

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: P332737-840

Luminaire Tested: **S124DIW-S350D1340U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332737-840  
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-S350D1340U840-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1340 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6953.1 lumens  
Efficiency: N/A  
Efficacy: 149.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

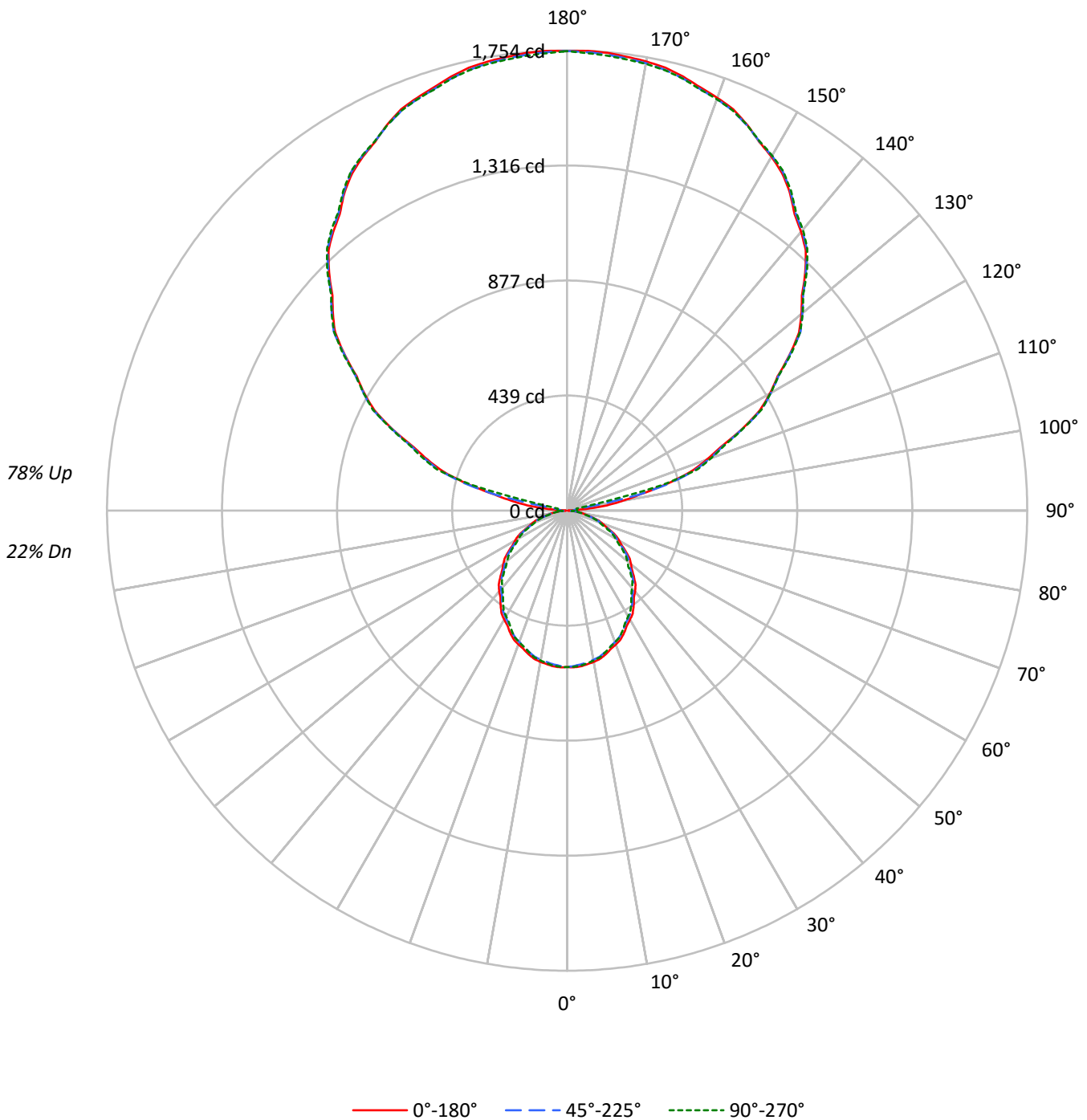
Input Watts (W): 46.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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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	0
RCR																		
0	100	100	100	100	89	89	89	89	68	68	68	48	48	48	30	30	30	22
1	92	87	84	80	81	78	74	72	59	57	55	42	41	40	27	26	26	19
2	83	76	70	65	74	68	63	59	52	49	46	37	35	33	24	22	22	16
3	76	67	60	54	67	60	54	49	46	42	38	33	30	28	21	19	18	13
4	69	59	52	46	61	53	46	41	40	36	33	29	26	24	19	17	16	11
5	63	52	45	39	56	47	40	35	36	31	28	26	23	21	17	15	14	10
6	58	47	39	34	51	42	35	30	32	28	24	23	20	18	15	13	12	9
7	54	42	35	29	48	38	31	26	29	25	21	21	18	16	14	12	11	8
8	50	38	31	26	44	34	28	23	26	22	19	19	16	14	13	11	9	7
9	46	35	27	23	41	31	25	21	24	20	16	18	15	12	12	10	9	6
10	43	32	25	20	38	28	22	18	22	18	15	16	13	11	11	9	8	6

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

	0°	45°	90°
0°	4816	4816	4816
5°	4830	4772	4807
10°	4800	4733	4757
15°	4741	4667	4679
20°	4665	4582	4587
25°	4577	4488	4475
30°	4470	4376	4336
35°	4357	4258	4202
40°	4241	4126	4051
45°	4120	3995	3919
50°	3986	3878	3758
55°	3842	3727	3606
60°	3696	3559	3450
65°	3534	3396	3261
70°	3352	3182	3059
75°	3072	2923	2848
80°	2734	2627	2552
85°	2399	2297	2251



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	56.2	0.8
10°-20°	158.3	2.3
20°-30°	233.0	3.4
30°-40°	270.8	3.9
40°-50°	270.9	3.9
50°-60°	236.9	3.4
60°-70°	175.9	2.5
70°-80°	100.0	1.4
80°-90°	33.9	0.5
90°-100°	59.9	0.9
100°-110°	381.9	5.5
110°-120°	730.6	10.5
120°-130°	927.4	13.3
130°-140°	992.3	14.3
140°-150°	927.9	13.3
