

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: P332683-935

Luminaire Tested: **S124DIP-S1195D590U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332683-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S1195D590U935-4F0-1E-UDD-D1  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 590 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5948.7 lumens  
Efficiency: N/A  
Efficacy: 108.0 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: Semi-Direct

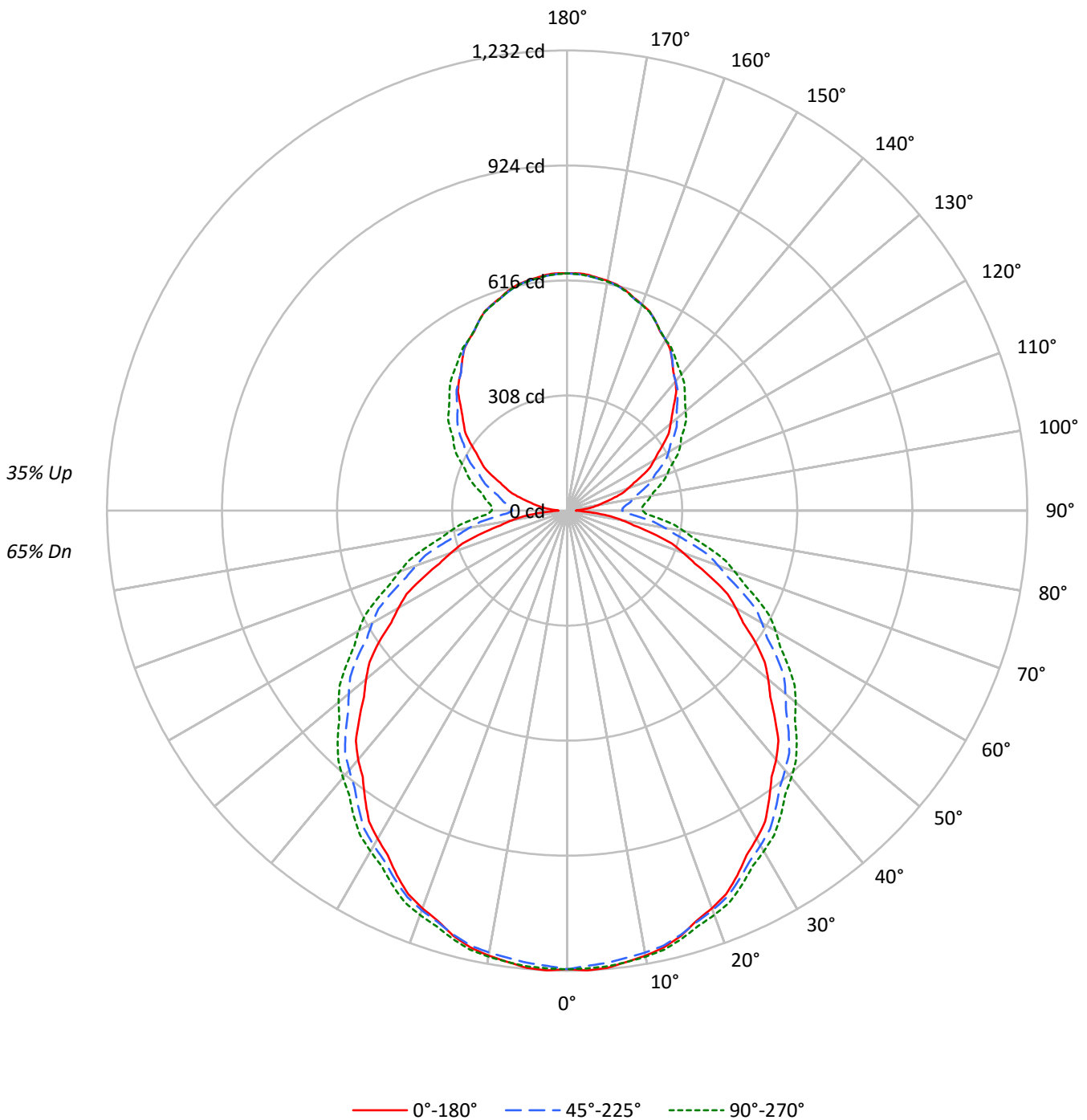
Input Watts (W): 55.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	111	111	111	111	104	104	104	104	92	92	92	80	80	80	70	70	70	65
1	100	95	90	86	94	89	85	82	79	76	73	69	66	64	60	58	57	52
2	90	82	75	69	84	77	71	66	68	63	59	60	56	53	52	49	47	43
3	82	72	64	57	77	68	60	54	60	54	49	52	48	44	45	42	39	35
4	75	63	55	48	70	60	52	46	53	46	42	46	41	37	40	36	33	30
5	69	56	47	41	64	53	45	39	47	41	36	41	36	32	36	32	29	26
6	63	50	42	35	59	48	40	34	42	36	31	37	32	28	33	28	25	22
7	59	45	37	31	55	43	35	30	38	32	27	34	29	25	30	26	22	20
8	54	41	33	27	51	39	32	26	35	29	24	31	26	22	27	23	20	18
9	51	38	30	24	47	36	28	23	32	26	22	29	23	20	25	21	18	16
10	47	35	27	22	44	33	26	21	30	24	19	26	21	18	23	19	16	14

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

	0°	45°	90°
0°	9912	9912	9912
5°	9942	9687	9715
10°	9882	9528	9521
15°	9793	9345	9294
20°	9660	9143	9072
25°	9509	8916	8829
30°	9346	8690	8579
35°	9161	8459	8360
40°	9014	8239	8132
45°	8795	8036	7936
50°	8610	7802	7728
55°	8420	7582	7486
60°	8121	7301	7265
65°	7793	6999	6992
70°	7397	6655	6676
75°	6845	6278	6390
80°	6233	5915	6107
85°	5446	5591	5943



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	116.3	2.0
10°-20°	333.1	5.6
20°-30°	503.7	8.5
30°-40°	609.4	10.2
40°-50°	644.3	10.8
50°-60°	606.4	10.2
60°-70°	503.1	8.5
70°-80°	353.4	5.9
80°-90°	201.7	3.4
90°-100°	160.5	2.7
100°-110°	211.9	3.6
110°-120°	269.5	4.5
120°-130°	310.9	5.2
130°-140°	326.2	5.5
140°-150°	309.3	5.2
150°-160°	257.7	4.3
160°-170°	171.5	2.9
170°-180°	60.0	1.0
0°-30°	953.1	16.0
0°-40°	1562.5	26.3
0°-60°	2813.1	47.3
