

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: P332113-830

Luminaire Tested: **S123DIW-S340D1320U830-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332113-830
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-S340D1320U830-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5645.3 lumens
Efficiency: N/A
Efficacy: 121.1 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

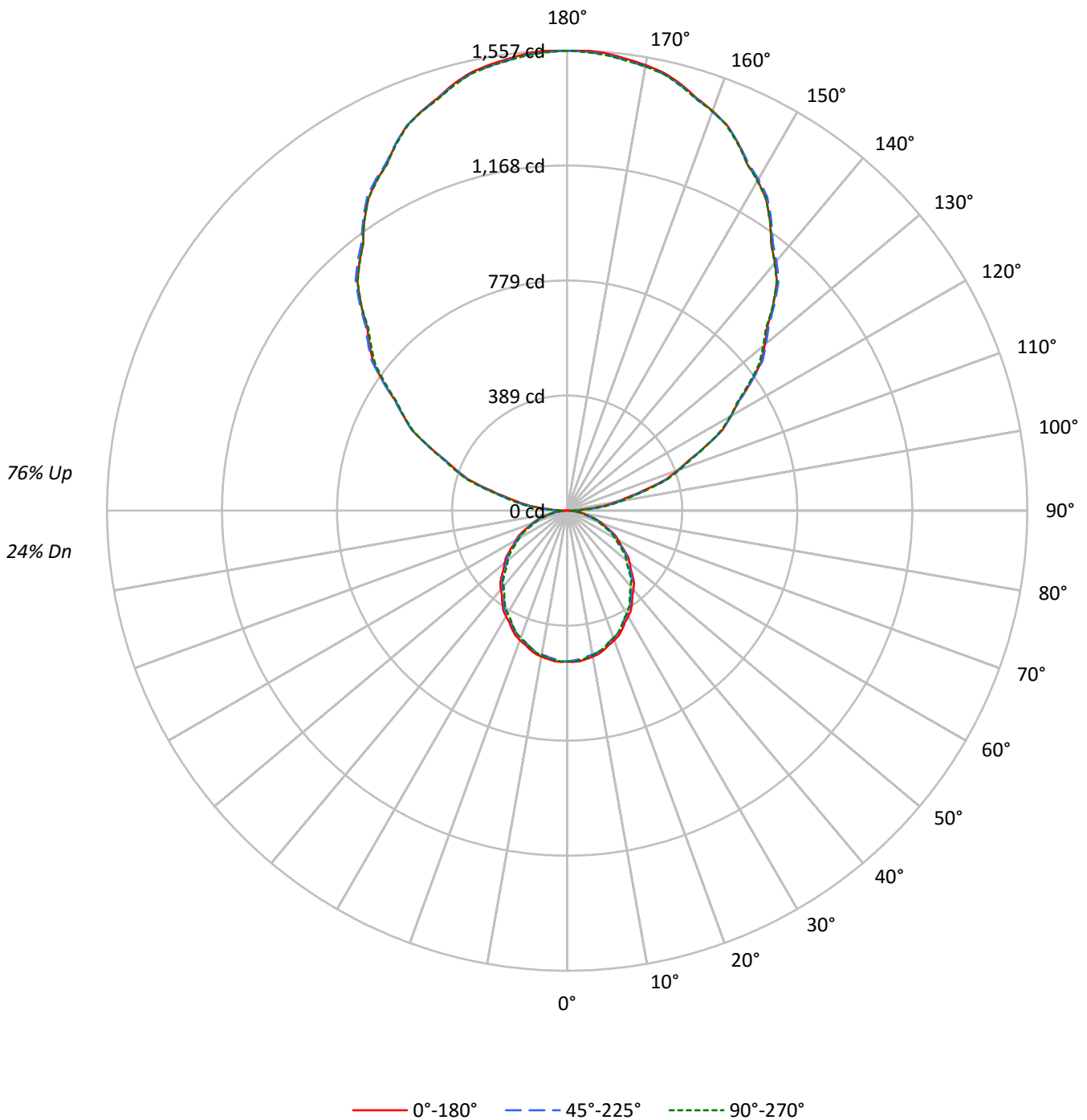
Input Watts (W): 46.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332113-830

