

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: P332843-930

Luminaire Tested: **S124DIW-S1195D770U930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332843-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIW-S1195D770U930-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 770 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6468.3 lumens  
Efficiency: N/A  
Efficacy: 108.2 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

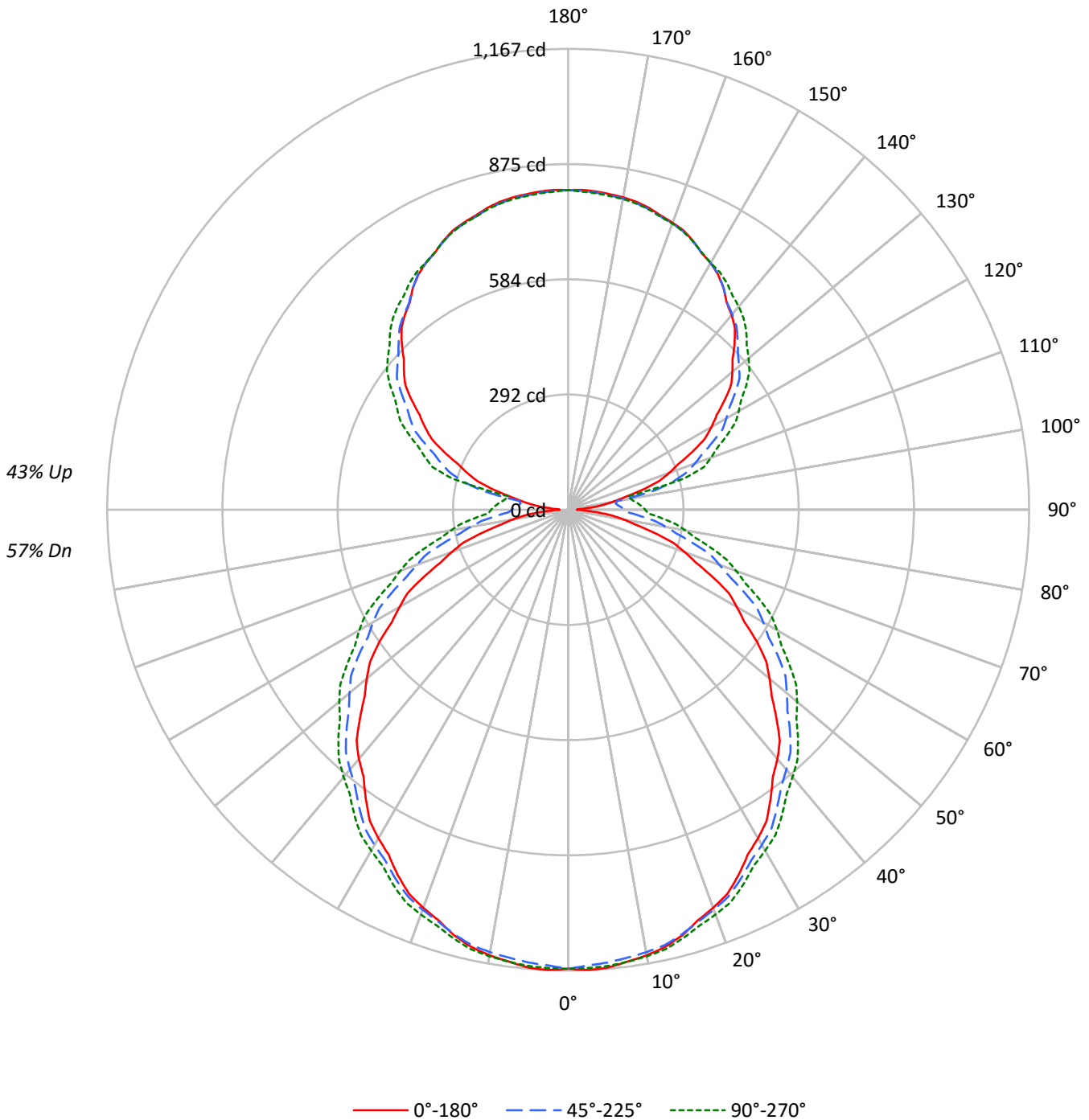
Input Watts (W): 59.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332843-930

