

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: P332684-935

Luminaire Tested: **S124DIP-S1195D590U935-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332684-935  
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-S1195D590U935-4F0-1E-UDD-D4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 590 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6004.8 lumens  
Efficiency: N/A  
Efficacy: 109.0 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

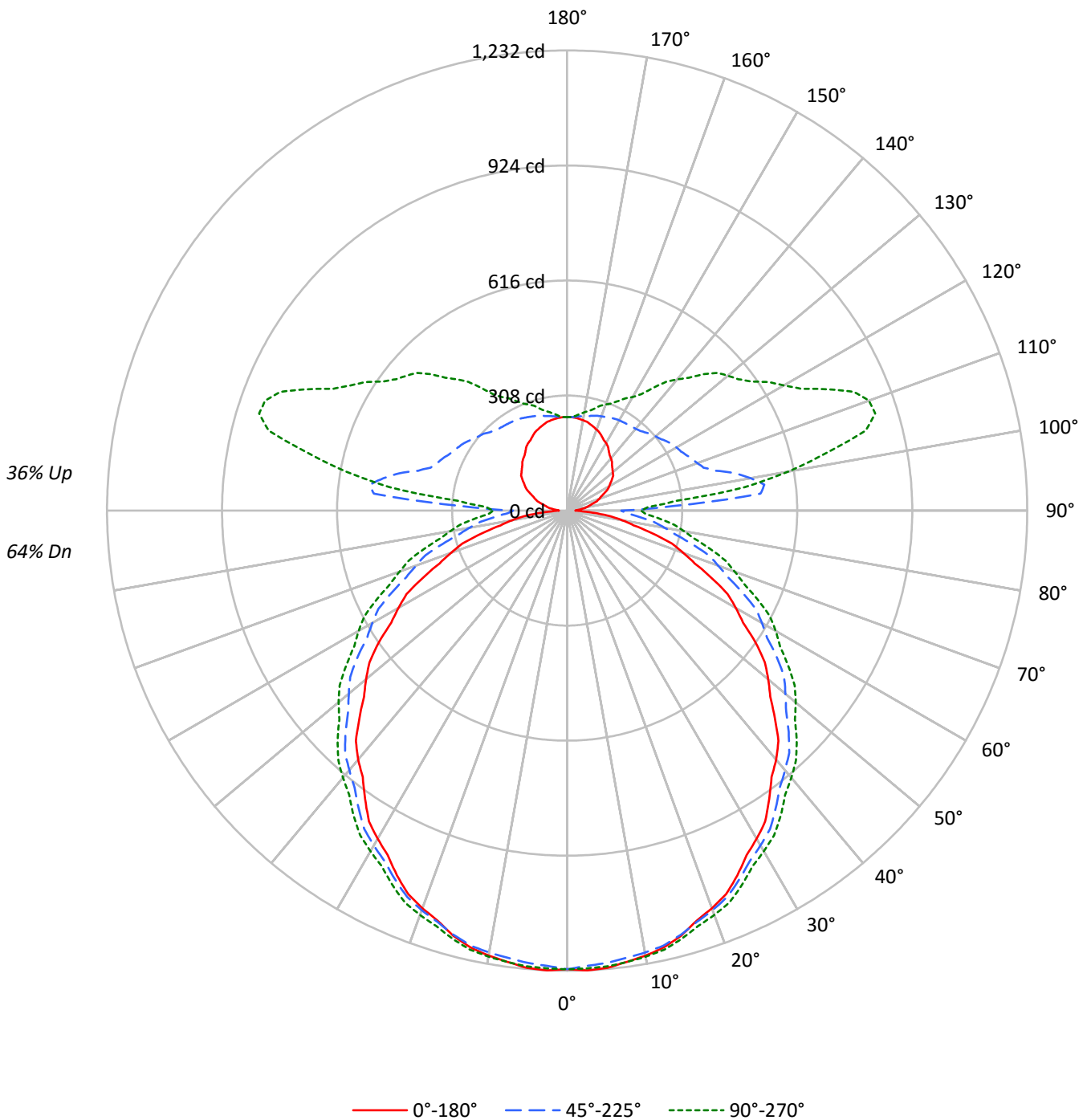
Input Watts (W): 55.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	91	91	91	80	80	80	69	69	69	64
1	100	95	90	86	93	89	85	81	78	75	72	68	66	64	59	58	56	52
2	90	82	75	69	84	77	71	66	68	63	59	59	56	52	51	49	46	42
3	82	72	64	57	77	67	60	54	59	54	49	52	47	44	45	42	39	35
4	75	63	55	48	70	59	52	46	53	46	41	46	41	37	40	36	33	30
5	69	56	47	41	64	53	45	39	47	40	36	41	36	32	36	32	28	25
6	63	50	42	35	59	47	40	34	42	36	31	37	32	28	32	28	25	22
7	58	45	37	31	55	43	35	30	38	32	27	34	28	25	30	25	22	20
8	54	41	33	27	51	39	32	26	35	29	24	31	26	22	27	23	20	17
9	51	38	30	24	47	36	28	23	32	26	22	28	23	20	25	21	18	16
10	47	35	27	22	44	33	26	21	29	23	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	1.9
10°-20°	333.1	5.5
20°-30°	503.7	8.4
30°-40°	609.4	10.1
40°-50°	644.3	10.7
50°-60°	606.4	10.1
60°-70°	503.1	8.4
70°-80°	353.4	5.9
80°-90°	201.2	3.3
90°-100°	299.2	5.0
100°-110°	463.6	7.7
110°-120°	395.5	6.6
120°-130°	316.4	5.3
130°-140°	250.5	4.2
140°-150°	183.3	3.1
150°-160°	126.8	2.1
160°-170°	74.6	1.2
170°-180°	24.3	0.4
0°-30°	953.1	15.9
0°-40°	1562.5	26.0
0°-60°	2813.1	46.8
0°-90°	3870.7	64.5
90°-120°	1158.3	19.3
90°-150°	1908.5	31.8
90°-180°	2134.0	35.5
0°-180°	6004.8	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°	22	81	145	184	197	15
95°	34	115	520	354	289	32
105°	70	124	413	818	827	75
115°	109	149	352	646	768	109
125°	146	174	324	533	602	131
135°	170	203	296	451	516	132
145°	194	221	282	360	400	122
155°	220	237	274	310	324	101
165°	239	247	263	278	282	68
175°	250	250	252	255	254	24
180°	250	250	250	250	250	



