

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: P332735

Luminaire Tested: **S124DIW-S350D1340U835-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332735  
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-S350D1340U835-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1340 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6810.2 lumens  
Efficiency: N/A  
Efficacy: 146.1 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

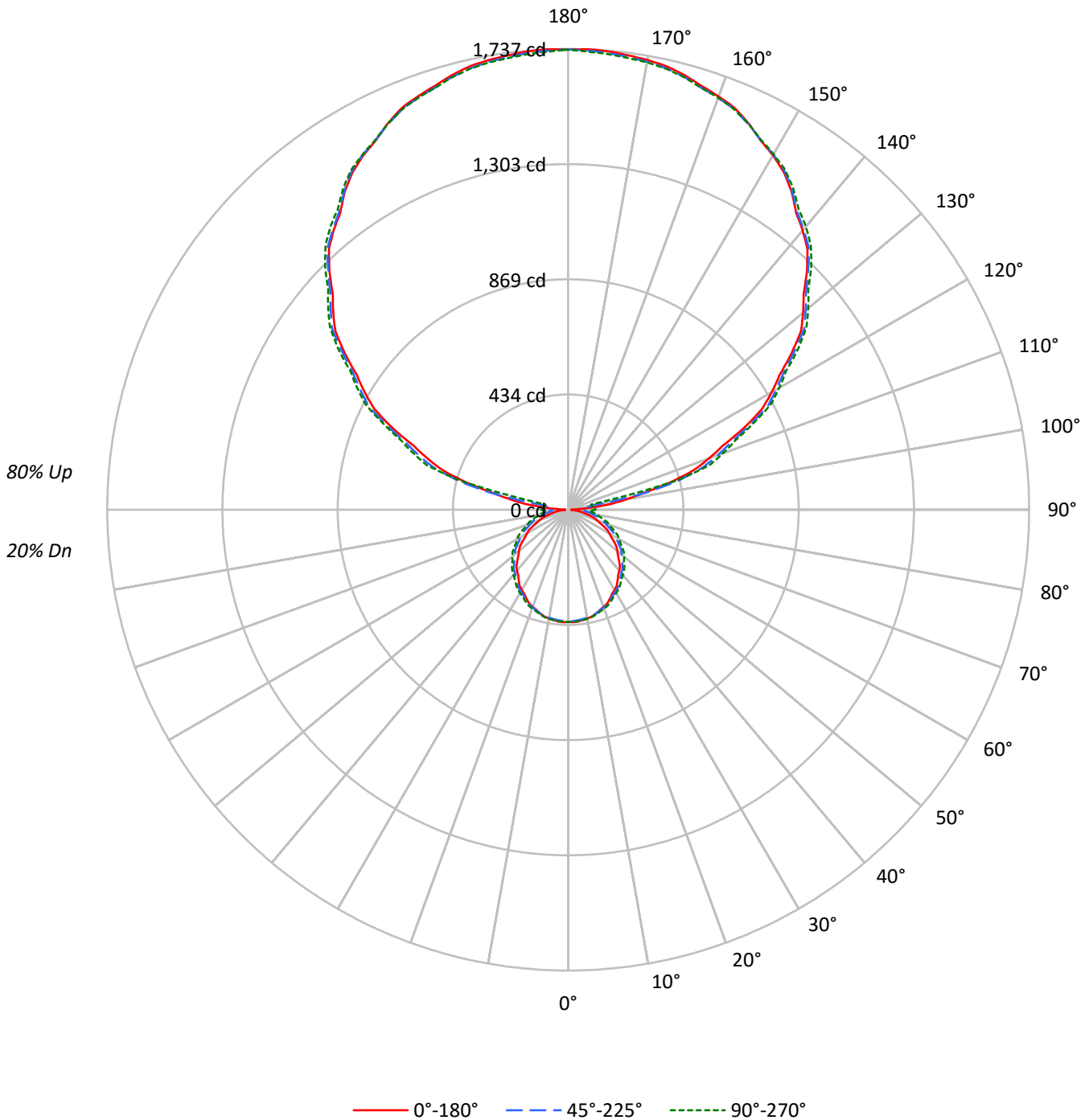
Input Watts (W): 46.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P332735

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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	50	30	10	0	
RCR																						
0	100	100	100	100	88	88	88	88	66	66	66	47	47	47	28	28	28	20				
1	91	86	82	79	80	76	73	70	57	55	53	40	39	38	24	24	23	16				
2	82	75	69	64	72	66	61	57	50	47	44	35	33	31	21	20	19	13				
3	75	66	59	53	66	58	52	47	44	40	37	31	28	26	19	17	16	11				
4	68	58	50	44	60	51	45	40	39	34	31	27	24	22	16	15	14	9				
5	62	51	44	38	55	45	39	34	34	30	26	24	21	19	15	13	12	8				
6	57	46	38	32	50	41	34	29	31	26	23	22	19	16	13	12	10	7				
7	53	41	33	28	46	37	30	25	28	23	20	20	17	14	12	10	9	6				
8	49	37	30	25	43	33	27	22	25	21	17	18	15	13	11	9	8	5				
9	45	34	26	22	40	30	24	20	23	18	15	16	13	11	10	8	7	5				
10	42	31	24	19	37	27	21	17	21	17	14	15	12	10	9	8	6	4				

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

	0°	45°	90°
0°	3412	3412	3412
5°	3423	3335	3344
10°	3402	3281	3278
15°	3371	3217	3200
20°	3325	3147	3124
25°	3274	3070	3039
30°	3217	2992	2954
35°	3154	2912	2878
40°	3103	2836	2800
45°	3027	2766	2732
50°	2964	2686	2661
55°	2899	2610	2577
60°	2796	2513	2501
65°	2682	2410	2407
70°	2547	2292	2298
75°	2356	2161	2199
80°	2145	2037	2102
85°	1878	1926	2046



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	40.0	0.6
10°-20°	114.7	1.7
20°-30°	173.4	2.5
30°-40°	209.8	3.1
40°-50°	221.8	3.3
50°-60°	208.8	3.1
60°-70°	173.2	2.5
70°-80°	121.7	1.8
80°-90°	73.8	1.1
90°-100°	100.2	1.5
100°-110°	408.4	6.0
110°-120°	743.7	10.9
120°-130°	929.8	13.7
130°-140°	987.5	14.5
