

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: P332220-840

Luminaire Tested: **S123DIW-S1165D755U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332220-840
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-S1165D755U840-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 755 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7857.0 lumens
Efficiency: N/A
Efficacy: 131.4 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: Semi-Direct

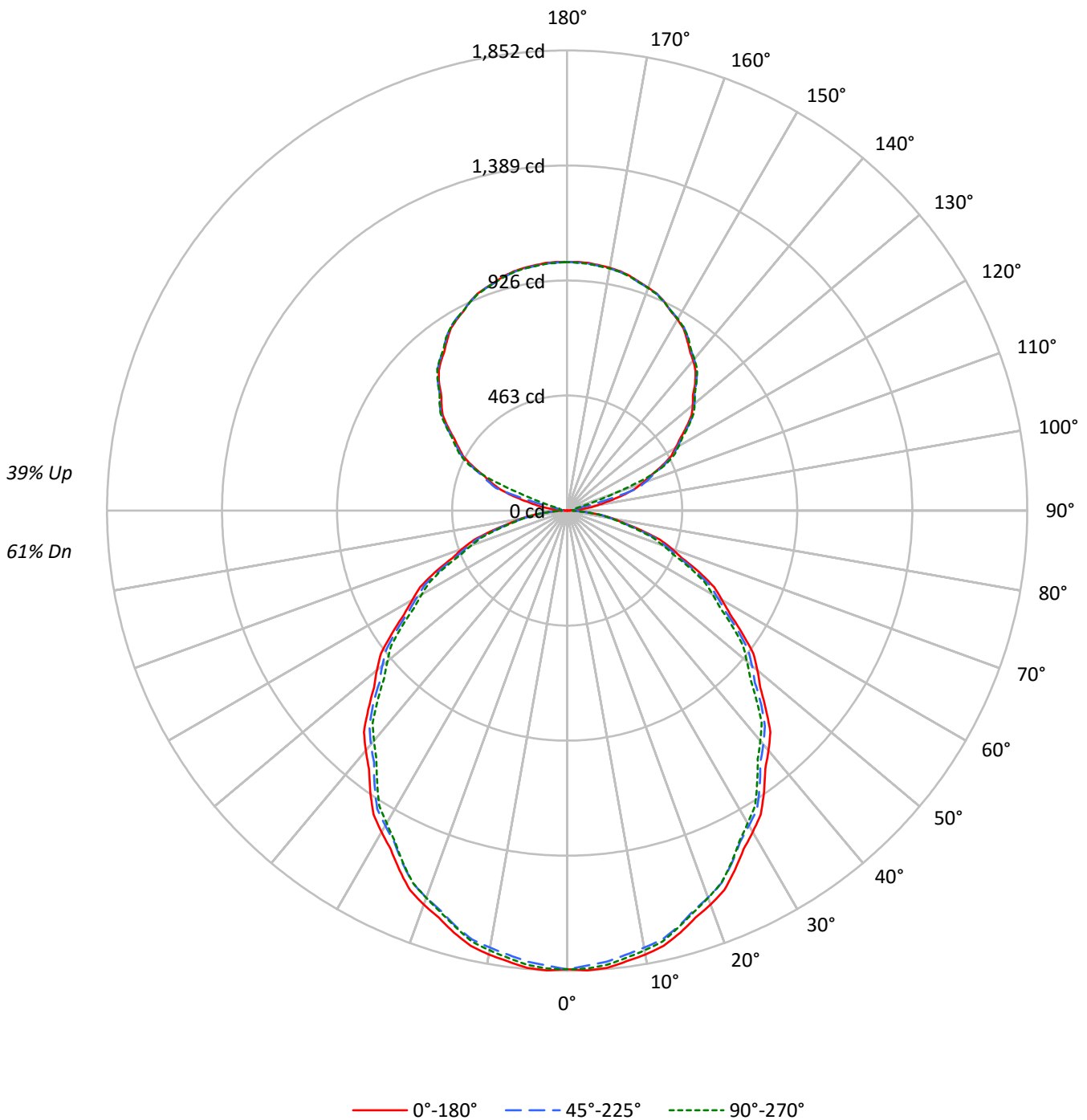
Input Watts (W): 59.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	110	110	110	110	103	103	103	103	90	90	90	77	77	77	66	66	66
1	100	96	92	88	94	90	86	83	78	76	73	68	66	64	59	57	56
2	91	84	77	72	85	78	73	68	69	64	61	60	57	54	52	49	47
3	83	73	66	60	78	69	62	57	61	55	51	53	49	45	46	43	40
4	76	65	57	51	71	61	54	48	54	48	44	47	43	39	41	37	34
5	70	58	50	44	65	55	47	42	48	42	38	42	38	34	37	33	30
6	64	52	44	38	60	49	42	36	44	37	33	38	33	30	33	29	26
7	60	47	39	33	56	44	37	32	39	33	29	35	30	26	30	27	24
8	55	43	35	29	52	41	33	28	36	30	26	32	27	23	28	24	21
9	52	39	32	26	48	37	30	25	33	27	23	29	25	21	26	22	19
10	48	36	29	24	45	34	27	23	31	25	21	27	22	19	24	20	17