0°-90°	3871.2	65.1
90°-120°	641.9	10.8
90°-150°	1588.3	26.7
90°-180°	2078.0	34.9
0°-180°	5948.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1228	1228	1228	1228	1228	
5°	1229	1225	1215	1226	1225	117
15°	1178	1179	1176	1187	1186	332
25°	1078	1086	1090	1105	1107	496
35°	943	959	973	992	997	590
45°	786	813	839	861	869	608
55°	616	646	686	712	722	549
65°	426	470	517	550	562	422
75°	236	288	345	382	396	252
85°	73	131	192	232	248	78
90°	24	84	147	188	202	16
95°	47	98	157	194	208	47
105°	127	156	208	242	256	135
115°	222	236	278	306	317	220
125°	317	318	350	374	382	283
135°	405	408	418	438	445	314
145°	490	491	491	499	503	307
155°	560	560	559	561	559	258
165°	609	608	607	610	608	172
175°	634	632	631	634	631	60
180°	635	635	635	635	635	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1227.8	1227.8	1227.8	1227.8	1227.8	1227.8	1227.8	1227.8	1227.8	1227.8	1227.8
2.5°	1232.2	1231.4	1230.7	1229.9	1229.2	1227.9	1225.9	1224.0	1222.0	1220.0	1221.8
5°	1229.1	1228.2	1227.3	1226.4	1225.5	1223.9	1221.8	1219.6	1217.5	1215.4	1217.8
7.5°	1218.7	1218.1	1217.5	1217.0	1216.5	1215.3	1213.6	1211.8	1210.0	1208.2	1211.0
10°	1209.9	1209.5	1209.3	1208.9	1208.7	1207.7	1206.2	1204.7	1203.2	1201.6	1204.4
12.5°	1197.7	1197.7	1197.7	1197.6	1197.6	1197.0	1195.9	1194.9	1193.9	1192.8	1195.3
15°	1178.3	1178.5	1178.9	1179.1	1179.5	1179.1	1178.3	1177.3	1176.4	1175.5	1178.3
17.5°	1151.6	1152.5	1153.4	1154.3	1155.2	1155.6	1155.5	1155.2	1155.0	1154.9	1157.7
20°	1132.9	1133.8	1134.7	1135.7	1136.5	1137.1	1137.5	1137.8	1138.1	1138.4	1141.4
22.5°	1112.0	1113.1	1114.3	1115.4	1116.6	1117.5	1118.0	1118.6	1119.1	1119.6	1122.7
25°	1077.9	1079.7	1081.6	1083.4	1085.2	1086.6	1087.5	1088.4	1089.3	1090.3	1093.6
27.5°	1039.9	1042.7	1045.3	1048.0	1050.7	1052.7	1054.1	1055.6	1057.0	1058.3	1061.4
30°	1014.6	1017.1	1019.5	1022.0	1024.4	1026.7	1028.8	1031.0	1033.1	1035.3	1038.6
32.5°	987.1	990.1	993.0	995.9	998.8	1001.5	1003.9	1006.3	1008.7	1011.1	1014.9
35°	943.1	946.8	950.5	954.2	957.8	961.1	964.2	967.2	970.3	973.4	977.7
37.5°	898.9	903.1	907.3	911.5	915.8	919.7	923.5	927.3	931.1	934.9	939.3
