

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: P332984-840

Luminaire Tested: **S124RDIP-S1020D1205U840-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332984-840
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-S1020D1205U840-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1205 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8560.4 lumens
Efficiency: N/A
Efficacy: 130.9 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

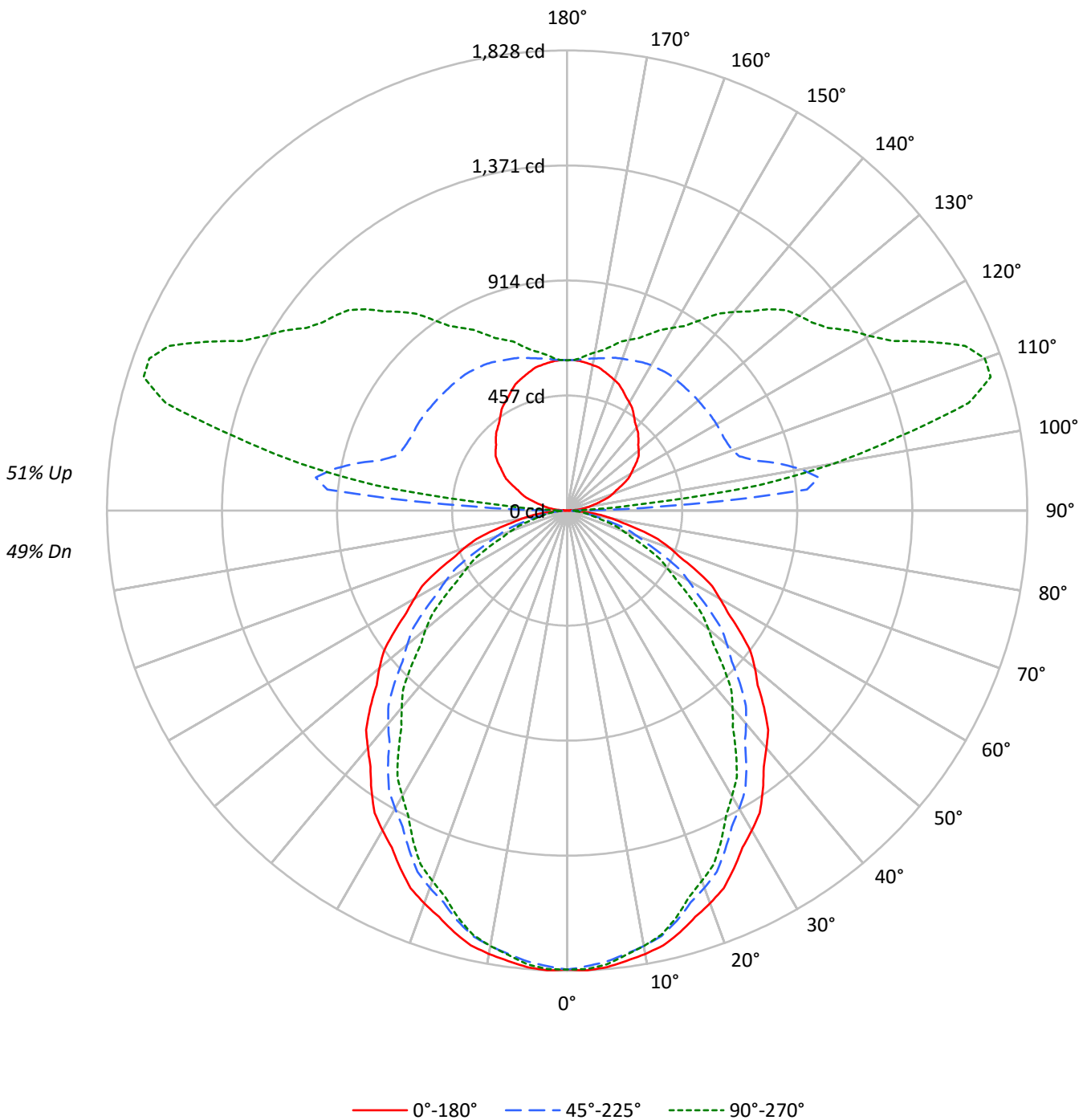
Input Watts (W): 65.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	55	55	55	49				
1	98	94	90	86	90	87	83	80	73	71	69	61	59	58	49	48	47	42				
2	89	82	76	71	82	76	71	66	64	61	57	54	51	49	44	42	40	36				
3	82	72	65	59	75	67	61	56	57	52	48	48	44	41	39	37	35	30				
4	75	64	56	50	69	60	53	47	51	46	41	43	39	36	35	32	30	26				
5	69	57	49	43	63	53	46	41	46	40	36	38	34	31	32	29	26	23				
6	63	51	43	38	58	48	41	36	41	36	31	35	30	27	29	26	23	20				
7	59	47	39	33	54	43	36	31	37	32	28	32	27	24	26	23	21	18				
8	54	42	35	29	50	39	33	28	34	29	25	29	25	22	24	21	19	16				
9	51	39	31	26	47	36	29	25	31	26	22	27	23	19	22	19	17	15				
10	47	35	28	24	44	33	27	22	29	24	20	25	21	18	21	18	15	13				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14721	14721	14721
5°	14755	14574	14665
10°	14662	14399	14399
15°	14493	14097	13992
20°	14262	13698	13447
25°	13967	13233	12897
30°	13679	12743	12209
35°	13361	12232	11517
40°	12978	11653	10771
45°	12625	11079	10011
50°	12223	10417	9207
55°	11792	9728	8332
60°	11317	8972	7440
65°	10883	8029	6562
70°	10249	6987	5570
75°	9451	5792	4529
80°	8243	4412	4156
85°	6984	4011	3751



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	171.3	2.0
10°-20°	477.7	5.6
20°-30°	689.8	8.1
30°-40°	781.8	9.1
40°-50°	755.0	8.8
50°-60°	627.8	7.3
60°-70°	433.5	5.1
70°-80°	219.7	2.6
80°-90°	59.7	0.7
90°-100°	431.4	5.0
100°-110°	897.9	10.5
110°-120°	804.2	9.4
120°-130°	676.5	7.9
130°-140°	564.1	6.6
140°-150°	430.9	5.0
150°-160°	302.9	3.5
160°-170°	178.2	2.1
170°-180°	58.0	0.7
0°-30°	1338.7	15.6
0°-40°	2120.6	24.8
0°-60°	3503.4	40.9
