

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: P332117-940

Luminaire Tested: **S123DIW-S340D1535U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332117-940
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: S123DIW-S340D1535U940-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6029.4 lumens
Efficiency: N/A
Efficacy: 112.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

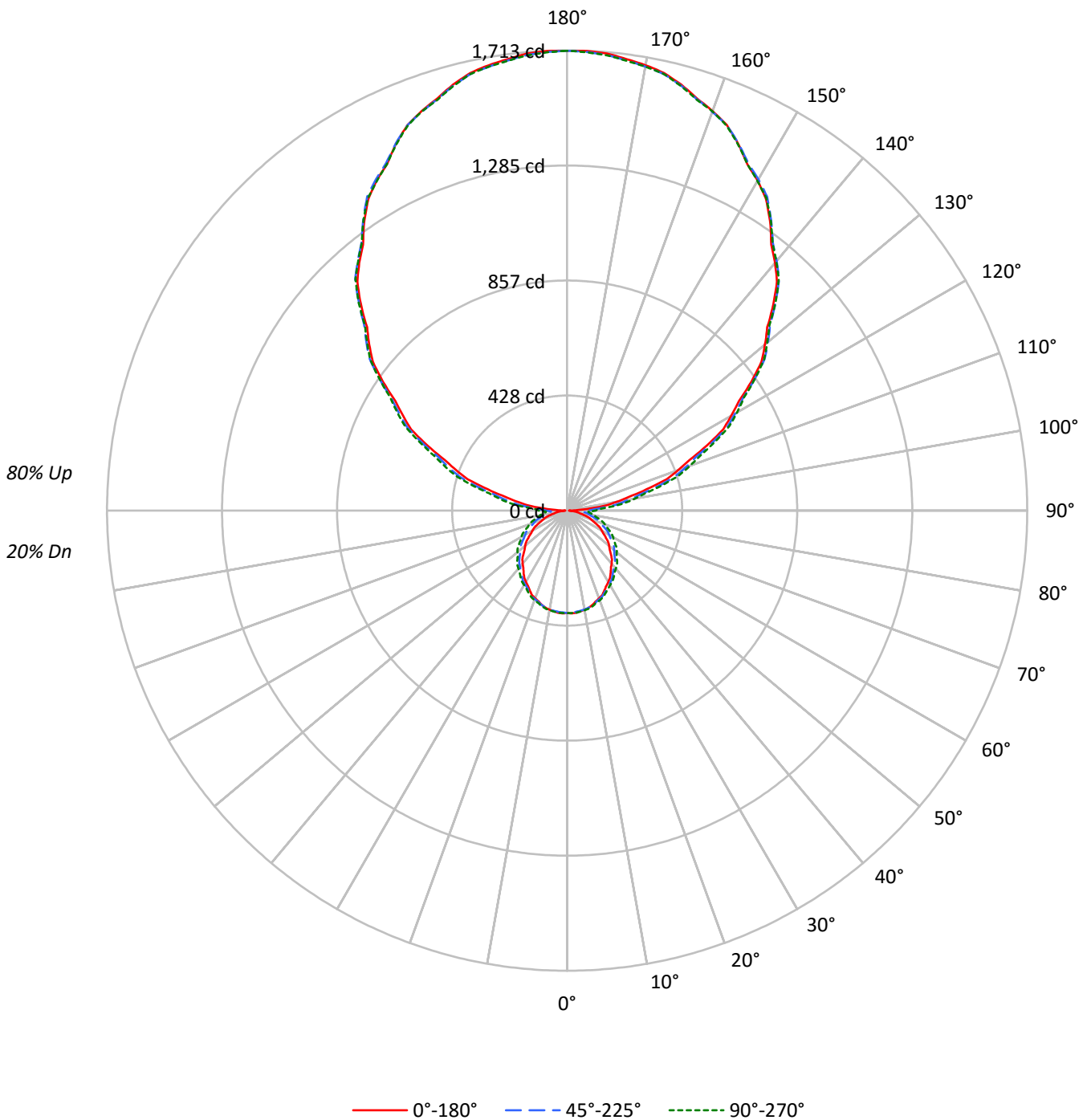
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	88	88	88	88	66	66	66	46	46	46	28	28	28	20
1	91	86	82	79	80	76	73	70	57	55	53	40	39	38	24	23	23	16
2	82	75	69	64	72	66	61	57	50	47	44	35	33	31	21	20	19	13
3	75	66	59	53	66	58	52	47	44	40	36	31	28	26	18	17	16	11
4	68	58	50	44	60	51	45	40	39	34	31	27	24	22	16	15	14	9
5	62	51	44	38	55	45	39	34	34	30	26	24	21	19	15	13	12	8
6	57	46	38	32	50	41	34	29	31	26	23	22	19	16	13	12	10	7
7	53	41	33	28	46	37	30	25	28	23	20	20	17	14	12	10	9	6
8	49	37	30	25	43	33	27	22	25	21	17	18	15	13	11	9	8	5
9	45	34	26	22	40	30	24	20	23	18	15	16	13	11	10	8	7	5
10	42	31	24	19	37	27	21	17	21	17	14	15	12	10	9	8	6	4

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4105	4105	4105
5°	4118	4002	4004
10°	4082	3910	3890
15°	4029	3805	3766
20°	3954	3686	3630
25°	3860	3549	3485
30°	3767	3425	3339
35°	3659	3294	3223
40°	3557	3175	3098
45°	3445	3060	2998
50°	3333	2947	2888
55°	3211	2831	2789
60°	3090	2713	2689
65°	2967	2588	2567
70°	2783	2448	2443
75°	2551	2287	2318
80°	2278	2128	2175
85°	2025	2018	2090



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.2	0.6
10°-20°	103.1	1.7
20°-30°	154.2	2.6
30°-40°	184.1	3.1
40°-50°	192.6	3.2
50°-60°	180.7	3.0
60°-70°	151.0	2.5
70°-80°	108.0	1.8
80°-90°	69.5	1.2
90°-100°	151.9	2.5
100°-110°	363.5	6.0
110°-120°	587.5	9.7
120°-130°	758.0	12.6
130°-140°	844.4	14.0
140°-150°	826.1	13.7
150°-160°	694.5	11.5
160°-170°	462.3	7.7
170°-180°	161.9	2.7
0°-30°	293.4	4.9
0°-40°	477.5	7.9
0°-60°	850.9	14.1
0°-90°	1179.3	19.6
90°-120°	1102.9	18.3
90°-150°	3531.4	58.6
90°-180°	4850.0	80.4
