

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: P332976-940

Luminaire Tested: **S124RDIP-S1020D1035U940-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332976-940  
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: S124RDIP-S1020D1035U940-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1035 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7405.0 lumens  
Efficiency: N/A  
Efficacy: 122.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: General Diffuse

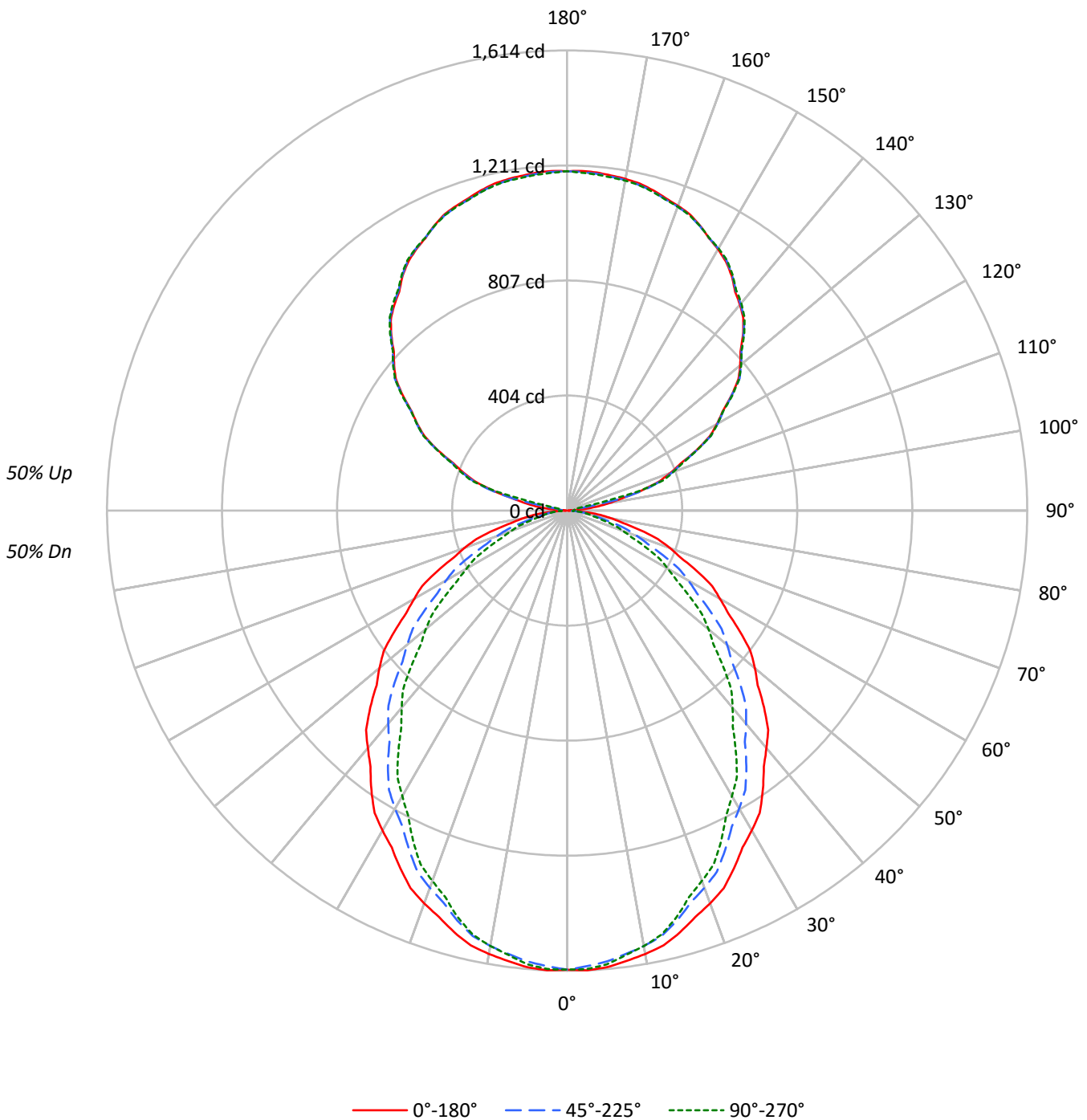
Input Watts (W): 60.5  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20				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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	56	56	56	50
1	98	94	90	87	90	87	84	81	74	71	69	61	60	58	50	49	48	48	48	48	43
2	90	82	76	71	82	76	71	67	65	61	58	54	52	49	45	43	41	41	41	41	36
3	82	73	65	60	75	67	61	56	57	53	49	48	45	42	40	37	35	35	35	35	31
4	75	64	57	51	69	60	53	48	51	46	42	43	39	36	36	33	30	30	30	30	27
5	69	57	49	44	63	53	46	41	46	40	36	39	35	31	32	29	27	27	27	27	23
6	64	52	44	38	59	48	41	36	41	36	32	35	31	28	29	26	24	24	24	24	21
7	59	47	39	33	54	44	36	31	38	32	28	32	28	24	27	24	21	21	21	21	18
8	55	42	35	29	50	40	33	28	34	29	25	29	25	22	25	21	19	19	19	19	17
9	51	39	31	26	47	36	30	25	32	26	22	27	23	20	23	20	17	17	17	17	15
10	48	36	28	24	44	33	27	23	29	24	20	25	21	18	21	18	16	16	16	16	14

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

	0°	45°	90°
0°	12999	12999	12999
5°	13028	12869	12949
10°	12946	12714	12714
15°	12797	12447	12354
20°	12594	12095	11874
25°	12333	11685	11388
30°	12078	11251	10781
35°	11798	10801	10170
40°	11460	10290	9511
45°	11147	9782	8840
50°	10792	9198	8130
55°	10412	8590	7357
60°	9993	7923	6570
65°	9608	7089	5794
70°	9050	6170	4919
75°	8344	5115	3999
80°	7280	3896	3668
85°	6169	3548	3316



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	151.3	2.0
10°-20°	421.8	5.7
20°-30°	609.1	8.2
30°-40°	690.4	9.3
40°-50°	666.7	9.0
50°-60°	554.4	7.5
60°-70°	382.8	5.2
70°-80°	194.0	2.6
80°-90°	53.2	0.7
90°-100°	40.7	0.5
100°-110°	259.5	3.5
110°-120°	496.5	6.7
120°-130°	630.3	8.5
130°-140°	674.3	9.1
