

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: P332667-840

Luminaire Tested: **S124DIP-S1020D1205U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332667-840  
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: S124DIP-S1020D1205U840-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1205 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9329.0 lumens  
Efficiency: N/A  
Efficacy: 142.6 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: General Diffuse

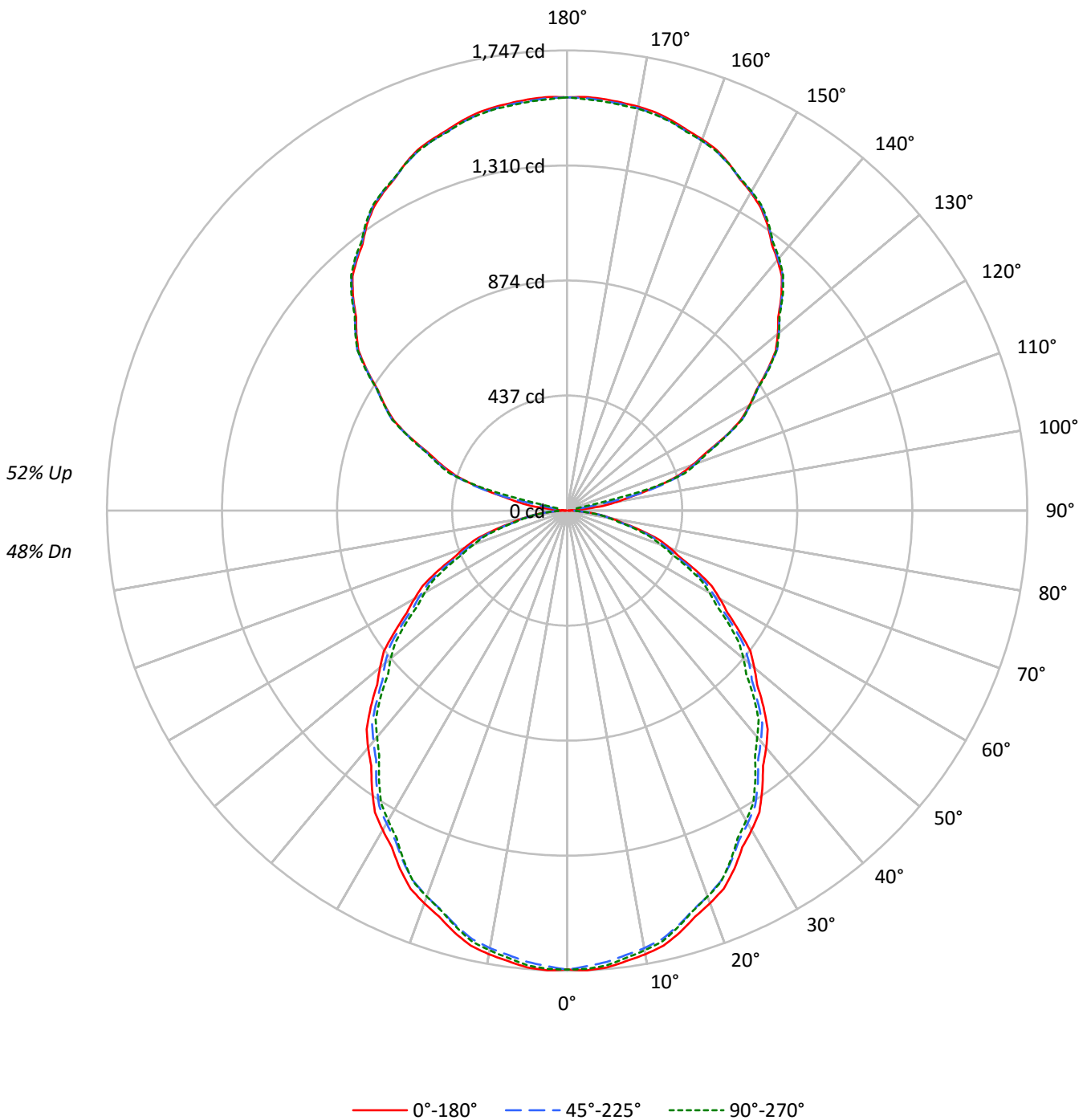
Input Watts (W): 65.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	0		
RCR																										
0	107	107	107	107	98	98	98	98	82	82	82	68	68	68	54	54	54	48	48	48	48	48	48	48		
1	97	93	89	86	89	86	82	79	72	70	67	59	58	56	48	47	46	40	40	40	40	40	40	40		
2	89	81	75	70	81	75	70	65	63	59	56	52	49	47	42	40	38	34	34	34	34	34	34	34		
3	81	71	64	58	74	66	59	54	56	51	47	46	43	40	37	35	33	29	29	29	29	29	29	29		
4	74	63	55	49	68	58	51	46	49	44	40	41	37	34	33	31	28	25	25	25	25	25	25	25		
5	68	56	48	42	62	52	45	40	44	39	34	37	33	29	30	27	25	21	21	21	21	21	21	21		
6	62	50	42	36	57	47	40	34	40	34	30	33	29	26	27	24	22	19	19	19	19	19	19	19		
7	58	45	38	32	53	42	35	30	36	30	26	30	26	23	25	22	19	17	17	17	17	17	17	17		
8	54	41	34	28	49	38	31	27	33	27	23	28	23	20	23	20	17	15	15	15	15	15	15	15		
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	16	13	13	13	13	13	13	13		
10	47	35	27	23	43	32	26	21	28	23	19	24	19	17	20	16	14	12	12	12	12	12	12	12		

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	14067	14067	14067
5°	14109	13940	14041
10°	14021	13827	13896
15°	13852	13630	13665
20°	13626	13387	13399
25°	13370	13109	13071
30°	13055	12781	12665
35°	12728	12439	12275
40°	12390	12052	11830
45°	12036	11669	11445
50°	11645	11328	10977
55°	11222	10888	10534
60°	10798	10393	10077
65°	10323	9922	9522
70°	9788	9293	8932
75°	8971	8537	8319
80°	7987	7657	7466
85°	6984	6725	6595



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	164.1	1.8
10°-20°	462.4	5.0
20°-30°	680.5	7.3
30°-40°	791.1	8.5
40°-50°	791.2	8.5
50°-60°	692.1	7.4
60°-70°	514.0	5.5
70°-80°	292.0	3.1
80°-90°	88.8	1.0
90°-100°	53.7	0.6
100°-110°	342.1	3.7
110°-120°	654.5	7.0
