

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: P332861-840

Luminaire Tested: **S124DIW-S1195D1560U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332861-840
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-S1195D1560U840-4F0-1E-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: 11213.1 lumens
Efficiency: N/A
Efficacy: 135.3 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

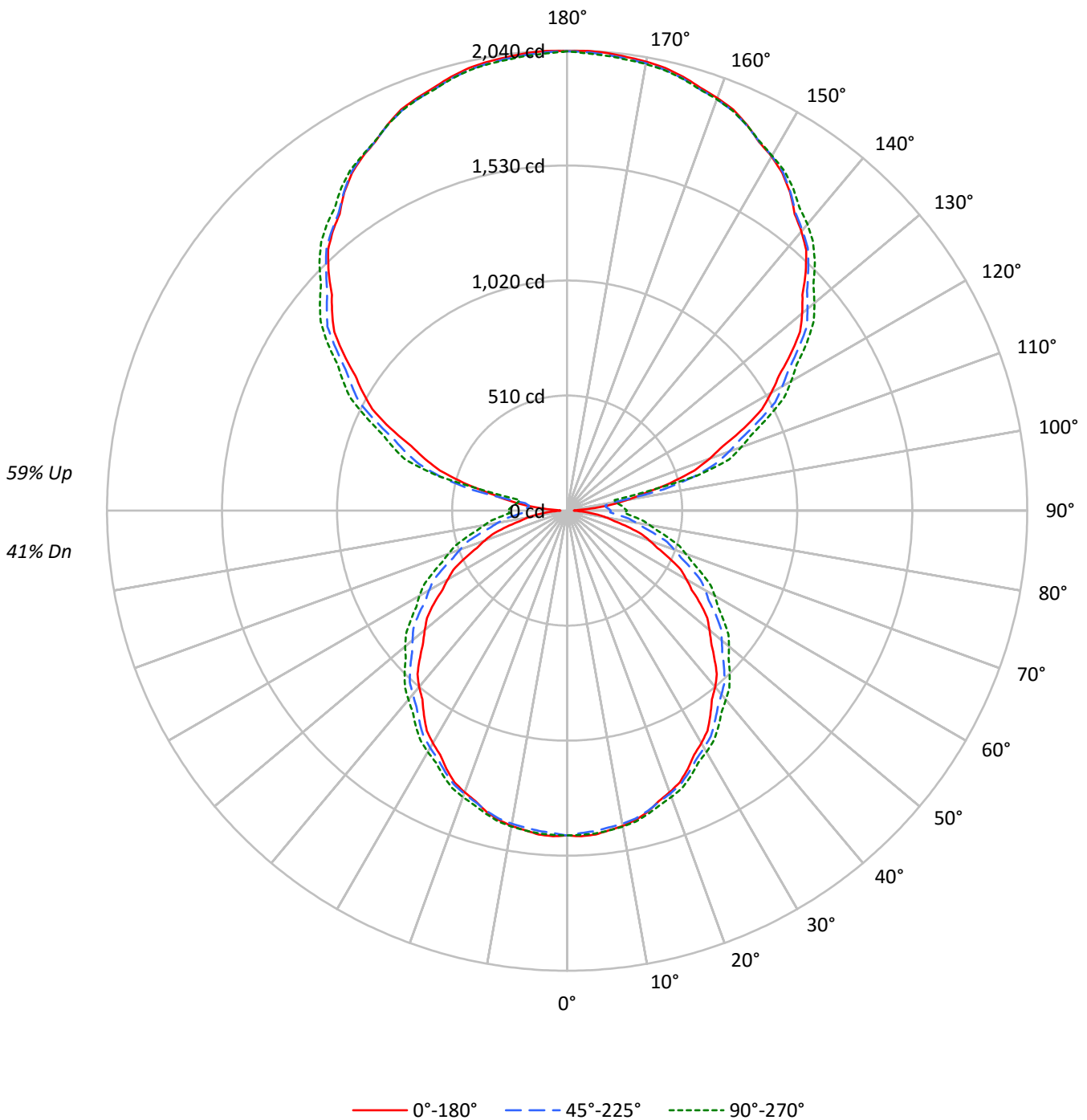
Input Watts (W): 82.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332861-840

