

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

Luminaire Tested: **S123DIW-S1000D1030U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332196  
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-S1000D1030U835-4F0-1E-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**

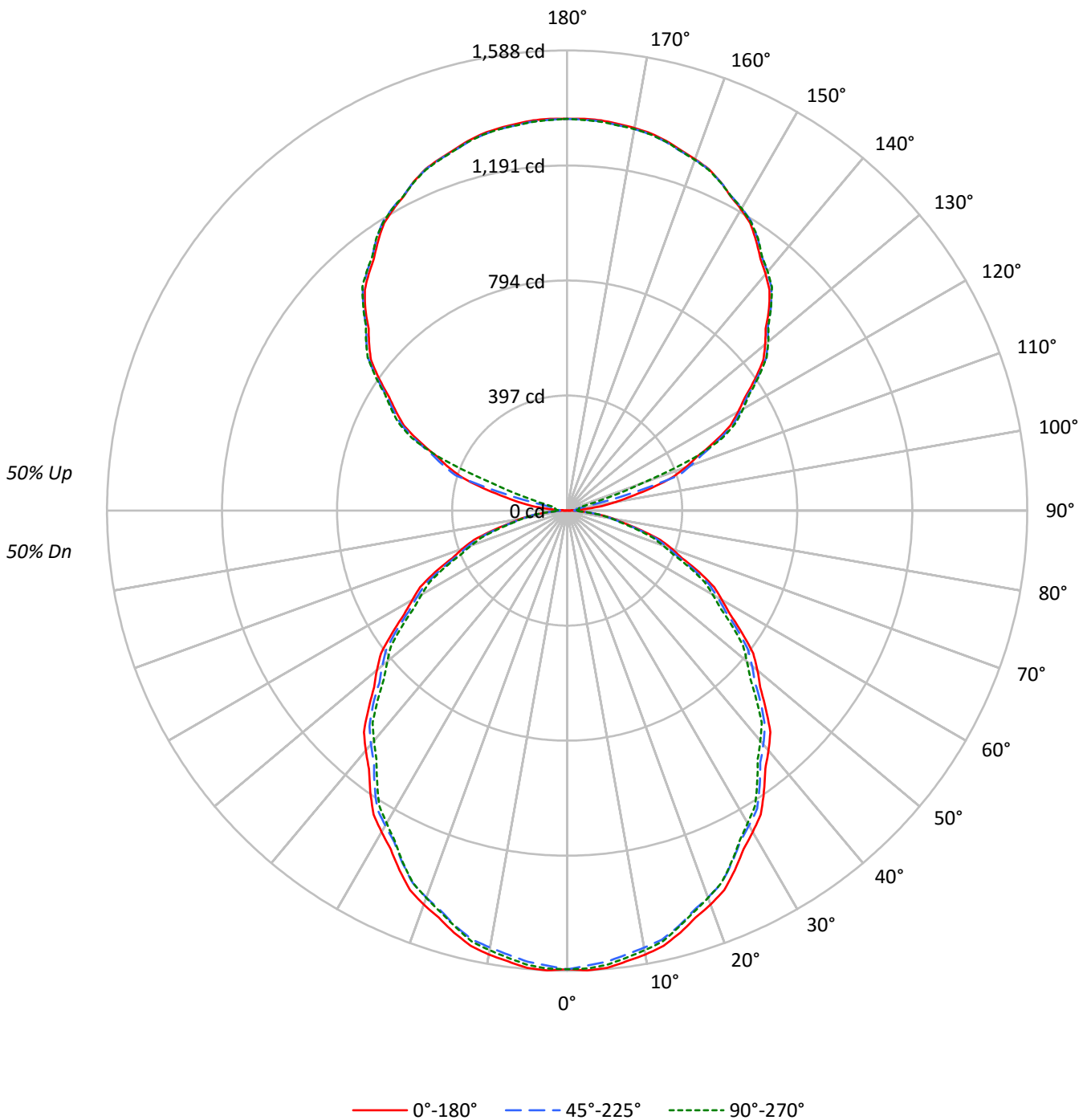
Lumens per Lamp: N/A  
Luminaire Lumens: 8245.3 lumens  
Efficiency: N/A  
Efficacy: 134.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse  
  
Input Watts (W): 61.2  
Input Voltage (V): 120  
Input Current (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



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	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	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°	17038	17038	17038
5°	17117	16883	17001
10°	17004	16736	16840
15°	16805	16547	16577
20°	16573	16276	16292
25°	16262	15954	15922
30°	15918	15597	15478
35°	15559	15219	15023
40°	15185	14802	14573
45°	14772	14420	14067
50°	14359	13949	13561
55°	13818	13461	13052
60°	13272	12893	12482
65°	12791	12271	11889
70°	12079	11566	11050
75°	11038	10643	10189
80°	9955	9534	9447
85°	8744	8410	8065



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	149.1	1.8
10°-20°	421.0	5.1
20°-30°	621.9	7.5
30°-40°	726.5	8.8
40°-50°	730.4	8.9
50°-60°	641.5	7.8
60°-70°	478.0	5.8
70°-80°	272.3	3.3
80°-90°	81.9	1.0
90°-100°	49.2	0.6
100°-110°	234.3	2.8
110°-120°	562.7	6.8
120°-130°	716.5	8.7
130°-140°	765.6	9.3
140°-150°	715.9	8.7
150°-160°	577.5	7.0
160°-170°	372.7	4.5
170°-180°	128.4	1.6
0°-30°	1192.0	14.5
0°-40°	1918.5	23.3
0°-60°	3290.4	39.9
0°-90°	4122.6	50.0
90°-120°	846.1	10.3
90°-150°	3044.1	36.9
90°-180°	4123.0	50.0
0°-180°	8245.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1583	1583	1583	1583	1583	
5°	1584	1577	1562	1575	1573	150
15°	1508	1502	1485	1495	1488	425
25°	1369	1360	1343	1344	1341	630
35°	1184	1175	1158	1150	1143	740
45°	970	964	947	932	924	749
55°	736	734	717	703	696	659
65°	502	495	482	471	467	495
75°	265	260	256	249	245	284
