

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: P332972-940

Luminaire Tested: **S124RDIP-S1020D810U940-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332972-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124RDIP-S1020D810U940-4F0-1E-UDD-F4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 810 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6303.2 lumens  
Efficiency: N/A  
Efficacy: 115.9 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

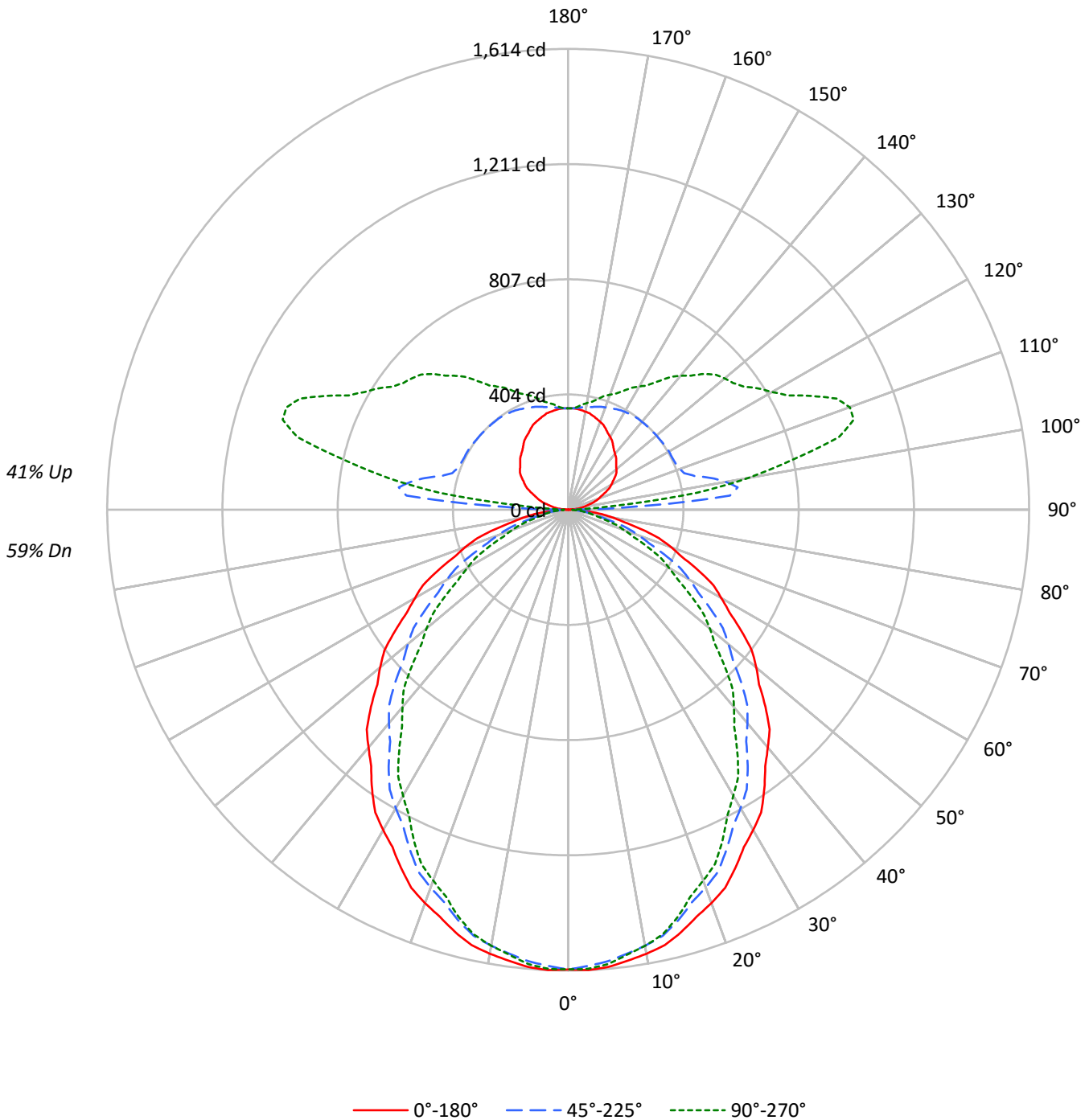
Input Watts (W): 54.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332972-940

CATALOG NUMBER: S124RDIP-S1020D810U940-4F0-1E-UDD-F4

### Luminous Intensity Polar Plot





TEST NUMBER: P332972-940

CATALOG NUMBER: S124RDIP-S1020D810U940-4F0-1E-UDD-F4

**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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64
1	100	96	92	89	93	90	86	83	78	76	73	67	66	64	57	56	55
2	91	84	78	73	85	79	73	69	69	65	61	60	57	54	51	49	47
3	84	74	67	61	78	70	63	58	61	56	52	53	49	46	45	43	40
4	77	66	58	52	71	62	55	49	54	49	44	47	43	40	41	38	35
5	71	59	51	45	66	55	48	43	49	43	39	43	38	35	37	33	31
6	65	53	45	39	61	50	43	37	44	38	34	39	34	30	34	30	27
7	60	48	40	34	56	45	38	33	40	34	30	35	31	27	31	27	24
8	56	44	36	31	52	41	34	29	37	31	27	32	28	24	28	25	22
9	52	40	32	27	49	38	31	26	34	28	24	30	25	22	26	22	20
10	49	37	30	25	46	35	28	24	31	26	22	28	23	20	24	21	18