40°	870.3	874.3	878.2	882.2	886.1	890.3	894.6	898.9	903.1	907.4	912.0
42.5°	837.3	841.7	846.2	850.7	855.1	859.9	864.9	869.9	874.9	879.9	885.0
45°	786.4	792.2	798.1	803.8	809.6	815.5	821.2	827.1	832.8	838.7	843.9
47.5°	737.7	743.7	749.8	755.7	761.7	768.1	774.8	781.5	788.2	795.0	800.3
50°	702.6	709.3	716.0	722.7	729.4	736.2	742.9	749.6	756.3	763.0	769.1
52.5°	667.4	674.1	680.8	687.5	694.2	701.5	709.1	716.9	724.5	732.3	738.4
55°	616.0	622.3	628.8	635.2	641.6	649.4	658.6	667.7	676.9	686.0	692.2
57.5°	558.4	566.5	574.4	582.3	590.2	598.7	607.9	617.0	626.1	635.2	642.5
60°	521.1	529.0	536.9	544.9	552.8	561.9	572.0	582.0	592.1	602.2	609.2
62.5°	484.7	493.4	502.1	510.8	519.4	528.8	539.0	549.1	559.1	569.2	576.2
65°	426.2	436.0	445.7	455.6	465.3	475.4	485.8	496.2	506.5	516.9	524.6
67.5°	369.8	380.2	390.6	401.0	411.4	422.1	433.3	444.4	455.5	466.7	474.4
70°	331.3	341.7	352.1	362.5	372.9	383.9	395.5	407.1	418.7	430.3	438.6
72.5°	293.9	304.5	315.2	325.8	336.5	347.9	360.3	372.6	385.0	397.4	405.4
75°	236.5	247.8	259.1	270.4	281.7	293.8	306.6	319.4	332.3	345.1	353.6
77.5°	182.9	194.8	206.8	218.8	230.7	243.5	256.9	270.4	283.8	297.2	305.9
80°	149.9	162.0	174.3	186.5	198.7	211.5	225.0	238.5	251.9	265.4	274.5
82.5°	116.8	129.6	142.3	155.0	167.7	180.8	194.2	207.7	221.1	234.5	243.9
85°	72.8	85.7	98.5	111.3	124.2	137.5	151.2	165.0	178.7	192.5	201.6
87.5°	41.0	53.7	66.4	79.1	91.8	105.0	118.5	132.1	145.6	159.2	168.2
90°	23.5	36.9	50.3	63.7	77.1	90.8	104.9	118.9	132.9	146.9	156.4
92.5°	31.4	43.7	56.1	68.5	80.9	93.9	107.7	121.5	135.2	149.0	158.0
95°	47.4	58.4	69.5	80.5	91.6	103.8	117.1	130.4	143.6	157.0	165.5
97.5°	67.7	77.1	86.6	96.1	105.6	116.9	130.2	143.5	156.8	170.1	178.5
100°	83.9	92.2	100.7	109.0	117.4	128.0	140.9	153.9	166.7	179.6	188.1
102.5°	101.9	109.1	116.2	123.4	130.5	140.3	152.9	165.5	178.1	190.6	198.9
105°	126.8	133.0	139.2	145.4	151.7	160.7	172.4	184.2	195.9	207.6	215.6
107.5°	155.5	160.7	165.7	170.9	176.1	184.0	194.8	205.5	216.3	227.0	234.9
110°	174.0	178.6	183.0	187.5	192.0	199.6	210.2	220.8	231.4	241.9	248.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	193.4	197.2	201.0	204.8	208.7	215.6	225.6	235.7	245.6	255.6	262.3
