

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: P332110-927

Luminaire Tested: **S123DIW-S340D1320U927-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332110-927  
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-S340D1320U927-4F0-1E-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: 5323.6 lumens  
Efficiency: N/A  
Efficacy: 114.2 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

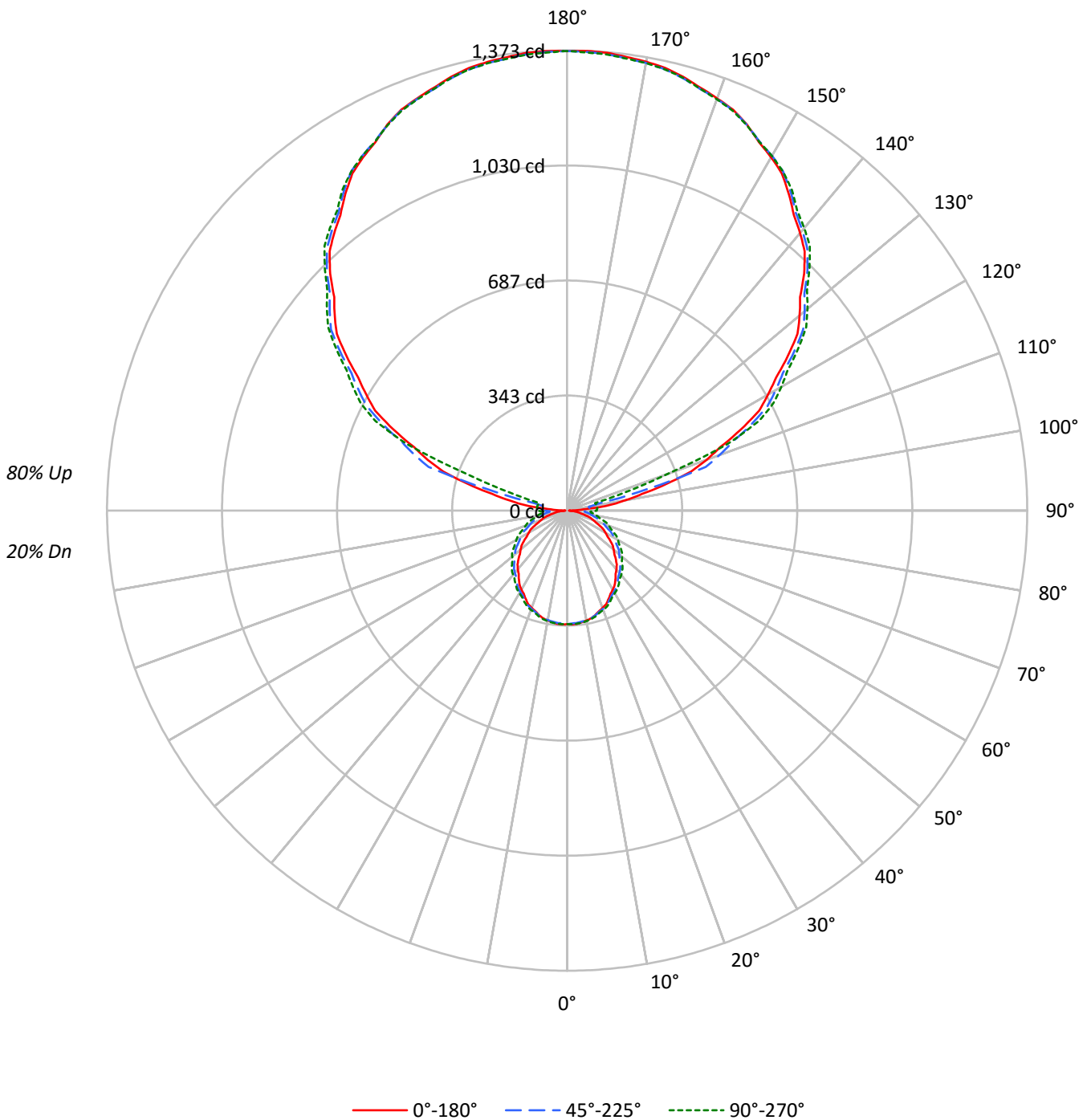
Input Watts (W): 46.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P332110-927

CATALOG NUMBER: S123DIW-S340D1320U927-4F0-1E-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	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					20			
1	91	86	82	79	80	76	73	70	57	55	53	40	39	38	24	24	23	16					16			
2	82	75	69	64	72	66	61	57	50	47	44	35	33	31	21	20	19	13					13			
3	75	66	59	53	66	58	52	47	44	40	37	31	28	26	19	17	16	11					11			
4	68	58	50	44	60	51	45	40	39	34	31	27	24	22	16	15	14	9					9			
5	62	51	44	38	55	46	39	34	35	30	26	24	21	19	15	13	12	8					8			
6	57	46	38	32	50	41	34	29	31	26	23	22	19	16	13	12	10	7					7			
7	53	41	33	28	46	37	30	25	28	23	20	20	17	14	12	10	9	6					6			
8	49	37	30	25	43	33	27	22	25	21	17	18	15	13	11	9	8	5					5			
9	45	34	27	22	40	30	24	20	23	19	15	16	13	11	10	8	7	5					5			
10	42	31	24	19	37	27	21	17	21	17	14	15	12	10	9	8	6	4					4			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3647	3647	3647
5°	3658	3556	3557
10°	3626	3473	3456
15°	3579	3380	3345
20°	3513	3274	3224
25°	3430	3152	3096
30°	3345	3043	2966
35°	3251	2926	2863
40°	3161	2820	2752
45°	3061	2718	2664
50°	2962	2618	2566
55°	2852	2516	2478
60°	2745	2411	2388
65°	2636	2300	2280
70°	2471	2174	2170
75°	2265	2031	2059
80°	2023	1890	1932
85°	1805	1794	1856



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	32.1	0.6
10°-20°	91.6	1.7
20°-30°	137.0	2.6
30°-40°	163.6	3.1
40°-50°	171.1	3.2
50°-60°	160.6	3.0
60°-70°	134.1	2.5
70°-80°	96.0	1.8
80°-90°	61.1	1.1
90°-100°	85.8	1.6
100°-110°	264.0	5.0
110°-120°	588.3	11.1
120°-130°	736.7	13.8
130°-140°	780.9	14.7
