

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: P333029-830

Luminaire Tested: **S124RDIW-S350D1340U830-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333029-830  
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: S124RDIW-S350D1340U830-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1340 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6407.0 lumens  
Efficiency: N/A  
Efficacy: 137.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

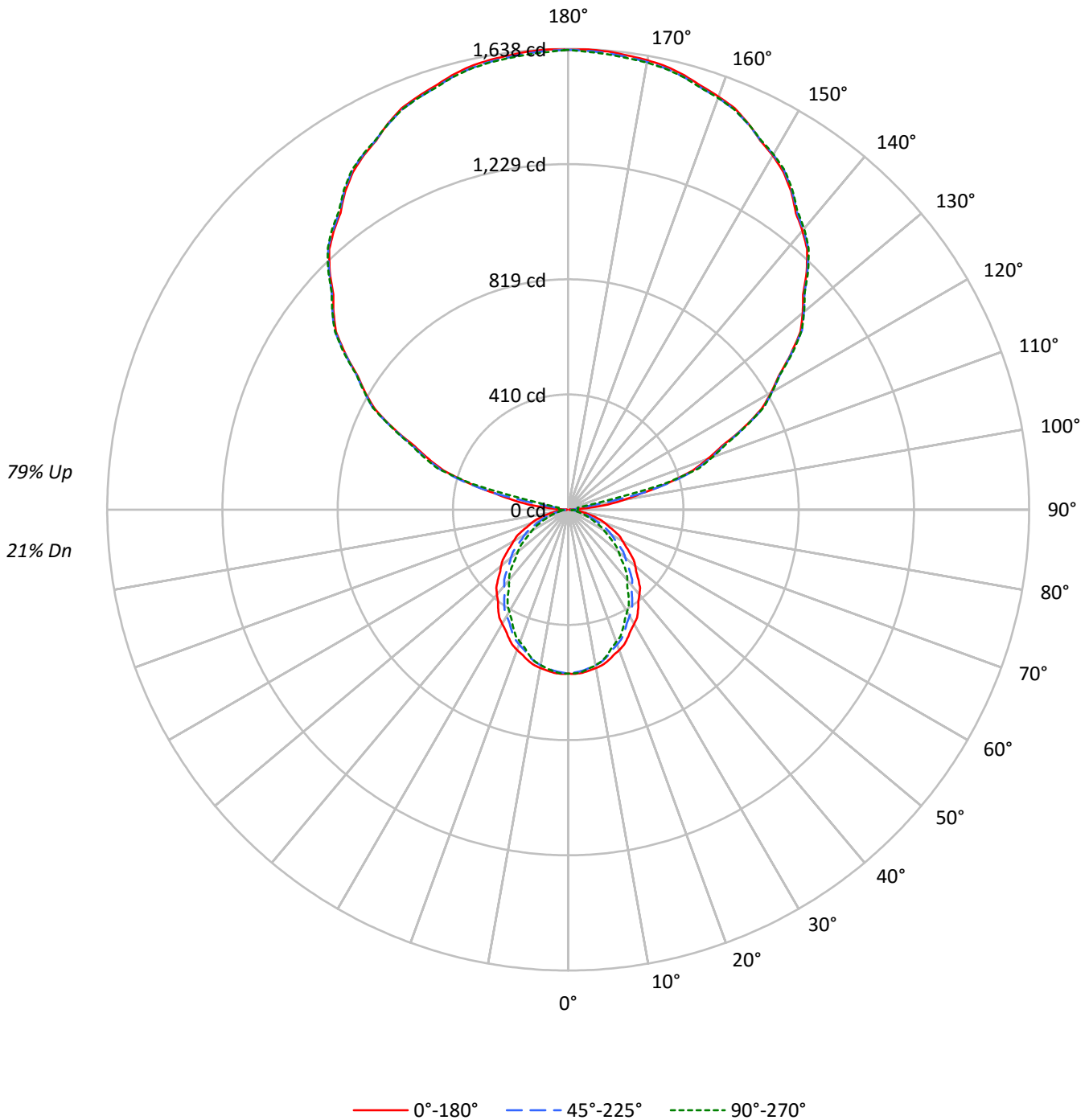
Input Watts (W): 46.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P333029-830