140°-150°	630.6	8.5
150°-160°	508.5	6.9
160°-170°	328.0	4.4
170°-180°	113.0	1.5
0°-30°	1182.1	16.0
0°-40°	1872.5	25.3
0°-60°	3093.5	41.8
0°-90°	3723.5	50.3
90°-120°	796.7	10.8
90°-150°	2731.9	36.9
90°-180°	3681.0	49.7
0°-180°	7405.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1610	1610	1610	1610	1610	
5°	1608	1602	1588	1599	1598	152
15°	1531	1519	1489	1486	1478	431
25°	1385	1361	1312	1291	1278	638
35°	1197	1156	1096	1055	1032	748
45°	976	929	857	799	774	753
55°	740	689	610	548	523	661
65°	503	449	371	320	303	497
75°	268	221	164	137	128	282
85°	67	43	38	36	36	75
90°	3	12	20	25	27	5
95°	49	20	20	25	26	63
105°	268	273	278	284	254	280
115°	500	503	502	504	504	492
125°	703	706	705	708	709	628
135°	872	872	875	877	879	672
145°	1006	1008	1008	1010	1011	628
155°	1103	1104	1101	1104	1102	508
165°	1163	1159	1159	1165	1158	329
175°	1190	1185	1186	1193	1183	113
180°	1190	1190	1190	1190	1190	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2
2.5°	1614.1	1613.2	1612.3	1611.5	1610.6	1608.9	1606.5	1604.1	1601.7	1599.3	1601.7
5°	1607.7	1606.6	1605.5	1604.4	1603.3	1601.1	1597.9	1594.6	1591.3	1588.0	1590.7
7.5°	1593.1	1592.0	1590.8	1589.7	1588.5	1585.8	1581.5	1577.3	1573.0	1568.7	1570.5
10°	1579.3	1578.0	1576.5	1575.2	1573.9	1570.7	1565.8	1560.9	1555.9	1551.0	1552.0
12.5°	1561.6	1560.0	1558.4	1556.8	1555.2	1551.5	1545.7	1539.9	1534.1	1528.3	1528.9
15°	1531.2	1528.7	1526.3	1523.8	1521.3	1516.7	1509.8	1503.0	1496.2	1489.3	1488.8
17.5°	1494.5	1490.9	1487.4	1483.8	1480.2	1474.4	1466.2	1457.9	1449.7	1441.5	1439.9
20°	1465.9	1462.3	1458.7	1455.2	1451.6	1445.2	1435.9	1426.6	1417.3	1407.9	1405.8
22.5°	1434.3	1430.3	1426.3	1422.4	1418.4	1411.3	1401.4	1391.4	1381.4	1371.5	1368.2
25°	1384.6	1379.6	1374.7	1369.8	1364.8	1356.7	1345.5	1334.3	1323.0	1311.8	1307.2
27.5°	1332.2	1326.1	1319.9	1313.7	1307.5	1298.4	1286.4	1274.4	1262.4	1250.4	1244.6
30°	1295.7	1288.9	1282.1	1275.2	1268.4	1258.5	1245.6	1232.7	1219.9	1207.0	1200.2
32.5°	1257.3	1249.6	1241.8	1234.1	1226.4	1215.8	1202.6	1189.3	1175.9	1162.6	1154.7
35°	1197.1	1188.4	1179.6	1170.8	1162.1	1150.8	1137.1	1123.5	1109.7	1096.0	1086.7
