

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: P332409-927

Luminaire Tested: **S123RDIW-S340D1535U927-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332409-927
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDIW-S340D1535U927-4F0-1E-UDD-F1
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, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5245.9 lumens
Efficiency: N/A
Efficacy: 98.2 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

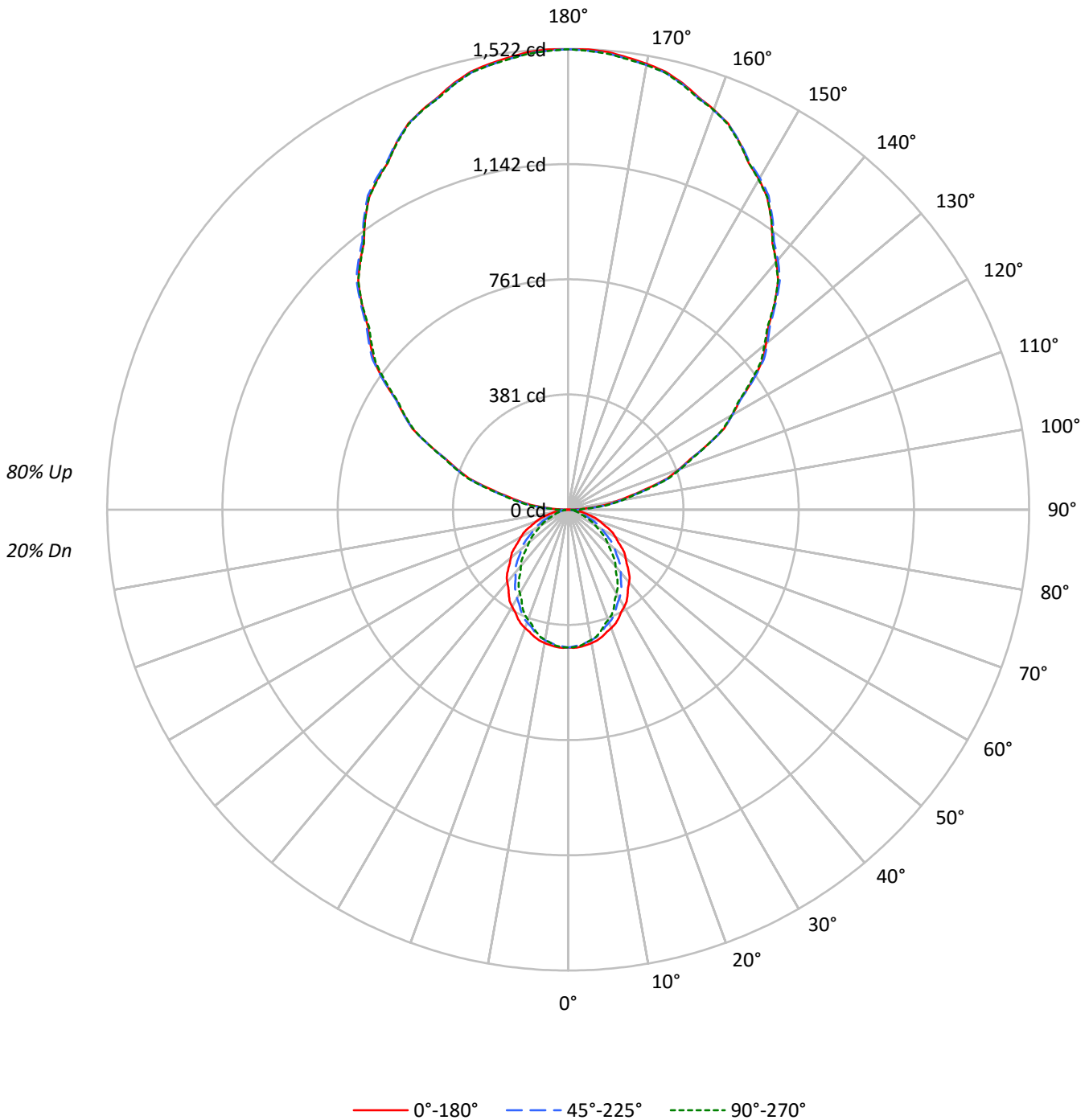
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	100	100	100	100	88	88	88	88	66	66	66	47	47	47	28	28	28	20
1	91	87	83	80	80	77	74	71	58	56	55	41	40	39	25	25	24	17
2	83	76	70	65	73	67	63	59	51	48	45	36	34	33	22	21	20	14
3	76	67	60	55	67	59	54	49	45	41	38	32	30	28	20	19	17	12
4	69	59	52	46	61	52	46	41	40	36	32	28	26	24	18	16	15	11
5	63	52	45	39	56	47	40	35	36	31	28	26	23	20	16	14	13	9
6	58	47	39	34	51	42	35	31	32	28	24	23	20	18	14	13	12	8
7	54	42	35	29	47	38	31	27	29	24	21	21	18	16	13	12	10	7
8	50	38	31	26	44	34	28	23	26	22	19	19	16	14	12	10	9	7
9	46	35	28	23	41	31	25	21	24	20	17	17	14	12	11	10	8	6
10	43	32	25	20	38	28	22	18	22	18	15	16	13	11	10	9	8	5

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4899	4899	4899
5°	4917	4850	4878
10°	4889	4790	4773
15°	4837	4677	4628
20°	4765	4537	4431
25°	4691	4380	4240
30°	4593	4197	3967
35°	4491	4016	3720
40°	4398	3801	3413
45°	4276	3589	3136
50°	4141	3349	2825
55°	4003	3076	2535
60°	3877	2781	2217
65°	3713	2463	1897
70°	3509	2068	1533
75°	3211	1626	1443
80°	2858	1444	1327
85°	2421	1272	1186



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.7	0.8
10°-20°	118.9	2.3
20°-30°	171.2	3.3
30°-40°	192.9	3.7
40°-50°	184.5	3.5
50°-60°	151.1	2.9
60°-70°	101.9	1.9
70°-80°	51.3	1.0
80°-90°	18.1	0.3
90°-100°	99.1	1.9
100°-110°	296.5	5.7
110°-120°	504.3	9.6
120°-130°	663.4	12.6
130°-140°	745.6	14.2
140°-150°	732.9	14.0
150°-160°	617.0	11.8
160°-170°	410.7	7.8
170°-180°	143.8	2.7
0°-30°	332.9	6.3
0°-40°	525.7	10.0
0°-60°	861.4	16.4
0°-90°	1032.7	19.7