**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



TEST NUMBER: P332972-940

CATALOG NUMBER: S124RDIP-S1020D810U940-4F0-1E-UDD-F4

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	151.3	2.4
10°-20°	421.8	6.7
20°-30°	609.1	9.7
30°-40°	690.4	11.0
40°-50°	666.7	10.6
50°-60°	554.4	8.8
60°-70°	382.8	6.1
70°-80°	194.0	3.1
80°-90°	51.7	0.8
90°-100°	256.3	4.1
100°-110°	533.5	8.5
110°-120°	477.9	7.6
120°-130°	402.0	6.4
130°-140°	335.1	5.3
140°-150°	256.1	4.1
150°-160°	180.0	2.9
160°-170°	105.9	1.7
170°-180°	34.4	0.5
0°-30°	1182.1	18.8
0°-40°	1872.5	29.7
0°-60°	3093.5	49.1
0°-90°	3722.1	59.1
90°-120°	1267.7	20.1
90°-150°	2260.9	35.9
90°-180°	2581.0	40.9
0°-180°	6303.2	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°	1	6	13	14	15	4
95°	23	72	568	281	170	26
105°	82	118	457	985	981	87
115°	144	180	408	784	942	142
125°	200	238	406	667	752	178
135°	238	283	402	592	672	184
145°	274	314	400	499	549	172
155°	312	336	389	441	460	144
165°	340	350	373	395	401	96
175°	354	355	358	363	361	34
180°	355	355	355	355	355	



TEST NUMBER: P332972-940

CATALOG NUMBER: S124RDIP-S1020D810U940-4F0-1E-UDD-F4

**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°	22.8	21.3	20.0	18.4	16.8	15.8	16.4	16.2	16.2	16.3	16.0
90°	0.7	2.1	4.2	4.9	5.6	5.6	9.7	9.7	11.1	12.6	11.9
92.5°	7.9	11.6	18.1	26.7	36.8	51.3	86.8	140.8	193.6	221.1	184.2
95°	23.0	25.1	32.1	41.1	57.9	87.1	147.8	262.2	428.8	568.3	584.3
97.5°	41.3	41.3	47.3	55.6	70.0	94.5	141.2	235.7	401.4	598.5	734.1
100°	53.0	53.0	57.9	66.3	79.5	101.8	142.9	221.8	364.0	560.6	739.0
102.5°	64.1	65.3	69.6	77.4	90.1	111.3	148.5	217.8	338.9	513.2	697.2
105°	81.6	83.6	87.1	95.5	108.1	128.3	161.8	219.6	317.3	457.4	621.3
107.5°	100.9	102.2	105.7	114.6	126.6	146.6	177.3	230.0	313.3	426.1	559.9
110°	113.7	115.0	118.5	126.9	139.5	158.3	189.0	237.7	314.4	415.5	529.2



TEST NUMBER: P332972-940

CATALOG NUMBER: S124RDIP-S1020D810U940-4F0-1E-UDD-F4

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	125.9	127.3	131.3	139.2	151.7	170.6	200.1	246.1	317.8	410.5	511.9
115°	143.7	145.7	150.6	157.6	170.9	189.7	217.6	259.4	324.2	407.9	495.7
117.5°	162.0	164.0	168.4	176.0	188.4	207.9	234.4	272.9	331.1	407.2	488.5
120°	174.3	175.7	180.6	188.2	200.1	219.6	246.1	282.4	336.1	407.2	484.6
122.5°	185.5	186.9	191.7	198.9	211.8	230.8	257.3	291.3	341.1	406.6	480.1
125°	200.1	202.9	207.1	214.7	228.0	247.5	272.6	304.7	348.7	405.8	472.7
127.5°	213.1	215.3	220.3	229.1	242.9	262.6	286.9	316.3	354.6	404.3	462.8
130°	220.3	223.1	228.7	239.2	252.4	272.6	296.3	323.5	359.1	403.7	456.7
132.5°	227.6	229.8	237.1	247.0	261.4	280.4	304.2	330.7	363.0	403.1	451.1
135°	237.7	240.6	247.5	259.4	274.0	292.1	315.1	340.3	368.8	402.3	442.7
137.5°	248.0	250.6	258.2	269.6	284.7	302.0	323.5	347.0	372.3	402.2	435.5
140°	255.2	257.3	264.9	276.8	291.4	308.2	329.1	351.4	375.1	401.6	431.6
142.5°	263.0	265.1	272.2	283.5	297.6	313.8	334.1	354.7	377.4	401.6	428.3
145°	274.0	276.1	283.1	292.8	306.1	321.5	339.6	358.4	378.6	400.2	422.5
147.5°	286.4	287.1	293.3	303.3	314.3	328.1	345.2	361.6	379.3	397.7	417.4
150°	294.3	295.0	300.5	308.9	319.3	332.6	347.9	363.3	379.3	396.0	413.5
152.5°	301.5	301.7	307.2	315.0	324.4	336.5	350.2	364.4	378.2	393.2	409.0
155°	311.7	312.4	316.6	323.5	331.2	341.6	353.5	365.3	376.5	389.1	402.3
157.5°	321.6	321.6	325.5	330.9	337.6	345.8	355.9	365.3	374.7	384.8	395.5
160°	327.7	327.7	330.5	335.4	341.0	348.7	357.0	365.3	373.0	381.4	390.5
162.5°	333.3	332.7	334.9	339.3	344.3	350.3	358.1	365.3	371.4	378.1	386.0
165°	339.6	339.6	341.0	344.5	347.9	352.1	358.4	364.0	368.2	373.0	378.6
167.5°	345.8	345.2	345.8	348.5	350.4	353.7	358.3	362.3	364.8	368.0	371.9
170°	348.7	347.9	348.7	350.7	352.1	354.2	357.7	361.1	362.6	364.6	367.5
172.5°	351.4	350.7	350.9	352.4	353.2	354.7	357.1	360.1	360.3	361.3	363.6
175°	354.2	353.5	353.5	354.2	354.9	354.9	356.3	358.4	357.7	357.7	359.1
177.5°	355.4	354.9	354.4	354.9	354.9	354.9	355.4	356.6	355.4	355.4	356.0
180°	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9



