

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: P332819-840

Luminaire Tested: **S124DIW-S1020D1050U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332819-840
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-S1020D1050U840-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1050 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8485.9 lumens
Efficiency: N/A
Efficacy: 138.7 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

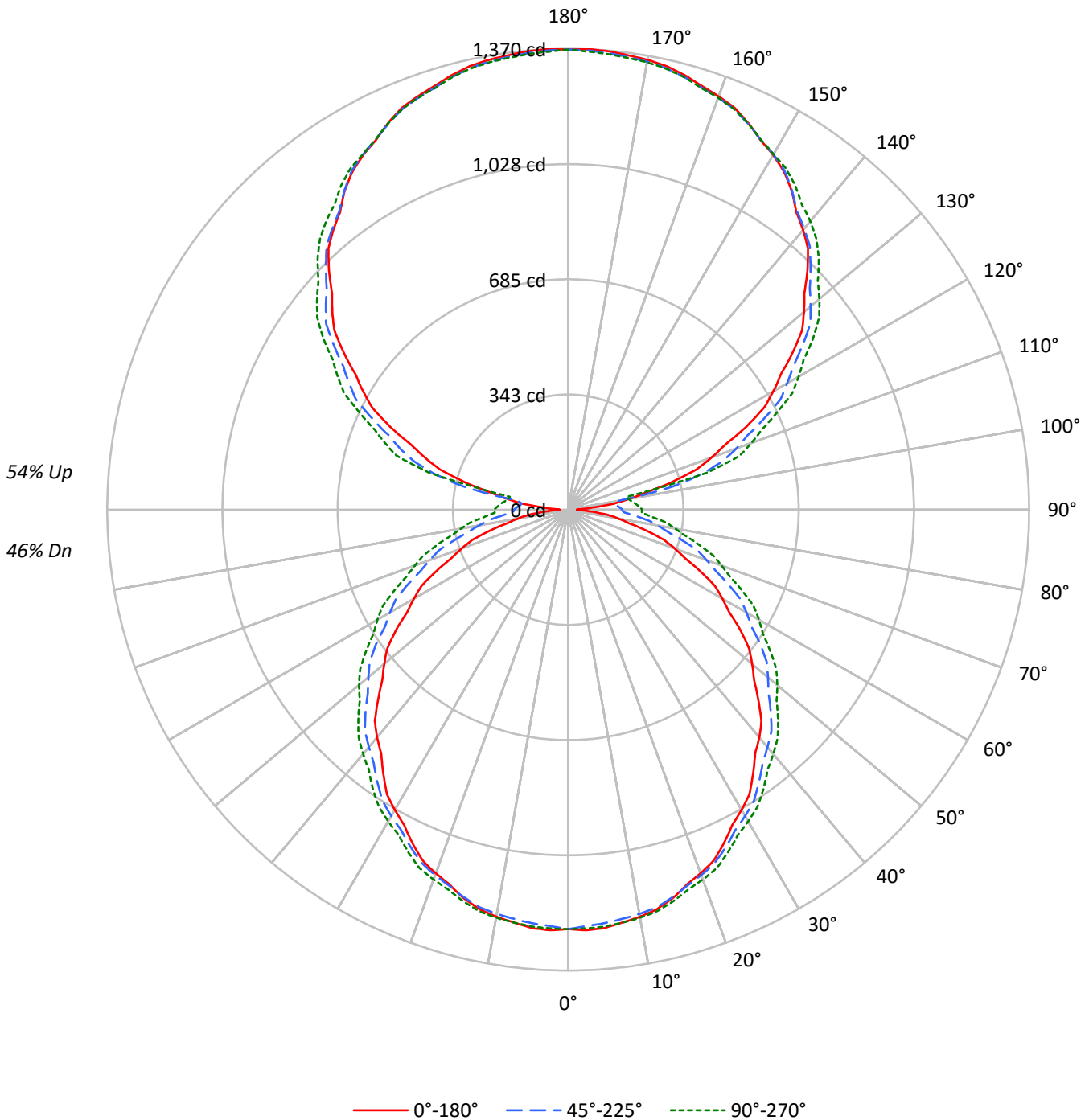
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332819-840

CATALOG NUMBER: S124DIW-S1020D1050U840-4F0-1E-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	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53	46
1	96	91	87	83	88	84	80	77	70	67	65	57	55	53	45	44	43	37
2	87	79	73	67	79	73	67	62	61	56	53	49	46	44	39	37	35	30
3	79	69	62	55	72	64	57	52	53	48	44	43	40	37	34	32	29	25
4	72	61	53	47	66	56	49	43	47	41	37	38	34	31	30	28	25	21
5	66	54	46	40	60	50	43	37	42	36	32	34	30	27	27	24	22	18
6	61	48	40	34	56	45	37	32	38	32	28	31	27	23	25	21	19	16
7	56	44	36	30	51	40	33	28	34	28	24	28	24	20	23	19	17	14
8	52	40	32	26	48	37	30	25	31	25	21	26	21	18	21	17	15	12
9	48	36	28	23	44	33	27	22	28	23	19	24	19	16	19	16	13	11
10	45	33	26	21	41	31	24	20	26	21	17	22	18	15	18	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10066	10066	10066
5°	10097	9838	9866
10°	10035	9677	9669
15°	9945	9490	9439
20°	9810	9285	9213
25°	9657	9054	8967
30°	9492	8825	8712
35°	9305	8591	8490
40°	9154	8367	8259
45°	8931	8161	8059
50°	8744	7924	7849
55°	8549	7700	7603
60°	8247	7415	7378
65°	7914	7109	7102
70°	7513	6760	6779
75°	6949	6374	6488
80°	6328	6004	6203
85°	5536	5679	6037



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.1	1.4
10°-20°	338.3	4.0
20°-30°	511.5	6.0
30°-40°	618.9	7.3
40°-50°	654.3	7.7
50°-60°	615.8	7.3
60°-70°	510.9	6.0
70°-80°	358.9	4.2
80°-90°	206.8	2.4
90°-100°	167.3	2.0
100°-110°	387.5	4.6
110°-120°	630.5	7.4
120°-130°	758.2	8.9
130°-140°	789.7	9.3
140°-150°	727.8	8.6
150°-160°	584.5	6.9
160°-170°	377.0	4.4
170°-180°	129.9	1.5
0°-30°	967.9	11.4
0°-40°	1586.8	18.7
0°-60°	2856.9	33.7
0°-90°	3933.5	46.4