90°-120°	899.9	17.2
90°-150°	3041.8	58.0
90°-180°	4213.0	80.3
0°-180°	5245.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	455	455	455	455	455	
5°	455	453	449	452	452	43
15°	434	430	420	418	415	122
25°	395	385	369	361	357	182
35°	342	328	306	290	283	214
45°	281	264	236	215	206	217
55°	213	195	164	143	135	191
65°	146	125	97	79	74	144
75°	77	59	39	36	35	82
85°	20	12	10	10	10	22
90°	1	13	29	33	36	5
95°	70	79	88	93	93	79
105°	269	272	282	282	284	288
115°	508	511	509	510	509	502
125°	743	746	744	739	735	662
135°	964	971	970	965	963	743
145°	1170	1172	1175	1174	1170	730
155°	1339	1339	1340	1344	1337	616
165°	1459	1455	1455	1461	1454	411
175°	1517	1513	1512	1519	1511	144
180°	1521	1521	1521	1521	1521	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	455.1	455.1	455.1	455.1	455.1	455.1	455.1	455.1	455.1	455.1	455.1
2.5°	456.6	456.3	456.1	455.8	455.6	455.0	454.2	453.4	452.7	451.9	452.6
5°	455.1	454.7	454.3	453.9	453.4	452.8	451.8	450.8	449.8	448.9	449.6
7.5°	450.9	450.4	450.0	449.6	449.2	448.3	447.0	445.8	444.4	443.1	443.5
10°	447.3	446.8	446.2	445.7	445.0	444.0	442.6	441.1	439.6	438.2	438.2
12.5°	442.4	441.7	441.1	440.5	439.8	438.6	436.7	435.0	433.2	431.3	431.3
15°	434.1	433.2	432.3	431.3	430.5	428.9	426.6	424.3	422.0	419.7	419.3
17.5°	423.7	422.6	421.6	420.5	419.5	417.5	414.5	411.6	408.8	405.8	405.0
20°	416.0	414.7	413.4	412.1	410.7	408.5	405.4	402.3	399.2	396.1	395.0
22.5°	407.4	405.9	404.4	402.9	401.4	399.0	395.7	392.4	389.0	385.7	384.4
25°	395.0	392.9	390.9	388.8	386.7	383.8	380.1	376.3	372.5	368.8	367.0
27.5°	379.9	377.6	375.3	373.0	370.7	367.6	363.4	359.1	354.9	350.7	348.3
30°	369.5	367.0	364.6	362.1	359.7	356.1	351.5	346.9	342.3	337.7	334.9
32.5°	359.2	356.3	353.6	350.8	348.0	344.2	339.3	334.5	329.6	324.7	321.7
35°	341.8	338.8	335.9	333.0	330.0	326.0	320.9	315.8	310.7	305.6	302.1
37.5°	324.2	320.9	317.7	314.4	311.1	306.7	301.3	295.9	290.5	285.0	281.1
40°	313.0	309.4	305.8	302.2	298.6	293.8	288.0	282.2	276.4	270.5	266.3
42.5°	300.3	296.7	293.1	289.5	285.9	281.1	275.0	269.0	263.0	257.0	252.3
