

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: P332233-840

Luminaire Tested: **S123DIW-S1165D1320U840-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332233-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S1165D1320U840-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9428.4 lumens
Efficiency: N/A
Efficacy: 123.7 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: General Diffuse

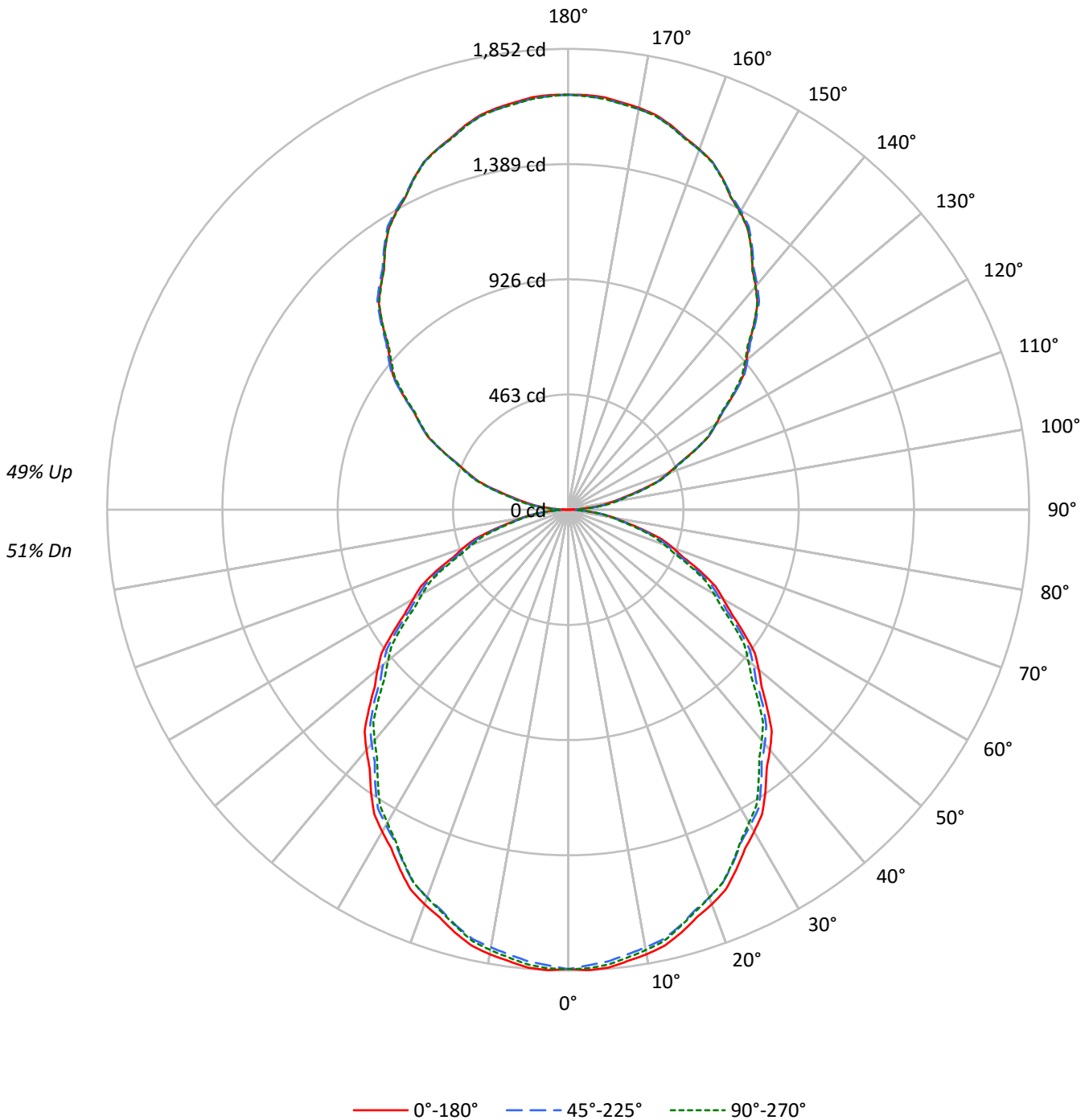
Input Watts (W): 76.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	51
1	98	94	90	86	90	87	83	80	73	71	69	61	60	58	50	49	48	43
2	89	82	75	70	82	76	70	66	64	60	57	54	51	48	44	42	40	36
3	81	72	64	59	75	67	60	55	57	52	48	48	44	41	39	37	34	30
4	74	63	56	49	68	59	52	46	50	45	41	42	38	35	35	32	30	26
5	68	57	48	42	63	53	45	40	45	39	35	38	34	30	32	28	26	23
6	63	51	43	37	58	47	40	35	41	35	31	34	30	27	29	25	23	20
7	58	46	38	32	54	43	36	30	37	31	27	31	27	24	26	23	20	18
8	54	42	34	28	50	39	32	27	34	28	24	29	24	21	24	21	18	16
9	50	38	30	25	46	35	29	24	31	25	21	26	22	19	22	19	16	14
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	21	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	19871	19871	19871
5°	19966	19690	19827
10°	19831	19519	19641
15°	19601	19299	19334
20°	19329	18984	19001
25°	18966	18608	18570
30°	18567	18191	18053
35°	18148	17751	17521
40°	17710	17265	16996
45°	17230	16818	16407
50°	16747	16268	15816
55°	16117	15700	15221
60°	15481	15035	14557
65°	14918	14314	13868
70°	14090	13489	12891
75°	12872	12410	11882
80°	11610	11120	11021
85°	10189	9806	9411



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	173.9	1.8
10°-20°	491.0	5.2
20°-30°	725.3	7.7
30°-40°	847.3	9.0
40°-50°	851.8	9.0
50°-60°	748.3	7.9
60°-70°	557.5	5.9
70°-80°	317.6	3.4
80°-90°	96.1	1.0
90°-100°	108.6	1.2
100°-110°	325.1	3.4
110°-120°	553.0	5.9
120°-130°	727.3	7.7
130°-140°	817.5	8.7
140°-150°	803.6	8.5
150°-160°	676.5	7.2
160°-170°	450.3	4.8
170°-180°	157.7	1.7
0°-30°	1390.3	14.7
0°-40°	2237.6	23.7
0°-60°	3837.7	40.7
0°-90°	4808.8	51.0
90°-120°	986.7	10.5
90°-150°	3335.1	35.4
90°-180°	4620.0	49.0