115°	222.4	225.1	227.8	230.6	233.3	239.5	249.1	258.6	268.2	277.8	284.4
117.5°	251.0	252.7	254.4	256.1	257.9	263.2	272.2	281.1	290.1	299.0	305.1
120°	269.1	270.4	271.8	273.2	274.5	279.5	288.0	296.5	305.1	313.6	319.2
122.5°	289.1	289.5	289.9	290.2	290.6	294.9	303.1	311.3	319.5	327.7	333.5
125°	317.4	317.0	316.7	316.4	316.1	319.7	327.3	334.8	342.3	349.8	355.4
127.5°	343.9	343.9	343.9	344.0	344.0	346.8	352.5	358.2	363.9	369.5	374.9
130°	361.6	361.6	361.7	361.7	361.7	364.2	369.0	373.9	378.8	383.7	389.0
132.5°	380.9	380.8	380.7	380.6	380.6	382.5	386.3	390.1	394.0	397.8	402.9
135°	404.9	405.6	406.2	406.9	407.6	409.0	411.1	413.2	415.3	417.5	422.1
137.5°	432.7	432.7	432.7	432.7	432.7	433.3	434.5	435.7	436.9	438.1	442.3
140°	451.1	451.0	450.9	450.8	450.7	450.8	451.2	451.5	451.8	452.1	455.9
142.5°	466.9	467.0	467.2	467.4	467.5	467.4	467.2	466.9	466.7	466.4	469.8
145°	490.0	490.1	490.3	490.4	490.5	490.6	490.8	490.9	490.9	491.0	492.8
147.5°	513.2	513.4	513.6	513.8	514.0	514.1	514.0	513.9	513.8	513.8	513.9
150°	527.3	527.4	527.5	527.7	527.8	527.9	527.9	527.9	527.9	527.9	527.9
152.5°	539.6	539.8	539.9	540.2	540.4	540.5	540.6	540.7	540.8	540.9	541.1
155°	559.8	559.8	559.8	559.8	559.8	559.7	559.6	559.6	559.5	559.3	559.7
157.5°	577.1	576.9	576.7	576.5	576.4	576.2	576.2	576.2	576.2	576.1	576.4
160°	587.3	587.2	587.1	587.0	586.9	586.8	586.7	586.6	586.4	586.3	586.7
162.5°	596.8	596.5	596.2	595.9	595.6	595.4	595.3	595.2	595.1	595.0	595.6
165°	609.4	609.1	608.7	608.5	608.1	607.9	607.6	607.4	607.2	607.0	607.6
167.5°	619.1	618.7	618.2	617.8	617.3	617.1	617.1	617.2	617.2	617.2	617.9
170°	624.7	624.1	623.5	623.0	622.4	622.2	622.3	622.4	622.6	622.7	623.4
172.5°	628.5	628.1	627.7	627.2	626.7	626.5	626.5	626.5	626.5	626.6	627.3
175°	634.0	633.4	632.9	632.3	631.8	631.5	631.4	631.3	631.1	631.0	631.8
177.5°	635.8	635.3	634.9	634.5	634.0	633.8	633.8	633.8	633.8	633.8	634.4
180°	635.0	635.0	635.0	635.0	635.0	635.0	635.0	635.0	635.0	635.0	635.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1227.8	1227.8	1227.8	1227.8	1227.8	1227.8	1227.8	1227.8
