

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: P332741-940

Luminaire Tested: **S124DIW-S350D1560U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332741-940
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: S124DIW-S350D1560U940-4F0-1E-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: 6851.5 lumens
Efficiency: N/A
Efficacy: 128.3 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

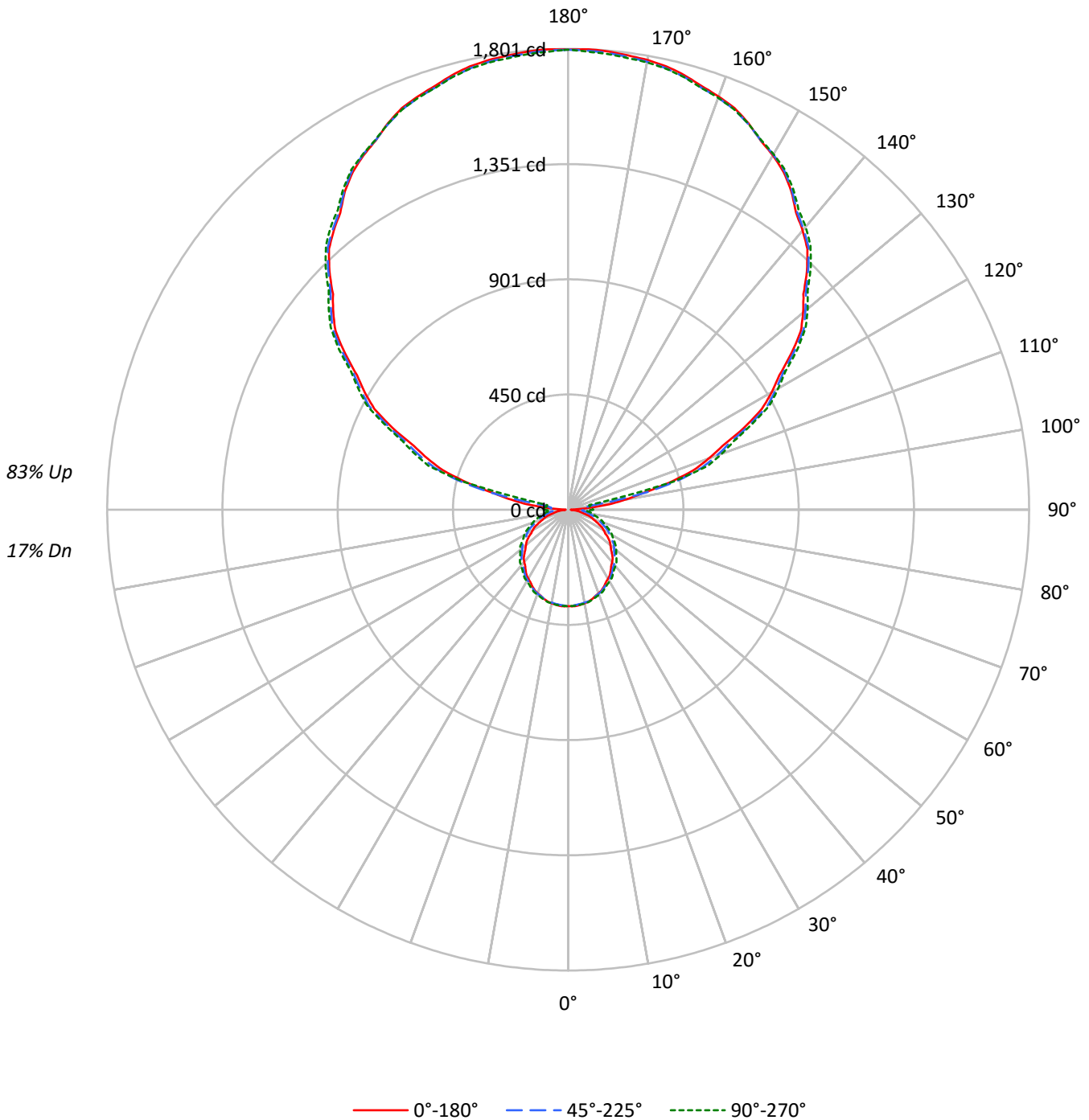
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332741-940