CATALOG NUMBER: S123DIW-S340D1320U830-4F0-1E-UDD-F1

Luminous Intensity Polar Plot





TEST NUMBER: P332113-830

CATALOG NUMBER: S123DIW-S340D1320U830-4F0-1E-UDD-F1

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	101	101	101	101	90	90	90	90	69	69	69	50	50	50	32	32	32	24
1	92	88	84	81	81	78	75	72	60	58	56	43	42	41	28	27	27	20
2	84	76	71	66	74	68	63	59	52	49	46	38	36	34	25	24	22	17
3	76	67	60	55	67	60	54	49	46	42	39	34	31	29	22	20	19	14
4	70	59	52	46	62	53	46	42	41	36	33	30	27	25	19	18	16	12
5	64	53	45	39	56	47	40	35	36	32	28	27	24	21	17	16	14	10
6	59	47	39	34	52	42	35	31	33	28	24	24	21	18	16	14	12	9
7	54	42	35	29	48	38	31	27	30	25	21	22	19	16	14	13	11	8
8	50	38	31	26	44	34	28	23	27	22	19	20	17	14	13	11	10	7
9	46	35	28	23	41	31	25	21	24	20	17	18	15	13	12	10	9	7
10	43	32	25	20	38	28	22	18	22	18	15	17	14	11	11	9	8	6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5498	5498	5498
5°	5524	5448	5486
10°	5487	5400	5434
15°	5422	5340	5349
20°	5347	5252	5257
25°	5247	5149	5138
30°	5137	5033	4994
35°	5021	4911	4847
40°	4900	4776	4703
45°	4766	4654	4539
50°	4632	4501	4376
55°	4459	4344	4211
60°	4284	4159	4028
65°	4126	3958	3836
70°	3899	3733	3566
75°	3564	3435	3290
80°	3211	3081	3050
85°	2816	2717	2606



TEST NUMBER: P332113-830

CATALOG NUMBER: S123DIW-S340D1320U830-4F0-1E-UDD-F1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	48.1	0.9
10°-20°	135.9	2.4
20°-30°	200.7	3.6
30°-40°	234.4	4.2
40°-50°	235.7	4.2
50°-60°	207.0	3.7
60°-70°	154.2	2.7
70°-80°	87.9	1.6
80°-90°	29.8	0.5
90°-100°	101.4	1.8
100°-110°	303.4	5.4
110°-120°	516.1	9.1
120°-130°	678.8	12.0
130°-140°	763.0	13.5
140°-150°	750.0	13.3
150°-160°	631.4	11.2
160°-170°	420.3	7.4
170°-180°	147.2	2.6
0°-30°	384.6	6.8
0°-40°	619.1	11.0
0°-60°	1061.7	18.8
0°-90°	1333.7	23.6
90°-120°	920.9	16.3
90°-150°	3112.8	55.1
90°-180°	4312.0	76.4
0°-180°	5645.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	511	511	511	511	511	
5°	511	509	504	508	508	48
15°	487	485	479	482	480	137
25°	442	439	434	434	433	203
35°	382	379	374	371	369	239
45°	313	311	306	301	298	242
55°	238	237	232	227	224	213
65°	162	160	155	152	151	160
75°	86	84	83	80	79	92
85°	23	22	22	21	21	25
90°	1	14	29	34	37	6
95°	72	81	90	95	95	81
105°	275	278	288	289	291	295
115°	520	523	521	522	521	514
125°	760	764	762	757	752	678
135°	987	993	993	988	985	760
145°	1197	1199	1203	1202	1197	747
155°	1370	1370	1372	1376	1368	631
165°	1493	1489	1489	1495	1488	421
175°	1553	1548	1548	1554	1546	147
180°	1556	1556	1556	1556	1556	



