

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: P332110-830

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332110-830
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-S340D1320U830-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6334.0 lumens
Efficiency: N/A
Efficacy: 135.9 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

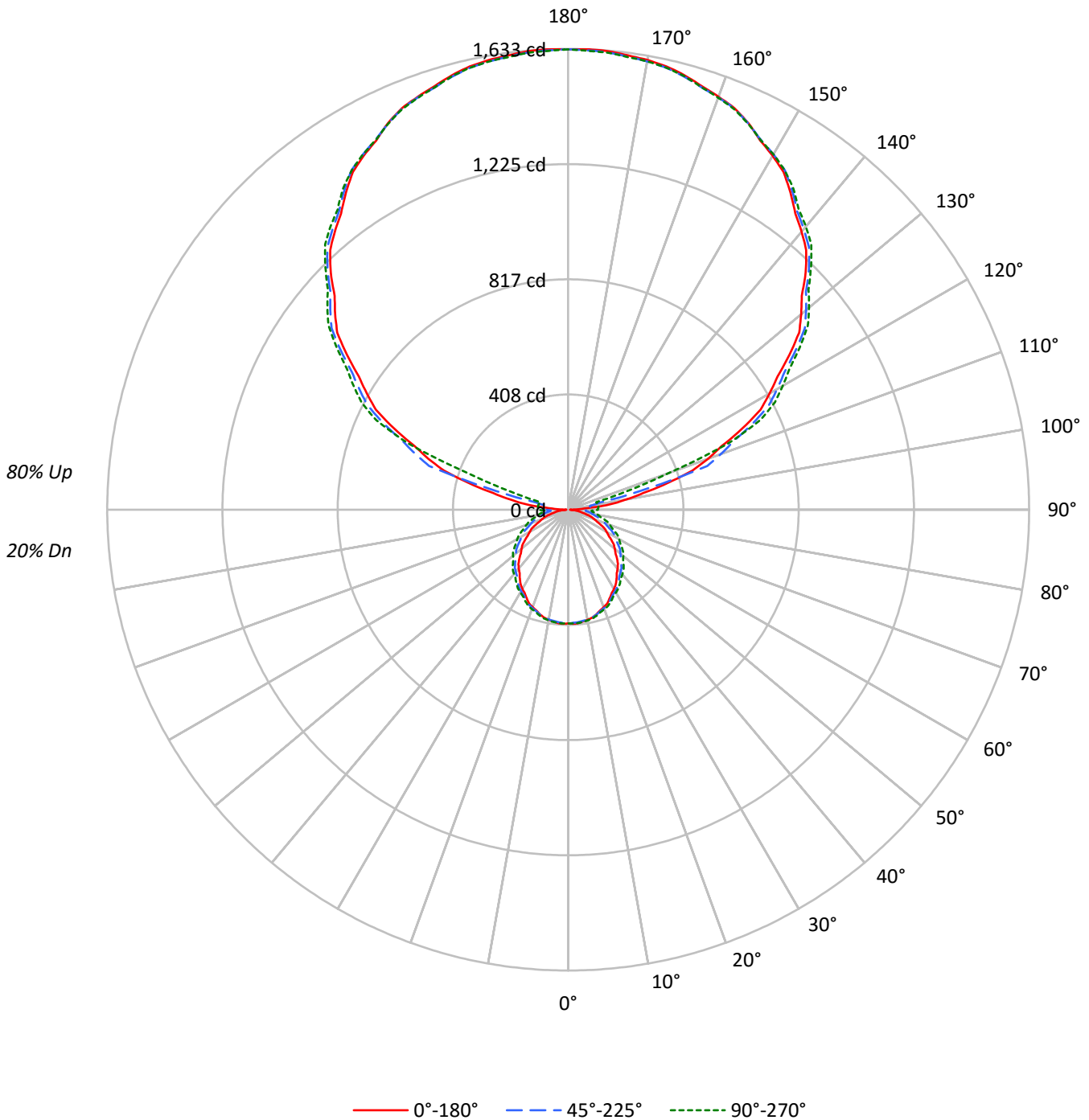
Input Watts (W): 46.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332110-830

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

Luminous Intensity Polar Plot





TEST NUMBER: P332110-830

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

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	86	82	79	80	76	73	70	57	55	53	40	39	38	24	24	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	37	31	28	26	19	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	46	39	34	35	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	27	22	40	30	24	20	23	19	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°	4339	4339	4339
5°	4353	4230	4232
10°	4315	4133	4112
15°	4259	4022	3980
20°	4179	3896	3836
25°	4080	3751	3684
30°	3980	3620	3529
35°	3867	3481	3406
40°	3760	3356	3274
45°	3641	3235	3169
50°	3525	3116	3054
55°	3393	2993	2948
60°	3266	2869	2842
65°	3138	2736	2714
70°	2941	2586	2582
75°	2693	2416	2450
80°	2412	2249	2299
85°	2145	2133	2211



