

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: P332226-840

Luminaire Tested: **S123DIW-S1165D1030U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332226-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S1165D1030U840-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1030 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8971.1 lumens
Efficiency: N/A
Efficacy: 133.1 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

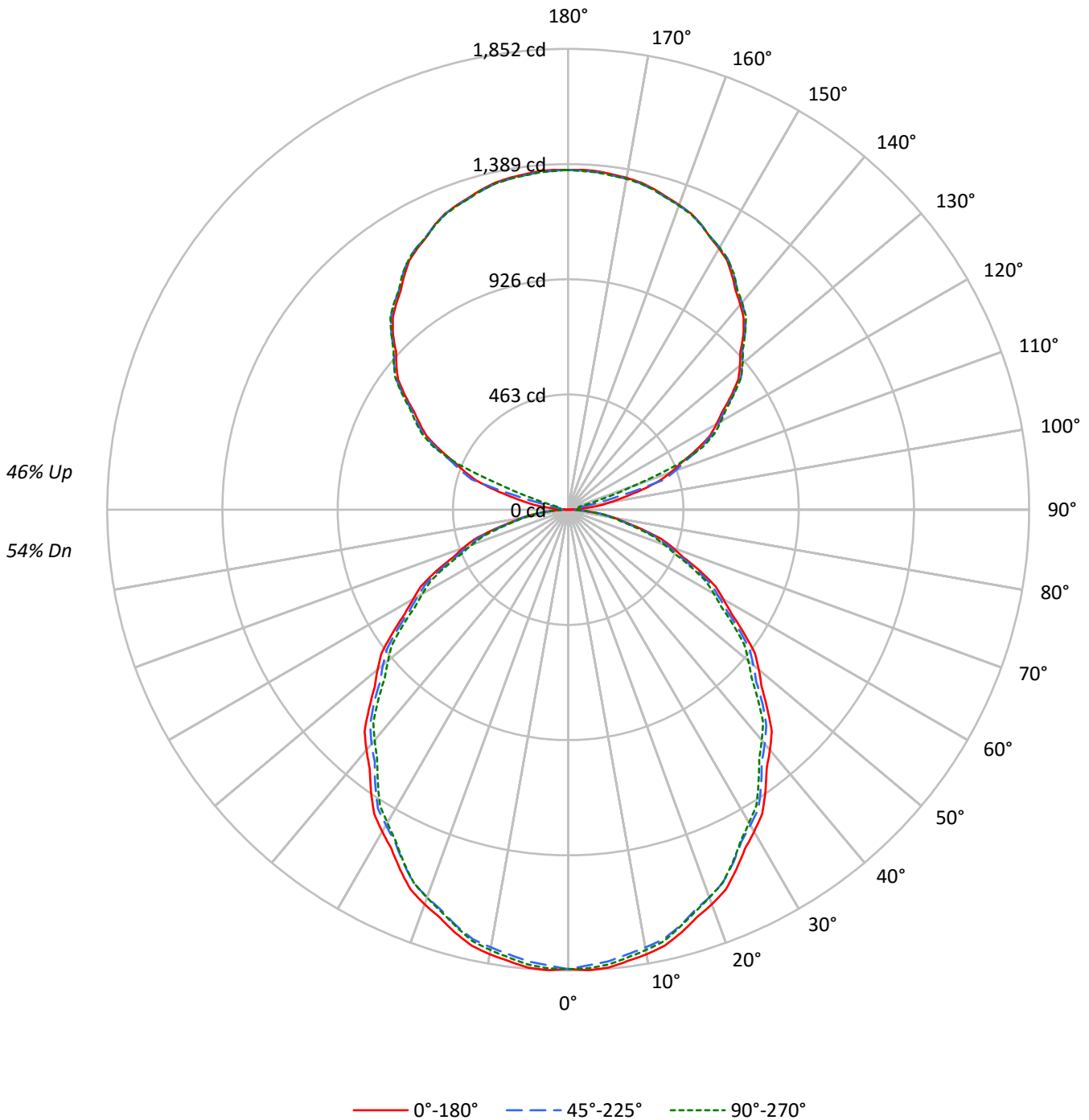
Input Watts (W): 67.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59	54
1	99	94	90	87	91	87	84	81	75	72	70	63	61	60	52	51	50	45
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42	38
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36	32
4	75	64	56	50	69	60	52	47	51	46	41	44	39	36	36	33	31	27
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	30	27	24
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24	21
7	59	46	38	32	54	43	36	31	37	32	27	32	28	24	27	24	21	18
8	54	42	34	29	50	39	32	27	34	28	24	29	25	22	25	21	19	16
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17	15
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	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	1.9
10°-20°	491.0	5.5
20°-30°	725.3	8.1
30°-40°	847.3	9.4
40°-50°	851.8	9.5
50°-60°	748.3	8.3
60°-70°	557.5	6.2
70°-80°	317.6	3.5
80°-90°	95.0	1.1
90°-100°	49.6	0.6
100°-110°	236.6	2.6
110°-120°	568.2	6.3
120°-130°	723.6	8.1
130°-140°	773.1	8.6
140°-150°	723.0	8.1
150°-160°	583.2	6.5
160°-170°	376.4	4.2
170°-180°	129.7	1.4
0°-30°	1390.3	15.5
0°-40°	2237.6	24.9
0°-60°	3837.7	42.8
0°-90°	4807.7	53.6
90°-120°	854.5	9.5
90°-150°	3074.2	34.3
90°-180°	4163.0	46.4
0°-180°	8971.1	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	11	24	28	30	7
95°	62	23	31	38	39	76
105°	302	308	222	53	45	320
115°	567	573	582	592	596	560
125°	799	807	811	813	816	714
135°	995	1001	1005	1008	1005	766
145°	1148	1155	1157	1159	1159	718
155°	1265	1263	1264	1268	1263	583
165°	1334	1331	1330	1337	1331	377
175°	1365	1361	1361	1368	1360	130
180°	1365	1365	1365	1365	1365	



