

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: P332861-935

Luminaire Tested: **S124DIW-S1195D1560U935-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332861-935  
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-S1195D1560U935-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1560 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9560.2 lumens  
Efficiency: N/A  
Efficacy: 115.3 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

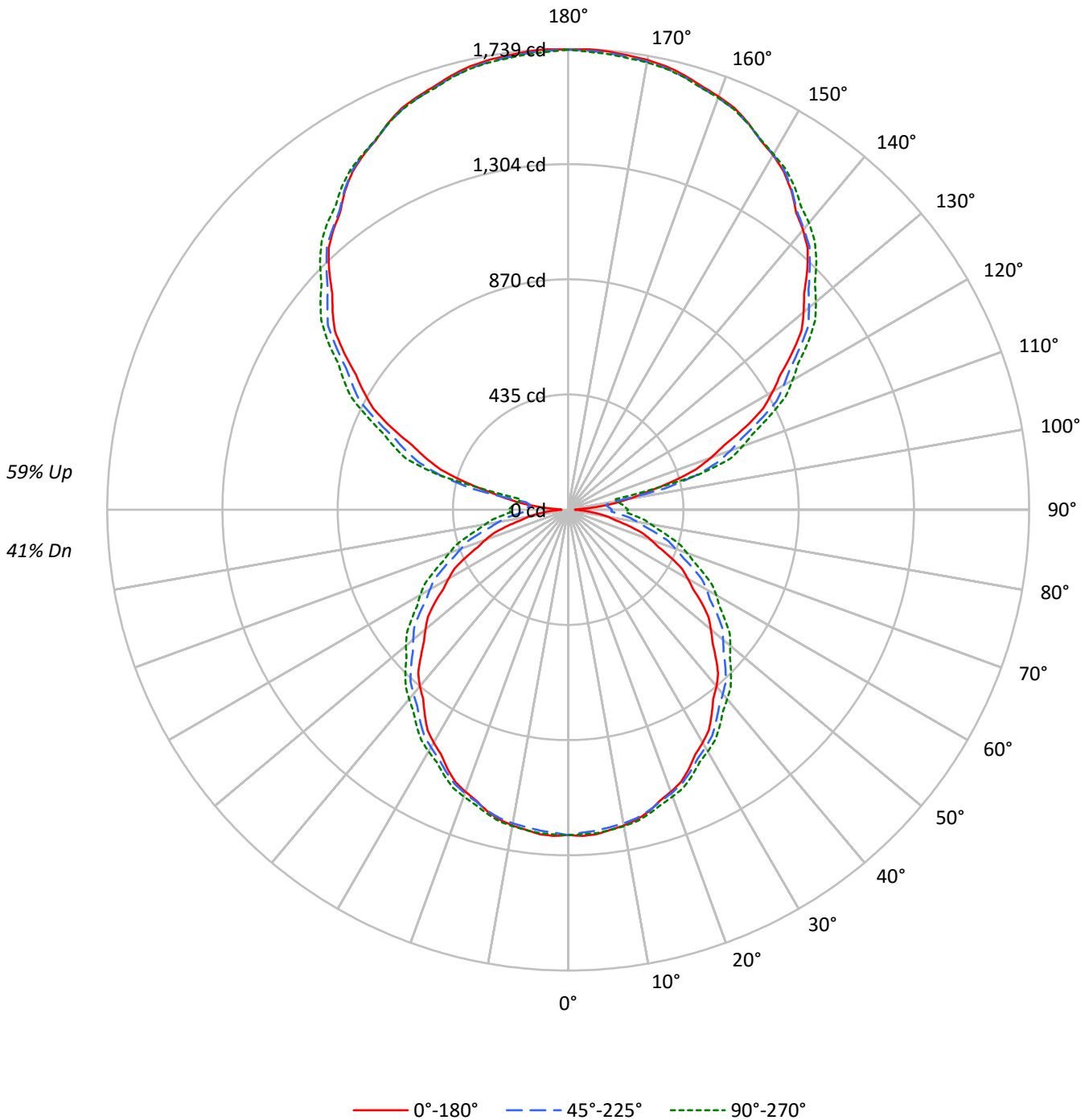
Input Watts (W): 82.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P332861-935

