

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: P332983-840

Luminaire Tested: **S124RDIP-S1020D1205U840-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332983-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,  
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-F1  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1205 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8426.5 lumens  
Efficiency: N/A  
Efficacy: 128.8 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

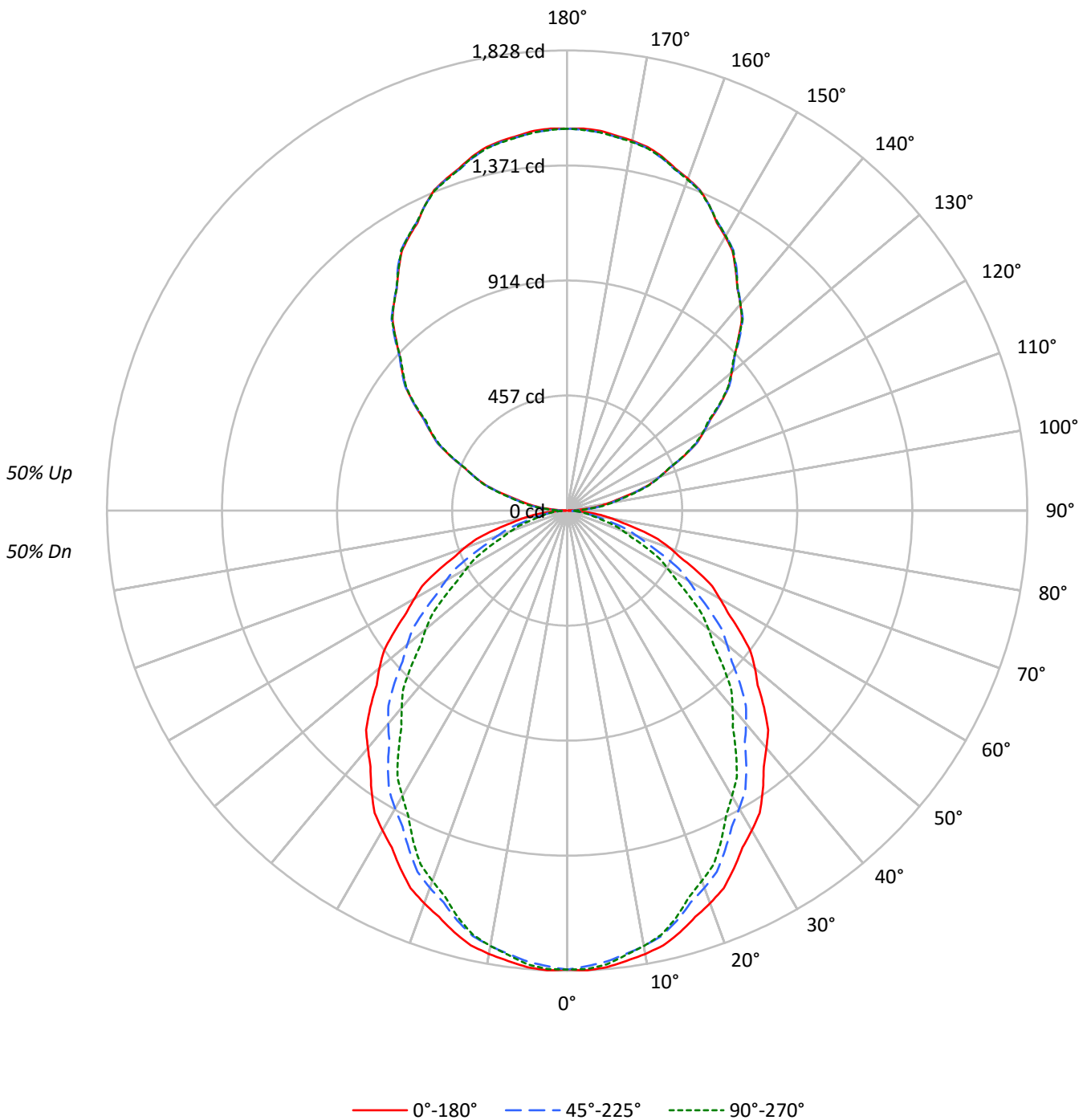
Input Watts (W): 65.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0		
RW	70	50	30	10	70	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	50
1	98	94	90	87	90	87	84	81	73	71	69		61	60	58		50	49	48	43
2	90	82	76	71	82	76	71	67	65	61	58		54	51	49		44	42	41	36
3	82	73	65	60	75	67	61	56	57	53	49		48	45	42		40	37	35	31
4	75	64	57	51	69	60	53	48	51	46	42		43	39	36		35	33	30	27
5	69	57	49	43	63	53	46	41	46	40	36		39	35	31		32	29	27	23
6	64	52	44	38	58	48	41	36	41	36	32		35	31	28		29	26	24	21
7	59	47	39	33	54	43	36	31	38	32	28		32	28	24		27	23	21	18
8	55	42	35	29	50	40	33	28	34	29	25		29	25	22		25	21	19	17
9	51	39	31	26	47	36	30	25	31	26	22		27	23	20		23	19	17	15
10	48	36	28	24	44	33	27	22	29	24	20		25	21	18		21	18	16	14

