

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: P332112-940

Luminaire Tested: **S123DIW-S340D1320U940-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332112-940
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: S123DIW-S340D1320U940-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5968.1 lumens
Efficiency: N/A
Efficacy: 128.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Indirect

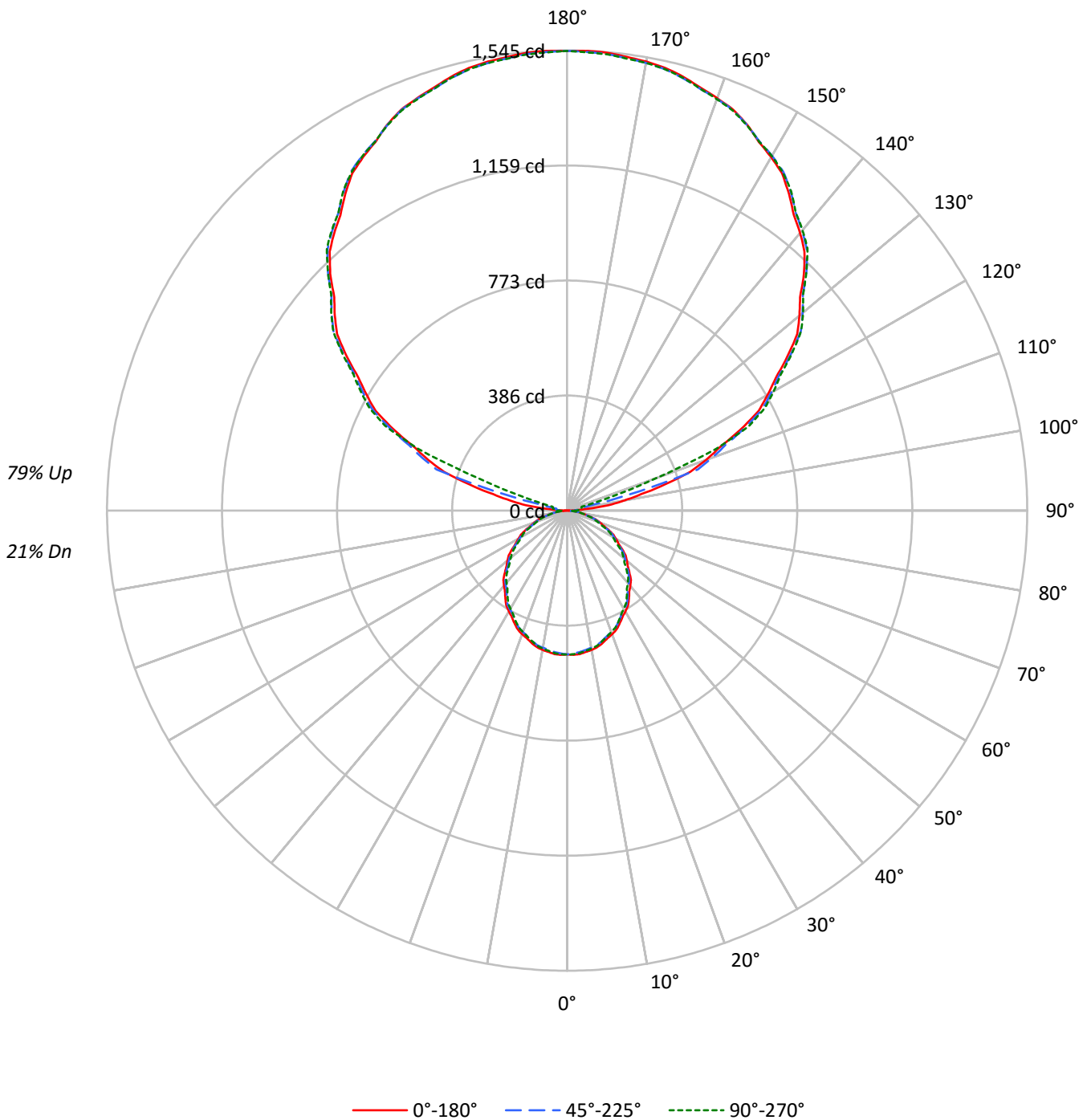
Input Watts (W): 46.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332112-940

