

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: P332861-940

Luminaire Tested: **S124DIW-S1195D1560U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332861-940
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-S1195D1560U940-4F0-1E-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: 9901.2 lumens
Efficiency: N/A
Efficacy: 119.4 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

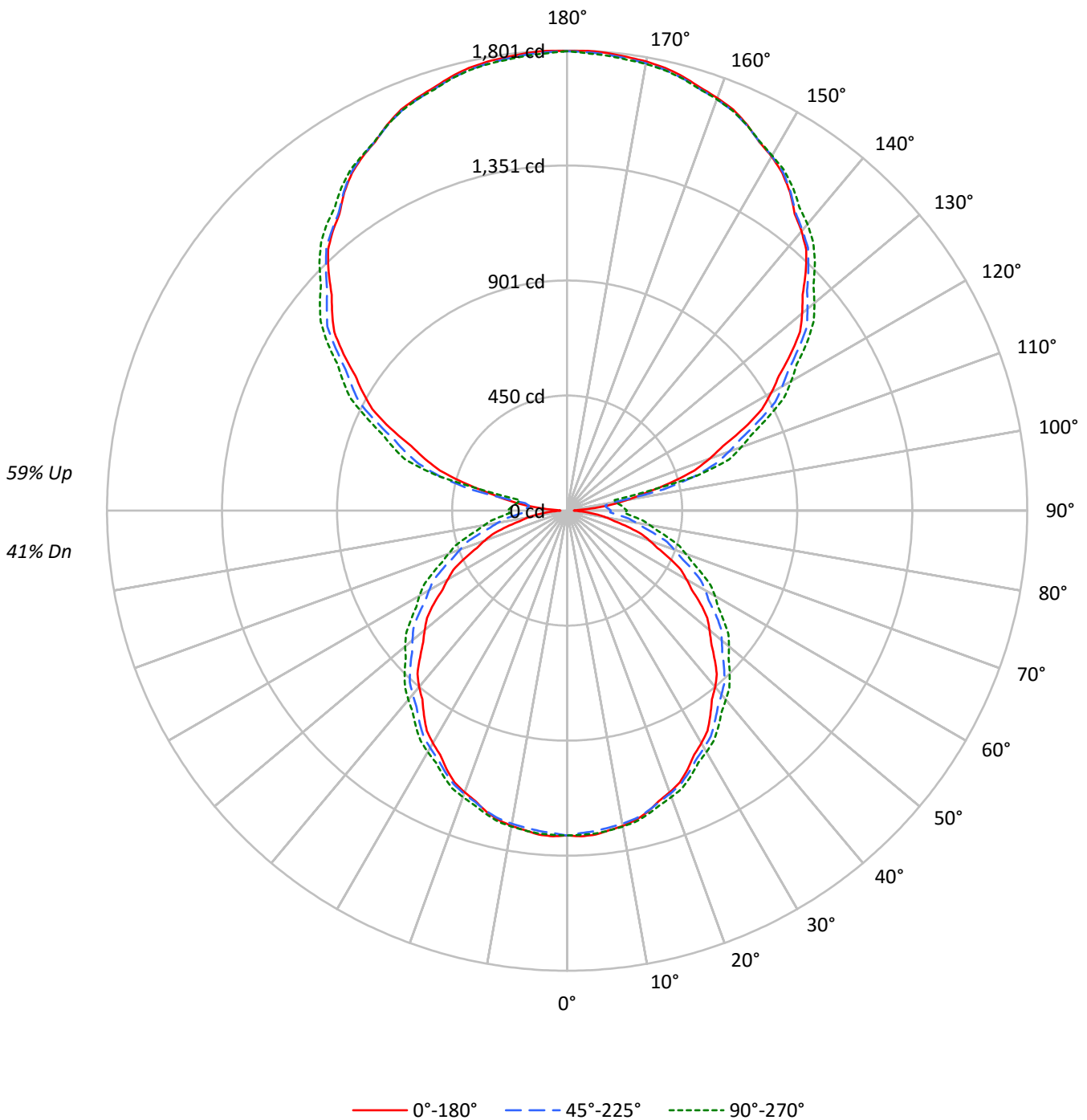
Input Watts (W): 82.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332861-940