0°-90°	4216.3	49.3
90°-120°	2133.5	24.9
90°-150°	3805.0	44.4
90°-180°	4344.0	50.7
0°-180°	8560.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1824	1824	1824	1824	1824	
5°	1821	1814	1798	1811	1810	173
15°	1734	1720	1687	1683	1674	488
25°	1568	1541	1486	1462	1448	722
35°	1356	1310	1241	1195	1169	847
45°	1106	1052	970	904	877	852
55°	838	780	691	621	592	749
65°	570	508	420	363	344	562
75°	303	251	186	155	145	320
85°	75	49	43	41	40	85
90°	1	9	21	23	25	6
95°	39	122	956	474	286	43
105°	137	199	770	1658	1651	146
115°	242	303	686	1319	1585	240
125°	337	400	683	1122	1265	300
135°	400	476	677	996	1131	309
145°	461	528	674	840	924	289
155°	524	566	655	742	773	242
165°	572	589	628	665	675	161
175°	596	597	602	610	608	57
180°	597	597	597	597	597	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5
2.5°	1828.0	1826.9	1825.9	1825.0	1824.0	1822.1	1819.4	1816.6	1813.9	1811.2	1813.9
5°	1820.7	1819.5	1818.3	1816.9	1815.7	1813.2	1809.6	1805.8	1802.1	1798.4	1801.5
7.5°	1804.2	1802.9	1801.6	1800.3	1799.0	1795.9	1791.1	1786.2	1781.4	1776.6	1778.6
10°	1788.6	1787.1	1785.4	1783.9	1782.4	1778.8	1773.2	1767.7	1762.0	1756.5	1757.7
12.5°	1768.5	1766.7	1764.8	1763.1	1761.3	1757.1	1750.5	1743.9	1737.4	1730.8	1731.5
15°	1734.1	1731.3	1728.6	1725.8	1722.9	1717.7	1709.9	1702.1	1694.5	1686.7	1686.1
17.5°	1692.5	1688.5	1684.5	1680.4	1676.4	1669.7	1660.4	1651.1	1641.8	1632.4	1630.7
20°	1660.1	1656.1	1652.0	1648.0	1644.0	1636.7	1626.2	1615.6	1605.1	1594.5	1592.1
22.5°	1624.4	1619.8	1615.3	1610.8	1606.3	1598.3	1587.1	1575.8	1564.5	1553.2	1549.4
25°	1568.0	1562.4	1556.8	1551.3	1545.6	1536.5	1523.8	1511.1	1498.3	1485.6	1480.4
27.5°	1508.7	1501.8	1494.8	1487.7	1480.8	1470.5	1456.8	1443.3	1429.7	1416.0	1409.6
30°	1467.4	1459.7	1452.0	1444.2	1436.4	1425.2	1410.7	1396.0	1381.5	1367.0	1359.2
32.5°	1423.9	1415.1	1406.3	1397.7	1388.9	1377.0	1361.9	1346.9	1331.7	1316.7	1307.7
35°	1355.7	1345.8	1335.8	1326.0	1316.1	1303.3	1287.8	1272.3	1256.8	1241.2	1230.7
37.5°	1282.8	1272.6	1262.4	1252.1	1241.9	1228.2	1211.0	1193.9	1176.6	1159.4	1147.6
40°	1231.5	1221.2	1211.0	1200.7	1190.5	1176.6	1158.9	1141.1	1123.5	1105.8	1092.8
