

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: P332741-840

Luminaire Tested: **S124DIW-S350D1560U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332741-840
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: S124DIW-S350D1560U840-4F0-1E-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: 7759.4 lumens
Efficiency: N/A
Efficacy: 145.3 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

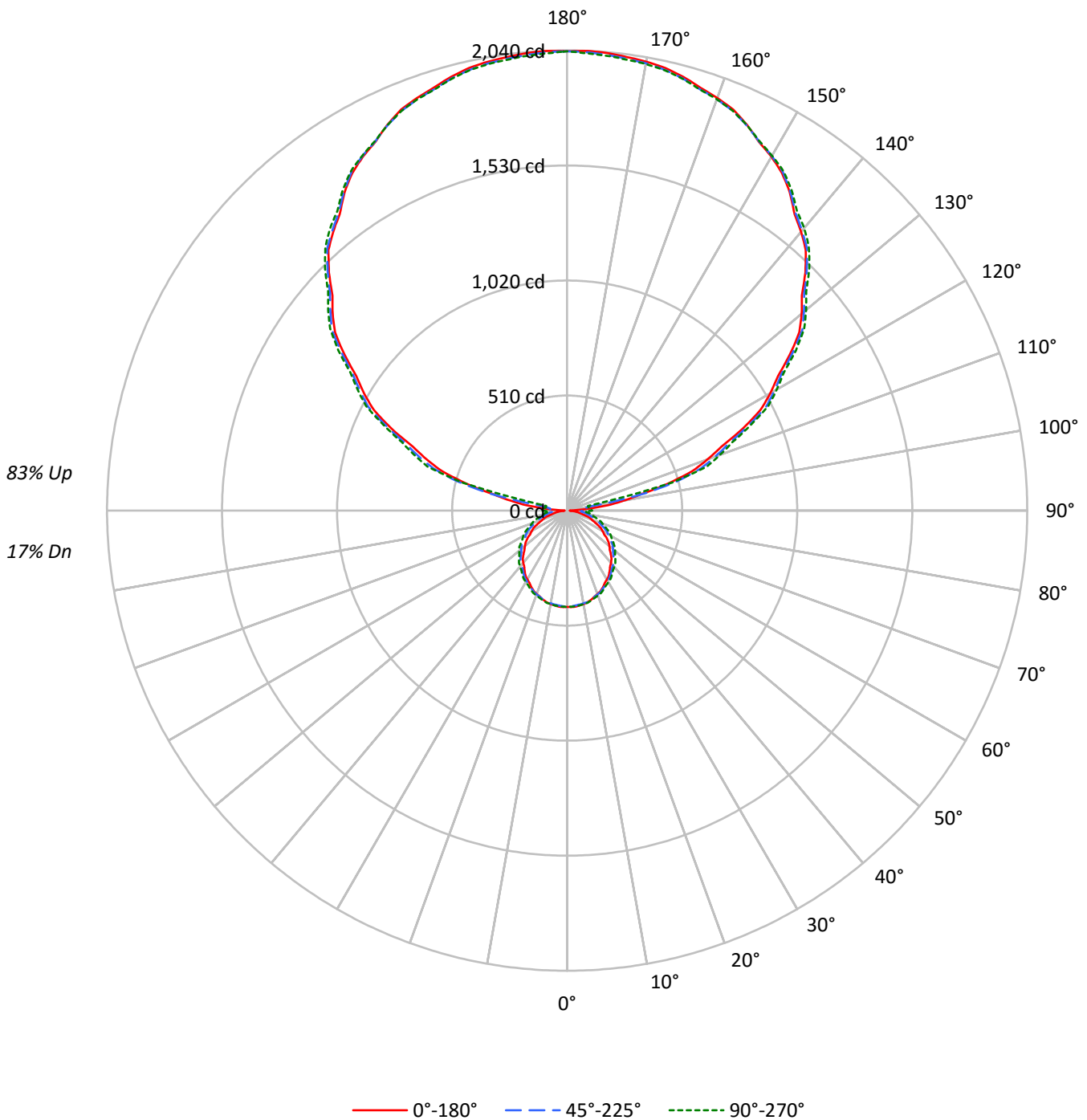
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332741-840

CATALOG NUMBER: S124DIW-S350D1560U840-4F0-1E-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	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°	3446	3446	3446
5°	3457	3367	3378
10°	3435	3313	3310
15°	3404	3249	3231
20°	3358	3179	3155
25°	3306	3100	3070
30°	3249	3021	2983
35°	3185	2941	2907
40°	3134	2865	2828
45°	3058	2793	2759
50°	2994	2713	2687
55°	2928	2636	2603
60°	2824	2538	2526
65°	2708	2435	2431
70°	2572	2315	2320
75°	2379	2183	2220
80°	2166	2057	2123
85°	1893	1946	2065



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.4	0.5
10°-20°	115.8	1.5
20°-30°	175.1	2.3
30°-40°	211.9	2.7
40°-50°	224.0	2.9
50°-60°	210.8	2.7
60°-70°	174.9	2.3
70°-80°	122.9	1.6
80°-90°	75.3	1.0
90°-100°	110.9	1.4
100°-110°	474.5	6.1
110°-120°	869.9	11.2
120°-130°	1089.9	14.0
130°-140°	1158.7	14.9
140°-150°	1079.8	13.9
150°-160°	870.0	11.2
160°-170°	561.1	7.2
170°-180°	193.4	2.5
0°-30°	331.4	4.3
0°-40°	543.2	7.0
0°-60°	978.1	12.6
0°-90°	1351.1	17.4
90°-120°	1455.3	18.8
90°-150°	4783.7	61.7
90°-180°	6408.0	82.6
0°-180°	7759.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	427	427	427	427	427	
5°	427	426	422	426	426	41
15°	410	410	409	413	412	115
25°	375	378	379	384	385	173
35°	328	334	338	345	347	205
45°	273	282	292	299	302	211
55°	214	224	238	248	251	191
65°	148	164	180	191	196	147
75°	82	100	120	133	138	87
85°	25	46	67	81	86	27
90°	12	48	81	103	111	9
95°	90	57	75	96	103	113
105°	463	482	507	528	481	484
115°	859	868	881	894	898	845
125°	1205	1211	1220	1233	1238	1076
135°	1493	1493	1501	1512	1518	1150
145°	1721	1725	1726	1730	1735	1075
155°	1887	1888	1884	1889	1885	870
165°	1990	1983	1983	1994	1981	562
175°	2036	2028	2028	2040	2024	194
180°	2036	2036	2036	2036	2036	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9
2.5°	428.4	428.1	427.9	427.6	427.4	426.9	426.3	425.6	424.9	424.1	424.7
