

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: P331905-940

Luminaire Tested: **S123DIP-S340D1195U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331905-940  
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: S123DIP-S340D1195U940-4F0-1E-UDD-D1  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4939.9 lumens  
Efficiency: N/A  
Efficacy: 117.1 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

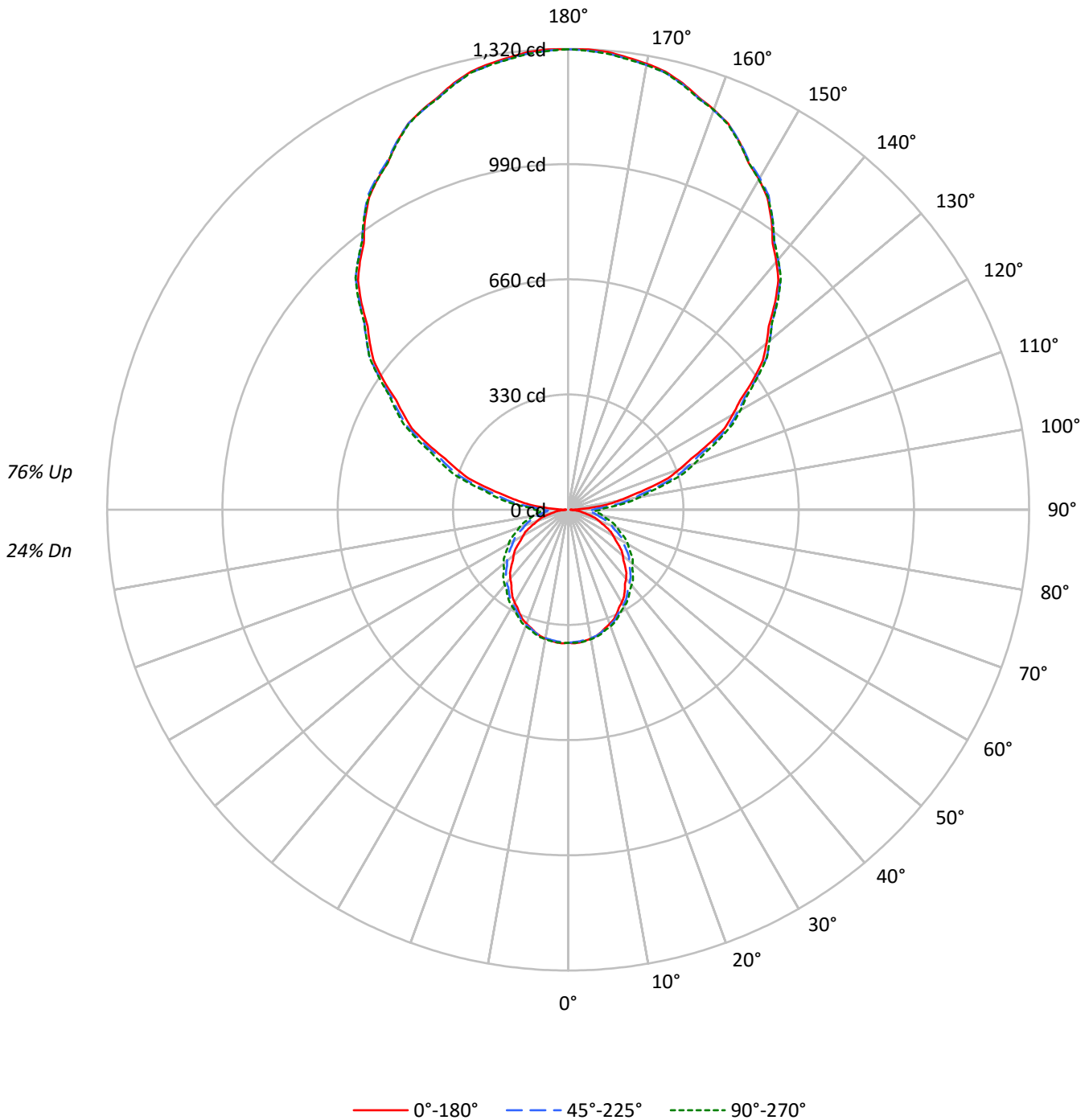
Input Watts (W): 42.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	101	101	101	101	90	90	90	90	69	69	69	50	50	50	32	32	32	24
1	91	87	83	80	81	77	74	71	59	57	55	43	41	40	27	27	26	19
2	83	76	70	64	73	67	62	58	52	48	45	37	35	33	24	23	21	16
3	76	66	59	53	67	59	53	48	45	41	38	33	30	28	21	19	18	13
4	69	58	51	45	61	52	45	40	40	35	32	29	26	23	19	17	15	11
5	63	52	44	38	56	46	39	34	36	31	27	26	23	20	17	15	13	9
6	58	46	38	33	51	41	35	30	32	27	23	23	20	17	15	13	12	8
7	53	42	34	28	47	37	30	26	29	24	20	21	18	15	14	12	10	7
8	49	37	30	25	44	34	27	23	26	21	18	19	16	14	13	11	9	6
9	46	34	27	22	41	31	24	20	24	19	16	18	14	12	12	10	8	6
10	43	31	24	19	38	28	22	18	22	17	14	16	13	11	11	9	7	5