140°-150°	919.8	13.5
150°-160°	741.0	10.9
160°-170°	477.9	7.0
170°-180°	164.7	2.4
0°-30°	328.1	4.8
0°-40°	537.9	7.9
0°-60°	968.5	14.2
0°-90°	1337.1	19.6
90°-120°	1252.3	18.4
90°-150°	4089.5	60.0
90°-180°	5473.0	80.4
0°-180°	6810.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	423	423	423	423	423	
5°	423	422	418	422	422	40
15°	406	406	405	409	408	114
25°	371	374	375	380	381	171
35°	325	330	335	341	343	203
45°	271	280	289	296	299	209
55°	212	222	236	245	248	189
65°	147	162	178	189	194	145
75°	81	99	119	132	136	87
85°	25	45	66	80	85	27
90°	12	45	75	96	103	8
95°	78	52	70	89	96	97
105°	395	412	436	456	416	413
115°	732	740	754	766	770	720
125°	1027	1032	1040	1053	1058	916
135°	1272	1271	1279	1289	1295	980
145°	1466	1469	1470	1474	1478	916
155°	1607	1608	1604	1609	1606	741
165°	1695	1689	1689	1698	1688	479
175°	1734	1727	1728	1738	1724	165
180°	1734	1734	1734	1734	1734	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7
2.5°	424.2	423.9	423.7	423.4	423.2	422.7	422.1	421.4	420.7	420.0	420.6
5°	423.2	422.8	422.5	422.2	421.9	421.4	420.6	419.9	419.2	418.4	419.3
7.5°	419.6	419.4	419.2	419.0	418.8	418.4	417.8	417.2	416.6	416.0	416.9
10°	416.5	416.4	416.3	416.2	416.1	415.8	415.3	414.7	414.2	413.7	414.6
12.5°	412.4	412.3	412.3	412.3	412.3	412.1	411.7	411.4	411.0	410.7	411.5
15°	405.6	405.8	405.9	406.0	406.1	406.0	405.6	405.3	405.0	404.7	405.6
17.5°	396.5	396.8	397.1	397.4	397.7	397.9	397.8	397.7	397.7	397.6	398.6
20°	390.0	390.3	390.7	391.0	391.3	391.5	391.6	391.7	391.8	391.9	393.0
22.5°	382.8	383.2	383.6	384.0	384.4	384.7	384.9	385.1	385.3	385.5	386.5
25°	371.1	371.7	372.4	373.0	373.6	374.1	374.4	374.7	375.0	375.4	376.5
27.5°	358.0	359.0	359.9	360.8	361.7	362.4	362.9	363.4	363.9	364.4	365.4
30°	349.3	350.2	351.0	351.8	352.7	353.5	354.2	354.9	355.7	356.4	357.6
32.5°	339.9	340.9	341.9	342.9	343.9	344.8	345.6	346.4	347.3	348.1	349.4
35°	324.7	326.0	327.2	328.5	329.8	330.9	332.0	333.0	334.1	335.1	336.6
37.5°	309.5	310.9	312.4	313.8	315.3	316.6	318.0	319.3	320.6	321.9	323.4
40°	299.6	301.0	302.4	303.7	305.1	306.5	308.0	309.5	310.9	312.4	314.0
