

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: P332744-935

Luminaire Tested: **S124DIW-S350D1560U935-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332744-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S350D1560U935-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5967.4 lumens
Efficiency: N/A
Efficacy: 111.7 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

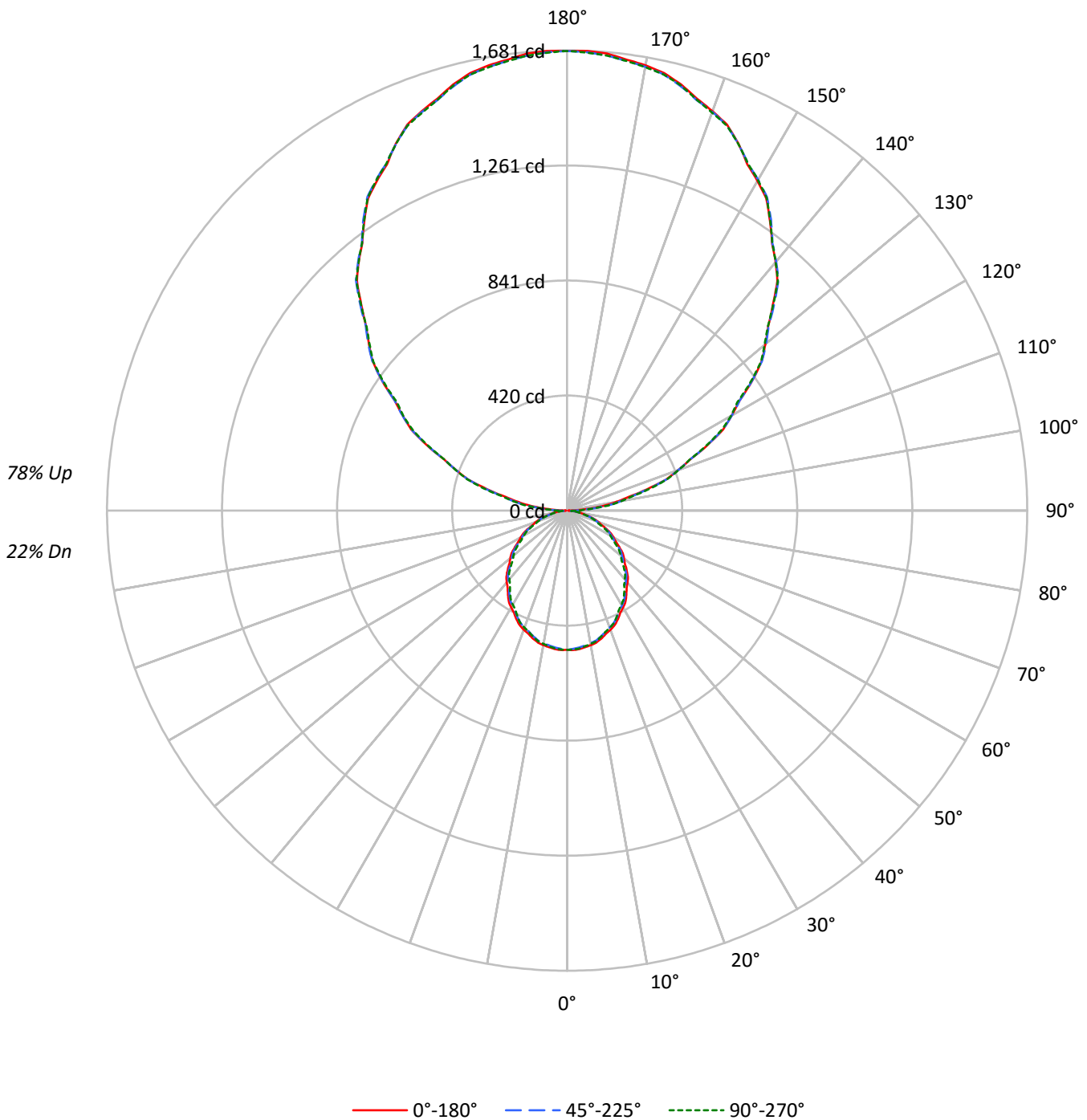
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332744-935