140°-150°	727.0	13.7
150°-160°	585.7	11.0
160°-170°	378.0	7.1
170°-180°	130.3	2.4
0°-30°	260.6	4.9
0°-40°	424.2	8.0
0°-60°	755.9	14.2
0°-90°	1047.0	19.7
90°-120°	938.0	17.6
90°-150°	3182.6	59.8
90°-180°	4277.0	80.3
0°-180°	5323.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	339	339	339	339	339	
5°	339	338	336	339	339	32
15°	323	324	324	327	327	91
25°	292	295	296	301	301	134
35°	251	257	262	267	269	157
45°	205	214	223	230	233	158
55°	156	169	182	192	195	140
65°	108	123	139	149	154	107
75°	59	76	94	106	111	63
85°	18	37	56	68	72	19
90°	6	34	66	82	88	6
95°	66	42	68	86	90	80
105°	306	321	251	91	86	325
115°	571	582	604	623	630	564
125°	804	812	827	836	841	718
135°	1000	1006	1014	1023	1022	770
145°	1153	1160	1162	1167	1169	722
155°	1270	1268	1269	1274	1268	585
165°	1340	1336	1335	1343	1336	378
175°	1371	1366	1367	1373	1366	130
180°	1371	1371	1371	1371	1371	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8
2.5°	340.3	340.2	339.9	339.8	339.5	339.2	338.7	338.1	337.6	337.1	337.6
5°	339.2	339.1	338.9	338.7	338.6	338.3	337.7	337.2	336.8	336.3	336.9
7.5°	335.9	336.0	336.0	336.0	336.0	335.8	335.3	334.9	334.4	333.9	334.7
10°	333.0	333.1	333.3	333.4	333.6	333.5	333.0	332.6	332.2	331.8	332.6
12.5°	329.4	329.6	329.9	330.1	330.3	330.3	330.0	329.7	329.5	329.2	329.9
15°	323.0	323.2	323.4	323.7	323.9	324.1	323.9	323.8	323.8	323.7	324.6
17.5°	314.9	315.4	315.8	316.3	316.8	317.0	317.0	317.0	317.0	317.0	317.7
20°	309.0	309.4	309.9	310.5	310.9	311.2	311.4	311.6	311.7	311.9	312.7
22.5°	302.8	303.2	303.7	304.2	304.8	305.1	305.3	305.5	305.8	306.0	307.0
25°	291.6	292.4	293.3	294.1	294.9	295.4	295.6	295.9	296.1	296.4	297.5
27.5°	280.4	281.3	282.3	283.2	284.2	284.9	285.3	285.9	286.5	286.9	287.9
30°	272.4	273.5	274.6	275.6	276.7	277.5	278.2	278.8	279.5	280.2	281.1
32.5°	263.6	264.7	265.9	267.1	268.3	269.3	270.2	271.1	272.0	272.7	273.9
35°	251.0	252.3	253.7	254.9	256.3	257.5	258.5	259.6	260.6	261.7	262.9
37.5°	237.7	239.2	240.7	242.2	243.6	245.0	246.3	247.6	249.0	250.3	251.7
40°	228.9	230.4	231.8	233.3	234.7	236.3	238.0	239.6	241.2	242.9	244.3
