

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

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332737  
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-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: 6885.2 lumens  
Efficiency: N/A  
Efficacy: 147.8 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

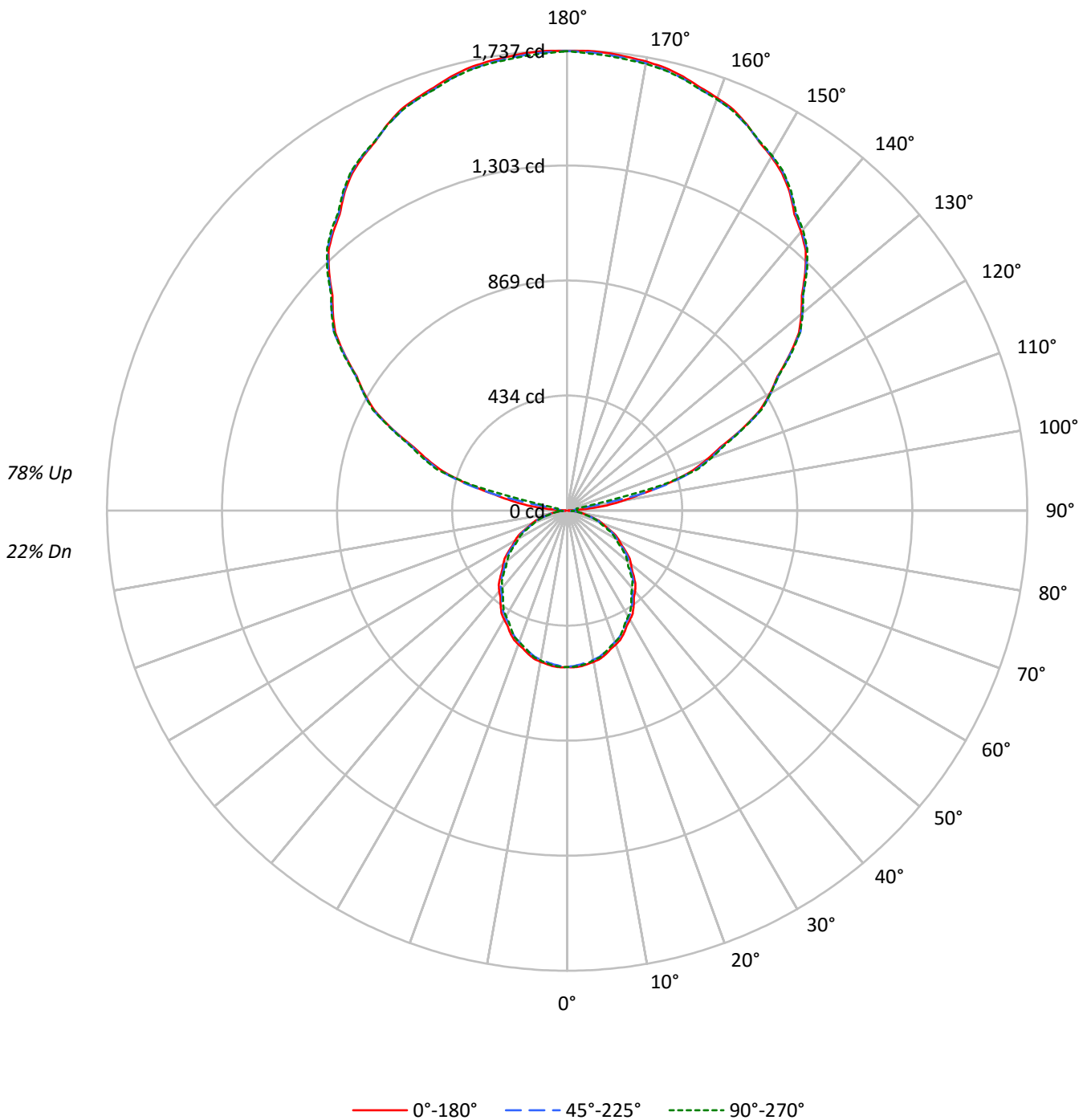
Input Watts (W): 46.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	4769	4769	4769
5°	4783	4725	4760
10°	4753	4687	4710
15°	4695	4621	4633
20°	4619	4538	4542
25°	4532	4444	4431
30°	4426	4333	4294
35°	4315	4217	4161
40°	4200	4086	4011
45°	4080	3956	3881
50°	3947	3841	3721
55°	3804	3690	3571
60°	3660	3523	3416
65°	3500	3364	3228
70°	3319	3151	3028
75°	3041	2895	2820
80°	2706	2599	2529
85°	2371	2279	2232



