

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

Luminaire Tested: **S124RDIP-S1020D810U835-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332972
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-S1020D810U835-4F0-1E-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: 7068.7 lumens
Efficiency: N/A
Efficacy: 129.9 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

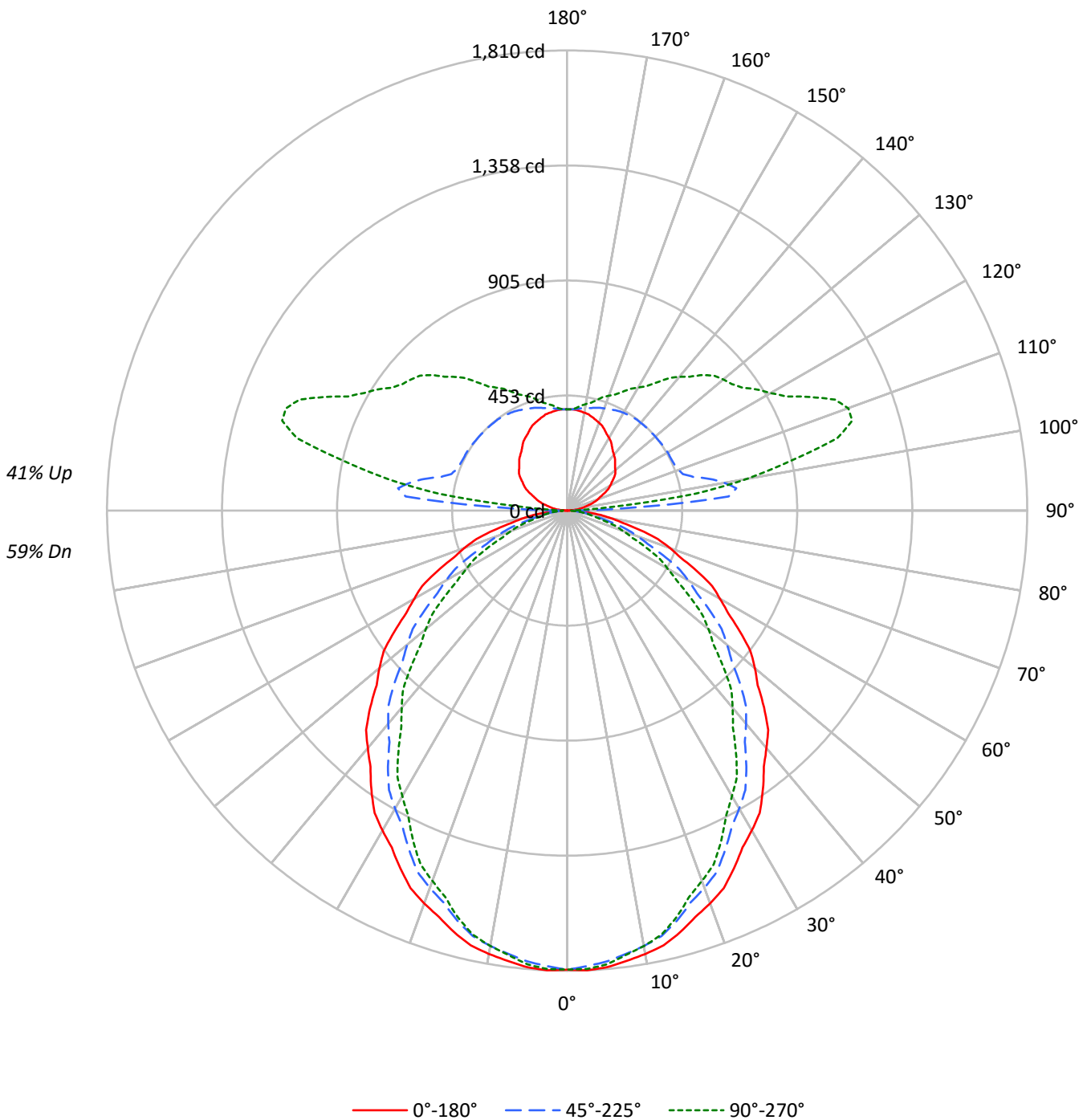
Input Watts (W): 54.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332972