120°-130°	830.8	8.9
130°-140°	888.9	9.5
140°-150°	831.2	8.9
150°-160°	670.3	7.2
160°-170°	432.4	4.6
170°-180°	149.0	1.6
0°-30°	1307.0	14.0
0°-40°	2098.1	22.5
0°-60°	3581.3	38.4
0°-90°	4476.1	48.0
90°-120°	1050.3	11.3
90°-150°	3601.3	38.6
90°-180°	4853.0	52.0
0°-180°	9329.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1742	1742	1742	1742	1742	
5°	1741	1735	1720	1735	1733	165
15°	1657	1651	1631	1638	1635	467
25°	1501	1491	1472	1473	1467	690
35°	1292	1281	1262	1253	1246	807
45°	1054	1044	1022	1007	1002	812
55°	797	792	774	757	748	714
65°	540	533	519	506	498	535
75°	288	281	274	268	267	306
85°	75	75	73	72	71	83
90°	4	16	26	33	35	7
95°	64	27	26	33	34	83
105°	353	360	366	374	334	370
115°	659	663	662	664	664	649
125°	927	931	929	933	934	827
135°	1150	1149	1154	1156	1158	886
145°	1326	1329	1330	1331	1333	828
155°	1454	1455	1452	1456	1453	670
165°	1534	1528	1528	1536	1527	433
175°	1569	1562	1563	1572	1559	149
180°	1569	1569	1569	1569	1569	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5
2.5°	1747.0	1746.3	1745.5	1744.7	1744.0	1742.2	1739.5	1736.8	1734.0	1731.3	1733.8
5°	1741.1	1739.9	1738.7	1737.4	1736.2	1733.8	1730.4	1727.0	1723.6	1720.2	1723.6
7.5°	1725.0	1723.6	1722.4	1721.2	1720.0	1717.5	1713.6	1709.9	1706.1	1702.3	1705.1
10°	1710.4	1709.2	1707.9	1706.7	1705.5	1702.8	1698.8	1694.8	1690.7	1686.7	1689.1
12.5°	1691.4	1690.2	1688.9	1687.7	1686.5	1683.6	1679.4	1675.2	1670.8	1666.6	1669.3
15°	1657.4	1656.1	1654.9	1653.7	1652.3	1649.4	1644.8	1640.1	1635.5	1630.8	1632.6
17.5°	1616.3	1614.8	1613.2	1611.6	1610.1	1607.1	1602.7	1598.3	1593.9	1589.5	1590.6
20°	1586.1	1584.6	1583.1	1581.4	1579.9	1576.8	1572.2	1567.5	1562.9	1558.2	1559.1
22.5°	1553.8	1551.7	1549.6	1547.6	1545.6	1542.2	1537.5	1532.9	1528.2	1523.6	1525.3
25°	1501.0	1498.8	1496.6	1494.4	1492.3	1489.0	1484.7	1480.4	1476.0	1471.7	1472.0
27.5°	1440.7	1438.5	1436.1	1433.9	1431.7	1428.6	1424.5	1420.5	1416.4	1412.4	1411.7
30°	1400.5	1398.0	1395.4	1393.0	1390.5	1387.3	1383.2	1379.2	1375.1	1371.1	1369.9
32.5°	1358.0	1355.7	1353.5	1351.3	1349.1	1345.7	1341.5	1337.3	1332.9	1328.7	1327.2
35°	1291.5	1289.4	1287.2	1285.1	1282.8	1279.6	1275.3	1270.9	1266.6	1262.2	1260.0