5°	427.4	427.0	426.7	426.4	426.1	425.6	424.7	424.0	423.3	422.5	423.4
7.5°	423.7	423.5	423.3	423.1	422.9	422.5	421.9	421.3	420.7	420.1	421.0
10°	420.6	420.5	420.4	420.3	420.2	419.9	419.4	418.8	418.3	417.8	418.7
12.5°	416.5	416.4	416.4	416.4	416.4	416.2	415.8	415.5	415.1	414.8	415.6
15°	409.6	409.8	409.9	410.0	410.1	410.0	409.6	409.3	409.0	408.7	409.6
17.5°	400.4	400.7	401.0	401.3	401.6	401.8	401.7	401.6	401.6	401.5	402.5
20°	393.8	394.2	394.6	394.9	395.2	395.4	395.5	395.6	395.7	395.8	396.9
22.5°	386.6	387.0	387.4	387.8	388.2	388.5	388.7	388.9	389.1	389.3	390.3
25°	374.8	375.4	376.1	376.7	377.3	377.8	378.1	378.4	378.7	379.1	380.2
27.5°	361.5	362.5	363.5	364.4	365.3	366.0	366.5	367.0	367.5	368.0	369.0
30°	352.7	353.7	354.5	355.3	356.2	357.0	357.7	358.4	359.2	359.9	361.1
32.5°	343.3	344.3	345.3	346.3	347.3	348.2	349.0	349.8	350.7	351.5	352.8
35°	327.9	329.2	330.4	331.7	333.1	334.2	335.3	336.3	337.4	338.4	339.9
37.5°	312.6	314.0	315.5	316.9	318.4	319.7	321.1	322.4	323.8	325.1	326.6
40°	302.6	304.0	305.4	306.7	308.1	309.5	311.0	312.6	314.0	315.5	317.1
42.5°	291.1	292.7	294.2	295.8	297.3	298.9	300.7	302.5	304.2	305.9	307.7
45°	273.4	275.4	277.4	279.4	281.4	283.5	285.5	287.5	289.5	291.5	293.4
47.5°	256.5	258.6	260.6	262.8	264.8	267.0	269.3	271.8	274.1	276.4	278.2
50°	244.3	246.6	248.9	251.3	253.6	255.9	258.3	260.6	263.0	265.3	267.4
52.5°	232.1	234.4	236.7	239.0	241.4	243.9	246.5	249.2	251.9	254.6	256.7
55°	214.2	216.4	218.6	220.9	223.1	225.8	228.9	232.2	235.3	238.5	240.7
57.5°	194.2	196.9	199.7	202.5	205.2	208.1	211.4	214.5	217.6	220.9	223.4
60°	181.2	183.9	186.7	189.5	192.2	195.3	198.8	202.4	205.8	209.3	211.8
62.5°	168.5	171.6	174.6	177.6	180.6	183.9	187.3	190.9	194.4	197.9	200.4
65°	148.1	151.6	155.0	158.3	161.8	165.3	168.8	172.5	176.1	179.8	182.4
67.5°	128.6	132.2	135.8	139.5	143.0	146.7	150.7	154.5	158.3	162.2	164.9
70°	115.2	118.8	122.4	126.0	129.7	133.5	137.5	141.6	145.6	149.7	152.5
72.5°	102.2	105.9	109.6	113.3	116.9	121.0	125.2	129.6	133.8	138.1	140.9
75°	82.2	86.1	90.1	94.0	98.0	102.1	106.6	111.1	115.5	120.0	123.0
77.5°	63.6	67.8	71.9	76.0	80.2	84.6	89.3	94.0	98.7	103.3	106.3
80°	52.1	56.4	60.6	64.8	69.1	73.5	78.3	82.9	87.6	92.3	95.4
82.5°	40.6	45.0	49.5	53.9	58.3	62.8	67.6	72.2	76.9	81.6	84.8
85°	25.3	29.8	34.2	38.7	43.2	47.8	52.6	57.4	62.1	67.0	70.1
87.5°	15.0	20.1	25.2	30.3	35.3	40.5	45.7	50.9	56.0	61.3	64.7