TEST NUMBER: P332110-830

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

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.2	0.6
10°-20°	108.9	1.7
20°-30°	163.0	2.6
30°-40°	194.6	3.1
40°-50°	203.6	3.2
50°-60°	191.1	3.0
60°-70°	159.6	2.5
70°-80°	114.2	1.8
80°-90°	72.6	1.1
90°-100°	102.0	1.6
100°-110°	314.1	5.0
110°-120°	699.9	11.1
120°-130°	876.6	13.8
130°-140°	929.2	14.7
140°-150°	865.0	13.7
150°-160°	696.8	11.0
160°-170°	449.7	7.1
170°-180°	155.0	2.4
0°-30°	310.1	4.9
0°-40°	504.7	8.0
0°-60°	899.4	14.2
0°-90°	1245.8	19.7
90°-120°	1116.0	17.6
90°-150°	3786.7	59.8
90°-180°	5088.0	80.3
0°-180°	6334.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	403	403	403	403	403	
5°	404	403	400	403	403	38
15°	384	386	385	389	389	108
25°	347	351	353	358	358	160
35°	299	306	311	318	320	187
45°	244	255	266	274	278	188
55°	186	201	216	228	232	167
65°	129	146	165	178	183	127
75°	70	91	112	126	132	75
85°	22	44	67	81	86	23
90°	7	41	79	98	105	7
95°	79	50	81	102	108	95
105°	365	382	298	108	102	386
115°	680	693	719	741	750	671
125°	956	966	984	995	1001	854
135°	1190	1197	1206	1217	1216	916
145°	1372	1380	1383	1388	1390	859
155°	1511	1509	1510	1515	1509	696
165°	1594	1590	1589	1598	1590	450
175°	1631	1626	1626	1634	1625	155
180°	1631	1631	1631	1631	1631	