CATALOG NUMBER: S124RDIP-S1020D810U835-4F0-1E-UDD-F4

Luminous Intensity Polar Plot





TEST NUMBER: P332972

CATALOG NUMBER: S124RDIP-S1020D810U835-4F0-1E-UDD-F4

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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64	59
1	100	96	92	89	93	90	86	83	78	76	73	67	66	64	57	56	55	50
2	91	84	78	73	85	79	73	69	69	65	61	60	57	54	51	49	47	43
3	84	74	67	61	78	70	63	58	61	56	52	53	49	46	45	43	40	37
4	77	66	58	52	71	62	55	49	54	49	44	47	43	40	41	38	35	32
5	71	59	51	45	66	55	48	43	49	43	39	43	38	35	37	33	31	28
6	65	53	45	39	61	50	43	37	44	38	34	39	34	30	34	30	27	24
7	60	48	40	34	56	45	38	33	40	34	30	35	31	27	31	27	24	22
8	56	44	36	31	52	41	34	29	37	31	27	32	28	24	28	25	22	19
9	52	40	32	27	49	38	31	26	34	28	24	30	25	22	26	22	20	18
10	49	37	30	25	46	35	28	24	31	26	22	28	23	20	24	21	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14577	14577	14577
5°	14610	14431	14521
10°	14519	14258	14258
15°	14352	13959	13855
20°	14123	13564	13315
25°	13831	13104	12772
30°	13546	12618	12089
35°	13231	12113	11404
40°	12852	11540	10666
45°	12501	10970	9913
50°	12103	10315	9117
55°	11676	9633	8251
60°	11207	8885	7367
65°	10776	7950	6497
70°	10150	6918	5516
75°	9357	5736	4485
80°	8164	4370	4114
85°	6919	3974	3714



TEST NUMBER: P332972

CATALOG NUMBER: S124RDIP-S1020D810U835-4F0-1E-UDD-F4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	169.6	2.4
10°-20°	473.0	6.7
20°-30°	683.0	9.7
30°-40°	774.2	11.0
40°-50°	747.6	10.6
50°-60°	621.7	8.8
60°-70°	429.3	6.1
70°-80°	217.6	3.1
80°-90°	58.0	0.8
90°-100°	287.5	4.1
100°-110°	598.3	8.5
110°-120°	535.9	7.6
120°-130°	450.8	6.4
130°-140°	375.9	5.3
140°-150°	287.1	4.1
150°-160°	201.8	2.9
160°-170°	118.7	1.7
170°-180°	38.6	0.5
0°-30°	1325.6	18.8
0°-40°	2099.9	29.7
0°-60°	3469.2	49.1
0°-90°	4174.1	59.1
90°-120°	1421.6	20.1
90°-150°	2535.4	35.9
90°-180°	2895.0	41.0
0°-180°	7068.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1806	1806	1806	1806	1806	
5°	1803	1797	1781	1794	1792	171
15°	1717	1704	1670	1667	1658	484
25°	1553	1526	1471	1448	1434	715
35°	1342	1297	1229	1183	1157	839
45°	1095	1042	961	896	868	844
55°	830	772	684	615	586	742
65°	564	503	416	359	340	557
75°	300	248	184	153	144	317
85°	75	48	43	40	40	84
90°	1	6	14	16	16	5
95°	26	81	637	316	191	29
105°	92	133	513	1104	1100	98
115°	161	202	457	879	1056	160
125°	224	267	455	748	843	200
135°	267	317	451	664	754	206
145°	307	352	449	560	615	193
155°	350	377	436	494	515	161
165°	381	393	418	443	450	107
175°	397	398	401	407	405	38
180°	398	398	398	398	398	