CATALOG NUMBER: S124DIW-S1195D1560U840-4F0-1E-UDD-D

Luminous Intensity Polar Plot





TEST NUMBER: P332861-840

CATALOG NUMBER: S124DIW-S1195D1560U840-4F0-1E-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	50	30	10	0	
RCR																						
0	105	105	105	105	96	96	96	96	78	78	78	62	62	62	47	47	47	41	41	41	41	
1	95	90	86	82	86	82	79	75	67	65	62	53	52	50	41	39	38	32	32	32	32	
2	86	78	72	67	78	71	66	61	58	54	51	46	43	41	35	33	32	26	26	26	26	
3	78	68	61	55	71	62	56	51	51	46	42	41	37	34	31	29	27	22	22	22	22	
4	71	60	52	46	65	55	48	43	45	40	36	36	32	29	27	25	23	19	19	19	19	
5	65	54	45	39	59	49	42	36	40	35	31	32	28	25	25	22	20	16	16	16	16	
6	60	48	40	34	54	44	37	31	36	31	27	29	25	22	22	19	17	14	14	14	14	
7	55	43	35	29	50	39	32	27	33	27	23	26	22	19	20	17	15	12	12	12	12	
8	51	39	31	26	47	36	29	24	30	24	20	24	20	17	19	16	13	11	11	11	11	
9	48	36	28	23	43	33	26	21	27	22	18	22	18	15	17	14	12	10	10	10	10	
10	45	32	25	20	40	30	23	19	25	20	16	20	16	14	16	13	11	9	9	9	9	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11626	11626	11626
5°	11661	11362	11394
10°	11590	11176	11167
15°	11486	10961	10900
20°	11330	10723	10641
25°	11153	10457	10356
30°	10961	10193	10063
35°	10745	9921	9805
40°	10573	9663	9538
45°	10316	9426	9309
50°	10098	9151	9066
55°	9875	8894	8781
60°	9525	8563	8521
65°	9141	8210	8201
70°	8676	7806	7830
75°	8028	7363	7494
80°	7309	6935	7163
85°	6389	6559	6968



TEST NUMBER: P332861-840

CATALOG NUMBER: S124DIW-S1195D1560U840-4F0-1E-UDD-D

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.4	1.2
10°-20°	390.7	3.5
20°-30°	590.8	5.3
30°-40°	714.8	6.4
40°-50°	755.7	6.7
50°-60°	711.2	6.3
60°-70°	590.1	5.3
70°-80°	414.5	3.7
80°-90°	240.2	2.1
90°-100°	208.8	1.9
100°-110°	547.0	4.9
110°-120°	918.5	8.2
120°-130°	1117.3	10.0
130°-140°	1170.5	10.4
140°-150°	1082.2	9.7
150°-160°	870.0	7.8
160°-170°	561.1	5.0
170°-180°	193.4	1.7
0°-30°	1117.8	10.0
0°-40°	1832.6	16.3
0°-60°	3299.5	29.4
0°-90°	4544.2	40.5
90°-120°	1674.3	14.9
90°-150°	5044.4	45.0
90°-180°	6669.0	59.5
0°-180°	11213.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1440	1440	1440	1440	1440	
5°	1442	1436	1426	1438	1437	137
15°	1382	1383	1379	1392	1392	389
25°	1264	1274	1279	1296	1298	582
35°	1106	1125	1142	1163	1169	692
45°	922	953	984	1010	1019	713
55°	722	757	805	836	847	643
65°	500	552	606	645	660	495
75°	277	338	405	448	464	295
85°	85	153	226	272	290	91
90°	30	112	193	247	265	21
95°	105	110	174	224	242	124
105°	473	516	582	630	594	496
115°	866	886	935	972	984	852
125°	1210	1216	1251	1285	1298	1080
135°	1496	1495	1512	1540	1553	1152
145°	1722	1725	1726	1737	1746	1076
155°	1887	1888	1884	1889	1885	870
165°	1990	1983	1983	1994	1981	562
175°	2036	2028	2028	2040	2024	194
180°	2036	2036	2036	2036	2036	