**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	0.7
10°-20°	103.1	2.1
20°-30°	154.2	3.1
30°-40°	184.1	3.7
40°-50°	192.6	3.9
50°-60°	180.7	3.7
60°-70°	151.0	3.1
70°-80°	108.0	2.2
80°-90°	68.3	1.4
90°-100°	126.4	2.6
100°-110°	286.9	5.8
110°-120°	457.2	9.3
120°-130°	586.7	11.9
130°-140°	651.7	13.2
140°-150°	636.7	12.9
150°-160°	535.1	10.8
160°-170°	356.2	7.2
170°-180°	124.7	2.5
0°-30°	293.4	5.9
0°-40°	477.5	9.7
0°-60°	850.9	17.2
0°-90°	1178.2	23.9
90°-120°	870.5	17.6
90°-150°	2745.6	55.6
90°-180°	3762.0	76.2
0°-180°	4939.9	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°	6	37	72	89	96	7
95°	66	90	118	134	139	72
105°	236	249	276	287	293	253
115°	442	451	463	474	477	438
125°	646	649	659	663	662	576
135°	837	843	846	849	850	645
145°	1015	1016	1020	1022	1019	633
155°	1162	1162	1162	1166	1159	534
165°	1265	1262	1262	1267	1261	357
175°	1316	1312	1312	1317	1311	125
180°	1319	1319	1319	1319	1319	