0°-180°	6029.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	381	381	381	381	381	
5°	382	381	378	382	381	36
15°	364	365	364	368	368	102
25°	328	332	334	339	339	151
35°	282	289	295	301	302	177
45°	231	241	251	259	263	178
55°	176	190	205	216	219	158
65°	122	138	156	168	173	120
75°	66	86	106	120	125	71
85°	20	41	63	77	81	21
90°	7	41	79	98	106	9
95°	84	110	141	158	163	93
105°	306	319	348	360	367	327
115°	574	583	595	606	608	567
125°	838	842	851	854	852	747
135°	1086	1093	1097	1099	1098	837
145°	1317	1319	1323	1325	1321	822
155°	1507	1507	1509	1513	1505	694
165°	1642	1638	1638	1645	1636	463
175°	1708	1703	1702	1709	1701	162
180°	1712	1712	1712	1712	1712	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4
2.5°	383.1	382.9	382.6	382.5	382.2	381.8	381.2	380.6	380.0	379.4	380.0
5°	381.8	381.7	381.5	381.3	381.1	380.8	380.1	379.6	379.1	378.5	379.2
7.5°	378.1	378.2	378.2	378.2	378.3	378.0	377.5	376.9	376.4	375.9	376.7
10°	374.8	375.0	375.1	375.3	375.5	375.4	374.9	374.4	374.0	373.5	374.4
12.5°	370.8	371.0	371.3	371.6	371.8	371.8	371.5	371.1	370.9	370.5	371.4
15°	363.6	363.8	364.1	364.4	364.6	364.8	364.6	364.5	364.4	364.4	365.3
17.5°	354.5	355.0	355.5	356.1	356.6	356.9	356.9	356.8	356.8	356.8	357.6
20°	347.8	348.3	348.8	349.5	350.0	350.4	350.5	350.7	350.9	351.1	352.0
22.5°	340.8	341.3	341.9	342.4	343.0	343.4	343.7	343.9	344.2	344.5	345.5
25°	328.2	329.1	330.1	331.0	331.9	332.5	332.8	333.1	333.3	333.7	334.8
27.5°	315.6	316.6	317.7	318.8	319.9	320.7	321.2	321.8	322.4	323.0	324.0
30°	306.7	307.8	309.1	310.2	311.5	312.4	313.2	313.9	314.6	315.4	316.5
32.5°	296.7	298.0	299.3	300.7	302.0	303.2	304.2	305.1	306.1	307.0	308.3
35°	282.5	284.0	285.5	287.0	288.5	289.8	291.0	292.2	293.4	294.6	296.0
37.5°	267.6	269.2	270.9	272.6	274.2	275.8	277.2	278.7	280.3	281.7	283.3
40°	257.6	259.3	260.9	262.6	264.2	266.0	267.9	269.7	271.5	273.4	275.0
42.5°	246.6	248.7	250.7	252.7	254.8	256.7	258.7	260.6	262.5	264.4	266.2
45°	231.0	233.3	235.4	237.6	239.9	242.1	244.4	246.7	249.1	251.4	253.2
47.5°	214.6	217.1	219.6	222.2	224.7	227.3	229.9	232.6	235.1	237.8	239.8