TEST NUMBER: P332861-840

CATALOG NUMBER: S124DIW-S1195D1560U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1
2.5°	1445.2	1444.3	1443.5	1442.6	1441.8	1440.2	1437.8	1435.6	1433.3	1431.0	1433.0
5°	1441.6	1440.6	1439.5	1438.5	1437.3	1435.5	1433.0	1430.5	1428.1	1425.5	1428.4
7.5°	1429.4	1428.8	1428.1	1427.4	1426.8	1425.4	1423.4	1421.3	1419.2	1417.1	1420.4
10°	1419.1	1418.7	1418.4	1418.0	1417.6	1416.5	1414.7	1413.0	1411.2	1409.4	1412.6
12.5°	1404.8	1404.8	1404.7	1404.6	1404.6	1403.9	1402.7	1401.5	1400.3	1399.1	1402.0
15°	1382.0	1382.3	1382.7	1383.0	1383.4	1383.0	1382.0	1380.9	1379.8	1378.8	1382.0
17.5°	1350.7	1351.8	1352.8	1353.9	1354.9	1355.4	1355.2	1354.9	1354.7	1354.5	1357.9
20°	1328.8	1329.8	1330.9	1332.0	1333.0	1333.7	1334.1	1334.5	1334.8	1335.2	1338.8
22.5°	1304.2	1305.6	1307.0	1308.3	1309.7	1310.7	1311.3	1312.0	1312.6	1313.2	1316.9
25°	1264.3	1266.4	1268.6	1270.7	1272.8	1274.4	1275.6	1276.6	1277.7	1278.8	1282.7
27.5°	1219.7	1222.9	1226.1	1229.2	1232.3	1234.8	1236.4	1238.1	1239.7	1241.3	1245.0
30°	1190.0	1193.0	1195.8	1198.7	1201.5	1204.3	1206.7	1209.2	1211.7	1214.3	1218.2
32.5°	1157.8	1161.2	1164.7	1168.1	1171.5	1174.7	1177.5	1180.3	1183.1	1185.9	1190.4
35°	1106.2	1110.5	1114.8	1119.1	1123.4	1127.3	1130.9	1134.5	1138.1	1141.7	1146.7
37.5°	1054.3	1059.2	1064.2	1069.1	1074.1	1078.7	1083.2	1087.6	1092.1	1096.5	1101.7
40°	1020.8	1025.4	1030.1	1034.7	1039.4	1044.2	1049.2	1054.3	1059.2	1064.3	1069.6
42.5°	982.1	987.2	992.5	997.7	1003.0	1008.6	1014.4	1020.3	1026.1	1032.1	1038.0
45°	922.4	929.2	936.0	942.8	949.6	956.4	963.2	970.1	976.8	983.7	989.8
47.5°	865.3	872.3	879.4	886.4	893.4	900.9	908.8	916.7	924.5	932.4	938.7
50°	824.0	831.9	839.8	847.7	855.6	863.4	871.3	879.2	887.1	894.9	902.1
52.5°	782.7	790.6	798.5	806.4	814.3	822.7	831.7	840.8	849.8	858.9	866.1
55°	722.5	729.9	737.5	745.0	752.6	761.6	772.4	783.2	794.0	804.7	811.8
57.5°	655.0	664.4	673.7	683.0	692.3	702.3	713.0	723.7	734.4	745.0	753.6
60°	611.2	620.5	629.8	639.1	648.4	659.0	670.9	682.7	694.5	706.3	714.6
62.5°	568.6	578.8	589.0	599.2	609.3	620.3	632.2	644.0	655.8	667.6	675.8
65°	499.9	511.4	522.8	534.3	545.7	557.5	569.8	582.0	594.1	606.3	615.3
67.5°	433.7	446.0	458.2	470.3	482.5	495.1	508.2	521.2	534.2	547.3	556.4
70°	388.6	400.8	413.0	425.2	437.4	450.3	463.8	477.5	491.1	504.7	514.4
72.5°	344.8	357.2	369.7	382.1	394.7	408.1	422.6	437.1	451.5	466.1	475.4
75°	277.4	290.6	303.9	317.1	330.4	344.6	359.6	374.7	389.7	404.8	414.8
77.5°	214.5	228.5	242.6	256.6	270.6	285.6	301.3	317.1	332.9	348.6	358.8
80°	175.8	190.1	204.4	218.7	233.1	248.1	263.9	279.7	295.5	311.2	321.9
82.5°	137.0	152.0	166.9	181.8	196.7	212.1	227.8	243.6	259.3	275.1	286.1
85°	85.4	100.5	115.5	130.6	145.6	161.3	177.3	193.5	209.6	225.8	236.5
87.5°	48.7	64.0	79.4	94.7	110.1	125.9	142.2	158.3	174.6	190.9	201.7
90°	30.4	48.5	66.4	84.5	102.6	120.7	138.8	156.9	175.0	193.2	205.6
92.5°	43.7	56.8	69.9	83.0	96.1	111.7	129.9	147.9	166.1	184.2	196.3
95°	104.7	105.0	105.3	105.6	106.0	113.7	128.7	143.7	158.8	173.8	185.5
97.5°	196.9	214.3	231.6	248.9	266.3	263.4	240.1	216.9	193.7	170.5	180.1
100°	267.5	282.9	298.3	313.8	329.1	320.4	287.7	255.0	222.3	189.6	193.5
102.5°	347.9	360.5	373.1	385.9	398.5	408.6	416.2	423.7	431.4	439.0	386.3
105°	472.9	482.1	491.3	500.5	509.7	521.8	536.7	551.7	566.6	581.6	593.6
107.5°	591.7	598.5	605.5	612.4	619.2	630.2	645.0	659.8	674.7	689.5	699.8
110°	670.8	676.8	682.9	688.9	694.9	705.2	719.8	734.4	748.9	763.6	772.4