0°-180°	9428.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1846	1846	1846	1846	1846	
5°	1848	1839	1822	1837	1835	175
15°	1759	1752	1732	1743	1735	496
25°	1597	1587	1567	1568	1564	735
35°	1381	1371	1351	1341	1333	864
45°	1132	1125	1105	1086	1078	873
55°	859	856	837	820	811	769
65°	586	577	562	550	544	578
75°	310	303	298	291	286	331
85°	82	80	79	76	76	91
90°	1	15	31	37	39	9
95°	77	87	97	102	102	87
105°	295	298	309	309	312	316
115°	557	560	558	559	558	551
125°	815	818	816	811	806	726
135°	1057	1064	1064	1058	1056	814
145°	1282	1285	1289	1287	1282	801
155°	1468	1468	1470	1474	1466	676
165°	1599	1596	1595	1602	1594	451
175°	1663	1658	1658	1665	1657	158
180°	1667	1667	1667	1667	1667	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1
2.5°	1852.5	1851.4	1850.3	1849.2	1848.0	1845.8	1842.8	1839.7	1836.5	1833.4	1836.2
5°	1847.8	1846.0	1844.2	1842.5	1840.7	1837.9	1834.0	1830.1	1826.2	1822.3	1825.8
7.5°	1829.7	1827.9	1826.1	1824.3	1822.6	1819.7	1815.6	1811.7	1807.7	1803.6	1806.7
10°	1814.4	1812.6	1810.9	1809.1	1807.4	1804.2	1799.6	1795.0	1790.4	1785.8	1789.0
12.5°	1794.1	1792.6	1791.1	1789.7	1788.2	1785.2	1781.0	1776.7	1772.3	1768.1	1770.4
15°	1758.9	1757.5	1756.1	1754.6	1753.2	1750.2	1745.7	1741.0	1736.5	1731.8	1734.6
17.5°	1717.9	1716.1	1714.2	1712.4	1710.5	1707.4	1702.7	1698.2	1693.5	1689.0	1691.0
20°	1687.4	1685.3	1683.1	1681.0	1679.0	1675.6	1671.0	1666.5	1661.8	1657.3	1658.7
22.5°	1653.1	1651.0	1648.9	1646.8	1644.7	1641.3	1636.7	1632.1	1627.6	1623.0	1624.1
25°	1596.9	1594.8	1592.7	1590.5	1588.5	1585.1	1580.5	1576.0	1571.3	1566.8	1567.1
27.5°	1536.9	1534.9	1532.9	1530.8	1528.7	1525.3	1520.4	1515.4	1510.5	1505.5	1505.8
30°	1493.8	1492.0	1490.3	1488.4	1486.7	1483.4	1478.4	1473.5	1468.5	1463.6	1463.6
32.5°	1450.6	1448.2	1445.9	1443.6	1441.3	1438.1	1434.4	1430.6	1426.7	1423.0	1421.0
35°	1381.1	1379.0	1376.8	1374.7	1372.6	1369.3	1364.6	1360.1	1355.4	1350.9	1348.8
37.5°	1309.9	1307.3	1304.5	1301.9	1299.2	1295.6	1290.9	1286.3	1281.6	1276.9	1274.3
40°	1260.4	1258.3	1256.2	1254.1	1251.9	1248.4	1243.4	1238.5	1233.6	1228.7	1225.9
42.5°	1210.8	1208.5	1206.1	1203.7	1201.2	1197.6	1192.7	1187.7	1182.8	1177.9	1175.1