CATALOG NUMBER: S124DIW-S1195D770U930-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P332843-930

CATALOG NUMBER: S124DIW-S1195D770U930-4F0-1E-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	0
RCR																		
0	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	57
1	98	93	89	85	91	87	83	80	75	72	69	63	61	59	53	52	50	45
2	89	81	74	68	82	75	69	64	65	60	56	55	52	49	46	44	41	37
3	81	71	63	56	75	66	59	53	57	51	47	48	44	41	40	37	35	31
4	74	62	54	47	68	58	51	45	50	44	40	43	38	35	36	32	30	26
5	68	55	47	40	62	52	44	38	45	39	34	38	33	30	32	29	26	22
6	62	50	41	35	58	46	39	33	40	34	29	34	30	26	29	25	22	20
7	57	45	36	31	53	42	34	29	36	30	26	31	26	23	27	23	20	17
8	53	40	32	27	49	38	31	26	33	27	23	29	24	20	24	21	18	15
9	50	37	29	24	46	35	28	23	30	25	20	26	22	18	22	19	16	14
10	46	34	26	21	43	32	25	20	28	22	18	24	20	16	21	17	14	12

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

	0°	45°	90°
0°	9386	9386	9386
5°	9414	9173	9199
10°	9357	9022	9016
15°	9273	8849	8800
20°	9147	8658	8591
25°	9004	8442	8360
30°	8849	8228	8124
35°	8675	8010	7917
40°	8536	7801	7700
45°	8329	7610	7515
50°	8153	7388	7319
55°	7973	7179	7089
60°	7689	6913	6880
65°	7380	6628	6622
70°	7004	6302	6322
75°	6483	5945	6051
80°	5900	5600	5784
85°	5162	5295	5626



TEST NUMBER: P332843-930

CATALOG NUMBER: S124DIW-S1195D770U930-4F0-1E-UDD-D

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	110.1	1.7
10°-20°	315.4	4.9
20°-30°	477.0	7.4
30°-40°	577.1	8.9
40°-50°	610.1	9.4
50°-60°	574.2	8.9
60°-70°	476.4	7.4
70°-80°	334.6	5.2
80°-90°	191.5	3.0
90°-100°	140.0	2.2
100°-110°	259.6	4.0
110°-120°	393.3	6.1
120°-130°	460.0	7.1
130°-140°	472.1	7.3
140°-150°	431.5	6.7
150°-160°	345.7	5.3
160°-170°	223.0	3.4
170°-180°	76.9	1.2
0°-30°	902.5	14.0
0°-40°	1479.6	22.9
0°-60°	2663.8	41.2
0°-90°	3666.3	56.7
90°-120°	792.9	12.3
90°-150°	2156.4	33.3
90°-180°	2802.0	43.3
0°-180°	6468.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1163	1163	1163	1163	1163	
5°	1164	1160	1151	1161	1160	110
15°	1116	1117	1113	1124	1124	314
25°	1021	1028	1032	1046	1048	470
35°	893	908	922	939	944	559
45°	745	769	794	815	823	575
55°	583	611	650	675	684	520
65°	404	445	490	521	532	400
75°	224	272	327	362	375	238
85°	69	124	182	220	234	73
90°	23	81	142	182	195	15
95°	50	74	127	164	178	56
105°	194	225	275	310	301	204
115°	348	363	402	431	442	343
125°	483	486	516	541	551	432
135°	596	596	607	628	638	459
145°	685	686	686	694	700	428
155°	750	750	749	751	749	346
165°	791	788	788	792	787	223
175°	809	806	806	811	804	77
180°	809	809	809	809	809	