50°	204.0	206.6	209.2	211.8	214.4	217.0	219.9	222.8	225.7	228.5	230.7
52.5°	192.7	195.5	198.1	200.9	203.7	206.6	209.7	212.9	216.1	219.2	221.4
55°	176.2	179.2	182.3	185.3	188.3	191.5	194.8	198.2	201.5	204.8	207.3
57.5°	160.1	163.2	166.4	169.6	172.7	176.2	179.8	183.4	187.1	190.7	193.2
60°	148.7	152.0	155.4	158.7	162.0	165.6	169.4	173.2	176.9	180.7	183.3
62.5°	138.1	141.5	144.9	148.3	151.7	155.4	159.4	163.5	167.5	171.5	174.0
65°	121.7	125.4	128.9	132.5	136.2	140.0	144.0	148.1	152.1	156.2	159.0
67.5°	105.1	109.0	112.8	116.5	120.4	124.4	128.5	132.7	136.8	141.0	143.9
70°	93.5	97.5	101.4	105.4	109.3	113.6	118.0	122.4	126.9	131.3	134.3
72.5°	82.8	86.9	90.8	94.8	98.7	103.0	107.5	112.2	116.7	121.4	124.4
75°	66.1	70.4	74.7	79.1	83.5	87.9	92.6	97.1	101.7	106.4	109.4
77.5°	51.5	55.8	60.2	64.6	68.9	73.5	78.1	82.8	87.4	92.1	95.3
80°	41.1	45.7	50.2	54.8	59.2	63.9	68.7	73.5	78.3	83.1	86.2
82.5°	32.2	36.7	41.4	45.9	50.6	55.3	60.2	65.0	69.9	74.8	77.9
85°	20.3	25.0	29.6	34.2	38.8	43.6	48.5	53.3	58.2	63.1	66.3
87.5°	11.3	16.5	21.7	26.9	32.1	37.5	42.9	48.4	53.9	59.4	62.8
90°	6.8	14.3	21.8	29.2	36.8	44.9	53.4	62.1	70.6	79.2	83.6
92.5°	37.6	43.7	49.8	55.9	62.1	68.6	75.3	82.2	89.1	95.9	100.0
95°	83.9	89.6	95.3	100.9	106.6	113.0	119.9	126.8	133.8	140.6	144.7
97.5°	145.0	149.8	154.6	159.4	164.2	169.6	175.7	181.7	187.8	193.9	198.0
100°	186.6	191.4	196.1	200.8	205.6	210.9	216.6	222.3	228.1	233.8	237.4
102.5°	234.7	238.4	242.2	245.9	249.6	254.6	260.7	266.9	273.0	279.1	282.7
105°	305.9	308.7	311.5	314.3	317.1	321.8	328.5	335.2	341.9	348.5	351.1
107.5°	388.2	390.5	392.7	394.9	397.2	400.7	405.6	410.4	415.3	420.1	423.5
110°	439.5	441.8	444.0	446.3	448.5	451.8	456.1	460.4	464.7	469.0	472.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	493.3	495.0	496.8	498.5	500.2	502.9	506.6	510.2	513.9	517.5	521.3
115°	573.5	575.6	577.6	579.6	581.6	584.0	586.7	589.4	592.1	594.9	597.4
117.5°	654.7	655.9	657.3	658.5	659.8	661.6	664.0	666.3	668.7	671.0	673.2
120°	704.9	707.1	709.4	711.7	713.9	715.9	717.4	719.0	720.5	722.0	723.9