37.5°	1132.7	1123.7	1114.7	1105.6	1096.6	1084.5	1069.3	1054.2	1038.9	1023.8	1013.3
40°	1087.4	1078.3	1069.3	1060.2	1051.2	1038.9	1023.3	1007.6	992.0	976.4	964.9
42.5°	1044.0	1034.6	1025.0	1015.6	1006.1	993.2	977.0	960.6	944.4	928.1	916.4
45°	976.4	966.3	956.2	946.0	935.9	922.6	906.2	889.7	873.3	856.8	843.5
47.5°	906.7	896.2	885.7	875.3	864.8	851.0	833.9	816.8	799.7	782.7	768.7
50°	859.3	848.6	837.9	827.2	816.5	802.5	785.0	767.4	749.8	732.4	718.6
52.5°	811.0	800.5	790.1	779.6	769.1	754.9	736.9	719.0	701.0	683.1	669.1
55°	739.8	728.8	717.8	706.9	695.9	681.5	663.7	645.9	628.1	610.3	596.0
57.5°	669.2	657.8	646.4	635.0	623.7	609.1	591.7	574.1	556.5	539.0	524.6
60°	618.9	608.0	597.0	586.0	575.1	560.8	543.3	525.8	508.2	490.7	476.4
62.5°	573.5	562.1	550.7	539.3	528.0	513.3	495.3	477.3	459.3	441.4	428.2
65°	503.0	491.2	479.5	467.7	455.9	441.2	423.7	406.2	388.6	371.1	359.4
67.5°	429.8	418.5	407.2	395.9	384.6	370.9	354.5	338.3	322.0	305.8	295.6
70°	383.4	371.9	360.4	348.9	337.4	323.9	308.3	292.6	277.0	261.4	252.4
72.5°	334.1	323.7	313.3	302.9	292.5	279.9	265.2	250.4	235.7	221.0	213.2
75°	267.5	257.4	247.3	237.1	227.0	215.4	202.6	189.8	176.8	164.0	157.7
77.5°	200.0	191.4	182.8	174.2	165.6	156.0	145.6	135.3	124.8	114.4	110.8
80°	156.6	148.6	140.7	132.8	124.8	116.7	108.5	100.3	92.0	83.8	83.0
82.5°	119.1	111.8	104.5	97.2	90.0	83.9	79.3	74.5	69.8	65.1	64.5
85°	66.6	61.1	55.6	50.1	44.7	41.5	40.7	39.9	39.1	38.3	37.6
87.5°	23.2	21.9	20.6	19.3	17.9	17.3	17.5	17.6	17.7	17.7	17.7
90°	2.7	4.8	7.0	9.2	11.4	13.3	14.8	16.4	18.0	19.6	20.8
92.5°	11.2	11.3	11.4	11.6	11.7	12.6	14.1	15.7	17.3	18.9	20.1
95°	49.0	42.3	35.5	28.8	22.0	18.8	19.0	19.2	19.4	19.6	20.8
97.5°	104.0	108.2	112.4	116.5	120.7	111.8	89.7	67.7	45.6	23.5	23.6
100°	146.0	149.5	153.1	156.7	160.2	148.4	121.1	93.8	66.4	39.1	35.8
102.5°	193.0	195.6	198.2	200.8	203.4	203.0	199.4	195.8	192.3	188.7	152.4
105°	268.0	269.1	270.3	271.5	272.7	273.8	274.7	275.7	276.8	277.8	279.6
107.5°	337.5	338.1	338.8	339.3	339.9	340.9	342.2	343.6	344.9	346.3	347.1
110°	384.6	385.1	385.8	386.3	386.9	387.8	389.0	390.2	391.4	392.5	393.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	430.2	431.2	432.3	433.4	434.4	435.2	435.8	436.3	436.8	437.4	437.4