CATALOG NUMBER: S124DIW-S1195D1560U940-4F0-1E-UDD-D

Luminous Intensity Polar Plot





TEST NUMBER: P332861-940

CATALOG NUMBER: S124DIW-S1195D1560U940-4F0-1E-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°	10266	10266	10266
5°	10297	10032	10061
10°	10234	9869	9861
15°	10142	9679	9625
20°	10004	9469	9396
25°	9848	9234	9144
30°	9679	9000	8885
35°	9488	8760	8658
40°	9335	8533	8422
45°	9109	8323	8219
50°	8917	8080	8004
55°	8719	7852	7753
60°	8410	7562	7524
65°	8071	7250	7242
70°	7660	6893	6914
75°	7091	6501	6617
80°	6453	6124	6326
85°	5641	5792	6154



TEST NUMBER: P332861-940

CATALOG NUMBER: S124DIW-S1195D1560U940-4F0-1E-UDD-D

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	120.4	1.2
10°-20°	345.0	3.5
20°-30°	521.7	5.3
30°-40°	631.2	6.4
40°-50°	667.3	6.7
50°-60°	628.0	6.3
60°-70°	521.0	5.3
70°-80°	366.0	3.7
80°-90°	212.1	2.1
90°-100°	184.3	1.9
100°-110°	483.0	4.9
110°-120°	811.1	8.2
120°-130°	986.6	10.0
130°-140°	1033.6	10.4
140°-150°	955.6	9.7
150°-160°	768.2	7.8
160°-170°	495.5	5.0
170°-180°	170.8	1.7
0°-30°	987.1	10.0
0°-40°	1618.2	16.3
0°-60°	2913.5	29.4
0°-90°	4012.5	40.5
90°-120°	1478.4	14.9
90°-150°	4454.2	45.0
90°-180°	5889.0	59.5
0°-180°	9901.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1272	1272	1272	1272	1272	
5°	1273	1268	1259	1269	1269	121
15°	1220	1221	1218	1229	1229	344
25°	1116	1125	1129	1144	1146	514
35°	977	994	1008	1027	1032	611
45°	814	842	869	892	900	629
55°	638	668	710	738	748	568
65°	441	487	535	570	582	437
75°	245	298	357	396	410	260
85°	75	136	199	240	256	80
90°	27	99	171	218	234	19
95°	92	97	154	198	214	110
105°	418	455	514	556	524	438
115°	764	783	825	858	869	752
125°	1068	1074	1105	1135	1146	953
135°	1321	1320	1335	1359	1371	1018
145°	1521	1523	1524	1533	1542	950
155°	1666	1667	1663	1668	1665	768
165°	1758	1751	1751	1760	1750	496
175°	1798	1790	1791	1802	1787	171
180°	1798	1798	1798	1798	1798	