122.5°	757.6	759.2	760.7	762.3	763.8	765.7	767.8	769.9	772.0	774.2	775.4
125°	837.6	838.5	839.5	840.3	841.2	842.7	844.8	846.9	848.9	851.0	851.8
127.5°	911.9	913.6	915.5	917.3	919.1	920.8	922.4	923.9	925.5	927.0	927.2
130°	961.4	963.6	965.9	968.2	970.5	972.1	973.1	974.0	975.0	976.0	976.5
132.5°	1010.5	1012.9	1015.2	1017.6	1019.9	1021.5	1022.3	1023.2	1024.0	1024.8	1025.1
135°	1085.9	1087.7	1089.4	1091.1	1092.8	1094.0	1094.7	1095.4	1096.1	1096.8	1097.3
137.5°	1155.8	1157.3	1158.7	1160.0	1161.5	1162.9	1164.2	1165.6	1166.9	1168.2	1168.5
140°	1203.9	1205.4	1206.8	1208.4	1209.9	1210.9	1211.5	1212.0	1212.6	1213.2	1214.2
142.5°	1247.9	1249.4	1250.8	1252.2	1253.7	1254.6	1255.3	1255.9	1256.4	1257.0	1258.0
145°	1316.8	1317.3	1317.9	1318.3	1318.8	1319.6	1320.4	1321.3	1322.2	1323.1	1323.6
147.5°	1376.6	1377.7	1378.8	1379.9	1381.0	1381.9	1382.8	1383.6	1384.4	1385.3	1385.5
150°	1418.6	1419.2	1419.8	1420.4	1421.0	1421.6	1422.2	1422.8	1423.3	1424.0	1424.0
152.5°	1453.0	1453.8	1454.7	1455.5	1456.3	1457.0	1457.3	1457.7	1458.0	1458.4	1458.9
155°	1507.3	1507.3	1507.3	1507.3	1507.3	1507.5	1507.8	1508.1	1508.4	1508.7	1509.9
157.5°	1553.6	1553.3	1552.9	1552.6	1552.2	1552.1	1552.4	1552.6	1552.8	1553.1	1554.3
160°	1582.7	1582.1	1581.4	1580.8	1580.3	1579.9	1579.9	1579.9	1579.9	1579.9	1581.4
162.5°	1608.5	1607.7	1606.8	1606.0	1605.2	1604.8	1605.1	1605.3	1605.5	1605.8	1607.3
165°	1641.8	1640.9	1640.0	1639.1	1638.3	1637.8	1637.8	1637.8	1637.8	1637.8	1639.6
167.5°	1668.5	1667.2	1666.1	1664.8	1663.7	1663.2	1663.4	1663.7	1663.9	1664.1	1666.0
170°	1683.5	1682.3	1681.1	1679.9	1678.7	1678.1	1678.1	1678.1	1678.1	1678.1	1680.3
172.5°	1695.3	1694.2	1692.9	1691.8	1690.6	1690.0	1690.0	1690.0	1690.0	1690.0	1691.8
175°	1707.7	1706.6	1705.3	1704.1	1702.9	1702.4	1702.4	1702.4	1702.4	1702.4	1704.1
177.5°	1712.8	1711.9	1710.9	1709.9	1709.0	1708.5	1708.5	1708.5	1708.5	1708.5	1709.9
180°	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4
2.5°	380.6	381.2	381.8	382.0	382.0	381.9	381.8	381.7