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	55.6	0.8
10°-20°	156.7	2.3
20°-30°	230.7	3.4
30°-40°	268.2	3.9
40°-50°	268.2	3.9
50°-60°	234.6	3.4
60°-70°	174.2	2.5
70°-80°	99.0	1.4
80°-90°	33.6	0.5
90°-100°	59.3	0.9
100°-110°	378.2	5.5
110°-120°	723.4	10.5
120°-130°	918.4	13.3
130°-140°	982.6	14.3
140°-150°	918.8	13.3
150°-160°	741.0	10.8
160°-170°	477.9	6.9
170°-180°	164.7	2.4
0°-30°	443.1	6.4
0°-40°	711.3	10.3
0°-60°	1214.1	17.6
0°-90°	1520.9	22.1
90°-120°	1160.9	16.9
90°-150°	3980.7	57.8
90°-180°	5364.0	77.9
0°-180°	6885.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	591	591	591	591	591	
5°	590	588	583	588	587	56
15°	562	560	553	555	554	158
25°	509	505	499	499	498	234
35°	438	434	428	425	422	274
45°	357	354	346	342	340	275
55°	270	269	262	257	254	242
65°	183	181	176	172	169	181
75°	98	95	93	91	90	104
85°	26	26	25	25	24	28
90°	4	18	28	36	39	5
95°	71	30	28	36	38	92
105°	390	398	405	413	370	408
115°	729	733	732	734	734	717
125°	1025	1029	1027	1031	1032	914
135°	1271	1270	1275	1278	1280	979
145°	1466	1469	1470	1471	1474	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	