45°	1131.9	1130.4	1129.0	1127.6	1126.2	1123.2	1118.6	1114.0	1109.4	1104.8	1100.7
47.5°	1053.4	1051.4	1049.4	1047.2	1045.2	1042.1	1037.7	1033.4	1029.2	1024.8	1020.7
50°	1000.1	998.4	996.5	994.8	993.0	989.9	985.2	980.7	976.0	971.5	967.7
52.5°	944.2	943.0	941.8	940.6	939.4	936.3	931.5	926.7	921.8	916.9	913.5
55°	858.8	858.5	858.1	857.8	857.4	855.0	850.3	845.8	841.1	836.6	832.7
57.5°	777.5	776.3	775.1	774.0	772.7	770.3	766.6	763.0	759.3	755.6	752.1
60°	719.1	718.7	718.4	718.0	717.7	715.4	711.1	706.9	702.7	698.4	695.3
62.5°	667.0	666.1	665.2	664.3	663.4	660.8	656.5	652.3	648.1	643.9	640.7
65°	585.7	584.0	582.2	580.5	578.7	576.0	572.5	569.0	565.4	562.0	559.2
67.5°	499.7	498.2	496.7	495.0	493.5	491.4	488.7	486.0	483.3	480.7	478.2
70°	447.7	445.6	443.4	441.3	439.2	437.1	434.9	432.8	430.7	428.6	426.2
72.5°	393.0	391.5	389.9	388.4	386.9	384.9	382.4	380.0	377.7	375.3	373.0
75°	309.5	308.1	306.7	305.3	303.9	302.7	301.6	300.5	299.5	298.4	296.7
77.5°	235.6	234.8	234.0	233.3	232.5	231.5	230.1	228.9	227.6	226.4	225.2
80°	187.3	186.2	185.2	184.1	183.1	182.2	181.5	180.8	180.1	179.4	179.0
82.5°	140.4	140.1	139.9	139.7	139.5	139.3	139.2	139.1	138.9	138.8	138.1
85°	82.5	81.8	81.1	80.4	79.7	79.4	79.4	79.4	79.4	79.4	78.7
87.5°	33.3	33.0	32.7	32.5	32.2	32.3	32.8	33.3	33.7	34.2	34.1
90°	1.3	4.2	7.2	10.0	12.9	16.3	20.1	23.8	27.7	31.4	32.6
92.5°	31.7	33.6	35.6	37.7	39.6	41.7	43.8	45.9	48.2	50.3	51.2
95°	77.3	79.3	81.4	83.4	85.4	87.7	90.0	92.3	94.6	96.9	98.1
97.5°	137.2	138.8	140.3	141.8	143.3	144.9	146.6	148.2	150.0	151.7	153.0
100°	178.1	179.9	181.6	183.4	185.1	186.7	188.1	189.7	191.1	192.6	193.4
102.5°	225.3	226.3	227.4	228.4	229.4	231.0	232.9	234.8	236.7	238.6	239.5
105°	294.7	295.3	295.9	296.4	297.0	298.6	301.2	303.9	306.5	309.1	309.1
107.5°	375.4	375.8	376.1	376.5	376.8	377.5	378.5	379.6	380.6	381.6	382.6
110°	425.7	426.3	426.9	427.4	428.0	428.6	429.2	429.8	430.3	430.9	432.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	478.1	478.4	478.8	479.1	479.5	479.7	479.8	479.9	480.1	480.2	481.6
115°	556.6	557.5	558.4	559.3	560.2	560.3	559.7	559.2	558.6	558.0	558.3