TEST NUMBER: P332861-940

CATALOG NUMBER: S124DIW-S1195D1560U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6
2.5°	1276.1	1275.3	1274.6	1273.8	1273.1	1271.7	1269.6	1267.7	1265.6	1263.6	1265.3
5°	1272.9	1272.0	1271.0	1270.2	1269.2	1267.6	1265.3	1263.1	1261.0	1258.7	1261.2
7.5°	1262.1	1261.6	1261.0	1260.4	1259.9	1258.6	1256.9	1255.0	1253.1	1251.3	1254.2
10°	1253.0	1252.7	1252.4	1252.1	1251.8	1250.8	1249.2	1247.7	1246.1	1244.5	1247.3
12.5°	1240.5	1240.5	1240.4	1240.3	1240.3	1239.7	1238.6	1237.5	1236.4	1235.4	1238.0
15°	1220.3	1220.6	1220.9	1221.2	1221.6	1221.2	1220.3	1219.3	1218.3	1217.5	1220.3
17.5°	1192.7	1193.6	1194.5	1195.5	1196.4	1196.9	1196.7	1196.4	1196.2	1196.1	1199.0
20°	1173.3	1174.2	1175.2	1176.2	1177.1	1177.7	1178.0	1178.4	1178.7	1179.0	1182.1
22.5°	1151.6	1152.8	1154.1	1155.2	1156.5	1157.4	1157.9	1158.5	1159.0	1159.6	1162.8
25°	1116.3	1118.2	1120.2	1122.0	1123.9	1125.3	1126.3	1127.2	1128.2	1129.2	1132.7
27.5°	1077.0	1079.9	1082.6	1085.4	1088.2	1090.3	1091.7	1093.2	1094.7	1096.1	1099.3
30°	1050.8	1053.4	1055.9	1058.5	1061.0	1063.4	1065.5	1067.7	1070.0	1072.2	1075.7
32.5°	1022.3	1025.4	1028.4	1031.4	1034.5	1037.2	1039.7	1042.2	1044.6	1047.1	1051.1
35°	976.8	980.6	984.4	988.2	991.9	995.4	998.6	1001.7	1005.0	1008.1	1012.5
37.5°	930.9	935.3	939.7	944.1	948.4	952.5	956.4	960.4	964.3	968.2	972.8
40°	901.3	905.4	909.5	913.6	917.7	922.0	926.5	930.9	935.3	939.8	944.5
42.5°	867.2	871.7	876.4	881.0	885.6	890.6	895.7	900.9	906.1	911.3	916.6
45°	814.5	820.5	826.5	832.5	838.5	844.5	850.5	856.6	862.6	868.6	874.0
47.5°	764.0	770.3	776.5	782.7	788.9	795.5	802.5	809.4	816.4	823.3	828.8
50°	727.6	734.6	741.5	748.5	755.5	762.4	769.4	776.3	783.3	790.2	796.6
52.5°	691.2	698.1	705.1	712.0	719.0	726.5	734.4	742.4	750.4	758.4	764.7
55°	637.9	644.5	651.2	657.8	664.5	672.5	682.1	691.5	701.1	710.5	716.8
57.5°	578.4	586.7	594.9	603.1	611.3	620.1	629.5	639.0	648.5	657.8	665.4
60°	539.7	547.9	556.1	564.4	572.6	581.9	592.4	602.8	613.2	623.7	631.0
62.5°	502.0	511.0	520.0	529.1	538.0	547.7	558.2	568.6	579.1	589.5	596.7
65°	441.4	451.6	461.6	471.8	481.9	492.3	503.1	513.9	524.6	535.4	543.3
67.5°	383.0	393.8	404.6	415.3	426.1	437.2	448.7	460.2	471.7	483.3	491.3
70°	343.1	353.9	364.7	375.4	386.2	397.6	409.6	421.6	433.6	445.7	454.2
72.5°	304.4	315.4	326.5	337.4	348.5	360.3	373.2	385.9	398.7	411.5	419.8
75°	245.0	256.6	268.3	280.0	291.8	304.3	317.5	330.8	344.1	357.4	366.2
77.5°	189.4	201.8	214.2	226.6	239.0	252.2	266.1	280.0	293.9	307.8	316.8
80°	155.2	167.8	180.5	193.1	205.8	219.1	233.0	247.0	260.9	274.8	284.3
82.5°	121.0	134.2	147.4	160.5	173.7	187.3	201.2	215.1	229.0	242.9	252.6
85°	75.4	88.7	102.0	115.3	128.6	142.4	156.6	170.9	185.1	199.4	208.8
87.5°	43.0	56.5	70.1	83.6	97.2	111.2	125.6	139.8	154.2	168.5	178.1
90°	26.8	42.8	58.7	74.6	90.6	106.6	122.5	138.6	154.5	170.6	181.6
92.5°	38.6	50.1	61.7	73.3	84.9	98.6	114.7	130.6	146.7	162.6	173.3
95°	92.5	92.7	93.0	93.3	93.6	100.4	113.6	126.9	140.2	153.5	163.8
97.5°	173.9	189.2	204.5	219.8	235.1	232.6	212.0	191.5	171.0	150.5	159.0
100°	236.2	249.8	263.4	277.1	290.6	282.9	254.0	225.2	196.3	167.4	170.9
102.5°	307.2	318.3	329.5	340.7	351.9	360.8	367.5	374.2	380.9	387.6	341.1
105°	417.6	425.7	433.8	441.9	450.0	460.7	473.9	487.1	500.3	513.5	524.1
107.5°	522.5	528.5	534.7	540.7	546.8	556.4	569.5	582.6	595.8	608.9	618.0
110°	592.3	597.6	603.0	608.3	613.6	622.7	635.6	648.5	661.3	674.2	682.1