CATALOG NUMBER: S124DIW-S1195D1560U935-4F0-1E-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	105	105	105	105	96	96	96	96	78	78	78	62	62	62	47	47	47	41
1	95	90	86	82	86	82	79	75	67	65	62	53	52	50	41	39	38	32
2	86	78	72	67	78	71	66	61	58	54	51	46	43	41	35	33	32	26
3	78	68	61	55	71	62	56	51	51	46	42	41	37	34	31	29	27	22
4	71	60	52	46	65	55	48	43	45	40	36	36	32	29	27	25	23	19
5	65	54	45	39	59	49	42	36	40	35	31	32	28	25	25	22	20	16
6	60	48	40	34	54	44	37	31	36	31	27	29	25	22	22	19	17	14
7	55	43	35	29	50	39	32	27	33	27	23	26	22	19	20	17	15	12
8	51	39	31	26	47	36	29	24	30	24	20	24	20	17	19	16	13	11
9	48	36	28	23	43	33	26	21	27	22	18	22	18	15	17	14	12	10
10	45	32	25	20	40	30	23	19	25	20	16	20	16	14	16	13	11	9

**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	1.2
10°-20°	333.1	3.5
20°-30°	503.7	5.3
30°-40°	609.4	6.4
40°-50°	644.3	6.7
50°-60°	606.4	6.3
60°-70°	503.1	5.3
70°-80°	353.4	3.7
80°-90°	204.8	2.1
90°-100°	178.0	1.9
100°-110°	466.4	4.9
110°-120°	783.1	8.2
120°-130°	952.6	10.0
130°-140°	998.0	10.4
140°-150°	922.7	9.7
150°-160°	741.8	7.8
160°-170°	478.4	5.0
170°-180°	164.9	1.7
0°-30°	953.1	10.0
0°-40°	1562.5	16.3
0°-60°	2813.1	29.4
0°-90°	3874.3	40.5
90°-120°	1427.5	14.9
90°-150°	4300.8	45.0
90°-180°	5686.0	59.5
0°-180°	9560.2	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°	26	95	165	210	226	18
95°	89	94	148	191	207	106
105°	403	440	496	537	506	423
115°	738	756	797	828	839	727
125°	1031	1037	1067	1096	1106	921
135°	1275	1275	1289	1313	1324	983
145°	1469	1471	1471	1481	1489	918
155°	1609	1610	1606	1611	1608	742
165°	1697	1691	1691	1700	1689	479
175°	1736	1729	1730	1740	1726	165
180°	1736	1736	1736	1736	1736	