TEST NUMBER: P332843-930

CATALOG NUMBER: S124DIW-S1195D770U930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6
2.5°	1166.8	1166.0	1165.4	1164.7	1164.0	1162.7	1160.8	1159.0	1157.2	1155.3	1156.9
5°	1163.8	1163.0	1162.1	1161.3	1160.4	1158.9	1156.9	1154.9	1152.9	1150.9	1153.2
7.5°	1154.0	1153.5	1152.9	1152.4	1151.9	1150.8	1149.2	1147.5	1145.7	1144.1	1146.7
10°	1145.7	1145.3	1145.1	1144.8	1144.5	1143.6	1142.2	1140.8	1139.3	1137.8	1140.4
12.5°	1134.2	1134.2	1134.1	1134.0	1134.0	1133.4	1132.5	1131.5	1130.5	1129.5	1131.9
15°	1115.7	1116.0	1116.3	1116.6	1116.9	1116.6	1115.7	1114.8	1113.9	1113.1	1115.7
17.5°	1090.5	1091.4	1092.2	1093.1	1093.9	1094.3	1094.1	1093.9	1093.7	1093.6	1096.3
20°	1072.8	1073.6	1074.5	1075.4	1076.2	1076.8	1077.1	1077.4	1077.7	1078.0	1080.8
22.5°	1053.0	1054.0	1055.2	1056.2	1057.4	1058.2	1058.7	1059.2	1059.7	1060.2	1063.2
25°	1020.7	1022.4	1024.2	1025.9	1027.6	1028.9	1029.8	1030.6	1031.5	1032.4	1035.6
27.5°	984.7	987.3	989.9	992.4	994.9	996.9	998.2	999.6	1000.9	1002.2	1005.1
30°	960.7	963.1	965.4	967.8	970.0	972.2	974.2	976.2	978.3	980.3	983.5
32.5°	934.7	937.5	940.3	943.1	945.8	948.4	950.6	952.9	955.1	957.4	961.1
35°	893.1	896.6	900.0	903.5	906.9	910.1	913.1	915.9	918.8	921.7	925.8
37.5°	851.2	855.2	859.2	863.2	867.2	870.9	874.5	878.1	881.7	885.3	889.4
40°	824.1	827.9	831.6	835.4	839.1	843.0	847.1	851.2	855.2	859.2	863.6
42.5°	792.9	797.0	801.3	805.5	809.8	814.2	819.0	823.7	828.4	833.2	838.0
45°	744.7	750.2	755.7	761.2	766.6	772.2	777.6	783.2	788.6	794.2	799.1
47.5°	698.5	704.3	710.0	715.6	721.3	727.3	733.7	740.0	746.4	752.8	757.8
50°	665.3	671.6	678.0	684.4	690.7	697.1	703.4	709.8	716.2	722.5	728.3
52.5°	631.9	638.3	644.7	651.0	657.4	664.2	671.5	678.8	686.1	693.4	699.2
55°	583.3	589.3	595.4	601.4	607.6	614.9	623.6	632.3	641.0	649.6	655.4
57.5°	528.8	536.4	543.9	551.4	558.9	567.0	575.6	584.2	592.9	601.4	608.4
60°	493.4	500.9	508.4	516.0	523.5	532.1	541.6	551.1	560.7	570.2	576.9
62.5°	459.0	467.2	475.5	483.7	491.9	500.8	510.4	519.9	529.5	539.0	545.6
65°	403.6	412.9	422.1	431.4	440.6	450.1	460.0	469.9	479.6	489.5	496.8
67.5°	350.2	360.0	369.9	379.7	389.6	399.7	410.3	420.8	431.3	441.9	449.2
70°	313.7	323.6	333.5	343.2	353.1	363.5	374.5	385.5	396.5	407.5	415.3
72.5°	278.3	288.4	298.5	308.5	318.6	329.5	341.2	352.9	364.5	376.3	383.8
75°	224.0	234.6	245.3	256.0	266.8	278.2	290.3	302.5	314.6	326.8	334.8
77.5°	173.2	184.5	195.8	207.2	218.5	230.6	243.3	256.0	268.7	281.4	289.7
80°	141.9	153.4	165.0	176.6	188.2	200.3	213.0	225.8	238.6	251.3	259.9
82.5°	110.6	122.7	134.8	146.8	158.8	171.2	183.9	196.7	209.4	222.1	231.0
85°	69.0	81.1	93.3	105.4	117.6	130.2	143.2	156.2	169.3	182.3	190.9
87.5°	38.9	51.0	63.1	75.2	87.3	99.8	112.7	125.6	138.4	151.3	159.9
90°	22.7	35.7	48.8	61.8	74.8	88.1	101.7	115.2	128.7	142.2	151.4
92.5°	27.4	37.9	48.4	58.9	69.4	81.4	94.9	108.4	122.0	135.5	144.5
95°	50.2	55.2	60.2	65.1	70.1	78.6	90.6	102.6	114.5	126.6	135.2
97.5°	86.0	97.1	108.2	119.3	130.3	134.2	130.9	127.7	124.4	121.2	128.8
100°	113.6	123.5	133.5	143.4	153.4	154.7	147.4	140.1	132.8	125.6	131.1
102.5°	145.5	153.9	162.2	170.6	179.0	187.5	196.2	204.8	213.4	222.0	205.0
105°	193.9	200.5	207.1	213.7	220.2	229.3	240.6	252.0	263.3	274.8	283.2
107.5°	240.9	246.1	251.3	256.4	261.5	269.6	280.7	291.7	302.7	313.8	321.5
110°	271.8	276.3	280.8	285.2	289.7	297.3	308.3	319.2	330.2	341.1	348.1