CATALOG NUMBER: S123DIW-S340D1320U940-4F0-1E-UDD-F

Luminous Intensity Polar Plot





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CATALOG NUMBER: S123DIW-S340D1320U940-4F0-1E-UDD-F

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	83	80	81	77	74	71	59	57	55	42	41	39	26	25	25	18
2	83	76	70	65	73	67	63	58	51	48	45	37	35	33	23	22	21	15
3	76	67	60	54	67	59	53	49	45	41	38	32	30	28	20	19	18	13
4	69	59	51	46	61	52	46	41	40	36	32	29	26	24	18	17	15	11
5	63	52	45	39	56	47	40	35	36	31	28	26	23	20	16	15	13	9
6	58	47	39	33	51	42	35	30	32	27	24	23	20	18	15	13	12	8
7	54	42	34	29	47	37	31	26	29	24	21	21	18	16	13	12	10	7
8	50	38	31	25	44	34	27	23	26	22	18	19	16	14	12	10	9	6
9	46	34	27	22	41	31	25	20	24	19	16	17	14	12	11	9	8	6
10	43	31	25	20	38	28	22	18	22	18	15	16	13	11	10	9	7	5

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5201	5201	5201
5°	5226	5154	5190
10°	5191	5109	5141
15°	5131	5051	5060
20°	5060	4969	4974
25°	4963	4871	4861
30°	4860	4762	4724
35°	4750	4646	4586
40°	4636	4519	4449
45°	4509	4402	4294
50°	4382	4258	4140
55°	4219	4110	3984
60°	4052	3935	3810
65°	3904	3744	3629
70°	3688	3531	3374
75°	3373	3248	3111
80°	3037	2913	2882
85°	2668	2569	2470



TEST NUMBER: P332112-940

CATALOG NUMBER: S123DIW-S340D1320U940-4F0-1E-UDD-F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	45.5	0.8
10°-20°	128.5	2.2
20°-30°	189.9	3.2
30°-40°	221.8	3.7
40°-50°	223.0	3.7
50°-60°	195.8	3.3
60°-70°	145.9	2.4
70°-80°	83.1	1.4
80°-90°	28.2	0.5
90°-100°	56.1	0.9
100°-110°	267.4	4.5
110°-120°	642.3	10.8
120°-130°	818.0	13.7
130°-140°	874.0	14.6
140°-150°	817.3	13.7
150°-160°	659.2	11.0
160°-170°	425.5	7.1
170°-180°	146.6	2.5
0°-30°	363.9	6.1
0°-40°	585.7	9.8
0°-60°	1004.5	16.8
0°-90°	1261.7	21.1
90°-120°	965.9	16.2
90°-150°	3475.0	58.2
90°-180°	4706.0	78.9
0°-180°	5968.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	483	483	483	483	483	
5°	484	481	477	481	480	46
15°	460	458	453	456	454	130
25°	418	415	410	410	409	192
35°	362	359	354	351	349	226
45°	296	294	289	284	282	229
55°	225	224	219	215	212	201
65°	153	151	147	144	142	151
75°	81	79	78	76	75	87
85°	22	21	21	20	20	24
90°	1	13	28	32	34	4
95°	70	26	36	43	44	86
105°	342	348	251	60	50	362
115°	641	648	658	669	674	632
125°	904	912	917	920	922	807
135°	1125	1132	1136	1139	1136	866
145°	1298	1306	1308	1310	1310	812
155°	1430	1428	1429	1434	1428	658
165°	1508	1504	1503	1511	1504	426
175°	1543	1538	1539	1546	1538	147
180°	1543	1543	1543	1543	1543	



