

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: P332667-930

Luminaire Tested: **S124DIP-S1020D1205U930-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332667-930  
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: S124DIP-S1020D1205U930-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1205 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

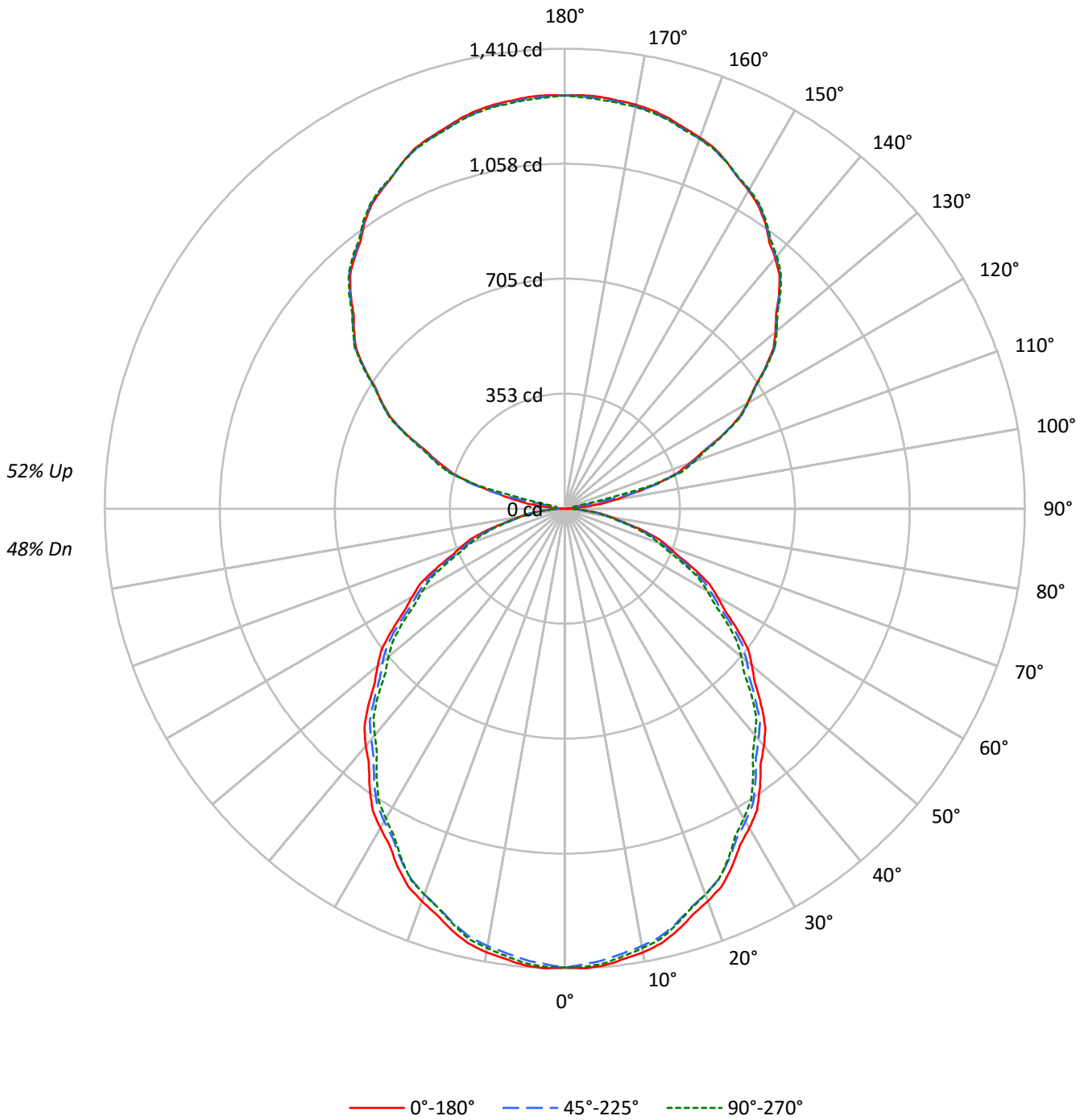
Lumens per Lamp: N/A  
Luminaire Lumens: 7531.7 lumens  
Efficiency: N/A  
Efficacy: 115.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: General Diffuse