85°	71	68	68	65	65	78
90°	1	11	24	28	30	7
95°	61	23	31	38	38	76
105°	299	305	220	52	44	317
115°	562	568	576	586	591	554
125°	792	799	804	806	808	707
135°	985	991	995	998	995	758
145°	1137	1144	1146	1148	1148	711
155°	1252	1251	1252	1256	1250	577
165°	1321	1318	1317	1324	1318	373
175°	1352	1347	1348	1354	1347	129
180°	1352	1352	1352	1352	1352	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9
2.5°	1588.3	1587.4	1586.4	1585.4	1584.5	1582.6	1580.0	1577.3	1574.7	1572.0	1574.4
5°	1584.2	1582.7	1581.2	1579.7	1578.2	1575.8	1572.5	1569.1	1565.8	1562.5	1565.5
7.5°	1568.7	1567.2	1565.7	1564.2	1562.7	1560.2	1556.8	1553.3	1549.9	1546.4	1549.1
10°	1555.7	1554.2	1552.6	1551.1	1549.6	1546.9	1543.0	1539.0	1535.1	1531.2	1533.9
12.5°	1538.2	1537.0	1535.7	1534.4	1533.2	1530.7	1527.0	1523.3	1519.6	1515.9	1517.9
15°	1508.0	1506.8	1505.6	1504.4	1503.2	1500.6	1496.7	1492.8	1488.8	1484.9	1487.3
17.5°	1472.9	1471.3	1469.8	1468.2	1466.6	1463.9	1459.9	1456.0	1452.1	1448.1	1449.8
20°	1446.8	1445.0	1443.2	1441.3	1439.5	1436.6	1432.7	1428.8	1424.9	1420.9	1422.1
22.5°	1417.4	1415.6	1413.8	1411.9	1410.1	1407.3	1403.3	1399.4	1395.5	1391.5	1392.5
25°	1369.2	1367.4	1365.6	1363.8	1361.9	1359.1	1355.1	1351.2	1347.3	1343.3	1343.6
27.5°	1317.8	1316.0	1314.2	1312.5	1310.7	1307.7	1303.5	1299.3	1295.0	1290.8	1291.0
30°	1280.7	1279.2	1277.7	1276.2	1274.7	1271.8	1267.6	1263.3	1259.1	1254.9	1254.9
32.5°	1243.7	1241.7	1239.7	1237.7	1235.7	1233.1	1229.8	1226.6	1223.3	1220.0	1218.3
35°	1184.1	1182.3	1180.5	1178.7	1176.8	1174.0	1170.0	1166.1	1162.2	1158.2	1156.4
37.5°	1123.1	1120.8	1118.5	1116.2	1113.9	1110.8	1106.8	1102.8	1098.8	1094.8	1092.6
40°	1080.7	1078.8	1077.0	1075.2	1073.4	1070.4	1066.1	1061.9	1057.7	1053.4	1051.0
42.5°	1038.2	1036.1	1034.1	1032.0	1030.0	1026.8	1022.6	1018.4	1014.1	1009.9	1007.5
45°	970.4	969.2	968.0	966.8	965.6	963.0	959.1	955.1	951.2	947.3	943.7
47.5°	903.2	901.4	899.7	897.9	896.2	893.4	889.8	886.1	882.4	878.7	875.1
50°	857.5	855.9	854.4	852.9	851.4	848.7	844.7	840.8	836.9	833.0	829.6