90°	12.2	20.2	28.2	36.2	44.1	51.7	59.0	66.2	73.5	80.8	85.9
92.5°	26.5	30.5	34.5	38.6	42.5	48.2	55.4	62.8	70.1	77.4	82.3
95°	90.0	82.0	73.9	65.9	58.0	56.4	61.0	65.7	70.4	75.1	80.0
97.5°	183.5	193.7	203.9	214.1	224.3	212.7	179.2	145.7	112.3	78.9	81.8
100°	255.0	263.9	272.8	281.6	290.4	273.6	231.1	188.4	145.9	103.3	100.5
102.5°	335.4	342.3	349.2	356.1	362.9	365.4	363.3	361.3	359.3	357.3	298.0
105°	462.7	466.9	471.0	475.1	479.3	484.2	489.8	495.4	501.1	506.6	512.4
107.5°	581.7	584.4	587.2	590.0	592.7	597.1	603.1	609.2	615.2	621.2	625.3
110°	661.8	664.2	666.7	669.2	671.8	675.9	681.6	687.3	693.1	698.8	702.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	739.3	742.5	745.6	748.7	751.8	755.7	760.2	764.7	769.2	773.7	775.9
115°	858.8	860.7	862.7	864.6	866.7	869.2	872.2	875.3	878.4	881.4	884.4
117.5°	966.7	968.7	970.7	972.6	974.5	977.4	981.3	985.2	989.2	993.0	995.1
120°	1039.5	1041.2	1042.9	1044.5	1046.2	1048.4	1051.2	1053.9	1056.6	1059.3	1062.2
122.5°	1107.7	1108.6	1109.4	1110.3	1111.3	1113.4	1116.7	1120.1	1123.5	1126.9	1129.4
125°	1205.0	1206.3	1207.5	1208.8	1210.0	1211.6	1213.6	1215.6	1217.6	1219.5	1222.5
127.5°	1297.5	1297.8	1298.0	1298.2	1298.5	1300.4	1303.9	1307.6	1311.1	1314.7	1316.5
130°	1356.9	1357.1	1357.3	1357.6	1357.8	1359.3	1361.9	1364.6	1367.4	1370.1	1372.3
132.5°	1411.7	1412.2	1412.7	1413.2	1413.7	1415.2	1417.9	1420.6	1423.2	1425.8	1427.9
135°	1493.4	1493.1	1492.8	1492.4	1492.1	1493.0	1495.0	1497.1	1499.2	1501.4	1503.7
137.5°	1566.2	1566.2	1566.3	1566.3	1566.3	1567.3	1569.1	1570.9	1572.9	1574.7	1577.0
140°	1613.8	1614.3	1614.9	1615.5	1616.0	1616.7	1617.5	1618.2	1619.0	1619.8	1622.2
142.5°	1656.0	1657.2	1658.4	1659.6	1660.7	1661.5	1661.8	1662.2	1662.5	1662.9	1664.9
145°	1721.4	1722.3	1723.2	1724.1	1725.1	1725.5	1725.5	1725.5	1725.5	1725.5	1726.5
147.5°	1773.4	1775.2	1777.1	1778.8	1780.6	1781.3	1781.0	1780.7	1780.3	1780.0	1780.3
150°	1811.2	1812.5	1813.7	1814.9	1816.2	1816.6	1816.3	1816.0	1815.6	1815.3	1815.3
152.5°	1842.5	1843.6	1844.6	1845.7	1846.7	1847.0	1846.3	1845.7	1845.1	1844.5	1845.1
155°	1886.9	1887.2	1887.5	1887.9	1888.2	1887.9	1886.9	1885.9	1884.9	1883.8	1885.2
157.5°	1924.4	1924.2	1924.0	1923.8	1923.6	1922.9	1921.7	1920.6	1919.5	1918.2	1920.1
160°	1946.3	1945.3	1944.3	1943.3	1942.3	1941.6	1941.2	1940.9	1940.6	1940.2	1942.3
162.5°	1965.8	1964.5	1963.2	1962.0	1960.7	1959.8	1959.4	1959.1	1958.8	1958.4	1960.5