TEST NUMBER: P332110-830

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

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1
2.5°	404.9	404.7	404.4	404.3	404.0	403.6	402.9	402.3	401.7	401.1	401.7
5°	403.6	403.4	403.2	403.0	402.8	402.5	401.8	401.2	400.7	400.1	400.9
7.5°	399.6	399.7	399.7	399.7	399.8	399.5	399.0	398.4	397.8	397.3	398.2
10°	396.2	396.3	396.5	396.7	396.9	396.8	396.2	395.8	395.3	394.8	395.8
12.5°	391.9	392.2	392.5	392.8	393.0	392.9	392.7	392.3	392.0	391.6	392.6
15°	384.3	384.6	384.8	385.1	385.4	385.6	385.4	385.3	385.2	385.1	386.2
17.5°	374.7	375.2	375.8	376.4	376.9	377.2	377.2	377.1	377.1	377.1	378.0
20°	367.6	368.2	368.7	369.4	369.9	370.3	370.5	370.7	370.9	371.1	372.0
22.5°	360.2	360.8	361.4	361.9	362.6	363.0	363.3	363.5	363.8	364.1	365.2
25°	346.9	347.9	348.9	349.9	350.8	351.5	351.8	352.0	352.3	352.7	353.9
27.5°	333.6	334.7	335.8	337.0	338.1	338.9	339.5	340.2	340.8	341.4	342.5
30°	324.1	325.4	326.7	327.9	329.2	330.2	331.0	331.8	332.5	333.4	334.5
32.5°	313.6	315.0	316.4	317.8	319.2	320.5	321.5	322.5	323.6	324.5	325.8
35°	298.6	300.2	301.8	303.3	304.9	306.3	307.6	308.9	310.1	311.4	312.8
37.5°	282.9	284.6	286.3	288.1	289.8	291.5	293.0	294.6	296.2	297.7	299.4
40°	272.3	274.1	275.8	277.6	279.3	281.2	283.1	285.1	287.0	289.0	290.7
42.5°	260.7	262.9	264.9	267.1	269.3	271.4	273.4	275.4	277.5	279.5	281.3
45°	244.2	246.6	248.8	251.2	253.5	255.9	258.4	260.8	263.3	265.7	267.6
47.5°	226.9	229.5	232.1	234.9	237.5	240.3	243.0	245.8	248.5	251.4	253.4
50°	215.7	218.4	221.1	223.9	226.6	229.4	232.4	235.5	238.6	241.6	243.8
52.5°	203.7	206.6	209.4	212.4	215.3	218.4	221.7	225.1	228.4	231.7	234.0
55°	186.2	189.5	192.7	195.9	199.1	202.5	205.9	209.5	213.0	216.5	219.1
57.5°	169.2	172.5	175.9	179.3	182.6	186.2	190.0	193.9	197.7	201.6	204.2
60°	157.2	160.7	164.3	167.8	171.3	175.0	179.1	183.0	187.0	191.1	193.8
62.5°	146.0	149.6	153.2	156.7	160.3	164.3	168.5	172.8	177.0	181.3	183.9
65°	128.7	132.5	136.3	140.1	143.9	148.0	152.2	156.6	160.8	165.1	168.1
67.5°	111.1	115.2	119.2	123.2	127.2	131.5	135.8	140.3	144.6	149.0	152.1
70°	98.8	103.0	107.2	111.4	115.6	120.1	124.7	129.4	134.1	138.7	141.9
72.5°	87.6	91.8	96.0	100.2	104.3	108.9	113.7	118.6	123.4	128.3	131.5
75°	69.8	74.5	79.0	83.6	88.2	92.9	97.8	102.6	107.5	112.4	115.6
77.5°	54.4	59.0	63.6	68.2	72.9	77.7	82.6	87.5	92.4	97.4	100.8
80°	43.5	48.3	53.1	57.9	62.6	67.6	72.6	77.7	82.8	87.8	91.1
82.5°	34.0	38.8	43.7	48.5	53.4	58.4	63.6	68.7	73.9	79.1	82.4
85°	21.5	26.4	31.3	36.2	41.0	46.1	51.3	56.4	61.5	66.7	70.0
87.5°	12.0	17.3	22.7	28.1	33.6	39.0	44.8	50.4	56.1	61.7	65.3
90°	6.9	14.4	21.9	29.3	36.9	44.8	53.3	61.7	70.2	78.7	83.1
92.5°	27.9	31.5	35.1	38.5	42.1	47.7	55.2	62.8	70.3	77.9	82.8
95°	78.8	71.5	64.3	57.0	49.9	50.0	57.8	65.6	73.3	81.1	86.0
97.5°	152.9	151.4	149.9	148.4	146.8	138.6	123.9	109.0	94.2	79.4	84.4
100°	208.8	217.3	225.8	234.3	242.8	228.3	190.8	153.3	115.7	78.2	83.2
102.5°	272.4	279.1	285.8	292.5	299.2	281.7	240.3	198.8	157.3	115.8	111.9
105°	364.7	369.9	375.3	380.6	385.9	378.5	358.4	338.5	318.4	298.3	253.4
107.5°	461.6	466.0	470.3	474.7	479.0	485.1	492.9	500.8	508.5	516.3	484.0
110°	526.2	530.1	534.0	537.9	541.9	547.2	554.1	561.0	567.8	574.7	568.4