115°	500.2	500.9	501.5	502.0	502.7	502.8	502.7	502.5	502.2	502.0	502.5
117.5°	563.5	564.3	565.1	565.9	566.7	567.2	567.7	568.1	568.6	569.0	568.9
120°	606.2	607.0	607.8	608.6	609.4	609.7	609.5	609.3	609.0	608.9	609.3
122.5°	646.0	646.6	647.0	647.5	648.0	648.4	648.6	648.9	649.2	649.4	649.7
125°	703.2	704.0	704.8	705.6	706.4	706.6	706.2	705.8	705.4	705.0	705.6
127.5°	757.3	757.5	757.8	758.0	758.1	758.7	759.6	760.5	761.4	762.3	762.2
130°	792.3	792.5	792.6	792.8	793.0	793.4	794.1	794.6	795.2	795.9	796.0
132.5°	824.3	824.7	825.0	825.4	825.7	826.3	827.1	827.8	828.5	829.3	829.5
135°	872.4	872.2	872.0	871.7	871.6	871.8	872.6	873.4	874.2	875.0	875.4
137.5°	914.9	915.0	915.1	915.2	915.3	915.7	916.6	917.5	918.3	919.2	919.6
140°	942.7	943.1	943.5	943.9	944.2	944.7	945.0	945.5	945.8	946.3	946.8
142.5°	967.6	968.3	969.0	969.7	970.4	970.9	971.2	971.4	971.6	971.9	972.3
145°	1005.8	1006.5	1007.1	1007.6	1008.3	1008.5	1008.5	1008.5	1008.5	1008.5	1008.8
147.5°	1036.3	1037.4	1038.6	1039.6	1040.8	1041.3	1041.0	1040.8	1040.6	1040.4	1040.6
150°	1058.4	1059.2	1060.0	1060.8	1061.6	1061.8	1061.7	1061.5	1061.3	1061.0	1061.0
152.5°	1076.9	1077.5	1078.2	1078.8	1079.4	1079.6	1079.2	1078.9	1078.5	1078.2	1078.5
155°	1103.0	1103.1	1103.3	1103.5	1103.7	1103.5	1103.0	1102.3	1101.7	1101.2	1101.9
157.5°	1124.8	1124.7	1124.5	1124.4	1124.4	1123.9	1123.3	1122.6	1122.0	1121.2	1122.3
160°	1137.6	1137.0	1136.5	1135.9	1135.2	1134.9	1134.7	1134.4	1134.3	1134.1	1135.2
162.5°	1149.1	1148.3	1147.5	1146.7	1146.0	1145.6	1145.3	1145.1	1145.0	1144.8	1145.9
165°	1163.4	1162.4	1161.5	1160.5	1159.5	1159.0	1159.0	1159.0	1159.0	1159.0	1160.6
167.5°	1174.8	1173.8	1172.8	1171.8	1170.7	1170.2	1170.0	1169.9	1169.8	1169.7	1171.4
170°	1181.2	1180.1	1178.8	1177.7	1176.5	1176.0	1176.2	1176.4	1176.6	1176.8	1178.4
172.5°	1185.5	1184.4	1183.1	1182.0	1180.8	1180.3	1180.4	1180.7	1180.9	1181.1	1182.7
175°	1190.2	1189.0	1187.8	1186.6	1185.4	1184.9	1185.1	1185.4	1185.5	1185.7	1187.5
177.5°	1192.3	1191.1	1190.1	1189.0	1187.8	1187.5	1187.8	1188.1	1188.4	1188.7	1190.0