90°-120°	1185.3	14.0
90°-150°	3461.0	40.8
90°-180°	4552.0	53.6
0°-180°	8485.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1247	1247	1247	1247	1247	
5°	1248	1244	1234	1245	1244	118
15°	1197	1198	1194	1206	1205	337
25°	1095	1103	1107	1122	1124	504
35°	958	974	989	1007	1012	600
45°	799	825	852	875	882	617
55°	626	656	697	724	733	557
65°	433	478	525	559	571	429
75°	240	292	350	388	402	255
85°	74	133	196	236	251	79
90°	25	93	161	206	221	17
95°	74	88	144	186	201	87
105°	320	356	411	452	430	336
115°	583	601	643	674	685	575
125°	814	818	849	878	888	727
135°	1006	1005	1018	1042	1053	775
145°	1158	1159	1159	1169	1176	723
155°	1268	1268	1266	1269	1267	584
165°	1337	1332	1332	1339	1331	378
175°	1368	1362	1363	1371	1360	130
180°	1368	1368	1368	1368	1368	



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CATALOG NUMBER: S124DIW-S1020D1050U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9
2.5°	1251.3	1250.6	1249.8	1249.1	1248.3	1247.0	1245.0	1243.0	1241.0	1239.0	1240.7
5°	1248.2	1247.3	1246.4	1245.5	1244.6	1242.9	1240.8	1238.6	1236.5	1234.3	1236.8
7.5°	1237.6	1237.1	1236.5	1236.0	1235.4	1234.3	1232.4	1230.6	1228.8	1227.0	1229.8
10°	1228.7	1228.4	1228.1	1227.8	1227.5	1226.5	1225.0	1223.5	1221.8	1220.3	1223.1
12.5°	1216.4	1216.4	1216.3	1216.2	1216.2	1215.6	1214.6	1213.5	1212.4	1211.3	1214.0
15°	1196.6	1196.9	1197.2	1197.5	1197.8	1197.5	1196.6	1195.7	1194.7	1193.8	1196.6
17.5°	1169.5	1170.4	1171.3	1172.3	1173.3	1173.6	1173.4	1173.3	1173.1	1172.9	1175.7
20°	1150.5	1151.4	1152.4	1153.3	1154.3	1154.9	1155.2	1155.5	1155.8	1156.1	1159.2
22.5°	1129.2	1130.4	1131.7	1132.9	1134.0	1134.9	1135.4	1136.0	1136.5	1137.1	1140.2
25°	1094.7	1096.5	1098.3	1100.2	1102.1	1103.5	1104.4	1105.4	1106.3	1107.2	1110.6
27.5°	1056.1	1058.8	1061.6	1064.3	1067.0	1069.1	1070.6	1072.0	1073.4	1074.8	1078.0
30°	1030.5	1032.9	1035.4	1037.8	1040.4	1042.7	1044.8	1047.0	1049.1	1051.4	1054.8
32.5°	1002.5	1005.5	1008.5	1011.5	1014.4	1017.1	1019.6	1022.0	1024.4	1026.8	1030.7
35°	957.9	961.6	965.2	969.0	972.7	976.1	979.3	982.3	985.4	988.6	992.9
37.5°	912.8	917.2	921.4	925.7	930.0	934.0	937.9	941.7	945.6	949.5	953.8