42.5°	1182.3	1171.6	1160.8	1150.1	1139.4	1124.8	1106.4	1087.9	1069.5	1051.1	1037.8
45°	1105.8	1094.4	1082.9	1071.4	1059.9	1044.8	1026.2	1007.6	989.0	970.4	955.2
47.5°	1026.8	1014.9	1003.1	991.3	979.4	963.8	944.4	925.0	905.6	886.4	870.6
50°	973.2	961.1	949.0	936.9	924.7	908.8	889.0	869.1	849.2	829.4	813.9
52.5°	918.5	906.6	894.7	882.9	871.0	855.0	834.6	814.3	793.9	773.6	757.8
55°	837.8	825.4	812.9	800.5	788.1	771.8	751.6	731.4	711.3	691.2	675.0
57.5°	757.9	745.0	732.1	719.1	706.3	689.8	670.0	650.2	630.3	610.5	594.1
60°	700.9	688.5	676.1	663.7	651.3	635.1	615.3	595.4	575.5	555.7	539.6
62.5°	649.5	636.6	623.7	610.8	597.9	581.3	560.9	540.6	520.2	499.9	484.9
65°	569.7	556.3	543.0	529.7	516.3	499.7	479.9	460.0	440.1	420.3	407.0
67.5°	486.8	473.9	461.2	448.4	435.6	420.0	401.5	383.1	364.7	346.3	334.8
70°	434.2	421.2	408.2	395.2	382.1	366.8	349.1	331.3	313.7	296.0	285.8
72.5°	378.4	366.6	354.8	343.1	331.2	317.0	300.3	283.6	266.9	250.2	241.5
75°	303.0	291.5	280.0	268.5	257.1	244.0	229.4	214.9	200.3	185.7	178.5
77.5°	226.5	216.7	207.0	197.2	187.5	176.7	164.9	153.2	141.4	129.6	125.4
80°	177.3	168.3	159.4	150.4	141.4	132.2	122.9	113.6	104.2	94.9	94.0
82.5°	134.9	126.6	118.4	110.1	101.9	95.0	89.8	84.4	79.1	73.7	73.0
85°	75.4	69.2	63.0	56.8	50.6	47.0	46.0	45.1	44.2	43.3	42.6
87.5°	26.0	24.4	23.1	21.4	19.6	18.5	19.7	19.4	19.6	19.9	19.4
90°	1.2	3.5	7.1	8.2	9.4	9.4	16.5	16.5	18.8	21.1	20.0
92.5°	13.3	19.5	30.5	44.8	62.0	86.3	146.0	237.0	325.8	372.2	310.0
95°	38.7	42.2	54.0	69.3	97.4	146.7	248.7	441.2	721.6	956.3	983.4
97.5°	69.5	69.5	79.6	93.6	117.9	159.2	237.7	396.7	675.4	1007.3	1235.5
100°	89.2	89.2	97.4	111.5	133.8	171.4	240.5	373.1	612.6	943.4	1243.9
102.5°	108.0	109.9	117.1	130.3	151.6	187.3	249.9	366.6	570.3	863.6	1173.5
105°	137.3	140.8	146.7	160.8	181.9	215.9	272.3	369.6	533.9	769.8	1045.5
107.5°	169.7	172.0	177.9	192.9	213.1	246.7	298.3	387.0	527.4	717.2	942.3
110°	191.3	193.6	199.4	213.6	234.7	266.4	318.0	400.1	529.3	699.4	890.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	212.0	214.3	221.1	234.2	255.4	287.0	336.8	414.2	534.8	690.9	861.5