45°	280.9	277.2	273.5	269.8	266.1	261.1	254.8	248.5	242.2	235.8	231.2
47.5°	261.5	257.5	253.3	249.3	245.3	240.1	233.8	227.4	221.2	214.8	209.8
50°	247.3	243.4	239.6	235.8	231.9	226.6	220.0	213.3	206.7	200.0	195.0
52.5°	234.6	230.4	226.2	222.0	217.9	212.5	205.9	199.3	192.7	186.2	180.9
55°	213.3	209.3	205.3	201.3	197.3	191.8	184.8	177.8	170.9	163.9	159.1
57.5°	193.7	189.3	185.0	180.5	176.2	170.5	163.5	156.5	149.5	142.5	138.0
60°	180.1	175.6	171.1	166.6	162.1	156.5	149.6	142.8	136.0	129.2	124.8
62.5°	166.5	162.0	157.5	153.0	148.5	142.8	136.0	129.2	122.4	115.6	111.5
65°	145.8	141.3	136.8	132.3	127.8	122.3	115.9	109.5	103.1	96.7	92.7
67.5°	125.1	120.5	115.9	111.4	106.8	101.5	95.3	89.2	83.0	76.9	73.9
70°	111.5	107.0	102.6	98.2	93.8	88.6	82.9	77.2	71.5	65.7	62.8
72.5°	97.9	93.6	89.2	84.8	80.4	75.7	70.4	65.2	60.0	54.7	52.4
75°	77.2	73.2	69.2	65.4	61.4	57.2	52.7	48.2	43.6	39.1	38.3
77.5°	58.2	54.7	51.1	47.5	44.0	40.8	37.9	34.9	32.1	29.2	28.8
80°	46.1	42.8	39.5	36.0	32.7	30.2	28.4	26.7	25.0	23.3	23.0
82.5°	34.6	31.7	28.8	25.9	23.0	21.2	20.4	19.6	18.8	17.9	17.7
85°	19.6	17.7	15.9	14.2	12.4	11.3	11.1	10.9	10.6	10.3	10.1
87.5°	7.3	7.1	7.0	6.7	6.6	6.8	7.5	8.2	8.9	9.6	9.7
90°	1.2	3.9	6.5	9.2	11.8	14.9	18.3	21.8	25.2	28.7	29.7
92.5°	28.9	30.7	32.5	34.3	36.1	38.0	40.0	41.9	43.9	45.9	46.7
95°	70.5	72.3	74.2	76.0	78.0	79.9	82.0	84.1	86.3	88.4	89.4
97.5°	125.2	126.6	127.9	129.4	130.7	132.1	133.7	135.2	136.8	138.3	139.6
100°	162.5	164.1	165.6	167.2	168.8	170.3	171.6	172.9	174.3	175.6	176.4
102.5°	205.5	206.4	207.4	208.3	209.3	210.6	212.4	214.1	215.9	217.6	218.5
105°	268.8	269.3	269.8	270.4	270.9	272.4	274.7	277.1	279.6	281.9	281.9
107.5°	342.4	342.7	343.0	343.3	343.6	344.3	345.2	346.2	347.1	348.1	349.0
110°	388.2	388.8	389.3	389.8	390.4	390.9	391.4	392.0	392.4	393.0	394.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	436.0	436.3	436.7	437.0	437.3	437.5	437.6	437.7	437.8	437.9	439.2
115°	507.7	508.5	509.3	510.1	510.9	511.0	510.5	509.9	509.5	508.9	509.1
