

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: P332693-935

Luminaire Tested: **S124DIP-S1195D810U935-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332693-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S1195D810U935-4F0-1E-UDD-D4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 810 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6679.4 lumens  
Efficiency: N/A  
Efficacy: 110.0 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: General Diffuse

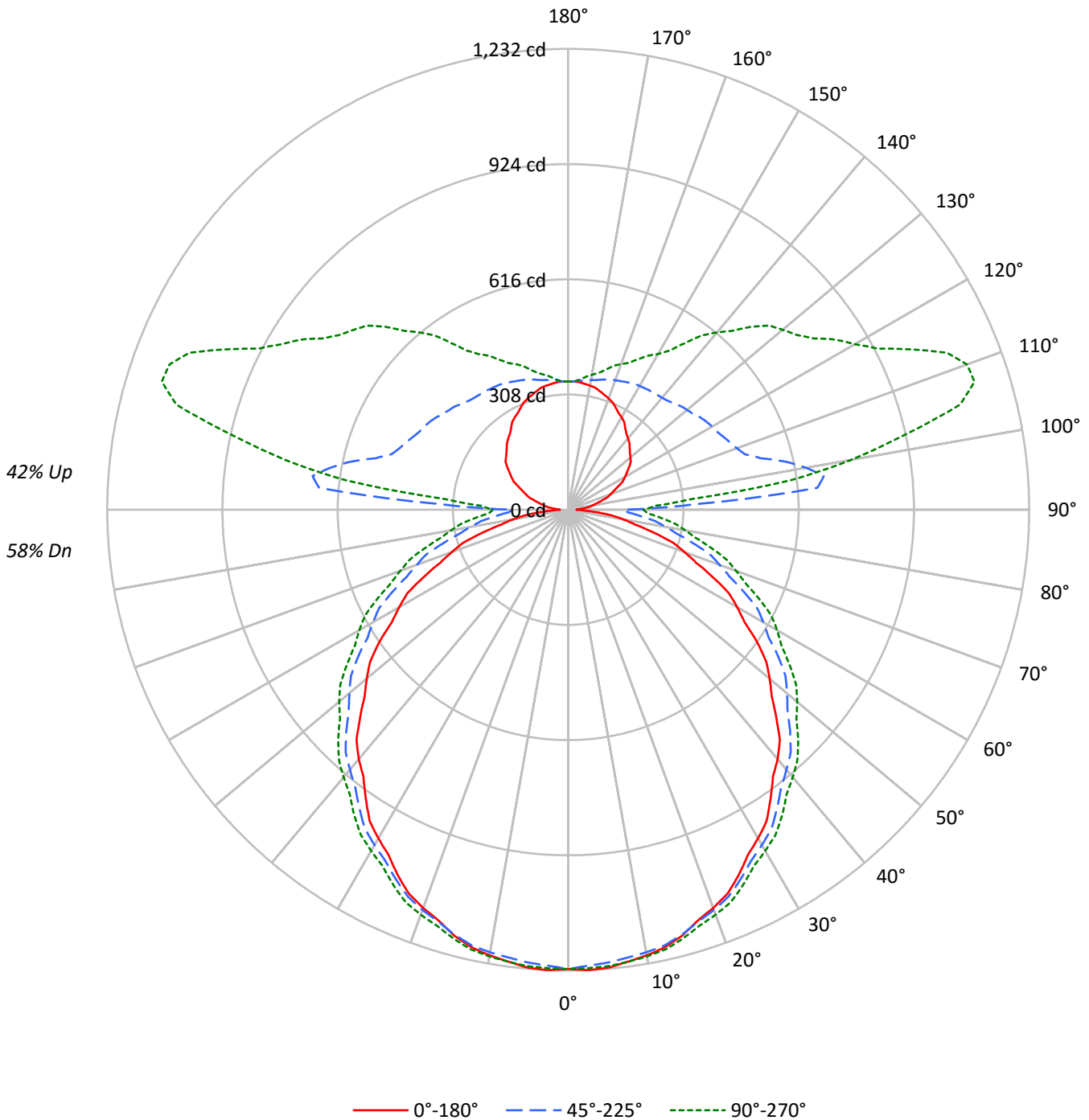
Input Watts (W): 60.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	109	109	109	109	102	102	102	102	88	88	88	75	75	75	63	63	63	58
1	98	94	89	85	91	87	83	80	75	72	70	64	62	60	54	53	51	46
2	89	81	74	69	83	76	70	65	65	61	57	56	52	49	47	44	42	38
3	81	71	63	57	75	66	59	53	57	52	47	49	45	41	41	38	35	32
4	74	62	54	48	68	58	51	45	51	45	40	43	39	35	37	33	30	27
5	68	55	47	41	63	52	44	38	45	39	34	39	34	30	33	29	26	23
6	62	50	41	35	58	46	39	33	41	34	30	35	30	26	30	26	23	20
7	58	45	36	31	53	42	34	29	37	31	26	32	27	23	27	23	20	18
8	53	41	33	27	50	38	31	26	33	27	23	29	24	21	25	21	18	16
9	50	37	29	24	46	35	28	23	31	25	21	27	22	18	23	19	16	14
10	46	34	26	22	43	32	25	21	28	22	19	25	20	17	21	17	15	13