115°	241.8	245.3	253.5	265.2	287.5	319.2	366.1	436.6	545.6	686.5	834.4
117.5°	272.7	276.0	283.3	296.2	317.1	349.9	394.6	459.3	557.1	685.3	822.1
120°	293.4	295.7	304.0	316.8	336.8	369.6	414.2	475.2	565.6	685.3	815.6
122.5°	312.1	314.5	322.8	334.7	356.5	388.4	433.0	490.3	574.1	684.4	808.1
125°	336.8	341.4	348.5	361.4	383.7	416.6	458.8	512.8	586.7	683.0	795.6
127.5°	358.6	362.3	370.8	385.6	408.8	441.9	482.7	532.3	596.8	680.3	778.9
130°	370.8	375.5	384.9	402.5	424.7	458.8	498.8	544.5	604.3	679.4	768.6
132.5°	383.0	386.8	399.0	415.7	439.8	472.0	511.9	556.7	610.9	678.5	759.2
135°	400.1	404.9	416.6	436.6	461.2	491.7	530.4	572.7	620.8	677.1	745.2
137.5°	417.3	421.7	434.6	453.6	479.3	508.4	544.5	583.9	626.6	676.8	733.0
140°	429.5	433.0	446.0	465.9	490.5	518.7	553.9	591.4	631.4	675.9	726.4
142.5°	442.6	446.2	458.1	477.2	500.8	528.1	562.3	597.0	635.1	675.9	720.7
145°	461.2	464.7	476.5	492.8	515.1	541.0	571.5	603.2	637.2	673.6	711.1
147.5°	482.0	483.2	493.5	510.5	529.0	552.2	580.9	608.5	638.3	669.3	702.5
150°	495.2	496.3	505.7	519.9	537.5	559.8	585.5	611.4	638.3	666.5	695.9
152.5°	507.4	507.7	517.1	530.2	545.9	566.3	589.4	613.3	636.5	661.9	688.3
155°	524.5	525.7	532.7	544.5	557.4	575.0	594.9	614.9	633.7	654.8	677.1
157.5°	541.2	541.2	547.8	556.9	568.2	582.1	599.0	614.9	630.7	647.5	665.6
160°	551.5	551.5	556.2	564.4	573.8	586.7	600.8	614.9	627.8	641.9	657.1
162.5°	560.9	560.0	563.7	571.0	579.5	589.6	602.7	614.9	625.0	636.2	649.6
165°	571.5	571.5	573.8	579.7	585.5	592.6	603.2	612.6	619.6	627.8	637.2
167.5°	582.1	580.9	582.1	586.5	589.8	595.2	602.9	609.8	614.0	619.4	625.9
170°	586.7	585.5	586.7	590.3	592.6	596.1	602.0	607.8	610.2	613.7	618.4
172.5°	591.4	590.3	590.5	593.1	594.5	597.0	601.1	606.0	606.4	608.0	611.9
175°	596.1	594.9	594.9	596.1	597.3	597.3	599.7	603.2	602.0	602.0	604.3
177.5°	598.2	597.3	596.3	597.3	597.3	597.3	598.2	600.1	598.2	598.2	599.2
180°	597.3	597.3	597.3	597.3	597.3	597.3	597.3	597.3	597.3	597.3	597.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5
2.5°	1816.6	1819.4	1822.1	1823.4	1823.1	1822.9	1822.6	1822.4