TEST NUMBER: P332110-830

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

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	588.2	591.6	595.0	598.4	601.8	606.8	613.5	620.3	627.0	633.7	636.3
115°	679.7	682.5	685.2	688.1	690.8	695.2	701.2	707.1	713.0	719.0	724.0
117.5°	768.5	771.3	774.0	776.7	779.4	783.1	787.6	792.1	796.6	801.2	805.7
120°	823.5	826.3	829.2	832.2	835.1	838.6	842.6	846.6	850.6	854.7	859.1
122.5°	879.7	881.9	884.2	886.5	888.7	891.8	895.9	900.0	904.1	908.2	911.9
125°	956.3	958.5	960.6	962.8	965.0	968.0	971.9	975.8	979.7	983.6	986.2
127.5°	1031.0	1033.0	1035.1	1037.2	1039.2	1042.1	1045.7	1049.3	1053.0	1056.6	1059.4
130°	1077.5	1079.6	1081.7	1083.7	1085.7	1088.3	1091.4	1094.4	1097.4	1100.4	1103.3
132.5°	1121.8	1123.9	1126.1	1128.2	1130.3	1132.6	1135.0	1137.5	1139.9	1142.3	1145.1
135°	1189.8	1191.3	1192.9	1194.4	1195.9	1197.7	1199.9	1202.0	1204.2	1206.3	1208.9
137.5°	1247.9	1249.8	1251.8	1253.8	1255.7	1257.4	1258.6	1259.7	1260.9	1262.2	1265.0
140°	1286.3	1287.9	1289.6	1291.2	1292.8	1294.1	1295.2	1296.4	1297.4	1298.5	1301.1
142.5°	1322.2	1323.7	1325.3	1326.8	1328.3	1329.6	1330.4	1331.2	1332.1	1333.0	1335.2
145°	1372.3	1374.1	1375.9	1377.7	1379.5	1380.6	1381.2	1381.8	1382.3	1382.8	1384.1
147.5°	1419.2	1420.4	1421.6	1422.9	1424.2	1425.0	1425.6	1426.1	1426.6	1427.2	1428.0
150°	1448.3	1449.1	1449.9	1450.7	1451.5	1452.2	1452.7	1453.2	1453.8	1454.3	1454.9
152.5°	1474.4	1474.8	1475.2	1475.6	1475.9	1476.3	1476.7	1477.0	1477.2	1477.6	1478.6
155°	1511.3	1510.8	1510.2	1509.7	1509.1	1509.0	1509.3	1509.6	1509.9	1510.0	1511.5
157.5°	1539.9	1539.8	1539.8	1539.7	1539.6	1539.5	1539.3	1539.0	1538.7	1538.4	1540.0
160°	1557.4	1557.1	1556.8	1556.5	1556.2	1556.0	1555.8	1555.5	1555.2	1554.9	1556.5
162.5°	1573.9	1573.1	1572.4	1571.7	1571.0	1570.6	1570.3	1570.0	1569.7	1569.4	1571.3
165°	1593.7	1592.9	1592.0	1591.3	1590.4	1590.0	1589.7	1589.4	1589.1	1588.8	1591.0
167.5°	1609.2	1608.2	1607.0	1606.0	1604.9	1604.4	1604.4	1604.4	1604.4	1604.4	1606.6
170°	1618.0	1616.8	1615.8	1614.8	1613.6	1613.1	1613.1	1613.1	1613.1	1613.1	1615.2
172.5°	1623.8	1622.5	1621.2	1619.9	1618.6	1618.1	1618.3	1618.5	1618.7	1618.9	1621.1
175°	1631.3	1629.9	1628.6	1627.2	1625.9	1625.3	1625.6	1625.9	1626.2	1626.5	1628.3
177.5°	1633.2	1632.1	1631.1	1630.0	1628.9	1628.5	1628.7	1628.9	1629.1	1629.4	1631.1
180°	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3



TEST NUMBER: P332110-830

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1
2.5°	402.3	402.9	403.6	403.8	403.8	403.7	403.6	403.5
5°	401.6	402.5	403.2	403.6	403.5	403.3	403.2	403.1
7.5°	399.3	400.2	401.1	401.6	401.5	401.3	401.2	401.1
10°	396.8	397.8	398.7	399.1	398.9	398.7	398.5	398.3
12.5°	393.4	394.4	395.2	395.6	395.4	395.2	395.0	394.8
15°	387.1	388.0	389.1	389.5	389.4	389.3	389.2	389.1
17.5°	378.8	379.8	380.6	381.0	380.8	380.7	380.6	380.4
20°	372.9	373.7	374.7	375.1	375.2	375.3	375.4	375.5
22.5°	366.3	367.4	368.5	369.1	369.0	368.9	368.9	368.8
25°	355.2	356.5	357.7	358.4	358.4	358.4	358.4	358.4
27.5°	343.6	344.7	345.8	346.4	346.5	346.6	346.6	346.7
30°	335.6	336.9	338.0	338.6	338.6	338.6	338.6	338.6
32.5°	327.1	328.3	329.5	330.3	330.5	330.7	331.0	331.2
35°	314.3	315.8	317.3	318.2	318.6	319.0	319.3	319.7
37.5°	301.0	302.7	304.4	305.4	305.7	306.0	306.3	306.6
40°	292.3	294.0	295.6	296.6	297.0	297.5	297.8	298.2
42.5°	283.1	284.9	286.7	287.9	288.5	289.0	289.5	290.1
45°	269.4	271.3	273.1	274.5	275.2	276.0	276.8	277.6
47.5°	255.5	257.7	259.8	261.1	261.6	262.3	262.9	263.5
50°	246.0	248.3	250.5	252.0	252.7	253.4	254.0	254.8
52.5°	236.4	238.7	241.0	242.6	243.5	244.3	245.1	245.9
55°	221.8	224.4	227.1	228.8	229.5	230.4	231.1	231.9
57.5°	206.9	209.5	212.2	214.0	214.9	215.8	216.8	217.6
60°	196.5	199.3	202.0	203.9	204.9	206.0	207.1	208.2
62.5°	186.6	189.4	192.1	194.0	195.0	196.0	197.0	198.0
65°	171.0	173.9	176.8	178.8	179.7	180.8	181.7	182.7
67.5°	155.3	158.5	161.7	163.8	164.6	165.4	166.3	167.0
70°	145.1	148.2	151.3	153.4	154.3	155.2	156.3	157.2
72.5°	134.6	137.8	141.0	143.2	144.1	145.1	146.1	147.0
75°	118.9	122.1	125.4	127.5	128.7	129.9	131.0	132.2
77.5°	104.2	107.5	110.9	113.0	114.0	114.9	115.7	116.7
80°	94.4	97.8	101.1	103.2	104.2	105.2	106.2	107.2
82.5°	85.7	89.0	92.4	94.4	95.5	96.4	97.4	98.4
85°	73.4	76.7	80.0	82.2	83.1	84.2	85.1	86.1
87.5°	68.8	72.4	75.9	78.2	79.3	80.4	81.4	82.6
90°	87.5	91.9	96.3	99.2	100.8	102.3	103.8	105.3
92.5°	87.8	92.7	97.7	100.8	102.0	103.2	104.4	105.7
95°	90.9	95.8	100.7	103.7	104.6	105.6	106.6	107.5
97.5°	89.4	94.5	99.6	102.7	104.0	105.3	106.5	107.7
100°	88.1	93.1	98.1	101.2	102.5	103.8	105.0	106.2
102.5°	108.0	104.1	100.1	98.9	100.4	101.8	103.3	104.7
105°	208.5	163.5	118.6	96.8	98.3	99.7	101.1	102.5
107.5°	451.7	419.3	387.0	353.3	318.2	283.1	248.1	213.0
110°	562.0	555.6	549.3	527.3	489.6	451.8	414.1	376.4



