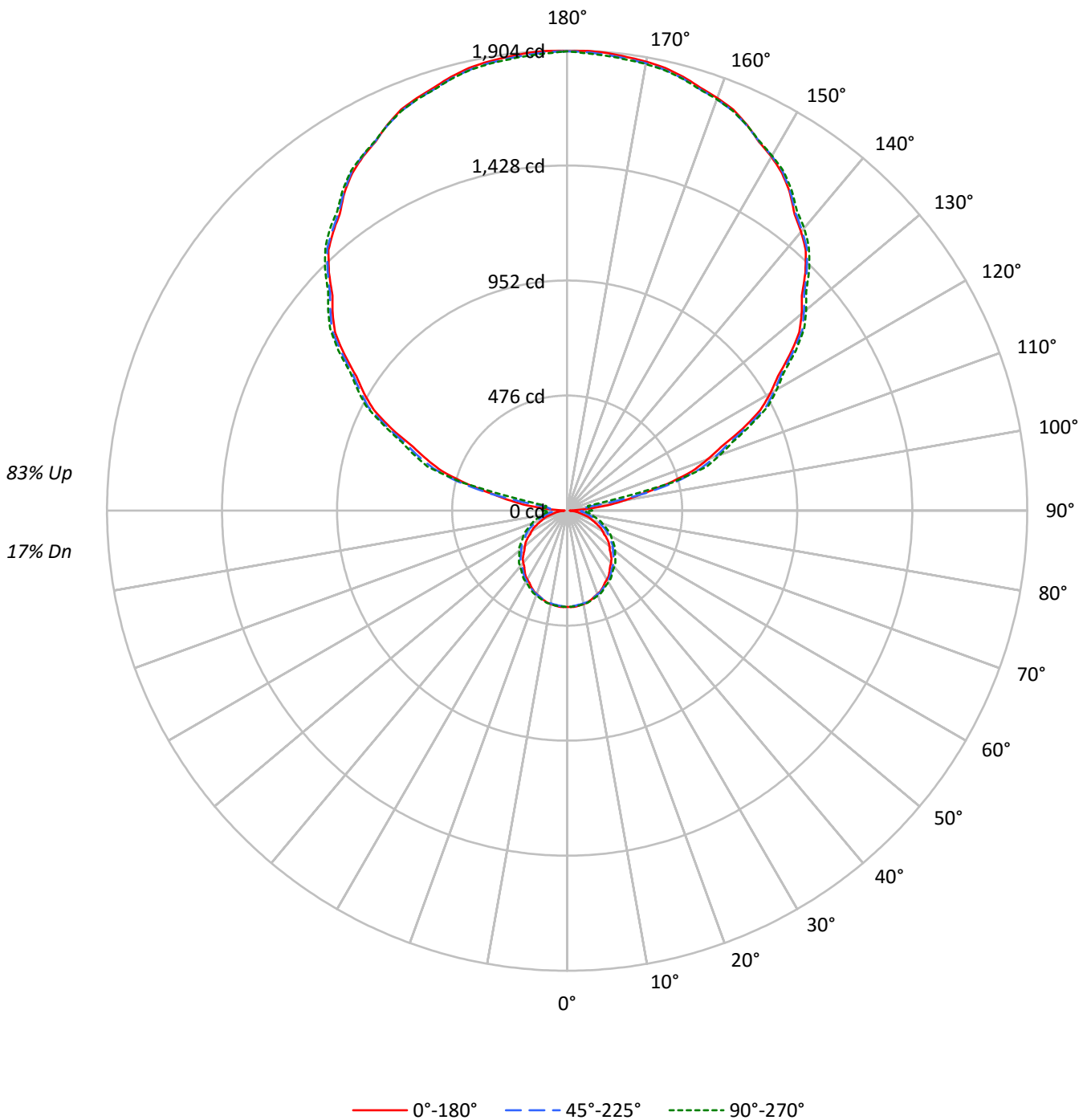
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332741-830

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### Luminous Intensity Polar Plot





TEST NUMBER: P332741-830

CATALOG NUMBER: S124DIW-S350D1560U830-4F0-1E-UDD-D

**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	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°	3216	3216	3216
5°	3227	3143	3152
10°	3207	3092	3090
15°	3177	3032	3016
20°	3134	2967	2944
25°	3086	2893	2865
30°	3032	2819	2784
35°	2972	2744	2713
40°	2925	2674	2639
45°	2853	2607	2575
50°	2794	2532	2508
55°	2732	2460	2429
60°	2635	2369	2357
65°	2529	2272	2269
70°	2400	2161	2166
75°	2220	2037	2074
80°	2021	1919	1981
85°	1773	1815	1928