42.5°	288.3	289.8	291.3	292.9	294.4	296.0	297.8	299.5	301.2	302.9	304.7
45°	270.7	272.7	274.7	276.7	278.7	280.7	282.7	284.7	286.7	288.7	290.5
47.5°	254.0	256.1	258.1	260.2	262.2	264.4	266.7	269.1	271.4	273.7	275.5
50°	241.9	244.2	246.5	248.8	251.1	253.4	255.8	258.1	260.4	262.7	264.8
52.5°	229.8	232.1	234.4	236.7	239.0	241.5	244.1	246.8	249.4	252.1	254.2
55°	212.1	214.3	216.5	218.7	220.9	223.6	226.7	229.9	233.0	236.2	238.3
57.5°	192.3	195.0	197.7	200.5	203.2	206.1	209.3	212.4	215.5	218.7	221.2
60°	179.4	182.1	184.9	187.6	190.3	193.4	196.9	200.4	203.8	207.3	209.7
62.5°	166.9	169.9	172.9	175.9	178.8	182.1	185.5	189.0	192.5	196.0	198.4
65°	146.7	150.1	153.5	156.8	160.2	163.7	167.2	170.8	174.4	178.0	180.6
67.5°	127.3	130.9	134.5	138.1	141.6	145.3	149.2	153.0	156.8	160.6	163.3
70°	114.1	117.6	121.2	124.8	128.4	132.2	136.2	140.2	144.2	148.2	151.0
72.5°	101.2	104.9	108.5	112.2	115.8	119.8	124.0	128.3	132.5	136.8	139.5
75°	81.4	85.3	89.2	93.1	97.0	101.1	105.6	110.0	114.4	118.8	121.8
77.5°	63.0	67.1	71.2	75.3	79.4	83.8	88.4	93.1	97.7	102.3	105.3
80°	51.6	55.8	60.0	64.2	68.4	72.8	77.5	82.1	86.7	91.4	94.5
82.5°	40.2	44.6	49.0	53.4	57.7	62.2	66.9	71.5	76.1	80.8	84.0
85°	25.1	29.5	33.9	38.3	42.8	47.3	52.1	56.8	61.5	66.3	69.4
87.5°	14.8	19.7	24.6	29.6	34.5	39.5	44.6	49.6	54.7	59.8	63.2
90°	11.5	18.8	26.2	33.6	41.0	48.1	54.9	61.7	68.6	75.4	80.2
92.5°	23.5	27.5	31.5	35.4	39.4	44.8	51.6	58.4	65.3	72.1	76.8
95°	77.5	71.2	64.8	58.5	52.2	51.3	55.9	60.5	65.1	69.7	74.3
97.5°	157.1	166.2	175.3	184.4	193.5	184.1	156.2	128.3	100.4	72.5	75.4
100°	217.9	225.8	233.8	241.7	249.6	235.7	200.1	164.4	128.7	93.0	91.0
102.5°	286.4	292.6	298.8	305.0	311.2	313.7	312.6	311.4	310.2	309.1	258.9
105°	394.7	398.5	402.3	406.2	410.0	414.6	419.9	425.3	430.6	435.9	441.1
107.5°	496.0	498.6	501.2	503.8	506.4	510.5	516.1	521.8	527.4	533.0	536.9
110°	564.1	566.5	568.8	571.1	573.5	577.3	582.7	588.2	593.6	599.0	602.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	630.1	633.0	635.9	638.7	641.6	645.2	649.5	653.8	658.1	662.5	664.7
115°	731.8	733.6	735.4	737.2	739.0	741.5	744.6	747.6	750.7	753.8	756.7