TEST NUMBER: P332861-940

CATALOG NUMBER: S124DIW-S1195D1560U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	660.0	665.6	671.1	676.6	682.2	690.6	702.0	713.5	724.9	736.3	743.2
115°	764.3	768.0	771.8	775.5	779.3	786.0	795.9	805.7	815.6	825.4	832.9
117.5°	859.5	862.4	865.3	868.2	871.1	877.6	887.7	897.8	907.9	917.9	924.4
120°	922.9	925.1	927.2	929.3	931.5	937.0	945.8	954.8	963.6	972.5	979.4
122.5°	983.1	984.0	985.0	985.9	986.8	991.8	1000.9	1010.0	1019.0	1028.1	1034.8
125°	1068.0	1068.9	1069.8	1070.7	1071.6	1075.7	1083.0	1090.3	1097.6	1104.9	1111.8
127.5°	1149.5	1149.5	1149.5	1149.4	1149.4	1153.2	1160.7	1168.1	1175.5	1182.9	1188.5
130°	1201.0	1201.0	1201.0	1201.0	1201.0	1204.0	1210.0	1215.9	1221.8	1227.8	1233.9
132.5°	1249.5	1249.7	1249.9	1250.2	1250.4	1253.1	1258.3	1263.5	1268.6	1273.8	1279.6
135°	1320.7	1320.4	1320.1	1319.8	1319.5	1321.1	1324.5	1327.8	1331.2	1334.7	1340.3
137.5°	1385.0	1384.7	1384.6	1384.4	1384.2	1385.3	1387.7	1390.1	1392.4	1394.8	1400.1
140°	1426.9	1427.2	1427.5	1427.8	1428.1	1428.6	1429.6	1430.5	1431.4	1432.3	1437.3
142.5°	1463.5	1464.5	1465.4	1466.5	1467.5	1468.1	1468.2	1468.4	1468.6	1468.7	1473.0
145°	1521.0	1521.5	1522.2	1522.7	1523.3	1523.6	1523.6	1523.6	1523.6	1523.6	1525.8
147.5°	1567.0	1568.3	1569.7	1571.0	1572.4	1572.9	1572.6	1572.4	1572.0	1571.7	1572.2
150°	1600.4	1601.2	1602.0	1602.9	1603.8	1604.1	1603.8	1603.6	1603.2	1602.9	1602.9
152.5°	1627.1	1628.0	1628.9	1629.8	1630.8	1630.9	1630.3	1629.8	1629.2	1628.7	1629.2
155°	1666.2	1666.4	1666.7	1667.1	1667.3	1667.1	1666.2	1665.3	1664.4	1663.4	1664.6
157.5°	1699.2	1699.1	1698.9	1698.7	1698.5	1697.9	1696.8	1695.9	1694.9	1693.8	1695.4
160°	1718.6	1717.7	1716.8	1715.9	1715.0	1714.4	1714.0	1713.8	1713.5	1713.2	1715.0
162.5°	1735.8	1734.6	1733.5	1732.4	1731.3	1730.5	1730.2	1729.9	1729.7	1729.3	1731.1
165°	1757.6	1756.0	1754.6	1753.1	1751.6	1750.9	1750.9	1750.9	1750.9	1750.9	1753.2
167.5°	1774.8	1773.3	1771.7	1770.1	1768.5	1767.7	1767.5	1767.4	1767.2	1767.0	1769.6
170°	1784.5	1782.7	1780.8	1779.1	1777.3	1776.6	1776.8	1777.2	1777.4	1777.7	1780.1
172.5°	1790.9	1789.1	1787.3	1785.6	1783.8	1783.0	1783.3	1783.6	1783.9	1784.2	1786.5
175°	1797.9	1796.1	1794.3	1792.5	1790.7	1790.0	1790.3	1790.6	1790.9	1791.2	1793.9
177.5°	1801.2	1799.5	1797.8	1796.1	1794.5	1793.9	1794.3	1794.8	1795.3	1795.7	1797.7
180°	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9