Input Watts (W): 65.4  
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





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**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	107	107	107	107	98	98	98	98	82	82	82	68	68	68	54	54	54	48
1	97	93	89	86	89	86	82	79	72	70	67	59	58	56	48	47	46	40
2	89	81	75	70	81	75	70	65	63	59	56	52	49	47	42	40	38	34
3	81	71	64	58	74	66	59	54	56	51	47	46	43	40	37	35	33	29
4	74	63	55	49	68	58	51	46	49	44	40	41	37	34	33	31	28	25
5	68	56	48	42	62	52	45	40	44	39	34	37	33	29	30	27	25	21
6	62	50	42	36	57	47	40	34	40	34	30	33	29	26	27	24	22	19
7	58	45	38	32	53	42	35	30	36	30	26	30	26	23	25	22	19	17
8	54	41	34	28	49	38	31	27	33	27	23	28	23	20	23	20	17	15
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	16	13
10	47	35	27	23	43	32	26	21	28	23	19	24	19	17	20	16	14	12

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

	0°	45°	90°
0°	11357	11357	11357
5°	11391	11255	11336
10°	11320	11163	11218
15°	11183	11004	11032
20°	11001	10808	10817
25°	10794	10583	10553
30°	10540	10318	10224
35°	10276	10042	9909
40°	10003	9729	9551
45°	9717	9421	9240
50°	9401	9146	8862
55°	9060	8790	8504
60°	8719	8391	8136
65°	8334	8010	7687
70°	7903	7504	7211
75°	7243	6890	6716
80°	6448	6183	6025
85°	5641	5428	5326