5°	1804.5	1807.7	1810.8	1812.0	1811.4	1810.8	1810.2	1809.6
7.5°	1780.6	1782.5	1784.5	1785.0	1784.0	1783.0	1782.0	1781.0
10°	1759.0	1760.2	1761.4	1761.4	1760.2	1759.0	1757.7	1756.5
12.5°	1732.2	1733.0	1733.7	1733.2	1731.5	1729.8	1728.1	1726.4
15°	1685.5	1684.8	1684.2	1682.7	1680.6	1678.4	1676.3	1674.1
17.5°	1629.0	1627.3	1625.6	1623.1	1619.7	1616.5	1613.2	1609.8
20°	1589.5	1587.1	1584.6	1581.3	1577.3	1573.3	1569.2	1565.2
22.5°	1545.7	1542.0	1538.3	1534.8	1531.5	1528.2	1524.9	1521.7
25°	1475.0	1469.8	1464.5	1460.3	1457.2	1454.1	1451.0	1447.9
27.5°	1403.0	1396.5	1390.0	1384.5	1380.1	1375.5	1371.1	1366.7
30°	1351.4	1343.6	1335.8	1329.5	1324.5	1319.6	1314.6	1309.7
32.5°	1298.7	1289.7	1280.7	1273.8	1269.1	1264.4	1259.7	1255.0
35°	1220.1	1209.6	1199.0	1191.0	1185.4	1179.8	1174.3	1168.6
37.5°	1135.9	1124.1	1112.3	1103.6	1098.0	1092.4	1086.8	1081.3
40°	1079.7	1066.7	1053.7	1044.4	1038.8	1033.2	1027.6	1022.1
42.5°	1024.5	1011.3	997.9	988.5	982.6	976.7	970.9	965.1
45°	940.0	924.7	909.6	899.2	893.6	888.0	882.4	876.9
47.5°	854.9	839.1	823.2	812.3	806.2	800.0	793.9	787.8
50°	798.3	782.8	767.3	756.6	750.7	744.8	738.9	733.1
52.5°	741.9	726.2	710.4	699.5	693.4	687.2	681.1	675.0
55°	658.8	642.8	626.6	615.6	609.7	603.8	597.9	592.0
57.5°	577.6	561.3	544.9	534.5	530.0	525.5	521.1	516.6
60°	523.4	507.3	491.2	480.6	475.6	470.7	465.7	460.8
62.5°	470.1	455.1	440.3	430.8	426.9	422.9	418.9	415.0
65°	393.5	380.2	366.9	358.4	354.7	350.9	347.2	343.5
67.5°	323.3	311.8	300.3	292.6	288.4	284.4	280.2	276.2
70°	275.5	265.3	255.1	248.3	245.3	242.2	239.0	236.0
72.5°	232.7	224.0	215.2	209.4	206.5	203.7	200.9	198.0
75°	171.5	164.3	157.1	152.7	150.8	149.0	147.0	145.2
77.5°	121.3	117.1	112.9	110.6	110.0	109.5	108.9	108.4
80°	93.1	92.2	91.2	90.6	90.3	90.0	89.7	89.4
82.5°	72.3	71.7	71.0	70.5	70.2	69.9	69.6	69.3
85°	42.0	41.4	40.8	40.5	40.5	40.5	40.5	40.5
87.5°	19.4	19.4	19.3	19.3	19.8	20.3	20.3	20.6
90°	21.1	22.3	23.4	23.4	24.6	25.9	24.6	24.6
92.5°	230.5	173.4	138.0	114.5	100.7	94.3	90.4	90.4
95°	869.5	687.6	530.4	416.6	359.1	322.8	301.5	286.3