37.5°	1221.4	1219.4	1217.5	1215.5	1213.5	1210.2	1205.5	1200.8	1196.2	1191.5	1189.2
40°	1175.7	1173.2	1170.6	1168.2	1165.7	1162.2	1157.5	1152.9	1148.2	1143.6	1140.4
42.5°	1126.5	1125.0	1123.5	1122.1	1120.5	1117.2	1112.1	1106.9	1101.8	1096.6	1093.0
45°	1054.2	1052.0	1049.9	1047.6	1045.5	1041.9	1036.9	1032.0	1027.0	1022.1	1018.7
47.5°	978.5	977.0	975.5	974.0	972.5	969.5	964.9	960.3	955.7	951.1	947.3
50°	927.2	925.8	924.6	923.4	922.1	919.4	915.0	910.7	906.4	902.0	897.7
52.5°	876.9	875.4	873.8	872.4	870.9	867.9	863.2	858.7	854.0	849.5	845.7
55°	797.3	796.3	795.4	794.5	793.6	790.9	786.6	782.2	777.9	773.6	769.8
57.5°	721.3	720.2	719.2	718.1	717.1	714.4	710.1	705.9	701.6	697.3	693.8
60°	668.8	667.2	665.7	664.2	662.6	659.8	655.8	651.8	647.7	643.7	640.9
62.5°	617.4	616.1	614.8	613.5	612.2	609.5	605.1	600.9	596.5	592.3	589.8
65°	540.4	538.8	537.2	535.7	534.1	531.8	528.7	525.6	522.5	519.4	516.3
67.5°	462.7	461.3	459.9	458.5	457.0	454.8	451.8	448.9	445.9	442.9	439.9
70°	414.7	412.5	410.3	408.2	406.0	403.6	401.2	398.7	396.3	393.7	391.2
72.5°	363.3	361.1	359.0	356.8	354.7	352.5	350.5	348.6	346.6	344.6	342.6
75°	287.6	286.1	284.5	283.0	281.4	279.8	278.3	276.8	275.2	273.7	272.5
77.5°	215.3	214.6	213.9	213.3	212.6	211.6	210.2	208.8	207.4	206.1	205.7
80°	171.8	170.8	169.9	169.0	168.0	167.2	166.6	166.0	165.4	164.7	164.1
82.5°	129.3	128.9	128.5	127.9	127.5	127.2	127.1	127.0	126.9	126.7	126.4
85°	75.4	75.4	75.4	75.4	75.4	75.1	74.4	73.8	73.2	72.6	72.6
87.5°	29.8	30.1	30.4	30.7	31.0	31.3	31.5	31.6	31.8	32.0	32.3
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°	14.7	14.9	15.1	15.2	15.5	16.6	18.6	20.7	22.8	24.8	26.5
95°	64.5	55.6	46.8	38.0	29.1	24.7	25.0	25.2	25.5	25.9	27.4
97.5°	137.0	142.6	148.1	153.6	159.2	147.3	118.3	89.2	60.1	31.0	31.1
100°	192.5	197.1	201.9	206.5	211.3	195.6	159.6	123.6	87.7	51.6	47.2
102.5°	254.4	257.8	261.3	264.7	268.1	267.5	262.9	258.1	253.5	248.7	201.0
105°	353.1	354.8	356.3	357.9	359.4	360.9	362.2	363.5	364.8	366.1	368.5
107.5°	444.9	445.8	446.6	447.3	448.1	449.4	451.1	452.9	454.6	456.5	457.6
110°	507.0	507.7	508.5	509.3	510.1	511.2	512.8	514.3	515.9	517.5	518.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	567.0	568.5	569.8	571.2	572.6	573.7	574.4	575.1	575.9	576.6	576.5