40°	883.8	887.9	891.9	896.0	900.0	904.1	908.5	912.8	917.2	921.5	926.1
42.5°	850.3	854.9	859.4	863.9	868.4	873.2	878.3	883.4	888.5	893.6	898.8
45°	798.6	804.6	810.4	816.4	822.2	828.1	834.0	839.9	845.8	851.7	857.0
47.5°	749.2	755.3	761.3	767.5	773.6	780.0	786.8	793.7	800.5	807.3	812.7
50°	713.5	720.3	727.1	734.0	740.7	747.6	754.5	761.2	768.1	774.9	781.1
52.5°	677.7	684.6	691.4	698.2	705.1	712.4	720.1	728.0	735.8	743.7	749.8
55°	625.5	632.1	638.5	645.1	651.6	659.4	668.8	678.1	687.4	696.7	703.0
57.5°	567.1	575.2	583.3	591.4	599.5	608.0	617.3	626.6	635.8	645.1	652.5
60°	529.2	537.2	545.3	553.4	561.5	570.6	580.9	591.1	601.3	611.6	618.6
62.5°	492.3	501.1	510.0	518.8	527.6	537.0	547.3	557.5	567.8	578.0	585.2
65°	432.8	442.7	452.7	462.6	472.5	482.8	493.3	503.9	514.4	525.0	532.7
67.5°	375.6	386.2	396.7	407.3	417.8	428.7	440.0	451.3	462.6	473.9	481.8
70°	336.5	347.1	357.6	368.1	378.7	389.9	401.6	413.4	425.3	437.1	445.5
72.5°	298.5	309.3	320.1	330.9	341.7	353.4	365.9	378.4	391.0	403.5	411.6
75°	240.1	251.7	263.1	274.6	286.1	298.3	311.3	324.4	337.4	350.4	359.1
77.5°	185.7	197.8	210.1	222.2	234.4	247.2	260.9	274.6	288.2	301.8	310.6
80°	152.2	164.6	177.0	189.5	201.9	214.9	228.5	242.2	255.8	269.4	278.8
82.5°	118.7	131.6	144.5	157.4	170.3	183.6	197.2	210.9	224.6	238.2	247.7
85°	74.0	87.1	100.1	113.1	126.1	139.7	153.6	167.5	181.5	195.5	204.8
87.5°	41.9	55.1	68.3	81.4	94.6	108.2	122.1	136.0	150.0	164.0	173.2
90°	25.4	40.3	55.2	70.2	85.0	100.1	115.2	130.4	145.6	160.8	171.1
92.5°	34.1	45.4	56.8	68.1	79.4	92.6	107.8	122.9	138.0	153.2	163.3
95°	74.4	77.0	79.5	82.0	84.4	92.2	105.1	118.1	131.1	144.0	153.7
97.5°	136.0	149.7	163.3	176.9	190.5	191.0	178.1	165.4	152.6	139.9	148.0
100°	183.2	195.3	207.5	219.6	231.8	228.2	208.9	189.7	170.4	151.2	155.6
102.5°	237.2	247.2	257.3	267.4	277.5	286.4	294.2	301.9	309.7	317.4	283.9
105°	320.5	328.1	335.7	343.3	350.8	360.9	373.5	386.2	398.8	411.4	421.2
107.5°	400.3	406.1	411.8	417.6	423.3	432.4	444.8	457.3	469.7	482.1	490.7
110°	453.2	458.2	463.2	468.3	473.3	481.9	494.1	506.3	518.6	530.8	538.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	504.4	509.5	514.6	519.7	524.7	532.8	543.8	554.8	565.8	576.8	583.6
