

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: P332408-935

Luminaire Tested: **S123RDIW-S340D1535U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332408-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDIW-S340D1535U935-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1535 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6405.8 lumens
Efficiency: N/A
Efficacy: 120.0 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Indirect

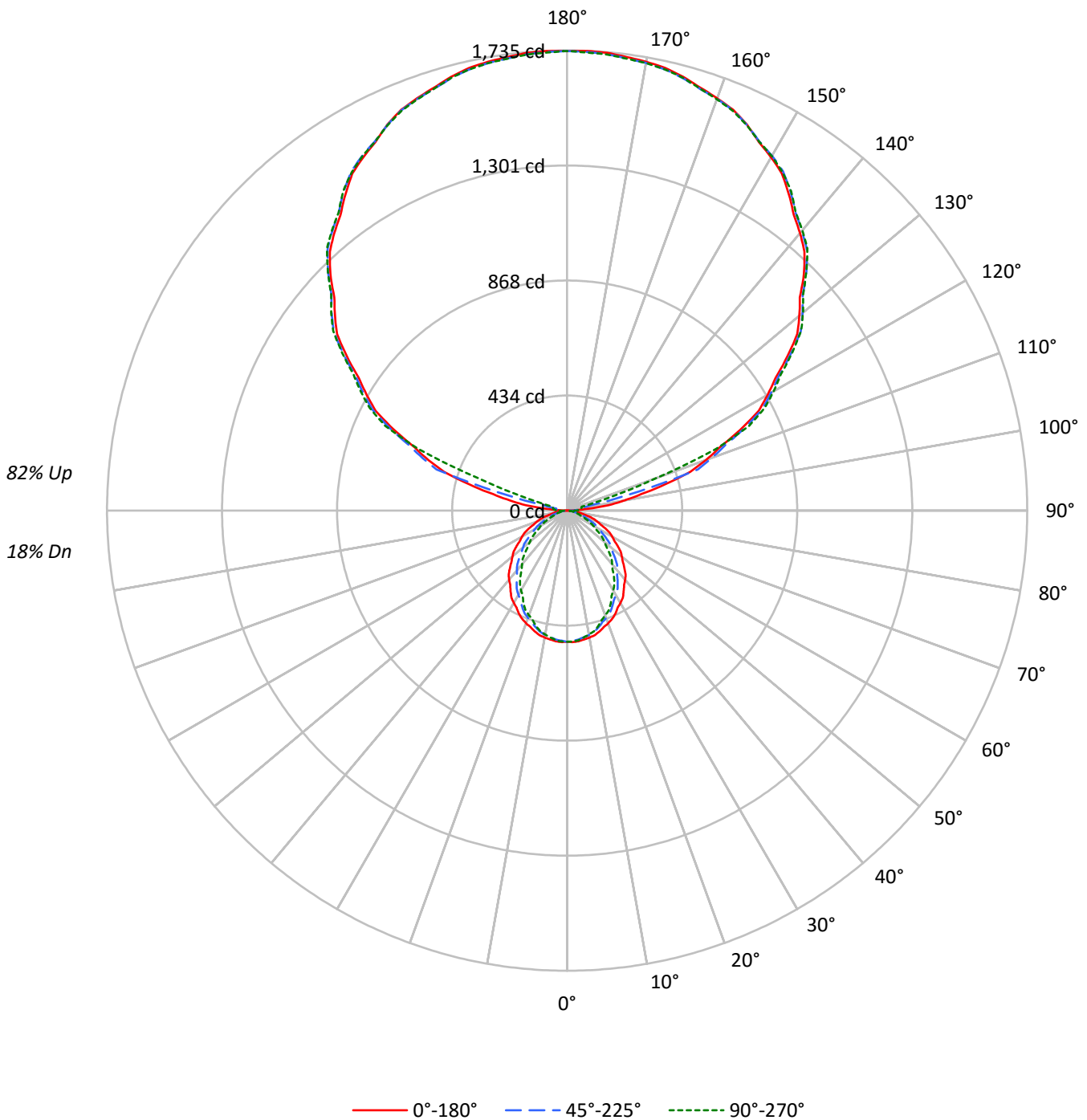
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																														
0	99	99	99	99	88	88	88	88	65	65	65	45	45	45	26	26	26	18																												
1	91	87	83	80	80	76	73	71	57	55	53	40	38	37	23	23	22	15																												
2	83	76	70	65	72	67	62	58	50	47	44	35	33	31	21	20	19	13																												
3	75	66	60	54	66	59	53	48	44	40	37	31	29	27	18	17	16	11																												
4	69	59	51	46	60	52	46	41	39	35	32	27	25	23	16	15	14	9																												
5	63	52	45	39	55	46	40	35	35	31	27	25	22	20	15	13	12	8																												
6	58	47	39	34	51	41	35	30	31	27	24	22	19	17	13	12	11	7																												
7	53	42	34	29	47	37	31	26	28	24	21	20	17	15	12	11	10	6																												
8	49	38	31	26	43	34	27	23	26	21	18	18	15	13	11	10	9	6																												
9	46	34	27	23	40	31	25	20	23	19	16	17	14	12	10	9	8	5																												
10	43	31	25	20	38	28	22	18	21	17	14	15	13	11	10	8	7	5																												

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5324	5324	5324
5°	5344	5271	5302
10°	5314	5205	5187
15°	5258	5084	5029
20°	5179	4931	4816
25°	5099	4760	4608
30°	4992	4561	4313
35°	4882	4365	4043
40°	4780	4131	3710
45°	4647	3902	3408
50°	4501	3641	3069
55°	4352	3342	2755
60°	4215	3023	2409
65°	4037	2677	2063
70°	3811	2247	1668
75°	3489	1768	1568
80°	3106	1568	1438
85°	2631	1383	1284



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.5	0.7
10°-20°	129.2	2.0
20°-30°	186.1	2.9
30°-40°	209.6	3.3
40°-50°	200.5	3.1
50°-60°	164.2	2.6
60°-70°	110.8	1.7
70°-80°	55.7	0.9
80°-90°	19.6	0.3
