

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: P332735-830

Luminaire Tested: **S124DIW-S350D1340U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332735-830  
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-S350D1340U830-4F0-1E-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: 6418.9 lumens  
Efficiency: N/A  
Efficacy: 137.7 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

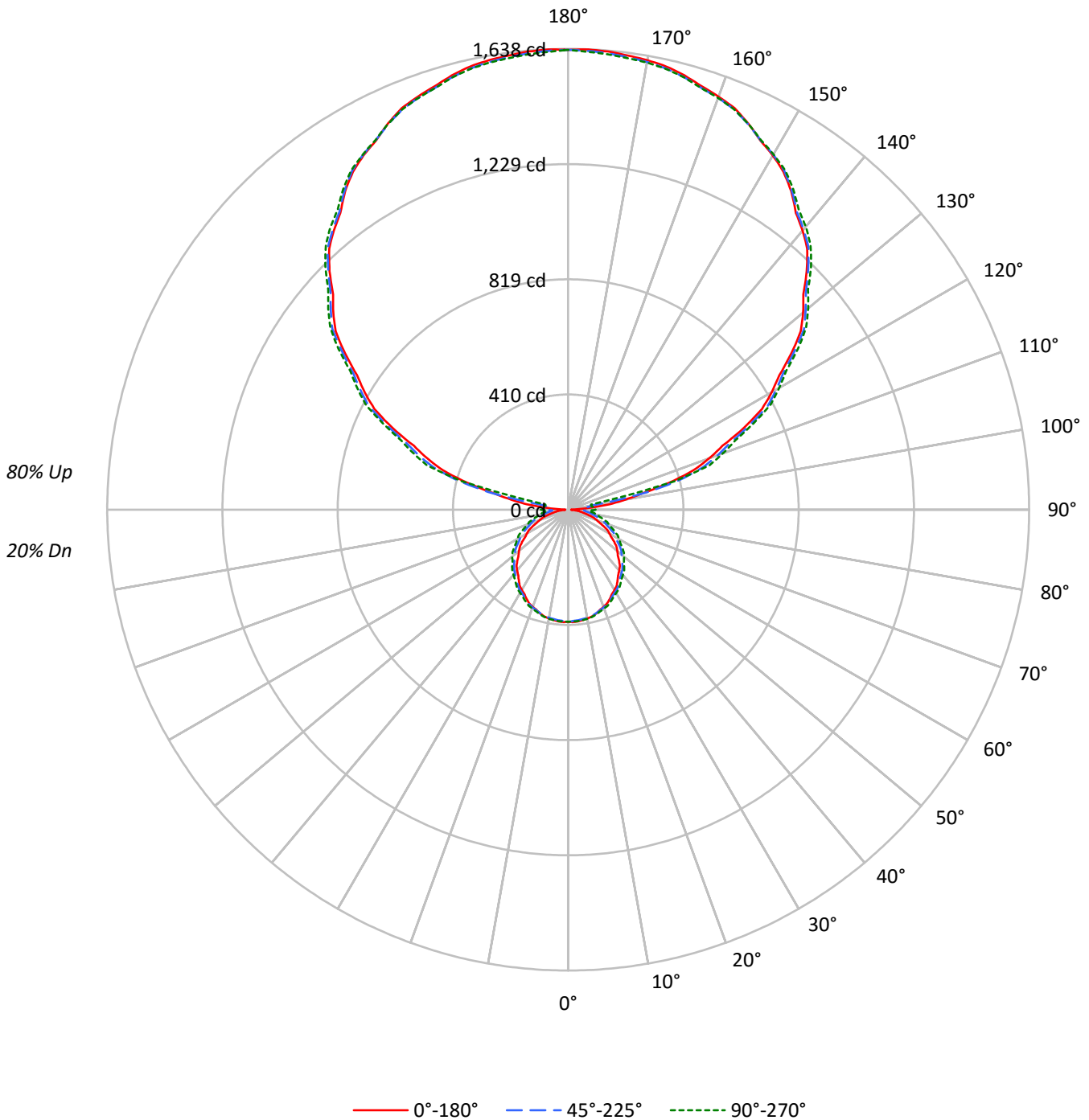
Input Watts (W): 46.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332735-830

CATALOG NUMBER: S124DIW-S350D1340U830-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P332735-830