150°-160°	748.3	10.8
160°-170°	482.6	6.9
170°-180°	166.3	2.4
0°-30°	447.4	6.4
0°-40°	718.3	10.3
0°-60°	1226.1	17.6
0°-90°	1535.9	22.1
90°-120°	1172.4	16.9
90°-150°	4020.0	57.8
90°-180°	5417.0	77.9
0°-180°	6953.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	596	596	596	596	596	
5°	596	594	589	594	593	57
15°	567	565	558	561	560	160
25°	514	510	504	504	502	236
35°	442	439	432	429	426	276
45°	361	357	350	345	343	278
55°	273	271	265	259	256	244
65°	185	182	178	173	171	183
75°	98	96	94	92	91	105
85°	26	26	25	25	24	29
90°	4	18	29	36	39	5
95°	72	30	29	36	38	93
105°	394	402	409	417	373	413
115°	736	740	739	741	741	724
125°	1035	1040	1037	1041	1043	924
135°	1284	1283	1288	1290	1293	989
145°	1480	1484	1484	1485	1488	925
155°	1623	1624	1620	1625	1622	748
165°	1712	1706	1706	1715	1704	484
175°	1751	1744	1745	1755	1741	167
180°	1751	1751	1751	1751	1751	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5
2.5°	598.0	597.8	597.5	597.3	597.0	596.4	595.5	594.6	593.7	592.7	593.6
5°	596.0	595.6	595.2	594.8	594.4	593.6	592.4	591.3	590.1	588.9	590.1
7.5°	590.6	590.1	589.7	589.3	588.9	587.9	586.6	585.4	584.1	582.8	583.7
10°	585.5	585.1	584.7	584.3	583.9	583.0	581.6	580.2	578.9	577.4	578.2
12.5°	579.1	578.7	578.2	577.7	577.3	576.4	574.9	573.5	572.0	570.6	571.5
15°	567.3	566.9	566.5	566.1	565.7	564.7	563.1	561.5	559.9	558.4	559.0
17.5°	553.3	552.8	552.3	551.8	551.2	550.2	548.7	547.1	545.6	544.1	544.5
20°	543.0	542.5	542.0	541.4	540.9	539.9	538.3	536.6	535.0	533.4	533.8
22.5°	531.9	531.2	530.5	529.8	529.1	528.0	526.3	524.8	523.2	521.6	522.2
25°	513.8	513.1	512.4	511.6	510.9	509.8	508.3	506.8	505.3	503.8	503.9
27.5°	493.2	492.4	491.7	490.9	490.2	489.1	487.7	486.4	484.9	483.5	483.3
30°	479.5	478.6	477.8	476.9	476.1	474.9	473.5	472.1	470.8	469.4	469.0
32.5°	464.9	464.1	463.3	462.6	461.8	460.7	459.3	457.8	456.4	454.8	454.3
35°	442.1	441.4	440.7	439.9	439.2	438.1	436.6	435.0	433.6	432.1	431.4
37.5°	418.2	417.5	416.8	416.2	415.5	414.3	412.7	411.1	409.5	407.9	407.1
40°	402.4	401.6	400.8	399.9	399.1	397.9	396.3	394.7	393.0	391.5	390.4