TEST NUMBER: P332113-830

CATALOG NUMBER: S123DIW-S340D1320U830-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	510.8	510.8	510.8	510.8	510.8	510.8	510.8	510.8	510.8	510.8	510.8
2.5°	512.6	512.2	511.9	511.6	511.2	510.7	509.8	509.0	508.1	507.3	508.0
5°	511.2	510.7	510.2	509.7	509.3	508.5	507.4	506.3	505.2	504.2	505.1
7.5°	506.2	505.7	505.2	504.7	504.3	503.4	502.4	501.2	500.1	499.0	499.8
10°	502.0	501.5	501.0	500.5	500.0	499.2	497.9	496.6	495.3	494.1	494.9
12.5°	496.3	496.0	495.5	495.1	494.7	493.9	492.8	491.5	490.3	489.2	489.8
15°	486.6	486.3	485.8	485.4	485.0	484.2	483.0	481.6	480.4	479.2	479.9
17.5°	475.2	474.8	474.3	473.7	473.3	472.4	471.1	469.9	468.5	467.3	467.8
20°	466.8	466.3	465.7	465.1	464.5	463.5	462.3	461.0	459.8	458.5	458.9
22.5°	457.3	456.8	456.2	455.6	455.1	454.1	452.8	451.6	450.3	449.0	449.3
25°	441.8	441.2	440.6	440.1	439.5	438.6	437.2	436.0	434.7	433.5	433.6
27.5°	425.2	424.6	424.0	423.5	422.9	422.0	420.7	419.2	417.9	416.5	416.6
30°	413.3	412.7	412.3	411.8	411.3	410.4	409.1	407.6	406.3	404.9	404.9
32.5°	401.3	400.7	400.0	399.4	398.8	397.8	396.8	395.8	394.7	393.7	393.1
35°	382.1	381.5	380.9	380.3	379.8	378.8	377.6	376.3	375.0	373.7	373.2
37.5°	362.4	361.7	360.9	360.1	359.5	358.4	357.1	355.8	354.6	353.3	352.6
40°	348.7	348.1	347.5	346.9	346.4	345.3	344.0	342.6	341.3	339.9	339.1
42.5°	335.0	334.3	333.7	333.0	332.3	331.3	330.0	328.6	327.3	325.8	325.1
45°	313.1	312.7	312.4	312.0	311.6	310.8	309.4	308.2	306.9	305.7	304.5
47.5°	291.4	290.9	290.3	289.7	289.2	288.3	287.1	285.9	284.7	283.5	282.4
50°	276.6	276.2	275.7	275.2	274.8	273.8	272.6	271.4	270.0	268.8	267.7
52.5°	261.2	260.9	260.5	260.2	259.9	259.0	257.7	256.4	255.1	253.6	252.8
55°	237.6	237.5	237.4	237.3	237.2	236.5	235.3	233.9	232.7	231.5	230.4
57.5°	215.1	214.8	214.4	214.1	213.8	213.1	212.1	211.0	210.1	209.1	208.1
60°	199.0	198.9	198.8	198.7	198.6	197.9	196.7	195.6	194.4	193.2	192.4
62.5°	184.5	184.3	184.1	183.8	183.5	182.9	181.6	180.5	179.3	178.1	177.3
65°	162.0	161.6	161.1	160.6	160.1	159.4	158.4	157.4	156.5	155.4	154.7
67.5°	138.3	137.8	137.4	137.0	136.6	135.9	135.3	134.5	133.7	133.0	132.3
70°	123.9	123.3	122.7	122.1	121.5	120.9	120.4	119.7	119.1	118.6	117.9
72.5°	108.8	108.3	107.9	107.4	107.0	106.5	105.8	105.2	104.5	103.9	103.2
75°	85.7	85.2	84.8	84.5	84.1	83.7	83.4	83.1	82.8	82.6	82.1
77.5°	65.1	64.9	64.8	64.6	64.3	64.0	63.7	63.3	63.0	62.6	62.3
80°	51.8	51.6	51.3	51.0	50.6	50.4	50.2	50.0	49.9	49.7	49.5
82.5°	38.8	38.7	38.7	38.6	38.5	38.5	38.5	38.5	38.5	38.4	38.2
85°	22.8	22.6	22.4	22.2	22.1	22.0	22.0	22.0	22.0	22.0	21.8
87.5°	9.4	9.7	10.0	10.3	10.7	11.1	11.7	12.3	13.0	13.6	13.8
90°	1.2	4.0	6.7	9.3	12.1	15.2	18.8	22.2	25.8	29.3	30.4
92.5°	29.6	31.4	33.3	35.2	36.9	38.9	40.9	42.9	45.0	46.9	47.8
95°	72.1	74.0	76.0	77.9	79.7	81.8	84.0	86.1	88.3	90.5	91.5
97.5°	128.1	129.5	130.9	132.3	133.7	135.3	136.9	138.4	140.0	141.6	142.8
100°	166.3	167.9	169.5	171.2	172.8	174.3	175.6	177.0	178.3	179.7	180.5
102.5°	210.3	211.2	212.3	213.2	214.1	215.6	217.4	219.1	220.9	222.7	223.6
105°	275.0	275.6	276.2	276.6	277.2	278.7	281.2	283.6	286.1	288.5	288.5
107.5°	350.3	350.7	351.0	351.4	351.7	352.3	353.3	354.3	355.2	356.2	357.1
110°	397.3	397.8	398.4	398.9	399.4	400.0	400.6	401.1	401.6	402.2	403.3