TEST NUMBER: P332112-940

CATALOG NUMBER: S123DIW-S340D1320U940-4F0-1E-UDD-F

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	483.2	483.2	483.2	483.2	483.2	483.2	483.2	483.2	483.2	483.2	483.2
2.5°	484.9	484.6	484.3	484.0	483.7	483.1	482.3	481.5	480.7	479.9	480.6
5°	483.7	483.1	482.7	482.2	481.8	481.1	480.0	479.0	478.0	477.0	477.9
7.5°	478.9	478.4	478.0	477.5	477.1	476.3	475.3	474.2	473.1	472.1	472.9
10°	474.9	474.5	473.9	473.5	473.1	472.3	471.0	469.8	468.6	467.4	468.2
12.5°	469.6	469.2	468.8	468.4	468.1	467.3	466.2	465.0	463.9	462.8	463.4
15°	460.4	460.0	459.6	459.2	458.9	458.1	456.9	455.7	454.5	453.3	454.1
17.5°	449.6	449.2	448.7	448.2	447.7	446.9	445.7	444.5	443.3	442.1	442.6
20°	441.7	441.1	440.6	440.0	439.4	438.5	437.4	436.1	435.0	433.8	434.2
22.5°	432.7	432.1	431.6	431.1	430.5	429.6	428.4	427.2	426.0	424.8	425.1
25°	417.9	417.4	416.9	416.3	415.8	414.9	413.7	412.5	411.3	410.1	410.2
27.5°	402.3	401.7	401.2	400.6	400.1	399.2	398.0	396.6	395.4	394.0	394.1
30°	391.0	390.5	390.0	389.6	389.1	388.3	387.0	385.7	384.4	383.1	383.1
32.5°	379.7	379.1	378.4	377.8	377.3	376.4	375.4	374.4	373.4	372.5	371.9
35°	361.5	361.0	360.3	359.8	359.3	358.4	357.2	356.0	354.8	353.6	353.0
37.5°	342.9	342.1	341.4	340.7	340.1	339.1	337.9	336.6	335.5	334.2	333.6
40°	329.9	329.3	328.8	328.2	327.7	326.7	325.5	324.1	322.9	321.6	320.8
42.5°	316.9	316.3	315.7	315.0	314.4	313.4	312.2	310.9	309.6	308.3	307.6
45°	296.2	295.9	295.5	295.2	294.8	294.0	292.7	291.6	290.3	289.2	288.1
47.5°	275.7	275.2	274.6	274.1	273.6	272.8	271.6	270.5	269.4	268.2	267.2
50°	261.7	261.3	260.8	260.4	259.9	259.0	257.9	256.7	255.5	254.3	253.2
52.5°	247.1	246.8	246.5	246.2	245.8	245.0	243.8	242.5	241.3	240.0	239.2
55°	224.8	224.7	224.6	224.5	224.4	223.7	222.6	221.3	220.2	219.0	217.9
57.5°	203.5	203.2	202.9	202.6	202.2	201.6	200.6	199.7	198.8	197.8	196.9
60°	188.2	188.2	188.1	188.0	187.9	187.3	186.1	185.0	184.0	182.8	182.0
62.5°	174.6	174.3	174.2	173.9	173.6	173.0	171.8	170.8	169.6	168.5	167.7
65°	153.3	152.8	152.4	151.9	151.5	150.8	149.9	148.9	148.0	147.0	146.3
67.5°	130.8	130.4	130.0	129.6	129.2	128.6	128.0	127.2	126.5	125.8	125.2
70°	117.2	116.6	116.1	115.5	114.9	114.4	113.9	113.2	112.7	112.2	111.6
72.5°	102.9	102.5	102.1	101.7	101.2	100.8	100.1	99.5	98.9	98.3	97.6
75°	81.1	80.6	80.3	79.9	79.5	79.2	78.9	78.6	78.4	78.1	77.7
77.5°	61.6	61.4	61.3	61.1	60.8	60.5	60.3	59.9	59.6	59.2	58.9
80°	49.0	48.8	48.5	48.2	47.9	47.7	47.5	47.3	47.2	47.0	46.8
82.5°	36.7	36.6	36.6	36.6	36.5	36.5	36.4	36.4	36.4	36.3	36.1
85°	21.6	21.4	21.2	21.0	20.9	20.8	20.8	20.8	20.8	20.8	20.6
87.5°	8.8	9.2	9.5	9.7	10.0	10.4	11.1	11.7	12.2	12.8	12.9
90°	1.2	3.7	6.2	8.8	11.3	14.3	17.6	20.9	24.2	27.6	28.5
92.5°	21.3	20.6	19.9	19.2	18.5	19.4	21.8	24.3	26.8	29.3	30.9
95°	69.9	59.5	49.0	38.6	28.2	24.3	27.1	30.0	32.7	35.6	37.4
97.5°	140.5	135.9	131.2	126.5	121.8	110.3	91.9	73.7	55.3	36.9	39.0
100°	193.8	198.9	203.9	209.0	214.2	196.8	157.1	117.3	77.6	37.8	39.9
102.5°	254.3	258.0	261.6	265.3	269.0	249.1	205.7	162.3	118.9	75.4	69.1
105°	341.7	344.5	347.3	350.1	352.8	342.9	319.9	296.9	274.0	251.1	206.0
107.5°	433.9	436.1	438.4	440.6	442.8	445.8	449.4	453.0	456.6	460.2	427.1
110°	495.3	497.4	499.4	501.4	503.5	505.9	508.7	511.5	514.3	517.1	508.7



