

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: P332863-940

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332863-940
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: S124DIW-S1195D1560U940-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1560 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10126.8 lumens
Efficiency: N/A
Efficacy: 122.2 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

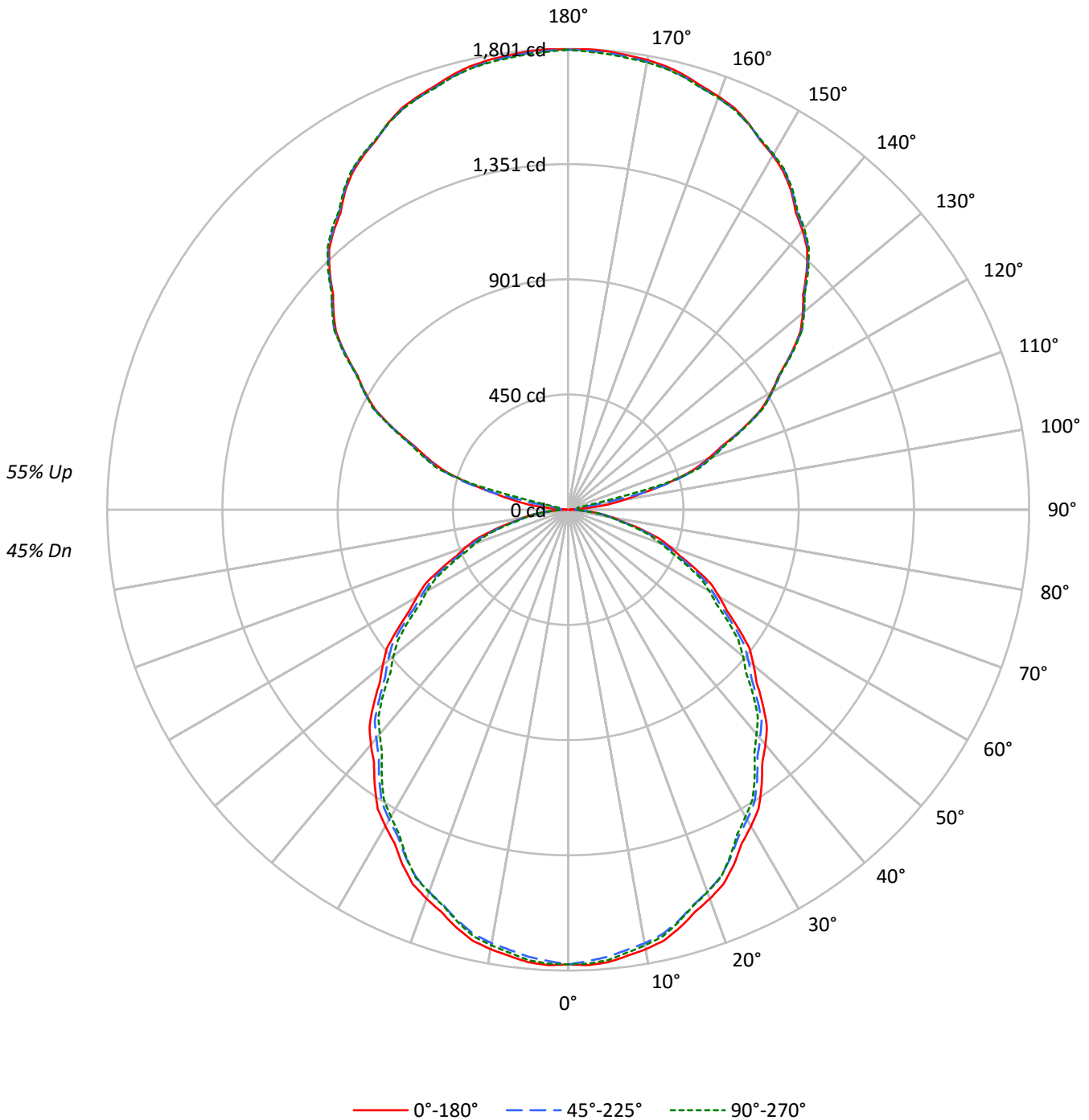
Input Watts (W): 82.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	106	106	106	106	97	97	97	97	81	81	81	65	65	65	52	52	52	45
1	97	92	88	85	88	85	81	78	71	68	66	58	56	54	46	44	43	38
2	88	81	74	69	80	74	69	64	62	58	55	51	48	45	40	38	37	32
3	80	71	64	58	73	65	59	54	55	50	46	45	41	38	35	33	31	27
4	73	63	55	49	67	58	51	46	48	43	39	40	36	33	32	29	27	23
5	67	56	48	42	61	51	44	39	43	38	34	36	32	28	29	26	23	20
6	62	50	42	36	57	46	39	34	39	33	29	32	28	25	26	23	21	18
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	24	21	18	16
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	16	14
9	49	37	30	25	45	35	28	23	29	24	20	25	21	18	20	17	15	13
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	19	16	13	11