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.7	0.5
10°-20°	108.1	1.5
20°-30°	163.4	2.3
30°-40°	197.8	2.7
40°-50°	209.1	2.9
50°-60°	196.8	2.7
60°-70°	163.2	2.3
70°-80°	114.7	1.6
80°-90°	70.3	1.0
90°-100°	103.5	1.4
100°-110°	442.9	6.1
110°-120°	811.9	11.2
120°-130°	1017.2	14.0
130°-140°	1081.4	14.9
140°-150°	1007.9	13.9
150°-160°	812.0	11.2
160°-170°	523.7	7.2
170°-180°	180.5	2.5
0°-30°	309.3	4.3
0°-40°	507.0	7.0
0°-60°	912.9	12.6
0°-90°	1261.1	17.4
90°-120°	1358.3	18.8
90°-150°	4464.8	61.7
90°-180°	5981.0	82.6
0°-180°	7242.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	398	398	398	398	398	
5°	399	397	394	398	398	38
15°	382	383	381	385	385	108
25°	350	352	354	358	359	161
35°	306	311	316	322	324	192
45°	255	264	272	279	282	197
55°	200	210	223	231	234	178
65°	138	153	168	178	182	137
75°	77	93	112	124	128	82
85°	24	42	62	75	80	25
90°	11	45	75	96	103	8
95°	84	53	70	90	96	105
105°	432	450	473	493	449	452
115°	802	810	823	835	838	789
125°	1125	1130	1138	1150	1155	1004
135°	1394	1393	1401	1411	1417	1074
145°	1607	1610	1610	1615	1619	1004
155°	1761	1762	1758	1763	1760	812
165°	1858	1851	1851	1861	1849	525
175°	1900	1892	1893	1904	1889	181
180°	1900	1900	1900	1900	1900	