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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	67	67	67	48	48	48	30	30	30	21
1	91	87	84	80	81	77	74	72	59	57	55	42	41	40	26	26	25	18
2	83	76	71	66	73	68	63	59	52	48	46	37	35	33	23	22	21	15
3	76	67	60	55	67	60	54	49	46	42	38	33	30	28	21	19	18	13
4	69	59	52	46	61	53	46	42	40	36	33	29	26	24	18	17	16	11
5	64	53	45	39	56	47	40	36	36	32	28	26	23	21	17	15	14	10
6	58	47	39	34	52	42	35	31	32	28	24	23	20	18	15	13	12	9
7	54	42	35	30	48	38	31	27	29	25	21	21	18	16	14	12	11	8
8	50	38	31	26	44	34	28	24	27	22	19	19	16	14	13	11	10	7
9	46	35	28	23	41	31	25	21	24	20	17	18	15	13	12	10	9	6
10	43	32	25	20	38	28	23	19	22	18	15	16	13	11	11	9	8	6

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

	0°	45°	90°
0°	4704	4704	4704
5°	4714	4657	4686
10°	4685	4601	4601
15°	4631	4504	4471
20°	4558	4376	4296
25°	4464	4228	4121
30°	4371	4072	3901
35°	4269	3909	3680
40°	4147	3724	3442
45°	4035	3540	3199
50°	3905	3328	2941
55°	3768	3108	2663
60°	3615	2868	2377
65°	3477	2565	2096
70°	3274	2231	1780
75°	3019	1853	1447
80°	2631	1409	1330
85°	2232	1288	1195



TEST NUMBER: P333029-830

CATALOG NUMBER: S124RDIW-S350D1340U830-4F0-1E-UDD-F

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	54.7	0.9
10°-20°	152.6	2.4
20°-30°	220.4	3.4
30°-40°	249.8	3.9
40°-50°	241.2	3.8
50°-60°	200.6	3.1
60°-70°	138.5	2.2
70°-80°	70.2	1.1
80°-90°	22.7	0.4
90°-100°	55.9	0.9
100°-110°	356.4	5.6
110°-120°	681.9	10.6
120°-130°	865.6	13.5
130°-140°	926.1	14.5
140°-150°	866.0	13.5
150°-160°	698.4	10.9
160°-170°	450.5	7.0
170°-180°	155.3	2.4
0°-30°	427.8	6.7
0°-40°	677.6	10.6
0°-60°	1119.4	17.5
0°-90°	1350.9	21.1
90°-120°	1094.2	17.1
90°-150°	3752.0	58.6
90°-180°	5056.0	78.9
0°-180°	6407.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	583	583	583	583	583	
5°	582	580	575	579	578	55
15°	554	550	539	538	535	156
25°	501	492	475	467	463	231
35°	433	418	397	382	373	271
45°	353	336	310	289	280	272
55°	268	249	221	198	189	239
65°	182	162	134	116	110	180
75°	97	80	59	50	46	102
85°	24	16	14	13	13	27
90°	4	17	27	34	37	4
95°	67	28	27	34	35	86
105°	368	375	381	389	348	385
115°	687	690	690	692	692	676
125°	966	970	968	972	973	862
135°	1198	1197	1202	1204	1207	923
145°	1382	1385	1385	1386	1389	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: P333029-830