CATALOG NUMBER: S124DIW-S350D1560U935-4F0-1E-UDD-F1

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	91	87	84	80	81	77	74	72	59	57	55	42	41	40	27	26	25	18
2	83	76	70	65	74	68	63	59	52	48	46	37	35	33	23	22	21	15
3	76	67	60	54	67	59	54	49	46	42	38	33	30	28	21	19	18	13
4	69	59	52	46	61	53	46	41	40	36	32	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	34	29	47	38	31	26	29	24	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	8	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°	4106	4106	4106
5°	4118	4068	4099
10°	4092	4036	4055
15°	4043	3978	3989
20°	3978	3907	3911
25°	3902	3827	3815
30°	3811	3731	3697
35°	3714	3631	3582
40°	3616	3518	3453
45°	3513	3406	3342
50°	3399	3307	3204
55°	3275	3178	3074
60°	3152	3034	2942
65°	3012	2896	2779
70°	2858	2712	2608
75°	2617	2492	2427
80°	2329	2236	2176
85°	2038	1964	1927



TEST NUMBER: P332744-935

CATALOG NUMBER: S124DIW-S350D1560U935-4F0-1E-UDD-F1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	47.9	0.8
10°-20°	135.0	2.3
20°-30°	198.6	3.3
30°-40°	230.9	3.9
40°-50°	230.9	3.9
50°-60°	202.0	3.4
60°-70°	150.0	2.5
70°-80°	85.2	1.4
80°-90°	29.6	0.5
90°-100°	110.7	1.9
100°-110°	328.0	5.5
110°-120°	556.7	9.3
120°-130°	734.0	12.3
130°-140°	824.4	13.8
140°-150°	810.1	13.6
150°-160°	681.3	11.4
160°-170°	453.3	7.6
170°-180°	158.7	2.7
0°-30°	381.5	6.4
0°-40°	612.4	10.3
0°-60°	1045.3	17.5
0°-90°	1310.2	22.0
90°-120°	995.4	16.7
90°-150°	3363.9	56.4
90°-180°	4657.0	78.0
0°-180°	5967.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	509	509	509	509	509	
5°	508	506	502	506	506	48
15°	484	482	476	478	477	136
25°	438	435	430	430	428	201
35°	377	374	368	366	364	236
45°	308	305	298	294	293	237
55°	233	231	226	221	218	208
65°	158	156	152	148	146	156
75°	84	82	80	78	78	89
85°	22	22	21	21	21	24
90°	4	18	29	36	39	6
95°	78	89	99	102	102	87
105°	302	304	309	313	317	321
115°	566	566	563	562	561	558
125°	824	824	823	820	818	734
135°	1063	1071	1071	1068	1064	822
145°	1292	1297	1298	1297	1293	808
155°	1480	1480	1479	1483	1479	681
165°	1611	1607	1605	1612	1607	454
175°	1676	1670	1668	1676	1668	159
180°	1679	1679	1679	1679	1679	