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	132.5	1.8
10°-20°	373.3	5.0
20°-30°	549.4	7.3
30°-40°	638.7	8.5
40°-50°	638.7	8.5
50°-60°	558.7	7.4
60°-70°	414.9	5.5
70°-80°	235.7	3.1
80°-90°	71.7	1.0
90°-100°	43.3	0.6
100°-110°	276.2	3.7
110°-120°	528.4	7.0
120°-130°	670.8	8.9
130°-140°	717.7	9.5
140°-150°	671.1	8.9
150°-160°	541.2	7.2
160°-170°	349.1	4.6
170°-180°	120.3	1.6
0°-30°	1055.2	14.0
0°-40°	1693.9	22.5
0°-60°	2891.3	38.4
0°-90°	3613.7	48.0
90°-120°	847.9	11.3
90°-150°	2907.4	38.6
90°-180°	3918.0	52.0
0°-180°	7531.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1407	1407	1407	1407	1407	
5°	1406	1401	1389	1400	1399	133
15°	1338	1333	1317	1323	1320	377
25°	1212	1204	1188	1189	1185	557
35°	1043	1034	1019	1011	1006	652
45°	851	843	825	813	809	656
55°	644	640	624	611	604	576
65°	436	430	419	408	402	432
75°	232	227	221	217	215	247
85°	61	61	59	59	58	67
90°	3	13	21	26	28	6
95°	52	22	21	26	28	67
105°	285	291	296	302	270	298
115°	532	535	534	536	536	524
125°	748	752	750	753	754	668
135°	928	928	931	933	935	715
145°	1070	1073	1073	1074	1076	669
155°	1174	1174	1172	1175	1173	541
165°	1238	1234	1234	1240	1232	350
175°	1267	1261	1262	1269	1259	121
180°	1267	1267	1267	1267	1267	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8
2.5°	1410.4	1409.8	1409.2	1408.6	1408.0	1406.6	1404.4	1402.2	1400.0	1397.7	1399.8
5°	1405.7	1404.7	1403.7	1402.6	1401.7	1399.8	1397.0	1394.2	1391.6	1388.8	1391.6
7.5°	1392.6	1391.6	1390.6	1389.6	1388.6	1386.6	1383.5	1380.5	1377.4	1374.4	1376.6
10°	1380.9	1379.9	1378.8	1377.9	1376.9	1374.8	1371.5	1368.2	1365.0	1361.7	1363.7
12.5°	1365.5	1364.6	1363.5	1362.5	1361.5	1359.3	1355.8	1352.4	1348.9	1345.5	1347.7
15°	1338.1	1337.0	1336.0	1335.1	1334.0	1331.6	1327.9	1324.1	1320.4	1316.6	1318.1
17.5°	1304.9	1303.7	1302.4	1301.1	1299.9	1297.5	1293.9	1290.4	1286.8	1283.3	1284.2
20°	1280.5	1279.3	1278.1	1276.8	1275.5	1273.0	1269.3	1265.5	1261.8	1258.0	1258.7
22.5°	1254.4	1252.7	1251.1	1249.4	1247.8	1245.0	1241.3	1237.5	1233.8	1230.0	1231.4
25°	1211.8	1210.1	1208.3	1206.5	1204.8	1202.2	1198.7	1195.1	1191.6	1188.1	1188.4
27.5°	1163.1	1161.3	1159.4	1157.6	1155.8	1153.3	1150.1	1146.8	1143.5	1140.3	1139.7
30°	1130.7	1128.6	1126.6	1124.6	1122.6	1120.0	1116.7	1113.5	1110.2	1106.9	1106.0
32.5°	1096.3	1094.5	1092.7	1091.0	1089.2	1086.5	1083.0	1079.6	1076.1	1072.7	1071.5
35°	1042.7	1041.0	1039.2	1037.5	1035.7	1033.1	1029.6	1026.1	1022.5	1019.0	1017.2
37.5°	986.1	984.5	982.9	981.3	979.7	977.1	973.2	969.5	965.7	962.0	960.1
40°	949.2	947.1	945.1	943.1	941.1	938.2	934.5	930.7	927.0	923.2	920.7
42.5°	909.5	908.2	907.0	905.9	904.7	902.0	897.8	893.6	889.5	885.3	882.4
45°	851.1	849.3	847.6	845.8	844.1	841.1	837.1	833.2	829.2	825.2	822.4
47.5°	789.9	788.8	787.6	786.4	785.1	782.7	779.0	775.3	771.6	767.8	764.8
50°	748.5	747.5	746.5	745.5	744.4	742.2	738.7	735.2	731.7	728.2	724.7
52.5°	707.9	706.7	705.5	704.3	703.1	700.7	696.9	693.2	689.5	685.8	682.7
55°	643.7	642.9	642.1	641.4	640.7	638.5	635.0	631.5	628.0	624.5	621.5
57.5°	582.4	581.5	580.7	579.8	578.9	576.7	573.3	569.9	566.4	563.0	560.1