TEST NUMBER: P332972

CATALOG NUMBER: S124RDIP-S1020D810U835-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7
2.5°	1810.1	1809.1	1808.1	1807.2	1806.2	1804.3	1801.6	1798.9	1796.2	1793.5	1796.2
5°	1802.9	1801.7	1800.5	1799.2	1798.0	1795.5	1791.9	1788.2	1784.5	1780.8	1783.9
7.5°	1786.6	1785.3	1784.0	1782.7	1781.4	1778.4	1773.6	1768.8	1764.0	1759.2	1761.2
10°	1771.1	1769.6	1768.0	1766.5	1765.0	1761.4	1755.9	1750.4	1744.8	1739.3	1740.5
12.5°	1751.2	1749.4	1747.6	1745.9	1744.1	1739.9	1733.4	1726.9	1720.4	1713.9	1714.6
15°	1717.2	1714.4	1711.7	1708.9	1706.1	1700.9	1693.2	1685.5	1677.9	1670.2	1669.6
17.5°	1676.0	1672.0	1668.0	1664.0	1660.0	1653.4	1644.2	1635.0	1625.8	1616.5	1614.8
20°	1643.9	1639.9	1635.9	1631.9	1627.9	1620.7	1610.3	1599.8	1589.4	1578.9	1576.5
22.5°	1608.5	1604.0	1599.5	1595.1	1590.6	1582.7	1571.6	1560.4	1549.2	1538.0	1534.3
25°	1552.7	1547.1	1541.6	1536.1	1530.5	1521.5	1508.9	1496.3	1483.7	1471.1	1465.9
27.5°	1494.0	1487.1	1480.2	1473.2	1466.3	1456.1	1442.6	1429.2	1415.7	1402.2	1395.8
30°	1453.1	1445.4	1437.8	1430.1	1422.4	1411.3	1396.9	1382.4	1368.0	1353.6	1345.9
32.5°	1410.0	1401.3	1392.6	1384.0	1375.3	1363.5	1348.6	1333.7	1318.7	1303.8	1294.9
35°	1342.5	1332.7	1322.8	1313.0	1303.2	1290.6	1275.2	1259.9	1244.5	1229.1	1218.7
37.5°	1270.3	1260.2	1250.1	1239.9	1229.8	1216.2	1199.2	1182.2	1165.1	1148.1	1136.4
40°	1219.5	1209.3	1199.2	1189.0	1178.9	1165.1	1147.6	1130.0	1112.5	1095.0	1082.1
42.5°	1170.8	1160.2	1149.5	1138.9	1128.3	1113.8	1095.6	1077.3	1059.1	1040.8	1027.7
45°	1095.0	1083.7	1072.3	1060.9	1049.5	1034.6	1016.2	997.8	979.3	960.9	945.9
47.5°	1016.8	1005.0	993.3	981.6	969.8	954.4	935.2	916.0	896.8	877.7	862.1
50°	963.7	951.7	939.7	927.7	915.7	899.9	880.3	860.6	840.9	821.3	805.9
52.5°	909.5	897.7	886.0	874.3	862.5	846.6	826.4	806.3	786.1	766.0	750.4
55°	829.6	817.3	805.0	792.7	780.4	764.3	744.3	724.3	704.4	684.4	668.4
57.5°	750.5	737.7	724.9	712.1	699.4	683.1	663.5	643.8	624.1	604.5	588.3
60°	694.1	681.8	669.5	657.2	644.9	628.9	609.3	589.6	569.9	550.3	534.3
62.5°	643.2	630.4	617.6	604.8	592.1	575.6	555.4	535.3	515.1	495.0	480.2
65°	564.1	550.9	537.7	524.5	511.3	494.8	475.2	455.5	435.8	416.2	403.0
67.5°	482.0	469.3	456.7	444.0	431.3	415.9	397.6	379.4	361.1	342.9	331.5
70°	430.0	417.1	404.2	391.3	378.4	363.2	345.7	328.1	310.6	293.1	283.0
72.5°	374.7	363.0	351.3	339.7	328.0	313.9	297.4	280.8	264.3	247.8	239.1
75°	300.0	288.7	277.3	265.9	254.6	241.6	227.2	212.8	198.3	183.9	176.8
77.5°	224.3	214.6	205.0	195.3	185.7	175.0	163.3	151.7	140.0	128.3	124.2
80°	175.6	166.7	157.8	148.9	140.0	130.9	121.7	112.5	103.2	94.0	93.1
82.5°	133.6	125.4	117.2	109.0	100.9	94.1	88.9	83.6	78.3	73.0	72.3
85°	74.7	68.5	62.4	56.2	50.1	46.5	45.6	44.7	43.8	42.9	42.2
87.5°	25.6	23.9	22.4	20.6	18.8	17.7	18.4	18.2	18.2	18.3	17.9
90°	0.8	2.3	4.7	5.5	6.3	6.3	10.9	10.9	12.5	14.1	13.3
92.5°	8.9	13.0	20.3	29.9	41.3	57.5	97.3	157.9	217.1	248.0	206.6
95°	25.8	28.1	36.0	46.1	64.9	97.7	165.8	294.0	480.9	637.3	655.3
97.5°	46.3	46.3	53.0	62.4	78.5	106.0	158.4	264.3	450.1	671.2	823.2
100°	59.4	59.4	64.9	74.3	89.1	114.2	160.3	248.7	408.2	628.7	828.8
102.5°	71.9	73.2	78.0	86.8	101.0	124.8	166.5	244.3	380.0	575.5	781.9
105°	91.5	93.8	97.7	107.1	121.2	143.9	181.4	246.3	355.8	512.9	696.7
107.5°	113.1	114.6	118.5	128.5	142.0	164.4	198.8	257.9	351.4	477.9	627.9
110°	127.5	129.0	132.9	142.3	156.4	177.5	211.9	266.6	352.6	466.0	593.5