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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°	11.2	16.3	21.4	26.4	31.5	36.6	42.0	47.3	52.6	57.9	61.3
90°	6.4	13.3	20.1	26.9	33.7	41.0	48.7	56.4	64.1	71.8	75.9
92.5°	30.1	35.8	41.5	47.1	52.7	58.8	65.1	71.4	77.8	84.1	87.9
95°	65.7	70.9	76.2	81.3	86.6	92.4	98.7	105.0	111.5	117.8	121.6
97.5°	112.6	117.1	121.5	126.0	130.5	135.5	141.2	146.8	152.5	158.1	161.9
100°	144.6	149.0	153.3	157.7	162.0	166.8	172.3	177.6	183.1	188.4	191.8
102.5°	181.6	185.1	188.6	192.1	195.6	200.2	205.8	211.5	217.2	222.9	226.2
105°	236.5	239.2	241.8	244.5	247.2	251.5	257.5	263.6	269.7	275.7	278.2
107.5°	299.8	301.9	304.1	306.2	308.4	311.7	316.4	320.9	325.6	330.2	333.4
110°	339.2	341.3	343.5	345.5	347.7	350.8	355.0	359.2	363.3	367.5	370.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	380.7	382.3	384.0	385.6	387.3	389.9	393.5	397.2	400.8	404.4	407.9
115°	442.4	444.2	446.0	447.8	449.6	451.9	454.8	457.6	460.5	463.4	465.8
117.5°	504.9	506.0	507.2	508.4	509.4	511.3	513.8	516.4	518.9	521.4	523.5
120°	543.5	545.4	547.2	549.0	550.9	552.8	554.6	556.5	558.5	560.4	562.2
122.5°	584.2	585.4	586.7	587.9	589.2	590.9	593.3	595.5	597.8	600.1	601.5
125°	645.7	646.4	647.0	647.7	648.5	649.9	652.1	654.3	656.6	658.8	659.8
127.5°	702.8	704.3	705.6	707.0	708.4	710.0	711.7	713.4	715.1	716.8	717.3
130°	741.0	742.7	744.5	746.3	748.0	749.5	750.6	751.8	752.9	754.0	754.9
132.5°	778.8	780.6	782.5	784.3	786.0	787.5	788.5	789.4	790.4	791.4	791.9
135°	837.0	838.2	839.5	840.8	842.1	843.1	843.9	844.7	845.5	846.2	847.0
137.5°	890.7	891.8	892.9	893.9	895.0	896.2	897.3	898.5	899.6	900.8	901.3
140°	927.6	928.8	930.0	931.1	932.3	933.1	933.6	934.2	934.7	935.1	936.3
142.5°	961.7	962.8	963.9	964.9	966.0	966.8	967.2	967.7	968.1	968.7	969.6
145°	1014.7	1015.1	1015.5	1015.8	1016.2	1016.7	1017.4	1018.1	1018.8	1019.5	1020.0
147.5°	1060.7	1061.6	1062.4	1063.2	1064.1	1064.8	1065.4	1066.0	1066.7	1067.4	1067.6
150°	1093.1	1093.5	1094.0	1094.4	1094.9	1095.4	1095.8	1096.3	1096.7	1097.2	1097.2
152.5°	1119.5	1120.3	1120.9	1121.5	1122.1	1122.6	1122.8	1123.2	1123.5	1123.7	1124.1
155°	1161.5	1161.5	1161.5	1161.5	1161.5	1161.5	1161.8	1162.0	1162.3	1162.4	1163.4
157.5°	1197.0	1196.8	1196.5	1196.2	1196.0	1195.9	1196.1	1196.3	1196.5	1196.7	1197.7
160°	1219.4	1219.0	1218.5	1218.1	1217.6	1217.4	1217.4	1217.4	1217.4	1217.4	1218.5
162.5°	1239.3	1238.7	1238.1	1237.4	1236.8	1236.5	1236.7	1236.9	1237.1	1237.2	1238.4
165°	1265.1	1264.4	1263.6	1262.9	1262.3	1261.9	1261.9	1261.9	1261.9	1261.9	1263.3
167.5°	1285.6	1284.6	1283.7	1282.8	1281.8	1281.5	1281.7	1281.8	1282.0	1282.2	1283.6
170°	1297.2	1296.2	1295.3	1294.4	1293.4	1293.0	1293.0	1293.0	1293.0	1293.0	1294.6
172.5°	1306.3	1305.4	1304.4	1303.5	1302.6	1302.2	1302.2	1302.2	1302.2	1302.2	1303.6
175°	1315.8	1314.9	1313.9	1313.0	1312.2	1311.6	1311.6	1311.6	1311.6	1311.6	1313.0
177.5°	1319.7	1319.0	1318.3	1317.5	1316.8	1316.4	1316.4	1316.4	1316.4	1316.4	1317.5
180°	1318.9	1318.9	1318.9	1318.9	1318.9	1318.9	1318.9	1318.9	1318.9	1318.9	1318.9



