

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: P332196-840

Luminaire Tested: **S123DIW-S1000D1030U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332196-840
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-S1000D1030U840-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1000 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: 8326.7 lumens
Efficiency: N/A
Efficacy: 136.1 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

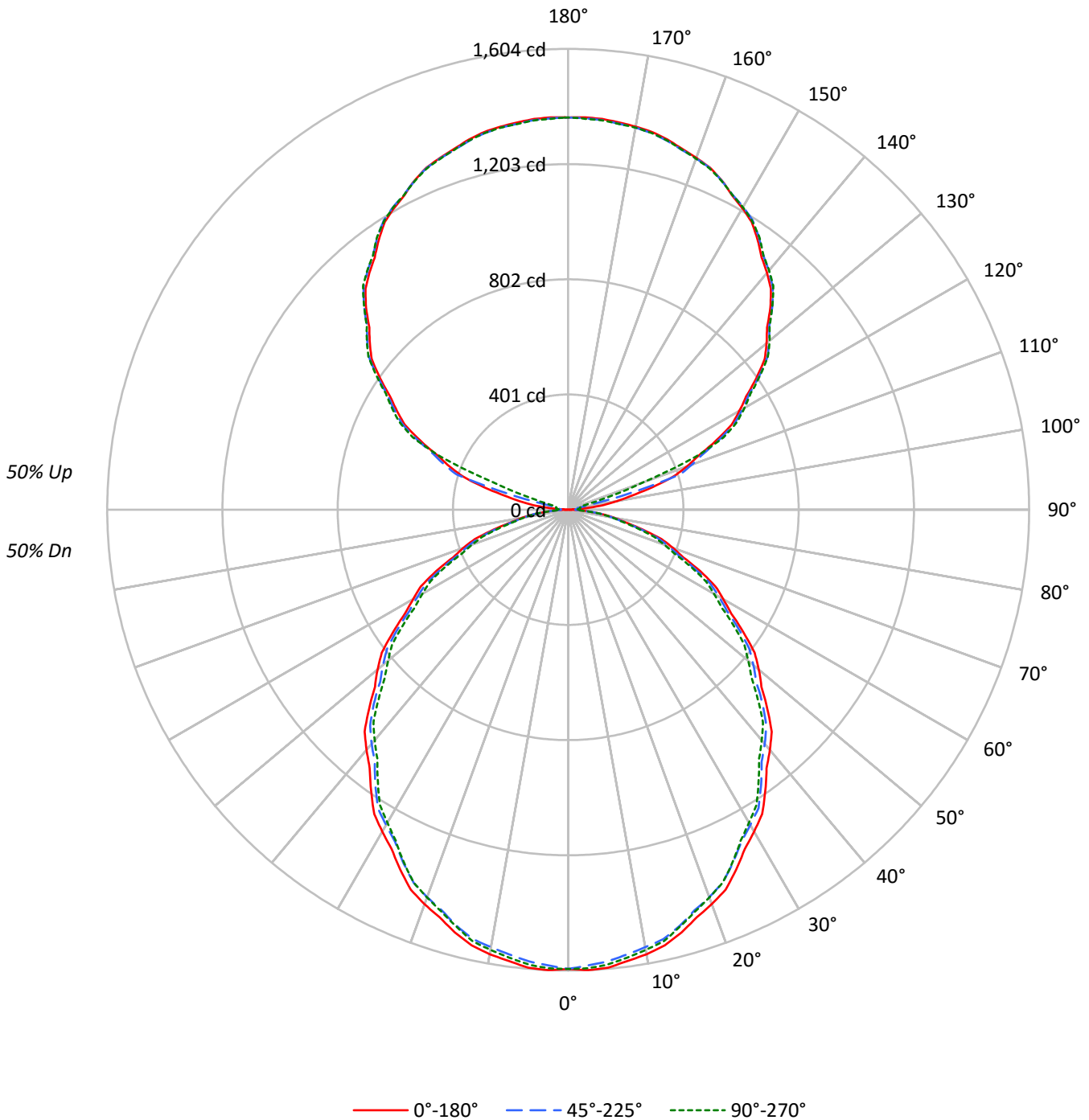
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332196-840