115°	583.4	586.8	590.4	593.8	597.3	603.9	613.6	623.3	633.0	642.7	649.9
117.5°	655.8	658.3	661.0	663.5	666.1	672.3	682.1	691.8	701.6	711.2	717.6
120°	703.8	705.6	707.4	709.3	711.1	716.4	725.2	734.0	742.8	751.5	758.2
122.5°	749.6	750.3	751.0	751.8	752.6	757.3	766.1	775.0	783.8	792.5	799.1
125°	813.9	814.5	815.1	815.7	816.3	820.2	827.6	834.9	842.1	849.4	856.1
127.5°	875.9	875.8	875.7	875.6	875.5	879.0	886.0	892.9	900.0	907.0	912.4
130°	914.8	914.7	914.6	914.5	914.4	917.3	922.9	928.6	934.2	939.9	945.6
132.5°	951.7	951.7	951.8	951.9	952.0	954.5	959.4	964.2	969.1	973.8	979.4
135°	1005.5	1005.3	1005.0	1004.8	1004.6	1006.0	1009.1	1012.2	1015.2	1018.3	1023.8
137.5°	1054.4	1054.2	1054.0	1053.8	1053.5	1054.4	1056.5	1058.5	1060.7	1062.7	1067.7
140°	1086.3	1086.5	1086.6	1086.7	1086.9	1087.3	1088.1	1088.9	1089.6	1090.5	1095.1
142.5°	1113.9	1114.6	1115.4	1116.1	1116.9	1117.3	1117.4	1117.5	1117.6	1117.6	1121.7
145°	1157.6	1157.9	1158.3	1158.7	1159.0	1159.2	1159.2	1159.2	1159.2	1159.2	1161.3
147.5°	1192.5	1193.6	1194.5	1195.5	1196.4	1196.8	1196.6	1196.4	1196.1	1195.9	1196.3
150°	1218.0	1218.5	1219.1	1219.7	1220.3	1220.5	1220.3	1220.1	1219.8	1219.6	1219.6
152.5°	1238.1	1238.8	1239.4	1240.1	1240.8	1240.9	1240.5	1240.1	1239.7	1239.3	1239.6
155°	1267.7	1268.0	1268.2	1268.4	1268.6	1268.4	1267.7	1267.1	1266.4	1265.7	1266.6
157.5°	1292.9	1292.7	1292.6	1292.4	1292.3	1291.9	1291.1	1290.3	1289.6	1288.8	1290.0
160°	1307.6	1307.0	1306.3	1305.6	1304.8	1304.4	1304.2	1303.9	1303.7	1303.5	1304.8
162.5°	1320.7	1319.9	1319.0	1318.1	1317.3	1316.7	1316.5	1316.3	1316.1	1315.8	1317.2
165°	1337.3	1336.2	1335.0	1333.8	1332.7	1332.2	1332.2	1332.2	1332.2	1332.2	1334.0
167.5°	1350.4	1349.2	1348.1	1346.9	1345.6	1345.0	1344.8	1344.7	1344.6	1344.4	1346.5
170°	1357.8	1356.3	1355.0	1353.6	1352.3	1351.7	1351.9	1352.2	1352.4	1352.6	1354.4
172.5°	1362.6	1361.3	1359.9	1358.6	1357.2	1356.7	1356.9	1357.1	1357.4	1357.6	1359.4
175°	1368.0	1366.7	1365.2	1363.9	1362.5	1362.0	1362.2	1362.4	1362.6	1362.9	1364.9
177.5°	1370.4	1369.2	1367.9	1366.7	1365.3	1364.9	1365.2	1365.6	1365.9	1366.3	1367.8
180°	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9