CATALOG NUMBER: S124RDIW-S350D1340U830-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	582.7	582.7	582.7	582.7	582.7	582.7	582.7	582.7	582.7	582.7	582.7
2.5°	584.1	583.7	583.4	583.2	582.8	582.2	581.4	580.5	579.6	578.7	579.6
5°	581.7	581.4	581.0	580.6	580.1	579.4	578.2	577.0	575.8	574.7	575.6
7.5°	576.5	576.1	575.7	575.2	574.9	573.8	572.3	570.7	569.2	567.7	568.3
10°	571.5	571.0	570.5	570.0	569.5	568.4	566.6	564.8	563.0	561.3	561.7
12.5°	565.1	564.5	563.9	563.4	562.8	561.5	559.3	557.2	555.2	553.0	553.3
15°	554.1	553.2	552.3	551.4	550.5	548.8	546.4	543.8	541.4	538.9	538.8
17.5°	540.8	539.5	538.2	537.0	535.6	533.5	530.6	527.5	524.6	521.6	521.0
20°	530.5	529.1	527.9	526.6	525.3	523.0	519.6	516.2	512.8	509.4	508.7
22.5°	519.1	517.6	516.1	514.7	513.2	510.7	507.1	503.5	499.9	496.2	495.1
25°	501.1	499.3	497.5	495.7	493.9	491.0	486.9	482.9	478.7	474.7	473.0
27.5°	482.1	479.8	477.6	475.4	473.2	469.9	465.5	461.2	456.9	452.5	450.3
30°	468.9	466.4	463.9	461.5	459.0	455.4	450.7	446.1	441.4	436.8	434.3
32.5°	455.0	452.1	449.4	446.6	443.7	440.0	435.2	430.4	425.6	420.8	417.8
35°	433.2	430.0	426.9	423.7	420.5	416.4	411.5	406.5	401.6	396.6	393.2
37.5°	409.9	406.6	403.4	400.1	396.8	392.5	386.9	381.4	376.0	370.5	366.7
40°	393.5	390.2	386.9	383.7	380.4	376.0	370.3	364.7	359.0	353.4	349.2
42.5°	377.8	374.4	370.9	367.5	364.1	359.4	353.5	347.6	341.8	335.8	331.6
45°	353.4	349.7	346.0	342.3	338.7	333.8	327.9	322.0	316.0	310.1	305.2
47.5°	328.1	324.3	320.6	316.7	312.9	307.9	301.8	295.6	289.4	283.2	278.1
50°	310.9	307.1	303.2	299.4	295.5	290.4	284.1	277.7	271.4	265.0	260.0
52.5°	293.5	289.6	285.9	282.1	278.3	273.1	266.6	260.1	253.6	247.1	242.1
55°	267.7	263.7	259.8	255.8	251.8	246.6	240.2	233.8	227.2	220.8	215.7
57.5°	242.1	238.0	233.9	229.8	225.6	220.5	214.1	207.7	201.4	195.0	189.8
60°	223.9	220.0	216.0	212.1	208.1	202.9	196.6	190.2	183.9	177.6	172.4
62.5°	207.5	203.4	199.3	195.2	191.1	185.8	179.3	172.8	166.3	159.8	155.0
65°	182.0	177.8	173.5	169.3	164.9	159.7	153.4	146.9	140.6	134.3	130.1
67.5°	155.5	151.5	147.3	143.3	139.2	134.2	128.3	122.4	116.5	110.7	107.0
70°	138.7	134.6	130.4	126.3	122.1	117.2	111.5	105.8	100.2	94.5	91.3
72.5°	120.9	117.2	113.4	109.6	105.8	101.3	96.0	90.6	85.3	79.9	77.2
75°	96.8	93.1	89.4	85.8	82.1	77.9	73.3	68.6	64.0	59.4	57.0
77.5°	72.4	69.3	66.2	63.1	59.9	56.5	52.7	48.9	45.1	41.4	40.1
80°	56.6	53.8	50.9	48.1	45.1	42.2	39.3	36.3	33.3	30.3	30.1
82.5°	43.1	40.4	37.8	35.2	32.5	30.3	28.7	27.0	25.3	23.6	23.4
85°	24.1	22.1	20.2	18.1	16.1	15.0	14.7	14.4	14.1	13.9	13.7
87.5°	9.0	8.9	8.9	8.9	8.8	9.0	9.3	9.7	10.0	10.4	10.7
90°	3.7	6.7	9.6	12.6	15.6	18.2	20.4	22.5	24.7	26.9	28.6
92.5°	15.4	15.6	15.7	15.9	16.0	17.2	19.4	21.6	23.8	25.9	27.5
95°	67.2	58.0	48.7	39.5	30.3	25.8	26.1	26.4	26.6	26.9	28.6
97.5°	142.8	148.5	154.3	160.0	165.8	153.5	123.2	92.9	62.6	32.2	32.4
100°	200.5	205.4	210.3	215.2	220.1	203.8	166.3	128.8	91.2	53.8	49.2
102.5°	265.0	268.6	272.2	275.8	279.4	278.7	273.8	269.0	264.1	259.2	209.3
105°	368.0	369.6	371.3	372.9	374.5	376.0	377.4	378.7	380.0	381.4	383.9
107.5°	463.5	464.4	465.2	466.0	466.8	468.2	470.0	471.8	473.7	475.6	476.7
110°	528.1	529.0	529.8	530.6	531.4	532.6	534.2	535.8	537.5	539.1	539.7