TEST NUMBER: P332112-940

CATALOG NUMBER: S123DIW-S340D1320U940-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	554.0	555.9	557.7	559.5	561.3	563.7	566.5	569.3	572.1	574.9	575.1
115°	641.0	642.5	644.0	645.5	647.0	649.0	651.2	653.5	655.9	658.2	660.7
117.5°	725.1	727.0	728.9	730.8	732.6	734.1	735.3	736.6	737.7	738.9	740.9
120°	777.4	779.7	781.9	784.3	786.6	788.1	788.8	789.6	790.4	791.1	793.2
122.5°	830.6	832.5	834.4	836.2	838.1	839.5	840.5	841.5	842.5	843.5	844.9
125°	903.5	905.5	907.6	909.6	911.7	913.2	914.2	915.3	916.2	917.3	917.7
127.5°	974.1	976.2	978.2	980.3	982.3	983.9	985.2	986.4	987.6	988.8	989.6
130°	1018.2	1020.2	1022.3	1024.3	1026.4	1027.9	1028.9	1029.9	1030.9	1031.9	1033.0
132.5°	1060.3	1062.4	1064.4	1066.5	1068.5	1070.0	1070.8	1071.6	1072.4	1073.2	1074.2
135°	1124.8	1126.3	1127.8	1129.4	1131.0	1132.2	1133.2	1134.3	1135.2	1136.3	1137.0
137.5°	1179.8	1181.8	1183.7	1185.6	1187.6	1188.8	1189.4	1190.0	1190.5	1191.1	1192.3
140°	1216.6	1218.1	1219.6	1221.1	1222.6	1223.8	1224.6	1225.3	1226.1	1226.8	1227.9
142.5°	1250.4	1252.0	1253.6	1255.1	1256.6	1257.8	1258.5	1259.3	1260.0	1260.8	1261.6
145°	1298.0	1299.8	1301.5	1303.3	1305.1	1306.2	1306.7	1307.2	1307.8	1308.2	1308.8
147.5°	1342.6	1343.8	1345.0	1346.1	1347.4	1348.2	1348.7	1349.2	1349.7	1350.2	1350.8
150°	1370.2	1370.9	1371.7	1372.4	1373.2	1373.9	1374.4	1374.8	1375.4	1375.9	1376.4
152.5°	1394.9	1395.3	1395.6	1396.0	1396.3	1396.7	1397.0	1397.3	1397.6	1397.9	1398.8
155°	1429.8	1429.3	1428.8	1428.3	1427.7	1427.6	1427.9	1428.2	1428.4	1428.6	1429.9
157.5°	1456.9	1456.8	1456.8	1456.7	1456.6	1456.5	1456.3	1456.0	1455.7	1455.5	1457.0
160°	1473.4	1473.1	1472.8	1472.6	1472.3	1472.1	1471.9	1471.6	1471.3	1471.1	1472.6
162.5°	1489.0	1488.3	1487.6	1486.9	1486.3	1485.9	1485.6	1485.3	1485.1	1484.8	1486.6
165°	1507.8	1507.0	1506.2	1505.5	1504.7	1504.2	1504.0	1503.7	1503.4	1503.2	1505.2
167.5°	1522.4	1521.4	1520.4	1519.4	1518.3	1517.9	1517.9	1517.9	1517.9	1517.9	1519.9
170°	1530.7	1529.6	1528.7	1527.7	1526.6	1526.1	1526.1	1526.1	1526.1	1526.1	1528.1
172.5°	1536.2	1535.0	1533.7	1532.5	1531.3	1530.8	1531.0	1531.2	1531.4	1531.6	1533.7
175°	1543.3	1542.0	1540.8	1539.4	1538.2	1537.7	1537.9	1538.2	1538.5	1538.7	1540.5
177.5°	1545.2	1544.1	1543.1	1542.1	1541.1	1540.7	1540.9	1541.1	1541.2	1541.5	1543.1
180°	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3