2.5°	1242.5	1244.3	1246.0	1246.7	1246.5	1246.2	1246.0	1245.8
5°	1239.2	1241.7	1244.3	1245.3	1245.0	1244.7	1244.4	1244.1
7.5°	1232.6	1235.4	1238.2	1239.4	1239.1	1238.8	1238.5	1238.2
10°	1225.9	1228.7	1231.5	1232.7	1232.4	1232.1	1231.8	1231.5
12.5°	1216.5	1219.0	1221.5	1222.8	1222.7	1222.6	1222.6	1222.5
15°	1199.4	1202.1	1205.0	1206.2	1205.9	1205.6	1205.3	1205.0
17.5°	1178.5	1181.4	1184.3	1185.6	1185.3	1185.1	1184.8	1184.6
20°	1162.3	1165.4	1168.5	1170.0	1170.0	1170.0	1170.0	1170.0
22.5°	1143.3	1146.4	1149.5	1151.3	1151.9	1152.3	1152.8	1153.3
25°	1114.1	1117.4	1120.8	1122.8	1123.1	1123.4	1123.7	1124.0
27.5°	1081.2	1084.3	1087.5	1089.2	1089.6	1090.0	1090.4	1090.8
30°	1058.2	1061.6	1065.0	1067.0	1067.6	1068.2	1068.9	1069.5
32.5°	1034.6	1038.5	1042.5	1044.7	1045.3	1045.9	1046.5	1047.2
35°	997.2	1001.6	1005.9	1008.6	1009.5	1010.4	1011.4	1012.3
37.5°	958.3	962.7	967.0	969.8	970.8	971.8	972.7	973.7
40°	930.8	935.4	940.2	943.1	944.3	945.5	946.8	948.1
42.5°	903.9	909.1	914.2	917.3	918.3	919.3	920.3	921.2
45°	862.2	867.6	872.8	876.3	877.8	879.3	880.9	882.4
47.5°	818.2	823.6	829.2	832.8	834.7	836.6	838.4	840.3
50°	787.3	793.6	799.7	803.8	805.7	807.5	809.3	811.2
52.5°	756.1	762.2	768.5	772.4	774.4	776.2	778.1	779.9
55°	709.1	715.4	721.5	725.6	727.4	729.3	731.1	733.1
57.5°	659.8	667.2	674.6	679.1	680.9	682.7	684.4	686.1
60°	625.8	633.0	640.1	644.9	647.4	649.8	652.4	654.8
62.5°	592.3	599.5	606.6	611.4	613.9	616.3	618.8	621.4
65°	540.5	548.3	556.0	561.2	563.6	566.1	568.6	571.1
67.5°	489.7	497.6	505.4	510.6	513.0	515.4	517.9	520.3
70°	453.7	462.1	470.5	475.8	478.0	480.2	482.3	484.5
72.5°	419.8	427.9	436.1	441.3	443.7	446.2	448.6	451.0
75°	367.8	376.5	385.2	390.9	393.7	396.6	399.3	402.1
77.5°	319.5	328.3	337.1	343.1	346.0	349.0	351.9	355.0
80°	288.1	297.4	306.7	312.6	315.1	317.6	320.0	322.6
82.5°	257.3	266.9	276.4	282.6	285.3	288.0	290.7	293.5
85°	214.1	223.4	232.7	238.9	242.1	245.1	248.2	251.4
87.5°	182.5	191.8	201.1	207.1	210.0	212.7	215.5	218.3
90°	181.5	191.9	202.2	208.8	211.8	214.7	217.6	220.6
92.5°	173.5	183.6	193.7	200.1	202.6	205.2	207.7	210.4
95°	163.5	173.2	183.0	189.3	192.4	195.4	198.4	201.4