**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	1.7
10°-20°	333.1	5.0
20°-30°	503.7	7.5
30°-40°	609.4	9.1
40°-50°	644.3	9.6
50°-60°	606.4	9.1
60°-70°	503.1	7.5
70°-80°	353.4	5.3
80°-90°	201.7	3.0
90°-100°	366.1	5.5
100°-110°	602.9	9.0
110°-120°	520.3	7.8
120°-130°	421.4	6.3
130°-140°	338.0	5.1
140°-150°	250.1	3.7
150°-160°	173.8	2.6
160°-170°	102.2	1.5
170°-180°	33.3	0.5
0°-30°	953.1	14.3
0°-40°	1562.5	23.4
0°-60°	2813.1	42.1
0°-90°	3871.2	58.0
90°-120°	1489.4	22.3
90°-150°	2498.9	37.4
90°-180°	2808.0	42.0
0°-180°	6679.4	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°	23	83	148	188	201	16
95°	40	134	668	427	333	39
105°	91	155	532	1075	1083	98
115°	147	196	458	850	1014	146
125°	199	236	430	708	799	177
135°	232	277	401	605	692	180
145°	266	303	386	490	544	167
155°	301	325	376	426	444	139
165°	328	338	360	381	387	93
175°	342	343	345	350	349	32
180°	343	343	343	343	343	



TEST NUMBER: P332693-935

CATALOG NUMBER: S124DIP-S1195D810U935-4F0-1E-UDD-D4

**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°	40.8	53.6	66.5	79.0	91.6	104.5	118.7	132.2	145.8	159.5	168.2
90°	22.6	36.2	50.5	63.4	76.3	88.9	106.2	119.2	133.7	148.3	156.4
92.5°	28.6	43.0	60.4	79.6	100.5	126.5	173.8	239.3	303.2	343.0	316.0
95°	40.1	52.2	69.0	87.8	114.1	153.7	224.7	347.7	521.2	668.3	692.1
97.5°	56.1	64.7	79.2	96.0	118.6	152.7	210.3	313.8	486.2	689.0	827.9
100°	66.3	74.2	86.9	102.9	123.6	155.2	206.7	294.7	444.0	645.8	826.4
102.5°	77.1	85.1	96.3	110.7	130.0	159.7	207.4	285.9	414.5	594.5	780.2
105°	91.2	99.3	108.7	123.0	141.2	169.4	213.0	280.2	385.7	532.4	698.3
107.5°	109.4	115.8	124.2	137.8	154.4	181.5	221.8	283.4	374.6	494.2	630.9
110°	120.7	126.4	134.0	146.4	162.7	188.4	228.8	286.5	371.3	479.6	596.4



TEST NUMBER: P332693-935

CATALOG NUMBER: S124DIP-S1195D810U935-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	131.5	136.6	144.3	155.7	171.5	196.7	235.5	290.1	369.5	469.2	573.9
115°	147.0	151.7	159.2	168.7	184.2	208.6	245.3	295.5	367.9	458.5	550.0
117.5°	164.5	168.0	173.7	182.9	196.5	220.7	255.4	301.7	367.0	449.5	534.4
120°	175.2	177.5	183.0	191.4	203.8	227.5	261.9	305.8	366.5	444.0	524.9
122.5°	186.0	187.5	192.3	199.4	212.2	234.7	268.7	309.9	366.4	438.0	515.1
125°	198.7	201.1	204.8	212.0	224.5	246.9	278.8	317.5	367.5	430.3	500.8
127.5°	210.9	212.8	217.3	225.5	238.6	260.3	289.6	323.9	366.8	420.6	482.7
130°	216.9	219.3	224.4	234.1	246.6	268.5	296.2	327.4	366.6	414.6	471.2
132.5°	223.9	225.8	232.4	241.7	255.2	275.5	302.3	331.9	367.0	409.6	461.2
135°	232.3	235.1	241.8	253.2	267.3	285.9	310.2	336.7	366.4	400.8	444.8
137.5°	242.1	244.4	251.5	262.1	276.5	293.5	315.3	339.0	364.5	394.3	431.0
140°	249.2	250.9	258.0	269.1	282.9	299.1	319.6	341.5	364.6	390.5	423.4
142.5°	255.6	257.5	264.3	275.2	288.8	304.3	323.7	343.5	365.1	388.3	417.5
145°	266.0	267.7	274.1	283.2	295.7	310.4	327.9	346.0	365.6	386.4	409.8
147.5°	277.9	278.3	284.0	293.3	303.7	316.8	333.3	349.1	366.3	384.0	403.2
150°	285.5	285.9	290.9	298.7	308.5	321.2	336.0	350.8	366.3	382.4	399.2
152.5°	291.4	291.4	296.8	304.3	313.2	324.9	338.1	351.8	365.2	379.7	394.9
155°	300.9	301.6	305.7	312.4	319.8	329.8	341.3	352.8	363.5	375.7	388.5
157.5°	310.5	310.5	314.3	319.5	326.0	333.9	343.6	352.8	361.8	371.5	381.9
160°	316.4	316.4	319.1	323.8	329.2	336.7	344.7	352.8	360.2	368.2	377.0
162.5°	321.8	321.2	323.4	327.6	332.4	338.2	345.8	352.8	358.6	365.1	372.7
165°	327.9	327.9	329.2	332.6	336.0	340.0	346.0	351.5	355.5	360.2	365.6
167.5°	333.9	333.3	333.9	336.5	338.4	341.5	345.9	349.8	352.2	355.3	359.1
170°	336.7	336.0	336.7	338.6	340.0	342.0	345.3	348.7	350.1	352.1	354.8
172.5°	339.3	338.6	338.8	340.3	341.0	342.5	344.8	347.7	347.9	348.9	351.0
175°	342.0	341.3	341.3	342.0	342.7	342.7	344.1	346.0	345.3	345.3	346.7
177.5°	343.2	342.7	342.2	342.7	342.7	342.7	343.2	344.3	343.2	343.2	343.7
180°	342.7	342.7	342.7	342.7	342.7	342.7	342.7	342.7	342.7	342.7	342.7