42.5°	219.1	220.9	222.7	224.5	226.3	228.1	229.8	231.5	233.2	234.9	236.5
45°	205.3	207.2	209.1	211.1	213.1	215.1	217.1	219.2	221.3	223.3	224.9
47.5°	190.7	192.9	195.1	197.4	199.6	201.9	204.2	206.6	208.9	211.3	213.0
50°	181.3	183.5	185.8	188.1	190.4	192.8	195.4	198.0	200.5	203.0	204.9
52.5°	171.2	173.6	176.0	178.5	180.9	183.5	186.3	189.2	191.9	194.7	196.7
55°	156.5	159.2	161.9	164.6	167.3	170.2	173.1	176.1	179.0	182.0	184.2
57.5°	142.2	145.0	147.8	150.7	153.4	156.5	159.7	163.0	166.2	169.4	171.7
60°	132.1	135.1	138.1	141.0	143.9	147.1	150.5	153.8	157.2	160.6	162.9
62.5°	122.7	125.7	128.7	131.7	134.8	138.1	141.6	145.2	148.8	152.3	154.6
65°	108.1	111.4	114.5	117.7	121.0	124.4	127.9	131.6	135.1	138.8	141.2
67.5°	93.4	96.8	100.2	103.5	106.9	110.5	114.2	117.9	121.5	125.2	127.9
70°	83.0	86.6	90.1	93.6	97.1	100.9	104.8	108.8	112.7	116.6	119.3
72.5°	73.6	77.2	80.6	84.2	87.7	91.5	95.5	99.7	103.7	107.8	110.5
75°	58.7	62.6	66.4	70.3	74.1	78.1	82.2	86.3	90.4	94.5	97.2
77.5°	45.7	49.6	53.5	57.4	61.2	65.3	69.4	73.5	77.6	81.8	84.7
80°	36.5	40.6	44.6	48.6	52.6	56.8	61.0	65.3	69.6	73.8	76.6
82.5°	28.6	32.6	36.8	40.8	44.9	49.1	53.5	57.8	62.1	66.5	69.2
85°	18.1	22.2	26.3	30.4	34.5	38.7	43.1	47.4	51.7	56.1	58.9
87.5°	10.1	14.6	19.1	23.6	28.2	32.8	37.6	42.4	47.1	51.9	54.9
90°	5.8	12.1	18.4	24.6	31.0	37.6	44.8	51.9	59.0	66.1	69.9
92.5°	23.4	26.5	29.5	32.4	35.4	40.1	46.4	52.8	59.1	65.4	69.6
95°	66.2	60.1	54.0	47.9	41.9	42.1	48.6	55.1	61.6	68.1	72.2
97.5°	128.5	127.2	126.0	124.7	123.4	116.5	104.1	91.6	79.1	66.7	70.9
100°	175.5	182.6	189.8	196.9	204.1	191.9	160.3	128.8	97.3	65.8	69.9
102.5°	228.9	234.6	240.2	245.8	251.4	236.8	201.9	167.1	132.2	97.4	94.0
105°	306.5	310.9	315.4	319.9	324.3	318.1	301.3	284.5	267.6	250.7	213.0
107.5°	387.9	391.7	395.3	398.9	402.6	407.7	414.3	420.9	427.4	434.0	406.8
110°	442.3	445.5	448.9	452.1	455.4	459.9	465.7	471.5	477.2	483.0	477.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	494.4	497.3	500.1	503.0	505.8	510.0	515.6	521.3	527.0	532.6	534.8
115°	571.2	573.6	575.9	578.3	580.6	584.3	589.3	594.3	599.3	604.3	608.5
