

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: P332864-940

Luminaire Tested: **S124DIW-S1195D1560U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332864-940
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: S124DIW-S1195D1560U940-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9388.7 lumens
Efficiency: N/A
Efficacy: 113.3 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

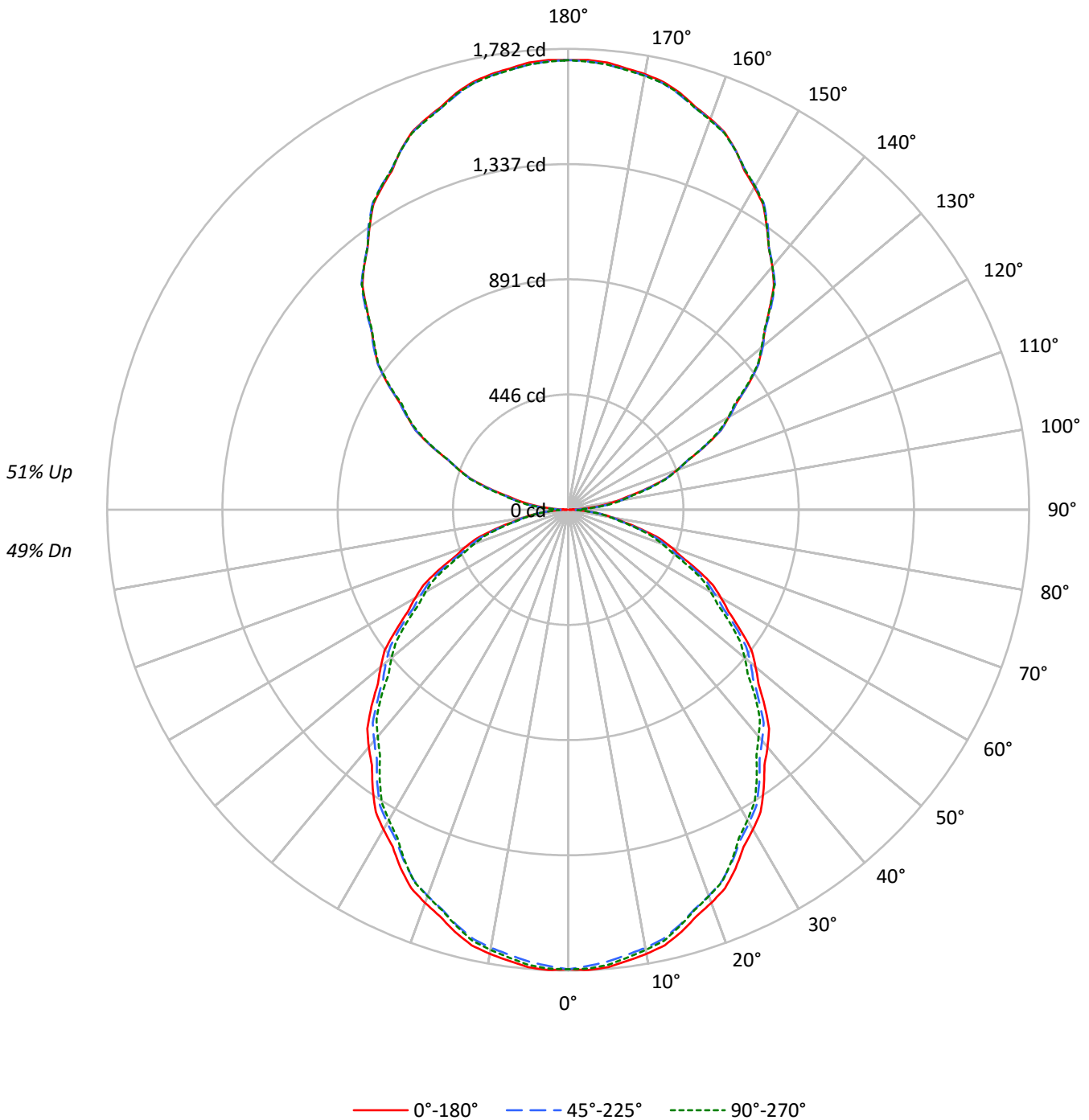
Input Watts (W): 82.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0	
RCR																						
0	107	107	107	107	98	98	98	98	83	83	83	68	68	68	55	55	55	49				
1	97	93	89	86	90	86	83	79	72	70	68	60	58	57	48	47	46	41				
2	89	81	75	70	81	75	70	65	63	59	56	53	50	47	43	41	39	34				
3	81	71	64	58	74	66	60	54	56	51	47	46	43	40	38	35	33	29				
4	74	63	55	49	68	59	52	46	50	44	40	41	37	34	34	31	29	25				
5	68	56	48	42	62	52	45	40	44	39	35	37	33	30	30	27	25	22				
6	63	50	42	37	57	47	40	34	40	34	30	34	29	26	28	24	22	19				
7	58	46	38	32	53	42	35	30	36	31	27	31	26	23	25	22	19	17				
8	54	41	34	28	49	39	32	27	33	28	24	28	24	20	23	20	17	15				
9	50	38	30	25	46	35	28	24	30	25	21	26	21	18	21	18	16	14				
10	47	35	27	23	43	32	26	21	28	23	19	24	20	17	20	17	14	12				