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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°	33.2	32.8	32.4	32.0	31.6	31.6	31.9	32.2	32.5	32.8	32.7
90°	1.0	3.2	5.6	7.8	10.0	12.6	15.6	18.5	21.4	24.3	25.2
92.5°	18.9	18.3	17.6	17.0	16.4	17.2	19.4	21.5	23.7	26.0	27.4
95°	61.9	52.6	43.4	34.1	24.9	21.5	24.0	26.5	29.0	31.4	33.0
97.5°	124.3	120.2	116.0	111.9	107.8	97.6	81.4	65.1	48.9	32.6	34.4
100°	171.4	175.9	180.5	184.9	189.5	174.1	139.0	103.8	68.7	33.4	35.2
102.5°	225.0	228.2	231.5	234.7	237.9	220.4	182.0	143.6	105.1	66.8	61.2
105°	302.3	304.8	307.2	309.7	312.1	303.3	283.0	262.7	242.5	222.2	182.3
107.5°	383.8	385.8	387.8	389.8	391.7	394.4	397.6	400.7	403.9	407.2	377.9
110°	438.2	440.0	441.8	443.6	445.4	447.6	450.0	452.5	454.9	457.5	450.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	490.1	491.7	493.3	495.0	496.7	498.7	501.1	503.6	506.1	508.6	508.7
115°	567.0	568.4	569.7	571.1	572.4	574.1	576.1	578.1	580.2	582.2	584.5
117.5°	641.5	643.1	644.8	646.4	648.1	649.4	650.6	651.6	652.6	653.6	655.4
120°	687.7	689.7	691.8	693.8	695.8	697.2	697.8	698.5	699.2	699.8	701.7
122.5°	734.8	736.4	738.1	739.7	741.4	742.7	743.6	744.4	745.3	746.1	747.4
125°	799.3	801.1	802.8	804.7	806.5	807.9	808.7	809.6	810.5	811.4	811.9
127.5°	861.7	863.5	865.4	867.2	869.0	870.4	871.5	872.6	873.6	874.7	875.5
130°	900.7	902.5	904.3	906.2	908.0	909.3	910.2	911.1	912.0	912.9	913.8
132.5°	938.1	939.9	941.6	943.4	945.2	946.5	947.3	948.0	948.7	949.4	950.3
135°	995.0	996.4	997.7	999.1	1000.5	1001.6	1002.5	1003.4	1004.3	1005.2	1005.8
137.5°	1043.7	1045.4	1047.1	1048.8	1050.6	1051.7	1052.2	1052.7	1053.2	1053.7	1054.7
140°	1076.2	1077.5	1078.9	1080.3	1081.6	1082.6	1083.3	1084.0	1084.6	1085.3	1086.2
142.5°	1106.2	1107.5	1108.9	1110.2	1111.7	1112.7	1113.3	1114.0	1114.7	1115.3	1116.1
145°	1148.2	1149.7	1151.3	1153.0	1154.5	1155.5	1156.0	1156.4	1156.9	1157.3	1157.8
147.5°	1187.8	1188.8	1189.8	1190.8	1191.9	1192.7	1193.1	1193.6	1194.0	1194.5	1194.9
150°	1212.1	1212.7	1213.5	1214.2	1214.8	1215.4	1215.8	1216.3	1216.7	1217.2	1217.6
152.5°	1234.1	1234.4	1234.7	1235.0	1235.3	1235.6	1235.9	1236.1	1236.4	1236.7	1237.5
155°	1264.9	1264.4	1263.9	1263.5	1263.0	1262.9	1263.1	1263.3	1263.6	1263.8	1265.0
157.5°	1288.8	1288.8	1288.7	1288.7	1288.6	1288.5	1288.3	1288.0	1287.8	1287.6	1288.9
160°	1303.4	1303.1	1302.9	1302.7	1302.5	1302.2	1302.0	1301.8	1301.6	1301.4	1302.7
162.5°	1317.2	1316.6	1316.1	1315.5	1314.8	1314.4	1314.2	1314.0	1313.7	1313.5	1315.0
165°	1333.8	1333.1	1332.5	1331.8	1331.1	1330.7	1330.4	1330.2	1330.0	1329.8	1331.6
167.5°	1346.8	1345.9	1345.0	1344.1	1343.2	1342.7	1342.7	1342.7	1342.7	1342.7	1344.5
170°	1354.1	1353.2	1352.3	1351.4	1350.5	1350.1	1350.1	1350.1	1350.1	1350.1	1351.8
172.5°	1359.0	1357.9	1356.9	1355.7	1354.6	1354.2	1354.3	1354.5	1354.7	1354.9	1356.8
175°	1365.2	1364.1	1363.0	1361.9	1360.8	1360.3	1360.5	1360.8	1361.0	1361.2	1362.8
177.5°	1366.9	1365.9	1365.1	1364.2	1363.3	1362.9	1363.1	1363.3	1363.4	1363.6	1365.1
180°	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2