TEST NUMBER: P332744-935

CATALOG NUMBER: S124DIW-S350D1560U935-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6
2.5°	509.9	509.7	509.5	509.3	509.0	508.5	507.7	507.0	506.2	505.3	506.1
5°	508.2	507.8	507.5	507.1	506.8	506.1	505.1	504.1	503.1	502.0	503.1
7.5°	503.5	503.1	502.7	502.4	502.0	501.3	500.2	499.1	498.0	496.9	497.7
10°	499.2	498.9	498.5	498.2	497.8	497.1	495.8	494.6	493.5	492.3	493.0
12.5°	493.7	493.4	493.0	492.6	492.2	491.5	490.2	489.0	487.7	486.5	487.2
15°	483.7	483.4	483.0	482.7	482.3	481.5	480.1	478.7	477.3	476.0	476.6
17.5°	471.7	471.3	470.9	470.5	469.9	469.1	467.8	466.5	465.2	463.9	464.3
20°	463.0	462.5	462.1	461.6	461.2	460.3	458.9	457.5	456.2	454.8	455.1
22.5°	453.5	452.9	452.3	451.7	451.1	450.1	448.8	447.5	446.1	444.7	445.2
25°	438.1	437.5	436.9	436.2	435.6	434.6	433.3	432.0	430.8	429.6	429.6
27.5°	420.5	419.8	419.2	418.5	417.9	417.0	415.8	414.7	413.5	412.2	412.1
30°	408.8	408.0	407.3	406.6	405.9	404.9	403.7	402.5	401.4	400.2	399.8
32.5°	396.4	395.7	395.0	394.4	393.7	392.8	391.6	390.3	389.1	387.8	387.4
35°	376.9	376.3	375.7	375.1	374.4	373.5	372.2	370.9	369.7	368.4	367.8
37.5°	356.5	355.9	355.3	354.8	354.2	353.3	351.9	350.5	349.1	347.8	347.1
40°	343.1	342.4	341.7	341.0	340.3	339.2	337.9	336.5	335.1	333.8	332.9
42.5°	328.8	328.4	328.0	327.5	327.1	326.1	324.6	323.0	321.6	320.1	319.0
45°	307.7	307.0	306.4	305.8	305.1	304.1	302.6	301.2	299.8	298.3	297.3
47.5°	285.6	285.2	284.7	284.3	283.9	283.0	281.6	280.3	279.0	277.6	276.5
50°	270.6	270.3	269.9	269.5	269.1	268.4	267.1	265.8	264.5	263.3	262.0
52.5°	256.0	255.5	255.0	254.6	254.2	253.3	251.9	250.6	249.3	248.0	246.8
55°	232.7	232.5	232.1	231.9	231.6	230.8	229.5	228.3	227.0	225.8	224.7
57.5°	210.5	210.3	209.9	209.7	209.3	208.5	207.2	206.0	204.7	203.5	202.5
60°	195.2	194.8	194.3	193.8	193.4	192.6	191.4	190.2	189.1	187.9	187.1
62.5°	180.2	179.9	179.4	179.1	178.7	177.9	176.6	175.4	174.1	172.9	172.1
65°	157.7	157.3	156.8	156.4	155.9	155.2	154.3	153.4	152.5	151.6	150.7
67.5°	135.1	134.7	134.2	133.8	133.4	132.8	131.9	131.0	130.2	129.2	128.4
70°	121.1	120.4	119.8	119.2	118.5	117.8	117.1	116.4	115.6	114.9	114.2
72.5°	106.1	105.4	104.8	104.2	103.5	102.9	102.3	101.8	101.2	100.6	100.0
75°	83.9	83.5	83.1	82.6	82.1	81.7	81.3	80.8	80.3	79.9	79.6
77.5°	62.9	62.7	62.4	62.3	62.1	61.7	61.4	61.0	60.5	60.2	60.0
80°	50.1	49.9	49.6	49.3	49.1	48.8	48.6	48.5	48.3	48.1	47.9
82.5°	37.7	37.6	37.5	37.4	37.2	37.1	37.1	37.1	37.0	37.0	36.9
85°	22.0	22.0	22.0	22.0	22.0	22.0	21.7	21.5	21.4	21.2	21.2
87.5°	9.3	9.8	10.4	10.9	11.5	12.0	12.4	12.7	13.2	13.5	13.9
90°	3.9	7.1	10.2	13.4	16.6	19.4	21.6	23.9	26.3	28.6	30.3
92.5°	27.8	31.4	35.0	38.7	42.4	44.9	46.6	48.2	49.8	51.4	52.4
95°	77.9	80.5	83.1	85.7	88.3	90.6	92.6	94.6	96.7	98.7	99.5
97.5°	136.0	138.1	140.2	142.3	144.4	146.6	149.0	151.3	153.7	156.0	157.0
100°	181.8	182.9	184.1	185.2	186.4	188.2	190.9	193.5	196.0	198.6	199.2
102.5°	229.5	230.0	230.5	230.9	231.4	232.8	235.1	237.5	239.9	242.3	243.1
105°	302.5	302.8	303.1	303.3	303.7	304.4	305.5	306.7	307.8	309.0	309.9
107.5°	379.1	379.4	379.8	380.1	380.5	380.7	380.9	381.1	381.3	381.4	382.2
110°	431.0	431.6	432.1	432.7	433.3	433.5	433.2	432.9	432.6	432.3	431.7