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	1.8
10°-20°	471.5	5.0
20°-30°	694.0	7.4
30°-40°	806.8	8.6
40°-50°	806.8	8.6
50°-60°	705.8	7.5
60°-70°	524.1	5.6
70°-80°	297.8	3.2
80°-90°	91.1	1.0
90°-100°	114.7	1.2
100°-110°	339.7	3.6
110°-120°	576.5	6.1
120°-130°	760.2	8.1
130°-140°	853.8	9.1
140°-150°	839.0	8.9
150°-160°	705.6	7.5
160°-170°	469.5	5.0
170°-180°	164.4	1.8
0°-30°	1332.9	14.2
0°-40°	2139.7	22.8
0°-60°	3652.3	38.9
0°-90°	4565.3	48.6
90°-120°	1030.9	11.0
90°-150°	3483.9	37.1
90°-180°	4823.0	51.4
0°-180°	9388.7	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°	4	19	30	37	40	9
95°	81	93	102	106	106	90
105°	313	315	320	324	328	332
115°	586	586	584	582	581	578
125°	854	854	852	850	847	761
135°	1101	1109	1109	1106	1102	852
145°	1338	1343	1344	1343	1339	837
155°	1533	1533	1531	1536	1531	705
165°	1669	1665	1662	1669	1665	470
175°	1736	1729	1728	1736	1728	165
180°	1738	1738	1738	1738	1738	