TEST NUMBER: P332737

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7
2.5°	592.2	592.0	591.7	591.5	591.2	590.6	589.7	588.8	587.9	586.9	587.8
5°	590.2	589.8	589.4	589.0	588.6	587.8	586.6	585.5	584.3	583.1	584.3
7.5°	584.8	584.3	583.9	583.5	583.1	582.2	580.9	579.7	578.4	577.1	578.0
10°	579.8	579.4	579.0	578.6	578.2	577.3	575.9	574.5	573.2	571.8	572.6
12.5°	573.4	573.0	572.6	572.1	571.7	570.8	569.3	567.9	566.4	565.0	565.9
15°	561.8	561.4	561.0	560.6	560.2	559.2	557.6	556.0	554.4	552.9	553.5
17.5°	547.9	547.4	546.9	546.4	545.8	544.8	543.3	541.8	540.3	538.8	539.2
20°	537.7	537.2	536.7	536.1	535.6	534.6	533.0	531.4	529.8	528.2	528.6
22.5°	526.7	526.0	525.3	524.6	523.9	522.8	521.2	519.7	518.1	516.5	517.1
25°	508.8	508.1	507.4	506.6	505.9	504.8	503.3	501.8	500.4	498.9	499.0
27.5°	488.4	487.6	486.9	486.1	485.4	484.3	482.9	481.6	480.2	478.8	478.6
30°	474.8	473.9	473.1	472.2	471.4	470.3	468.9	467.5	466.2	464.8	464.4
32.5°	460.4	459.6	458.8	458.1	457.3	456.2	454.8	453.3	451.9	450.4	449.9
35°	437.8	437.1	436.4	435.6	434.9	433.8	432.3	430.8	429.4	427.9	427.2
37.5°	414.1	413.4	412.7	412.1	411.4	410.3	408.7	407.1	405.5	403.9	403.1
40°	398.5	397.7	396.9	396.0	395.2	394.0	392.4	390.8	389.2	387.7	386.6
42.5°	381.9	381.4	380.9	380.4	379.9	378.7	377.0	375.2	373.5	371.8	370.5
45°	357.4	356.6	355.9	355.2	354.4	353.2	351.5	349.8	348.2	346.5	345.3
47.5°	331.7	331.2	330.7	330.2	329.7	328.7	327.1	325.5	324.0	322.4	321.1
50°	314.3	313.9	313.5	313.0	312.6	311.7	310.2	308.7	307.2	305.8	304.3
52.5°	297.3	296.7	296.2	295.7	295.2	294.2	292.6	291.1	289.5	288.0	286.7
55°	270.3	270.0	269.6	269.3	269.0	268.1	266.6	265.2	263.7	262.2	261.0
57.5°	244.5	244.2	243.8	243.5	243.1	242.2	240.7	239.3	237.8	236.4	235.2
60°	226.7	226.2	225.7	225.1	224.6	223.7	222.3	220.9	219.6	218.2	217.3
62.5°	209.3	208.9	208.4	208.0	207.5	206.6	205.1	203.7	202.2	200.8	199.9
65°	183.2	182.7	182.1	181.6	181.1	180.3	179.2	178.2	177.1	176.1	175.0
67.5°	156.9	156.4	155.9	155.4	154.9	154.2	153.2	152.2	151.2	150.1	149.1
70°	140.6	139.8	139.1	138.4	137.6	136.8	136.0	135.2	134.3	133.5	132.6
72.5°	123.2	122.4	121.7	121.0	120.2	119.5	118.8	118.2	117.5	116.8	116.1
75°	97.5	97.0	96.5	95.9	95.4	94.9	94.4	93.8	93.3	92.8	92.4
77.5°	73.0	72.8	72.5	72.3	72.1	71.7	71.3	70.8	70.3	69.9	69.7
80°	58.2	57.9	57.6	57.3	57.0	56.7	56.5	56.3	56.1	55.9	55.6
82.5°	43.8	43.7	43.5	43.4	43.2	43.1	43.1	43.1	43.0	43.0	42.9
85°	25.6	25.6	25.6	25.6	25.6	25.5	25.2	25.0	24.8	24.6	24.6
87.5°	10.6	11.2	11.7	12.3	12.8	13.3	13.7	14.0	14.4	14.8	15.1
90°	3.9	7.1	10.2	13.4	16.6	19.3	21.6	23.9	26.2	28.5	30.3
92.5°	16.3	16.5	16.7	16.9	17.0	18.3	20.6	22.9	25.2	27.5	29.2
95°	71.3	61.5	51.7	41.9	32.1	27.4	27.7	28.0	28.2	28.5	30.3
97.5°	151.5	157.6	163.7	169.8	175.9	162.9	130.7	98.6	66.4	34.2	34.4
100°	212.7	217.9	223.1	228.3	233.5	216.2	176.4	136.6	96.8	57.1	52.2
102.5°	281.2	285.0	288.8	292.6	296.4	295.7	290.5	285.4	280.2	275.0	222.1
105°	390.4	392.1	393.9	395.6	397.3	398.9	400.4	401.8	403.2	404.7	407.3
107.5°	491.8	492.7	493.6	494.4	495.3	496.7	498.7	500.6	502.6	504.6	505.8
110°	560.3	561.2	562.1	562.9	563.8	565.1	566.8	568.5	570.3	572.0	572.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	626.7	628.3	629.9	631.4	633.0	634.1	635.0	635.8	636.6	637.4	637.3
115°	728.9	729.8	730.7	731.5	732.4	732.7	732.4	732.1	731.8	731.5	732.1
117.5°	821.0	822.2	823.3	824.5	825.6	826.5	827.2	827.8	828.4	829.1	829.0
120°	883.3	884.4	885.6	886.8	887.9	888.3	888.1	887.8	887.5	887.2	887.8