117.5°	823.8	825.5	827.2	828.9	830.7	833.4	837.2	840.9	844.7	848.5	850.6
120°	885.7	887.1	888.6	890.1	891.5	893.7	896.4	899.2	901.9	904.7	907.4
122.5°	943.8	944.5	945.3	946.0	946.8	948.8	952.1	955.4	958.7	962.0	964.4
125°	1026.6	1027.6	1028.7	1029.7	1030.8	1032.3	1034.4	1036.4	1038.5	1040.5	1043.4
127.5°	1105.3	1105.5	1105.7	1105.9	1106.1	1107.8	1111.2	1114.5	1117.9	1121.2	1122.9
130°	1155.8	1156.0	1156.2	1156.3	1156.5	1157.9	1160.4	1163.0	1165.5	1168.1	1170.3
132.5°	1202.5	1202.9	1203.3	1203.7	1204.1	1205.6	1208.0	1210.5	1212.9	1215.3	1217.4
135°	1272.1	1271.8	1271.5	1271.2	1270.9	1271.7	1273.6	1275.5	1277.4	1279.3	1281.5
137.5°	1334.1	1334.1	1334.1	1334.1	1334.1	1334.9	1336.5	1338.2	1339.8	1341.4	1343.6
140°	1374.5	1375.0	1375.5	1375.9	1376.4	1377.0	1377.7	1378.4	1379.0	1379.7	1382.0
142.5°	1410.5	1411.5	1412.5	1413.5	1414.5	1415.2	1415.5	1415.8	1416.0	1416.3	1418.1
145°	1466.1	1466.9	1467.7	1468.4	1469.2	1469.6	1469.6	1469.6	1469.6	1469.6	1470.5
147.5°	1510.5	1512.0	1513.5	1515.0	1516.5	1517.2	1516.9	1516.6	1516.3	1516.0	1516.3
150°	1542.7	1543.7	1544.8	1545.8	1546.9	1547.2	1547.0	1546.7	1546.4	1546.1	1546.1
152.5°	1569.3	1570.2	1571.1	1572.0	1572.9	1573.1	1572.6	1572.0	1571.5	1571.0	1571.5
155°	1607.1	1607.3	1607.6	1607.9	1608.2	1607.9	1607.1	1606.2	1605.3	1604.5	1605.6
157.5°	1639.0	1638.8	1638.6	1638.4	1638.3	1637.7	1636.7	1635.7	1634.8	1633.8	1635.3
160°	1657.6	1656.8	1655.9	1655.0	1654.2	1653.6	1653.3	1653.0	1652.7	1652.5	1654.2
162.5°	1674.2	1673.1	1672.1	1671.0	1669.9	1669.2	1668.9	1668.6	1668.3	1668.0	1669.7
165°	1695.3	1693.8	1692.4	1690.9	1689.5	1688.8	1688.8	1688.8	1688.8	1688.8	1691.1
167.5°	1711.9	1710.4	1708.9	1707.4	1705.9	1705.0	1704.9	1704.7	1704.5	1704.3	1706.9
170°	1721.2	1719.5	1717.7	1716.0	1714.3	1713.6	1713.8	1714.1	1714.4	1714.7	1717.0
172.5°	1727.4	1725.7	1724.0	1722.2	1720.5	1719.8	1720.1	1720.4	1720.6	1720.9	1723.2
175°	1734.2	1732.4	1730.7	1729.0	1727.2	1726.5	1726.8	1727.1	1727.4	1727.7	1730.3
177.5°	1737.3	1735.7	1734.0	1732.4	1730.8	1730.2	1730.7	1731.2	1731.6	1732.1	1733.9