117.5°	635.8	636.3	636.9	637.5	638.1	638.0	637.2	636.5	635.7	635.0	634.9
120°	685.0	686.7	688.5	690.2	692.0	692.2	690.6	689.2	687.8	686.3	686.0
122.5°	736.4	737.6	738.9	740.2	741.4	741.7	740.9	740.2	739.4	738.7	737.9
125°	814.7	815.6	816.4	817.3	818.2	818.3	817.7	817.2	816.6	816.0	814.9
127.5°	887.0	888.9	890.7	892.5	894.4	895.0	894.4	893.7	893.1	892.5	890.8
130°	935.1	937.5	939.9	942.2	944.5	945.2	944.3	943.5	942.6	941.7	940.6
132.5°	983.4	985.7	988.1	990.4	992.7	993.5	992.9	992.3	991.6	991.0	989.6
135°	1057.0	1058.7	1060.5	1062.2	1064.0	1064.7	1064.4	1064.1	1063.8	1063.5	1062.4
137.5°	1125.1	1126.5	1128.0	1129.4	1130.9	1132.1	1132.8	1133.6	1134.3	1135.1	1133.8
140°	1172.3	1173.7	1175.2	1176.6	1178.1	1178.9	1179.2	1179.5	1179.8	1180.1	1179.8
142.5°	1215.2	1216.7	1218.1	1219.6	1221.0	1222.0	1222.5	1223.0	1223.6	1224.2	1223.9
145°	1282.2	1282.8	1283.4	1284.0	1284.5	1285.4	1286.2	1287.1	1288.0	1288.8	1288.5
147.5°	1340.9	1342.0	1343.0	1344.1	1345.1	1346.0	1346.9	1347.7	1348.5	1349.3	1349.3
150°	1381.8	1382.4	1383.0	1383.5	1384.1	1384.7	1385.3	1385.8	1386.4	1387.0	1387.0
152.5°	1415.3	1416.1	1416.9	1417.7	1418.6	1419.2	1419.6	1419.9	1420.3	1420.6	1421.1
155°	1468.2	1468.2	1468.2	1468.2	1468.2	1468.4	1468.6	1468.9	1469.3	1469.6	1470.8
157.5°	1513.3	1513.0	1512.6	1512.3	1511.9	1511.9	1512.1	1512.3	1512.6	1512.8	1514.0
160°	1541.6	1541.1	1540.4	1539.8	1539.2	1538.9	1538.9	1538.9	1538.9	1538.9	1540.4
162.5°	1566.7	1565.9	1565.1	1564.3	1563.5	1563.2	1563.5	1563.7	1563.9	1564.1	1565.6
165°	1599.2	1598.3	1597.5	1596.6	1595.8	1595.3	1595.3	1595.3	1595.3	1595.3	1597.0
167.5°	1625.2	1624.0	1622.9	1621.6	1620.5	1620.0	1620.2	1620.5	1620.7	1620.9	1622.8
170°	1639.8	1638.7	1637.5	1636.4	1635.2	1634.6	1634.6	1634.6	1634.6	1634.6	1636.6
172.5°	1651.3	1650.2	1649.0	1647.9	1646.7	1646.1	1646.1	1646.1	1646.1	1646.1	1647.9
175°	1663.4	1662.2	1661.1	1659.9	1658.7	1658.2	1658.2	1658.2	1658.2	1658.2	1659.9
177.5°	1668.4	1667.5	1666.5	1665.6	1664.7	1664.2	1664.2	1664.2	1664.2	1664.2	1665.6
180°	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1	1846.1
2.5°	1839.1	1841.9	1844.7	1846.0	1845.7	1845.4	1845.1	1844.9