TEST NUMBER: P332861-840

CATALOG NUMBER: S124DIW-S1195D1560U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	747.5	753.8	760.0	766.3	772.5	782.1	795.1	808.0	820.9	833.8	841.6
115°	865.6	869.8	874.0	878.3	882.5	890.2	901.3	912.4	923.6	934.7	943.3
117.5°	973.4	976.6	980.0	983.2	986.5	993.9	1005.3	1016.7	1028.1	1039.6	1046.9
120°	1045.2	1047.6	1050.1	1052.5	1054.9	1061.2	1071.2	1081.3	1091.3	1101.4	1109.1
122.5°	1113.4	1114.4	1115.5	1116.5	1117.5	1123.2	1133.5	1143.8	1154.1	1164.4	1171.9
125°	1209.5	1210.5	1211.5	1212.5	1213.6	1218.2	1226.5	1234.8	1243.0	1251.3	1259.1
127.5°	1301.8	1301.8	1301.8	1301.7	1301.7	1306.0	1314.4	1322.8	1331.3	1339.7	1345.9
130°	1360.2	1360.2	1360.2	1360.2	1360.2	1363.5	1370.3	1377.1	1383.7	1390.5	1397.4
132.5°	1415.0	1415.3	1415.5	1415.8	1416.0	1419.2	1425.0	1430.9	1436.7	1442.6	1449.2
135°	1495.7	1495.3	1495.0	1494.7	1494.3	1496.1	1500.0	1503.8	1507.6	1511.6	1517.9
137.5°	1568.5	1568.2	1568.0	1567.8	1567.6	1568.8	1571.6	1574.3	1576.9	1579.6	1585.6
140°	1616.0	1616.3	1616.6	1617.0	1617.3	1617.9	1619.0	1620.0	1621.0	1622.0	1627.8
142.5°	1657.4	1658.5	1659.6	1660.8	1661.9	1662.6	1662.7	1662.9	1663.1	1663.3	1668.2
145°	1722.5	1723.1	1723.8	1724.4	1725.2	1725.5	1725.5	1725.5	1725.5	1725.5	1728.0
147.5°	1774.6	1776.2	1777.7	1779.2	1780.7	1781.3	1781.0	1780.7	1780.3	1780.0	1780.5
150°	1812.4	1813.3	1814.3	1815.3	1816.3	1816.6	1816.3	1816.0	1815.6	1815.3	1815.3
152.5°	1842.7	1843.7	1844.7	1845.7	1846.8	1847.0	1846.3	1845.7	1845.1	1844.5	1845.1
155°	1886.9	1887.2	1887.5	1887.9	1888.2	1887.9	1886.9	1885.9	1884.9	1883.8	1885.2
157.5°	1924.4	1924.2	1924.0	1923.8	1923.6	1922.9	1921.7	1920.6	1919.5	1918.2	1920.1
160°	1946.3	1945.3	1944.3	1943.3	1942.3	1941.6	1941.2	1940.9	1940.6	1940.2	1942.3
162.5°	1965.8	1964.5	1963.2	1962.0	1960.7	1959.8	1959.4	1959.1	1958.8	1958.4	1960.5
165°	1990.4	1988.7	1987.1	1985.4	1983.7	1982.9	1982.9	1982.9	1982.9	1982.9	1985.5
167.5°	2009.9	2008.2	2006.4	2004.7	2002.9	2002.0	2001.8	2001.6	2001.4	2001.1	2004.1
170°	2020.9	2018.9	2016.8	2014.8	2012.8	2012.0	2012.3	2012.7	2013.0	2013.3	2016.0
172.5°	2028.2	2026.2	2024.2	2022.2	2020.1	2019.2	2019.6	2019.9	2020.2	2020.6	2023.3
175°	2036.1	2034.1	2032.1	2030.0	2028.0	2027.2	2027.5	2027.8	2028.2	2028.5	2031.5
177.5°	2039.8	2037.9	2036.0	2034.1	2032.3	2031.5	2032.1	2032.7	2033.2	2033.7	2035.9
180°	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1