TEST NUMBER: P332972

CATALOG NUMBER: S124RDIP-S1020D810U835-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	141.2	142.8	147.3	156.1	170.1	191.3	224.4	276.0	356.4	460.4	574.1
115°	161.1	163.4	168.9	176.7	191.6	212.7	244.0	290.9	363.6	457.4	555.9
117.5°	181.7	183.9	188.8	197.4	211.3	233.2	262.9	306.0	371.3	456.6	547.8
120°	195.5	197.0	202.5	211.1	224.4	246.3	276.0	316.7	376.9	456.6	543.4
122.5°	208.0	209.6	215.0	223.0	237.5	258.8	288.5	326.7	382.5	456.0	538.4
125°	224.4	227.5	232.2	240.8	255.7	277.6	305.7	341.7	391.0	455.1	530.1
127.5°	239.0	241.5	247.1	256.9	272.4	294.5	321.7	354.7	397.7	453.4	519.0
130°	247.1	250.2	256.5	268.2	283.1	305.7	332.3	362.8	402.7	452.7	512.2
132.5°	255.2	257.7	265.9	277.0	293.1	314.5	341.1	370.9	407.1	452.1	505.9
135°	266.6	269.8	277.6	290.9	307.3	327.6	353.4	381.6	413.6	451.2	496.5
137.5°	278.1	281.0	289.6	302.3	319.3	338.7	362.8	389.1	417.5	451.0	488.4
140°	286.2	288.5	297.1	310.4	326.8	345.6	369.1	394.1	420.7	450.4	484.0
142.5°	294.9	297.3	305.3	317.9	333.7	351.9	374.7	397.8	423.2	450.4	480.3
145°	307.3	309.6	317.5	328.4	343.3	360.5	380.8	401.9	424.6	448.8	473.8
147.5°	321.2	322.0	328.9	340.1	352.5	368.0	387.1	405.5	425.4	446.0	468.1
150°	330.0	330.8	337.0	346.4	358.1	373.0	390.2	407.4	425.4	444.1	463.7
152.5°	338.1	338.3	344.5	353.3	363.8	377.4	392.7	408.6	424.1	441.0	458.7
155°	349.5	350.3	355.0	362.8	371.4	383.1	396.4	409.7	422.2	436.3	451.2
157.5°	360.6	360.6	365.0	371.1	378.6	387.8	399.1	409.7	420.2	431.5	443.5
160°	367.5	367.5	370.6	376.1	382.4	391.0	400.3	409.7	418.3	427.7	437.9
162.5°	373.8	373.1	375.6	380.5	386.1	392.8	401.6	409.7	416.5	424.0	432.9
165°	380.8	380.8	382.4	386.3	390.2	394.9	401.9	408.2	412.9	418.3	424.6
167.5°	387.8	387.1	387.8	390.8	393.0	396.6	401.8	406.3	409.1	412.7	417.1
170°	391.0	390.2	391.0	393.3	394.9	397.2	401.1	405.0	406.6	408.9	412.1
172.5°	394.1	393.3	393.5	395.2	396.1	397.8	400.5	403.8	404.1	405.2	407.7
175°	397.2	396.4	396.4	397.2	398.0	398.0	399.6	401.9	401.1	401.1	402.7
177.5°	398.6	398.0	397.4	398.0	398.0	398.0	398.6	399.9	398.6	398.6	399.2
180°	398.0	398.0	398.0	398.0	398.0	398.0	398.0	398.0	398.0	398.0	398.0