165°	1990.4	1988.7	1987.1	1985.4	1983.7	1982.9	1982.9	1982.9	1982.9	1982.9	1985.5
167.5°	2009.9	2008.2	2006.4	2004.7	2002.9	2002.0	2001.8	2001.6	2001.4	2001.1	2004.1
170°	2020.9	2018.9	2016.8	2014.8	2012.8	2012.0	2012.3	2012.7	2013.0	2013.3	2016.0
172.5°	2028.2	2026.2	2024.2	2022.2	2020.1	2019.2	2019.6	2019.9	2020.2	2020.6	2023.3
175°	2036.1	2034.1	2032.1	2030.0	2028.0	2027.2	2027.5	2027.8	2028.2	2028.5	2031.5
177.5°	2039.8	2037.9	2036.0	2034.1	2032.3	2031.5	2032.1	2032.7	2033.2	2033.7	2035.9
180°	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9
2.5°	425.4	426.0	426.6	426.8	426.8	426.7	426.6	426.5
5°	424.2	425.1	426.0	426.4	426.3	426.1	426.0	425.9
7.5°	422.0	422.9	423.9	424.3	424.2	424.1	424.0	423.9
10°	419.7	420.6	421.6	422.0	421.9	421.8	421.7	421.6
12.5°	416.5	417.4	418.2	418.6	418.6	418.6	418.6	418.5
15°	410.6	411.5	412.5	412.9	412.8	412.7	412.6	412.5
17.5°	403.4	404.5	405.5	405.9	405.8	405.7	405.7	405.6
20°	397.9	399.0	400.0	400.6	400.6	400.6	400.6	400.6
22.5°	391.4	392.4	393.5	394.2	394.4	394.5	394.7	394.9
25°	381.4	382.5	383.7	384.4	384.5	384.6	384.7	384.8
27.5°	370.1	371.2	372.3	372.9	373.0	373.1	373.2	373.4
30°	362.2	363.5	364.6	365.3	365.5	365.8	366.0	366.2
32.5°	354.2	355.6	356.9	357.7	357.9	358.1	358.3	358.5
35°	341.4	342.8	344.4	345.3	345.6	345.9	346.3	346.6
37.5°	328.1	329.5	331.0	332.0	332.3	332.6	333.1	333.4
40°	318.7	320.2	321.8	322.9	323.3	323.8	324.2	324.6
42.5°	309.4	311.2	313.0	314.1	314.4	314.7	315.1	315.4
45°	295.2	297.0	298.8	299.9	300.5	301.0	301.5	302.1
47.5°	280.1	282.0	283.9	285.1	285.8	286.4	287.0	287.7
50°	269.5	271.7	273.8	275.2	275.8	276.4	277.1	277.7
52.5°	258.8	260.9	263.1	264.5	265.1	265.7	266.4	267.0
55°	242.8	244.9	247.0	248.4	249.0	249.6	250.3	251.0
57.5°	225.9	228.4	231.0	232.5	233.1	233.7	234.3	234.9
60°	214.3	216.7	219.1	220.8	221.7	222.5	223.4	224.2
62.5°	202.8	205.2	207.6	209.3	210.2	211.0	211.9	212.7
65°	185.0	187.7	190.4	192.1	193.0	193.8	194.7	195.5
67.5°	167.6	170.4	173.0	174.8	175.6	176.4	177.2	178.1
70°	155.3	158.2	161.1	162.9	163.6	164.4	165.1	165.8
72.5°	143.7	146.5	149.3	151.1	151.9	152.7	153.6	154.4
75°	125.9	128.9	131.9	133.8	134.8	135.7	136.7	137.6
77.5°	109.4	112.4	115.4	117.4	118.5	119.5	120.5	121.5
80°	98.7	101.8	105.0	107.0	107.9	108.8	109.6	110.4
82.5°	88.1	91.4	94.6	96.7	97.7	98.6	99.6	100.5
85°	73.3	76.4	79.7	81.8	82.8	83.9	84.9	86.0