TEST NUMBER: P332741-830

CATALOG NUMBER: S124DIW-S350D1560U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
2.5°	399.8	399.5	399.4	399.1	398.9	398.4	397.8	397.2	396.5	395.9	396.4
5°	398.9	398.5	398.2	397.9	397.7	397.2	396.4	395.8	395.1	394.4	395.2
7.5°	395.5	395.3	395.1	394.9	394.7	394.4	393.8	393.2	392.7	392.1	392.9
10°	392.6	392.5	392.4	392.3	392.2	391.9	391.4	390.9	390.4	389.9	390.8
12.5°	388.7	388.6	388.6	388.6	388.6	388.4	388.0	387.8	387.4	387.1	387.9
15°	382.3	382.5	382.6	382.7	382.8	382.7	382.3	382.0	381.7	381.4	382.3
17.5°	373.7	374.0	374.3	374.6	374.8	375.0	374.9	374.8	374.8	374.8	375.7
20°	367.6	367.9	368.3	368.5	368.8	369.0	369.1	369.2	369.3	369.4	370.4
22.5°	360.8	361.2	361.6	361.9	362.3	362.6	362.8	363.0	363.2	363.4	364.3
25°	349.8	350.3	351.0	351.6	352.1	352.6	352.9	353.2	353.5	353.8	354.9
27.5°	337.4	338.4	339.2	340.1	340.9	341.6	342.0	342.5	343.0	343.5	344.4
30°	329.2	330.1	330.8	331.6	332.4	333.2	333.8	334.5	335.3	335.9	337.1
32.5°	320.4	321.3	322.3	323.2	324.1	325.0	325.7	326.5	327.3	328.1	329.3
35°	306.0	307.3	308.4	309.6	310.9	311.9	312.9	313.9	314.9	315.8	317.3
37.5°	291.7	293.0	294.5	295.8	297.2	298.4	299.7	301.0	302.2	303.4	304.8
40°	282.4	283.7	285.0	286.3	287.6	288.9	290.3	291.7	293.0	294.5	296.0
42.5°	271.7	273.1	274.6	276.1	277.5	279.0	280.7	282.3	283.9	285.5	287.2
45°	255.1	257.0	258.9	260.8	262.7	264.6	266.5	268.3	270.2	272.1	273.8
47.5°	239.4	241.4	243.3	245.2	247.1	249.2	251.4	253.6	255.8	258.0	259.7
50°	228.0	230.2	232.3	234.5	236.7	238.8	241.1	243.3	245.4	247.6	249.6
52.5°	216.6	218.8	220.9	223.1	225.3	227.6	230.1	232.6	235.1	237.6	239.6
55°	199.9	202.0	204.1	206.1	208.2	210.8	213.7	216.7	219.6	222.6	224.6
57.5°	181.3	183.8	186.3	189.0	191.5	194.3	197.3	200.2	203.1	206.1	208.5
60°	169.1	171.6	174.3	176.8	179.4	182.3	185.6	188.9	192.1	195.4	197.7
62.5°	157.3	160.1	163.0	165.8	168.5	171.6	174.8	178.1	181.4	184.7	187.0
65°	138.3	141.5	144.7	147.8	151.0	154.3	157.6	161.0	164.4	167.8	170.2
67.5°	120.0	123.4	126.8	130.2	133.5	137.0	140.6	144.2	147.8	151.4	153.9
70°	107.5	110.8	114.2	117.6	121.0	124.6	128.4	132.1	135.9	139.7	142.3
72.5°	95.4	98.9	102.3	105.8	109.1	112.9	116.9	120.9	124.9	128.9	131.5
75°	76.7	80.4	84.1	87.8	91.4	95.3	99.5	103.7	107.8	112.0	114.8
77.5°	59.4	63.2	67.1	71.0	74.8	79.0	83.3	87.8	92.1	96.4	99.2
80°	48.6	52.6	56.6	60.5	64.5	68.6	73.0	77.4	81.7	86.1	89.1
82.5°	37.9	42.0	46.2	50.3	54.4	58.6	63.1	67.4	71.7	76.2	79.2
85°	23.7	27.8	32.0	36.1	40.3	44.6	49.1	53.5	58.0	62.5	65.4
87.5°	14.0	18.8	23.6	28.3	33.0	37.8	42.7	47.5	52.3	57.2	60.4
90°	11.4	18.9	26.3	33.7	41.2	48.3	55.0	61.8	68.6	75.4	80.2
92.5°	24.7	28.5	32.2	36.0	39.7	45.0	51.7	58.6	65.4	72.2	76.8
95°	84.0	76.5	69.0	61.5	54.1	52.6	56.9	61.4	65.7	70.1	74.6
97.5°	171.3	180.8	190.3	199.8	209.3	198.5	167.2	136.0	104.8	73.6	76.3
100°	238.0	246.3	254.6	262.8	271.1	255.3	215.7	175.9	136.2	96.4	93.8
102.5°	313.0	319.5	325.9	332.3	338.7	341.0	339.1	337.2	335.4	333.5	278.1
105°	431.9	435.7	439.6	443.5	447.3	451.9	457.1	462.4	467.7	472.9	478.2
107.5°	542.9	545.4	548.1	550.6	553.2	557.3	562.9	568.5	574.2	579.8	583.6
110°	617.6	619.9	622.3	624.6	627.0	630.8	636.1	641.5	646.9	652.2	655.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	690.0	693.0	695.9	698.8	701.7	705.3	709.5	713.7	717.9	722.1	724.2
115°	801.5	803.3	805.2	807.0	808.9	811.2	814.1	816.9	819.8	822.7	825.5
117.5°	902.3	904.1	906.0	907.8	909.6	912.3	915.9	919.5	923.2	926.8	928.8
120°	970.2	971.8	973.4	974.9	976.5	978.5	981.1	983.6	986.2	988.7	991.4
122.5°	1033.9	1034.7	1035.5	1036.3	1037.2	1039.2	1042.3	1045.5	1048.6	1051.8	1054.1
125°	1124.6	1125.9	1127.0	1128.2	1129.4	1130.9	1132.7	1134.5	1136.4	1138.2	1141.0
127.5°	1211.0	1211.3	1211.4	1211.6	1211.9	1213.7	1217.0	1220.4	1223.7	1227.1	1228.7
130°	1266.4	1266.6	1266.8	1267.1	1267.2	1268.7	1271.1	1273.7	1276.2	1278.7	1280.8
132.5°	1317.6	1318.1	1318.5	1319.0	1319.5	1320.9	1323.3	1325.9	1328.3	1330.8	1332.8