97.5°	1284.8	1217.1	1102.4	979.9	895.5	825.0	789.7	765.4
100°	1415.2	1438.7	1381.2	1294.3	1192.2	1120.6	1085.5	1076.1
102.5°	1408.7	1525.0	1541.7	1505.5	1442.9	1391.0	1353.9	1346.5
105°	1314.2	1517.3	1633.5	1681.5	1683.9	1674.6	1658.1	1651.0
107.5°	1180.2	1396.4	1560.0	1664.7	1722.6	1749.4	1761.1	1764.2
110°	1099.5	1302.5	1472.7	1601.7	1685.1	1734.3	1755.5	1766.1



TEST NUMBER: P332984-840

CATALOG NUMBER: S124RDIP-S1020D1205U840-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1040.4	1219.9	1380.7	1509.7	1604.4	1664.0	1693.5	1710.7
115°	981.0	1125.4	1262.6	1375.3	1468.0	1538.4	1576.0	1585.4
117.5°	951.9	1071.4	1179.3	1274.9	1353.9	1413.1	1451.1	1458.3
120°	938.8	1047.9	1141.8	1225.1	1292.0	1343.6	1374.1	1387.0
122.5°	927.5	1032.9	1118.3	1191.3	1247.9	1292.0	1317.8	1330.7
125°	908.3	1009.2	1090.1	1154.7	1201.6	1235.7	1258.0	1265.0
127.5°	884.7	981.3	1062.0	1123.3	1170.4	1200.7	1219.5	1226.5
130°	866.1	958.8	1038.5	1100.8	1148.8	1178.1	1196.9	1204.0
132.5°	846.3	933.4	1011.3	1073.5	1120.6	1153.8	1171.5	1178.6
135°	819.1	895.3	966.9	1025.6	1072.6	1105.4	1124.2	1131.3
137.5°	794.5	859.0	919.3	972.3	1016.2	1048.6	1064.1	1072.6
140°	780.3	835.5	888.3	937.6	978.7	1004.5	1020.9	1030.3
142.5°	767.2	815.8	861.1	903.8	940.2	964.1	978.7	985.2
145°	748.7	788.6	823.7	856.7	886.0	905.9	917.7	923.5
147.5°	733.5	765.1	793.2	819.1	840.7	857.8	866.8	868.8
150°	724.1	751.0	774.5	795.6	814.4	829.6	836.7	837.9
152.5°	713.7	736.9	758.5	775.9	791.8	804.3	808.5	809.7
155°	698.2	717.0	734.6	748.7	760.4	769.8	773.4	773.4
157.5°	681.6	697.3	712.1	723.4	732.3	739.3	741.4	741.4
160°	671.3	684.1	697.0	706.4	713.5	720.5	721.6	721.6
162.5°	660.9	672.0	682.1	690.4	695.6	702.7	703.9	702.9
165°	646.6	653.6	661.9	667.7	672.4	677.1	675.9	674.8
167.5°	632.8	638.1	644.7	648.2	650.6	653.6	653.4	652.5
170°	624.3	627.8	632.5	636.0	638.3	639.5	638.3	638.3
172.5°	616.7	619.4	622.2	624.7	626.1	627.3	626.1	624.3
175°	606.7	607.8	610.2	610.2	610.2	612.6	610.2	607.8
177.5°	600.1	601.1	601.1	602.0	601.1	602.0	600.1	598.2
180°	597.3	597.3	597.3	597.3	597.3	597.3	597.3	597.3

(END OF REPORT)