CATALOG NUMBER: S124DIW-S350D1560U940-4F0-1E-UDD-D

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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°	3043	3043	3043
5°	3053	2974	2982
10°	3033	2925	2923
15°	3006	2869	2854
20°	2965	2807	2785
25°	2919	2737	2710
30°	2869	2668	2634
35°	2812	2597	2566
40°	2768	2530	2497
45°	2700	2466	2436
50°	2643	2396	2373
55°	2585	2328	2298
60°	2493	2242	2231
65°	2392	2149	2146
70°	2271	2045	2049
75°	2101	1926	1961
80°	1913	1816	1875
85°	1676	1717	1825



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.7	0.5
10°-20°	102.3	1.5
20°-30°	154.6	2.3
30°-40°	187.1	2.7
40°-50°	197.8	2.9
50°-60°	186.2	2.7
60°-70°	154.4	2.3
70°-80°	108.5	1.6
80°-90°	66.5	1.0
90°-100°	97.9	1.4
100°-110°	419.0	6.1
110°-120°	768.1	11.2
120°-130°	962.3	14.0
130°-140°	1023.1	14.9
140°-150°	953.5	13.9
150°-160°	768.2	11.2
160°-170°	495.5	7.2
170°-180°	170.8	2.5
0°-30°	292.6	4.3
0°-40°	479.7	7.0
0°-60°	863.6	12.6
0°-90°	1193.1	17.4
90°-120°	1285.1	18.8
90°-150°	4224.0	61.7
90°-180°	5658.0	82.6
0°-180°	6851.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	377	377	377	377	377	
5°	377	376	373	376	376	36
15°	362	362	361	364	364	102
25°	331	333	335	339	340	152
35°	290	295	299	304	306	181
45°	241	249	257	264	267	187
55°	189	198	211	219	222	168
65°	131	144	159	169	173	130
75°	73	88	106	117	122	77
85°	22	40	59	71	76	24
90°	11	42	71	91	98	8
95°	80	50	66	85	91	99
105°	409	425	447	466	425	428
115°	758	766	778	790	793	746
125°	1064	1069	1077	1088	1093	950
135°	1319	1318	1326	1335	1340	1016
145°	1520	1523	1524	1528	1532	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	