TEST NUMBER: P332110-830

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	638.9	641.5	644.1	641.9	634.5	627.3	620.0	612.7
115°	729.0	734.1	739.0	742.5	744.4	746.2	748.1	750.0
117.5°	810.1	814.6	819.1	821.8	822.8	823.8	824.7	825.8
120°	863.5	867.9	872.3	874.9	875.5	876.2	876.8	877.6
122.5°	915.6	919.3	922.9	925.2	926.0	927.0	927.8	928.8
125°	988.8	991.4	994.0	995.9	997.1	998.3	999.6	1000.8
127.5°	1062.2	1065.0	1067.8	1069.2	1069.4	1069.5	1069.6	1069.7
130°	1106.3	1109.2	1112.1	1113.6	1113.7	1113.7	1113.8	1113.8
132.5°	1148.0	1150.8	1153.7	1155.1	1155.0	1154.9	1154.8	1154.7
135°	1211.4	1214.0	1216.5	1217.7	1217.4	1217.0	1216.7	1216.4
137.5°	1267.8	1270.6	1273.5	1274.9	1274.8	1274.8	1274.7	1274.7
140°	1303.6	1306.2	1308.7	1309.9	1309.9	1309.9	1309.8	1309.8
142.5°	1337.4	1339.5	1341.7	1342.7	1342.4	1342.1	1341.8	1341.6
145°	1385.4	1386.8	1388.1	1388.9	1389.3	1389.8	1390.2	1390.5
147.5°	1428.7	1429.6	1430.3	1430.2	1429.4	1428.4	1427.6	1426.6
150°	1455.4	1455.9	1456.5	1456.4	1455.9	1455.2	1454.6	1454.0
152.5°	1479.5	1480.5	1481.5	1481.4	1480.2	1478.9	1477.8	1476.6
155°	1512.8	1514.1	1515.5	1515.3	1513.7	1512.1	1510.5	1508.9
157.5°	1541.7	1543.3	1544.9	1544.6	1542.6	1540.5	1538.3	1536.3
160°	1558.1	1559.8	1561.4	1561.2	1559.3	1557.5	1555.6	1553.7
162.5°	1573.1	1575.0	1576.8	1576.9	1575.2	1573.6	1571.9	1570.2
165°	1593.2	1595.3	1597.5	1597.6	1595.7	1593.8	1592.0	1590.1
167.5°	1608.7	1610.8	1613.0	1613.0	1610.8	1608.7	1606.6	1604.4
170°	1617.4	1619.6	1621.7	1621.7	1619.6	1617.4	1615.2	1613.1
172.5°	1623.2	1625.4	1627.6	1627.4	1625.0	1622.7	1620.3	1618.0
175°	1630.2	1632.1	1634.0	1633.8	1631.7	1629.6	1627.4	1625.2
177.5°	1632.8	1634.6	1636.3	1636.1	1633.9	1631.7	1629.6	1627.4
180°	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3

(END OF REPORT)