**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	5.7
20°-30°	689.8	8.2
30°-40°	781.8	9.3
40°-50°	755.0	9.0
50°-60°	627.8	7.5
60°-70°	433.5	5.1
70°-80°	219.7	2.6
80°-90°	60.9	0.7
90°-100°	100.1	1.2
100°-110°	296.4	3.5
110°-120°	503.1	6.0
120°-130°	663.4	7.9
130°-140°	745.0	8.8
140°-150°	732.1	8.7
150°-160°	615.7	7.3
160°-170°	409.7	4.9
170°-180°	143.5	1.7
0°-30°	1338.7	15.9
0°-40°	2120.6	25.2
0°-60°	3503.4	41.6
0°-90°	4217.6	50.1
90°-120°	899.6	10.7
90°-150°	3040.1	36.1
90°-180°	4209.0	49.9
0°-180°	8426.5	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°	4	16	26	33	35	8
95°	70	81	89	92	93	78
105°	273	275	279	283	286	290
115°	512	511	509	508	507	504
125°	745	745	744	741	739	664
135°	961	968	968	966	962	743
145°	1167	1172	1173	1172	1169	730
155°	1338	1337	1336	1340	1336	615
165°	1456	1453	1450	1456	1452	410
175°	1515	1509	1508	1515	1508	144
180°	1517	1517	1517	1517	1517	