TEST NUMBER: P332741-940

CATALOG NUMBER: S124DIW-S350D1560U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9
2.5°	378.3	378.0	377.8	377.6	377.4	376.9	376.4	375.8	375.1	374.5	375.1
5°	377.4	377.0	376.7	376.5	376.2	375.8	375.1	374.4	373.8	373.1	373.9
7.5°	374.2	374.0	373.8	373.6	373.4	373.1	372.6	372.0	371.5	371.0	371.8
10°	371.4	371.3	371.2	371.1	371.0	370.8	370.3	369.8	369.3	368.9	369.7
12.5°	367.7	367.7	367.7	367.7	367.7	367.5	367.1	366.8	366.5	366.2	366.9
15°	361.7	361.9	361.9	362.0	362.1	362.0	361.7	361.4	361.1	360.9	361.7
17.5°	353.6	353.8	354.1	354.4	354.6	354.8	354.7	354.6	354.6	354.5	355.4
20°	347.8	348.0	348.4	348.7	348.9	349.1	349.2	349.3	349.4	349.5	350.4
22.5°	341.3	341.7	342.1	342.4	342.8	343.0	343.2	343.4	343.6	343.8	344.6
25°	330.9	331.4	332.1	332.6	333.1	333.6	333.9	334.1	334.4	334.7	335.7
27.5°	319.2	320.1	320.9	321.7	322.5	323.2	323.6	324.0	324.5	324.9	325.8
30°	311.5	312.3	313.0	313.7	314.5	315.2	315.8	316.5	317.2	317.8	318.9
32.5°	303.1	304.0	304.9	305.8	306.7	307.5	308.2	308.9	309.7	310.4	311.6
35°	289.5	290.7	291.8	292.9	294.1	295.1	296.0	296.9	297.9	298.8	300.1
37.5°	276.0	277.2	278.6	279.8	281.2	282.3	283.6	284.7	285.9	287.0	288.4
40°	267.2	268.4	269.7	270.8	272.1	273.3	274.6	276.0	277.2	278.6	280.0
42.5°	257.1	258.4	259.8	261.2	262.5	263.9	265.6	267.1	268.6	270.1	271.7
45°	241.4	243.2	245.0	246.7	248.5	250.3	252.1	253.9	255.7	257.4	259.0
47.5°	226.5	228.4	230.2	232.0	233.8	235.8	237.8	240.0	242.0	244.1	245.7
50°	215.7	217.8	219.8	221.9	223.9	226.0	228.1	230.2	232.2	234.3	236.1
52.5°	204.9	207.0	209.0	211.1	213.1	215.3	217.7	220.1	222.4	224.8	226.7
55°	189.1	191.1	193.1	195.0	197.0	199.4	202.2	205.0	207.8	210.6	212.5
57.5°	171.5	173.9	176.3	178.8	181.2	183.8	186.6	189.4	192.2	195.0	197.2
60°	160.0	162.4	164.9	167.3	169.7	172.5	175.6	178.7	181.7	184.9	187.0
62.5°	148.8	151.5	154.2	156.9	159.4	162.4	165.4	168.5	171.7	174.8	176.9
65°	130.8	133.8	136.9	139.8	142.9	146.0	149.1	152.3	155.5	158.7	161.0
67.5°	113.5	116.7	119.9	123.1	126.3	129.6	133.0	136.4	139.8	143.2	145.6
70°	101.7	104.9	108.1	111.3	114.5	117.9	121.5	125.0	128.6	132.2	134.6
72.5°	90.2	93.5	96.8	100.0	103.3	106.8	110.6	114.4	118.2	122.0	124.4
75°	72.6	76.1	79.5	83.0	86.5	90.2	94.2	98.1	102.0	105.9	108.6
77.5°	56.2	59.8	63.5	67.1	70.8	74.7	78.8	83.0	87.1	91.2	93.9
80°	46.0	49.8	53.5	57.2	61.0	64.9	69.1	73.2	77.3	81.5	84.3
82.5°	35.8	39.8	43.7	47.6	51.5	55.5	59.7	63.8	67.9	72.1	74.9
85°	22.4	26.3	30.2	34.2	38.2	42.2	46.5	50.6	54.8	59.1	61.9
87.5°	13.3	17.7	22.3	26.8	31.2	35.8	40.4	44.9	49.5	54.1	57.2
90°	10.8	17.8	24.9	31.9	39.0	45.7	52.1	58.5	64.9	71.3	75.9
92.5°	23.4	26.9	30.5	34.1	37.5	42.5	49.0	55.5	61.9	68.3	72.7
95°	79.5	72.4	65.3	58.2	51.2	49.8	53.9	58.1	62.2	66.3	70.6
97.5°	162.0	171.0	180.0	189.0	198.0	187.8	158.2	128.7	99.2	69.6	72.2
100°	225.2	233.0	240.9	248.6	256.5	241.6	204.0	166.4	128.9	91.2	88.7
102.5°	296.1	302.3	308.4	314.4	320.5	322.6	320.8	319.1	317.3	315.5	263.1
105°	408.6	412.2	415.9	419.5	423.2	427.6	432.5	437.5	442.5	447.4	452.5
107.5°	513.6	516.0	518.5	520.9	523.3	527.3	532.5	537.9	543.2	548.5	552.1
110°	584.3	586.5	588.7	590.9	593.2	596.8	601.8	606.9	612.0	617.1	619.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	652.8	655.6	658.4	661.1	663.9	667.3	671.3	675.2	679.2	683.1	685.1
115°	758.3	760.0	761.8	763.5	765.3	767.5	770.2	772.8	775.6	778.3	781.0
117.5°	853.6	855.3	857.1	858.8	860.5	863.1	866.5	870.0	873.4	876.8	878.7