TEST NUMBER: P332112-940

CATALOG NUMBER: S123DIW-S340D1320U940-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	483.2	483.2	483.2	483.2	483.2	483.2	483.2	483.2
2.5°	481.3	482.1	482.9	483.2	483.1	483.0	483.0	482.9
5°	478.8	479.7	480.7	481.1	480.9	480.7	480.5	480.3
7.5°	473.8	474.6	475.4	475.7	475.6	475.5	475.5	475.3
10°	469.1	469.9	470.7	471.1	470.9	470.7	470.6	470.4
12.5°	464.0	464.6	465.2	465.5	465.4	465.2	465.1	465.0
15°	454.8	455.5	456.3	456.4	455.8	455.2	454.7	454.1
17.5°	443.1	443.6	444.2	444.3	444.1	443.9	443.7	443.5
20°	434.5	434.9	435.2	435.3	435.0	434.7	434.4	434.2
22.5°	425.3	425.7	426.0	426.0	425.6	425.3	424.9	424.5
25°	410.3	410.4	410.5	410.4	410.1	409.8	409.6	409.3
27.5°	394.2	394.3	394.3	394.2	393.9	393.5	393.2	392.8
30°	383.1	383.1	383.1	382.7	382.1	381.5	380.8	380.1
32.5°	371.4	370.9	370.4	370.0	369.6	369.3	368.9	368.5
35°	352.5	352.0	351.3	350.9	350.4	349.9	349.5	349.0
37.5°	332.9	332.3	331.5	331.1	330.8	330.5	330.2	329.9
40°	320.1	319.4	318.6	318.1	317.7	317.4	317.0	316.6
42.5°	306.8	306.0	305.3	304.8	304.4	304.1	303.7	303.3
45°	287.0	285.9	284.7	284.0	283.5	283.0	282.6	282.1
47.5°	266.1	265.0	263.9	263.1	262.7	262.3	261.9	261.5
50°	252.3	251.2	250.2	249.4	248.9	248.3	247.8	247.2
52.5°	238.3	237.4	236.5	235.8	235.2	234.7	234.2	233.6
55°	217.0	215.9	214.9	214.2	213.7	213.2	212.8	212.3
57.5°	196.0	195.0	194.1	193.4	192.9	192.3	191.8	191.3
60°	181.2	180.3	179.5	178.9	178.3	177.9	177.5	177.0
62.5°	166.8	166.0	165.2	164.6	164.3	164.0	163.7	163.4
65°	145.6	144.9	144.1	143.7	143.4	143.0	142.8	142.5
67.5°	124.5	123.9	123.2	122.7	122.3	121.9	121.5	121.2
70°	110.9	110.2	109.6	109.1	108.6	108.2	107.6	107.2
72.5°	97.1	96.5	95.9	95.5	95.3	95.1	94.8	94.5
75°	77.2	76.7	76.2	75.9	75.6	75.3	75.1	74.8
77.5°	58.6	58.3	58.0	57.9	57.9	57.9	57.9	57.9
80°	46.7	46.6	46.5	46.5	46.5	46.5	46.5	46.5
82.5°	36.0	35.8	35.7	35.5	35.5	35.4	35.3	35.2
85°	20.4	20.2	20.1	20.0	20.0	20.0	20.0	20.0
87.5°	13.1	13.2	13.4	13.5	13.6	13.6	13.7	13.8
90°	29.5	30.6	31.6	32.4	32.9	33.3	33.9	34.4
92.5°	32.6	34.2	35.8	36.8	37.2	37.5	37.7	38.1
95°	39.1	40.9	42.7	43.6	43.6	43.6	43.6	43.6
97.5°	41.0	43.1	45.0	46.2	46.5	46.7	47.0	47.3
100°	41.9	44.0	46.0	47.2	47.3	47.6	47.9	48.2
102.5°	62.8	56.4	50.2	47.3	47.7	48.2	48.6	49.0
105°	160.9	115.8	70.7	48.4	49.0	49.4	49.9	50.5
107.5°	394.1	361.1	328.0	294.4	260.5	226.4	192.4	158.5
110°	500.2	491.9	483.5	461.0	424.6	388.2	351.8	315.3