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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°	30.4	30.9	31.2	31.7	32.0	32.4	32.5	32.8	33.0	33.3	33.6
90°	4.0	7.3	10.6	13.9	17.2	20.1	22.4	24.8	27.2	29.6	31.4
92.5°	28.8	32.5	36.3	40.0	43.9	46.5	48.2	49.9	51.5	53.2	54.3
95°	80.7	83.4	86.1	88.7	91.4	93.8	95.9	98.0	100.1	102.2	103.1
97.5°	140.9	143.0	145.2	147.4	149.5	151.9	154.3	156.7	159.2	161.6	162.6
100°	188.2	189.4	190.6	191.8	193.1	194.9	197.7	200.4	203.0	205.7	206.3
102.5°	237.7	238.2	238.7	239.2	239.6	241.1	243.5	246.0	248.4	250.9	251.7
105°	313.3	313.6	313.9	314.1	314.5	315.2	316.4	317.6	318.8	320.0	320.9
107.5°	392.6	393.0	393.3	393.7	394.0	394.3	394.5	394.7	394.8	395.0	395.8
110°	446.4	447.0	447.5	448.2	448.8	449.0	448.6	448.4	448.0	447.7	447.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	502.3	502.5	502.6	502.7	502.8	502.6	502.0	501.5	501.0	500.4	500.3
115°	586.2	586.2	586.2	586.2	586.2	585.9	585.3	584.7	584.2	583.5	583.3
117.5°	665.3	665.5	665.8	666.0	666.3	666.2	665.8	665.3	664.9	664.5	663.4
120°	718.0	719.2	720.4	721.6	722.7	722.9	722.0	721.1	720.2	719.3	717.8
122.5°	772.8	773.3	773.8	774.3	774.7	774.8	774.4	773.9	773.6	773.1	772.1
125°	853.8	853.8	853.8	853.8	853.8	853.6	853.4	853.0	852.7	852.5	851.9
127.5°	927.2	928.1	929.0	929.9	930.8	931.0	930.5	930.1	929.6	929.1	928.4
130°	978.8	979.7	980.6	981.5	982.4	982.8	982.8	982.8	982.8	982.8	982.3
132.5°	1031.5	1032.2	1032.9	1033.5	1034.2	1034.4	1034.1	1033.9	1033.7	1033.4	1032.9
135°	1101.2	1103.0	1104.7	1106.6	1108.4	1109.3	1109.3	1109.3	1109.3	1109.3	1108.7
137.5°	1177.1	1177.9	1178.7	1179.6	1180.4	1181.1	1181.5	1182.0	1182.5	1182.9	1182.1
140°	1227.6	1228.2	1228.8	1229.4	1229.9	1230.3	1230.3	1230.3	1230.3	1230.3	1229.9
142.5°	1273.8	1274.4	1275.1	1275.6	1276.2	1276.4	1276.1	1275.9	1275.7	1275.4	1275.4
145°	1337.8	1339.0	1340.2	1341.4	1342.6	1343.4	1343.6	1344.0	1344.3	1344.5	1344.3
147.5°	1401.3	1402.8	1404.2	1405.6	1407.0	1407.7	1407.4	1407.1	1406.9	1406.7	1406.4
150°	1440.0	1441.2	1442.4	1443.6	1444.8	1445.4	1445.4	1445.4	1445.4	1445.4	1445.4
152.5°	1476.6	1477.3	1478.0	1478.7	1479.4	1480.0	1480.2	1480.4	1480.7	1480.9	1481.6
155°	1532.8	1532.8	1532.8	1532.8	1532.8	1532.7	1532.3	1532.0	1531.8	1531.4	1532.7
157.5°	1580.1	1579.6	1579.0	1578.5	1578.0	1577.7	1577.6	1577.5	1577.5	1577.4	1578.3
160°	1608.1	1607.8	1607.5	1607.2	1606.9	1606.6	1606.3	1606.0	1605.7	1605.4	1606.3
162.5°	1633.9	1633.2	1632.4	1631.6	1630.8	1630.2	1630.0	1629.7	1629.3	1629.1	1630.7
165°	1668.6	1667.7	1666.8	1665.9	1665.0	1664.3	1663.7	1663.0	1662.5	1661.9	1663.7
167.5°	1695.2	1694.0	1692.7	1691.5	1690.2	1689.6	1689.7	1689.7	1689.8	1689.9	1691.7
170°	1710.3	1708.8	1707.3	1705.8	1704.3	1703.7	1704.0	1704.3	1704.6	1704.9	1706.6
172.5°	1721.0	1719.8	1718.5	1717.3	1716.0	1715.4	1715.5	1715.6	1715.6	1715.7	1717.7
175°	1735.8	1734.3	1732.9	1731.3	1729.8	1728.9	1728.7	1728.3	1728.0	1727.8	1729.8
177.5°	1740.6	1739.5	1738.3	1737.1	1735.9	1735.3	1735.3	1735.3	1735.3	1735.3	1737.0
180°	1738.5	1738.5	1738.5	1738.5	1738.5	1738.5	1738.5	1738.5	1738.5	1738.5	1738.5