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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°	41.5	54.6	67.7	80.8	93.8	107.4	121.2	135.0	148.9	162.7	171.9
90°	25.9	41.3	56.7	72.1	87.5	102.9	118.3	133.8	149.2	164.7	175.3
92.5°	37.3	48.4	59.6	70.8	82.0	95.2	110.7	126.1	141.6	157.0	167.4
95°	89.3	89.5	89.8	90.1	90.4	96.9	109.7	122.5	135.3	148.2	158.2
97.5°	167.9	182.7	197.4	212.2	227.0	224.5	204.7	184.9	165.1	145.3	153.5
100°	228.1	241.2	254.3	267.5	280.6	273.2	245.3	217.4	189.5	161.6	165.0
102.5°	296.6	307.4	318.1	329.0	339.8	348.4	354.8	361.3	367.8	374.3	329.3
105°	403.2	411.0	418.9	426.7	434.5	444.9	457.6	470.4	483.1	495.8	506.1
107.5°	504.5	510.3	516.3	522.1	528.0	537.3	549.9	562.6	575.2	587.9	596.7
110°	571.9	577.0	582.2	587.4	592.5	601.2	613.7	626.1	638.5	651.0	658.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	637.3	642.7	648.0	653.3	658.7	666.8	677.9	688.9	699.9	710.9	717.6
115°	738.0	741.6	745.2	748.8	752.4	759.0	768.4	777.9	787.5	796.9	804.3
117.5°	829.9	832.7	835.5	838.3	841.1	847.4	857.1	866.9	876.6	886.3	892.6
120°	891.1	893.2	895.3	897.3	899.4	904.7	913.3	921.9	930.4	939.0	945.6
122.5°	949.3	950.1	951.1	951.9	952.8	957.6	966.4	975.2	984.0	992.7	999.2
125°	1031.2	1032.1	1032.9	1033.8	1034.7	1038.6	1045.7	1052.7	1059.8	1066.9	1073.5
127.5°	1109.9	1109.9	1109.9	1109.8	1109.8	1113.4	1120.7	1127.8	1135.1	1142.2	1147.5
130°	1159.7	1159.7	1159.7	1159.7	1159.7	1162.5	1168.3	1174.1	1179.7	1185.5	1191.4
132.5°	1206.4	1206.7	1206.9	1207.1	1207.3	1210.0	1215.0	1220.0	1224.9	1229.9	1235.5
135°	1275.2	1274.9	1274.6	1274.4	1274.0	1275.6	1278.8	1282.1	1285.4	1288.7	1294.2
137.5°	1337.3	1337.0	1336.9	1336.7	1336.5	1337.6	1339.9	1342.2	1344.5	1346.8	1351.9
140°	1377.8	1378.0	1378.3	1378.6	1378.9	1379.4	1380.4	1381.2	1382.1	1382.9	1387.8
142.5°	1413.1	1414.0	1415.0	1416.0	1416.9	1417.6	1417.6	1417.8	1418.0	1418.2	1422.3
145°	1468.6	1469.1	1469.7	1470.2	1470.8	1471.1	1471.1	1471.1	1471.1	1471.1	1473.3
147.5°	1513.0	1514.3	1515.6	1516.9	1518.2	1518.7	1518.5	1518.2	1517.9	1517.6	1518.0
150°	1545.2	1546.0	1546.9	1547.7	1548.6	1548.9	1548.6	1548.3	1548.0	1547.7	1547.7
152.5°	1571.1	1571.9	1572.8	1573.6	1574.6	1574.8	1574.2	1573.6	1573.1	1572.6	1573.1
155°	1608.8	1609.0	1609.3	1609.6	1609.9	1609.6	1608.8	1607.9	1607.1	1606.1	1607.3
157.5°	1640.7	1640.5	1640.4	1640.2	1640.0	1639.4	1638.4	1637.4	1636.5	1635.5	1637.0
160°	1659.4	1658.5	1657.7	1656.8	1656.0	1655.4	1655.0	1654.8	1654.5	1654.2	1656.0
162.5°	1676.0	1674.9	1673.8	1672.8	1671.6	1670.9	1670.6	1670.3	1670.1	1669.7	1671.5
165°	1697.0	1695.6	1694.2	1692.7	1691.3	1690.6	1690.6	1690.6	1690.6	1690.6	1692.8
167.5°	1713.6	1712.2	1710.6	1709.2	1707.6	1706.8	1706.7	1706.5	1706.3	1706.2	1708.7
170°	1723.0	1721.3	1719.5	1717.8	1716.1	1715.4	1715.6	1716.0	1716.2	1716.5	1718.8
172.5°	1729.2	1727.5	1725.8	1724.1	1722.3	1721.6	1721.9	1722.2	1722.4	1722.8	1725.0
175°	1735.9	1734.2	1732.5	1730.8	1729.1	1728.4	1728.6	1728.9	1729.2	1729.5	1732.1
177.5°	1739.1	1737.5	1735.9	1734.2	1732.7	1732.1	1732.5	1733.0	1733.5	1733.9	1735.8
180°	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9