TEST NUMBER: P332113-830

CATALOG NUMBER: S123DIW-S340D1320U830-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	446.2	446.5	446.9	447.1	447.5	447.7	447.8	447.9	448.1	448.2	449.5
115°	519.5	520.4	521.1	522.0	522.8	522.9	522.4	521.9	521.3	520.8	521.0
117.5°	593.4	593.9	594.5	595.0	595.6	595.5	594.7	594.1	593.3	592.7	592.6
120°	639.3	640.9	642.6	644.2	645.8	646.0	644.6	643.3	642.0	640.6	640.3
122.5°	687.3	688.4	689.7	690.9	692.0	692.3	691.5	690.9	690.1	689.5	688.7
125°	760.3	761.2	762.0	762.8	763.6	763.7	763.2	762.7	762.1	761.6	760.5
127.5°	827.8	829.6	831.3	833.0	834.8	835.4	834.8	834.2	833.6	833.0	831.4
130°	872.8	875.0	877.2	879.4	881.6	882.2	881.4	880.6	879.8	878.9	877.9
132.5°	917.8	920.0	922.2	924.4	926.5	927.3	926.7	926.1	925.5	924.9	923.6
135°	986.6	988.2	989.8	991.4	993.1	993.7	993.4	993.2	992.9	992.6	991.6
137.5°	1050.1	1051.4	1052.8	1054.1	1055.6	1056.6	1057.2	1058.0	1058.7	1059.4	1058.2
140°	1094.1	1095.4	1096.8	1098.2	1099.6	1100.3	1100.6	1100.9	1101.2	1101.5	1101.2
142.5°	1134.2	1135.6	1136.9	1138.3	1139.6	1140.6	1141.0	1141.5	1142.0	1142.6	1142.3
145°	1196.7	1197.3	1197.9	1198.4	1198.9	1199.7	1200.4	1201.3	1202.1	1202.9	1202.6
147.5°	1251.5	1252.5	1253.5	1254.5	1255.5	1256.3	1257.1	1257.8	1258.6	1259.3	1259.3
150°	1289.7	1290.2	1290.8	1291.3	1291.8	1292.4	1293.0	1293.5	1294.0	1294.6	1294.6
152.5°	1321.0	1321.7	1322.5	1323.2	1324.0	1324.6	1324.9	1325.2	1325.6	1325.9	1326.3
155°	1370.4	1370.4	1370.4	1370.4	1370.4	1370.6	1370.7	1371.0	1371.3	1371.6	1372.7
157.5°	1412.4	1412.1	1411.7	1411.5	1411.1	1411.1	1411.3	1411.5	1411.7	1411.9	1413.1
160°	1438.8	1438.3	1437.8	1437.2	1436.6	1436.3	1436.3	1436.3	1436.3	1436.3	1437.8
162.5°	1462.3	1461.5	1460.8	1460.0	1459.2	1459.0	1459.2	1459.4	1459.6	1459.8	1461.2
165°	1492.6	1491.8	1491.0	1490.2	1489.4	1488.9	1488.9	1488.9	1488.9	1488.9	1490.5
167.5°	1516.8	1515.7	1514.7	1513.5	1512.5	1512.0	1512.2	1512.5	1512.7	1512.9	1514.6
170°	1530.5	1529.5	1528.3	1527.3	1526.2	1525.6	1525.6	1525.6	1525.6	1525.6	1527.5
172.5°	1541.2	1540.2	1539.1	1538.0	1536.9	1536.3	1536.3	1536.3	1536.3	1536.3	1538.0
175°	1552.6	1551.4	1550.4	1549.3	1548.1	1547.7	1547.7	1547.7	1547.7	1547.7	1549.3
177.5°	1557.2	1556.3	1555.4	1554.5	1553.7	1553.2	1553.2	1553.2	1553.2	1553.2	1554.5
180°	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2