117.5°	645.9	648.2	650.5	652.8	655.1	658.1	661.9	665.7	669.6	673.4	677.2
120°	692.1	694.5	697.0	699.4	701.9	704.8	708.2	711.5	714.9	718.4	722.1
122.5°	739.3	741.2	743.1	745.0	746.9	749.6	753.0	756.5	759.9	763.3	766.4
125°	803.7	805.6	807.4	809.2	811.0	813.6	816.8	820.1	823.4	826.7	828.9
127.5°	866.5	868.2	870.0	871.7	873.5	875.8	878.8	881.9	885.0	888.0	890.4
130°	905.6	907.4	909.1	910.9	912.5	914.7	917.3	919.8	922.3	924.9	927.3
132.5°	942.9	944.6	946.4	948.2	950.0	951.9	953.9	956.0	958.1	960.0	962.4
135°	1000.0	1001.2	1002.6	1003.9	1005.1	1006.6	1008.4	1010.3	1012.1	1013.8	1016.1
137.5°	1048.8	1050.4	1052.1	1053.8	1055.4	1056.8	1057.8	1058.8	1059.8	1060.8	1063.2
140°	1081.1	1082.4	1083.9	1085.2	1086.6	1087.7	1088.6	1089.6	1090.4	1091.4	1093.5
142.5°	1111.3	1112.5	1113.9	1115.2	1116.4	1117.5	1118.2	1118.9	1119.6	1120.4	1122.2
145°	1153.4	1154.9	1156.4	1157.9	1159.4	1160.4	1160.9	1161.3	1161.8	1162.2	1163.3
147.5°	1192.8	1193.8	1194.8	1195.9	1197.0	1197.7	1198.2	1198.6	1199.0	1199.5	1200.2
150°	1217.3	1217.9	1218.6	1219.2	1220.0	1220.5	1221.0	1221.4	1221.9	1222.3	1222.8
152.5°	1239.2	1239.5	1239.8	1240.2	1240.5	1240.8	1241.1	1241.3	1241.6	1241.9	1242.7
155°	1270.2	1269.8	1269.3	1268.8	1268.4	1268.3	1268.5	1268.8	1269.0	1269.2	1270.3
157.5°	1294.3	1294.2	1294.2	1294.1	1294.0	1294.0	1293.7	1293.5	1293.2	1293.0	1294.3
160°	1308.9	1308.7	1308.4	1308.2	1308.0	1307.8	1307.6	1307.3	1307.1	1306.9	1308.2
162.5°	1322.8	1322.2	1321.6	1321.0	1320.4	1320.0	1319.8	1319.5	1319.3	1319.1	1320.6
165°	1339.5	1338.8	1338.1	1337.4	1336.7	1336.3	1336.1	1335.9	1335.6	1335.4	1337.2
167.5°	1352.5	1351.6	1350.7	1349.8	1348.8	1348.5	1348.5	1348.5	1348.5	1348.5	1350.3
170°	1359.9	1358.9	1358.0	1357.2	1356.2	1355.7	1355.7	1355.7	1355.7	1355.7	1357.6
172.5°	1364.8	1363.7	1362.6	1361.4	1360.4	1359.9	1360.1	1360.3	1360.5	1360.7	1362.5
175°	1371.0	1369.9	1368.8	1367.6	1366.5	1366.0	1366.3	1366.5	1366.8	1367.0	1368.6
177.5°	1372.7	1371.7	1370.9	1370.0	1369.0	1368.7	1368.9	1369.0	1369.2	1369.4	1370.9