5°	1829.4	1832.9	1836.4	1837.9	1837.1	1836.4	1835.7	1835.0
7.5°	1810.0	1813.1	1816.3	1817.7	1817.3	1816.8	1816.4	1816.0
10°	1792.2	1795.3	1798.6	1799.8	1799.1	1798.4	1797.7	1797.0
12.5°	1772.7	1775.0	1777.4	1778.4	1777.9	1777.5	1777.1	1776.7
15°	1737.5	1740.3	1743.1	1743.5	1741.4	1739.3	1737.2	1735.0
17.5°	1692.9	1695.0	1696.9	1697.5	1696.8	1696.0	1695.2	1694.5
20°	1660.1	1661.5	1662.9	1663.0	1662.0	1660.9	1659.9	1658.8
22.5°	1625.3	1626.4	1627.5	1627.4	1626.1	1624.7	1623.4	1622.0
25°	1567.5	1567.8	1568.2	1567.8	1566.8	1565.7	1564.7	1563.6
27.5°	1506.1	1506.3	1506.6	1506.1	1504.8	1503.4	1502.1	1500.8
30°	1463.6	1463.6	1463.6	1462.4	1459.9	1457.4	1454.9	1452.5
32.5°	1419.0	1417.0	1415.0	1413.4	1412.1	1410.7	1409.4	1408.1
35°	1346.7	1344.5	1342.4	1340.5	1338.7	1337.0	1335.1	1333.4
37.5°	1271.8	1269.3	1266.8	1265.0	1263.7	1262.6	1261.5	1260.4
40°	1223.0	1220.2	1217.4	1215.3	1213.9	1212.4	1211.0	1209.6
42.5°	1172.3	1169.4	1166.6	1164.5	1163.1	1161.6	1160.2	1158.8
45°	1096.4	1092.2	1087.9	1084.9	1083.2	1081.4	1079.6	1077.8
47.5°	1016.5	1012.4	1008.1	1005.3	1003.8	1002.2	1000.7	999.2
50°	963.7	959.9	955.9	953.0	950.9	948.8	946.6	944.5
52.5°	910.3	907.0	903.6	900.9	898.8	896.7	894.5	892.4
55°	828.8	825.0	821.0	818.2	816.5	814.7	812.9	811.1
57.5°	748.7	745.3	741.7	739.0	737.0	735.0	732.9	730.8
60°	692.2	688.9	685.8	683.3	681.6	679.7	678.0	676.2
62.5°	637.5	634.3	631.2	628.9	627.7	626.5	625.4	624.2
65°	556.3	553.5	550.7	548.8	547.6	546.6	545.5	544.5
67.5°	475.7	473.2	470.8	468.8	467.4	465.9	464.3	462.9
70°	423.6	421.2	418.7	416.6	414.9	413.0	411.3	409.6
72.5°	370.9	368.7	366.5	365.0	364.1	363.1	362.2	361.3
75°	294.9	293.2	291.3	289.9	288.9	287.8	286.8	285.7
77.5°	224.0	222.8	221.6	221.0	221.0	221.0	221.0	221.0
80°	178.6	178.3	177.9	177.8	177.8	177.8	177.8	177.8
82.5°	137.4	136.8	136.2	135.7	135.4	135.2	134.9	134.6
85°	78.0	77.3	76.5	76.2	76.2	76.2	76.2	76.2
87.5°	34.1	34.0	34.0	34.0	34.1	34.3	34.4	34.5
90°	33.7	34.9	36.1	37.0	37.6	38.2	38.7	39.3
92.5°	52.1	53.1	54.0	54.3	53.9	53.6	53.2	52.9
95°	99.3	100.4	101.6	102.2	102.2	102.2	102.2	102.2