135°	1393.8	1393.5	1393.3	1392.9	1392.6	1393.5	1395.3	1397.3	1399.3	1401.3	1403.4
137.5°	1461.8	1461.8	1461.9	1461.9	1461.9	1462.8	1464.5	1466.2	1468.0	1469.7	1471.9
140°	1506.2	1506.7	1507.2	1507.8	1508.3	1508.9	1509.7	1510.3	1511.1	1511.8	1514.1
142.5°	1545.6	1546.7	1547.8	1549.0	1550.0	1550.8	1551.0	1551.4	1551.7	1552.1	1553.9
145°	1606.7	1607.5	1608.4	1609.2	1610.1	1610.4	1610.4	1610.4	1610.4	1610.4	1611.4
147.5°	1655.2	1656.9	1658.6	1660.2	1661.9	1662.6	1662.3	1662.0	1661.6	1661.3	1661.6
150°	1690.5	1691.7	1692.8	1693.9	1695.2	1695.5	1695.3	1695.0	1694.6	1694.3	1694.3
152.5°	1719.7	1720.7	1721.6	1722.7	1723.6	1723.9	1723.3	1722.7	1722.1	1721.6	1722.1
155°	1761.1	1761.4	1761.7	1762.1	1762.4	1762.1	1761.1	1760.2	1759.3	1758.2	1759.5
157.5°	1796.1	1795.9	1795.7	1795.5	1795.4	1794.7	1793.6	1792.5	1791.5	1790.4	1792.1
160°	1816.6	1815.6	1814.7	1813.7	1812.8	1812.1	1811.8	1811.5	1811.2	1810.8	1812.8
162.5°	1834.8	1833.5	1832.3	1831.2	1829.9	1829.2	1828.8	1828.5	1828.2	1827.9	1829.8
165°	1857.8	1856.1	1854.6	1853.0	1851.4	1850.7	1850.7	1850.7	1850.7	1850.7	1853.1
167.5°	1875.9	1874.3	1872.6	1871.0	1869.3	1868.5	1868.3	1868.1	1867.9	1867.7	1870.5
170°	1886.2	1884.3	1882.4	1880.5	1878.6	1877.8	1878.1	1878.5	1878.8	1879.1	1881.6
172.5°	1893.0	1891.1	1889.2	1887.3	1885.5	1884.6	1885.0	1885.3	1885.6	1885.9	1888.4
175°	1900.4	1898.5	1896.6	1894.7	1892.8	1892.1	1892.3	1892.6	1893.0	1893.3	1896.1
177.5°	1903.8	1902.1	1900.3	1898.5	1896.8	1896.1	1896.6	1897.1	1897.6	1898.1	1900.2
180°	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
2.5°	397.0	397.6	398.1	398.3	398.3	398.2	398.1	398.0
5°	396.0	396.7	397.6	397.9	397.8	397.7	397.6	397.5
7.5°	393.9	394.7	395.7	396.1	396.0	395.9	395.8	395.7
10°	391.7	392.6	393.5	393.9	393.8	393.7	393.6	393.5
12.5°	388.7	389.6	390.3	390.7	390.7	390.7	390.7	390.6
15°	383.2	384.1	385.0	385.4	385.3	385.2	385.1	385.0
17.5°	376.5	377.5	378.4	378.8	378.7	378.6	378.6	378.5
20°	371.4	372.4	373.3	373.9	373.9	373.9	373.9	373.9
22.5°	365.3	366.3	367.3	367.9	368.1	368.2	368.3	368.5
25°	356.0	357.0	358.2	358.7	358.8	358.9	359.0	359.1
27.5°	345.4	346.5	347.5	348.1	348.2	348.3	348.4	348.6
30°	338.1	339.2	340.3	340.9	341.1	341.4	341.6	341.8
32.5°	330.5	331.9	333.1	333.8	334.0	334.2	334.4	334.6
35°	318.7	320.0	321.4	322.3	322.5	322.8	323.2	323.5
37.5°	306.2	307.6	309.0	309.9	310.2	310.5	310.9	311.1
40°	297.5	298.9	300.4	301.3	301.7	302.2	302.6	302.9
42.5°	288.8	290.5	292.1	293.1	293.4	293.7	294.1	294.4
45°	275.5	277.2	278.9	279.9	280.5	281.0	281.4	281.9
47.5°	261.5	263.2	264.9	266.1	266.7	267.3	267.9	268.5
50°	251.6	253.5	255.5	256.8	257.4	258.0	258.6	259.2
52.5°	241.6	243.6	245.5	246.9	247.4	248.0	248.6	249.2
55°	226.6	228.6	230.5	231.9	232.4	233.0	233.7	234.2
57.5°	210.8	213.2	215.6	217.0	217.5	218.1	218.7	219.2
60°	200.0	202.3	204.5	206.0	206.9	207.6	208.5	209.2
62.5°	189.3	191.5	193.8	195.4	196.1	196.9	197.7	198.5
65°	172.7	175.2	177.7	179.3	180.1	180.9	181.7	182.5
67.5°	156.5	159.0	161.5	163.2	163.9	164.7	165.4	166.3
70°	145.0	147.7	150.3	152.0	152.7	153.4	154.1	154.8
72.5°	134.1	136.8	139.3	141.0	141.8	142.5	143.4	144.1
75°	117.5	120.3	123.1	124.9	125.8	126.7	127.6	128.5
77.5°	102.1	104.9	107.7	109.6	110.6	111.5	112.4	113.4
80°	92.1	95.0	98.0	99.9	100.7	101.5	102.3	103.0
82.5°	82.2	85.3	88.3	90.3	91.1	92.0	92.9	93.8
85°	68.4	71.4	74.4	76.3	77.3	78.3	79.3	80.3
87.5°	63.7	66.9	70.2	72.4	73.3	74.4	75.3	76.3
90°	85.0	89.7	94.5	97.6	99.1	100.5	101.9	103.3
92.5°	81.5	86.2	91.0	93.7	94.6	95.6	96.5	97.4
95°	79.3	83.8	88.4	91.2	92.5	93.7	94.9	96.1
97.5°	79.2	81.9	84.7	86.7	87.8	89.1	90.2	91.3
100°	91.0	88.4	85.7	84.8	85.9	86.8	87.8	88.9
102.5°	222.8	167.5	112.2	84.9	85.7	86.5	87.4	88.2
105°	483.5	488.9	494.2	491.5	481.0	470.4	459.9	449.3
107.5°	587.4	591.3	595.1	597.9	599.8	601.8	603.7	605.6
110°	658.1	661.0	663.9	666.3	668.0	669.7	671.5	673.2