42.5°	385.7	385.2	384.7	384.2	383.6	382.4	380.7	378.9	377.2	375.5	374.2
45°	360.9	360.1	359.4	358.7	357.9	356.7	355.0	353.3	351.6	349.9	348.7
47.5°	335.0	334.5	334.0	333.5	333.0	331.9	330.3	328.7	327.2	325.6	324.3
50°	317.4	317.0	316.6	316.1	315.7	314.8	313.3	311.7	310.2	308.8	307.3
52.5°	300.2	299.6	299.1	298.6	298.1	297.1	295.5	294.0	292.4	290.8	289.5
55°	273.0	272.7	272.3	272.0	271.7	270.7	269.2	267.8	266.3	264.8	263.6
57.5°	246.9	246.6	246.2	245.9	245.5	244.6	243.1	241.7	240.1	238.7	237.5
60°	228.9	228.4	227.9	227.3	226.8	225.9	224.5	223.1	221.8	220.4	219.4
62.5°	211.4	211.0	210.5	210.1	209.5	208.6	207.1	205.7	204.2	202.8	201.9
65°	185.0	184.5	183.9	183.4	182.9	182.1	181.0	180.0	178.8	177.8	176.7
67.5°	158.4	157.9	157.4	156.9	156.4	155.7	154.7	153.7	152.7	151.6	150.6
70°	142.0	141.2	140.5	139.8	139.0	138.1	137.3	136.5	135.6	134.8	133.9
72.5°	124.4	123.6	122.9	122.2	121.4	120.7	120.0	119.4	118.7	118.0	117.2
75°	98.5	98.0	97.5	96.8	96.3	95.8	95.3	94.7	94.2	93.7	93.3
77.5°	73.7	73.5	73.2	73.0	72.8	72.4	72.0	71.5	71.0	70.6	70.4
80°	58.8	58.5	58.2	57.9	57.6	57.3	57.1	56.9	56.7	56.5	56.1
82.5°	44.2	44.1	43.9	43.8	43.6	43.5	43.5	43.5	43.4	43.4	43.3
85°	25.9	25.9	25.9	25.9	25.9	25.8	25.4	25.2	25.0	24.8	24.8
87.5°	10.7	11.3	11.8	12.4	12.9	13.4	13.8	14.1	14.5	14.9	15.2
90°	3.9	7.2	10.3	13.5	16.8	19.5	21.8	24.1	26.5	28.8	30.6
92.5°	16.5	16.7	16.9	17.1	17.2	18.5	20.8	23.1	25.4	27.8	29.5
95°	72.0	62.1	52.2	42.3	32.4	27.7	28.0	28.3	28.5	28.8	30.6
97.5°	153.0	159.2	165.3	171.5	177.6	164.5	132.0	99.6	67.1	34.5	34.7
100°	214.8	220.0	225.3	230.6	235.8	218.3	178.1	137.9	97.8	57.7	52.7
102.5°	284.0	287.8	291.6	295.5	299.3	298.6	293.4	288.2	283.0	277.7	224.3
105°	394.3	396.0	397.8	399.5	401.2	402.8	404.3	405.8	407.2	408.7	411.3
107.5°	496.7	497.6	498.5	499.3	500.2	501.6	503.6	505.5	507.6	509.6	510.8
110°	565.8	566.7	567.6	568.5	569.4	570.7	572.4	574.1	575.9	577.6	578.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	632.9	634.5	636.1	637.6	639.2	640.4	641.3	642.1	642.9	643.7	643.6
115°	736.1	737.0	737.9	738.7	739.6	739.9	739.6	739.3	739.0	738.7	739.3