TEST NUMBER: P332972

CATALOG NUMBER: S124RDIP-S1020D810U835-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7
2.5°	1798.9	1801.6	1804.3	1805.6	1805.3	1805.1	1804.8	1804.6
5°	1786.9	1790.0	1793.1	1794.3	1793.7	1793.1	1792.5	1791.9
7.5°	1763.2	1765.1	1767.1	1767.6	1766.6	1765.6	1764.6	1763.6
10°	1741.8	1743.0	1744.2	1744.2	1743.0	1741.8	1740.5	1739.3
12.5°	1715.3	1716.1	1716.8	1716.3	1714.6	1712.9	1711.2	1709.5
15°	1669.0	1668.3	1667.7	1666.3	1664.2	1662.0	1659.9	1657.7
17.5°	1613.1	1611.4	1609.7	1607.2	1603.9	1600.7	1597.4	1594.1
20°	1574.0	1571.6	1569.1	1565.9	1561.9	1557.9	1553.9	1549.9
22.5°	1530.6	1526.9	1523.3	1519.8	1516.5	1513.3	1510.0	1506.8
25°	1460.6	1455.4	1450.2	1446.0	1443.0	1439.9	1436.8	1433.8
27.5°	1389.3	1382.9	1376.4	1371.0	1366.6	1362.1	1357.7	1353.3
30°	1338.2	1330.5	1322.8	1316.5	1311.6	1306.7	1301.8	1296.9
32.5°	1286.0	1277.1	1268.2	1261.4	1256.7	1252.0	1247.4	1242.7
35°	1208.2	1197.8	1187.3	1179.4	1173.8	1168.3	1162.8	1157.2
37.5°	1124.8	1113.1	1101.4	1092.8	1087.3	1081.7	1076.2	1070.7
40°	1069.2	1056.3	1043.4	1034.2	1028.7	1023.1	1017.6	1012.1
42.5°	1014.5	1001.4	988.2	978.8	973.0	967.2	961.4	955.7
45°	930.8	915.7	900.7	890.4	884.9	879.3	873.8	868.3
47.5°	846.5	830.9	815.2	804.4	798.3	792.2	786.1	780.1
50°	790.5	775.2	759.8	749.2	743.4	737.5	731.7	725.9
52.5°	734.7	719.1	703.5	692.7	686.6	680.5	674.4	668.4
55°	652.4	636.5	620.5	609.6	603.7	597.9	592.1	586.2
57.5°	572.0	555.8	539.6	529.3	524.8	520.4	516.0	511.6
60°	518.3	502.3	486.4	475.9	471.0	466.1	461.2	456.3
62.5°	465.5	450.7	436.0	426.6	422.7	418.8	414.8	410.9
65°	389.7	376.5	363.3	354.9	351.2	347.5	343.8	340.1
67.5°	320.1	308.8	297.4	289.7	285.6	281.6	277.5	273.5
70°	272.8	262.7	252.6	245.9	242.9	239.8	236.7	233.7
72.5°	230.4	221.8	213.1	207.4	204.5	201.7	198.9	196.1
75°	169.8	162.7	155.6	151.2	149.3	147.5	145.6	143.8
77.5°	120.1	116.0	111.8	109.5	108.9	108.4	107.8	107.3
80°	92.2	91.3	90.3	89.7	89.4	89.1	88.8	88.5
82.5°	71.6	71.0	70.3	69.8	69.5	69.2	68.9	68.6
85°	41.6	41.0	40.4	40.1	40.1	40.1	40.1	40.1
87.5°	17.8	17.7	17.6	17.6	18.0	18.4	18.5	18.8
90°	14.1	14.9	15.6	15.6	16.4	17.2	16.4	16.4
92.5°	153.6	115.6	92.0	76.3	67.1	62.9	60.2	60.2
95°	579.4	458.2	353.4	277.6	239.3	215.0	201.0	190.8
97.5°	856.0	811.0	734.5	652.9	596.8	549.7	526.2	510.0
100°	943.0	958.6	920.3	862.5	794.4	746.7	723.3	717.0
102.5°	938.6	1016.2	1027.3	1003.2	961.5	926.9	902.2	897.2
105°	875.8	1011.0	1088.4	1120.5	1122.1	1115.8	1104.9	1100.2
107.5°	786.5	930.5	1039.5	1109.2	1147.9	1165.7	1173.5	1175.5
110°	732.7	867.9	981.3	1067.3	1122.8	1155.7	1169.8	1176.8