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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°	26.4	24.9	23.5	22.1	20.7	20.1	20.3	20.5	20.6	20.8	20.9
90°	3.5	6.4	9.3	12.1	14.9	17.5	19.6	21.6	23.7	25.9	27.4
92.5°	25.1	28.4	31.7	34.9	38.3	40.6	42.1	43.5	45.0	46.5	47.4
95°	70.4	72.7	75.1	77.5	79.8	81.9	83.7	85.5	87.4	89.2	90.0
97.5°	123.0	124.8	126.7	128.6	130.5	132.5	134.6	136.7	138.9	141.0	142.0
100°	164.3	165.3	166.3	167.3	168.4	170.2	172.5	174.8	177.1	179.6	180.1
102.5°	207.4	207.8	208.2	208.6	209.1	210.4	212.5	214.7	216.8	218.9	219.6
105°	273.4	273.7	273.9	274.2	274.4	275.1	276.1	277.1	278.2	279.2	280.0
107.5°	342.5	343.0	343.3	343.6	343.9	344.1	344.3	344.4	344.6	344.7	345.5
110°	389.5	390.0	390.5	391.1	391.6	391.7	391.5	391.2	390.9	390.7	390.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	438.3	438.5	438.6	438.7	438.8	438.6	438.1	437.7	437.2	436.7	436.6
115°	511.5	511.5	511.5	511.5	511.5	511.3	510.8	510.3	509.7	509.2	509.0
117.5°	580.6	580.8	581.0	581.2	581.4	581.3	580.9	580.6	580.2	579.9	579.0
120°	626.5	627.5	628.6	629.7	630.7	630.9	630.1	629.2	628.4	627.7	626.4
122.5°	674.4	674.8	675.2	675.6	676.1	676.1	675.7	675.4	675.0	674.6	673.8
125°	745.0	745.0	745.0	745.0	745.0	744.9	744.7	744.4	744.1	743.9	743.4
127.5°	809.1	809.9	810.6	811.4	812.2	812.4	811.9	811.5	811.1	810.7	810.2
130°	854.1	855.0	855.7	856.5	857.3	857.7	857.7	857.7	857.7	857.7	857.2
132.5°	900.1	900.7	901.3	901.8	902.4	902.6	902.4	902.2	902.0	901.8	901.2
135°	960.9	962.5	964.0	965.6	967.1	968.0	968.0	968.0	968.0	968.0	967.5
137.5°	1027.0	1027.8	1028.5	1029.3	1030.0	1030.6	1031.0	1031.4	1031.8	1032.2	1031.6
140°	1071.2	1071.7	1072.3	1072.8	1073.3	1073.5	1073.5	1073.5	1073.5	1073.5	1073.3
142.5°	1111.6	1112.1	1112.6	1113.1	1113.7	1113.8	1113.6	1113.4	1113.2	1113.0	1112.9
145°	1167.4	1168.4	1169.5	1170.5	1171.5	1172.3	1172.5	1172.8	1173.0	1173.3	1173.0
147.5°	1222.7	1224.1	1225.3	1226.5	1227.8	1228.3	1228.1	1227.9	1227.7	1227.5	1227.3
150°	1256.6	1257.6	1258.7	1259.7	1260.7	1261.2	1261.2	1261.2	1261.2	1261.2	1261.2
152.5°	1288.5	1289.1	1289.7	1290.3	1291.0	1291.4	1291.6	1291.8	1292.0	1292.2	1292.8
155°	1337.5	1337.5	1337.5	1337.5	1337.5	1337.4	1337.2	1336.9	1336.6	1336.4	1337.4
157.5°	1378.8	1378.4	1377.9	1377.5	1377.0	1376.6	1376.6	1376.5	1376.5	1376.4	1377.3
160°	1403.2	1403.0	1402.7	1402.4	1402.2	1401.9	1401.7	1401.4	1401.1	1400.9	1401.7
162.5°	1425.7	1425.0	1424.4	1423.7	1423.0	1422.6	1422.3	1422.1	1421.8	1421.5	1422.9
165°	1456.0	1455.2	1454.4	1453.7	1452.9	1452.2	1451.7	1451.2	1450.7	1450.2	1451.7
167.5°	1479.3	1478.1	1477.0	1475.9	1474.9	1474.3	1474.4	1474.4	1474.5	1474.5	1476.1
170°	1492.4	1491.1	1489.8	1488.4	1487.1	1486.6	1486.9	1487.1	1487.4	1487.7	1489.2
172.5°	1501.8	1500.7	1499.5	1498.4	1497.4	1496.8	1496.9	1497.0	1497.0	1497.1	1498.8
175°	1514.7	1513.4	1512.1	1510.8	1509.4	1508.6	1508.4	1508.1	1507.9	1507.6	1509.4
177.5°	1518.9	1517.8	1516.8	1515.8	1514.7	1514.2	1514.2	1514.2	1514.2	1514.2	1515.7
180°	1517.0	1517.0	1517.0	1517.0	1517.0	1517.0	1517.0	1517.0	1517.0	1517.0	1517.0