180°	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8
2.5°	338.1	338.7	339.2	339.4	339.4	339.3	339.2	339.1
5°	337.5	338.3	338.9	339.2	339.1	339.0	338.9	338.8
7.5°	335.6	336.4	337.2	337.5	337.5	337.3	337.2	337.2
10°	333.5	334.3	335.1	335.4	335.3	335.1	334.9	334.8
12.5°	330.7	331.4	332.2	332.5	332.3	332.2	332.0	331.8
15°	325.3	326.1	327.0	327.3	327.3	327.2	327.1	327.0
17.5°	318.4	319.2	319.9	320.2	320.0	320.0	319.9	319.7
20°	313.4	314.1	314.9	315.3	315.4	315.4	315.5	315.6
22.5°	307.8	308.8	309.7	310.2	310.1	310.1	310.1	310.0
25°	298.5	299.6	300.6	301.2	301.2	301.2	301.2	301.2
27.5°	288.8	289.7	290.7	291.1	291.2	291.3	291.3	291.4
30°	282.1	283.1	284.1	284.6	284.6	284.6	284.6	284.6
32.5°	274.9	275.9	276.9	277.6	277.8	278.0	278.2	278.4
35°	264.2	265.4	266.6	267.4	267.8	268.1	268.4	268.7
37.5°	253.0	254.4	255.9	256.7	256.9	257.2	257.5	257.7
40°	245.7	247.1	248.4	249.3	249.6	250.0	250.3	250.6
42.5°	238.0	239.5	241.0	242.0	242.5	242.9	243.4	243.8
45°	226.4	228.0	229.6	230.7	231.3	232.0	232.7	233.3
47.5°	214.8	216.6	218.3	219.4	219.9	220.5	220.9	221.5
50°	206.8	208.7	210.6	211.8	212.4	212.9	213.5	214.1
52.5°	198.7	200.6	202.6	203.9	204.6	205.3	206.0	206.7
55°	186.4	188.6	190.8	192.3	192.9	193.6	194.2	194.9
57.5°	173.9	176.1	178.3	179.8	180.6	181.4	182.2	182.9
60°	165.2	167.5	169.8	171.3	172.2	173.2	174.0	175.0
62.5°	156.9	159.1	161.4	163.0	163.9	164.7	165.6	166.4
65°	143.7	146.2	148.6	150.3	151.1	151.9	152.7	153.5
67.5°	130.6	133.2	135.9	137.7	138.3	139.0	139.7	140.4
70°	121.9	124.5	127.1	128.9	129.7	130.5	131.3	132.1
72.5°	113.1	115.8	118.5	120.3	121.1	121.9	122.8	123.6
75°	99.9	102.6	105.4	107.2	108.1	109.2	110.1	111.1
77.5°	87.5	90.4	93.2	95.0	95.8	96.6	97.3	98.1
80°	79.4	82.2	85.0	86.7	87.6	88.4	89.3	90.1
82.5°	72.0	74.8	77.6	79.4	80.2	81.0	81.8	82.7
85°	61.7	64.5	67.3	69.1	69.9	70.7	71.5	72.3
87.5°	57.8	60.8	63.8	65.8	66.6	67.6	68.4	69.4
90°	73.5	77.2	81.0	83.4	84.7	86.0	87.2	88.5
92.5°	73.8	78.0	82.1	84.7	85.7	86.7	87.8	88.8
95°	76.4	80.5	84.6	87.1	87.9	88.7	89.6	90.4
97.5°	75.2	79.5	83.7	86.3	87.4	88.5	89.5	90.5