52.5°	809.5	808.5	807.5	806.5	805.4	802.8	798.7	794.5	790.3	786.1	783.3
55°	736.3	736.0	735.7	735.4	735.1	733.0	729.1	725.1	721.2	717.3	713.9
57.5°	666.6	665.6	664.6	663.6	662.5	660.4	657.3	654.1	651.0	647.9	644.9
60°	616.5	616.2	615.9	615.6	615.3	613.4	609.7	606.1	602.5	598.9	596.1
62.5°	571.9	571.1	570.3	569.5	568.8	566.6	562.9	559.3	555.7	552.0	549.3
65°	502.2	500.7	499.2	497.7	496.2	493.9	490.9	487.9	484.8	481.8	479.4
67.5°	428.5	427.1	425.8	424.5	423.1	421.3	419.0	416.7	414.4	412.1	410.0
70°	383.8	382.0	380.2	378.4	376.6	374.7	372.9	371.1	369.3	367.5	365.4
72.5°	337.0	335.7	334.3	333.0	331.7	330.0	327.9	325.9	323.8	321.7	319.9
75°	265.4	264.2	263.0	261.8	260.6	259.5	258.6	257.7	256.8	255.9	254.4
77.5°	202.0	201.3	200.6	200.0	199.3	198.4	197.4	196.3	195.2	194.1	193.1
80°	160.6	159.7	158.8	157.9	157.0	156.2	155.6	155.0	154.4	153.8	153.5
82.5°	120.3	120.1	120.0	119.8	119.6	119.4	119.3	119.2	119.1	119.0	118.4
85°	70.8	70.2	69.6	69.0	68.4	68.1	68.1	68.1	68.1	68.1	67.4
87.5°	28.5	28.2	28.0	27.7	27.4	27.4	27.8	28.1	28.4	28.8	28.7
90°	1.0	3.2	5.5	7.7	9.9	12.5	15.4	18.3	21.2	24.1	25.0
92.5°	18.7	18.1	17.4	16.8	16.2	17.0	19.2	21.3	23.5	25.7	27.1
95°	61.3	52.1	43.0	33.8	24.7	21.3	23.8	26.2	28.7	31.1	32.7
97.5°	123.1	119.0	114.9	110.8	106.7	96.6	80.6	64.5	48.4	32.3	34.1
100°	169.7	174.2	178.7	183.1	187.6	172.4	137.6	102.8	68.0	33.1	34.9
102.5°	222.8	226.0	229.2	232.4	235.6	218.2	180.2	142.2	104.1	66.1	60.6
105°	299.3	301.8	304.2	306.7	309.1	300.3	280.2	260.1	240.1	220.0	180.5
107.5°	380.1	382.0	384.0	386.0	387.9	390.5	393.7	396.8	400.0	403.2	374.2
110°	433.9	435.7	437.5	439.3	441.0	443.2	445.6	448.1	450.5	453.0	445.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	485.3	486.9	488.5	490.2	491.8	493.8	496.2	498.7	501.2	503.6	503.7
115°	561.5	562.8	564.1	565.5	566.8	568.5	570.5	572.5	574.5	576.5	578.8
117.5°	635.2	636.8	638.5	640.1	641.8	643.1	644.2	645.2	646.2	647.2	649.0
120°	681.0	683.0	685.0	687.0	689.0	690.4	691.0	691.7	692.4	693.0	694.8
122.5°	727.6	729.2	730.9	732.5	734.2	735.4	736.3	737.1	738.0	738.8	740.1
