

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: P332696-940

Luminaire Tested: **S124DIP-S1195D810U940-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332696-940  
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: S124DIP-S1195D810U940-4F0-1E-UDD-F4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 810 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

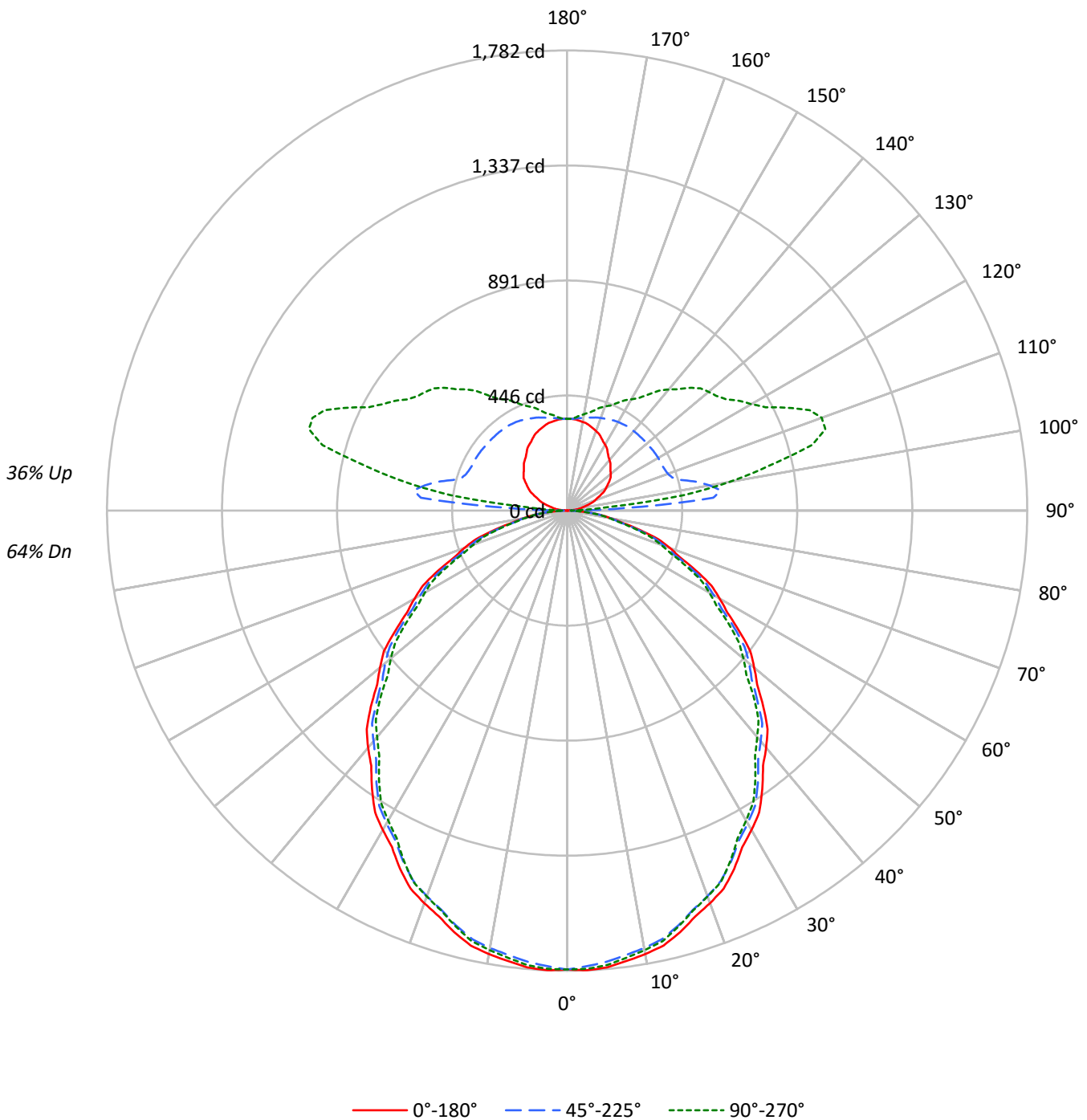
Lumens per Lamp: N/A  
Luminaire Lumens: 7143.2 lumens  
Efficiency: N/A  
Efficacy: 117.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Semi-Direct  
  