2.5°	1223.5	1225.2	1226.9	1227.6	1227.4	1227.1	1226.9	1226.7
5°	1220.3	1222.7	1225.1	1226.2	1225.9	1225.6	1225.3	1225.0
7.5°	1213.8	1216.5	1219.3	1220.5	1220.1	1219.9	1219.5	1219.3
10°	1207.1	1209.9	1212.6	1213.8	1213.6	1213.2	1212.9	1212.6
12.5°	1197.8	1200.3	1202.8	1204.1	1204.0	1203.9	1203.9	1203.9
15°	1181.0	1183.8	1186.5	1187.7	1187.4	1187.1	1186.8	1186.5
17.5°	1160.5	1163.3	1166.1	1167.4	1167.2	1166.9	1166.7	1166.4
20°	1144.5	1147.5	1150.6	1152.1	1152.1	1152.1	1152.1	1152.1
22.5°	1125.8	1128.9	1131.9	1133.7	1134.2	1134.6	1135.1	1135.7
25°	1097.0	1100.4	1103.7	1105.5	1105.9	1106.1	1106.5	1106.7
27.5°	1064.6	1067.7	1070.8	1072.5	1073.0	1073.3	1073.7	1074.0
30°	1042.0	1045.3	1048.7	1050.7	1051.3	1051.9	1052.5	1053.2
32.5°	1018.7	1022.6	1026.5	1028.7	1029.3	1029.9	1030.5	1031.1
35°	982.0	986.2	990.5	993.1	994.0	995.0	995.8	996.8
37.5°	943.6	947.9	952.3	954.9	955.9	956.8	957.9	958.8
40°	916.5	921.2	925.7	928.7	929.9	931.1	932.3	933.5
42.5°	890.0	895.1	900.2	903.2	904.2	905.2	906.1	907.1
45°	849.0	854.3	859.5	862.8	864.4	865.8	867.4	868.9
47.5°	805.7	811.1	816.5	820.0	821.9	823.7	825.5	827.4
50°	775.2	781.4	787.5	791.4	793.3	795.1	796.9	798.7
52.5°	744.5	750.6	756.6	760.7	762.5	764.3	766.1	768.0
55°	698.3	704.4	710.5	714.5	716.3	718.2	720.0	721.8
57.5°	649.7	657.0	664.3	668.7	670.5	672.2	673.9	675.6
60°	616.2	623.3	630.3	635.0	637.5	639.9	642.4	644.8
62.5°	583.2	590.3	597.3	602.0	604.5	606.9	609.3	611.8
65°	532.2	539.8	547.5	552.5	555.0	557.4	559.9	562.3
67.5°	482.2	489.9	497.7	502.7	505.1	507.5	509.9	512.3
70°	446.9	455.0	463.3	468.6	470.6	472.8	474.9	477.1
72.5°	413.4	421.4	429.4	434.5	437.0	439.3	441.7	444.1
75°	362.2	370.7	379.3	385.0	387.7	390.5	393.2	396.0
77.5°	314.6	323.3	331.9	337.8	340.7	343.6	346.6	349.5
80°	283.7	292.8	302.0	307.8	310.2	312.7	315.1	317.6
82.5°	253.4	262.8	272.2	278.3	280.9	283.6	286.3	289.0
85°	210.8	220.0	229.1	235.2	238.3	241.3	244.4	247.5
87.5°	177.2	186.1	195.1	201.0	203.7	206.5	209.2	211.9
90°	165.9	175.5	184.9	191.1	193.7	196.4	199.1	201.7