CATALOG NUMBER: S124DIW-S350D1340U830-4F0-1E-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	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°	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	0.6
10°-20°	108.1	1.7
20°-30°	163.4	2.5
30°-40°	197.8	3.1
40°-50°	209.1	3.3
50°-60°	196.8	3.1
60°-70°	163.2	2.5
70°-80°	114.7	1.8
80°-90°	69.5	1.1
90°-100°	94.4	1.5
100°-110°	384.9	6.0
110°-120°	701.0	10.9
120°-130°	876.4	13.7
130°-140°	930.8	14.5
140°-150°	867.0	13.5
150°-160°	698.4	10.9
160°-170°	450.5	7.0
170°-180°	155.3	2.4
0°-30°	309.3	4.8
0°-40°	507.0	7.9
0°-60°	912.9	14.2
0°-90°	1260.3	19.6
90°-120°	1180.3	18.4
90°-150°	3854.5	60.0
90°-180°	5159.0	80.4
0°-180°	6418.9	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	42	71	91	97	8
95°	73	49	66	84	90	91
105°	372	389	411	430	393	390
115°	690	698	710	722	726	679
125°	968	972	981	992	997	864
135°	1199	1198	1206	1215	1220	924
145°	1382	1385	1385	1389	1393	863
155°	1515	1516	1512	1517	1514	698
165°	1598	1592	1592	1600	1590	451
175°	1635	1628	1628	1638	1625	156
180°	1635	1635	1635	1635	1635	



TEST NUMBER: P332735-830

CATALOG NUMBER: S124DIW-S350D1340U830-4F0-1E-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°	13.9	18.6	23.2	27.9	32.5	37.2	42.0	46.8	51.6	56.4	59.6
90°	10.8	17.7	24.7	31.7	38.6	45.3	51.7	58.2	64.7	71.1	75.6
92.5°	22.1	25.9	29.7	33.4	37.1	42.2	48.6	55.0	61.5	68.0	72.4
95°	73.0	67.1	61.1	55.1	49.2	48.4	52.7	57.0	61.4	65.7	70.0
97.5°	148.1	156.7	165.2	173.8	182.4	173.5	147.2	120.9	94.6	68.3	71.1
100°	205.4	212.8	220.4	227.8	235.3	222.2	188.6	155.0	121.3	87.7	85.8
102.5°	269.9	275.8	281.6	287.5	293.3	295.7	294.6	293.5	292.4	291.3	244.0
105°	372.0	375.6	379.2	382.9	386.4	390.8	395.8	400.9	405.9	410.9	415.8
107.5°	467.5	470.0	472.4	474.9	477.3	481.2	486.4	491.8	497.1	502.4	506.1
110°	531.7	534.0	536.1	538.3	540.5	544.1	549.2	554.4	559.5	564.6	567.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	593.9	596.6	599.4	602.0	604.7	608.1	612.2	616.2	620.3	624.4	626.5
115°	689.8	691.4	693.1	694.8	696.5	698.9	701.8	704.6	707.6	710.5	713.2
117.5°	776.5	778.1	779.7	781.3	783.0	785.5	789.1	792.6	796.2	799.7	801.7
120°	834.8	836.1	837.5	839.0	840.3	842.4	844.9	847.5	850.1	852.7	855.3
122.5°	889.6	890.2	891.0	891.6	892.4	894.3	897.4	900.5	903.6	906.7	909.0
125°	967.6	968.6	969.6	970.5	971.6	973.0	975.0	976.9	978.8	980.7	983.4
127.5°	1041.8	1042.0	1042.2	1042.4	1042.5	1044.1	1047.4	1050.5	1053.7	1056.8	1058.4
130°	1089.4	1089.6	1089.8	1089.9	1090.1	1091.4	1093.7	1096.2	1098.5	1101.0	1103.1
132.5°	1133.4	1133.8	1134.2	1134.5	1134.9	1136.3	1138.6	1140.9	1143.2	1145.5	1147.5
135°	1199.0	1198.7	1198.4	1198.2	1197.9	1198.6	1200.4	1202.2	1204.0	1205.8	1207.9
137.5°	1257.4	1257.4	1257.4	1257.4	1257.4	1258.2	1259.7	1261.3	1262.8	1264.3	1266.4
140°	1295.5	1296.0	1296.5	1296.8	1297.3	1297.9	1298.5	1299.2	1299.8	1300.4	1302.6
142.5°	1329.5	1330.4	1331.3	1332.3	1333.2	1333.9	1334.2	1334.5	1334.6	1334.9	1336.6
145°	1381.9	1382.6	1383.4	1384.0	1384.8	1385.2	1385.2	1385.2	1385.2	1385.2	1386.0
147.5°	1423.7	1425.1	1426.5	1428.0	1429.4	1430.0	1429.7	1429.5	1429.2	1428.9	1429.2
150°	1454.1	1455.0	1456.0	1457.0	1458.0	1458.3	1458.1	1457.8	1457.5	1457.3	1457.3
152.5°	1479.1	1480.0	1480.8	1481.7	1482.5	1482.7	1482.2	1481.7	1481.2	1480.7	1481.2
155°	1514.8	1514.9	1515.2	1515.5	1515.8	1515.5	1514.8	1513.9	1513.1	1512.3	1513.3
157.5°	1544.8	1544.6	1544.5	1544.3	1544.2	1543.6	1542.7	1541.7	1540.9	1539.9	1541.3
160°	1562.4	1561.6	1560.8	1559.9	1559.2	1558.6	1558.3	1558.0	1557.7	1557.6	1559.2
162.5°	1578.0	1577.0	1576.0	1575.0	1574.0	1573.3	1573.0	1572.7	1572.4	1572.2	1573.8
165°	1597.9	1596.5	1595.2	1593.7	1592.4	1591.8	1591.8	1591.8	1591.8	1591.8	1593.9
167.5°	1613.5	1612.1	1610.7	1609.3	1607.9	1607.0	1606.9	1606.8	1606.6	1606.4	1608.8
170°	1622.3	1620.7	1619.0	1617.4	1615.8	1615.1	1615.3	1615.6	1615.9	1616.2	1618.3
172.5°	1628.1	1626.5	1624.9	1623.2	1621.6	1621.0	1621.3	1621.6	1621.7	1622.0	1624.2
175°	1634.6	1632.9	1631.3	1629.7	1628.0	1627.3	1627.6	1627.9	1628.1	1628.4	1630.9
177.5°	1637.5	1636.0	1634.4	1632.9	1631.4	1630.8	1631.3	1631.7	1632.1	1632.6	1634.3
180°	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6