122.5°	941.4	942.1	942.8	943.5	944.2	944.7	945.1	945.5	945.9	946.3	946.7
125°	1024.7	1025.8	1027.0	1028.1	1029.3	1029.6	1029.0	1028.4	1027.8	1027.3	1028.1
127.5°	1103.5	1103.8	1104.1	1104.4	1104.7	1105.5	1106.8	1108.1	1109.5	1110.8	1110.6
130°	1154.4	1154.7	1155.0	1155.2	1155.5	1156.1	1157.0	1157.8	1158.7	1159.6	1159.9
132.5°	1201.1	1201.6	1202.1	1202.6	1203.1	1204.0	1205.1	1206.1	1207.2	1208.3	1208.6
135°	1271.1	1270.8	1270.5	1270.3	1270.0	1270.4	1271.5	1272.7	1273.9	1275.0	1275.6
137.5°	1333.1	1333.2	1333.3	1333.5	1333.6	1334.3	1335.5	1336.8	1338.1	1339.3	1340.0
140°	1373.6	1374.2	1374.7	1375.3	1375.9	1376.5	1377.0	1377.6	1378.2	1378.8	1379.6
142.5°	1409.9	1410.9	1412.0	1413.0	1414.1	1414.7	1415.1	1415.4	1415.8	1416.1	1416.8
145°	1465.7	1466.5	1467.4	1468.3	1469.1	1469.6	1469.6	1469.6	1469.6	1469.6	1469.9
147.5°	1510.0	1511.6	1513.3	1514.9	1516.5	1517.2	1516.9	1516.6	1516.3	1516.0	1516.2
150°	1542.2	1543.4	1544.5	1545.7	1546.8	1547.2	1547.0	1546.7	1546.4	1546.1	1546.1
152.5°	1569.2	1570.1	1571.0	1571.9	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°	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7
2.5°	588.6	589.5	590.3	590.7	590.6	590.5	590.4	590.3
5°	585.5	586.6	587.8	588.2	588.0	587.8	587.6	587.4
7.5°	578.9	579.9	580.8	581.2	581.1	580.9	580.8	580.7
10°	573.5	574.3	575.2	575.5	575.3	575.0	574.8	574.6
12.5°	566.8	567.7	568.7	569.0	568.7	568.4	568.1	567.8
15°	554.1	554.7	555.4	555.5	555.2	554.9	554.6	554.3
17.5°	539.6	540.0	540.4	540.5	540.3	540.1	539.9	539.7
20°	528.9	529.2	529.5	529.6	529.3	529.1	528.9	528.7
22.5°	517.6	518.2	518.8	518.9	518.5	518.1	517.7	517.4
25°	499.1	499.2	499.3	499.2	498.7	498.3	497.9	497.5
27.5°	478.3	478.1	477.8	477.4	476.9	476.4	475.8	475.3
30°	464.0	463.6	463.1	462.7	462.1	461.6	461.1	460.6
32.5°	449.4	448.9	448.4	447.9	447.4	446.8	446.3	445.8
35°	426.4	425.7	424.9	424.3	423.8	423.3	422.7	422.2
37.5°	402.3	401.5	400.7	400.0	399.3	398.6	397.9	397.2
40°	385.6	384.5	383.5	382.7	382.1	381.6	381.1	380.6
42.5°	369.3	368.1	366.9	366.1	365.7	365.4	365.0	364.7
45°	344.2	343.0	341.9	341.1	340.8	340.5	340.2	339.9
47.5°	319.8	318.5	317.2	316.2	315.4	314.6	313.8	313.0
50°	302.8	301.4	299.9	298.8	298.2	297.6	296.9	296.3
52.5°	285.4	284.1	282.8	281.7	280.9	280.1	279.3	278.5
55°	259.7	258.4	257.2	256.2	255.6	255.0	254.3	253.7
57.5°	234.0	232.8	231.6	230.7	230.1	229.5	228.9	228.2
60°	216.3	215.4	214.4	213.7	213.2	212.6	212.1	211.6
62.5°	199.1	198.2	197.3	196.6	196.1	195.6	195.1	194.5
65°	174.0	172.9	171.9	171.1	170.6	170.0	169.5	169.0
67.5°	148.1	147.1	146.1	145.5	145.4	145.2	145.1	144.9
70°	131.8	131.0	130.1	129.5	129.2	128.9	128.6	128.3
72.5°	115.5	114.8	114.1	113.6	113.3	113.0	112.7	112.4
75°	91.9	91.5	91.1	90.8	90.7	90.6	90.5	90.4
77.5°	69.6	69.5	69.4	69.2	68.9	68.6	68.3	68.1
80°	55.4	55.2	55.0	54.9	54.7	54.6	54.5	54.4
82.5°	42.7	42.6	42.5	42.4	42.3	42.1	42.0	41.9
85°	24.6	24.6	24.6	24.6	24.5	24.4	24.2	24.1
87.5°	15.5	15.8	16.2	16.4	16.5	16.6	16.8	16.9
90°	32.0	33.7	35.5	36.6	37.2	37.8	38.3	38.9
92.5°	31.0	32.7	34.4	35.3	35.5	35.6	35.7	35.8
95°	32.0	33.7	35.5	36.5	36.7	37.0	37.3	37.6
97.5°	34.6	34.8	34.9	35.2	35.5	35.7	36.0	36.3
100°	47.3	42.4	37.5	35.2	35.5	35.7	36.0	36.3
102.5°	169.3	116.4	63.5	37.1	37.2	37.2	37.3	37.4
105°	409.9	412.5	415.1	411.2	400.8	390.4	380.0	369.7
107.5°	507.1	508.4	509.6	510.8	511.9	513.0	514.1	515.2
110°	573.2	573.7	574.3	575.0	575.9	576.8	577.6	578.5