125°	791.5	793.3	795.0	796.8	798.6	800.0	800.8	801.7	802.6	803.5	804.0
127.5°	853.3	855.1	856.9	858.7	860.5	861.9	863.0	864.1	865.1	866.2	866.9
130°	891.9	893.7	895.5	897.3	899.1	900.4	901.3	902.2	903.1	904.0	904.9
132.5°	928.9	930.7	932.4	934.2	936.0	937.3	938.0	938.7	939.4	940.1	941.0
135°	985.3	986.7	988.0	989.3	990.7	991.8	992.7	993.6	994.5	995.4	996.0
137.5°	1033.5	1035.2	1036.9	1038.6	1040.3	1041.4	1041.9	1042.4	1042.9	1043.4	1044.4
140°	1065.7	1067.0	1068.4	1069.7	1071.0	1072.0	1072.7	1073.4	1074.0	1074.7	1075.6
142.5°	1095.4	1096.7	1098.1	1099.4	1100.8	1101.8	1102.4	1103.1	1103.8	1104.4	1105.2
145°	1137.0	1138.5	1140.1	1141.7	1143.2	1144.2	1144.7	1145.1	1145.6	1146.0	1146.5
147.5°	1176.2	1177.2	1178.2	1179.2	1180.3	1181.0	1181.4	1181.9	1182.3	1182.8	1183.2
150°	1200.3	1200.9	1201.6	1202.3	1202.9	1203.5	1203.9	1204.4	1204.8	1205.3	1205.7
152.5°	1222.0	1222.3	1222.6	1222.9	1223.2	1223.5	1223.8	1224.0	1224.3	1224.6	1225.4
155°	1252.5	1252.0	1251.6	1251.2	1250.7	1250.6	1250.8	1251.0	1251.3	1251.5	1252.6
157.5°	1276.2	1276.2	1276.1	1276.1	1276.0	1275.9	1275.7	1275.4	1275.2	1275.0	1276.3
160°	1290.7	1290.4	1290.2	1290.0	1289.8	1289.5	1289.3	1289.1	1288.9	1288.7	1290.0
162.5°	1304.3	1303.7	1303.2	1302.6	1302.0	1301.6	1301.4	1301.2	1300.9	1300.7	1302.2
165°	1320.8	1320.1	1319.5	1318.8	1318.1	1317.7	1317.4	1317.2	1317.0	1316.8	1318.6
167.5°	1333.6	1332.8	1331.9	1331.0	1330.1	1329.6	1329.6	1329.6	1329.6	1329.6	1331.4
170°	1340.9	1340.0	1339.1	1338.2	1337.3	1336.9	1336.9	1336.9	1336.9	1336.9	1338.6
172.5°	1345.7	1344.6	1343.6	1342.5	1341.4	1341.0	1341.1	1341.3	1341.5	1341.7	1343.5
175°	1351.9	1350.8	1349.7	1348.6	1347.5	1347.0	1347.2	1347.5	1347.7	1347.9	1349.5
177.5°	1353.5	1352.6	1351.8	1350.9	1350.0	1349.6	1349.8	1350.0	1350.1	1350.3	1351.8
180°	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9	1582.9
2.5°	1576.8	1579.3	1581.7	1582.8	1582.5	1582.3	1582.0	1581.8
5°	1568.5	1571.5	1574.6	1575.8	1575.2	1574.6	1574.0	1573.4
7.5°	1551.9	1554.6	1557.3	1558.5	1558.1	1557.8	1557.4	1557.0