TEST NUMBER: P332113-830

CATALOG NUMBER: S123DIW-S340D1320U830-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	510.8	510.8	510.8	510.8	510.8	510.8	510.8	510.8
2.5°	508.8	509.6	510.4	510.8	510.7	510.6	510.5	510.4
5°	506.1	507.1	508.1	508.5	508.3	508.1	507.8	507.7
7.5°	500.8	501.6	502.5	502.8	502.8	502.7	502.6	502.4
10°	495.9	496.7	497.6	497.9	497.8	497.6	497.4	497.2
12.5°	490.4	491.1	491.7	492.0	491.9	491.7	491.6	491.5
15°	480.7	481.5	482.3	482.4	481.7	481.2	480.6	480.0
17.5°	468.3	468.9	469.5	469.7	469.4	469.2	469.0	468.8
20°	459.3	459.7	460.1	460.1	459.8	459.5	459.2	458.9
22.5°	449.6	450.0	450.3	450.3	449.9	449.5	449.1	448.7
25°	433.7	433.8	433.9	433.8	433.5	433.2	432.9	432.6
27.5°	416.7	416.8	416.8	416.7	416.3	415.9	415.6	415.2
30°	404.9	404.9	404.9	404.5	403.9	403.2	402.6	401.8
32.5°	392.6	392.0	391.5	391.1	390.7	390.3	389.9	389.6
35°	372.6	372.0	371.4	370.9	370.4	369.9	369.4	368.9
37.5°	351.9	351.2	350.4	350.0	349.7	349.3	349.0	348.7
40°	338.4	337.6	336.8	336.2	335.8	335.5	335.1	334.7
42.5°	324.3	323.5	322.7	322.2	321.8	321.4	321.0	320.6
45°	303.3	302.2	301.0	300.2	299.6	299.2	298.7	298.2
47.5°	281.3	280.1	278.9	278.1	277.7	277.3	276.8	276.4
50°	266.6	265.5	264.5	263.6	263.1	262.5	261.9	261.3
52.5°	251.8	250.9	250.0	249.2	248.6	248.1	247.5	246.9
55°	229.3	228.2	227.2	226.4	225.9	225.4	224.9	224.4
57.5°	207.2	206.1	205.2	204.4	203.9	203.3	202.7	202.2
60°	191.5	190.6	189.7	189.1	188.5	188.0	187.6	187.1
62.5°	176.3	175.5	174.7	174.0	173.7	173.3	173.1	172.7
65°	153.9	153.2	152.3	151.8	151.6	151.2	150.9	150.6
67.5°	131.6	130.9	130.3	129.7	129.3	128.8	128.5	128.1
70°	117.3	116.5	115.8	115.3	114.8	114.3	113.8	113.3
72.5°	102.6	102.0	101.4	100.9	100.8	100.5	100.2	99.9
75°	81.6	81.1	80.6	80.2	79.9	79.6	79.4	79.1
77.5°	61.9	61.6	61.3	61.2	61.2	61.2	61.2	61.2
80°	49.4	49.3	49.2	49.2	49.2	49.2	49.2	49.2
82.5°	38.1	37.9	37.7	37.5	37.5	37.4	37.3	37.2
85°	21.6	21.4	21.2	21.1	21.1	21.1	21.1	21.1
87.5°	13.9	14.0	14.1	14.2	14.4	14.5	14.6	14.7
90°	31.5	32.6	33.6	34.5	35.1	35.6	36.1	36.7
92.5°	48.6	49.6	50.4	50.7	50.3	50.0	49.7	49.4
95°	92.7	93.7	94.8	95.4	95.4	95.4	95.4	95.4
97.5°	144.0	145.3	146.6	147.1	147.0	146.9	146.8	146.7
100°	181.3	182.1	182.9	183.6	184.2	184.7	185.3	185.8
102.5°	224.3	225.2	226.0	226.3	226.2	226.1	226.0	225.9
105°	288.5	288.5	288.5	288.8	289.4	289.8	290.4	291.0
107.5°	358.0	358.8	359.7	360.0	359.7	359.3	359.0	358.6
110°	404.4	405.5	406.5	406.8	406.2	405.8	405.2	404.6