180°	1190.2	1190.2	1190.2	1190.2	1190.2	1190.2	1190.2	1190.2	1190.2	1190.2	1190.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2
2.5°	1604.1	1606.5	1608.9	1610.1	1609.8	1609.6	1609.4	1609.2
5°	1593.4	1596.2	1598.9	1600.0	1599.5	1598.9	1598.4	1597.9
7.5°	1572.3	1574.0	1575.7	1576.2	1575.3	1574.4	1573.5	1572.6
10°	1553.2	1554.3	1555.3	1555.3	1554.3	1553.2	1552.0	1551.0
12.5°	1529.6	1530.3	1530.9	1530.4	1528.9	1527.4	1525.9	1524.4
15°	1488.3	1487.6	1487.1	1485.9	1484.0	1482.0	1480.2	1478.2
17.5°	1438.4	1436.9	1435.4	1433.2	1430.2	1427.4	1424.4	1421.5
20°	1403.6	1401.4	1399.2	1396.3	1392.8	1389.2	1385.6	1382.1
22.5°	1364.9	1361.6	1358.3	1355.2	1352.3	1349.4	1346.5	1343.6
25°	1302.4	1297.8	1293.2	1289.4	1286.7	1284.0	1281.2	1278.5
27.5°	1238.9	1233.1	1227.4	1222.5	1218.6	1214.6	1210.7	1206.8
30°	1193.3	1186.4	1179.6	1173.9	1169.6	1165.2	1160.8	1156.5
32.5°	1146.7	1138.8	1130.9	1124.8	1120.6	1116.4	1112.3	1108.1
35°	1077.4	1068.1	1058.7	1051.7	1046.7	1041.8	1036.9	1031.9
37.5°	1003.0	992.6	982.1	974.5	969.6	964.6	959.7	954.8
40°	953.4	941.9	930.4	922.2	917.3	912.3	907.4	902.5
42.5°	904.6	893.0	881.2	872.8	867.6	862.5	857.3	852.2
45°	830.0	816.5	803.2	794.0	789.1	784.1	779.2	774.3
47.5°	754.8	740.9	726.9	717.3	711.9	706.4	701.0	695.6
50°	704.9	691.3	677.5	668.1	662.9	657.6	652.5	647.3
52.5°	655.1	641.2	627.3	617.7	612.2	606.8	601.4	596.0
55°	581.8	567.6	553.3	543.6	538.3	533.2	528.0	522.7
57.5°	510.1	495.6	481.2	472.0	468.0	464.0	460.1	456.2
60°	462.2	447.9	433.7	424.4	420.0	415.6	411.3	406.9
62.5°	415.1	401.9	388.8	380.4	376.9	373.4	369.9	366.4
65°	347.5	335.7	324.0	316.5	313.2	309.9	306.6	303.3
67.5°	285.4	275.4	265.2	258.3	254.7	251.1	247.4	243.9
70°	243.3	234.3	225.2	219.3	216.6	213.8	211.1	208.4
72.5°	205.5	197.8	190.0	184.9	182.4	179.9	177.4	174.9
75°	151.4	145.1	138.8	134.8	133.1	131.5	129.8	128.2
77.5°	107.1	103.4	99.7	97.6	97.1	96.7	96.1	95.7
80°	82.2	81.4	80.5	80.0	79.7	79.5	79.2	78.9
82.5°	63.8	63.3	62.7	62.2	62.0	61.7	61.4	61.2
85°	37.1	36.6	36.0	35.8	35.8	35.8	35.8	35.8
87.5°	17.7	17.7	17.8	17.9	18.3	18.5	18.8	19.2
90°	21.9	23.2	24.3	25.1	25.5	25.9	26.3	26.7
92.5°	21.2	22.5	23.6	24.3	24.3	24.4	24.5	24.6