90°-100°	63.0	1.0
100°-110°	300.2	4.7
110°-120°	721.1	11.3
120°-130°	918.3	14.3
130°-140°	981.1	15.3
140°-150°	917.5	14.3
150°-160°	740.1	11.6
160°-170°	477.6	7.5
170°-180°	164.6	2.6
0°-30°	361.8	5.6
0°-40°	571.4	8.9
0°-60°	936.2	14.6
0°-90°	1122.3	17.5
90°-120°	1084.3	16.9
90°-150°	3901.2	60.9
90°-180°	5283.0	82.5
0°-180°	6405.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	495	495	495	495	495	
5°	495	492	488	491	491	47
15°	472	467	456	454	451	133
25°	429	419	401	393	388	197
35°	372	356	332	315	308	232
45°	305	286	256	234	224	235
55°	232	211	178	156	147	208
65°	158	136	105	86	81	157
75°	84	64	42	39	38	89
85°	21	13	11	10	10	24
90°	1	14	31	36	39	5
95°	78	29	40	48	49	97
105°	384	390	282	67	57	407
115°	720	728	739	751	757	710
125°	1014	1024	1030	1032	1035	905
135°	1263	1270	1276	1279	1276	972
145°	1457	1466	1469	1471	1471	912
155°	1605	1603	1604	1610	1603	739
165°	1693	1689	1688	1697	1689	478
175°	1732	1726	1727	1735	1726	165
180°	1732	1732	1732	1732	1732	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	494.6	494.6	494.6	494.6	494.6	494.6	494.6	494.6	494.6	494.6	494.6
2.5°	496.3	495.9	495.7	495.4	495.2	494.6	493.7	492.8	492.0	491.1	491.9
5°	494.6	494.2	493.8	493.4	492.8	492.1	491.0	490.0	488.9	487.8	488.6
7.5°	490.1	489.6	489.1	488.6	488.2	487.2	485.9	484.5	483.0	481.6	482.1
10°	486.2	485.6	485.0	484.4	483.7	482.6	481.0	479.4	477.8	476.2	476.3
12.5°	480.8	480.1	479.4	478.7	478.0	476.6	474.7	472.8	470.8	468.8	468.7
15°	471.8	470.8	469.8	468.8	467.9	466.1	463.6	461.2	458.7	456.2	455.7
17.5°	460.5	459.3	458.2	457.0	455.9	453.7	450.6	447.4	444.3	441.1	440.1
20°	452.1	450.7	449.3	447.9	446.4	444.0	440.7	437.2	433.9	430.5	429.3
22.5°	442.8	441.2	439.5	437.9	436.3	433.7	430.1	426.5	422.8	419.2	417.8
25°	429.3	427.1	424.8	422.6	420.3	417.2	413.1	409.0	404.8	400.8	398.9
27.5°	412.8	410.4	407.9	405.4	402.9	399.5	394.9	390.3	385.7	381.2	378.6
30°	401.6	398.9	396.2	393.6	390.9	387.0	382.0	377.0	372.0	367.0	364.0
32.5°	390.4	387.3	384.3	381.3	378.2	374.1	368.8	363.5	358.3	352.9	349.7
35°	371.5	368.2	365.1	361.9	358.7	354.3	348.8	343.2	337.7	332.2	328.4