117.5°	829.1	830.3	831.4	832.6	833.7	834.7	835.4	836.0	836.6	837.3	837.2
120°	892.0	893.1	894.3	895.5	896.7	897.1	896.9	896.6	896.3	896.0	896.6
122.5°	950.7	951.4	952.1	952.8	953.5	954.0	954.4	954.8	955.2	955.6	956.0
125°	1034.8	1035.9	1037.1	1038.2	1039.5	1039.8	1039.2	1038.5	1037.9	1037.4	1038.2
127.5°	1114.4	1114.7	1115.0	1115.3	1115.6	1116.4	1117.7	1119.0	1120.4	1121.8	1121.6
130°	1165.8	1166.1	1166.4	1166.6	1166.9	1167.5	1168.4	1169.2	1170.1	1171.0	1171.3
132.5°	1212.9	1213.5	1214.0	1214.5	1215.0	1215.9	1217.0	1218.0	1219.1	1220.2	1220.5
135°	1283.6	1283.3	1283.0	1282.8	1282.5	1282.9	1284.0	1285.3	1286.5	1287.6	1288.2
137.5°	1346.3	1346.4	1346.5	1346.7	1346.8	1347.5	1348.7	1350.0	1351.3	1352.5	1353.2
140°	1387.2	1387.8	1388.3	1388.9	1389.5	1390.1	1390.6	1391.2	1391.8	1392.4	1393.2
142.5°	1423.8	1424.8	1425.9	1426.9	1428.1	1428.7	1429.1	1429.4	1429.8	1430.1	1430.8
145°	1480.2	1481.0	1481.9	1482.8	1483.6	1484.1	1484.1	1484.1	1484.1	1484.1	1484.4
147.5°	1524.9	1526.5	1528.2	1529.8	1531.5	1532.2	1531.9	1531.6	1531.3	1531.0	1531.2
150°	1557.4	1558.6	1559.7	1560.9	1562.1	1562.5	1562.3	1562.0	1561.7	1561.4	1561.4
152.5°	1584.7	1585.6	1586.5	1587.4	1588.4	1588.6	1588.1	1587.5	1587.0	1586.5	1587.0
155°	1623.0	1623.2	1623.5	1623.8	1624.1	1623.8	1623.0	1622.0	1621.1	1620.3	1621.4
157.5°	1655.2	1655.0	1654.8	1654.6	1654.5	1653.9	1652.8	1651.8	1650.9	1649.9	1651.4
160°	1674.0	1673.1	1672.2	1671.3	1670.5	1669.9	1669.6	1669.3	1669.0	1668.8	1670.5
162.5°	1690.7	1689.6	1688.6	1687.5	1686.4	1685.7	1685.4	1685.1	1684.8	1684.5	1686.2
165°	1712.0	1710.5	1709.1	1707.6	1706.2	1705.5	1705.5	1705.5	1705.5	1705.5	1707.8
167.5°	1728.8	1727.3	1725.8	1724.2	1722.7	1721.8	1721.7	1721.5	1721.3	1721.1	1723.7
170°	1738.2	1736.5	1734.6	1732.9	1731.2	1730.5	1730.7	1731.0	1731.3	1731.6	1733.9
172.5°	1744.4	1742.7	1741.0	1739.2	1737.5	1736.8	1737.1	1737.4	1737.6	1737.9	1740.2
175°	1751.3	1749.5	1747.8	1746.1	1744.2	1743.5	1743.8	1744.1	1744.4	1744.7	1747.4
177.5°	1754.4	1752.8	1751.1	1749.5	1747.9	1747.3	1747.8	1748.3	1748.7	1749.2	1751.0