TEST NUMBER: P332744-935

CATALOG NUMBER: S124DIW-S350D1560U935-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	485.0	485.2	485.3	485.3	485.5	485.3	484.7	484.2	483.7	483.2	483.1
115°	566.0	566.0	566.0	566.0	566.0	565.8	565.2	564.6	564.0	563.4	563.2
117.5°	642.4	642.6	642.8	643.1	643.3	643.3	642.8	642.4	642.0	641.6	640.6
120°	693.3	694.4	695.6	696.7	697.8	698.0	697.2	696.3	695.4	694.6	693.1
122.5°	746.2	746.7	747.2	747.6	748.0	748.1	747.7	747.3	746.9	746.5	745.5
125°	824.4	824.4	824.4	824.4	824.4	824.2	824.0	823.6	823.4	823.1	822.5
127.5°	895.3	896.1	897.0	897.9	898.7	899.0	898.5	898.0	897.6	897.1	896.5
130°	945.1	946.0	946.8	947.7	948.6	949.0	949.0	949.0	949.0	949.0	948.5
132.5°	996.0	996.7	997.3	997.9	998.6	998.8	998.5	998.3	998.1	997.8	997.3
135°	1063.2	1065.0	1066.7	1068.5	1070.2	1071.1	1071.1	1071.1	1071.1	1071.1	1070.5
137.5°	1136.5	1137.3	1138.1	1138.9	1139.7	1140.4	1140.8	1141.3	1141.8	1142.2	1141.4
140°	1185.3	1185.9	1186.5	1187.1	1187.6	1187.9	1187.9	1187.9	1187.9	1187.9	1187.6
142.5°	1229.9	1230.5	1231.1	1231.7	1232.3	1232.4	1232.2	1232.0	1231.7	1231.5	1231.5
145°	1291.8	1292.9	1294.1	1295.2	1296.4	1297.1	1297.4	1297.7	1298.0	1298.2	1298.0
147.5°	1353.1	1354.4	1355.8	1357.2	1358.6	1359.2	1358.9	1358.7	1358.5	1358.2	1358.0
150°	1390.4	1391.5	1392.8	1393.9	1395.1	1395.6	1395.6	1395.6	1395.6	1395.6	1395.6
152.5°	1425.7	1426.4	1427.1	1427.8	1428.5	1429.0	1429.2	1429.4	1429.7	1429.9	1430.6
155°	1480.0	1480.0	1480.0	1480.0	1480.0	1479.9	1479.5	1479.3	1479.0	1478.7	1479.9
157.5°	1525.7	1525.2	1524.7	1524.1	1523.6	1523.4	1523.3	1523.2	1523.2	1523.1	1524.0
160°	1552.7	1552.4	1552.1	1551.9	1551.5	1551.3	1551.0	1550.7	1550.4	1550.1	1551.0
162.5°	1577.6	1576.9	1576.1	1575.4	1574.6	1574.1	1573.8	1573.6	1573.2	1573.0	1574.5
165°	1611.1	1610.2	1609.4	1608.5	1607.7	1607.0	1606.4	1605.8	1605.2	1604.6	1606.4
167.5°	1636.8	1635.6	1634.4	1633.2	1632.0	1631.4	1631.5	1631.5	1631.6	1631.7	1633.4
170°	1651.4	1649.9	1648.5	1647.0	1645.6	1645.0	1645.3	1645.6	1645.9	1646.1	1647.9
172.5°	1661.7	1660.5	1659.3	1658.1	1656.9	1656.3	1656.4	1656.5	1656.5	1656.6	1658.5
175°	1676.0	1674.6	1673.2	1671.7	1670.3	1669.4	1669.1	1668.8	1668.5	1668.3	1670.3
177.5°	1680.7	1679.6	1678.4	1677.2	1676.1	1675.5	1675.5	1675.5	1675.5	1675.5	1677.1
180°	1678.6	1678.6	1678.6	1678.6	1678.6	1678.6	1678.6	1678.6	1678.6	1678.6	1678.6