60°	540.0	538.7	537.4	536.2	534.9	532.7	529.5	526.2	522.9	519.7	517.4
62.5°	498.5	497.4	496.4	495.3	494.2	492.0	488.5	485.1	481.6	478.2	476.1
65°	436.3	435.0	433.7	432.5	431.2	429.3	426.8	424.4	421.8	419.3	416.9
67.5°	373.6	372.4	371.3	370.1	368.9	367.2	364.8	362.4	360.0	357.6	355.1
70°	334.8	333.0	331.3	329.5	327.8	325.9	323.9	321.9	319.9	317.9	315.8
72.5°	293.3	291.6	289.8	288.0	286.3	284.6	283.0	281.4	279.8	278.2	276.6
75°	232.2	231.0	229.7	228.4	227.2	225.9	224.7	223.5	222.2	220.9	220.0
77.5°	173.8	173.3	172.7	172.2	171.6	170.8	169.7	168.6	167.5	166.4	166.1
80°	138.7	137.9	137.1	136.4	135.7	135.0	134.5	134.0	133.5	133.0	132.5
82.5°	104.4	104.0	103.7	103.3	103.0	102.7	102.6	102.6	102.5	102.3	102.1
85°	60.9	60.9	60.9	60.9	60.9	60.7	60.1	59.6	59.1	58.6	58.6
87.5°	24.1	24.3	24.5	24.8	25.0	25.3	25.4	25.5	25.7	25.8	26.1
90°	2.9	5.1	7.5	9.8	12.1	14.1	15.8	17.4	19.2	20.9	22.1
92.5°	11.9	12.1	12.2	12.3	12.5	13.4	15.0	16.7	18.4	20.1	21.4
95°	52.1	44.9	37.7	30.7	23.5	20.0	20.2	20.4	20.6	20.9	22.1
97.5°	110.6	115.1	119.6	124.0	128.5	119.0	95.5	72.0	48.5	25.0	25.1
100°	155.4	159.1	163.0	166.7	170.6	157.9	128.8	99.8	70.8	41.7	38.1
102.5°	205.4	208.1	210.9	213.7	216.5	216.0	212.2	208.4	204.6	200.8	162.2
105°	285.1	286.4	287.6	288.9	290.2	291.4	292.4	293.4	294.5	295.5	297.5
107.5°	359.2	359.9	360.5	361.1	361.7	362.8	364.2	365.7	367.0	368.5	369.4
110°	409.3	409.9	410.5	411.2	411.8	412.7	414.0	415.2	416.5	417.8	418.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	457.8	458.9	460.0	461.1	462.3	463.2	463.7	464.3	465.0	465.5	465.5
115°	532.4	533.0	533.7	534.3	534.9	535.2	534.9	534.8	534.5	534.3	534.8
117.5°	599.7	600.5	601.4	602.2	603.0	603.6	604.1	604.6	605.1	605.5	605.4
120°	645.1	646.0	646.9	647.7	648.5	648.8	648.7	648.4	648.2	648.0	648.4
122.5°	687.5	688.1	688.6	689.1	689.6	690.0	690.3	690.6	690.9	691.2	691.5
125°	748.4	749.3	750.1	750.9	751.8	752.0	751.5	751.1	750.7	750.3	750.9
127.5°	806.0	806.2	806.4	806.7	806.8	807.4	808.4	809.3	810.3	811.3	811.1
130°	843.1	843.3	843.6	843.8	844.0	844.4	845.1	845.6	846.3	846.9	847.1
132.5°	877.3	877.6	878.0	878.4	878.7	879.4	880.1	880.9	881.7	882.6	882.7
135°	928.4	928.2	928.0	927.7	927.6	927.9	928.7	929.5	930.4	931.2	931.6
137.5°	973.7	973.8	973.9	974.0	974.0	974.5	975.4	976.4	977.3	978.2	978.7
140°	1003.2	1003.6	1004.0	1004.5	1004.9	1005.3	1005.8	1006.2	1006.6	1007.1	1007.6
142.5°	1029.7	1030.5	1031.3	1032.0	1032.8	1033.3	1033.6	1033.8	1034.0	1034.3	1034.8
145°	1070.5	1071.1	1071.8	1072.4	1073.0	1073.3	1073.3	1073.3	1073.3	1073.3	1073.6
147.5°	1102.9	1104.1	1105.2	1106.4	1107.6	1108.1	1107.9	1107.7	1107.4	1107.3	1107.4
150°	1126.4	1127.2	1128.0	1128.9	1129.8	1130.1	1129.8	1129.7	1129.4	1129.2	1129.2
152.5°	1146.1	1146.8	1147.5	1148.1	1148.8	1148.9	1148.6	1148.2	1147.8	1147.5	1147.8
155°	1173.8	1173.9	1174.2	1174.4	1174.6	1174.4	1173.8	1173.1	1172.5	1171.8	1172.7
157.5°	1197.0	1196.9	1196.8	1196.7	1196.5	1196.1	1195.4	1194.7	1194.0	1193.3	1194.3
160°	1210.7	1210.1	1209.4	1208.8	1208.2	1207.8	1207.5	1207.3	1207.1	1206.9	1208.2
162.5°	1222.8	1222.1	1221.2	1220.4	1219.6	1219.1	1218.9	1218.7	1218.5	1218.3	1219.5