100°	74.1	78.3	82.5	85.1	86.2	87.2	88.2	89.3
102.5°	90.8	87.5	84.1	83.1	84.4	85.6	86.8	88.0
105°	175.2	137.4	99.7	81.4	82.6	83.8	85.0	86.2
107.5°	379.6	352.4	325.3	296.9	267.4	238.0	208.5	179.0
110°	472.4	467.0	461.7	443.1	411.5	379.7	348.0	316.3





TEST NUMBER: P332110-927

CATALOG NUMBER: S123DIW-S340D1320U927-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	537.0	539.2	541.4	539.5	533.3	527.2	521.1	515.0
115°	612.7	617.0	621.2	624.1	625.7	627.2	628.8	630.3
117.5°	680.9	684.7	688.4	690.7	691.6	692.4	693.2	694.0
120°	725.7	729.4	733.2	735.3	735.9	736.4	737.0	737.6
122.5°	769.5	772.6	775.7	777.6	778.3	779.1	779.8	780.6
125°	831.1	833.2	835.4	837.0	838.0	839.1	840.1	841.1
127.5°	892.7	895.1	897.5	898.7	898.8	898.9	899.0	899.0
130°	929.8	932.2	934.7	936.0	936.0	936.0	936.1	936.1
132.5°	964.9	967.3	969.6	970.8	970.7	970.7	970.6	970.5
135°	1018.2	1020.3	1022.5	1023.4	1023.2	1022.9	1022.6	1022.4
137.5°	1065.6	1067.9	1070.3	1071.5	1071.4	1071.4	1071.3	1071.3
140°	1095.7	1097.8	1099.9	1101.0	1101.0	1100.9	1100.8	1100.8
142.5°	1124.0	1125.8	1127.7	1128.5	1128.2	1128.0	1127.8	1127.6
145°	1164.4	1165.5	1166.6	1167.4	1167.7	1168.1	1168.4	1168.7
147.5°	1200.8	1201.5	1202.1	1202.1	1201.3	1200.6	1199.8	1199.0
150°	1223.2	1223.7	1224.2	1224.1	1223.6	1223.1	1222.6	1222.0
152.5°	1243.5	1244.4	1245.2	1245.1	1244.0	1243.0	1242.1	1241.0
155°	1271.5	1272.6	1273.7	1273.6	1272.2	1270.9	1269.6	1268.2
157.5°	1295.8	1297.1	1298.5	1298.2	1296.5	1294.7	1292.9	1291.2
160°	1309.6	1311.0	1312.3	1312.2	1310.6	1309.0	1307.4	1305.8
162.5°	1322.2	1323.7	1325.2	1325.3	1323.9	1322.5	1321.1	1319.7
165°	1339.0	1340.8	1342.7	1342.7	1341.2	1339.6	1338.0	1336.4
167.5°	1352.1	1353.8	1355.7	1355.7	1353.8	1352.1	1350.3	1348.5
170°	1359.4	1361.2	1363.0	1363.0	1361.2	1359.4	1357.6	1355.7
172.5°	1364.3	1366.1	1367.9	1367.8	1365.8	1363.8	1361.8	1359.9
175°	1370.2	1371.7	1373.3	1373.2	1371.4	1369.6	1367.8	1366.0
177.5°	1372.3	1373.8	1375.2	1375.1	1373.2	1371.4	1369.6	1367.8
180°	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0	1371.0

(END OF REPORT)