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	1.7
10°-20°	471.5	4.7
20°-30°	694.0	6.9
30°-40°	806.8	8.0
40°-50°	806.8	8.0
50°-60°	705.8	7.0
60°-70°	524.1	5.2
70°-80°	297.8	2.9
80°-90°	91.1	0.9
90°-100°	61.5	0.6
100°-110°	392.1	3.9
110°-120°	750.0	7.4
120°-130°	952.1	9.4
130°-140°	1018.7	10.1
140°-150°	952.6	9.4
150°-160°	768.2	7.6
160°-170°	495.5	4.9
170°-180°	170.8	1.7
0°-30°	1332.9	13.2
0°-40°	2139.7	21.1
0°-60°	3652.3	36.1
0°-90°	4565.3	45.1
90°-120°	1203.6	11.9
90°-150°	4127.0	40.8
90°-180°	5561.0	54.9
0°-180°	10126.8	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	8
95°	74	31	30	37	39	95
105°	405	413	420	428	383	423
115°	756	759	758	761	761	743
125°	1062	1067	1065	1069	1070	948
135°	1318	1317	1322	1325	1327	1015
145°	1520	1523	1524	1525	1528	949
155°	1666	1667	1663	1668	1665	768
165°	1758	1751	1751	1760	1750	496
175°	1798	1790	1791	1802	1787	171
180°	1798	1798	1798	1798	1798	



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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°	16.9	17.1	17.3	17.5	17.7	18.9	21.3	23.7	26.1	28.5	30.3
95°	73.9	63.8	53.7	43.5	33.3	28.4	28.7	29.0	29.2	29.6	31.4
97.5°	157.0	163.4	169.7	176.1	182.4	168.9	135.5	102.2	68.8	35.5	35.7
100°	220.5	226.0	231.3	236.7	242.0	224.1	182.9	141.6	100.4	59.2	54.1
102.5°	291.5	295.5	299.4	303.4	307.3	306.6	301.2	295.9	290.4	285.1	230.2
105°	404.7	406.5	408.3	410.2	412.0	413.6	415.1	416.6	418.0	419.5	422.2
107.5°	509.9	510.9	511.8	512.6	513.5	515.0	517.0	519.1	521.0	523.1	524.4
110°	580.9	581.8	582.7	583.6	584.5	585.9	587.6	589.4	591.2	593.0	593.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	649.8	651.4	653.0	654.6	656.2	657.5	658.3	659.2	660.0	660.8	660.7
115°	755.7	756.6	757.5	758.4	759.3	759.6	759.3	759.0	758.8	758.4	759.0
117.5°	851.2	852.4	853.6	854.8	856.0	856.9	857.6	858.3	858.9	859.5	859.4
120°	915.8	916.9	918.2	919.4	920.5	921.0	920.7	920.4	920.1	919.8	920.4
122.5°	976.0	976.7	977.4	978.1	978.9	979.5	979.9	980.3	980.7	981.1	981.5
125°	1062.4	1063.5	1064.7	1066.0	1067.1	1067.4	1066.8	1066.2	1065.6	1065.1	1066.0
127.5°	1144.1	1144.4	1144.7	1145.0	1145.3	1146.1	1147.5	1148.9	1150.2	1151.6	1151.5
130°	1196.9	1197.1	1197.4	1197.7	1198.0	1198.6	1199.5	1200.4	1201.3	1202.2	1202.5
132.5°	1245.2	1245.7	1246.3	1246.9	1247.4	1248.2	1249.4	1250.4	1251.6	1252.8	1253.0
135°	1317.9	1317.5	1317.2	1317.0	1316.6	1317.1	1318.3	1319.5	1320.7	1321.9	1322.5
137.5°	1382.2	1382.2	1382.3	1382.5	1382.6	1383.3	1384.6	1386.0	1387.2	1388.6	1389.2
140°	1424.1	1424.7	1425.3	1425.8	1426.5	1427.1	1427.6	1428.3	1428.9	1429.4	1430.4
142.5°	1461.7	1462.8	1463.9	1465.0	1466.1	1466.8	1467.1	1467.5	1467.8	1468.2	1468.8
145°	1519.6	1520.5	1521.3	1522.2	1523.1	1523.6	1523.6	1523.6	1523.6	1523.6	1523.8
147.5°	1565.6	1567.2	1568.9	1570.6	1572.3	1572.9	1572.6	1572.4	1572.0	1571.7	1572.0
150°	1598.9	1600.1	1601.2	1602.5	1603.7	1604.1	1603.8	1603.6	1603.2	1602.9	1602.9
152.5°	1626.8	1627.8	1628.8	1629.7	1630.7	1630.9	1630.3	1629.8	1629.2	1628.7	1629.2
155°	1666.2	1666.4	1666.7	1667.1	1667.3	1667.1	1666.2	1665.3	1664.4	1663.4	1664.6
157.5°	1699.2	1699.1	1698.9	1698.7	1698.5	1697.9	1696.8	1695.9	1694.9	1693.8	1695.4
160°	1718.6	1717.7	1716.8	1715.9	1715.0	1714.4	1714.0	1713.8	1713.5	1713.2	1715.0
162.5°	1735.8	1734.6	1733.5	1732.4	1731.3	1730.5	1730.2	1729.9	1729.7	1729.3	1731.1
165°	1757.6	1756.0	1754.6	1753.1	1751.6	1750.9	1750.9	1750.9	1750.9	1750.9	1753.2
167.5°	1774.8	1773.3	1771.7	1770.1	1768.5	1767.7	1767.5	1767.4	1767.2	1767.0	1769.6
170°	1784.5	1782.7	1780.8	1779.1	1777.3	1776.6	1776.8	1777.2	1777.4	1777.7	1780.1
172.5°	1790.9	1789.1	1787.3	1785.6	1783.8	1783.0	1783.3	1783.6	1783.9	1784.2	1786.5
175°	1797.9	1796.1	1794.3	1792.5	1790.7	1790.0	1790.3	1790.6	1790.9	1791.2	1793.9
177.5°	1801.2	1799.5	1797.8	1796.1	1794.5	1793.9	1794.3	1794.8	1795.3	1795.7	1797.7
180°	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9