37.5°	352.4	348.8	345.3	341.7	338.1	333.4	327.5	321.6	315.7	309.8	305.5
40°	340.2	336.3	332.3	328.5	324.5	319.3	313.1	306.7	300.4	294.0	289.5
42.5°	326.4	322.4	318.6	314.6	310.7	305.5	298.9	292.4	285.9	279.3	274.2
45°	305.3	301.3	297.3	293.3	289.2	283.8	277.0	270.1	263.2	256.3	251.2
47.5°	284.2	279.8	275.3	271.0	266.6	261.0	254.1	247.2	240.4	233.5	228.0
50°	268.8	264.6	260.5	256.2	252.0	246.3	239.1	231.9	224.6	217.4	211.9
52.5°	255.0	250.5	245.9	241.3	236.8	230.9	223.8	216.6	209.5	202.3	196.7
55°	231.9	227.5	223.2	218.8	214.4	208.4	200.9	193.3	185.7	178.1	173.0
57.5°	210.5	205.8	201.0	196.2	191.5	185.3	177.7	170.0	162.5	154.9	150.0
60°	195.8	190.9	186.0	181.1	176.2	170.0	162.6	155.2	147.8	140.4	135.6
62.5°	181.0	176.1	171.2	166.3	161.4	155.2	147.8	140.4	133.0	125.6	121.1
65°	158.5	153.6	148.7	143.8	138.9	132.9	126.0	119.0	112.1	105.1	100.7
67.5°	136.0	131.0	126.0	121.1	116.1	110.3	103.6	96.9	90.2	83.6	80.3
70°	121.1	116.3	111.5	106.7	101.9	96.3	90.1	83.9	77.7	71.4	68.3
72.5°	106.4	101.7	96.9	92.1	87.4	82.2	76.5	70.9	65.2	59.5	57.0
75°	83.9	79.6	75.3	71.0	66.7	62.2	57.3	52.3	47.4	42.5	41.7
77.5°	63.3	59.4	55.5	51.7	47.9	44.3	41.2	38.0	34.9	31.7	31.3
80°	50.1	46.5	42.9	39.2	35.6	32.8	30.9	29.0	27.1	25.3	25.0
82.5°	37.6	34.4	31.3	28.2	25.0	23.0	22.1	21.3	20.4	19.5	19.2
85°	21.3	19.3	17.3	15.4	13.4	12.3	12.1	11.8	11.5	11.2	11.0
87.5°	7.9	7.7	7.6	7.3	7.1	7.4	8.1	8.9	9.6	10.3	10.5
90°	1.3	4.1	7.0	9.9	12.7	16.0	19.7	23.4	27.2	30.9	32.0
92.5°	23.9	23.2	22.3	21.5	20.8	21.7	24.5	27.4	30.1	33.0	34.8
95°	78.5	66.8	55.1	43.3	31.6	27.3	30.5	33.6	36.8	39.9	41.9
97.5°	157.8	152.6	147.3	142.0	136.7	123.8	103.2	82.7	62.1	41.4	43.7
100°	217.6	223.3	228.9	234.7	240.4	220.9	176.3	131.7	87.1	42.4	44.8
102.5°	285.5	289.6	293.8	297.8	302.0	279.7	230.9	182.2	133.5	84.7	77.6
105°	383.6	386.8	389.9	393.0	396.1	384.9	359.1	333.4	307.6	281.9	231.3
107.5°	487.1	489.6	492.1	494.6	497.1	500.4	504.5	508.6	512.6	516.7	479.6
110°	556.0	558.4	560.6	562.9	565.2	567.9	571.1	574.2	577.4	580.5	571.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	622.0	624.1	626.1	628.2	630.2	632.8	635.9	639.1	642.2	645.4	645.6