TEST NUMBER: P332861-840

CATALOG NUMBER: S124DIW-S1195D1560U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1
2.5°	1435.0	1437.0	1439.1	1439.9	1439.6	1439.3	1439.1	1438.8
5°	1431.3	1434.1	1436.9	1438.2	1437.8	1437.5	1437.1	1436.8
7.5°	1423.6	1426.8	1430.1	1431.5	1431.1	1430.8	1430.4	1430.1
10°	1415.8	1419.1	1422.3	1423.7	1423.4	1423.0	1422.6	1422.3
12.5°	1404.9	1407.9	1410.8	1412.3	1412.2	1412.1	1412.0	1412.0
15°	1385.2	1388.5	1391.6	1393.1	1392.7	1392.4	1392.0	1391.6
17.5°	1361.2	1364.4	1367.8	1369.3	1369.0	1368.7	1368.4	1368.1
20°	1342.4	1345.9	1349.6	1351.3	1351.3	1351.3	1351.3	1351.3
22.5°	1320.4	1324.0	1327.6	1329.7	1330.3	1330.8	1331.4	1332.0
25°	1286.7	1290.6	1294.5	1296.7	1297.1	1297.4	1297.8	1298.1
27.5°	1248.7	1252.3	1256.0	1258.0	1258.5	1258.9	1259.3	1259.7
30°	1222.1	1226.1	1230.0	1232.3	1233.0	1233.8	1234.5	1235.3
32.5°	1194.9	1199.4	1204.0	1206.6	1207.3	1208.0	1208.7	1209.4
35°	1151.8	1156.7	1161.7	1164.8	1165.9	1167.0	1168.0	1169.1
37.5°	1106.7	1111.8	1116.9	1120.0	1121.2	1122.3	1123.5	1124.6
40°	1075.0	1080.5	1085.8	1089.2	1090.7	1092.1	1093.5	1094.9
42.5°	1043.9	1049.9	1055.8	1059.3	1060.6	1061.7	1062.8	1064.0
45°	995.8	1002.0	1008.0	1012.0	1013.8	1015.5	1017.3	1019.2
47.5°	945.0	951.3	957.7	961.8	964.0	966.1	968.3	970.5
50°	909.3	916.5	923.6	928.3	930.5	932.6	934.7	936.9
52.5°	873.2	880.4	887.5	892.2	894.3	896.5	898.6	900.8
55°	819.0	826.2	833.3	838.0	840.1	842.3	844.4	846.6
57.5°	762.0	770.6	779.1	784.4	786.4	788.4	790.4	792.4
60°	722.8	731.0	739.2	744.8	747.7	750.5	753.5	756.3
62.5°	684.1	692.4	700.5	706.1	709.0	711.9	714.7	717.6
65°	624.2	633.2	642.2	648.0	651.0	653.8	656.7	659.5
67.5°	565.5	574.6	583.7	589.7	592.5	595.2	598.0	600.9
70°	524.1	533.7	543.4	549.6	552.0	554.5	557.0	559.6
72.5°	484.8	494.2	503.6	509.7	512.5	515.2	518.1	520.9
75°	424.9	434.8	444.8	451.5	454.7	458.0	461.2	464.4
77.5°	369.0	379.2	389.3	396.2	399.6	403.0	406.5	409.9
80°	332.8	343.5	354.3	361.0	363.9	366.8	369.6	372.5
82.5°	297.2	308.2	319.2	326.4	329.5	332.6	335.8	338.9
85°	247.2	258.0	268.7	275.9	279.5	283.1	286.7	290.2
87.5°	212.5	223.3	234.1	241.1	244.4	247.7	251.0	254.3
90°	218.0	230.5	242.9	250.9	254.4	257.9	261.5	265.0
92.5°	208.4	220.6	232.8	240.3	243.3	246.3	249.3	252.3
95°	197.2	208.9	220.7	228.2	231.9	235.4	238.9	242.5
97.5°	189.7	199.2	208.8	215.4	218.8	222.2	225.6	229.0
100°	197.4	201.4	205.2	208.6	211.5	214.3	217.2	220.0
102.5°	333.6	280.9	228.2	203.4	206.2	209.0	212.0	214.8
105°	605.6	617.6	629.5	631.0	621.7	612.3	603.0	593.7
107.5°	710.1	720.4	730.7	737.8	741.6	745.5	749.4	753.3
110°	781.3	790.3	799.2	805.6	809.5	813.3	817.3	821.1