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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	99	99	99	99	83	83	83	69	69	69	56	56	56	50				
1	98	93	89	86	90	86	83	80	73	71	68	61	59	57	49	48	47	42				
2	89	81	75	70	82	75	70	65	64	60	56	53	50	48	44	42	40	35				
3	81	72	64	58	75	66	60	55	56	51	47	47	44	41	39	36	34	30				
4	74	63	55	49	68	59	52	46	50	45	40	42	38	35	34	32	29	25				
5	68	56	48	42	63	52	45	40	45	39	35	38	33	30	31	28	25	22				
6	63	51	42	37	58	47	40	35	40	35	30	34	30	26	28	25	22	19				
7	58	46	38	32	53	43	35	30	37	31	27	31	27	23	26	22	20	17				
8	54	41	34	28	50	39	32	27	33	28	24	28	24	21	24	20	18	15				
9	50	38	30	25	46	35	29	24	31	25	21	26	22	19	22	18	16	14				
10	47	35	27	23	43	32	26	21	28	23	19	24	20	17	20	17	15	13				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17206	17206	17206
5°	17286	17049	17168
10°	17171	16901	17006
15°	16971	16710	16741
20°	16736	16436	16452
25°	16422	16112	16079
30°	16075	15751	15631
35°	15713	15369	15172
40°	15336	14948	14716
45°	14918	14562	14206
50°	14502	14086	13695
55°	13955	13594	13181
60°	13403	13020	12605
65°	12918	12394	12006
70°	12198	11679	11160
75°	11146	10746	10289
80°	10054	9627	9540
85°	8830	8497	8139



TEST NUMBER: P332196-840

CATALOG NUMBER: S123DIW-S1000D1030U840-4F0-1E-UDD-F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	150.6	1.8
10°-20°	425.2	5.1
20°-30°	628.0	7.5
30°-40°	733.6	8.8
40°-50°	737.6	8.9
50°-60°	647.9	7.8
60°-70°	482.7	5.8
70°-80°	275.0	3.3
80°-90°	82.8	1.0
90°-100°	49.6	0.6
100°-110°	236.6	2.8
110°-120°	568.2	6.8
120°-130°	723.6	8.7
130°-140°	773.1	9.3
140°-150°	723.0	8.7
150°-160°	583.2	7.0
160°-170°	376.4	4.5
170°-180°	129.7	1.6
0°-30°	1203.8	14.5
0°-40°	1937.4	23.3
0°-60°	3322.8	39.9
0°-90°	4163.3	50.0
90°-120°	854.5	10.3
90°-150°	3074.2	36.9
90°-180°	4163.0	50.0
0°-180°	8326.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1598	1598	1598	1598	1598	
5°	1600	1593	1578	1591	1589	152
15°	1523	1517	1500	1509	1502	429
25°	1383	1374	1357	1358	1354	637
35°	1196	1187	1170	1162	1155	748
45°	980	974	957	941	933	756
55°	744	741	724	710	702	666
65°	507	500	487	476	471	500
75°	268	263	258	252	247	287
85°	72	69	69	66	66	78
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	