TEST NUMBER: P332113-830

CATALOG NUMBER: S123DIW-S340D1320U830-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	450.7	452.0	453.4	453.9	453.8	453.7	453.6	453.6
115°	521.3	521.6	521.9	521.9	521.6	521.3	521.0	520.8
117.5°	592.6	592.5	592.4	592.0	591.3	590.5	589.7	589.0
120°	640.0	639.8	639.5	639.0	638.6	638.0	637.4	636.9
122.5°	688.1	687.3	686.6	685.9	685.1	684.4	683.6	682.9
125°	759.4	758.4	757.2	756.2	755.1	753.9	752.9	751.8
127.5°	829.9	828.4	826.9	825.5	824.3	823.0	821.8	820.5
130°	876.8	875.7	874.6	873.1	871.2	869.3	867.4	865.5
132.5°	922.3	921.0	919.7	918.3	916.8	915.4	913.9	912.5
135°	990.4	989.4	988.3	987.5	986.9	986.4	985.8	985.3
137.5°	1057.1	1055.9	1054.8	1053.8	1052.7	1051.7	1050.7	1049.6
140°	1100.9	1100.6	1100.3	1099.3	1097.4	1095.4	1093.5	1091.7
142.5°	1142.0	1141.7	1141.4	1140.6	1139.1	1137.6	1136.1	1134.7
145°	1202.3	1202.1	1201.8	1201.2	1200.0	1198.9	1197.9	1196.7
147.5°	1259.3	1259.3	1259.3	1258.6	1257.0	1255.3	1253.7	1252.1
150°	1294.6	1294.6	1294.6	1293.7	1292.1	1290.5	1288.8	1287.2
152.5°	1326.7	1327.2	1327.6	1327.1	1325.7	1324.3	1322.9	1321.4
155°	1373.8	1374.9	1375.9	1375.5	1373.7	1371.8	1369.8	1367.9
157.5°	1414.2	1415.3	1416.5	1416.3	1414.8	1413.2	1411.7	1410.2
160°	1439.1	1440.5	1441.8	1442.0	1440.9	1439.8	1438.7	1437.6
162.5°	1462.5	1464.0	1465.3	1465.1	1463.4	1461.6	1459.9	1458.1
165°	1492.2	1493.8	1495.4	1495.3	1493.5	1491.6	1489.6	1487.7
167.5°	1516.3	1518.0	1519.7	1519.7	1518.0	1516.3	1514.6	1512.9
170°	1529.5	1531.3	1533.2	1533.2	1531.3	1529.5	1527.5	1525.6
172.5°	1539.7	1541.4	1543.1	1543.0	1541.2	1539.2	1537.3	1535.4
175°	1550.9	1552.6	1554.2	1554.0	1552.1	1550.2	1548.3	1546.4
177.5°	1555.9	1557.2	1558.5	1558.4	1556.8	1555.3	1553.8	1552.3
180°	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2

(END OF REPORT)