TEST NUMBER: P332861-940

CATALOG NUMBER: S124DIW-S1195D1560U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6
2.5°	1267.1	1268.9	1270.7	1271.4	1271.1	1270.9	1270.7	1270.4
5°	1263.8	1266.3	1268.8	1270.0	1269.6	1269.4	1269.0	1268.7
7.5°	1257.0	1259.9	1262.8	1264.0	1263.6	1263.4	1263.0	1262.8
10°	1250.2	1253.0	1255.9	1257.1	1256.9	1256.5	1256.2	1255.9
12.5°	1240.5	1243.1	1245.7	1247.1	1247.0	1246.9	1246.8	1246.8
15°	1223.2	1226.0	1228.8	1230.1	1229.8	1229.5	1229.1	1228.8
17.5°	1201.9	1204.8	1207.7	1209.1	1208.8	1208.5	1208.3	1208.0
20°	1185.4	1188.5	1191.7	1193.2	1193.2	1193.2	1193.2	1193.2
22.5°	1165.9	1169.1	1172.2	1174.1	1174.7	1175.1	1175.6	1176.2
25°	1136.1	1139.6	1143.1	1145.0	1145.3	1145.6	1145.9	1146.2
27.5°	1102.6	1105.8	1109.0	1110.8	1111.3	1111.6	1112.0	1112.3
30°	1079.1	1082.6	1086.1	1088.2	1088.8	1089.4	1090.0	1090.7
32.5°	1055.1	1059.1	1063.1	1065.4	1066.0	1066.7	1067.3	1067.9
35°	1017.0	1021.4	1025.8	1028.5	1029.5	1030.5	1031.4	1032.3
37.5°	977.2	981.7	986.2	989.0	990.0	991.0	992.0	993.0
40°	949.2	954.0	958.8	961.8	963.0	964.3	965.5	966.8
42.5°	921.8	927.0	932.3	935.4	936.5	937.5	938.4	939.5
45°	879.3	884.8	890.1	893.6	895.2	896.7	898.3	899.9
47.5°	834.5	840.0	845.6	849.3	851.2	853.1	855.0	856.9
50°	802.9	809.2	815.6	819.7	821.6	823.5	825.4	827.2
52.5°	771.1	777.4	783.6	787.8	789.7	791.6	793.4	795.4
55°	723.2	729.5	735.8	739.9	741.8	743.8	745.6	747.5
57.5°	672.9	680.5	688.0	692.6	694.4	696.2	697.9	699.7
60°	638.2	645.5	652.7	657.6	660.2	662.7	665.3	667.8
62.5°	604.0	611.4	618.6	623.5	626.1	628.6	631.1	633.6
65°	551.2	559.1	567.0	572.2	574.8	577.3	579.9	582.4
67.5°	499.4	507.4	515.4	520.7	523.2	525.6	528.1	530.6
70°	462.8	471.3	479.8	485.3	487.4	489.6	491.9	494.1
72.5°	428.1	436.4	444.7	450.0	452.5	455.0	457.4	459.9
75°	375.1	384.0	392.8	398.7	401.5	404.4	407.2	410.1
77.5°	325.8	334.8	343.8	349.8	352.8	355.9	358.9	361.9
80°	293.8	303.3	312.8	318.8	321.3	323.9	326.4	329.0
82.5°	262.4	272.2	281.9	288.2	291.0	293.7	296.5	299.3
85°	218.3	227.8	237.3	243.6	246.8	249.9	253.2	256.3
87.5°	187.6	197.2	206.7	212.9	215.8	218.7	221.6	224.5
90°	192.5	203.5	214.5	221.5	224.6	227.7	230.9	234.0
92.5°	184.0	194.7	205.5	212.2	214.8	217.5	220.2	222.7
95°	174.2	184.5	194.8	201.5	204.7	207.9	211.0	214.1
97.5°	167.5	175.9	184.4	190.2	193.2	196.2	199.2	202.2
100°	174.3	177.8	181.2	184.2	186.7	189.2	191.8	194.3
102.5°	294.5	248.1	201.5	179.6	182.1	184.6	187.2	189.7
105°	534.8	545.4	555.9	557.1	548.9	540.6	532.4	524.2
107.5°	627.1	636.1	645.2	651.5	654.9	658.3	661.7	665.1
110°	689.9	697.9	705.7	711.3	714.8	718.2	721.7	725.1