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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°	34.0	34.3	34.7	35.0	35.0	35.1	35.3	35.4
90°	33.2	35.0	36.7	38.0	38.5	39.1	39.8	40.3
92.5°	55.4	56.4	57.5	58.2	58.6	58.9	59.3	59.7
95°	104.0	104.9	105.8	106.2	106.2	106.2	106.2	106.2
97.5°	163.8	164.9	165.9	166.5	166.5	166.5	166.5	166.5
100°	206.9	207.5	208.1	208.4	208.4	208.4	208.4	208.4
102.5°	252.5	253.4	254.2	254.8	255.0	255.3	255.5	255.7
105°	321.8	322.7	323.6	324.5	325.4	326.3	327.2	328.1
107.5°	396.7	397.5	398.4	398.8	398.7	398.7	398.6	398.5
110°	446.6	445.9	445.3	445.5	446.4	447.3	448.2	449.1



TEST NUMBER: P332864-940

CATALOG NUMBER: S124DIW-S1195D1560U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	500.2	500.1	500.0	500.0	500.2	500.3	500.5	500.7
115°	582.9	582.6	582.4	582.0	581.8	581.5	581.1	580.9
117.5°	662.5	661.5	660.4	659.6	659.0	658.4	657.8	657.2
120°	716.3	714.9	713.4	712.9	713.5	714.1	714.7	715.3
122.5°	771.1	770.1	769.1	768.0	767.0	765.9	764.8	763.8
125°	851.2	850.7	850.1	849.4	848.8	848.3	847.7	847.0
127.5°	927.9	927.3	926.7	926.1	925.7	925.2	924.7	924.3
130°	981.7	981.1	980.4	979.5	978.4	977.2	976.0	974.8
132.5°	1032.2	1031.6	1031.0	1030.5	1030.0	1029.6	1029.0	1028.6
135°	1108.0	1107.5	1106.9	1106.1	1105.2	1104.3	1103.4	1102.5
137.5°	1181.4	1180.6	1179.8	1179.6	1179.7	1179.9	1180.1	1180.3
140°	1229.7	1229.4	1229.0	1228.8	1228.5	1228.2	1227.9	1227.6
142.5°	1275.3	1275.2	1275.2	1275.1	1275.1	1275.1	1275.0	1274.9
145°	1344.0	1343.6	1343.4	1342.7	1341.8	1341.0	1340.1	1339.2
147.5°	1406.2	1406.0	1405.7	1405.4	1405.2	1404.9	1404.5	1404.3
150°	1445.4	1445.4	1445.4	1445.3	1444.9	1444.7	1444.4	1444.0
152.5°	1482.3	1483.0	1483.7	1483.7	1482.9	1482.2	1481.4	1480.6
155°	1533.8	1535.0	1536.2	1536.2	1535.0	1533.8	1532.7	1531.4
157.5°	1579.2	1580.1	1581.0	1580.9	1579.9	1579.0	1577.9	1576.9
160°	1607.2	1608.1	1609.0	1608.6	1607.2	1605.7	1604.2	1602.7
162.5°	1632.3	1633.9	1635.5	1635.6	1634.1	1632.6	1631.1	1629.6
165°	1665.4	1667.2	1669.0	1669.4	1668.1	1667.0	1665.7	1664.6
167.5°	1693.4	1695.2	1697.0	1697.0	1695.1	1693.3	1691.4	1689.5
170°	1708.5	1710.3	1712.1	1711.9	1709.9	1707.7	1705.7	1703.5
172.5°	1719.8	1721.7	1723.8	1723.8	1721.6	1719.6	1717.4	1715.4
175°	1732.0	1734.0	1736.2	1736.2	1734.0	1732.0	1729.8	1727.8
177.5°	1738.7	1740.3	1742.0	1741.9	1739.9	1738.0	1736.2	1734.2
180°	1738.5	1738.5	1738.5	1738.5	1738.5	1738.5	1738.5	1738.5

(END OF REPORT)