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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°	32.6	32.5	32.4	32.4	32.5	32.6	32.6	32.7
90°	26.2	27.1	28.0	28.6	29.1	29.5	30.0	30.4
92.5°	28.9	30.3	31.7	32.6	32.8	33.1	33.4	33.6
95°	34.6	36.2	37.8	38.6	38.6	38.6	38.6	38.6
97.5°	36.3	38.1	39.9	40.9	41.1	41.3	41.6	41.8
100°	37.1	38.9	40.7	41.7	41.9	42.1	42.4	42.6
102.5°	55.5	50.0	44.3	41.8	42.2	42.6	43.0	43.4
105°	142.4	102.4	62.5	42.8	43.3	43.7	44.1	44.6
107.5°	348.6	319.4	290.1	260.4	230.4	200.4	170.3	140.2
110°	442.6	435.2	427.7	407.9	375.7	343.4	311.1	278.9



TEST NUMBER: P332226-840

CATALOG NUMBER: S123DIW-S1165D1030U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	508.9	509.0	509.1	505.7	499.0	492.2	485.3	478.6
115°	586.7	589.0	591.3	592.8	593.7	594.6	595.5	596.4
117.5°	657.2	659.0	660.9	661.9	662.0	662.2	662.4	662.6
120°	703.5	705.3	707.1	708.0	708.0	708.0	708.0	708.0
122.5°	748.6	749.9	751.1	751.9	752.0	752.2	752.5	752.7
125°	812.3	812.8	813.2	813.7	814.2	814.6	815.1	815.5
127.5°	876.2	876.9	877.7	877.8	877.3	876.9	876.5	876.0
130°	914.7	915.5	916.5	916.8	916.3	915.8	915.3	914.9
132.5°	951.2	952.1	953.0	953.1	952.5	951.9	951.3	950.6
135°	1006.5	1007.2	1007.8	1007.8	1007.2	1006.5	1005.8	1005.2
137.5°	1055.8	1056.9	1058.0	1058.3	1057.8	1057.4	1056.9	1056.5
140°	1087.1	1088.0	1088.9	1089.1	1088.7	1088.2	1087.8	1087.3
142.5°	1116.8	1117.5	1118.2	1118.2	1117.6	1117.0	1116.4	1115.7
145°	1158.2	1158.7	1159.1	1159.3	1159.3	1159.3	1159.3	1159.3
147.5°	1195.4	1195.8	1196.3	1196.0	1195.0	1193.9	1192.9	1191.8
150°	1218.1	1218.5	1219.0	1218.9	1218.2	1217.5	1216.9	1216.2
152.5°	1238.3	1239.1	1239.9	1239.8	1238.7	1237.7	1236.7	1235.7
155°	1266.1	1267.2	1268.4	1268.2	1266.9	1265.6	1264.1	1262.8
157.5°	1290.3	1291.6	1292.9	1292.7	1291.0	1289.3	1287.5	1285.8
160°	1304.0	1305.5	1306.8	1306.7	1305.0	1303.5	1301.9	1300.3
162.5°	1316.6	1318.2	1319.7	1319.7	1318.4	1317.0	1315.6	1314.1
165°	1333.3	1335.1	1337.0	1337.1	1335.5	1333.9	1332.3	1330.8
167.5°	1346.4	1348.2	1350.0	1350.0	1348.2	1346.4	1344.5	1342.7
170°	1353.6	1355.4	1357.3	1357.3	1355.4	1353.6	1351.8	1350.1
172.5°	1358.6	1360.3	1362.1	1362.0	1360.1	1358.1	1356.0	1354.1
175°	1364.3	1365.9	1367.6	1367.5	1365.6	1363.8	1362.0	1360.2
177.5°	1366.5	1368.0	1369.4	1369.3	1367.5	1365.6	1363.8	1362.0
180°	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2	1365.2

(END OF REPORT)