115°	659.4	660.2	661.1	661.8	662.6	662.9	662.6	662.4	662.1	661.8	662.4
117.5°	742.8	743.8	744.9	745.9	746.9	747.7	748.3	748.9	749.5	750.0	749.9
120°	799.1	800.1	801.2	802.2	803.2	803.7	803.4	803.1	802.8	802.6	803.1
122.5°	851.6	852.3	852.9	853.5	854.1	854.6	855.1	855.4	855.8	856.2	856.5
125°	927.0	928.1	929.1	930.1	931.2	931.4	930.9	930.4	929.9	929.4	930.1
127.5°	998.4	998.6	998.9	999.2	999.4	1000.1	1001.3	1002.5	1003.7	1004.9	1004.7
130°	1044.3	1044.6	1044.9	1045.1	1045.4	1045.9	1046.7	1047.4	1048.2	1049.0	1049.2
132.5°	1086.6	1087.0	1087.5	1088.0	1088.4	1089.2	1090.1	1091.2	1092.2	1093.2	1093.4
135°	1149.9	1149.7	1149.4	1149.1	1148.9	1149.3	1150.3	1151.3	1152.5	1153.5	1154.0
137.5°	1206.1	1206.2	1206.3	1206.4	1206.5	1207.1	1208.2	1209.4	1210.5	1211.6	1212.2
140°	1242.6	1243.1	1243.6	1244.3	1244.8	1245.3	1245.8	1246.3	1246.8	1247.4	1248.1
142.5°	1275.5	1276.5	1277.4	1278.3	1279.3	1279.9	1280.2	1280.5	1280.8	1281.1	1281.7
145°	1326.0	1326.8	1327.6	1328.3	1329.1	1329.5	1329.5	1329.5	1329.5	1329.5	1329.8
147.5°	1366.0	1367.6	1369.0	1370.5	1371.9	1372.5	1372.3	1372.0	1371.7	1371.5	1371.7
150°	1395.2	1396.2	1397.2	1398.4	1399.4	1399.8	1399.5	1399.3	1399.0	1398.7	1398.7
152.5°	1419.6	1420.5	1421.3	1422.1	1422.9	1423.1	1422.7	1422.2	1421.7	1421.3	1421.7
155°	1453.9	1454.1	1454.4	1454.6	1454.9	1454.6	1453.9	1453.1	1452.3	1451.5	1452.6
157.5°	1482.7	1482.6	1482.4	1482.3	1482.1	1481.6	1480.7	1479.9	1478.9	1478.0	1479.4
160°	1499.6	1498.8	1498.0	1497.3	1496.5	1496.0	1495.7	1495.4	1495.2	1494.9	1496.5
162.5°	1514.6	1513.7	1512.7	1511.7	1510.7	1510.1	1509.7	1509.5	1509.2	1509.0	1510.6
165°	1533.7	1532.4	1531.1	1529.7	1528.4	1527.8	1527.8	1527.8	1527.8	1527.8	1529.8
167.5°	1548.6	1547.3	1546.0	1544.6	1543.3	1542.5	1542.4	1542.2	1542.1	1541.9	1544.2
170°	1557.1	1555.6	1554.0	1552.5	1550.8	1550.2	1550.4	1550.7	1551.0	1551.3	1553.4
172.5°	1562.8	1561.2	1559.6	1558.0	1556.5	1555.8	1556.1	1556.4	1556.6	1556.9	1558.9
175°	1568.8	1567.3	1565.7	1564.2	1562.6	1562.0	1562.2	1562.5	1562.8	1563.0	1565.3
177.5°	1571.7	1570.2	1568.7	1567.3	1565.8	1565.3	1565.7	1566.1	1566.6	1567.0	1568.6
