

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: P333085-940

Luminaire Tested: **S124RDIW-S1020D1050U940-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333085-940  
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: S124RDIW-S1020D1050U940-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1050 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7460.1 lumens  
Efficiency: N/A  
Efficacy: 121.9 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

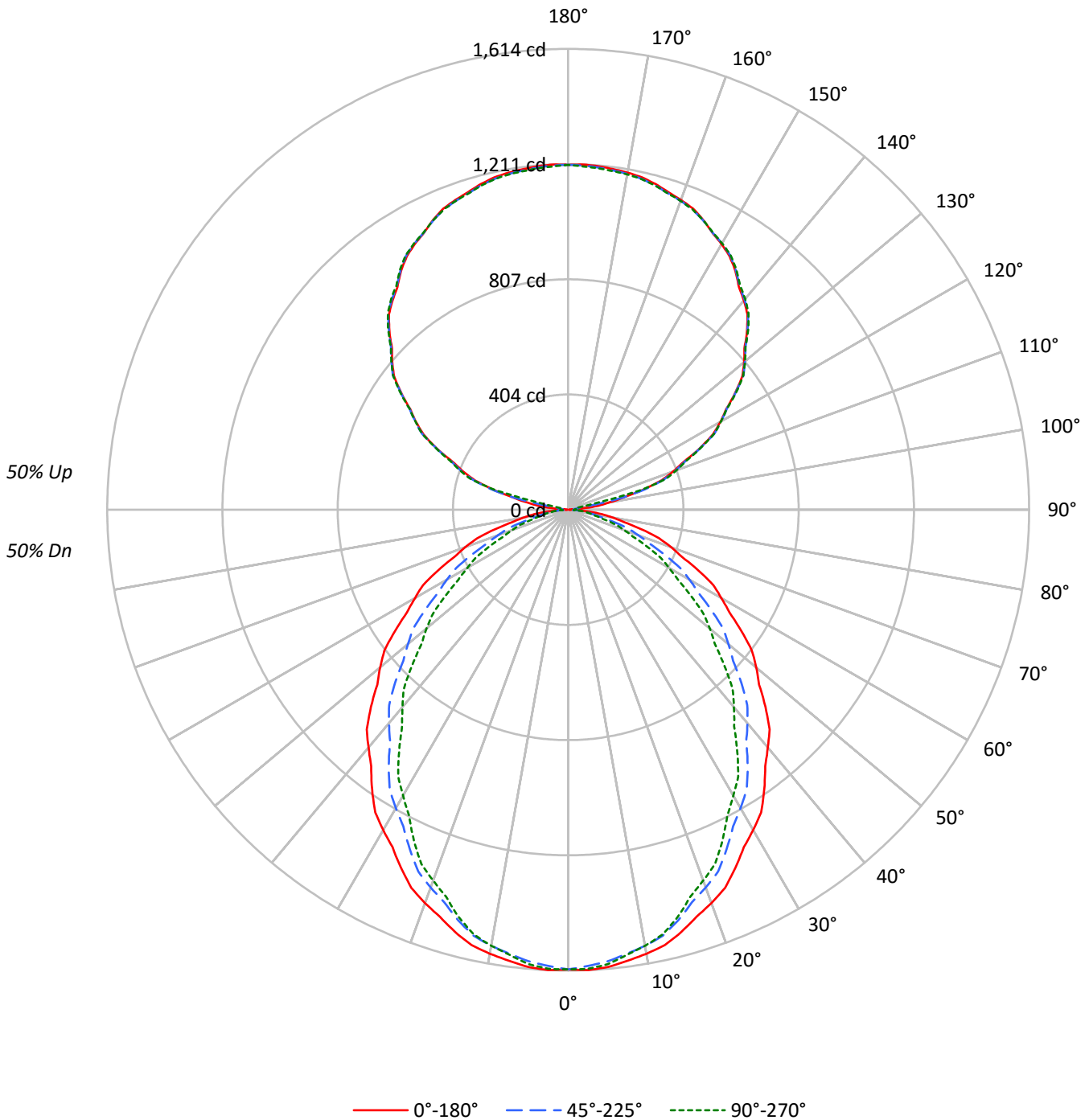
Input Watts (W): 61.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56
1	98	94	90	87	90	87	83	81	73	71	69	61	60	58	50	49	48
2	89	82	76	71	82	76	71	66	65	61	57	54	51	49	44	42	41
3	82	72	65	60	75	67	61	56	57	53	49	48	45	42	39	37	35
4	75	64	57	51	69	60	53	48	51	46	42	43	39	36	35	33	30
5	69	57	49	43	63	53	46	41	46	40	36	39	34	31	32	29	27
6	63	52	44	38	58	48	41	36	41	36	32	35	31	27	29	26	23
7	59	47	39	33	54	43	36	31	37	32	28	32	28	24	27	23	21
8	55	42	35	29	50	40	33	28	34	29	25	29	25	22	25	21	19
9	51	39	31	26	47	36	30	25	31	26	22	27	23	20	23	19	17
10	48	36	28	24	44	33	27	22	29	24	20	25	21	18	21	18	16