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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°	40.8	53.5	66.2	78.8	91.4	104.3	118.2	131.6	145.2	158.8	167.6
90°	22.5	35.7	49.4	62.1	74.8	87.5	103.6	116.8	130.9	145.0	153.3
92.5°	26.5	40.0	55.7	72.7	90.8	113.1	151.2	202.4	252.7	285.3	267.9
95°	34.1	45.6	60.6	77.1	98.9	130.9	186.1	279.2	409.1	519.9	539.4
97.5°	45.3	54.0	66.9	81.5	100.2	128.0	173.4	252.3	381.4	532.7	636.2
100°	52.4	60.4	71.8	85.6	102.9	128.5	169.4	236.9	349.0	499.4	633.4
102.5°	60.3	68.0	78.1	90.6	106.4	130.7	168.6	229.1	326.1	460.5	598.1
105°	69.8	77.4	86.0	98.0	113.0	135.9	170.7	222.8	302.9	412.9	536.0
107.5°	83.1	89.1	96.6	107.9	121.3	143.3	175.6	223.3	292.8	383.0	484.7
110°	91.1	96.3	103.1	113.2	126.3	147.1	179.4	224.5	289.2	371.1	458.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	98.6	103.4	110.0	119.3	131.9	152.2	183.2	225.8	286.5	362.1	440.2
115°	109.4	113.7	119.9	127.5	139.6	159.1	188.6	227.7	283.3	352.0	420.5
117.5°	122.1	125.1	129.8	136.9	147.3	166.4	194.2	230.4	280.4	343.2	406.8
120°	129.7	131.6	136.0	142.2	151.5	170.1	197.7	232.0	278.7	337.7	398.3
122.5°	137.5	138.7	142.3	147.5	156.8	174.4	201.5	233.8	277.2	331.8	389.7
125°	146.5	148.1	150.8	155.8	164.9	182.3	207.6	237.9	276.5	324.3	377.3
127.5°	155.3	156.6	159.8	165.7	175.1	191.7	214.7	241.3	274.1	315.0	361.8
130°	159.4	161.0	164.6	171.7	180.7	197.3	218.9	242.9	272.8	309.1	352.0
132.5°	164.5	165.7	170.5	177.2	187.0	202.2	222.8	245.6	272.2	304.4	343.4
135°	170.2	172.2	177.1	185.5	195.8	209.7	228.0	247.8	270.1	295.8	329.2
137.5°	177.4	179.0	184.1	191.7	202.1	214.6	230.8	248.4	267.3	289.4	317.3
140°	182.5	183.7	188.8	196.8	206.8	218.6	233.7	249.7	266.7	285.7	310.7
142.5°	186.9	188.3	193.3	201.1	211.0	222.3	236.4	250.8	266.6	283.4	305.7
145°	194.4	195.5	200.2	206.7	215.8	226.4	239.2	252.4	266.7	281.9	299.5
147.5°	203.1	203.4	207.3	214.1	221.5	231.2	243.1	254.7	267.2	280.2	294.3
150°	208.6	208.8	212.5	218.0	225.1	234.3	245.1	255.9	267.2	279.0	291.3
152.5°	212.7	212.7	216.5	222.0	228.5	237.0	246.7	256.7	266.4	277.0	288.1
155°	219.6	220.1	223.0	227.9	233.3	240.6	249.0	257.4	265.2	274.1	283.4
157.5°	226.5	226.5	229.3	233.1	237.8	243.6	250.7	257.4	264.0	271.0	278.6
160°	230.8	230.8	232.8	236.3	240.1	245.6	251.5	257.4	262.8	268.6	275.1
162.5°	234.8	234.4	235.9	239.0	242.5	246.8	252.3	257.4	261.6	266.3	271.9
165°	239.2	239.2	240.1	242.6	245.1	248.1	252.4	256.4	259.3	262.8	266.7
167.5°	243.6	243.1	243.6	245.5	246.8	249.1	252.4	255.2	257.0	259.2	262.0
170°	245.6	245.1	245.6	247.0	248.1	249.5	251.9	254.4	255.4	256.8	258.8
172.5°	247.5	247.0	247.1	248.2	248.8	249.9	251.6	253.7	253.8	254.5	256.1
175°	249.5	249.0	249.0	249.5	250.0	250.0	251.0	252.4	251.9	251.9	253.0
177.5°	250.4	250.0	249.6	250.0	250.0	250.0	250.4	251.2	250.4	250.4	250.8
180°	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0