10°	1536.6	1539.3	1542.1	1543.1	1542.5	1541.9	1541.3	1540.7
12.5°	1519.9	1521.9	1523.9	1524.7	1524.4	1524.0	1523.6	1523.3
15°	1489.7	1492.1	1494.6	1494.9	1493.1	1491.2	1489.4	1487.6
17.5°	1451.5	1453.2	1454.9	1455.4	1454.8	1454.1	1453.4	1452.8
20°	1423.3	1424.6	1425.8	1425.9	1425.0	1424.1	1423.2	1422.3
22.5°	1393.5	1394.4	1395.4	1395.3	1394.2	1393.0	1391.9	1390.7
25°	1343.9	1344.3	1344.6	1344.3	1343.3	1342.4	1341.5	1340.6
27.5°	1291.3	1291.5	1291.8	1291.3	1290.2	1289.0	1287.9	1286.7
30°	1254.9	1254.9	1254.9	1253.8	1251.7	1249.6	1247.5	1245.3
32.5°	1216.6	1215.0	1213.3	1211.8	1210.7	1209.5	1208.4	1207.2
35°	1154.6	1152.8	1151.0	1149.3	1147.8	1146.3	1144.8	1143.3
37.5°	1090.5	1088.3	1086.1	1084.5	1083.6	1082.6	1081.6	1080.7
40°	1048.6	1046.2	1043.8	1041.9	1040.7	1039.5	1038.3	1037.1
42.5°	1005.0	1002.6	1000.2	998.4	997.2	996.0	994.8	993.6
45°	940.0	936.4	932.8	930.2	928.7	927.2	925.7	924.1
47.5°	871.5	868.0	864.4	862.0	860.6	859.3	858.0	856.6
50°	826.3	823.0	819.6	817.1	815.3	813.4	811.6	809.8
52.5°	780.4	777.6	774.8	772.4	770.6	768.8	767.0	765.2
55°	710.6	707.3	704.0	701.5	700.0	698.5	697.0	695.5
57.5°	641.9	639.0	636.0	633.6	631.9	630.1	628.4	626.6
60°	593.4	590.7	588.0	585.9	584.3	582.8	581.3	579.8
62.5°	546.6	543.9	541.1	539.3	538.2	537.2	536.2	535.2
65°	477.0	474.5	472.1	470.5	469.6	468.7	467.7	466.8
67.5°	407.9	405.8	403.7	402.0	400.7	399.4	398.1	396.9
70°	363.2	361.1	359.0	357.2	355.7	354.2	352.7	351.1
72.5°	318.0	316.1	314.2	312.9	312.1	311.3	310.6	309.8
75°	252.9	251.3	249.8	248.6	247.7	246.8	245.9	245.0
77.5°	192.0	191.0	190.0	189.5	189.5	189.5	189.5	189.5
80°	153.2	152.9	152.6	152.4	152.4	152.4	152.4	152.4
82.5°	117.9	117.3	116.8	116.4	116.1	115.9	115.7	115.4
85°	66.8	66.2	65.6	65.3	65.3	65.3	65.3	65.3
87.5°	28.6	28.6	28.5	28.5	28.6	28.7	28.8	28.9
90°	25.9	26.8	27.7	28.3	28.8	29.2	29.7	30.1
92.5°	28.6	30.0	31.4	32.3	32.5	32.8	33.1	33.3
95°	34.3	35.8	37.4	38.2	38.2	38.2	38.2	38.2
97.5°	35.9	37.7	39.5	40.5	40.7	40.9	41.2	41.4