Input Watts (W): 60.7  
Input Voltage (V): 120  
Input Current (Ain): 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	0
RCR																		
0	110	110	110	110	104	104	104	104	91	91	91	79	79	79	69	69	69	64
1	101	96	92	89	95	91	87	84	80	77	75	70	68	66	61	59	58	54
2	92	84	78	73	86	79	74	69	70	66	62	61	58	55	54	51	49	45
3	84	74	66	60	78	70	63	58	62	56	52	54	50	47	47	44	42	38
4	77	66	57	51	72	62	55	49	55	49	44	48	44	40	42	39	36	33
5	70	59	50	44	66	55	48	42	49	43	38	44	39	35	38	34	31	28
6	65	53	44	38	61	50	42	37	44	38	34	39	34	31	35	31	28	25
7	60	48	39	34	56	45	38	32	40	34	30	36	31	27	32	28	25	22
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22	20
9	52	40	32	27	49	38	31	26	34	28	24	30	25	22	27	23	20	18
10	49	36	29	24	46	35	28	23	31	25	21	28	23	20	25	21	18	16

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

	0°	45°	90°
0°	14346	14346	14346
5°	14389	14216	14319
10°	14299	14100	14170
15°	14125	13900	13936
20°	13897	13651	13664
25°	13635	13367	13331
30°	13313	13035	12915
35°	12980	12686	12518
40°	12635	12290	12064
45°	12273	11900	11671
50°	11875	11552	11195
55°	11444	11102	10742
60°	11013	10598	10277
65°	10527	10118	9712
70°	9982	9477	9106
75°	9148	8706	8484
80°	8140	7810	7610
85°	7123	6854	6725