TEST NUMBER: P333029-830

CATALOG NUMBER: S124RDIW-S350D1340U830-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	590.7	592.2	593.7	595.1	596.6	597.7	598.5	599.3	600.0	600.8	600.7
115°	687.0	687.9	688.7	689.5	690.3	690.6	690.3	690.0	689.8	689.5	690.0
117.5°	773.8	775.0	776.0	777.1	778.2	779.0	779.7	780.2	780.8	781.5	781.4
120°	832.5	833.6	834.7	835.8	836.9	837.3	837.1	836.8	836.5	836.2	836.8
122.5°	887.3	888.0	888.6	889.3	889.9	890.4	890.8	891.2	891.6	891.9	892.3
125°	965.8	966.9	968.0	969.0	970.2	970.4	969.9	969.3	968.7	968.3	969.0
127.5°	1040.1	1040.4	1040.7	1040.9	1041.2	1042.0	1043.2	1044.4	1045.8	1047.0	1046.8
130°	1088.1	1088.4	1088.6	1088.8	1089.1	1089.7	1090.5	1091.3	1092.1	1093.0	1093.3
132.5°	1132.1	1132.6	1133.0	1133.5	1134.0	1134.8	1135.9	1136.8	1137.8	1138.9	1139.2
135°	1198.1	1197.8	1197.5	1197.3	1197.0	1197.4	1198.4	1199.6	1200.7	1201.7	1202.3
137.5°	1256.5	1256.6	1256.7	1256.9	1257.0	1257.6	1258.8	1260.0	1261.2	1262.3	1263.0
140°	1294.7	1295.2	1295.7	1296.3	1296.8	1297.4	1297.9	1298.4	1299.0	1299.6	1300.3
142.5°	1328.9	1329.8	1330.9	1331.8	1332.8	1333.4	1333.8	1334.1	1334.5	1334.7	1335.4
145°	1381.5	1382.2	1383.1	1383.9	1384.7	1385.2	1385.2	1385.2	1385.2	1385.2	1385.4
147.5°	1423.2	1424.7	1426.3	1427.9	1429.4	1430.0	1429.7	1429.5	1429.2	1428.9	1429.1
150°	1453.6	1454.7	1455.8	1456.9	1457.9	1458.3	1458.1	1457.8	1457.5	1457.3	1457.3
152.5°	1479.0	1479.9	1480.7	1481.6	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