TEST NUMBER: P332972-940

CATALOG NUMBER: S124RDIP-S1020D810U940-4F0-1E-UDD-F4

**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°	15.9	15.8	15.7	15.7	16.1	16.4	16.5	16.8
90°	12.6	13.3	13.9	13.9	14.6	15.3	14.6	14.6
92.5°	137.0	103.1	82.0	68.0	59.8	56.1	53.7	53.7
95°	516.7	408.6	315.1	247.5	213.4	191.7	179.2	170.1
97.5°	763.3	723.2	655.0	582.2	532.2	490.2	469.2	454.8
100°	840.9	854.8	820.6	769.1	708.4	665.8	645.0	639.4
102.5°	837.0	906.2	916.1	894.6	857.4	826.5	804.5	800.0
105°	781.0	901.5	970.5	999.2	1000.6	995.0	985.3	981.1
107.5°	701.3	829.7	926.9	989.1	1023.6	1039.5	1046.4	1048.2
110°	653.4	773.9	875.0	951.7	1001.2	1030.6	1043.1	1049.4





TEST NUMBER: P332972-940

CATALOG NUMBER: S124RDIP-S1020D810U940-4F0-1E-UDD-F4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	618.2	724.9	820.4	897.1	953.2	988.7	1006.3	1016.5
115°	582.9	668.7	750.2	817.2	872.3	914.1	936.4	942.0
117.5°	565.6	636.6	700.7	757.5	804.5	839.6	862.2	866.6
120°	557.8	622.7	678.4	727.9	767.7	798.3	816.5	824.1
122.5°	551.1	613.7	664.5	707.8	741.5	767.7	783.0	790.7
125°	539.7	599.7	647.7	686.1	714.0	734.2	747.4	751.6
127.5°	525.8	583.0	631.0	667.4	695.4	713.5	724.6	728.8
130°	514.6	569.6	617.1	654.0	682.6	700.1	711.2	715.4
132.5°	502.8	554.6	600.9	637.8	665.8	685.5	696.2	700.3
135°	486.7	532.0	574.5	609.4	637.3	656.8	668.0	672.2
137.5°	472.1	510.4	546.3	577.7	603.8	623.0	632.2	637.3
140°	463.7	496.4	527.8	557.1	581.5	596.8	606.6	612.2
142.5°	455.8	484.7	511.7	537.0	558.7	572.8	581.5	585.4
145°	444.9	468.6	489.5	509.0	526.5	538.2	545.3	548.8
147.5°	435.8	454.6	471.4	486.7	499.5	509.7	515.0	516.2
150°	430.2	446.2	460.2	472.7	483.9	492.9	497.1	497.8
152.5°	424.1	437.8	450.7	461.0	470.5	477.9	480.4	481.1
155°	414.8	426.1	436.5	444.9	451.8	457.4	459.5	459.5
157.5°	404.9	414.3	423.1	429.8	435.1	439.3	440.5	440.5
160°	398.9	406.5	414.2	419.7	423.9	428.1	428.8	428.8
162.5°	392.7	399.2	405.3	410.3	413.3	417.5	418.2	417.7
165°	384.1	388.3	393.2	396.7	399.5	402.3	401.6	400.9
167.5°	375.9	379.2	383.1	385.1	386.6	388.3	388.3	387.6
170°	371.0	373.0	375.9	377.9	379.3	380.0	379.3	379.3
172.5°	366.5	368.0	369.7	371.2	372.0	372.7	372.0	371.0
175°	360.5	361.1	362.6	362.6	362.6	364.0	362.6	361.1
177.5°	356.6	357.1	357.1	357.7	357.1	357.7	356.6	355.4
180°	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9

(END OF REPORT)