TEST NUMBER: P332861-840

CATALOG NUMBER: S124DIW-S1195D1560U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	849.5	857.3	865.2	871.1	875.3	879.4	883.5	887.7
115°	951.8	960.4	969.0	974.5	977.0	979.5	982.0	984.5
117.5°	1054.2	1061.5	1068.8	1073.9	1076.6	1079.3	1082.1	1084.8
120°	1117.0	1124.9	1132.7	1137.7	1139.9	1142.2	1144.3	1146.5
122.5°	1179.5	1187.1	1194.7	1199.3	1201.2	1203.2	1205.1	1207.0
125°	1267.0	1274.8	1282.6	1287.8	1290.2	1292.7	1295.3	1297.7
127.5°	1352.2	1358.5	1364.7	1368.9	1371.1	1373.2	1375.4	1377.6
130°	1404.1	1410.9	1417.6	1422.1	1424.3	1426.4	1428.6	1430.8
132.5°	1455.6	1462.1	1468.6	1472.8	1474.7	1476.5	1478.4	1480.4
135°	1524.4	1530.8	1537.2	1541.8	1544.6	1547.4	1550.2	1553.1
137.5°	1591.6	1597.6	1603.6	1607.3	1608.9	1610.5	1612.1	1613.7
140°	1633.5	1639.1	1644.8	1648.7	1650.8	1652.9	1655.1	1657.2
142.5°	1673.0	1677.9	1682.6	1685.9	1687.5	1689.0	1690.6	1692.1
145°	1730.4	1732.9	1735.5	1737.7	1739.8	1741.9	1744.0	1746.2
147.5°	1781.1	1781.7	1782.2	1783.2	1784.7	1786.2	1787.7	1789.2
150°	1815.3	1815.3	1815.3	1815.5	1815.8	1816.1	1816.5	1816.8
152.5°	1845.6	1846.1	1846.7	1846.8	1846.6	1846.4	1846.2	1846.0
155°	1886.5	1887.9	1889.3	1889.5	1888.4	1887.4	1886.4	1885.4
157.5°	1921.8	1923.6	1925.3	1925.3	1923.6	1921.8	1920.1	1918.2
160°	1944.3	1946.3	1948.3	1948.3	1946.3	1944.3	1942.3	1940.2
162.5°	1962.6	1964.6	1966.6	1966.4	1964.2	1961.9	1959.5	1957.2
165°	1988.2	1990.9	1993.7	1993.5	1990.4	1987.4	1984.4	1981.4
167.5°	2007.1	2010.0	2013.1	2012.9	2009.4	2006.1	2002.7	1999.3
170°	2018.7	2021.4	2024.2	2023.8	2020.4	2017.0	2013.7	2010.2
172.5°	2026.0	2028.7	2031.4	2030.9	2027.3	2023.7	2020.0	2016.3
175°	2034.6	2037.7	2040.7	2040.2	2036.1	2032.1	2028.0	2024.0
177.5°	2038.0	2040.2	2042.4	2041.8	2038.6	2035.3	2032.1	2028.8
180°	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1	2036.1

(END OF REPORT)