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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°	62.8	66.0	69.1	71.3	72.2	73.1	74.2	75.1
90°	80.1	84.5	89.1	92.0	93.3	94.6	96.0	97.4
92.5°	76.8	81.2	85.7	88.3	89.3	90.1	91.0	91.9
95°	74.4	78.6	82.9	85.7	86.8	88.0	89.2	90.3
97.5°	73.8	76.6	79.4	81.3	82.5	83.5	84.6	85.8
100°	83.8	81.9	79.9	79.5	80.4	81.3	82.4	83.3
102.5°	196.8	149.6	102.4	79.2	80.0	80.9	81.7	82.5
105°	420.8	425.7	430.6	428.6	419.5	410.6	401.6	392.6
107.5°	509.7	513.3	517.0	519.6	521.4	523.1	524.9	526.6
110°	570.2	573.1	575.9	578.1	579.7	581.3	582.9	584.5





TEST NUMBER: P332735-830

CATALOG NUMBER: S124DIW-S350D1340U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	628.6	630.7	632.7	634.7	636.6	638.4	640.2	642.1
115°	716.0	718.7	721.3	723.1	723.8	724.4	725.2	725.9
117.5°	803.6	805.6	807.6	808.9	809.5	810.2	811.0	811.6
120°	857.8	860.3	862.8	864.2	864.5	864.7	865.0	865.3
122.5°	911.3	913.6	916.0	917.2	917.3	917.5	917.7	917.8
125°	986.1	988.8	991.6	993.3	994.2	995.0	995.9	996.7
127.5°	1060.1	1061.7	1063.3	1064.3	1064.8	1065.3	1065.7	1066.1
130°	1105.1	1107.1	1109.2	1110.5	1111.2	1111.7	1112.3	1112.9
132.5°	1149.4	1151.4	1153.4	1154.6	1155.0	1155.4	1155.7	1156.1
135°	1210.0	1212.1	1214.3	1215.9	1217.0	1218.2	1219.4	1220.5
137.5°	1268.5	1270.5	1272.5	1273.8	1274.0	1274.4	1274.7	1275.1
140°	1304.7	1306.7	1308.8	1310.3	1311.1	1311.8	1312.6	1313.3
142.5°	1338.4	1340.1	1341.8	1342.9	1343.4	1343.9	1344.3	1344.8
145°	1386.9	1387.7	1388.6	1389.5	1390.4	1391.4	1392.3	1393.3
147.5°	1429.5	1429.7	1430.1	1430.5	1431.2	1431.7	1432.3	1432.9
150°	1457.3	1457.3	1457.3	1457.4	1457.6	1457.9	1458.2	1458.5
152.5°	1481.6	1482.1	1482.4	1482.6	1482.4	1482.2	1482.1	1482.0
155°	1514.5	1515.5	1516.6	1516.7	1516.0	1515.1	1514.3	1513.5
157.5°	1542.8	1544.2	1545.6	1545.6	1544.2	1542.8	1541.3	1539.9
160°	1560.8	1562.4	1564.1	1564.1	1562.4	1560.8	1559.2	1557.6
162.5°	1575.5	1577.1	1578.7	1578.6	1576.8	1574.9	1573.0	1571.2
165°	1596.1	1598.3	1600.4	1600.2	1597.9	1595.4	1593.0	1590.5
167.5°	1611.2	1613.5	1616.0	1615.8	1613.1	1610.3	1607.7	1605.0
170°	1620.5	1622.7	1624.8	1624.6	1621.9	1619.2	1616.5	1613.7
172.5°	1626.4	1628.6	1630.8	1630.4	1627.4	1624.5	1621.6	1618.6
175°	1633.3	1635.8	1638.2	1637.8	1634.6	1631.3	1628.0	1624.8
177.5°	1636.1	1637.8	1639.6	1639.1	1636.4	1633.9	1631.3	1628.6
180°	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6	1634.6

(END OF REPORT)