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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°	181.2	190.4	199.6	205.5	208.4	211.2	214.0	216.8
90°	185.9	196.5	207.1	213.9	216.9	219.9	222.9	225.9
92.5°	177.7	188.0	198.5	204.9	207.4	210.0	212.6	215.1
95°	168.2	178.1	188.1	194.6	197.7	200.7	203.7	206.7
97.5°	161.7	169.9	178.1	183.7	186.6	189.4	192.3	195.3
100°	168.3	171.7	175.0	177.9	180.3	182.7	185.2	187.6
102.5°	284.4	239.5	194.6	173.4	175.8	178.2	180.7	183.1
105°	516.3	526.6	536.7	538.0	530.0	522.0	514.1	506.2
107.5°	605.5	614.2	623.0	629.0	632.3	635.6	638.9	642.2
110°	666.2	673.8	681.4	686.8	690.2	693.4	696.8	700.1





TEST NUMBER: P332861-935

CATALOG NUMBER: S124DIW-S1195D1560U935-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	724.3	730.9	737.6	742.7	746.2	749.8	753.3	756.8
115°	811.5	818.8	826.1	830.9	833.0	835.1	837.2	839.4
117.5°	898.8	905.0	911.3	915.6	917.9	920.2	922.6	924.9
120°	952.4	959.1	965.7	970.0	971.9	973.8	975.6	977.5
122.5°	1005.6	1012.1	1018.6	1022.5	1024.2	1025.8	1027.4	1029.1
125°	1080.2	1086.8	1093.6	1097.9	1100.0	1102.2	1104.3	1106.4
127.5°	1152.9	1158.2	1163.6	1167.1	1169.0	1170.8	1172.7	1174.5
130°	1197.1	1202.9	1208.7	1212.5	1214.4	1216.2	1218.0	1219.9
132.5°	1241.0	1246.6	1252.2	1255.7	1257.3	1258.9	1260.5	1262.1
135°	1299.7	1305.1	1310.6	1314.5	1316.9	1319.3	1321.7	1324.1
137.5°	1357.0	1362.1	1367.2	1370.4	1371.7	1373.1	1374.5	1375.8
140°	1392.7	1397.5	1402.3	1405.7	1407.5	1409.3	1411.1	1412.9
142.5°	1426.4	1430.6	1434.6	1437.4	1438.7	1440.0	1441.4	1442.7
145°	1475.3	1477.5	1479.6	1481.5	1483.3	1485.1	1486.9	1488.8
147.5°	1518.5	1519.1	1519.5	1520.4	1521.6	1522.9	1524.1	1525.4
150°	1547.7	1547.7	1547.7	1547.9	1548.2	1548.4	1548.8	1549.0
152.5°	1573.6	1574.0	1574.5	1574.6	1574.4	1574.3	1574.1	1573.9
155°	1608.4	1609.6	1610.8	1610.9	1610.1	1609.2	1608.3	1607.5
157.5°	1638.5	1640.0	1641.5	1641.5	1640.0	1638.5	1637.0	1635.5
160°	1657.7	1659.4	1661.1	1661.1	1659.4	1657.7	1656.0	1654.2
162.5°	1673.3	1675.0	1676.7	1676.5	1674.6	1672.7	1670.7	1668.7
165°	1695.1	1697.5	1699.8	1699.6	1697.0	1694.4	1691.9	1689.3
167.5°	1711.2	1713.7	1716.3	1716.1	1713.2	1710.4	1707.4	1704.6
170°	1721.1	1723.5	1725.8	1725.4	1722.6	1719.7	1716.8	1713.9
172.5°	1727.3	1729.7	1732.0	1731.6	1728.5	1725.4	1722.3	1719.1
175°	1734.7	1737.3	1739.9	1739.5	1735.9	1732.5	1729.1	1725.6
177.5°	1737.6	1739.5	1741.3	1740.9	1738.1	1735.3	1732.5	1729.7
180°	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9	1735.9

(END OF REPORT)