TEST NUMBER: P333029-830

CATALOG NUMBER: S124RDIW-S350D1340U830-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	582.7	582.7	582.7	582.7	582.7	582.7	582.7	582.7
2.5°	580.5	581.4	582.2	582.6	582.5	582.5	582.4	582.3
5°	576.6	577.6	578.6	579.0	578.8	578.6	578.3	578.2
7.5°	568.9	569.6	570.2	570.3	570.0	569.8	569.4	569.1
10°	562.0	562.4	562.8	562.8	562.4	562.0	561.7	561.3
12.5°	553.5	553.7	554.0	553.8	553.3	552.7	552.1	551.6
15°	538.6	538.4	538.1	537.7	537.0	536.3	535.6	534.9
17.5°	520.5	520.0	519.4	518.6	517.6	516.5	515.5	514.4
20°	507.9	507.1	506.3	505.3	504.0	502.7	501.4	500.1
22.5°	493.9	492.7	491.5	490.4	489.4	488.3	487.3	486.2
25°	471.3	469.7	468.0	466.7	465.6	464.6	463.6	462.6
27.5°	448.3	446.2	444.1	442.4	440.9	439.5	438.1	436.7
30°	431.8	429.3	426.9	424.8	423.2	421.7	420.1	418.5
32.5°	415.0	412.1	409.3	407.0	405.5	404.0	402.5	401.0
35°	389.8	386.5	383.1	380.6	378.8	377.0	375.2	373.4
37.5°	363.0	359.2	355.4	352.6	350.8	349.0	347.2	345.4
40°	345.0	340.8	336.7	333.8	332.0	330.2	328.4	326.6
42.5°	327.3	323.1	318.9	315.8	314.0	312.1	310.2	308.4
45°	300.4	295.5	290.6	287.3	285.5	283.7	281.9	280.2
47.5°	273.1	268.1	263.1	259.6	257.6	255.6	253.6	251.8
50°	255.1	250.2	245.2	241.8	239.9	238.0	236.1	234.2
52.5°	237.0	232.1	227.1	223.5	221.6	219.6	217.6	215.7
55°	210.6	205.4	200.2	196.7	194.8	192.9	191.1	189.2
57.5°	184.5	179.4	174.1	170.8	169.4	168.0	166.5	165.0
60°	167.2	162.1	156.9	153.5	151.9	150.4	148.8	147.2
62.5°	150.2	145.4	140.7	137.7	136.4	135.2	133.8	132.6
65°	125.7	121.5	117.3	114.5	113.3	112.2	110.9	109.7
67.5°	103.3	99.6	96.0	93.5	92.2	90.9	89.5	88.2
70°	88.0	84.7	81.5	79.4	78.3	77.4	76.3	75.4
72.5°	74.4	71.5	68.8	66.9	66.0	65.1	64.2	63.2
75°	54.8	52.5	50.2	48.8	48.2	47.6	47.0	46.4
77.5°	38.7	37.4	36.1	35.3	35.2	35.0	34.8	34.6
80°	29.8	29.4	29.1	28.9	28.8	28.7	28.7	28.6
82.5°	23.1	22.9	22.7	22.5	22.4	22.3	22.2	22.1
85°	13.5	13.2	13.0	12.9	12.9	12.9	12.9	12.9
87.5°	10.8	11.1	11.4	11.6	11.8	12.0	12.2	12.3
90°	30.2	31.8	33.5	34.5	35.1	35.6	36.1	36.7
92.5°	29.2	30.8	32.4	33.3	33.5	33.6	33.6	33.7
95°	30.2	31.8	33.5	34.4	34.6	34.9	35.2	35.4
97.5°	32.6	32.8	32.9	33.2	33.5	33.6	33.9	34.2
100°	44.6	40.0	35.3	33.2	33.5	33.6	33.9	34.2
102.5°	159.6	109.7	59.9	35.0	35.1	35.1	35.2	35.3
105°	386.3	388.8	391.2	387.6	377.8	368.0	358.2	348.5
107.5°	478.0	479.2	480.3	481.5	482.5	483.5	484.6	485.6
110°	540.3	540.7	541.3	542.0	542.8	543.7	544.4	545.3





TEST NUMBER: P333029-830

CATALOG NUMBER: S124RDIW-S350D1340U830-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	600.5	600.4	600.3	600.8	601.8	602.9	603.9	604.9
115°	690.6	691.2	691.6	691.9	691.9	691.9	691.9	691.9
117.5°	781.2	781.1	781.0	780.9	780.8	780.7	780.6	780.4
120°	837.3	837.8	838.4	838.4	837.8	837.3	836.8	836.2
122.5°	892.6	893.0	893.2	893.2	892.6	892.0	891.6	891.0
125°	969.9	970.7	971.5	972.0	972.3	972.6	972.9	973.2
127.5°	1046.7	1046.5	1046.3	1046.1	1045.9	1045.7	1045.5	1045.3
130°	1093.4	1093.7	1094.0	1094.2	1094.2	1094.2	1094.2	1094.2
132.5°	1139.4	1139.7	1140.0	1140.0	1139.8	1139.6	1139.3	1139.2
135°	1202.9	1203.3	1203.9	1204.5	1205.0	1205.5	1206.1	1206.6
137.5°	1263.6	1264.1	1264.8	1265.0	1264.8	1264.7	1264.5	1264.3
140°	1301.2	1302.0	1302.8	1303.3	1303.6	1303.9	1304.2	1304.5
142.5°	1336.0	1336.5	1337.2	1337.5	1337.6	1337.6	1337.7	1337.7
145°	1385.6	1385.9	1386.2	1386.7	1387.1	1387.7	1388.3	1388.8
147.5°	1429.4	1429.6	1429.7	1430.0	1430.3	1430.6	1430.8	1431.1
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)