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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°	64.6	67.9	71.2	73.4	74.4	75.4	76.4	77.4
90°	79.9	84.0	88.1	90.8	92.2	93.5	95.0	96.3
92.5°	91.7	95.5	99.2	101.5	102.0	102.6	103.2	103.8
95°	125.4	129.1	133.0	135.3	136.3	137.1	138.0	139.0
97.5°	165.8	169.5	173.3	175.7	176.5	177.4	178.2	179.0
100°	195.2	198.6	201.9	204.3	205.7	207.1	208.5	209.8
102.5°	229.5	232.8	236.1	238.2	239.0	239.9	240.7	241.5
105°	280.8	283.4	286.0	287.9	289.3	290.5	291.9	293.1
107.5°	336.6	339.8	343.0	344.9	345.4	346.0	346.5	347.1
110°	374.1	377.5	380.8	382.5	382.8	383.1	383.3	383.6





TEST NUMBER: P331905-940

CATALOG NUMBER: S123DIP-S340D1195U940-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	411.3	414.7	418.1	420.3	421.0	421.7	422.4	423.1
115°	468.2	470.7	473.1	474.7	475.2	475.6	476.2	476.7
117.5°	525.7	527.9	530.0	531.1	531.2	531.3	531.4	531.5
120°	564.1	566.1	567.9	569.0	569.2	569.4	569.5	569.7
122.5°	603.1	604.5	605.9	606.6	606.6	606.6	606.6	606.6
125°	660.8	661.8	662.8	663.2	662.9	662.6	662.4	662.1
127.5°	717.8	718.4	718.9	719.0	718.5	718.1	717.6	717.3
130°	755.7	756.5	757.4	757.3	756.3	755.2	754.1	753.0
132.5°	792.6	793.1	793.6	793.6	793.0	792.4	791.8	791.2
135°	847.7	848.5	849.3	849.6	849.6	849.6	849.6	849.6
137.5°	901.8	902.3	902.8	902.9	902.4	902.1	901.6	901.2
140°	937.5	938.6	939.8	939.8	938.6	937.5	936.3	935.1
142.5°	970.6	971.7	972.7	972.8	972.0	971.3	970.4	969.6
145°	1020.5	1021.0	1021.5	1021.5	1020.9	1020.4	1019.8	1019.3
147.5°	1067.8	1068.0	1068.3	1067.8	1066.8	1065.7	1064.7	1063.6
150°	1097.2	1097.2	1097.2	1096.6	1095.4	1094.2	1093.0	1091.8
152.5°	1124.4	1124.8	1125.2	1124.8	1123.6	1122.5	1121.3	1120.2
155°	1164.3	1165.2	1166.2	1165.8	1164.2	1162.6	1161.0	1159.3
157.5°	1198.5	1199.5	1200.5	1200.3	1199.1	1197.7	1196.5	1195.2
160°	1219.7	1220.8	1222.0	1222.1	1221.2	1220.2	1219.3	1218.4
162.5°	1239.6	1240.7	1241.9	1241.7	1240.2	1238.8	1237.2	1235.8
165°	1264.7	1266.1	1267.5	1267.3	1265.7	1264.1	1262.5	1260.9
167.5°	1285.0	1286.5	1287.9	1287.9	1286.5	1285.0	1283.6	1282.2
170°	1296.2	1297.9	1299.5	1299.5	1297.9	1296.2	1294.6	1293.0
172.5°	1305.0	1306.4	1307.9	1307.8	1306.1	1304.5	1302.9	1301.3
175°	1314.4	1315.8	1317.1	1317.1	1315.5	1313.8	1312.2	1310.6
177.5°	1318.7	1319.7	1320.8	1320.7	1319.5	1318.1	1316.9	1315.6
180°	1318.9	1318.9	1318.9	1318.9	1318.9	1318.9	1318.9	1318.9

(END OF REPORT)