180°	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5
2.5°	594.4	595.3	596.1	596.5	596.4	596.3	596.2	596.1
5°	591.3	592.4	593.6	594.0	593.8	593.6	593.4	593.2
7.5°	584.6	585.6	586.5	586.9	586.8	586.6	586.5	586.4
10°	579.2	580.0	580.9	581.2	581.0	580.7	580.5	580.3
12.5°	572.4	573.3	574.3	574.6	574.3	574.0	573.7	573.4
15°	559.6	560.2	560.9	561.0	560.7	560.4	560.1	559.8
17.5°	544.9	545.3	545.7	545.8	545.6	545.4	545.2	545.0
20°	534.1	534.4	534.7	534.8	534.5	534.3	534.1	533.9
22.5°	522.7	523.3	523.9	524.0	523.6	523.2	522.8	522.5
25°	504.0	504.1	504.2	504.1	503.6	503.2	502.8	502.4
27.5°	483.0	482.8	482.5	482.1	481.6	481.1	480.5	480.0
30°	468.6	468.2	467.7	467.3	466.7	466.2	465.6	465.1
32.5°	453.8	453.3	452.8	452.3	451.8	451.2	450.7	450.2
35°	430.6	429.9	429.1	428.5	428.0	427.5	426.9	426.4
37.5°	406.3	405.5	404.7	403.9	403.2	402.5	401.8	401.1
40°	389.4	388.3	387.3	386.5	385.9	385.4	384.9	384.4
42.5°	372.9	371.7	370.5	369.7	369.3	369.0	368.6	368.3
45°	347.6	346.4	345.3	344.5	344.2	343.9	343.6	343.3
47.5°	323.0	321.6	320.3	319.3	318.5	317.7	316.9	316.1
50°	305.8	304.4	302.9	301.7	301.1	300.5	299.8	299.2
52.5°	288.2	286.9	285.6	284.5	283.7	282.9	282.1	281.2
55°	262.3	260.9	259.7	258.7	258.1	257.5	256.8	256.2
57.5°	236.3	235.1	233.9	233.0	232.4	231.8	231.2	230.5
60°	218.4	217.5	216.5	215.8	215.3	214.7	214.2	213.7
62.5°	201.1	200.2	199.2	198.5	198.0	197.5	197.0	196.4
65°	175.7	174.6	173.6	172.8	172.3	171.7	171.2	170.7
67.5°	149.6	148.6	147.5	146.9	146.8	146.6	146.5	146.3
70°	133.1	132.3	131.4	130.8	130.5	130.2	129.9	129.6
72.5°	116.6	115.9	115.2	114.7	114.4	114.1	113.8	113.5
75°	92.8	92.4	92.0	91.7	91.6	91.5	91.4	91.3
77.5°	70.3	70.2	70.1	69.9	69.6	69.3	69.0	68.8
80°	55.9	55.7	55.5	55.4	55.2	55.1	55.0	54.9
82.5°	43.1	43.0	42.9	42.8	42.7	42.5	42.4	42.3
85°	24.8	24.8	24.8	24.8	24.7	24.6	24.4	24.3
87.5°	15.7	16.0	16.4	16.6	16.7	16.8	17.0	17.1
90°	32.3	34.0	35.9	37.0	37.6	38.2	38.7	39.3
92.5°	31.3	33.0	34.7	35.6	35.9	36.0	36.1	36.2
95°	32.3	34.0	35.9	36.9	37.1	37.4	37.7	38.0
97.5°	34.9	35.1	35.2	35.5	35.9	36.1	36.4	36.7
100°	47.8	42.8	37.9	35.5	35.9	36.1	36.4	36.7
