

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: P332185-940

Luminaire Tested: **S123DIW-S1000D460U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332185-940
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-S1000D460U940-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1000 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5099.6 lumens
Efficiency: N/A
Efficacy: 110.4 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

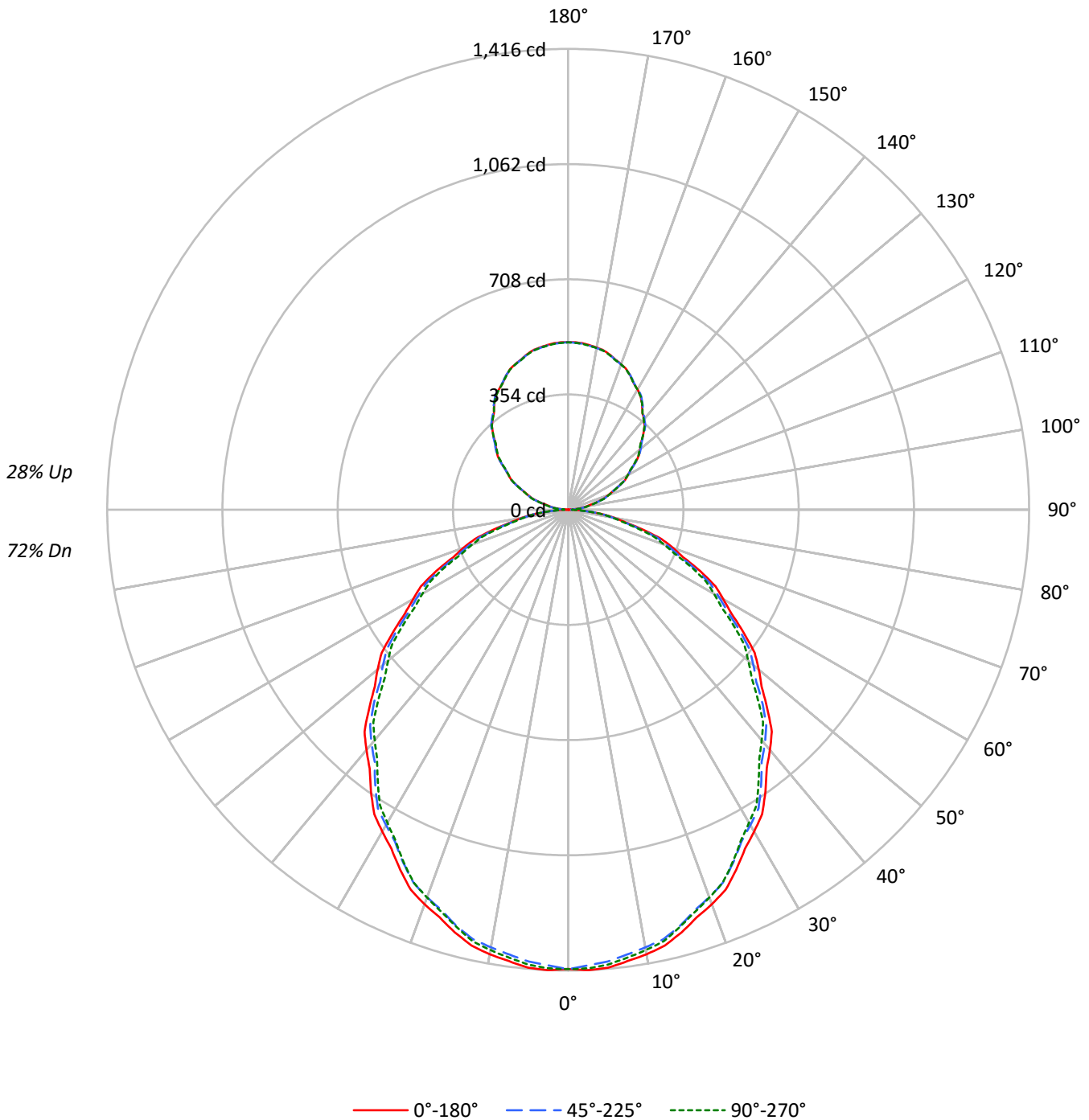
Input Watts (W): 46.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	112	112	112	107	107	107	107	96	96	96	86	86	86	76	76	76	72
1	103	98	94	90	97	93	90	86	84	81	79	75	73	71	67	66	64	61
2	93	86	79	74	88	81	76	71	73	69	65	66	63	59	59	57	54	51
3	85	75	68	62	80	72	65	59	65	59	55	58	54	50	53	49	46	43
4	78	67	58	52	74	64	56	50	58	52	47	52	47	43	47	43	40	37
5	72	60	51	45	68	57	49	43	52	45	40	47	42	37	42	38	35	32
6	66	54	45	39	63	51	43	38	47	40	35	42	37	33	38	34	30	28
7	61	49	40	34	58	46	39	33	42	36	31	39	33	29	35	31	27	25
8	57	44	36	31	54	42	35	30	39	32	28	35	30	26	32	28	24	22
9	53	40	33	27	50	39	32	27	36	29	25	33	27	24	30	25	22	20
10	50	37	30	25	47	36	29	24	33	27	23	30	25	21	28	23	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	15193	15193	15193
5°	15263	15055	15159
10°	15162	14924	15017
15°	14985	14755	14782
20°	14778	14513	14528
25°	14500	14226	14197
30°	14194	13908	13801
35°	13875	13571	13397
40°	13541	13198	12995
45°	13172	12858	12543
50°	12804	12439	12092
55°	12322	12003	11639
60°	11834	11496	11130
65°	11405	10942	10603
70°	10770	10313	9854
75°	9844	9491	9087
80°	8877	8498	8424
85°	7793	7497	7188