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	167.3	2.3
10°-20°	471.5	6.6
20°-30°	694.0	9.7
30°-40°	806.8	11.3
40°-50°	806.8	11.3
50°-60°	705.8	9.9
60°-70°	524.1	7.3
70°-80°	297.8	4.2
80°-90°	87.9	1.2
90°-100°	256.3	3.6
100°-110°	533.5	7.5
110°-120°	477.9	6.7
120°-130°	402.0	5.6
130°-140°	335.1	4.7
140°-150°	256.1	3.6
150°-160°	180.0	2.5
160°-170°	105.9	1.5
170°-180°	34.4	0.5
0°-30°	1332.9	18.7
0°-40°	2139.7	30.0
0°-60°	3652.3	51.1
0°-90°	4562.1	63.9
90°-120°	1267.7	17.7
90°-150°	2260.9	31.7
90°-180°	2581.0	36.1
0°-180°	7143.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1777	1777	1777	1777	1777	
5°	1776	1769	1754	1769	1767	168
15°	1690	1684	1663	1671	1667	476
25°	1531	1520	1501	1502	1497	704
35°	1317	1307	1287	1277	1270	823
45°	1075	1064	1042	1027	1022	828
55°	813	808	789	772	763	728
65°	551	544	530	516	508	545
75°	293	286	279	274	272	312
85°	77	77	74	74	73	85
90°	1	6	13	14	15	5
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	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0
2.5°	1781.5	1780.8	1780.0	1779.3	1778.5	1776.7	1774.0	1771.2	1768.4	1765.7	1768.2
5°	1775.6	1774.3	1773.1	1771.8	1770.6	1768.2	1764.7	1761.2	1757.7	1754.3	1757.7
7.5°	1759.1	1757.8	1756.6	1755.2	1754.0	1751.5	1747.6	1743.7	1739.9	1736.0	1738.8
10°	1744.3	1743.0	1741.8	1740.4	1739.2	1736.5	1732.4	1728.3	1724.2	1720.1	1722.6
12.5°	1724.9	1723.7	1722.3	1721.1	1719.8	1717.0	1712.7	1708.3	1704.0	1699.6	1702.4
15°	1690.1	1688.9	1687.7	1686.4	1685.1	1682.1	1677.3	1672.6	1667.9	1663.1	1665.0
17.5°	1648.3	1646.7	1645.1	1643.6	1642.0	1639.0	1634.4	1630.0	1625.5	1621.0	1622.2
20°	1617.6	1616.0	1614.4	1612.8	1611.2	1608.0	1603.3	1598.6	1593.8	1589.0	1590.0
22.5°	1584.5	1582.4	1580.4	1578.2	1576.2	1572.7	1568.0	1563.3	1558.5	1553.7	1555.5
25°	1530.7	1528.5	1526.3	1524.0	1521.8	1518.5	1514.0	1509.7	1505.2	1500.7	1501.1
27.5°	1469.2	1466.9	1464.6	1462.3	1460.1	1456.9	1452.8	1448.7	1444.6	1440.4	1439.7
30°	1428.2	1425.7	1423.1	1420.6	1418.1	1414.7	1410.6	1406.5	1402.4	1398.3	1397.0
32.5°	1384.9	1382.6	1380.4	1378.0	1375.7	1372.4	1368.1	1363.7	1359.3	1355.0	1353.4
35°	1317.1	1314.9	1312.7	1310.5	1308.2	1304.9	1300.5	1296.1	1291.6	1287.2	1285.0
37.5°	1245.6	1243.6	1241.6	1239.6	1237.5	1234.1	1229.4	1224.7	1219.9	1215.1	1212.7
40°	1198.9	1196.4	1193.8	1191.3	1188.8	1185.2	1180.4	1175.6	1170.9	1166.2	1163.0
42.5°	1148.8	1147.3	1145.8	1144.2	1142.7	1139.3	1134.1	1128.8	1123.6	1118.3	1114.6
45°	1075.0	1072.8	1070.6	1068.4	1066.2	1062.6	1057.5	1052.4	1047.3	1042.3	1038.8
47.5°	997.8	996.3	994.8	993.3	991.8	988.7	984.0	979.4	974.6	970.0	966.1
50°	945.5	944.2	942.9	941.6	940.4	937.5	933.1	928.7	924.3	919.8	915.4
52.5°	894.2	892.7	891.2	889.7	888.1	885.0	880.4	875.7	871.0	866.3	862.4
55°	813.1	812.1	811.2	810.2	809.2	806.6	802.1	797.7	793.3	788.8	785.1
57.5°	735.6	734.5	733.4	732.4	731.3	728.5	724.2	719.8	715.4	711.1	707.5
60°	682.1	680.5	678.9	677.3	675.7	672.9	668.8	664.7	660.5	656.4	653.5
62.5°	629.6	628.3	627.0	625.6	624.4	621.5	617.2	612.8	608.4	604.0	601.5
65°	551.1	549.5	547.9	546.3	544.7	542.3	539.2	536.0	532.9	529.7	526.6
67.5°	471.9	470.5	469.0	467.5	466.1	463.8	460.7	457.7	454.7	451.7	448.6
70°	422.9	420.7	418.5	416.3	414.0	411.7	409.1	406.6	404.0	401.5	399.0
72.5°	370.5	368.3	366.0	363.8	361.7	359.5	357.5	355.4	353.5	351.4	349.4
75°	293.3	291.8	290.2	288.6	287.0	285.4	283.8	282.2	280.7	279.1	277.9
77.5°	219.5	218.8	218.2	217.5	216.8	215.7	214.4	212.9	211.6	210.2	209.8
80°	175.1	174.2	173.3	172.3	171.4	170.6	170.0	169.2	168.6	168.0	167.4
82.5°	131.9	131.4	131.0	130.5	130.1	129.8	129.7	129.6	129.4	129.3	128.9
85°	76.9	76.9	76.9	76.9	76.9	76.6	76.0	75.3	74.6	74.0	74.0
87.5°	29.8	29.8	30.0	29.9	29.7	29.4	30.1	29.8	29.8	29.9	29.7
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