TEST NUMBER: P332196-840

CATALOG NUMBER: S123DIW-S1000D1030U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5
2.5°	1604.0	1603.1	1602.0	1601.0	1600.1	1598.2	1595.6	1592.9	1590.2	1587.5	1589.9
5°	1599.8	1598.3	1596.8	1595.3	1593.8	1591.3	1588.0	1584.6	1581.2	1577.9	1580.9
7.5°	1584.2	1582.7	1581.1	1579.6	1578.1	1575.6	1572.2	1568.6	1565.2	1561.7	1564.4
10°	1571.0	1569.5	1567.9	1566.4	1564.9	1562.2	1558.2	1554.2	1550.2	1546.3	1549.0
12.5°	1553.4	1552.2	1550.8	1549.5	1548.3	1545.8	1542.1	1538.3	1534.6	1530.9	1532.9
15°	1522.9	1521.7	1520.5	1519.2	1518.0	1515.4	1511.5	1507.5	1503.5	1499.5	1502.0
17.5°	1487.4	1485.8	1484.3	1482.7	1481.1	1478.3	1474.3	1470.4	1466.4	1462.4	1464.1
20°	1461.1	1459.3	1457.4	1455.5	1453.7	1450.8	1446.8	1442.9	1439.0	1434.9	1436.1
22.5°	1431.4	1429.6	1427.7	1425.8	1424.0	1421.2	1417.1	1413.2	1409.3	1405.2	1406.2
25°	1382.7	1380.9	1379.1	1377.3	1375.3	1372.5	1368.5	1364.5	1360.6	1356.6	1356.9
27.5°	1330.8	1329.0	1327.2	1325.4	1323.6	1320.6	1316.4	1312.1	1307.8	1303.5	1303.7
30°	1293.3	1291.8	1290.3	1288.8	1287.3	1284.3	1280.1	1275.8	1271.5	1267.3	1267.3
32.5°	1256.0	1253.9	1251.9	1249.9	1247.9	1245.3	1241.9	1238.7	1235.4	1232.0	1230.3
35°	1195.8	1194.0	1192.1	1190.3	1188.4	1185.6	1181.5	1177.6	1173.7	1169.6	1167.8
37.5°	1134.2	1131.9	1129.5	1127.2	1124.9	1121.8	1117.7	1113.7	1109.6	1105.6	1103.4
40°	1091.4	1089.4	1087.6	1085.8	1084.0	1081.0	1076.6	1072.4	1068.1	1063.8	1061.4
42.5°	1048.4	1046.3	1044.3	1042.2	1040.2	1036.9	1032.7	1028.4	1024.1	1019.9	1017.4
45°	980.0	978.8	977.5	976.3	975.1	972.5	968.6	964.5	960.6	956.6	953.0
47.5°	912.1	910.3	908.6	906.8	905.0	902.2	898.6	894.8	891.1	887.4	883.7
50°	866.0	864.3	862.8	861.3	859.8	857.1	853.0	849.1	845.2	841.2	837.8
52.5°	817.5	816.5	815.5	814.5	813.3	810.7	806.6	802.3	798.1	793.9	791.0
55°	743.6	743.3	743.0	742.7	742.4	740.2	736.3	732.3	728.3	724.4	720.9
57.5°	673.2	672.2	671.2	670.1	669.0	666.9	663.8	660.6	657.4	654.3	651.3
60°	622.6	622.3	622.0	621.7	621.4	619.5	615.7	612.1	608.4	604.8	602.0
62.5°	577.5	576.7	575.9	575.1	574.4	572.2	568.5	564.8	561.2	557.4	554.7
65°	507.2	505.6	504.1	502.6	501.1	498.8	495.7	492.7	489.6	486.6	484.1
67.5°	432.7	431.3	430.0	428.7	427.3	425.5	423.1	420.8	418.5	416.2	414.0
70°	387.6	385.8	384.0	382.1	380.3	378.4	376.6	374.8	372.9	371.1	369.0
72.5°	340.3	339.0	337.6	336.3	335.0	333.3	331.1	329.1	327.0	324.9	323.1
75°	268.0	266.8	265.6	264.4	263.2	262.1	261.2	260.2	259.3	258.4	256.9
77.5°	204.0	203.3	202.6	202.0	201.3	200.4	199.3	198.2	197.1	196.0	195.0
80°	162.2	161.3	160.4	159.5	158.5	157.7	157.1	156.5	155.9	155.3	155.0
82.5°	121.5	121.3	121.2	121.0	120.8	120.6	120.5	120.4	120.3	120.2	119.6
85°	71.5	70.9	70.3	69.7	69.1	68.8	68.8	68.8	68.8	68.8	68.1
87.5°	28.8	28.5	28.3	28.0	27.7	27.7	28.1	28.4	28.7	29.1	29.0
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