5°	380.0	380.8	381.5	381.8	381.7	381.6	381.5	381.4
7.5°	377.7	378.6	379.5	380.0	379.9	379.7	379.6	379.5
10°	375.4	376.3	377.2	377.6	377.4	377.2	377.0	376.8
12.5°	372.2	373.1	373.9	374.3	374.1	373.9	373.7	373.5
15°	366.2	367.1	368.1	368.5	368.4	368.3	368.2	368.1
17.5°	358.4	359.3	360.1	360.4	360.3	360.2	360.1	359.9
20°	352.8	353.6	354.5	354.9	355.0	355.1	355.2	355.3
22.5°	346.5	347.6	348.7	349.2	349.1	349.0	349.0	348.9
25°	336.0	337.2	338.4	339.0	339.0	339.0	339.0	339.0
27.5°	325.0	326.1	327.2	327.7	327.8	327.9	327.9	328.0
30°	317.5	318.7	319.8	320.3	320.3	320.3	320.3	320.3
32.5°	309.4	310.6	311.7	312.5	312.7	312.9	313.2	313.3
35°	297.4	298.7	300.1	301.0	301.4	301.8	302.1	302.5
37.5°	284.8	286.4	288.0	288.9	289.2	289.5	289.8	290.1
40°	276.5	278.1	279.6	280.6	281.0	281.4	281.8	282.1
42.5°	267.9	269.6	271.3	272.4	273.0	273.4	273.9	274.5
45°	254.9	256.6	258.4	259.7	260.4	261.1	261.9	262.6
47.5°	241.7	243.8	245.8	247.0	247.5	248.2	248.7	249.3
50°	232.7	234.9	237.0	238.4	239.1	239.7	240.3	241.0
52.5°	223.6	225.8	228.0	229.5	230.3	231.1	231.8	232.6
55°	209.8	212.3	214.8	216.4	217.1	217.9	218.6	219.4
57.5°	195.7	198.2	200.7	202.4	203.3	204.2	205.1	205.9
60°	185.9	188.5	191.1	192.9	193.9	194.9	195.9	197.0
62.5°	176.6	179.1	181.7	183.5	184.5	185.4	186.4	187.3
65°	161.8	164.5	167.3	169.2	170.0	171.0	171.9	172.8
67.5°	147.0	150.0	153.0	155.0	155.7	156.5	157.3	158.0
70°	137.2	140.2	143.1	145.1	146.0	146.9	147.8	148.7
72.5°	127.3	130.4	133.4	135.5	136.3	137.2	138.2	139.1
75°	112.4	115.5	118.6	120.6	121.7	122.9	123.9	125.1
77.5°	98.5	101.7	105.0	106.9	107.8	108.7	109.5	110.4
80°	89.3	92.6	95.7	97.6	98.6	99.5	100.5	101.4
82.5°	81.1	84.2	87.4	89.3	90.3	91.2	92.1	93.1
85°	69.5	72.6	75.7	77.8	78.6	79.6	80.5	81.4
87.5°	66.2	69.6	72.9	75.1	76.2	77.2	78.2	79.3
90°	87.9	92.2	96.6	99.5	101.0	102.5	104.1	105.6
92.5°	104.0	108.0	112.0	114.2	114.8	115.2	115.7	116.2
95°	148.7	152.8	156.9	159.3	160.2	161.2	162.1	163.1
97.5°	202.1	206.3	210.4	212.9	213.7	214.5	215.3	216.1
100°	240.9	244.5	248.1	250.7	252.2	253.7	255.2	256.7