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	2.2
10°-20°	491.0	6.2
20°-30°	725.3	9.2
30°-40°	847.3	10.8
40°-50°	851.8	10.8
50°-60°	748.3	9.5
60°-70°	557.5	7.1
70°-80°	317.6	4.0
80°-90°	94.0	1.2
90°-100°	36.4	0.5
100°-110°	173.3	2.2
110°-120°	416.3	5.3
120°-130°	530.1	6.7
130°-140°	566.4	7.2
140°-150°	529.7	6.7
150°-160°	427.3	5.4
160°-170°	275.7	3.5
170°-180°	95.0	1.2
0°-30°	1390.3	17.7
0°-40°	2237.6	28.5
0°-60°	3837.7	48.8
0°-90°	4806.7	61.2
90°-120°	626.0	8.0
90°-150°	2252.2	28.7
90°-180°	3050.0	38.8
0°-180°	7857.0	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	8	18	21	22	7
95°	45	17	23	28	28	56
105°	222	225	163	39	33	235
115°	415	420	427	434	437	410
125°	586	591	594	596	597	523
135°	729	733	736	738	736	561
145°	841	846	848	849	849	526
155°	927	925	926	929	925	427
165°	977	975	974	980	975	276
175°	1000	997	997	1002	996	95
180°	1000	1000	1000	1000	1000	



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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°	33.1	32.6	32.1	31.6	31.1	30.9	31.1	31.2	31.4	31.5	31.3
90°	0.7	2.4	4.0	5.7	7.4	9.3	11.4	13.5	15.7	17.9	18.5
92.5°	13.8	13.3	12.9	12.4	12.0	12.5	14.1	15.8	17.4	19.0	20.1
95°	45.3	38.6	31.8	25.0	18.3	15.8	17.6	19.4	21.2	23.0	24.2
97.5°	91.1	88.1	85.0	82.0	79.0	71.5	59.6	47.7	35.9	23.9	25.2
100°	125.6	128.9	132.2	135.5	138.8	127.5	101.8	76.0	50.3	24.5	25.9
102.5°	164.8	167.2	169.6	172.0	174.3	161.5	133.3	105.1	77.1	48.9	44.8
105°	221.5	223.3	225.1	226.9	228.7	222.2	207.3	192.5	177.6	162.8	133.5
107.5°	281.1	282.7	284.1	285.6	287.0	288.9	291.2	293.6	296.0	298.3	276.8
110°	321.0	322.3	323.7	325.0	326.3	327.9	329.7	331.5	333.4	335.2	329.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	359.1	360.2	361.4	362.6	363.9	365.4	367.2	369.0	370.8	372.6	372.7
115°	415.4	416.4	417.4	418.4	419.4	420.6	422.1	423.5	425.1	426.6	428.2
117.5°	470.0	471.2	472.4	473.6	474.8	475.8	476.6	477.4	478.1	478.9	480.2
120°	503.8	505.3	506.9	508.3	509.8	510.8	511.3	511.8	512.3	512.7	514.1
122.5°	538.4	539.6	540.8	542.0	543.2	544.1	544.7	545.4	546.0	546.6	547.5
125°	585.6	586.9	588.2	589.6	590.9	591.9	592.5	593.2	593.8	594.5	594.8
127.5°	631.4	632.7	634.0	635.3	636.6	637.7	638.5	639.2	640.1	640.9	641.4
130°	659.8	661.3	662.6	663.9	665.2	666.2	666.8	667.5	668.1	668.8	669.4
132.5°	687.2	688.5	689.8	691.2	692.6	693.5	694.0	694.5	695.0	695.6	696.2
135°	729.0	730.0	730.9	732.0	733.0	733.8	734.5	735.1	735.8	736.4	736.9
137.5°	764.7	765.9	767.2	768.4	769.7	770.5	770.8	771.2	771.6	771.9	772.7
140°	788.4	789.4	790.4	791.4	792.4	793.1	793.7	794.2	794.7	795.2	795.8
142.5°	810.4	811.4	812.4	813.4	814.5	815.2	815.7	816.2	816.7	817.2	817.7
145°	841.2	842.3	843.5	844.7	845.9	846.6	846.9	847.3	847.6	847.9	848.2
147.5°	870.2	870.9	871.7	872.4	873.2	873.7	874.1	874.4	874.7	875.0	875.5
150°	888.1	888.5	889.0	889.5	890.0	890.4	890.8	891.1	891.4	891.7	892.1
152.5°	904.0	904.3	904.5	904.7	905.0	905.2	905.4	905.6	905.8	906.1	906.6
155°	926.7	926.3	926.0	925.6	925.3	925.2	925.4	925.6	925.7	925.9	926.8
157.5°	944.2	944.2	944.1	944.1	944.1	944.0	943.8	943.6	943.5	943.3	944.3
160°	954.9	954.7	954.6	954.4	954.2	954.1	953.9	953.7	953.6	953.4	954.4
162.5°	965.0	964.6	964.1	963.7	963.3	963.0	962.8	962.7	962.5	962.3	963.5
165°	977.2	976.7	976.2	975.7	975.2	974.9	974.7	974.5	974.4	974.2	975.5
167.5°	986.7	986.0	985.4	984.7	984.1	983.7	983.7	983.7	983.7	983.7	985.0
170°	992.1	991.4	990.8	990.1	989.5	989.1	989.1	989.1	989.1	989.1	990.4
172.5°	995.6	994.8	994.0	993.3	992.5	992.1	992.3	992.4	992.5	992.7	994.0
175°	1000.3	999.4	998.6	997.7	996.9	996.6	996.7	996.9	997.1	997.2	998.5
177.5°	1001.4	1000.8	1000.1	999.5	998.8	998.6	998.7	998.8	999.0	999.1	1000.1
180°	1000.3	1000.3	1000.3	1000.3	1000.3	1000.3	1000.3	1000.3	1000.3	1000.3	1000.3