TEST NUMBER: P332196-840

CATALOG NUMBER: S123DIW-S1000D1030U840-4F0-1E-UDD-F

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



TEST NUMBER: P332196-840

CATALOG NUMBER: S123DIW-S1000D1030U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5	1598.5
2.5°	1592.4	1594.9	1597.3	1598.4	1598.1	1597.9	1597.6	1597.4
5°	1584.0	1587.0	1590.1	1591.3	1590.7	1590.1	1589.5	1588.9
7.5°	1567.2	1569.9	1572.7	1573.9	1573.5	1573.2	1572.8	1572.4
10°	1551.8	1554.5	1557.3	1558.3	1557.7	1557.1	1556.5	1555.9
12.5°	1534.9	1536.9	1538.9	1539.7	1539.4	1539.0	1538.6	1538.3
15°	1504.4	1506.8	1509.3	1509.6	1507.8	1505.9	1504.1	1502.3
17.5°	1465.8	1467.5	1469.3	1469.8	1469.2	1468.4	1467.7	1467.1
20°	1437.3	1438.7	1439.9	1440.0	1439.1	1438.1	1437.2	1436.3
22.5°	1407.2	1408.2	1409.2	1409.1	1408.0	1406.7	1405.6	1404.4
25°	1357.2	1357.6	1357.9	1357.6	1356.6	1355.6	1354.7	1353.8
27.5°	1304.0	1304.2	1304.5	1304.0	1302.9	1301.7	1300.6	1299.4
30°	1267.3	1267.3	1267.3	1266.2	1264.0	1261.9	1259.8	1257.6
32.5°	1228.6	1227.0	1225.3	1223.8	1222.6	1221.4	1220.3	1219.1
35°	1166.0	1164.2	1162.4	1160.6	1159.1	1157.6	1156.1	1154.6
37.5°	1101.3	1099.0	1096.8	1095.2	1094.3	1093.3	1092.3	1091.4
40°	1058.9	1056.5	1054.1	1052.2	1051.0	1049.8	1048.5	1047.3
42.5°	1014.9	1012.5	1010.1	1008.2	1007.0	1005.8	1004.6	1003.4
45°	949.3	945.6	942.0	939.4	937.9	936.3	934.8	933.2
47.5°	880.1	876.6	872.9	870.5	869.1	867.8	866.5	865.1
50°	834.5	831.1	827.7	825.2	823.3	821.4	819.6	817.8
52.5°	788.1	785.3	782.4	780.0	778.2	776.4	774.6	772.7
55°	717.6	714.3	710.9	708.4	706.9	705.4	703.9	702.4
57.5°	648.2	645.3	642.3	639.9	638.1	636.3	634.6	632.8
60°	599.3	596.5	593.8	591.7	590.1	588.5	587.0	585.5
62.5°	552.0	549.3	546.4	544.6	543.5	542.5	541.5	540.5
65°	481.7	479.2	476.8	475.1	474.2	473.3	472.3	471.4
67.5°	411.9	409.8	407.7	406.0	404.7	403.3	402.0	400.8
70°	366.8	364.7	362.5	360.7	359.2	357.7	356.2	354.6
72.5°	321.1	319.2	317.3	316.0	315.2	314.4	313.7	312.9
75°	255.4	253.8	252.3	251.1	250.1	249.2	248.3	247.4
77.5°	193.9	192.9	191.9	191.4	191.4	191.4	191.4	191.4
80°	154.7	154.4	154.1	153.9	153.9	153.9	153.9	153.9
82.5°	119.1	118.5	118.0	117.5	117.2	117.0	116.8	116.5
85°	67.5	66.9	66.2	65.9	65.9	65.9	65.9	65.9
87.5°	28.9	28.9	28.8	28.8	28.9	29.0	29.1	29.2
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: P332196-840

CATALOG NUMBER: S123DIW-S1000D1030U840-4F0-1E-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)