TEST NUMBER: P332741-830

CATALOG NUMBER: S124DIW-S350D1560U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	726.2	728.3	730.4	732.4	734.4	736.4	738.4	740.5
115°	828.2	831.0	833.9	835.7	836.3	837.1	837.7	838.4
117.5°	930.8	932.6	934.6	935.9	936.5	937.3	937.9	938.6
120°	994.0	996.6	999.2	1000.6	1000.8	1000.9	1001.1	1001.3
122.5°	1056.5	1058.9	1061.2	1062.4	1062.5	1062.6	1062.7	1062.8
125°	1143.9	1146.7	1149.5	1151.4	1152.4	1153.3	1154.1	1155.1
127.5°	1230.3	1231.9	1233.5	1234.4	1234.9	1235.3	1235.8	1236.1
130°	1283.0	1285.1	1287.1	1288.5	1289.1	1289.7	1290.2	1290.9
132.5°	1334.8	1336.8	1338.9	1340.0	1340.4	1340.8	1341.0	1341.4
135°	1405.7	1407.9	1410.1	1411.8	1413.1	1414.3	1415.5	1416.7
137.5°	1473.9	1476.1	1478.3	1479.5	1479.8	1480.1	1480.4	1480.7
140°	1516.3	1518.5	1520.8	1522.3	1523.1	1523.9	1524.8	1525.5
142.5°	1555.7	1557.6	1559.3	1560.5	1560.9	1561.5	1562.0	1562.5
145°	1612.2	1613.2	1614.1	1615.0	1616.1	1617.1	1618.2	1619.2
147.5°	1662.0	1662.4	1662.6	1663.1	1663.8	1664.4	1665.0	1665.7
150°	1694.3	1694.3	1694.3	1694.5	1694.8	1695.1	1695.4	1695.7
152.5°	1722.6	1723.1	1723.6	1723.7	1723.5	1723.3	1723.2	1723.0
155°	1760.8	1762.1	1763.3	1763.5	1762.6	1761.6	1760.7	1759.7
157.5°	1793.7	1795.4	1797.0	1797.0	1795.4	1793.7	1792.1	1790.4
160°	1814.7	1816.6	1818.4	1818.4	1816.6	1814.7	1812.8	1810.8
162.5°	1831.7	1833.6	1835.5	1835.3	1833.2	1831.1	1828.9	1826.7
165°	1855.7	1858.2	1860.8	1860.6	1857.8	1854.9	1852.1	1849.3
167.5°	1873.3	1876.0	1878.9	1878.7	1875.5	1872.4	1869.2	1866.0
170°	1884.1	1886.7	1889.2	1888.9	1885.7	1882.5	1879.4	1876.2
172.5°	1890.9	1893.5	1896.0	1895.5	1892.2	1888.8	1885.4	1881.9
175°	1898.9	1901.9	1904.7	1904.2	1900.4	1896.6	1892.8	1889.0
177.5°	1902.1	1904.2	1906.2	1905.7	1902.7	1899.6	1896.6	1893.6
180°	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4	1900.4

(END OF REPORT)