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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°	31.2	31.1	30.9	30.9	30.9	31.0	31.1	31.1
90°	19.2	19.8	20.5	21.0	21.3	21.6	21.9	22.3
92.5°	21.1	22.2	23.2	23.8	24.0	24.2	24.4	24.6
95°	25.3	26.5	27.7	28.3	28.3	28.3	28.3	28.3
97.5°	26.6	27.9	29.2	30.0	30.1	30.3	30.5	30.6
100°	27.2	28.5	29.8	30.6	30.7	30.9	31.0	31.2
102.5°	40.7	36.7	32.5	30.6	30.9	31.2	31.5	31.8
105°	104.3	75.0	45.8	31.4	31.7	32.0	32.4	32.7
107.5°	255.4	234.0	212.6	190.9	168.7	146.7	124.7	102.7
110°	324.3	318.8	313.4	298.8	275.2	251.6	227.9	204.4



TEST NUMBER: P332220-840

CATALOG NUMBER: S123DIW-S1165D755U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	372.8	372.9	373.0	370.5	365.6	360.6	355.6	350.6
115°	429.9	431.5	433.1	434.3	434.9	435.7	436.3	437.0
117.5°	481.5	482.8	484.1	484.8	485.0	485.1	485.2	485.4
120°	515.4	516.7	518.1	518.7	518.7	518.7	518.7	518.7
122.5°	548.5	549.4	550.4	550.9	551.0	551.1	551.3	551.4
125°	595.1	595.5	595.8	596.1	596.5	596.8	597.1	597.4
127.5°	642.0	642.5	643.0	643.1	642.8	642.4	642.1	641.8
130°	670.1	670.8	671.5	671.7	671.3	671.0	670.7	670.2
132.5°	696.9	697.5	698.2	698.3	697.8	697.4	696.9	696.4
135°	737.4	737.9	738.4	738.4	737.9	737.4	736.9	736.4
137.5°	773.6	774.4	775.2	775.4	775.1	774.7	774.4	774.1
140°	796.5	797.1	797.8	798.0	797.6	797.3	797.0	796.6
142.5°	818.2	818.7	819.2	819.3	818.8	818.4	817.9	817.4
145°	848.6	848.9	849.2	849.4	849.4	849.4	849.4	849.4
147.5°	875.8	876.1	876.5	876.2	875.5	874.6	873.9	873.1
150°	892.4	892.7	893.0	893.0	892.5	892.0	891.5	891.0
152.5°	907.2	907.8	908.4	908.3	907.6	906.8	906.1	905.2
155°	927.6	928.4	929.3	929.2	928.2	927.2	926.1	925.1
157.5°	945.3	946.2	947.3	947.2	945.8	944.5	943.3	942.0
160°	955.4	956.4	957.4	957.4	956.1	955.0	953.8	952.7
162.5°	964.6	965.7	966.8	966.8	965.8	964.8	963.8	962.8
165°	976.8	978.2	979.5	979.6	978.5	977.2	976.1	974.9
167.5°	986.3	987.7	989.1	989.1	987.7	986.3	985.0	983.7
170°	991.7	993.1	994.4	994.4	993.1	991.7	990.4	989.1
172.5°	995.3	996.6	997.9	997.8	996.4	995.0	993.5	992.1
175°	999.6	1000.8	1001.9	1001.8	1000.5	999.2	997.8	996.5
177.5°	1001.2	1002.2	1003.3	1003.1	1001.8	1000.5	999.2	997.8
180°	1000.3	1000.3	1000.3	1000.3	1000.3	1000.3	1000.3	1000.3

(END OF REPORT)