TEST NUMBER: P332843-930

CATALOG NUMBER: S124DIW-S1195D770U930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	301.8	306.1	310.5	314.7	319.0	326.2	336.2	346.3	356.4	366.4	372.8
115°	347.9	350.9	353.9	356.9	360.0	366.0	375.1	384.3	393.4	402.5	409.1
117.5°	390.6	392.7	394.8	397.0	399.0	404.6	413.4	422.4	431.3	440.2	446.2
120°	418.7	420.0	421.4	422.9	424.3	429.1	437.3	445.6	453.9	462.1	468.1
122.5°	445.7	446.2	446.8	447.3	447.8	452.1	460.2	468.3	476.4	484.5	490.5
125°	483.3	483.6	483.8	484.0	484.3	487.9	494.9	501.8	508.8	515.8	521.6
127.5°	519.8	519.7	519.5	519.3	519.2	522.2	528.4	534.6	540.8	546.9	552.0
130°	542.5	542.3	542.2	542.1	541.9	544.4	549.3	554.4	559.5	564.4	569.8
132.5°	564.3	564.3	564.2	564.2	564.1	566.2	570.4	574.6	578.9	583.0	588.2
135°	595.7	595.6	595.4	595.3	595.2	596.4	598.9	601.5	604.1	606.6	611.5
137.5°	624.6	624.4	624.1	623.9	623.7	624.4	625.9	627.5	629.1	630.6	635.2
140°	643.5	643.4	643.4	643.4	643.4	643.7	644.2	644.8	645.4	645.9	650.1
142.5°	659.4	659.8	660.2	660.7	661.1	661.3	661.3	661.3	661.3	661.3	664.9
145°	685.2	685.3	685.4	685.5	685.6	685.7	685.7	685.7	685.7	685.7	687.5
147.5°	705.9	706.3	706.8	707.3	707.7	707.8	707.8	707.6	707.4	707.4	707.7
150°	720.9	721.1	721.4	721.6	721.9	721.9	721.8	721.6	721.5	721.4	721.4
152.5°	732.4	732.8	733.2	733.5	733.9	733.9	733.7	733.5	733.3	733.0	733.2
155°	749.8	750.0	750.1	750.2	750.4	750.2	749.8	749.4	749.0	748.6	749.2
157.5°	764.8	764.7	764.6	764.5	764.4	764.1	763.7	763.2	762.7	762.3	763.0
160°	773.4	773.0	772.7	772.3	771.8	771.5	771.4	771.3	771.1	771.0	771.8
162.5°	781.1	780.6	780.2	779.7	779.1	778.8	778.7	778.5	778.4	778.3	779.1
165°	791.0	790.3	789.6	789.0	788.3	788.0	788.0	788.0	788.0	788.0	789.0
167.5°	798.7	798.0	797.4	796.6	795.9	795.6	795.5	795.4	795.3	795.2	796.4
170°	803.1	802.3	801.4	800.6	799.9	799.5	799.6	799.8	799.9	800.1	801.1
172.5°	806.0	805.2	804.4	803.6	802.7	802.4	802.6	802.7	802.8	803.0	804.0
175°	809.1	808.3	807.6	806.7	805.9	805.6	805.7	805.8	806.0	806.1	807.3
177.5°	810.6	809.8	809.1	808.3	807.6	807.3	807.6	807.7	808.0	808.1	809.0
180°	809.1	809.1	809.1	809.1	809.1	809.1	809.1	809.1	809.1	809.1	809.1