165°	1238.2	1237.1	1236.1	1235.0	1234.0	1233.5	1233.5	1233.5	1233.5	1233.5	1235.1
167.5°	1250.3	1249.2	1248.1	1247.0	1245.9	1245.3	1245.2	1245.0	1245.0	1244.8	1246.7
170°	1257.1	1255.9	1254.6	1253.4	1252.1	1251.6	1251.7	1252.0	1252.1	1252.4	1254.1
172.5°	1261.7	1260.4	1259.1	1257.8	1256.6	1256.1	1256.3	1256.5	1256.7	1256.9	1258.6
175°	1266.6	1265.3	1264.0	1262.8	1261.5	1261.0	1261.2	1261.4	1261.7	1261.8	1263.7
177.5°	1268.9	1267.7	1266.5	1265.3	1264.1	1263.7	1264.0	1264.4	1264.8	1265.1	1266.4
180°	1266.6	1266.6	1266.6	1266.6	1266.6	1266.6	1266.6	1266.6	1266.6	1266.6	1266.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8
2.5°	1401.7	1403.8	1405.8	1406.7	1406.5	1406.3	1406.1	1405.9
5°	1394.2	1397.0	1399.8	1400.9	1400.4	1399.9	1399.4	1398.9
7.5°	1378.8	1381.0	1383.2	1384.1	1383.8	1383.5	1383.2	1382.9
10°	1365.7	1367.7	1369.7	1370.4	1369.9	1369.5	1369.0	1368.5
12.5°	1349.9	1352.1	1354.3	1355.0	1354.4	1353.6	1352.9	1352.3
15°	1319.6	1321.1	1322.7	1323.0	1322.3	1321.5	1320.8	1320.0
17.5°	1285.2	1286.1	1287.0	1287.3	1286.8	1286.3	1285.8	1285.2
20°	1259.5	1260.3	1261.0	1261.1	1260.6	1260.1	1259.6	1259.1
22.5°	1232.7	1234.1	1235.4	1235.7	1234.8	1233.9	1233.0	1232.1
25°	1188.6	1188.9	1189.1	1188.7	1187.7	1186.7	1185.7	1184.7
27.5°	1139.1	1138.5	1137.9	1137.0	1135.7	1134.5	1133.2	1132.0
30°	1105.0	1103.9	1102.9	1101.8	1100.6	1099.3	1098.0	1096.8
32.5°	1070.2	1069.1	1067.9	1066.7	1065.4	1064.1	1062.9	1061.6
35°	1015.5	1013.7	1012.0	1010.5	1009.3	1008.0	1006.7	1005.5
37.5°	958.1	956.3	954.4	952.6	951.0	949.3	947.6	946.0
40°	918.2	915.7	913.2	911.3	910.0	908.8	907.6	906.3
42.5°	879.5	876.6	873.7	871.8	871.0	870.1	869.3	868.5
45°	819.6	816.8	814.1	812.4	811.6	810.9	810.1	809.3
47.5°	761.7	758.6	755.5	752.9	751.1	749.1	747.2	745.3
50°	721.2	717.7	714.2	711.7	710.1	708.7	707.2	705.6
52.5°	679.6	676.5	673.4	670.9	669.0	667.1	665.2	663.2
55°	618.5	615.5	612.5	610.3	608.7	607.2	605.7	604.2
57.5°	557.3	554.4	551.5	549.3	547.9	546.5	545.0	543.6
60°	515.2	512.9	510.6	508.9	507.6	506.4	505.2	503.9
62.5°	474.1	472.0	469.9	468.3	467.1	465.8	464.6	463.3
65°	414.3	411.8	409.3	407.4	406.2	405.0	403.7	402.4
67.5°	352.8	350.3	348.0	346.6	346.2	345.8	345.5	345.2
70°	313.9	311.9	309.9	308.5	307.8	307.0	306.2	305.5
72.5°	275.0	273.4	271.8	270.6	269.9	269.1	268.4	267.6
75°	218.9	217.9	217.0	216.3	216.1	215.8	215.6	215.3
77.5°	165.8	165.5	165.2	164.7	164.0	163.4	162.7	162.1
80°	132.0	131.5	131.0	130.6	130.4	130.1	129.9	129.6
82.5°	101.7	101.4	101.2	100.9	100.6	100.4	100.1	99.9
85°	58.6	58.6	58.6	58.5	58.2	58.0	57.7	57.5
87.5°	26.3	26.6	26.8	27.0	27.1	27.1	27.2	27.3
90°	23.4	24.6	25.9	26.7	27.1	27.6	28.0	28.5
92.5°	22.6	23.9	25.1	25.8	25.9	26.0	26.1	26.2
95°	23.4	24.6	25.9	26.7	26.8	27.1	27.2	27.5
97.5°	25.3	25.4	25.5	25.7	25.9	26.1	26.3	26.5
100°	34.5	31.0	27.4	25.7	25.9	26.1	26.3	26.5
102.5°	123.6	85.0	46.4	27.1	27.1	27.2	27.2	27.3
105°	299.4	301.3	303.1	300.3	292.7	285.1	277.6	270.0
107.5°	370.4	371.3	372.2	373.1	373.9	374.7	375.4	376.3
110°	418.7	419.1	419.5	420.0	420.6	421.3	421.9	422.5