97.5°	154.3	155.7	157.0	157.6	157.5	157.4	157.3	157.1
100°	194.3	195.1	196.0	196.7	197.3	197.9	198.5	199.0
102.5°	240.3	241.3	242.2	242.5	242.4	242.3	242.2	242.1
105°	309.1	309.1	309.1	309.4	310.0	310.5	311.1	311.7
107.5°	383.5	384.5	385.4	385.7	385.4	385.0	384.7	384.3
110°	433.2	434.4	435.6	435.9	435.3	434.7	434.1	433.5



TEST NUMBER: P332233-840

CATALOG NUMBER: S123DIW-S1165D1320U840-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	482.9	484.3	485.7	486.4	486.3	486.1	486.0	485.9
115°	558.6	558.9	559.2	559.2	558.9	558.6	558.3	558.0
117.5°	634.9	634.8	634.7	634.3	633.5	632.7	631.9	631.1
120°	685.7	685.5	685.2	684.7	684.2	683.6	683.0	682.4
122.5°	737.2	736.4	735.7	734.9	734.1	733.3	732.5	731.6
125°	813.6	812.5	811.3	810.2	809.0	807.8	806.7	805.5
127.5°	889.2	887.6	886.0	884.4	883.1	881.8	880.5	879.1
130°	939.4	938.3	937.1	935.4	933.4	931.4	929.4	927.4
132.5°	988.2	986.7	985.4	983.9	982.3	980.8	979.2	977.7
135°	1061.2	1060.1	1058.8	1058.0	1057.4	1056.8	1056.2	1055.7
137.5°	1132.6	1131.4	1130.1	1129.0	1127.9	1126.8	1125.7	1124.6
140°	1179.5	1179.2	1178.9	1177.8	1175.8	1173.7	1171.6	1169.6
142.5°	1223.6	1223.2	1222.9	1222.0	1220.4	1218.9	1217.3	1215.8
145°	1288.2	1288.0	1287.7	1287.0	1285.8	1284.5	1283.4	1282.2
147.5°	1349.3	1349.3	1349.3	1348.5	1346.8	1344.9	1343.2	1341.5
150°	1387.0	1387.0	1387.0	1386.1	1384.4	1382.7	1380.9	1379.2
152.5°	1421.5	1422.0	1422.4	1421.9	1420.4	1418.9	1417.3	1415.8
155°	1471.9	1473.1	1474.2	1473.8	1471.8	1469.8	1467.6	1465.6
157.5°	1515.2	1516.4	1517.7	1517.4	1515.8	1514.2	1512.6	1511.0
160°	1541.9	1543.4	1544.8	1545.0	1543.8	1542.7	1541.5	1540.2
162.5°	1567.0	1568.5	1569.9	1569.7	1567.9	1566.0	1564.2	1562.3
165°	1598.8	1600.5	1602.3	1602.2	1600.1	1598.1	1596.0	1594.0
167.5°	1624.6	1626.4	1628.2	1628.2	1626.4	1624.6	1622.8	1620.9
170°	1638.7	1640.7	1642.7	1642.7	1640.7	1638.7	1636.6	1634.6
172.5°	1649.7	1651.5	1653.4	1653.3	1651.2	1649.1	1647.1	1645.1
175°	1661.6	1663.4	1665.2	1665.0	1662.9	1660.9	1658.9	1656.9
177.5°	1667.0	1668.4	1669.8	1669.7	1668.0	1666.4	1664.8	1663.1
180°	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4

(END OF REPORT)