100°	36.7	38.5	40.3	41.3	41.5	41.7	42.0	42.2
102.5°	55.0	49.5	43.9	41.4	41.8	42.2	42.6	43.0
105°	141.0	101.4	61.9	42.4	42.9	43.3	43.7	44.2
107.5°	345.2	316.3	287.3	257.9	228.1	198.4	168.6	138.8
110°	438.3	430.9	423.5	403.9	372.0	340.0	308.1	276.2





TEST NUMBER: P332196

CATALOG NUMBER: S123DIW-S1000D1030U835-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	503.9	504.0	504.1	500.8	494.1	487.4	480.6	473.9
115°	581.0	583.2	585.5	587.0	587.9	588.8	589.7	590.6
117.5°	650.8	652.6	654.4	655.4	655.5	655.7	655.9	656.1
120°	696.6	698.4	700.2	701.1	701.1	701.1	701.1	701.1
122.5°	741.3	742.6	743.8	744.6	744.7	744.9	745.1	745.3
125°	804.4	804.9	805.3	805.8	806.2	806.6	807.1	807.5
127.5°	867.6	868.3	869.1	869.2	868.7	868.3	867.9	867.4
130°	905.8	906.6	907.5	907.8	907.3	906.9	906.4	906.0
132.5°	941.9	942.8	943.7	943.8	943.2	942.6	942.0	941.3
135°	996.7	997.4	998.0	998.0	997.4	996.7	996.0	995.4
137.5°	1045.5	1046.6	1047.7	1048.0	1047.5	1047.1	1046.6	1046.2
140°	1076.5	1077.4	1078.3	1078.5	1078.1	1077.6	1077.2	1076.7
142.5°	1105.9	1106.6	1107.3	1107.3	1106.7	1106.1	1105.5	1104.8
145°	1146.9	1147.4	1147.8	1148.0	1148.0	1148.0	1148.0	1148.0
147.5°	1183.7	1184.1	1184.6	1184.3	1183.3	1182.2	1181.2	1180.2
150°	1206.2	1206.6	1207.1	1207.0	1206.3	1205.6	1205.0	1204.3
152.5°	1226.2	1227.0	1227.8	1227.7	1226.6	1225.6	1224.6	1223.6
155°	1253.7	1254.8	1256.0	1255.8	1254.5	1253.2	1251.8	1250.5
157.5°	1277.7	1279.0	1280.3	1280.1	1278.4	1276.7	1274.9	1273.2
160°	1291.3	1292.7	1294.0	1293.9	1292.3	1290.8	1289.2	1287.6
162.5°	1303.7	1305.3	1306.8	1306.8	1305.5	1304.1	1302.7	1301.3
165°	1320.3	1322.1	1323.9	1324.0	1322.5	1320.9	1319.3	1317.8
167.5°	1333.2	1335.0	1336.8	1336.8	1335.0	1333.2	1331.4	1329.6
170°	1340.4	1342.2	1344.0	1344.0	1342.2	1340.4	1338.6	1336.9
172.5°	1345.3	1347.0	1348.8	1348.7	1346.8	1344.8	1342.8	1340.9
175°	1351.0	1352.6	1354.2	1354.1	1352.3	1350.5	1348.7	1346.9
177.5°	1353.2	1354.6	1356.0	1355.9	1354.1	1352.3	1350.5	1348.7
180°	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9

(END OF REPORT)