180°	1568.8	1568.8	1568.8	1568.8	1568.8	1568.8	1568.8	1568.8	1568.8	1568.8	1568.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5
2.5°	1736.3	1738.8	1741.3	1742.4	1742.1	1741.9	1741.6	1741.4
5°	1727.0	1730.4	1733.8	1735.3	1734.6	1733.9	1733.3	1732.7
7.5°	1707.8	1710.5	1713.2	1714.4	1714.0	1713.6	1713.2	1712.9
10°	1691.6	1694.1	1696.6	1697.5	1696.9	1696.3	1695.7	1695.1
12.5°	1672.0	1674.8	1677.5	1678.4	1677.6	1676.7	1675.8	1675.0
15°	1634.6	1636.4	1638.3	1638.7	1637.8	1636.9	1636.0	1635.0
17.5°	1591.9	1593.1	1594.2	1594.5	1593.9	1593.3	1592.7	1592.0
20°	1560.0	1561.0	1562.0	1562.1	1561.5	1560.8	1560.2	1559.6
22.5°	1526.9	1528.6	1530.2	1530.6	1529.4	1528.3	1527.2	1526.1
25°	1472.3	1472.6	1472.9	1472.4	1471.2	1470.0	1468.6	1467.4
27.5°	1411.0	1410.2	1409.5	1408.4	1406.7	1405.2	1403.6	1402.1
30°	1368.7	1367.4	1366.1	1364.7	1363.2	1361.6	1360.1	1358.6
32.5°	1325.6	1324.2	1322.7	1321.2	1319.6	1318.1	1316.6	1314.9
35°	1257.9	1255.7	1253.5	1251.6	1250.1	1248.6	1247.0	1245.5
37.5°	1186.8	1184.5	1182.1	1179.9	1177.9	1175.8	1173.8	1171.7
40°	1137.3	1134.2	1131.1	1128.8	1127.2	1125.7	1124.2	1122.6
42.5°	1089.4	1085.8	1082.2	1079.8	1078.8	1077.7	1076.7	1075.7
45°	1015.2	1011.8	1008.4	1006.2	1005.3	1004.4	1003.4	1002.5
47.5°	943.4	939.6	935.7	932.6	930.3	927.9	925.5	923.2
50°	893.3	889.0	884.6	881.5	879.6	877.8	876.0	874.0
52.5°	841.8	837.9	834.0	831.0	828.6	826.3	823.9	821.5
55°	766.1	762.3	758.6	755.9	754.0	752.1	750.2	748.4
57.5°	690.2	686.7	683.2	680.4	678.6	676.9	675.1	673.3
60°	638.1	635.3	632.5	630.4	628.7	627.2	625.7	624.1
62.5°	587.2	584.6	582.1	580.1	578.6	576.9	575.4	573.9
65°	513.2	510.1	507.0	504.6	503.1	501.6	500.0	498.5
67.5°	437.0	433.9	431.0	429.3	428.8	428.4	428.0	427.6
70°	388.8	386.3	383.8	382.1	381.2	380.2	379.3	378.4
72.5°	340.6	338.6	336.7	335.2	334.3	333.4	332.4	331.4
75°	271.1	269.9	268.7	267.9	267.6	267.3	267.0	266.7
77.5°	205.3	205.0	204.6	204.0	203.2	202.4	201.6	200.8
80°	163.5	162.9	162.3	161.8	161.5	161.2	160.9	160.6
82.5°	126.0	125.6	125.3	124.9	124.6	124.3	124.0	123.7
85°	72.6	72.6	72.6	72.4	72.1	71.8	71.5	71.2
87.5°	32.6	32.9	33.2	33.4	33.5	33.6	33.7	33.8
90°	29.0	30.5	32.1	33.1	33.6	34.1	34.6	35.2
92.5°	28.0	29.6	31.1	32.0	32.1	32.2	32.3	32.4