TEST NUMBER: P332112-940

CATALOG NUMBER: S123DIW-S340D1320U940-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	575.2	575.3	575.5	571.8	564.0	556.3	548.7	541.0
115°	663.3	665.8	668.3	670.1	671.1	672.2	673.2	674.2
117.5°	743.0	744.9	747.0	748.1	748.3	748.5	748.8	748.9
120°	795.2	797.3	799.3	800.3	800.3	800.3	800.3	800.3
122.5°	846.3	847.7	849.2	850.0	850.2	850.3	850.6	850.8
125°	918.3	918.8	919.3	919.8	920.3	920.9	921.3	921.9
127.5°	990.4	991.2	992.1	992.2	991.8	991.2	990.7	990.2
130°	1033.9	1035.0	1036.0	1036.3	1035.7	1035.3	1034.7	1034.2
132.5°	1075.2	1076.3	1077.3	1077.5	1076.7	1076.0	1075.3	1074.6
135°	1137.8	1138.5	1139.3	1139.3	1138.5	1137.8	1137.0	1136.3
137.5°	1193.6	1194.7	1196.0	1196.3	1195.8	1195.3	1194.8	1194.3
140°	1228.9	1229.9	1230.9	1231.2	1230.7	1230.1	1229.7	1229.1
142.5°	1262.4	1263.2	1264.1	1264.1	1263.4	1262.7	1261.9	1261.2
145°	1309.3	1309.7	1310.3	1310.5	1310.5	1310.5	1310.5	1310.5
147.5°	1351.2	1351.7	1352.3	1351.9	1350.8	1349.6	1348.4	1347.2
150°	1376.9	1377.4	1378.0	1377.8	1377.1	1376.3	1375.6	1374.8
152.5°	1399.7	1400.7	1401.6	1401.5	1400.3	1399.1	1397.9	1396.8
155°	1431.2	1432.4	1433.8	1433.6	1432.1	1430.6	1429.1	1427.5
157.5°	1458.6	1460.1	1461.6	1461.3	1459.4	1457.4	1455.4	1453.4
160°	1474.1	1475.7	1477.2	1477.0	1475.2	1473.5	1471.7	1469.9
162.5°	1488.3	1490.0	1491.7	1491.8	1490.2	1488.7	1487.1	1485.5
165°	1507.3	1509.3	1511.4	1511.4	1509.7	1507.9	1506.1	1504.3
167.5°	1522.0	1523.9	1526.0	1526.0	1523.9	1522.0	1519.9	1517.9
170°	1530.2	1532.2	1534.3	1534.3	1532.2	1530.2	1528.1	1526.1
172.5°	1535.7	1537.8	1539.8	1539.6	1537.4	1535.2	1532.9	1530.7
175°	1542.3	1544.1	1545.9	1545.7	1543.7	1541.7	1539.6	1537.6
177.5°	1544.7	1546.4	1548.0	1547.8	1545.8	1543.7	1541.7	1539.6
180°	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3

(END OF REPORT)