95°	21.9	23.2	24.3	25.1	25.2	25.4	25.6	25.8
97.5°	23.7	23.9	24.0	24.2	24.3	24.5	24.7	25.0
100°	32.5	29.1	25.7	24.2	24.3	24.5	24.7	25.0
102.5°	116.2	79.9	43.6	25.5	25.5	25.6	25.6	25.7
105°	281.3	283.0	284.8	282.2	275.1	268.0	260.8	253.7
107.5°	348.0	348.9	349.7	350.5	351.3	352.0	352.8	353.6
110°	393.3	393.8	394.1	394.7	395.2	395.8	396.5	397.0





TEST NUMBER: P332976-940

CATALOG NUMBER: S124RDIP-S1020D1035U940-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	437.3	437.2	437.1	437.5	438.2	439.0	439.7	440.4
115°	502.8	503.3	503.6	503.8	503.8	503.8	503.8	503.8
117.5°	568.8	568.7	568.6	568.6	568.6	568.5	568.4	568.3
120°	609.7	610.0	610.5	610.5	610.0	609.7	609.3	608.9
122.5°	650.0	650.1	650.4	650.3	650.0	649.5	649.2	648.7
125°	706.2	706.8	707.4	707.8	708.0	708.2	708.4	708.6
127.5°	762.1	762.0	761.9	761.7	761.6	761.4	761.3	761.1
130°	796.2	796.4	796.6	796.7	796.7	796.7	796.7	796.7
132.5°	829.6	829.9	830.1	830.1	829.9	829.7	829.6	829.5
135°	875.8	876.2	876.6	877.0	877.4	877.8	878.2	878.6
137.5°	920.1	920.5	921.0	921.0	921.0	920.9	920.7	920.6
140°	947.4	948.1	948.6	949.0	949.2	949.4	949.6	949.9
142.5°	972.8	973.2	973.7	973.8	973.9	973.9	974.0	974.0
145°	1009.0	1009.1	1009.3	1009.7	1010.0	1010.4	1010.8	1011.2
147.5°	1040.7	1040.9	1041.1	1041.3	1041.4	1041.6	1041.9	1042.1
150°	1061.0	1061.0	1061.0	1061.1	1061.4	1061.6	1061.8	1061.9
152.5°	1078.8	1079.1	1079.4	1079.5	1079.4	1079.3	1079.1	1079.1
155°	1102.7	1103.5	1104.3	1104.4	1103.8	1103.2	1102.6	1102.1
157.5°	1123.3	1124.4	1125.3	1125.3	1124.4	1123.3	1122.3	1121.2
160°	1136.5	1137.6	1138.8	1138.8	1137.6	1136.5	1135.2	1134.1
162.5°	1147.1	1148.3	1149.5	1149.4	1148.1	1146.7	1145.4	1144.1
165°	1162.2	1163.8	1165.3	1165.2	1163.4	1161.6	1159.8	1158.1
167.5°	1173.1	1174.9	1176.6	1176.5	1174.6	1172.6	1170.5	1168.6
170°	1180.0	1181.5	1183.1	1182.9	1181.0	1179.0	1177.0	1175.0
172.5°	1184.3	1185.8	1187.4	1187.1	1185.0	1182.9	1180.7	1178.6
175°	1189.3	1191.1	1192.8	1192.5	1190.2	1187.8	1185.4	1183.0
177.5°	1191.2	1192.5	1193.8	1193.5	1191.6	1189.7	1187.8	1185.9
180°	1190.2	1190.2	1190.2	1190.2	1190.2	1190.2	1190.2	1190.2

(END OF REPORT)