TEST NUMBER: P332843-930

CATALOG NUMBER: S124DIW-S1195D770U930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6	1162.6
2.5°	1158.5	1160.2	1161.8	1162.5	1162.2	1162.0	1161.8	1161.6
5°	1155.5	1157.8	1160.1	1161.1	1160.8	1160.6	1160.3	1160.0
7.5°	1149.3	1151.9	1154.5	1155.7	1155.4	1155.1	1154.8	1154.5
10°	1143.0	1145.7	1148.3	1149.4	1149.2	1148.8	1148.5	1148.3
12.5°	1134.2	1136.6	1139.0	1140.2	1140.1	1140.0	1140.0	1140.0
15°	1118.3	1121.0	1123.5	1124.7	1124.4	1124.1	1123.8	1123.5
17.5°	1098.9	1101.6	1104.2	1105.5	1105.2	1105.0	1104.7	1104.5
20°	1083.8	1086.6	1089.6	1091.0	1091.0	1091.0	1091.0	1091.0
22.5°	1066.0	1068.9	1071.8	1073.5	1074.0	1074.4	1074.9	1075.4
25°	1038.8	1042.0	1045.1	1046.8	1047.2	1047.4	1047.7	1048.0
27.5°	1008.1	1011.1	1014.0	1015.6	1016.0	1016.4	1016.7	1017.0
30°	986.7	989.9	993.0	994.9	995.5	996.1	996.6	997.3
32.5°	964.7	968.3	972.0	974.1	974.7	975.3	975.8	976.4
35°	929.8	933.8	937.9	940.4	941.3	942.2	943.0	943.9
37.5°	893.5	897.6	901.7	904.2	905.1	906.0	907.0	907.9
40°	867.9	872.3	876.6	879.4	880.5	881.7	882.8	883.9
42.5°	842.8	847.6	852.4	855.2	856.2	857.1	858.0	859.0
45°	804.0	808.9	813.8	817.0	818.5	819.9	821.3	822.8
47.5°	763.0	768.0	773.1	776.5	778.3	780.0	781.7	783.5
50°	734.1	739.9	745.7	749.4	751.2	752.9	754.6	756.4
52.5°	705.0	710.8	716.5	720.3	722.0	723.7	725.5	727.2
55°	661.2	667.0	672.8	676.5	678.2	680.0	681.8	683.5
57.5°	615.2	622.2	629.0	633.2	634.9	636.5	638.1	639.8
60°	583.5	590.2	596.8	601.3	603.6	605.9	608.3	610.6
62.5°	552.3	559.0	565.6	570.1	572.4	574.7	577.0	579.4
65°	503.9	511.2	518.4	523.2	525.5	527.8	530.2	532.5
67.5°	456.6	463.9	471.2	476.1	478.3	480.5	482.8	485.1
70°	423.1	430.9	438.7	443.7	445.6	447.7	449.7	451.8
72.5°	391.4	399.0	406.6	411.5	413.8	416.0	418.2	420.5
75°	343.0	351.1	359.1	364.5	367.1	369.7	372.3	375.0
77.5°	297.9	306.1	314.3	319.8	322.6	325.4	328.2	330.9
80°	268.6	277.3	286.0	291.5	293.8	296.1	298.4	300.8
82.5°	239.9	248.8	257.7	263.5	266.0	268.6	271.1	273.6
85°	199.6	208.3	217.0	222.7	225.7	228.5	231.5	234.3
87.5°	168.4	177.0	185.6	191.1	193.7	196.3	198.9	201.5
90°	160.6	169.8	179.0	184.9	187.4	190.0	192.7	195.2
92.5°	153.4	162.3	171.3	177.0	179.4	181.7	184.1	186.5
95°	143.8	152.5	161.0	166.7	169.5	172.2	175.0	177.7
97.5°	136.5	144.1	151.8	156.9	159.6	162.2	164.9	167.5
100°	136.6	142.1	147.7	151.5	153.7	155.8	158.0	160.1
102.5°	187.8	170.8	153.7	146.3	148.5	150.8	153.1	155.4
105°	291.6	300.1	308.5	311.4	308.9	306.4	303.9	301.3
107.5°	329.2	336.9	344.6	349.8	352.4	355.0	357.6	360.1
110°	354.9	361.8	368.8	373.6	376.3	379.0	381.7	384.5