95°	29.0	30.5	32.1	33.0	33.2	33.5	33.7	34.0
97.5°	31.3	31.4	31.6	31.8	32.1	32.3	32.6	32.8
100°	42.7	38.4	33.9	31.8	32.1	32.3	32.6	32.8
102.5°	153.1	105.3	57.5	33.6	33.6	33.7	33.7	33.8
105°	370.8	373.1	375.5	371.9	362.5	353.1	343.9	334.5
107.5°	458.8	459.9	461.0	462.1	463.1	464.1	465.0	466.1
110°	518.6	519.1	519.6	520.2	521.0	521.8	522.6	523.3





TEST NUMBER: P332667-840

CATALOG NUMBER: S124DIP-S1020D1205U840-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	576.4	576.3	576.2	576.6	577.6	578.7	579.7	580.6
115°	662.9	663.4	663.9	664.2	664.2	664.2	664.2	664.2
117.5°	749.8	749.7	749.6	749.5	749.4	749.3	749.2	749.1
120°	803.7	804.2	804.7	804.7	804.2	803.7	803.1	802.6
122.5°	856.8	857.1	857.4	857.3	856.8	856.3	855.7	855.2
125°	930.9	931.7	932.5	933.0	933.2	933.5	933.8	934.0
127.5°	1004.6	1004.4	1004.3	1004.1	1003.9	1003.7	1003.5	1003.3
130°	1049.6	1049.9	1050.1	1050.2	1050.2	1050.2	1050.2	1050.2
132.5°	1093.7	1094.0	1094.2	1094.2	1094.0	1093.8	1093.6	1093.4
135°	1154.5	1155.0	1155.6	1156.1	1156.6	1157.1	1157.6	1158.1
137.5°	1212.8	1213.4	1214.0	1214.2	1214.1	1213.9	1213.7	1213.6
140°	1248.9	1249.7	1250.5	1251.0	1251.2	1251.5	1251.7	1252.0
142.5°	1282.3	1282.8	1283.4	1283.7	1283.8	1283.8	1283.9	1283.9
145°	1330.0	1330.3	1330.5	1330.9	1331.4	1331.9	1332.5	1333.0
147.5°	1371.9	1372.1	1372.3	1372.5	1372.8	1373.1	1373.3	1373.6
150°	1398.7	1398.7	1398.7	1398.9	1399.1	1399.4	1399.7	1399.9
152.5°	1422.1	1422.5	1422.9	1423.0	1422.9	1422.7	1422.6	1422.4
155°	1453.6	1454.6	1455.7	1455.8	1455.0	1454.2	1453.5	1452.7
157.5°	1480.8	1482.1	1483.5	1483.5	1482.1	1480.8	1479.4	1478.0
160°	1498.0	1499.6	1501.2	1501.2	1499.6	1498.0	1496.5	1494.9
162.5°	1512.2	1513.7	1515.3	1515.2	1513.4	1511.7	1509.8	1508.0
165°	1532.0	1534.1	1536.1	1536.0	1533.7	1531.3	1528.9	1526.6
167.5°	1546.5	1548.7	1551.1	1550.8	1548.3	1545.7	1543.1	1540.4
170°	1555.4	1557.5	1559.6	1559.3	1556.7	1554.1	1551.6	1548.9
172.5°	1561.0	1563.2	1565.2	1564.9	1562.1	1559.2	1556.4	1553.6
175°	1567.7	1570.0	1572.4	1572.0	1568.8	1565.7	1562.6	1559.4
177.5°	1570.3	1572.0	1573.7	1573.3	1570.7	1568.2	1565.7	1563.3
180°	1568.8	1568.8	1568.8	1568.8	1568.8	1568.8	1568.8	1568.8

(END OF REPORT)