87.5°	68.3	71.7	75.2	77.6	78.6	79.7	80.7	81.8
90°	91.1	96.1	101.3	104.6	106.1	107.7	109.2	110.7
92.5°	87.4	92.4	97.5	100.4	101.4	102.4	103.4	104.3
95°	84.9	89.8	94.7	97.8	99.1	100.4	101.7	103.0
97.5°	84.8	87.8	90.8	92.9	94.1	95.4	96.6	97.9
100°	97.6	94.7	91.8	90.9	92.0	93.0	94.1	95.2
102.5°	238.7	179.5	120.2	91.0	91.8	92.7	93.6	94.5
105°	518.1	523.8	529.5	526.6	515.3	504.0	492.7	481.4
107.5°	629.3	633.5	637.6	640.7	642.7	644.8	646.8	648.8
110°	705.1	708.2	711.3	713.9	715.7	717.5	719.4	721.2



TEST NUMBER: P332741-840

CATALOG NUMBER: S124DIW-S350D1560U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	778.1	780.3	782.5	784.8	786.9	789.0	791.1	793.3
115°	887.4	890.4	893.4	895.3	896.1	896.9	897.6	898.3
117.5°	997.2	999.3	1001.4	1002.7	1003.4	1004.2	1004.9	1005.6
120°	1065.0	1067.7	1070.6	1072.1	1072.3	1072.4	1072.6	1072.8
122.5°	1132.0	1134.5	1137.0	1138.3	1138.4	1138.5	1138.6	1138.7
125°	1225.6	1228.6	1231.6	1233.7	1234.7	1235.7	1236.6	1237.6
127.5°	1318.2	1319.9	1321.6	1322.6	1323.1	1323.5	1324.0	1324.4
130°	1374.6	1376.8	1379.1	1380.6	1381.2	1381.8	1382.4	1383.1
132.5°	1430.2	1432.3	1434.5	1435.7	1436.1	1436.5	1436.8	1437.2
135°	1506.1	1508.4	1510.9	1512.7	1514.0	1515.3	1516.6	1517.9
137.5°	1579.2	1581.5	1583.9	1585.2	1585.5	1585.8	1586.1	1586.5
140°	1624.6	1627.0	1629.4	1631.0	1631.9	1632.7	1633.7	1634.5
142.5°	1666.8	1668.8	1670.7	1671.9	1672.4	1673.0	1673.5	1674.1
145°	1727.4	1728.4	1729.4	1730.4	1731.5	1732.6	1733.7	1734.8
147.5°	1780.7	1781.1	1781.4	1781.9	1782.6	1783.3	1783.9	1784.6
150°	1815.3	1815.3	1815.3	1815.5	1815.8	1816.1	1816.5	1816.8
152.5°	1845.6	1846.1	1846.7	1846.8	1846.6	1846.4	1846.2	1846.0
155°	1886.5	1887.9	1889.3	1889.5	1888.4	1887.4	1886.4	1885.4
157.5°	1921.8	1923.6	1925.3	1925.3	1923.6	1921.8	1920.1	1918.2
160°	1944.3	1946.3	1948.3	1948.3	1946.3	1944.3	1942.3	1940.2
162.5°	1962.6	1964.6	1966.6	1966.4	1964.2	1961.9	1959.5	1957.2
165°	1988.2	1990.9	1993.7	1993.5	1990.4	1987.4	1984.4	1981.4
167.5°	2007.1	2010.0	2013.1	2012.9	2009.4	2006.1	2002.7	1999.3
170°	2018.7	2021.4	2024.2	2023.8	2020.4	2017.0	2013.7	2010.2
172.5°	2026.0	2028.7	2031.4	2030.9	2027.3	2023.7	2020.0	2016.3
175°	2034.6	2037.7	2040.7	2040.2	2036.1	2032.1	2028.0	2024.0
177.5°	2038.0	2040.2	2042.4	2041.8	2038.6	2035.3	2032.1	2028.8
180°	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1

(END OF REPORT)