115°	719.5	721.3	723.0	724.7	726.4	728.6	731.2	733.7	736.2	738.8	741.7
117.5°	814.0	816.1	818.2	820.4	822.5	824.2	825.5	826.8	828.1	829.5	831.7
120°	872.7	875.3	877.9	880.5	883.0	884.8	885.5	886.4	887.3	888.1	890.4
122.5°	932.5	934.5	936.7	938.7	940.9	942.5	943.6	944.7	945.7	946.8	948.5
125°	1014.3	1016.6	1018.9	1021.1	1023.5	1025.2	1026.3	1027.4	1028.6	1029.8	1030.4
127.5°	1093.6	1095.9	1098.2	1100.4	1102.8	1104.6	1106.0	1107.3	1108.7	1110.1	1110.9
130°	1143.0	1145.3	1147.6	1149.9	1152.2	1153.9	1155.0	1156.2	1157.4	1158.5	1159.6
132.5°	1190.4	1192.7	1195.0	1197.2	1199.5	1201.2	1202.0	1203.0	1203.9	1204.8	1205.9
135°	1262.7	1264.5	1266.2	1267.9	1269.6	1271.0	1272.1	1273.3	1274.5	1275.6	1276.4
137.5°	1324.5	1326.7	1328.9	1331.0	1333.2	1334.6	1335.2	1335.8	1336.5	1337.1	1338.5
140°	1365.7	1367.4	1369.2	1370.9	1372.6	1373.8	1374.7	1375.5	1376.4	1377.3	1378.5
142.5°	1403.8	1405.5	1407.2	1408.9	1410.7	1412.0	1412.8	1413.7	1414.5	1415.4	1416.3
145°	1457.1	1459.1	1461.1	1463.1	1465.1	1466.4	1467.0	1467.5	1468.1	1468.7	1469.2
147.5°	1507.3	1508.6	1509.9	1511.2	1512.5	1513.5	1514.1	1514.7	1515.2	1515.8	1516.4
150°	1538.2	1539.0	1539.9	1540.8	1541.6	1542.3	1542.9	1543.5	1544.0	1544.6	1545.2
152.5°	1566.0	1566.4	1566.8	1567.2	1567.6	1568.0	1568.3	1568.7	1569.0	1569.3	1570.4
155°	1605.1	1604.6	1604.0	1603.4	1602.8	1602.7	1603.0	1603.3	1603.5	1603.8	1605.2
157.5°	1635.5	1635.5	1635.4	1635.3	1635.3	1635.1	1634.8	1634.5	1634.3	1633.9	1635.6
160°	1654.1	1653.7	1653.5	1653.2	1652.9	1652.6	1652.3	1652.0	1651.7	1651.5	1653.2
162.5°	1671.5	1670.8	1670.1	1669.3	1668.5	1668.0	1667.8	1667.5	1667.2	1666.9	1668.9
165°	1692.6	1691.8	1690.9	1690.1	1689.2	1688.7	1688.3	1688.1	1687.8	1687.5	1689.8
167.5°	1709.1	1708.0	1706.8	1705.7	1704.5	1704.0	1704.0	1704.0	1704.0	1704.0	1706.2
170°	1718.4	1717.3	1716.1	1714.9	1713.8	1713.2	1713.2	1713.2	1713.2	1713.2	1715.5
172.5°	1724.6	1723.2	1721.8	1720.5	1719.1	1718.5	1718.7	1719.0	1719.2	1719.4	1721.7
175°	1732.5	1731.1	1729.7	1728.3	1726.8	1726.2	1726.6	1726.8	1727.1	1727.4	1729.4