92.5°	166.9	176.0	185.0	190.8	193.4	196.0	198.5	201.0
95°	174.1	182.7	191.2	196.9	199.7	202.4	205.2	207.9
97.5°	186.9	195.3	203.7	209.2	211.8	214.5	217.1	219.7
100°	196.6	205.0	213.5	218.8	220.9	223.1	225.2	227.4
102.5°	207.2	215.6	223.9	229.3	231.7	234.2	236.7	239.1
105°	223.5	231.5	239.4	244.9	247.6	250.4	253.1	255.9
107.5°	242.7	250.5	258.3	263.3	265.5	267.7	269.8	272.1
110°	255.5	262.3	269.1	273.9	276.7	279.5	282.2	285.0





TEST NUMBER: P332683-935

CATALOG NUMBER: S124DIP-S1195D590U935-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	269.1	275.9	282.6	287.2	289.7	292.2	294.7	297.3
115°	290.9	297.6	304.2	308.5	310.6	312.5	314.6	316.6
117.5°	311.0	317.0	323.0	327.1	329.3	331.6	333.8	336.0
120°	324.7	330.3	335.9	339.9	342.6	345.3	347.9	350.6
122.5°	339.2	344.9	350.7	354.5	356.3	358.1	359.9	361.7
125°	361.0	366.6	372.2	375.7	377.4	379.0	380.6	382.3
127.5°	380.1	385.4	390.7	394.3	396.2	398.1	400.0	401.9
130°	394.3	399.6	404.8	408.2	409.6	411.0	412.3	413.8
132.5°	407.9	412.9	417.9	421.3	422.9	424.6	426.3	427.9
135°	426.9	431.5	436.2	439.3	440.7	442.3	443.8	445.3
137.5°	446.4	450.6	454.8	457.7	459.3	460.9	462.4	464.1
140°	459.8	463.6	467.5	470.2	471.6	473.0	474.4	475.9
142.5°	473.3	476.7	480.3	482.6	483.9	485.1	486.4	487.7
145°	494.6	496.3	498.0	499.3	500.2	501.1	502.0	502.8
147.5°	514.1	514.2	514.4	514.9	515.7	516.6	517.5	518.4
150°	527.9	527.9	527.9	527.9	527.7	527.6	527.5	527.4
152.5°	541.4	541.7	541.9	541.9	541.7	541.3	541.1	540.8
155°	560.2	560.6	561.1	561.1	560.6	560.2	559.7	559.3
157.5°	576.8	577.1	577.5	577.4	577.0	576.7	576.3	575.9
160°	587.0	587.3	587.6	587.5	587.0	586.4	585.9	585.4
162.5°	596.2	596.8	597.4	597.4	596.8	596.2	595.7	595.2
165°	608.3	608.9	609.6	609.7	609.2	608.8	608.4	608.0
167.5°	618.5	619.1	619.8	619.7	619.1	618.5	617.8	617.1
170°	624.0	624.7	625.3	625.3	624.5	623.7	622.9	622.2
172.5°	628.1	628.9	629.6	629.6	628.8	628.0	627.2	626.5
175°	632.6	633.4	634.0	634.0	633.4	632.6	631.8	631.0
177.5°	635.0	635.6	636.2	636.2	635.5	634.8	634.0	633.4
180°	635.0	635.0	635.0	635.0	635.0	635.0	635.0	635.0

(END OF REPORT)