120°	917.8	919.4	920.9	922.3	923.8	925.8	928.2	930.6	933.0	935.4	937.9
122.5°	978.1	978.9	979.6	980.4	981.2	983.1	986.1	989.1	992.0	995.1	997.3
125°	1064.0	1065.1	1066.2	1067.4	1068.4	1069.9	1071.6	1073.4	1075.1	1076.8	1079.5
127.5°	1145.7	1145.9	1146.1	1146.3	1146.6	1148.3	1151.4	1154.6	1157.7	1160.9	1162.4
130°	1198.1	1198.3	1198.5	1198.7	1198.9	1200.2	1202.6	1205.0	1207.4	1209.8	1211.7
132.5°	1246.5	1247.0	1247.4	1247.9	1248.3	1249.6	1252.0	1254.4	1256.7	1259.0	1260.9
135°	1318.7	1318.4	1318.1	1317.8	1317.5	1318.3	1320.1	1322.0	1323.8	1325.7	1327.8
137.5°	1383.0	1383.0	1383.0	1383.0	1383.0	1383.9	1385.5	1387.1	1388.8	1390.4	1392.5
140°	1425.0	1425.4	1425.9	1426.5	1426.9	1427.5	1428.3	1428.9	1429.6	1430.3	1432.4
142.5°	1462.2	1463.3	1464.4	1465.4	1466.4	1467.1	1467.4	1467.8	1468.0	1468.4	1470.1
145°	1520.0	1520.8	1521.6	1522.4	1523.2	1523.6	1523.6	1523.6	1523.6	1523.6	1524.5
147.5°	1565.9	1567.5	1569.1	1570.7	1572.3	1572.9	1572.6	1572.4	1572.0	1571.7	1572.0
150°	1599.3	1600.4	1601.5	1602.6	1603.7	1604.1	1603.8	1603.6	1603.2	1602.9	1602.9
152.5°	1626.9	1627.9	1628.8	1629.8	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°	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9
2.5°	375.6	376.1	376.7	376.8	376.8	376.7	376.7	376.6
5°	374.6	375.3	376.1	376.5	376.4	376.2	376.1	376.0
7.5°	372.6	373.4	374.3	374.7	374.6	374.5	374.4	374.3
10°	370.6	371.4	372.3	372.6	372.6	372.5	372.4	372.3
12.5°	367.7	368.5	369.3	369.6	369.6	369.6	369.6	369.5
15°	362.6	363.4	364.3	364.6	364.5	364.4	364.4	364.3
17.5°	356.2	357.1	358.0	358.4	358.3	358.2	358.2	358.1
20°	351.3	352.3	353.2	353.7	353.7	353.7	353.7	353.7
22.5°	345.6	346.5	347.5	348.0	348.2	348.3	348.5	348.7
25°	336.8	337.8	338.9	339.4	339.5	339.6	339.7	339.7
27.5°	326.8	327.8	328.8	329.3	329.4	329.5	329.6	329.8
30°	319.9	320.9	321.9	322.5	322.7	323.0	323.2	323.3
32.5°	312.7	314.0	315.1	315.8	316.0	316.2	316.4	316.6
35°	301.5	302.7	304.1	304.9	305.1	305.4	305.8	306.0
37.5°	289.7	291.0	292.3	293.2	293.5	293.7	294.1	294.4
40°	281.4	282.8	284.2	285.1	285.4	285.9	286.2	286.6
42.5°	273.2	274.8	276.3	277.3	277.6	277.9	278.2	278.5
45°	260.6	262.3	263.9	264.8	265.4	265.8	266.3	266.7
47.5°	247.4	249.0	250.7	251.7	252.4	252.9	253.4	254.0
50°	238.0	239.9	241.7	243.0	243.5	244.1	244.7	245.2
52.5°	228.5	230.4	232.3	233.5	234.1	234.6	235.2	235.8
55°	214.4	216.2	218.1	219.4	219.9	220.4	221.1	221.6
57.5°	199.5	201.7	203.9	205.3	205.8	206.3	206.9	207.4
60°	189.2	191.4	193.5	194.9	195.7	196.4	197.2	198.0
62.5°	179.1	181.2	183.3	184.9	185.6	186.3	187.1	187.8
65°	163.4	165.8	168.1	169.6	170.4	171.1	171.9	172.6
67.5°	148.0	150.4	152.8	154.4	155.1	155.8	156.5	157.3
70°	137.1	139.7	142.2	143.8	144.5	145.2	145.8	146.4
72.5°	126.9	129.4	131.8	133.4	134.1	134.8	135.6	136.3
75°	111.2	113.8	116.5	118.2	119.0	119.8	120.7	121.5
77.5°	96.6	99.2	101.9	103.7	104.6	105.5	106.4	107.3
80°	87.1	89.9	92.7	94.5	95.2	96.0	96.8	97.5
82.5°	77.8	80.7	83.6	85.4	86.2	87.0	87.9	88.7
85°	64.7	67.5	70.4	72.2	73.1	74.1	75.0	76.0
87.5°	60.3	63.3	66.4	68.5	69.4	70.4	71.2	72.2
90°	80.4	84.9	89.4	92.4	93.7	95.1	96.4	97.7
92.5°	77.1	81.6	86.1	88.6	89.5	90.4	91.3	92.1
95°	75.0	79.3	83.6	86.3	87.5	88.6	89.8	91.0
97.5°	74.9	77.5	80.2	82.0	83.1	84.3	85.3	86.4
100°	86.1	83.6	81.1	80.3	81.2	82.1	83.1	84.1
102.5°	210.8	158.5	106.1	80.3	81.1	81.9	82.7	83.5
105°	457.4	462.5	467.5	465.0	455.0	445.1	435.1	425.1
107.5°	555.7	559.4	563.0	565.7	567.5	569.4	571.1	572.9
110°	622.6	625.4	628.1	630.4	632.0	633.6	635.3	636.9