**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	8.9
50°-60°	554.4	7.4
60°-70°	382.8	5.1
70°-80°	194.0	2.6
80°-90°	53.3	0.7
90°-100°	41.3	0.6
100°-110°	263.4	3.5
110°-120°	503.9	6.8
120°-130°	639.7	8.6
130°-140°	684.4	9.2
140°-150°	640.0	8.6
150°-160°	516.1	6.9
160°-170°	332.9	4.5
170°-180°	114.7	1.5
0°-30°	1182.1	15.8
0°-40°	1872.5	25.1
0°-60°	3093.5	41.5
0°-90°	3723.6	49.9
90°-120°	808.6	10.8
90°-150°	2772.8	37.2
90°-180°	3737.0	50.1
0°-180°	7460.1	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°	50	21	20	25	26	64
105°	272	277	282	288	258	285
115°	508	510	510	511	511	499
125°	714	717	716	718	719	637
135°	885	885	888	890	892	682
145°	1021	1023	1024	1025	1026	638
155°	1119	1120	1118	1121	1118	516
165°	1181	1177	1176	1183	1175	334
175°	1208	1203	1204	1210	1201	115
180°	1208	1208	1208	1208	1208	



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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	18.0	17.4	17.5	17.6	17.7	17.7	17.8
90°	2.7	4.9	7.1	9.4	11.5	13.5	15.1	16.7	18.3	19.9	21.0
92.5°	11.4	11.5	11.6	11.8	11.9	12.8	14.4	16.0	17.6	19.2	20.3
95°	49.7	42.9	36.0	29.2	22.4	19.1	19.3	19.4	19.7	19.9	21.0
97.5°	105.5	109.8	114.0	118.3	122.5	113.5	91.0	68.7	46.3	23.8	24.0
100°	148.2	151.8	155.4	159.0	162.6	150.6	122.9	95.1	67.5	39.8	36.4
102.5°	195.9	198.5	201.2	203.8	206.4	206.0	202.4	198.8	195.1	191.5	154.7
105°	272.0	273.1	274.4	275.5	276.8	277.9	278.8	279.9	280.9	281.9	283.7
107.5°	342.6	343.2	343.8	344.4	345.0	346.0	347.3	348.7	350.1	351.4	352.3
110°	390.3	390.9	391.5	392.1	392.7	393.6	394.8	396.0	397.3	398.4	398.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	436.6	437.7	438.7	439.8	440.9	441.8	442.3	442.8	443.4	444.0	443.9
115°	507.7	508.4	509.0	509.5	510.1	510.3	510.1	510.0	509.8	509.5	510.0
117.5°	571.9	572.7	573.5	574.3	575.1	575.7	576.1	576.6	577.0	577.5	577.4
120°	615.3	616.1	616.9	617.7	618.5	618.8	618.6	618.4	618.1	618.0	618.4
122.5°	655.8	656.2	656.7	657.2	657.6	658.1	658.4	658.6	658.9	659.2	659.4
125°	713.7	714.5	715.3	716.1	716.9	717.1	716.8	716.3	716.0	715.5	716.1
127.5°	768.7	768.8	769.1	769.3	769.5	770.0	771.0	771.9	772.8	773.7	773.6
130°	804.1	804.3	804.5	804.7	804.9	805.3	805.9	806.5	807.1	807.7	807.9
132.5°	836.6	837.0	837.3	837.7	838.0	838.7	839.4	840.2	840.9	841.7	841.9
135°	885.4	885.2	885.0	884.8	884.6	884.9	885.7	886.5	887.3	888.1	888.5
137.5°	928.5	928.6	928.7	928.8	928.9	929.3	930.2	931.1	932.0	932.9	933.4
140°	956.8	957.2	957.6	958.0	958.4	958.8	959.2	959.6	960.0	960.4	961.0
142.5°	982.0	982.8	983.5	984.3	985.0	985.4	985.7	985.9	986.1	986.4	986.9
145°	1020.9	1021.5	1022.1	1022.7	1023.3	1023.6	1023.6	1023.6	1023.6	1023.6	1023.9
147.5°	1051.8	1052.9	1054.1	1055.2	1056.3	1056.8	1056.6	1056.4	1056.1	1056.0	1056.1
150°	1074.2	1075.0	1075.8	1076.7	1077.5	1077.7	1077.5	1077.4	1077.1	1076.9	1076.9
152.5°	1093.0	1093.7	1094.3	1094.9	1095.6	1095.7	1095.4	1095.0	1094.7	1094.3	1094.6
155°	1119.4	1119.6	1119.8	1120.0	1120.2	1120.0	1119.4	1118.8	1118.2	1117.6	1118.4
157.5°	1141.7	1141.5	1141.4	1141.2	1141.1	1140.8	1140.1	1139.3	1138.7	1138.0	1139.1
160°	1154.6	1154.1	1153.4	1152.8	1152.2	1151.8	1151.6	1151.4	1151.2	1151.0	1152.2
162.5°	1166.2	1165.5	1164.7	1163.9	1163.1	1162.6	1162.4	1162.3	1162.1	1161.8	1163.1
165°	1180.8	1179.8	1178.8	1177.8	1176.8	1176.3	1176.3	1176.3	1176.3	1176.3	1177.9
167.5°	1192.4	1191.3	1190.3	1189.3	1188.2	1187.7	1187.5	1187.4	1187.3	1187.1	1188.9
170°	1198.9	1197.7	1196.5	1195.2	1194.1	1193.6	1193.7	1194.0	1194.2	1194.4	1196.0
172.5°	1203.2	1202.0	1200.8	1199.6	1198.4	1197.9	1198.1	1198.3	1198.5	1198.7	1200.3
175°	1207.9	1206.8	1205.5	1204.3	1203.1	1202.7	1202.8	1203.0	1203.2	1203.5	1205.2
177.5°	1210.1	1209.0	1207.8	1206.8	1205.6	1205.2	1205.5	1205.9	1206.1	1206.5	1207.7
180°	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9