TEST NUMBER: P332667-930

CATALOG NUMBER: S124DIP-S1020D1205U930-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	465.4	465.3	465.2	465.5	466.4	467.2	468.0	468.7
115°	535.2	535.6	536.0	536.2	536.2	536.2	536.2	536.2
117.5°	605.4	605.3	605.2	605.1	605.0	605.0	604.9	604.8
120°	648.8	649.2	649.6	649.6	649.2	648.8	648.4	648.0
122.5°	691.7	691.9	692.2	692.1	691.7	691.3	690.8	690.4
125°	751.5	752.2	752.8	753.3	753.4	753.7	753.9	754.1
127.5°	811.1	810.9	810.8	810.7	810.5	810.3	810.2	810.0
130°	847.3	847.6	847.7	847.8	847.8	847.8	847.8	847.8
132.5°	883.0	883.2	883.4	883.4	883.2	883.1	882.9	882.7
135°	932.1	932.5	932.9	933.4	933.8	934.2	934.6	935.0
137.5°	979.2	979.6	980.1	980.2	980.2	980.0	979.8	979.7
140°	1008.3	1008.9	1009.6	1010.0	1010.2	1010.4	1010.6	1010.8
142.5°	1035.3	1035.7	1036.2	1036.4	1036.5	1036.5	1036.6	1036.6
145°	1073.7	1074.0	1074.2	1074.5	1074.9	1075.3	1075.8	1076.2
147.5°	1107.6	1107.7	1107.9	1108.1	1108.3	1108.6	1108.7	1109.0
150°	1129.2	1129.2	1129.2	1129.4	1129.5	1129.8	1130.0	1130.2
152.5°	1148.1	1148.4	1148.8	1148.8	1148.8	1148.6	1148.5	1148.3
155°	1173.5	1174.4	1175.3	1175.3	1174.7	1174.0	1173.5	1172.8
157.5°	1195.5	1196.5	1197.7	1197.7	1196.5	1195.5	1194.3	1193.3
160°	1209.4	1210.7	1211.9	1211.9	1210.7	1209.4	1208.2	1206.9
162.5°	1220.8	1222.1	1223.4	1223.3	1221.8	1220.4	1219.0	1217.5
165°	1236.8	1238.5	1240.2	1240.1	1238.2	1236.2	1234.4	1232.5
167.5°	1248.5	1250.3	1252.2	1252.1	1250.0	1247.9	1245.8	1243.7
170°	1255.7	1257.4	1259.1	1258.9	1256.8	1254.7	1252.6	1250.5
172.5°	1260.3	1262.0	1263.6	1263.4	1261.1	1258.8	1256.5	1254.3
175°	1265.7	1267.5	1269.4	1269.1	1266.6	1264.0	1261.5	1259.0
177.5°	1267.8	1269.1	1270.5	1270.2	1268.1	1266.1	1264.0	1262.1
180°	1266.6	1266.6	1266.6	1266.6	1266.6	1266.6	1266.6	1266.6

(END OF REPORT)