TEST NUMBER: P332744-935

CATALOG NUMBER: S124DIW-S350D1560U935-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6
2.5°	506.8	507.6	508.2	508.6	508.5	508.4	508.3	508.2
5°	504.1	505.1	506.1	506.4	506.3	506.1	505.9	505.8
7.5°	498.4	499.3	500.1	500.4	500.3	500.2	500.1	500.0
10°	493.8	494.5	495.2	495.5	495.3	495.1	494.9	494.7
12.5°	488.0	488.8	489.7	489.9	489.7	489.4	489.1	488.9
15°	477.1	477.6	478.2	478.3	478.0	477.8	477.5	477.3
17.5°	464.6	464.9	465.3	465.4	465.2	465.0	464.9	464.7
20°	455.4	455.6	455.9	456.0	455.7	455.6	455.4	455.2
22.5°	445.7	446.2	446.7	446.8	446.4	446.1	445.7	445.5
25°	429.7	429.8	429.9	429.8	429.4	429.0	428.7	428.3
27.5°	411.8	411.6	411.4	411.0	410.6	410.2	409.7	409.2
30°	399.5	399.2	398.7	398.4	397.9	397.4	397.0	396.6
32.5°	386.9	386.5	386.1	385.6	385.2	384.7	384.3	383.8
35°	367.1	366.5	365.8	365.3	364.9	364.5	363.9	363.5
37.5°	346.4	345.7	345.0	344.4	343.8	343.2	342.6	342.0
40°	332.0	331.1	330.2	329.5	329.0	328.6	328.1	327.7
42.5°	318.0	316.9	315.9	315.2	314.9	314.6	314.3	314.0
45°	296.4	295.3	294.4	293.7	293.4	293.2	292.9	292.7
47.5°	275.3	274.2	273.1	272.2	271.6	270.9	270.2	269.5
50°	260.7	259.5	258.2	257.3	256.8	256.2	255.6	255.1
52.5°	245.7	244.6	243.5	242.5	241.9	241.2	240.5	239.8
55°	223.6	222.5	221.4	220.6	220.1	219.6	219.0	218.4
57.5°	201.5	200.4	199.4	198.6	198.1	197.6	197.1	196.5
60°	186.2	185.5	184.6	184.0	183.6	183.0	182.6	182.2
62.5°	171.4	170.7	169.9	169.3	168.8	168.4	168.0	167.5
65°	149.8	148.9	148.0	147.3	146.9	146.4	145.9	145.5
67.5°	127.5	126.7	125.8	125.3	125.2	125.0	124.9	124.8
70°	113.5	112.8	112.0	111.5	111.2	111.0	110.7	110.5
72.5°	99.4	98.8	98.2	97.8	97.6	97.3	97.0	96.8
75°	79.1	78.8	78.4	78.2	78.1	78.0	77.9	77.8
77.5°	59.9	59.8	59.8	59.6	59.3	59.1	58.8	58.6
80°	47.7	47.5	47.4	47.3	47.1	47.0	46.9	46.8
82.5°	36.8	36.7	36.6	36.5	36.4	36.2	36.2	36.1
85°	21.2	21.2	21.2	21.2	21.1	21.0	20.8	20.8
87.5°	14.2	14.6	14.9	15.2	15.2	15.4	15.5	15.6
90°	32.0	33.8	35.5	36.7	37.2	37.8	38.4	38.9
92.5°	53.5	54.5	55.5	56.2	56.6	56.9	57.3	57.6
95°	100.4	101.3	102.1	102.5	102.5	102.5	102.5	102.5
97.5°	158.2	159.2	160.2	160.7	160.7	160.7	160.7	160.7
100°	199.8	200.4	201.0	201.2	201.2	201.2	201.2	201.2
102.5°	243.8	244.7	245.5	246.0	246.2	246.5	246.7	246.9
105°	310.7	311.6	312.5	313.3	314.2	315.0	315.9	316.8
107.5°	383.1	383.8	384.7	385.0	385.0	385.0	384.9	384.8
110°	431.2	430.6	430.0	430.2	431.0	431.9	432.7	433.6