TEST NUMBER: P332693-935

CATALOG NUMBER: S124DIP-S1195D810U935-4F0-1E-UDD-D4

**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	206.6	209.1	211.8
90°	165.9	175.5	185.0	190.6	193.8	196.9	198.6	201.1
92.5°	279.0	254.9	243.1	235.2	229.7	228.5	228.7	231.1
95°	635.0	538.9	456.9	397.1	366.9	348.7	339.4	333.4
97.5°	864.2	833.4	775.5	710.6	664.9	627.0	609.4	598.1
100°	932.9	954.6	929.9	885.3	828.8	789.9	771.8	768.6
102.5°	923.2	997.9	1015.5	1000.0	966.4	939.0	920.2	918.2
105°	860.1	984.1	1058.4	1091.1	1094.8	1091.9	1084.9	1083.3
107.5°	774.9	906.5	1007.8	1072.7	1108.2	1125.8	1134.7	1138.6
110°	723.2	846.7	951.4	1030.2	1080.4	1111.1	1125.7	1134.2





TEST NUMBER: P332693-935

CATALOG NUMBER: S124DIP-S1195D810U935-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	683.3	793.2	892.2	970.8	1027.5	1064.1	1083.6	1095.8
115°	640.9	730.4	815.9	884.9	940.3	982.8	1006.5	1014.0
117.5°	615.2	690.1	758.4	817.6	865.4	901.8	926.0	932.6
120°	601.7	670.4	730.4	782.5	823.3	855.3	875.3	885.1
122.5°	589.7	656.3	711.4	757.4	792.1	819.6	836.6	846.2
125°	571.2	634.9	687.2	728.0	756.7	778.1	792.7	798.6
127.5°	548.9	609.7	661.5	700.4	729.6	749.1	761.9	768.0
130°	532.6	591.2	642.6	681.9	711.4	730.0	742.6	748.5
132.5°	516.4	571.6	621.6	660.8	689.7	710.5	722.6	728.4
135°	492.1	540.7	586.7	623.7	652.5	673.1	685.8	691.6
137.5°	470.7	512.2	551.3	584.7	611.4	631.5	642.0	648.3
140°	458.4	494.0	528.3	559.3	584.4	600.7	611.7	618.6
142.5°	447.7	479.1	508.5	535.4	557.6	572.6	582.2	587.3
145°	433.2	457.9	479.9	500.3	518.4	531.1	539.0	543.5
147.5°	421.3	439.7	456.1	471.5	484.9	495.7	501.8	503.9
150°	415.3	430.8	444.4	456.4	467.3	476.0	480.0	480.7
152.5°	409.5	422.8	435.1	445.1	454.3	461.4	463.8	464.5
155°	400.5	411.4	421.5	429.6	436.3	441.6	443.7	443.7
157.5°	391.0	400.0	408.5	415.0	420.1	424.1	425.3	425.3
160°	385.1	392.5	399.9	405.3	409.3	413.4	414.1	414.1
162.5°	379.2	385.5	391.3	396.1	399.1	403.1	403.8	403.3
165°	370.9	375.0	379.7	383.1	385.7	388.5	387.8	387.1
167.5°	363.0	366.1	369.9	371.9	373.2	375.0	374.9	374.3
170°	358.2	360.2	362.9	364.9	366.3	366.9	366.3	366.3
172.5°	353.9	355.3	357.0	358.4	359.2	359.9	359.2	358.2
175°	348.1	348.7	350.1	350.1	350.1	351.5	350.1	348.7
177.5°	344.3	344.8	344.8	345.3	344.8	345.3	344.3	343.2
180°	342.7	342.7	342.7	342.7	342.7	342.7	342.7	342.7

(END OF REPORT)