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**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



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0	1777.0
2.5°	1770.7	1773.3	1775.8	1776.9	1776.6	1776.4	1776.1	1775.8
5°	1761.2	1764.7	1768.2	1769.6	1769.0	1768.4	1767.7	1767.0
7.5°	1741.6	1744.4	1747.1	1748.4	1748.0	1747.6	1747.2	1746.9
10°	1725.1	1727.7	1730.2	1731.2	1730.5	1729.9	1729.2	1728.6
12.5°	1705.1	1707.9	1710.7	1711.6	1710.7	1709.9	1709.0	1708.1
15°	1666.9	1668.8	1670.7	1671.2	1670.3	1669.3	1668.3	1667.4
17.5°	1623.4	1624.6	1625.8	1626.0	1625.4	1624.8	1624.2	1623.5
20°	1591.0	1591.9	1592.9	1593.0	1592.4	1591.8	1591.2	1590.5
22.5°	1557.2	1558.9	1560.6	1560.9	1559.8	1558.6	1557.5	1556.3
25°	1501.5	1501.7	1502.1	1501.6	1500.3	1499.1	1497.8	1496.6
27.5°	1438.9	1438.2	1437.3	1436.2	1434.6	1433.1	1431.5	1429.9
30°	1395.7	1394.5	1393.2	1391.8	1390.2	1388.7	1387.1	1385.5
32.5°	1351.9	1350.4	1348.9	1347.4	1345.8	1344.2	1342.6	1341.0
35°	1282.8	1280.6	1278.4	1276.5	1274.9	1273.3	1271.7	1270.2
37.5°	1210.3	1207.9	1205.5	1203.3	1201.2	1199.1	1197.0	1194.9
40°	1159.8	1156.6	1153.5	1151.1	1149.6	1148.0	1146.4	1144.8
42.5°	1111.0	1107.3	1103.7	1101.3	1100.2	1099.1	1098.1	1097.0
45°	1035.4	1031.9	1028.4	1026.2	1025.2	1024.2	1023.3	1022.3
47.5°	962.2	958.2	954.3	951.1	948.7	946.3	943.9	941.5
50°	911.0	906.5	902.1	898.9	897.1	895.2	893.2	891.4
52.5°	858.4	854.5	850.6	847.5	845.1	842.7	840.3	837.9
55°	781.2	777.5	773.6	770.8	768.9	767.0	765.1	763.2
57.5°	703.9	700.3	696.7	693.9	692.1	690.3	688.4	686.6
60°	650.7	647.9	645.1	642.8	641.2	639.6	638.1	636.5
62.5°	598.8	596.2	593.6	591.6	590.0	588.4	586.8	585.2
65°	523.3	520.2	517.0	514.7	513.1	511.5	509.9	508.4
67.5°	445.6	442.6	439.5	437.7	437.3	436.8	436.4	436.0
70°	396.5	394.0	391.4	389.7	388.7	387.8	386.8	385.8
72.5°	347.4	345.4	343.3	341.8	340.9	339.9	338.9	338.0
75°	276.5	275.3	274.0	273.2	273.0	272.6	272.2	272.0
77.5°	209.4	209.0	208.7	208.0	207.2	206.4	205.5	204.7
80°	166.7	166.1	165.5	165.1	164.7	164.3	164.1	163.7
82.5°	128.5	128.1	127.8	127.4	127.1	126.8	126.4	126.2
85°	74.0	74.0	74.0	73.9	73.6	73.2	72.9	72.6
87.5°	29.9	30.0	30.1	30.1	30.2	30.4	30.2	30.2
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: P332696-940

CATALOG NUMBER: S124DIP-S1195D810U940-4F0-1E-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)