TEST NUMBER: P332972

CATALOG NUMBER: S124RDIP-S1020D810U835-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	693.3	812.9	920.0	1006.0	1069.0	1108.8	1128.5	1139.9
115°	653.7	749.9	841.3	916.4	978.2	1025.1	1050.1	1056.4
117.5°	634.3	713.9	785.8	849.5	902.2	941.6	966.9	971.8
120°	625.5	698.3	760.8	816.3	860.9	895.3	915.6	924.2
122.5°	618.0	688.2	745.2	793.8	831.5	860.9	878.1	886.7
125°	605.2	672.5	726.4	769.4	800.7	823.4	838.2	842.9
127.5°	589.6	653.8	707.6	748.5	779.9	800.1	812.6	817.3
130°	577.1	638.8	692.0	733.4	765.5	785.1	797.6	802.3
132.5°	563.9	621.9	673.9	715.3	746.7	768.8	780.7	785.4
135°	545.8	596.6	644.3	683.4	714.7	736.6	749.1	753.8
137.5°	529.4	572.4	612.6	647.9	677.1	698.7	709.0	714.7
140°	520.0	556.7	591.9	624.8	652.1	669.3	680.3	686.5
142.5°	511.2	543.6	573.8	602.2	626.5	642.4	652.1	656.5
145°	498.9	525.5	548.9	570.8	590.4	603.6	611.5	615.4
147.5°	488.7	509.8	528.6	545.8	560.2	571.6	577.5	578.9
150°	482.4	500.4	516.1	530.1	542.7	552.8	557.5	558.3
152.5°	475.6	491.0	505.4	517.0	527.6	535.9	538.7	539.5
155°	465.2	477.8	489.5	498.9	506.7	512.9	515.3	515.3
157.5°	454.1	464.6	474.5	482.0	487.9	492.6	494.0	494.0
160°	447.3	455.9	464.5	470.7	475.4	480.1	480.9	480.9
162.5°	440.4	447.7	454.5	460.1	463.5	468.2	469.0	468.4
165°	430.8	435.5	441.0	444.9	448.0	451.2	450.4	449.6
167.5°	421.6	425.2	429.6	431.9	433.5	435.5	435.4	434.7
170°	416.0	418.3	421.5	423.8	425.4	426.1	425.4	425.4
172.5°	411.0	412.7	414.6	416.3	417.2	418.0	417.2	416.0
175°	404.3	405.0	406.6	406.6	406.6	408.2	406.6	405.0
177.5°	399.9	400.5	400.5	401.1	400.5	401.1	399.9	398.6
180°	398.0	398.0	398.0	398.0	398.0	398.0	398.0	398.0

(END OF REPORT)