102.5°	286.1	289.6	293.1	295.3	296.1	296.9	297.7	298.5
105°	353.7	356.2	358.8	360.9	362.3	363.7	365.2	366.6
107.5°	427.0	430.3	433.8	435.8	436.2	436.7	437.1	437.6
110°	476.2	479.7	483.4	485.3	485.4	485.5	485.6	485.8



TEST NUMBER: P332117-940

CATALOG NUMBER: S123DIW-S340D1535U940-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	525.0	528.9	532.6	534.8	535.5	536.2	536.9	537.6
115°	599.9	602.4	604.9	606.4	606.8	607.3	607.7	608.1
117.5°	675.3	677.4	679.6	680.6	680.5	680.3	680.2	680.1
120°	725.7	727.5	729.3	730.3	730.3	730.4	730.4	730.5
122.5°	776.7	778.0	779.3	779.8	779.6	779.4	779.3	779.1
125°	852.5	853.3	854.0	854.1	853.5	853.0	852.5	851.9
127.5°	927.4	927.6	927.6	927.4	926.7	925.9	925.1	924.3
130°	977.0	977.6	978.2	977.7	976.2	974.6	973.1	971.5
132.5°	1025.4	1025.6	1025.8	1025.5	1024.5	1023.5	1022.5	1021.5
135°	1097.8	1098.2	1098.7	1098.9	1098.8	1098.6	1098.5	1098.3
137.5°	1168.7	1168.9	1169.1	1168.9	1168.1	1167.5	1166.8	1166.2
140°	1215.4	1216.5	1217.5	1217.3	1215.7	1214.0	1212.4	1210.8
142.5°	1258.9	1259.9	1260.8	1260.7	1259.5	1258.4	1257.2	1256.1
145°	1324.0	1324.5	1324.9	1324.7	1323.8	1323.0	1322.2	1321.4
147.5°	1385.7	1385.9	1386.2	1385.5	1384.0	1382.6	1381.2	1379.7
150°	1424.0	1424.0	1424.0	1423.2	1421.6	1420.0	1418.4	1416.8
152.5°	1459.4	1459.8	1460.4	1459.8	1458.3	1456.8	1455.3	1453.8
155°	1511.1	1512.3	1513.5	1513.1	1510.9	1508.9	1506.7	1504.7
157.5°	1555.6	1556.8	1558.1	1557.9	1556.2	1554.5	1552.8	1551.2
160°	1583.0	1584.5	1585.9	1586.1	1584.9	1583.7	1582.5	1581.3
162.5°	1608.7	1610.3	1611.8	1611.6	1609.6	1607.8	1605.8	1603.9
165°	1641.4	1643.2	1644.9	1644.8	1642.7	1640.7	1638.5	1636.5
167.5°	1667.9	1669.7	1671.5	1671.5	1669.7	1667.9	1666.0	1664.1
170°	1682.3	1684.4	1686.5	1686.5	1684.4	1682.3	1680.3	1678.1
172.5°	1693.6	1695.5	1697.4	1697.3	1695.1	1693.1	1691.0	1688.9
175°	1705.9	1707.7	1709.5	1709.3	1707.3	1705.1	1703.1	1701.0
177.5°	1711.4	1712.8	1714.2	1714.1	1712.4	1710.7	1709.1	1707.4
180°	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7

(END OF REPORT)