180°	1734.2	1734.2	1734.2	1734.2	1734.2	1734.2	1734.2	1734.2	1734.2	1734.2	1734.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7
2.5°	421.2	421.8	422.4	422.6	422.6	422.5	422.4	422.3
5°	420.1	420.9	421.8	422.2	422.1	421.9	421.8	421.7
7.5°	417.9	418.8	419.8	420.2	420.1	420.0	419.9	419.8
10°	415.6	416.5	417.5	417.9	417.8	417.7	417.6	417.5
12.5°	412.4	413.3	414.1	414.5	414.5	414.5	414.5	414.4
15°	406.6	407.5	408.5	408.9	408.8	408.7	408.6	408.5
17.5°	399.5	400.5	401.5	401.9	401.8	401.7	401.7	401.6
20°	394.0	395.1	396.1	396.7	396.7	396.7	396.7	396.7
22.5°	387.6	388.6	389.7	390.3	390.5	390.6	390.8	391.0
25°	377.7	378.8	380.0	380.6	380.7	380.8	380.9	381.0
27.5°	366.5	367.6	368.7	369.3	369.4	369.5	369.6	369.8
30°	358.7	359.9	361.0	361.7	361.9	362.2	362.4	362.6
32.5°	350.7	352.1	353.4	354.2	354.4	354.6	354.8	355.0
35°	338.1	339.5	341.0	341.9	342.2	342.5	342.9	343.2
37.5°	324.9	326.3	327.8	328.8	329.1	329.4	329.8	330.1
40°	315.6	317.1	318.7	319.7	320.1	320.6	321.0	321.4
42.5°	306.4	308.2	309.9	311.0	311.3	311.6	312.0	312.3
45°	292.3	294.1	295.9	297.0	297.6	298.1	298.6	299.1
47.5°	277.4	279.2	281.1	282.3	283.0	283.6	284.2	284.9
50°	266.9	269.0	271.1	272.5	273.1	273.7	274.4	275.0
52.5°	256.3	258.4	260.5	261.9	262.5	263.1	263.8	264.4
55°	240.4	242.5	244.6	246.0	246.6	247.2	247.9	248.5
57.5°	223.7	226.2	228.7	230.2	230.8	231.4	232.0	232.6
60°	212.2	214.6	217.0	218.6	219.5	220.3	221.2	222.0
62.5°	200.8	203.2	205.6	207.3	208.1	208.9	209.8	210.6
65°	183.2	185.9	188.5	190.2	191.1	191.9	192.8	193.6
67.5°	166.0	168.7	171.3	173.1	173.9	174.7	175.5	176.4
70°	153.8	156.7	159.5	161.3	162.0	162.8	163.5	164.2
72.5°	142.3	145.1	147.8	149.6	150.4	151.2	152.1	152.9
75°	124.7	127.6	130.6	132.5	133.5	134.4	135.4	136.3
77.5°	108.3	111.3	114.3	116.3	117.3	118.3	119.3	120.3
80°	97.7	100.8	104.0	106.0	106.8	107.7	108.5	109.3
82.5°	87.2	90.5	93.7	95.8	96.7	97.6	98.6	99.5
85°	72.6	75.7	78.9	81.0	82.0	83.1	84.1	85.2
87.5°	66.6	70.0	73.3	75.6	76.6	77.6	78.7	79.7
90°	85.0	89.7	94.5	97.6	99.0	100.4	101.9	103.3
92.5°	81.5	86.2	90.9	93.7	94.7	95.6	96.6	97.5
95°	78.9	83.4	88.0	90.9	92.1	93.4	94.6	95.8
97.5°	78.3	81.3	84.2	86.3	87.5	88.6	89.8	91.0