TEST NUMBER: P332843-930

CATALOG NUMBER: S124DIW-S1195D770U930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	379.1	385.5	391.8	396.5	399.3	402.1	405.0	407.7
115°	415.8	422.4	429.0	433.4	435.4	437.4	439.4	441.5
117.5°	452.2	458.1	464.1	468.1	470.4	472.7	475.0	477.2
120°	474.3	480.3	486.3	490.4	492.4	494.5	496.5	498.6
122.5°	496.4	502.4	508.3	512.2	514.0	515.8	517.6	519.4
125°	527.6	533.5	539.3	543.2	545.1	547.0	548.9	550.7
127.5°	557.2	562.3	567.4	571.0	572.7	574.6	576.5	578.4
130°	575.2	580.5	585.9	589.4	591.1	592.9	594.6	596.3
132.5°	593.3	598.4	603.5	606.9	608.5	610.1	611.7	613.3
135°	616.4	621.3	626.2	629.7	631.7	633.7	635.7	637.6
137.5°	639.7	644.2	648.7	651.7	653.1	654.4	655.7	657.1
140°	654.3	658.4	662.6	665.4	667.0	668.6	670.2	671.8
142.5°	668.5	672.1	675.6	678.1	679.3	680.5	681.8	683.1
145°	689.4	691.3	693.2	694.8	696.3	697.7	699.1	700.5
147.5°	708.0	708.3	708.7	709.4	710.5	711.5	712.6	713.6
150°	721.4	721.4	721.4	721.5	721.6	721.7	721.9	721.9
152.5°	733.4	733.6	733.9	733.9	733.9	733.8	733.7	733.6
155°	749.7	750.2	750.7	750.8	750.4	750.0	749.6	749.3
157.5°	763.7	764.4	765.1	765.1	764.4	763.7	763.0	762.3
160°	772.7	773.4	774.2	774.2	773.4	772.7	771.8	771.0
162.5°	779.9	780.6	781.5	781.5	780.6	779.6	778.7	777.8
165°	790.1	791.2	792.2	792.2	791.0	789.8	788.6	787.3
167.5°	797.6	798.7	800.0	799.9	798.5	797.2	795.8	794.5
170°	802.2	803.3	804.4	804.2	802.9	801.5	800.2	798.8
172.5°	805.1	806.2	807.2	807.1	805.6	804.2	802.7	801.3
175°	808.5	809.8	811.0	810.7	809.1	807.6	805.9	804.3
177.5°	809.9	810.7	811.6	811.4	810.1	808.8	807.6	806.2
180°	809.1	809.1	809.1	809.1	809.1	809.1	809.1	809.1

(END OF REPORT)