TEST NUMBER: P332737

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

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	637.1	637.0	636.9	637.4	638.5	639.6	640.7	641.8
115°	732.7	733.3	733.8	734.1	734.1	734.1	734.1	734.1
117.5°	828.8	828.7	828.6	828.5	828.4	828.3	828.2	828.0
120°	888.3	888.9	889.5	889.5	888.9	888.3	887.8	887.2
122.5°	947.0	947.4	947.7	947.6	947.0	946.4	945.9	945.3
125°	1029.0	1029.9	1030.7	1031.3	1031.6	1031.9	1032.2	1032.5
127.5°	1110.5	1110.3	1110.1	1109.9	1109.7	1109.4	1109.2	1109.0
130°	1160.1	1160.4	1160.7	1160.9	1160.9	1160.9	1160.9	1160.9
132.5°	1208.9	1209.2	1209.5	1209.5	1209.3	1209.1	1208.8	1208.6
135°	1276.2	1276.7	1277.3	1277.9	1278.5	1279.0	1279.6	1280.2
137.5°	1340.6	1341.2	1341.9	1342.1	1341.9	1341.8	1341.6	1341.4
140°	1380.5	1381.4	1382.2	1382.8	1383.1	1383.4	1383.7	1384.0
142.5°	1417.4	1418.0	1418.7	1419.0	1419.1	1419.1	1419.2	1419.2
145°	1470.1	1470.4	1470.7	1471.2	1471.7	1472.3	1472.9	1473.5
147.5°	1516.5	1516.7	1516.9	1517.2	1517.5	1517.8	1518.0	1518.3
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)