TEST NUMBER: P332861-940

CATALOG NUMBER: S124DIW-S1195D1560U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	750.1	757.0	763.9	769.2	772.8	776.5	780.2	783.8
115°	840.4	848.0	855.6	860.5	862.7	864.9	867.1	869.3
117.5°	930.9	937.3	943.8	948.2	950.7	953.1	955.5	957.9
120°	986.3	993.3	1000.1	1004.6	1006.6	1008.5	1010.4	1012.4
122.5°	1041.5	1048.2	1054.9	1059.0	1060.7	1062.4	1064.1	1065.8
125°	1118.7	1125.6	1132.6	1137.1	1139.2	1141.5	1143.7	1145.8
127.5°	1194.0	1199.5	1205.1	1208.7	1210.7	1212.5	1214.5	1216.4
130°	1239.8	1245.8	1251.8	1255.7	1257.7	1259.5	1261.4	1263.4
132.5°	1285.3	1291.0	1296.8	1300.5	1302.2	1303.8	1305.5	1307.2
135°	1346.0	1351.7	1357.4	1361.4	1363.9	1366.4	1368.9	1371.4
137.5°	1405.4	1410.7	1415.9	1419.2	1420.7	1422.1	1423.5	1424.9
140°	1442.3	1447.3	1452.3	1455.8	1457.7	1459.6	1461.4	1463.3
142.5°	1477.3	1481.6	1485.8	1488.6	1490.0	1491.4	1492.8	1494.2
145°	1527.9	1530.2	1532.4	1534.4	1536.2	1538.1	1540.0	1541.9
147.5°	1572.7	1573.2	1573.7	1574.6	1575.9	1577.3	1578.5	1579.8
150°	1602.9	1602.9	1602.9	1603.1	1603.4	1603.7	1604.0	1604.3
152.5°	1629.7	1630.1	1630.7	1630.8	1630.6	1630.4	1630.2	1630.0
155°	1665.8	1667.1	1668.2	1668.4	1667.5	1666.6	1665.7	1664.8
157.5°	1696.9	1698.5	1700.0	1700.0	1698.5	1696.9	1695.4	1693.8
160°	1716.8	1718.6	1720.4	1720.4	1718.6	1716.8	1715.0	1713.2
162.5°	1733.0	1734.7	1736.5	1736.3	1734.4	1732.3	1730.3	1728.2
165°	1755.6	1758.0	1760.4	1760.2	1757.6	1754.9	1752.2	1749.5
167.5°	1772.3	1774.9	1777.5	1777.4	1774.3	1771.4	1768.4	1765.4
170°	1782.5	1784.9	1787.3	1787.0	1784.0	1781.0	1778.1	1775.0
172.5°	1789.0	1791.4	1793.8	1793.3	1790.1	1786.9	1783.7	1780.4
175°	1796.5	1799.3	1802.0	1801.5	1797.9	1794.3	1790.7	1787.2
177.5°	1799.6	1801.5	1803.4	1803.0	1800.1	1797.2	1794.3	1791.4
180°	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9

(END OF REPORT)