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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°	17.8	17.8	17.8	18.0	18.4	18.6	18.9	19.3
90°	22.3	23.5	24.7	25.5	25.9	26.3	26.7	27.1
92.5°	21.6	22.7	24.0	24.6	24.7	24.8	24.9	25.0
95°	22.3	23.5	24.7	25.4	25.6	25.8	26.0	26.2
97.5°	24.1	24.3	24.3	24.5	24.7	24.9	25.1	25.3
100°	32.9	29.5	26.1	24.5	24.7	24.9	25.1	25.3
102.5°	117.9	81.1	44.2	25.9	25.9	25.9	25.9	26.0
105°	285.5	287.3	289.1	286.4	279.2	272.0	264.7	257.5
107.5°	353.2	354.1	355.0	355.8	356.6	357.3	358.1	358.8
110°	399.2	399.7	400.0	400.6	401.2	401.7	402.3	403.0





TEST NUMBER: P333085-940

CATALOG NUMBER: S124RDIW-S1020D1050U940-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	443.8	443.7	443.6	444.0	444.8	445.5	446.3	447.0
115°	510.3	510.8	511.1	511.4	511.4	511.4	511.4	511.4
117.5°	577.3	577.3	577.2	577.1	577.0	576.9	576.8	576.8
120°	618.8	619.2	619.6	619.6	619.2	618.8	618.4	618.0
122.5°	659.7	659.9	660.1	660.0	659.7	659.2	658.9	658.4
125°	716.8	717.4	717.9	718.4	718.5	718.7	719.0	719.2
127.5°	773.5	773.4	773.2	773.1	772.9	772.8	772.6	772.5
130°	808.1	808.3	808.5	808.6	808.6	808.6	808.6	808.6
132.5°	842.0	842.3	842.5	842.5	842.3	842.1	842.0	841.9
135°	888.9	889.3	889.7	890.1	890.6	890.9	891.4	891.7
137.5°	933.8	934.2	934.7	934.9	934.7	934.6	934.5	934.3
140°	961.6	962.2	962.8	963.2	963.4	963.6	963.8	964.0
142.5°	987.3	987.7	988.2	988.4	988.5	988.5	988.6	988.6
145°	1024.0	1024.2	1024.4	1024.8	1025.1	1025.6	1025.9	1026.4
147.5°	1056.3	1056.4	1056.6	1056.8	1057.0	1057.2	1057.4	1057.6
150°	1076.9	1076.9	1076.9	1077.0	1077.2	1077.5	1077.6	1077.8
152.5°	1094.9	1095.2	1095.6	1095.6	1095.6	1095.4	1095.3	1095.2
155°	1119.2	1120.0	1120.8	1120.9	1120.3	1119.7	1119.1	1118.5
157.5°	1140.1	1141.1	1142.2	1142.2	1141.1	1140.1	1139.1	1138.0
160°	1153.4	1154.6	1155.8	1155.8	1154.6	1153.4	1152.2	1151.0
162.5°	1164.2	1165.5	1166.6	1166.6	1165.2	1163.9	1162.5	1161.1
165°	1179.6	1181.2	1182.8	1182.6	1180.8	1179.0	1177.2	1175.4
167.5°	1190.7	1192.5	1194.2	1194.1	1192.1	1190.1	1188.1	1186.1
170°	1197.6	1199.2	1200.8	1200.6	1198.5	1196.6	1194.5	1192.6
172.5°	1201.9	1203.5	1205.1	1204.9	1202.7	1200.5	1198.4	1196.1
175°	1207.0	1208.8	1210.7	1210.3	1207.9	1205.5	1203.1	1200.7
177.5°	1209.1	1210.3	1211.7	1211.3	1209.3	1207.5	1205.5	1203.6
180°	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9

(END OF REPORT)