117.5°	579.9	580.4	580.9	581.5	581.9	581.9	581.2	580.5	579.8	579.2	579.1
120°	624.8	626.4	628.0	629.5	631.1	631.3	629.9	628.6	627.2	626.0	625.7
122.5°	671.6	672.7	673.9	675.1	676.3	676.5	675.8	675.1	674.5	673.8	673.0
125°	743.0	743.8	744.7	745.4	746.2	746.3	745.8	745.3	744.7	744.3	743.1
127.5°	809.0	810.6	812.4	814.0	815.8	816.3	815.7	815.2	814.6	814.0	812.5
130°	852.9	855.1	857.1	859.3	861.4	862.1	861.3	860.5	859.7	858.9	857.9
132.5°	896.9	899.0	901.1	903.2	905.4	906.2	905.5	905.0	904.4	903.8	902.5
135°	964.0	965.6	967.2	968.8	970.4	971.1	970.8	970.5	970.3	970.0	968.9
137.5°	1026.1	1027.5	1028.8	1030.2	1031.4	1032.5	1033.2	1033.8	1034.5	1035.2	1034.1
140°	1069.1	1070.5	1071.8	1073.1	1074.4	1075.2	1075.5	1075.8	1076.0	1076.3	1076.0
142.5°	1108.3	1109.6	1111.0	1112.3	1113.6	1114.5	1115.0	1115.5	1115.9	1116.4	1116.2
145°	1169.5	1170.1	1170.5	1171.1	1171.6	1172.3	1173.1	1173.9	1174.6	1175.4	1175.2
147.5°	1223.0	1223.9	1224.9	1225.9	1226.9	1227.6	1228.4	1229.2	1229.9	1230.7	1230.7
150°	1260.3	1260.8	1261.3	1261.9	1262.4	1262.9	1263.5	1264.0	1264.5	1265.0	1265.0
152.5°	1290.9	1291.6	1292.4	1293.1	1293.8	1294.3	1294.7	1295.0	1295.3	1295.6	1296.1
155°	1339.1	1339.1	1339.1	1339.1	1339.1	1339.3	1339.5	1339.7	1340.1	1340.3	1341.4
157.5°	1380.2	1379.9	1379.6	1379.3	1379.0	1378.9	1379.1	1379.3	1379.5	1379.7	1380.9
160°	1406.0	1405.5	1404.9	1404.4	1403.9	1403.6	1403.6	1403.6	1403.6	1403.6	1404.9
162.5°	1428.9	1428.2	1427.4	1426.7	1426.0	1425.7	1425.9	1426.2	1426.3	1426.6	1427.9
165°	1458.6	1457.8	1457.0	1456.2	1455.4	1455.0	1455.0	1455.0	1455.0	1455.0	1456.6
167.5°	1482.3	1481.1	1480.1	1479.0	1478.0	1477.6	1477.7	1478.0	1478.2	1478.4	1480.0
170°	1495.6	1494.5	1493.5	1492.4	1491.4	1490.8	1490.8	1490.8	1490.8	1490.8	1492.7
172.5°	1506.1	1505.1	1504.0	1502.9	1501.9	1501.3	1501.3	1501.3	1501.3	1501.3	1503.0
175°	1517.1	1516.1	1515.0	1513.9	1512.8	1512.4	1512.4	1512.4	1512.4	1512.4	1513.9
177.5°	1521.6	1520.8	1520.0	1519.1	1518.2	1517.8	1517.8	1517.8	1517.8	1517.8	1519.1
180°	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	455.1	455.1	455.1	455.1	455.1	455.1	455.1	455.1