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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°	20.9	21.0	21.1	21.3	21.6	22.0	22.3	22.7
90°	29.0	30.5	32.1	33.1	33.6	34.1	34.6	35.2
92.5°	48.4	49.3	50.2	50.8	51.2	51.5	51.8	52.1
95°	90.7	91.5	92.3	92.7	92.7	92.7	92.7	92.7
97.5°	142.9	143.8	144.8	145.2	145.2	145.2	145.2	145.2
100°	180.6	181.1	181.6	181.9	181.9	181.9	181.9	181.9
102.5°	220.4	221.2	221.9	222.3	222.6	222.8	223.0	223.2
105°	280.8	281.6	282.4	283.2	284.0	284.7	285.5	286.3
107.5°	346.2	346.9	347.6	348.0	347.9	347.9	347.8	347.8
110°	389.6	389.1	388.6	388.7	389.5	390.3	391.1	391.8





TEST NUMBER: P332983-840

CATALOG NUMBER: S124RDIP-S1020D1205U840-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	436.5	436.4	436.3	436.3	436.5	436.6	436.8	437.0
115°	508.7	508.4	508.2	507.9	507.7	507.4	507.2	506.9
117.5°	578.0	577.1	576.2	575.6	575.0	574.5	574.0	573.5
120°	625.1	623.8	622.5	622.1	622.6	623.1	623.7	624.2
122.5°	672.9	672.0	671.1	670.1	669.2	668.3	667.3	666.4
125°	742.8	742.3	741.7	741.2	740.7	740.2	739.6	739.1
127.5°	809.7	809.2	808.6	808.2	807.8	807.3	806.9	806.5
130°	856.6	856.1	855.6	854.7	853.7	852.7	851.6	850.6
132.5°	900.7	900.2	899.7	899.2	898.8	898.4	898.0	897.6
135°	966.9	966.3	965.8	965.2	964.4	963.6	962.8	962.1
137.5°	1030.9	1030.2	1029.6	1029.3	1029.5	1029.6	1029.8	1029.9
140°	1073.0	1072.8	1072.5	1072.3	1072.0	1071.7	1071.5	1071.2
142.5°	1112.9	1112.8	1112.8	1112.7	1112.7	1112.6	1112.6	1112.5
145°	1172.8	1172.5	1172.3	1171.6	1170.9	1170.1	1169.3	1168.6
147.5°	1227.1	1226.9	1226.6	1226.4	1226.2	1225.9	1225.6	1225.4
150°	1261.2	1261.2	1261.2	1261.1	1260.8	1260.6	1260.3	1260.1
152.5°	1293.4	1294.1	1294.7	1294.7	1294.0	1293.3	1292.6	1292.0
155°	1338.5	1339.5	1340.5	1340.5	1339.5	1338.5	1337.4	1336.4
157.5°	1378.1	1378.8	1379.6	1379.6	1378.7	1377.8	1376.8	1376.0
160°	1402.4	1403.2	1404.0	1403.7	1402.4	1401.1	1399.9	1398.6
162.5°	1424.3	1425.7	1427.1	1427.2	1425.9	1424.6	1423.3	1422.0
165°	1453.3	1454.8	1456.4	1456.6	1455.6	1454.6	1453.5	1452.5
167.5°	1477.6	1479.3	1480.8	1480.8	1479.1	1477.5	1475.9	1474.3
170°	1490.9	1492.4	1494.0	1493.8	1492.0	1490.2	1488.3	1486.5
172.5°	1500.7	1502.4	1504.2	1504.2	1502.3	1500.5	1498.6	1496.8
175°	1511.3	1513.1	1514.9	1514.9	1513.1	1511.3	1509.4	1507.6
177.5°	1517.1	1518.6	1520.0	1519.9	1518.2	1516.6	1514.9	1513.3
180°	1517.0	1517.0	1517.0	1517.0	1517.0	1517.0	1517.0	1517.0

(END OF REPORT)