177.5°	1734.6	1733.5	1732.3	1731.2	1730.0	1729.6	1729.8	1730.0	1730.3	1730.5	1732.3
180°	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	494.6	494.6	494.6	494.6	494.6	494.6	494.6	494.6
2.5°	492.7	493.4	494.3	494.6	494.5	494.3	494.1	494.0
5°	489.5	490.3	491.0	491.4	491.2	491.0	490.9	490.7
7.5°	482.6	483.0	483.5	483.5	483.2	482.9	482.6	482.3
10°	476.4	476.5	476.6	476.4	476.0	475.5	475.0	474.6
12.5°	468.7	468.6	468.6	468.3	467.8	467.3	466.7	466.2
15°	455.2	454.8	454.3	453.8	453.2	452.5	451.9	451.3
17.5°	439.2	438.2	437.3	436.4	435.4	434.5	433.6	432.7
20°	428.2	427.0	425.9	424.7	423.6	422.6	421.5	420.4
22.5°	416.4	414.9	413.5	412.2	411.2	410.3	409.2	408.3
25°	397.0	395.2	393.3	391.8	390.9	389.9	388.9	388.0
27.5°	376.0	373.4	370.8	368.8	367.2	365.8	364.3	362.7
30°	361.0	358.0	355.0	352.8	351.3	349.9	348.4	347.0
32.5°	346.3	343.0	339.7	337.3	335.8	334.3	332.8	331.3
35°	324.5	320.6	316.8	314.1	312.5	310.9	309.3	307.7
37.5°	301.1	296.7	292.4	289.2	287.2	285.2	283.3	281.3
40°	284.8	280.2	275.5	272.2	270.1	268.1	266.0	264.0
42.5°	269.1	264.2	259.1	255.6	253.7	251.9	250.1	248.2
45°	246.2	241.1	236.0	232.4	230.3	228.2	226.0	223.9
47.5°	222.4	216.9	211.4	207.7	205.8	203.9	201.9	200.0
50°	206.4	200.9	195.4	191.6	189.5	187.4	185.4	183.3
52.5°	190.9	185.1	179.4	175.6	173.7	171.9	170.1	168.2
55°	167.8	162.6	157.5	153.9	152.2	150.4	148.6	146.8
57.5°	145.1	140.2	135.3	132.1	130.6	129.1	127.6	126.1
60°	130.8	126.0	121.1	118.0	116.5	114.9	113.5	111.9
62.5°	116.6	112.1	107.5	104.4	102.9	101.3	99.7	98.2
65°	96.3	92.0	87.6	85.0	83.9	83.0	82.1	81.0
67.5°	77.1	73.8	70.5	68.4	67.3	66.3	65.3	64.2
70°	65.2	62.1	58.9	56.9	55.9	54.9	53.9	53.0
72.5°	54.4	51.9	49.3	47.9	47.4	47.0	46.7	46.2
75°	40.7	39.9	38.9	38.4	38.2	38.1	37.9	37.7
77.5°	30.7	30.2	29.8	29.4	29.3	29.1	28.9	28.8
80°	24.7	24.5	24.2	24.0	23.8	23.6	23.4	23.2
82.5°	18.9	18.7	18.4	18.3	18.3	18.2	18.2	18.2
85°	10.8	10.7	10.5	10.4	10.4	10.4	10.4	10.4
87.5°	10.7	10.8	11.0	11.1	11.1	11.2	11.2	11.3
90°	33.1	34.4	35.5	36.3	36.9	37.5	38.1	38.6
92.5°	36.6	38.5	40.3	41.3	41.7	42.0	42.4	42.7
95°	43.9	45.9	47.9	48.9	48.9	48.9	48.9	48.9
97.5°	46.1	48.3	50.6	51.9	52.2	52.4	52.8	53.0