2.5°	453.3	454.0	454.8	455.0	455.0	454.8	454.6	454.6
5°	450.4	451.1	451.8	452.1	451.9	451.8	451.6	451.5
7.5°	444.0	444.4	444.8	444.9	444.6	444.3	444.0	443.8
10°	438.3	438.4	438.5	438.3	437.9	437.5	437.0	436.7
12.5°	431.3	431.2	431.2	430.9	430.4	429.9	429.4	429.0
15°	418.8	418.4	418.0	417.6	417.0	416.4	415.8	415.3
17.5°	404.1	403.2	402.3	401.5	400.6	399.7	398.9	398.1
20°	394.0	392.8	391.8	390.8	389.8	388.8	387.9	386.8
22.5°	383.1	381.8	380.4	379.3	378.3	377.5	376.5	375.7
25°	365.3	363.6	361.9	360.5	359.7	358.8	357.8	357.0
27.5°	345.9	343.6	341.2	339.3	337.9	336.5	335.2	333.7
30°	332.2	329.4	326.6	324.6	323.2	321.9	320.6	319.2
32.5°	318.6	315.6	312.5	310.3	309.0	307.6	306.2	304.8
35°	298.6	295.0	291.5	289.0	287.6	286.1	284.6	283.1
37.5°	277.0	273.0	269.0	266.1	264.3	262.4	260.6	258.8
40°	262.1	257.8	253.5	250.4	248.5	246.7	244.8	242.9
42.5°	247.6	243.0	238.4	235.2	233.5	231.8	230.1	228.4
45°	226.5	221.8	217.1	213.8	211.9	209.9	207.9	206.0
47.5°	204.6	199.6	194.5	191.1	189.3	187.6	185.8	184.0
50°	189.9	184.8	179.7	176.3	174.4	172.5	170.6	168.7
52.5°	175.6	170.3	165.1	161.6	159.9	158.2	156.5	154.8
55°	154.4	149.6	144.9	141.6	140.1	138.4	136.7	135.1
57.5°	133.5	129.0	124.5	121.5	120.2	118.7	117.4	116.0
60°	120.3	115.9	111.5	108.5	107.2	105.8	104.4	103.0
62.5°	107.3	103.1	98.9	96.1	94.7	93.2	91.7	90.3
65°	88.6	84.7	80.6	78.2	77.2	76.4	75.5	74.5
67.5°	70.9	67.9	64.9	62.9	61.9	61.0	60.0	59.1
70°	60.0	57.1	54.2	52.4	51.4	50.5	49.6	48.7
72.5°	50.1	47.8	45.4	44.0	43.6	43.3	42.9	42.5
75°	37.5	36.7	35.8	35.3	35.2	35.0	34.9	34.7
77.5°	28.3	27.8	27.4	27.1	26.9	26.8	26.6	26.5
80°	22.7	22.5	22.3	22.1	21.9	21.7	21.5	21.4
82.5°	17.4	17.2	17.0	16.8	16.8	16.7	16.7	16.7
85°	10.0	9.8	9.7	9.6	9.6	9.6	9.6	9.6
87.5°	9.9	10.0	10.1	10.2	10.3	10.3	10.4	10.4
90°	30.8	31.8	33.0	33.7	34.2	34.8	35.3	35.8
92.5°	47.5	48.4	49.3	49.5	49.2	48.9	48.6	48.2
95°	90.5	91.6	92.6	93.2	93.2	93.2	93.2	93.2
97.5°	140.8	142.0	143.2	143.8	143.7	143.5	143.5	143.4
100°	177.2	178.0	178.8	179.4	180.0	180.5	181.0	181.6