TEST NUMBER: P332741-940

CATALOG NUMBER: S124DIW-S350D1560U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	687.1	689.0	691.0	692.9	694.8	696.7	698.6	700.5
115°	783.5	786.2	788.9	790.6	791.2	791.9	792.6	793.2
117.5°	880.6	882.3	884.2	885.4	886.0	886.7	887.3	888.0
120°	940.4	942.8	945.3	946.6	946.8	946.9	947.1	947.3
122.5°	999.5	1001.7	1004.0	1005.1	1005.2	1005.3	1005.4	1005.5
125°	1082.2	1084.9	1087.5	1089.3	1090.2	1091.1	1091.9	1092.8
127.5°	1164.0	1165.5	1167.0	1167.9	1168.3	1168.7	1169.1	1169.5
130°	1213.8	1215.8	1217.7	1219.1	1219.6	1220.1	1220.7	1221.3
132.5°	1262.8	1264.7	1266.7	1267.7	1268.1	1268.5	1268.7	1269.1
135°	1329.9	1331.9	1334.1	1335.7	1336.9	1338.0	1339.2	1340.3
137.5°	1394.5	1396.5	1398.6	1399.7	1400.0	1400.3	1400.5	1400.9
140°	1434.5	1436.6	1438.8	1440.2	1441.0	1441.7	1442.5	1443.2
142.5°	1471.8	1473.6	1475.2	1476.3	1476.8	1477.3	1477.7	1478.2
145°	1525.3	1526.2	1527.1	1527.9	1528.9	1529.9	1530.9	1531.9
147.5°	1572.4	1572.7	1573.0	1573.4	1574.0	1574.7	1575.2	1575.8
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)