100°	47.0	49.3	51.7	53.0	53.2	53.5	53.8	54.1
102.5°	70.5	63.5	56.3	53.0	53.6	54.1	54.6	55.1
105°	180.6	130.0	79.4	54.3	54.9	55.5	56.1	56.7
107.5°	442.4	405.3	368.2	330.5	292.4	254.2	216.0	177.9
110°	561.6	552.2	542.8	517.5	476.6	435.8	394.9	354.0



TEST NUMBER: P332408-935

CATALOG NUMBER: S123RDIW-S340D1535U935-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	645.8	645.9	646.1	641.9	633.2	624.6	616.0	607.3
115°	744.6	747.4	750.3	752.3	753.5	754.6	755.7	756.9
117.5°	834.1	836.3	838.6	839.9	840.1	840.3	840.6	840.8
120°	892.8	895.0	897.3	898.5	898.5	898.5	898.5	898.5
122.5°	950.0	951.7	953.3	954.2	954.4	954.6	954.8	955.1
125°	1030.9	1031.5	1032.0	1032.6	1033.2	1033.7	1034.3	1034.9
127.5°	1111.9	1112.8	1113.7	1113.9	1113.4	1112.8	1112.2	1111.6
130°	1160.7	1161.9	1163.0	1163.3	1162.8	1162.2	1161.6	1161.1
132.5°	1207.1	1208.2	1209.4	1209.5	1208.8	1208.0	1207.1	1206.3
135°	1277.3	1278.2	1279.0	1279.0	1278.2	1277.3	1276.4	1275.6
137.5°	1339.9	1341.3	1342.6	1343.0	1342.5	1341.9	1341.3	1340.7
140°	1379.6	1380.7	1381.8	1382.2	1381.6	1381.0	1380.4	1379.8
142.5°	1417.2	1418.2	1419.0	1419.1	1418.3	1417.5	1416.7	1415.9
145°	1469.8	1470.4	1470.9	1471.3	1471.3	1471.3	1471.3	1471.3
147.5°	1516.9	1517.5	1518.1	1517.7	1516.4	1515.1	1513.7	1512.4
150°	1545.8	1546.4	1546.9	1546.8	1545.9	1545.1	1544.2	1543.3
152.5°	1571.4	1572.4	1573.5	1573.3	1572.0	1570.6	1569.3	1568.1
155°	1606.7	1608.1	1609.6	1609.4	1607.7	1605.9	1604.2	1602.6
157.5°	1637.4	1639.1	1640.8	1640.5	1638.3	1636.1	1633.8	1631.6
160°	1654.9	1656.6	1658.3	1658.2	1656.1	1654.2	1652.2	1650.2
162.5°	1670.8	1672.8	1674.6	1674.7	1673.0	1671.2	1669.5	1667.7
165°	1692.0	1694.4	1696.7	1696.8	1694.8	1692.8	1690.7	1688.8
167.5°	1708.6	1710.8	1713.1	1713.1	1710.8	1708.6	1706.2	1704.0
170°	1717.8	1720.1	1722.4	1722.4	1720.1	1717.8	1715.5	1713.2
172.5°	1724.0	1726.3	1728.5	1728.5	1726.0	1723.5	1720.9	1718.4
175°	1731.4	1733.4	1735.4	1735.3	1732.9	1730.7	1728.4	1726.1
177.5°	1734.1	1735.9	1737.8	1737.6	1735.3	1733.0	1730.7	1728.5
180°	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5

(END OF REPORT)