102.5°	219.3	220.1	220.9	221.2	221.1	220.9	220.9	220.8
105°	281.9	281.9	281.9	282.2	282.7	283.3	283.8	284.3
107.5°	349.8	350.6	351.5	351.7	351.4	351.1	350.8	350.5
110°	395.1	396.2	397.3	397.5	397.0	396.5	395.9	395.4



TEST NUMBER: P332409-927

CATALOG NUMBER: S123RDIW-S340D1535U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	440.5	441.7	443.0	443.6	443.5	443.4	443.3	443.1
115°	509.5	509.7	509.9	509.9	509.7	509.5	509.1	508.9
117.5°	579.0	579.0	578.9	578.5	577.7	577.0	576.3	575.5
120°	625.4	625.2	624.9	624.5	624.0	623.4	622.9	622.3
122.5°	672.3	671.7	671.0	670.3	669.6	668.8	668.0	667.3
125°	742.1	741.0	740.0	738.9	737.8	736.8	735.7	734.7
127.5°	811.0	809.5	808.0	806.7	805.5	804.2	803.0	801.8
130°	856.7	855.7	854.7	853.2	851.4	849.5	847.6	845.7
132.5°	901.3	900.0	898.7	897.4	896.0	894.5	893.0	891.6
135°	967.9	966.8	965.7	965.0	964.4	963.8	963.4	962.8
137.5°	1033.0	1031.9	1030.8	1029.7	1028.6	1027.7	1026.7	1025.6
140°	1075.8	1075.5	1075.2	1074.2	1072.3	1070.5	1068.6	1066.8
142.5°	1115.9	1115.6	1115.4	1114.5	1113.1	1111.7	1110.2	1108.8
145°	1174.9	1174.6	1174.4	1173.7	1172.7	1171.6	1170.5	1169.5
147.5°	1230.7	1230.7	1230.7	1229.9	1228.3	1226.7	1225.0	1223.4
150°	1265.0	1265.0	1265.0	1264.2	1262.7	1261.1	1259.5	1257.9
152.5°	1296.5	1296.9	1297.4	1296.9	1295.5	1294.1	1292.7	1291.3
155°	1342.4	1343.5	1344.6	1344.2	1342.3	1340.5	1338.6	1336.7
157.5°	1382.0	1383.1	1384.2	1384.0	1382.5	1381.0	1379.5	1378.1
160°	1406.3	1407.6	1408.9	1409.1	1408.0	1406.9	1405.9	1404.8
162.5°	1429.2	1430.5	1431.9	1431.7	1430.0	1428.3	1426.6	1424.9
165°	1458.2	1459.8	1461.3	1461.3	1459.4	1457.5	1455.6	1453.8
167.5°	1481.7	1483.4	1484.9	1484.9	1483.4	1481.7	1480.0	1478.4
170°	1494.5	1496.4	1498.3	1498.3	1496.4	1494.5	1492.7	1490.8
172.5°	1504.6	1506.3	1507.9	1507.8	1505.9	1504.1	1502.2	1500.4
175°	1515.5	1517.1	1518.7	1518.5	1516.7	1514.8	1513.0	1511.2
177.5°	1520.4	1521.6	1522.9	1522.8	1521.3	1519.8	1518.4	1516.9
180°	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7

(END OF REPORT)