100°	88.9	86.9	84.8	84.3	85.3	86.3	87.4	88.4
102.5°	208.8	158.7	108.6	84.0	84.9	85.8	86.7	87.5
105°	446.4	451.6	456.8	454.7	445.1	435.6	426.1	416.5
107.5°	540.8	544.6	548.5	551.3	553.2	555.0	556.9	558.7
110°	605.0	608.0	611.0	613.3	615.0	616.7	618.4	620.1





TEST NUMBER: P332735

CATALOG NUMBER: S124DIW-S350D1340U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	666.9	669.1	671.3	673.4	675.4	677.3	679.2	681.2
115°	759.6	762.5	765.3	767.2	767.9	768.6	769.4	770.1
117.5°	852.6	854.7	856.8	858.2	858.9	859.6	860.4	861.1
120°	910.1	912.7	915.4	916.9	917.2	917.4	917.7	918.0
122.5°	966.9	969.3	971.8	973.1	973.2	973.4	973.6	973.8
125°	1046.2	1049.1	1052.0	1053.9	1054.8	1055.7	1056.6	1057.5
127.5°	1124.7	1126.4	1128.1	1129.2	1129.7	1130.2	1130.7	1131.1
130°	1172.5	1174.6	1176.8	1178.2	1178.9	1179.5	1180.1	1180.7
132.5°	1219.5	1221.6	1223.7	1225.0	1225.4	1225.8	1226.2	1226.6
135°	1283.8	1286.0	1288.3	1290.0	1291.2	1292.5	1293.7	1294.9
137.5°	1345.8	1347.9	1350.1	1351.4	1351.7	1352.1	1352.4	1352.8
140°	1384.2	1386.4	1388.6	1390.2	1391.0	1391.8	1392.6	1393.4
142.5°	1420.0	1421.8	1423.6	1424.8	1425.3	1425.8	1426.3	1426.8
145°	1471.4	1472.3	1473.2	1474.2	1475.2	1476.2	1477.2	1478.2
147.5°	1516.6	1516.9	1517.3	1517.7	1518.4	1519.0	1519.6	1520.2
150°	1546.1	1546.1	1546.1	1546.2	1546.5	1546.8	1547.1	1547.4
152.5°	1571.9	1572.4	1572.8	1573.0	1572.8	1572.6	1572.5	1572.3
155°	1606.8	1607.9	1609.1	1609.2	1608.4	1607.5	1606.6	1605.8
157.5°	1636.8	1638.3	1639.8	1639.8	1638.3	1636.8	1635.3	1633.8
160°	1655.9	1657.6	1659.4	1659.4	1657.6	1655.9	1654.2	1652.5
162.5°	1671.5	1673.2	1674.9	1674.8	1672.9	1670.9	1668.9	1667.0
165°	1693.4	1695.7	1698.0	1697.8	1695.3	1692.7	1690.1	1687.5
167.5°	1709.4	1711.9	1714.5	1714.3	1711.4	1708.5	1705.7	1702.8
170°	1719.3	1721.6	1723.9	1723.6	1720.8	1717.9	1715.0	1712.1
172.5°	1725.5	1727.9	1730.2	1729.8	1726.6	1723.5	1720.4	1717.3
175°	1732.9	1735.5	1738.1	1737.6	1734.2	1730.7	1727.2	1723.8
177.5°	1735.8	1737.6	1739.5	1739.0	1736.2	1733.5	1730.7	1727.9
180°	1734.2	1734.2	1734.2	1734.2	1734.2	1734.2	1734.2	1734.2

(END OF REPORT)