97.5°	156.3	164.6	172.9	178.4	181.4	184.3	187.1	190.1
100°	160.2	164.7	169.2	172.7	175.0	177.4	179.9	182.3
102.5°	250.3	216.7	183.2	167.6	170.1	172.6	175.0	177.4
105°	431.0	440.8	450.6	452.6	447.0	441.2	435.6	429.8
107.5°	499.4	508.0	516.6	522.5	525.5	528.7	531.8	534.8
110°	546.0	553.6	561.2	566.5	569.7	572.9	576.0	579.2



TEST NUMBER: P332819-840

CATALOG NUMBER: S124DIW-S1020D1050U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	590.4	597.1	604.0	609.0	612.4	615.7	619.0	622.5
115°	657.2	664.5	671.9	676.5	678.7	680.9	683.1	685.2
117.5°	724.0	730.3	736.7	741.0	743.5	745.9	748.3	750.6
120°	764.9	771.5	778.2	782.5	784.6	786.6	788.6	790.6
122.5°	805.6	812.0	818.5	822.6	824.5	826.2	828.0	829.7
125°	862.6	869.2	875.8	880.1	882.2	884.2	886.4	888.5
127.5°	917.9	923.3	928.8	932.4	934.3	936.3	938.3	940.2
130°	951.5	957.3	963.1	966.9	968.8	970.7	972.5	974.4
132.5°	985.0	990.6	996.1	999.8	1001.4	1003.1	1004.8	1006.4
135°	1029.2	1034.6	1040.1	1043.9	1046.2	1048.5	1050.9	1053.2
137.5°	1072.8	1077.7	1082.8	1086.0	1087.4	1088.8	1090.3	1091.7
140°	1099.8	1104.6	1109.3	1112.6	1114.3	1116.1	1117.9	1119.6
142.5°	1125.7	1129.7	1133.8	1136.5	1137.8	1139.2	1140.5	1141.9
145°	1163.5	1165.5	1167.6	1169.5	1171.2	1172.9	1174.6	1176.3
147.5°	1196.8	1197.2	1197.6	1198.4	1199.6	1200.8	1202.0	1203.4
150°	1219.6	1219.6	1219.6	1219.7	1219.9	1220.2	1220.4	1220.6
152.5°	1240.0	1240.3	1240.7	1240.8	1240.7	1240.5	1240.4	1240.3
155°	1267.5	1268.4	1269.3	1269.4	1268.7	1268.1	1267.4	1266.7
157.5°	1291.1	1292.3	1293.5	1293.5	1292.3	1291.1	1290.0	1288.8
160°	1306.3	1307.6	1309.0	1309.0	1307.6	1306.3	1304.8	1303.5
162.5°	1318.5	1319.9	1321.2	1321.2	1319.6	1318.1	1316.6	1314.9
165°	1335.8	1337.7	1339.5	1339.3	1337.3	1335.2	1333.2	1331.1
167.5°	1348.5	1350.5	1352.4	1352.3	1350.1	1347.8	1345.5	1343.2
170°	1356.2	1358.1	1359.9	1359.7	1357.4	1355.1	1352.8	1350.6
172.5°	1361.2	1363.0	1364.8	1364.5	1362.0	1359.6	1357.2	1354.6
175°	1367.0	1369.0	1371.1	1370.7	1368.0	1365.2	1362.5	1359.8
177.5°	1369.3	1370.7	1372.2	1371.8	1369.6	1367.5	1365.2	1363.1
180°	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0	1368.0

(END OF REPORT)