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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°	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°	32.1	33.9	35.7	36.6	36.7	36.9	37.0	37.1
95°	33.2	35.0	36.7	37.8	38.1	38.4	38.7	39.0
97.5°	35.8	36.0	36.2	36.5	36.7	37.1	37.4	37.6
100°	49.0	44.0	38.9	36.5	36.7	37.1	37.4	37.6
102.5°	175.5	120.6	65.9	38.5	38.5	38.6	38.7	38.7
105°	424.9	427.7	430.3	426.2	415.5	404.7	394.0	383.3
107.5°	525.8	527.1	528.3	529.6	530.7	531.8	533.0	534.1
110°	594.2	594.9	595.4	596.2	597.1	598.0	598.9	599.8



TEST NUMBER: P332863-940

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	660.6	660.4	660.3	660.8	662.0	663.1	664.2	665.4
115°	759.6	760.2	760.8	761.2	761.2	761.2	761.2	761.2
117.5°	859.3	859.2	859.1	859.0	858.8	858.7	858.6	858.4
120°	921.0	921.6	922.2	922.2	921.6	921.0	920.4	919.8
122.5°	981.9	982.2	982.6	982.4	981.9	981.2	980.6	980.1
125°	1066.8	1067.7	1068.6	1069.3	1069.5	1069.8	1070.1	1070.4
127.5°	1151.3	1151.1	1150.9	1150.7	1150.5	1150.2	1150.0	1149.8
130°	1202.8	1203.1	1203.4	1203.5	1203.5	1203.5	1203.5	1203.5
132.5°	1253.4	1253.7	1253.9	1254.0	1253.7	1253.5	1253.3	1253.0
135°	1323.0	1323.7	1324.3	1324.9	1325.4	1326.1	1326.7	1327.2
137.5°	1389.9	1390.5	1391.2	1391.4	1391.2	1391.1	1390.9	1390.7
140°	1431.3	1432.2	1433.1	1433.6	1434.0	1434.2	1434.5	1434.9
142.5°	1469.5	1470.2	1470.8	1471.1	1471.2	1471.3	1471.3	1471.4
145°	1524.2	1524.5	1524.7	1525.3	1525.8	1526.4	1527.1	1527.6
147.5°	1572.2	1572.4	1572.7	1573.0	1573.2	1573.5	1573.9	1574.1
150°	1602.9	1602.9	1602.9	1603.1	1603.4	1603.7	1604.0	1604.3
152.5°	1629.7	1630.1	1630.7	1630.8	1630.6	1630.4	1630.2	1630.0
155°	1665.8	1667.1	1668.2	1668.4	1667.5	1666.6	1665.7	1664.8
157.5°	1696.9	1698.5	1700.0	1700.0	1698.5	1696.9	1695.4	1693.8
160°	1716.8	1718.6	1720.4	1720.4	1718.6	1716.8	1715.0	1713.2
162.5°	1733.0	1734.7	1736.5	1736.3	1734.4	1732.3	1730.3	1728.2
165°	1755.6	1758.0	1760.4	1760.2	1757.6	1754.9	1752.2	1749.5
167.5°	1772.3	1774.9	1777.5	1777.4	1774.3	1771.4	1768.4	1765.4
170°	1782.5	1784.9	1787.3	1787.0	1784.0	1781.0	1778.1	1775.0
172.5°	1789.0	1791.4	1793.8	1793.3	1790.1	1786.9	1783.7	1780.4
175°	1796.5	1799.3	1802.0	1801.5	1797.9	1794.3	1790.7	1787.2
177.5°	1799.6	1801.5	1803.4	1803.0	1800.1	1797.2	1794.3	1791.4
180°	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9	1797.9

(END OF REPORT)