TEST NUMBER: P332744-935

CATALOG NUMBER: S124DIW-S350D1560U935-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	482.9	482.8	482.8	482.8	482.9	483.1	483.3	483.5
115°	562.8	562.6	562.3	562.0	561.7	561.5	561.1	560.9
117.5°	639.6	638.7	637.7	636.9	636.3	635.8	635.2	634.6
120°	691.6	690.3	688.8	688.4	689.0	689.5	690.1	690.7
122.5°	744.5	743.6	742.6	741.6	740.5	739.5	738.5	737.4
125°	821.9	821.4	820.8	820.2	819.6	819.1	818.5	817.9
127.5°	896.0	895.4	894.8	894.2	893.8	893.4	892.9	892.4
130°	947.9	947.3	946.7	945.8	944.7	943.6	942.4	941.2
132.5°	996.7	996.1	995.5	995.0	994.5	994.1	993.6	993.2
135°	1069.9	1069.4	1068.8	1068.0	1067.1	1066.3	1065.4	1064.5
137.5°	1140.7	1140.0	1139.2	1138.9	1139.1	1139.3	1139.4	1139.6
140°	1187.3	1187.1	1186.7	1186.5	1186.2	1185.9	1185.6	1185.3
142.5°	1231.4	1231.3	1231.3	1231.2	1231.1	1231.1	1231.1	1231.0
145°	1297.7	1297.4	1297.1	1296.5	1295.6	1294.8	1293.9	1293.0
147.5°	1357.8	1357.5	1357.3	1357.0	1356.8	1356.5	1356.2	1355.9
150°	1395.6	1395.6	1395.6	1395.5	1395.2	1394.9	1394.6	1394.3
152.5°	1431.2	1431.9	1432.6	1432.6	1431.8	1431.2	1430.4	1429.6
155°	1481.0	1482.1	1483.3	1483.3	1482.1	1481.0	1479.9	1478.7
157.5°	1524.8	1525.7	1526.6	1526.5	1525.5	1524.6	1523.5	1522.6
160°	1551.9	1552.7	1553.6	1553.2	1551.9	1550.4	1548.9	1547.5
162.5°	1576.1	1577.6	1579.2	1579.2	1577.8	1576.4	1574.9	1573.5
165°	1608.1	1609.8	1611.5	1611.9	1610.7	1609.6	1608.3	1607.2
167.5°	1635.1	1636.8	1638.6	1638.6	1636.8	1635.0	1633.1	1631.3
170°	1649.7	1651.4	1653.1	1652.9	1651.0	1648.9	1646.9	1644.9
172.5°	1660.5	1662.4	1664.4	1664.4	1662.3	1660.4	1658.3	1656.3
175°	1672.3	1674.3	1676.4	1676.4	1674.3	1672.3	1670.3	1668.3
177.5°	1678.8	1680.3	1682.0	1681.9	1680.0	1678.2	1676.4	1674.5
180°	1678.6	1678.6	1678.6	1678.6	1678.6	1678.6	1678.6	1678.6

(END OF REPORT)