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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°	176.5	185.5	194.4	200.2	202.9	205.8	208.4	211.0
90°	162.6	172.0	181.4	187.0	189.9	192.9	194.8	197.3
92.5°	243.2	228.0	221.7	217.4	214.1	213.9	214.6	217.1
95°	500.1	432.1	374.6	332.4	311.2	298.7	292.6	289.0
97.5°	664.8	644.5	604.5	558.5	525.9	498.9	486.9	479.2
100°	713.3	731.4	715.6	684.4	643.9	616.0	603.4	601.7
102.5°	704.6	761.3	776.3	766.4	742.5	723.2	710.1	709.3
105°	656.1	748.7	804.9	830.2	833.6	832.1	827.7	827.2
107.5°	591.8	689.8	765.8	814.4	840.9	854.3	861.4	864.9
110°	552.7	644.6	722.9	781.6	819.0	842.1	853.3	860.1





TEST NUMBER: P332684-935

CATALOG NUMBER: S124DIP-S1195D590U935-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	521.9	603.8	677.9	736.5	778.6	806.0	820.8	830.4
115°	488.7	555.8	620.0	671.6	712.5	744.1	762.0	768.0
117.5°	467.5	523.8	575.4	619.7	655.3	682.5	700.9	706.4
120°	456.0	507.8	553.2	592.4	622.8	646.9	662.0	669.9
122.5°	445.8	496.0	537.9	572.6	598.5	619.1	632.1	639.7
125°	430.2	478.3	518.0	548.8	570.3	586.4	597.5	602.4
127.5°	411.6	457.4	496.7	526.2	548.0	562.7	572.7	577.7
130°	398.2	442.6	481.4	511.1	533.0	547.2	556.9	561.6
132.5°	385.0	426.8	464.7	494.2	515.8	531.5	540.8	545.5
135°	365.0	401.8	436.6	464.6	486.0	501.6	511.3	516.1
137.5°	347.5	378.9	408.6	433.9	453.7	468.8	476.8	481.9
140°	337.3	364.4	390.5	413.8	432.6	444.9	453.3	458.7
142.5°	328.6	352.5	374.9	395.1	411.6	422.9	430.3	434.4
145°	317.0	335.5	352.1	367.4	380.9	390.5	396.6	400.3
147.5°	307.5	321.0	333.0	344.4	354.5	362.6	367.3	369.1
150°	303.1	314.4	324.2	333.0	340.9	347.2	350.2	350.7
152.5°	298.7	308.4	317.5	324.8	331.4	336.7	338.4	338.9
155°	292.2	300.1	307.5	313.3	318.3	322.2	323.6	323.6
157.5°	285.2	291.9	298.0	302.7	306.5	309.4	310.3	310.3
160°	280.9	286.4	291.7	295.7	298.6	301.6	302.0	302.0
162.5°	276.6	281.2	285.4	289.0	291.2	294.1	294.6	294.2
165°	270.6	273.5	277.0	279.5	281.5	283.4	282.9	282.4
167.5°	264.8	267.1	269.8	271.3	272.3	273.5	273.5	273.1
170°	261.3	262.8	264.8	266.2	267.2	267.7	267.2	267.2
172.5°	258.1	259.2	260.5	261.5	262.1	262.6	262.1	261.3
175°	253.9	254.4	255.4	255.4	255.4	256.4	255.4	254.4
177.5°	251.2	251.6	251.6	251.9	251.6	251.9	251.2	250.4
180°	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0

(END OF REPORT)