102.5°	171.0	117.5	64.1	37.5	37.6	37.6	37.7	37.8
105°	413.9	416.6	419.2	415.3	404.8	394.3	383.7	373.3
107.5°	512.1	513.4	514.6	515.8	516.9	518.1	519.2	520.3
110°	578.9	579.4	580.0	580.7	581.6	582.5	583.3	584.2





TEST NUMBER: P332737-840

CATALOG NUMBER: S124DIW-S350D1340U840-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	643.4	643.3	643.2	643.7	644.8	645.9	647.0	648.1
115°	739.9	740.5	741.0	741.3	741.3	741.3	741.3	741.3
117.5°	837.0	836.9	836.8	836.7	836.6	836.5	836.4	836.2
120°	897.1	897.7	898.3	898.3	897.7	897.1	896.6	896.0
122.5°	956.3	956.7	957.0	956.9	956.3	955.7	955.2	954.6
125°	1039.2	1040.1	1040.9	1041.5	1041.8	1042.1	1042.4	1042.7
127.5°	1121.5	1121.3	1121.1	1120.8	1120.6	1120.3	1120.1	1119.9
130°	1171.5	1171.8	1172.2	1172.4	1172.4	1172.4	1172.4	1172.4
132.5°	1220.8	1221.1	1221.4	1221.4	1221.2	1221.0	1220.7	1220.5
135°	1288.8	1289.3	1289.9	1290.5	1291.1	1291.6	1292.2	1292.8
137.5°	1353.8	1354.4	1355.1	1355.3	1355.1	1355.0	1354.8	1354.6
140°	1394.1	1395.0	1395.8	1396.4	1396.7	1397.0	1397.4	1397.7
142.5°	1431.4	1432.0	1432.7	1433.0	1433.1	1433.1	1433.2	1433.2
145°	1484.6	1484.9	1485.2	1485.7	1486.2	1486.8	1487.4	1488.0
147.5°	1531.5	1531.7	1531.9	1532.2	1532.5	1532.8	1533.0	1533.3
150°	1561.4	1561.4	1561.4	1561.5	1561.8	1562.1	1562.4	1562.7
152.5°	1587.4	1587.9	1588.3	1588.5	1588.3	1588.1	1588.0	1587.8
155°	1622.7	1623.8	1625.0	1625.1	1624.3	1623.4	1622.4	1621.6
157.5°	1652.9	1654.5	1656.0	1656.0	1654.5	1652.9	1651.4	1649.9
160°	1672.2	1674.0	1675.8	1675.8	1674.0	1672.2	1670.5	1668.8
162.5°	1688.0	1689.7	1691.4	1691.3	1689.4	1687.4	1685.4	1683.4
165°	1710.1	1712.4	1714.8	1714.5	1712.0	1709.4	1706.8	1704.1
167.5°	1726.3	1728.8	1731.4	1731.2	1728.3	1725.4	1722.5	1719.6
170°	1736.3	1738.6	1740.9	1740.6	1737.8	1734.8	1731.9	1729.0
172.5°	1742.5	1744.9	1747.3	1746.9	1743.6	1740.5	1737.4	1734.2
175°	1750.0	1752.6	1755.2	1754.7	1751.3	1747.8	1744.2	1740.8
177.5°	1752.9	1754.7	1756.7	1756.2	1753.3	1750.6	1747.8	1744.9
180°	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3

(END OF REPORT)