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.0	2.6
10°-20°	375.4	7.4
20°-30°	554.6	10.9
30°-40°	647.8	12.7
40°-50°	651.3	12.8
50°-60°	572.1	11.2
60°-70°	426.2	8.4
70°-80°	242.8	4.8
80°-90°	71.2	1.4
90°-100°	33.5	0.7
100°-110°	100.3	2.0
110°-120°	170.6	3.3
120°-130°	224.4	4.4
130°-140°	252.2	4.9
140°-150°	247.9	4.9
150°-160°	208.7	4.1
160°-170°	138.9	2.7
170°-180°	48.7	1.0
0°-30°	1062.9	20.8
0°-40°	1710.7	33.5
0°-60°	2934.1	57.5
0°-90°	3674.3	72.1
90°-120°	304.4	6.0
90°-150°	1029.0	20.2
90°-180°	1425.0	27.9
0°-180°	5099.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1412	1412	1412	1412	1412	
5°	1413	1406	1393	1405	1403	134
15°	1345	1339	1324	1333	1326	379
25°	1221	1213	1198	1199	1195	562
35°	1056	1048	1033	1026	1020	660
45°	865	860	845	831	824	668
55°	657	655	640	627	620	588
65°	448	441	430	420	416	442
75°	237	232	228	222	218	253
85°	63	61	61	58	58	69
90°	0	4	10	11	12	5
95°	24	27	30	31	32	27
105°	91	92	95	95	96	97
115°	172	173	172	172	172	170
125°	251	252	252	250	248	224
135°	326	328	328	327	326	251
145°	396	396	398	397	396	247
155°	453	453	453	455	452	208
165°	493	492	492	494	492	139
175°	513	512	512	514	511	49
180°	514	514	514	514	514	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5
2.5°	1416.3	1415.5	1414.6	1413.7	1412.9	1411.2	1408.9	1406.5	1404.2	1401.8	1403.9
5°	1412.6	1411.3	1410.0	1408.6	1407.3	1405.2	1402.2	1399.2	1396.2	1393.3	1396.0
7.5°	1398.8	1397.5	1396.2	1394.8	1393.5	1391.2	1388.2	1385.1	1382.1	1378.9	1381.3
10°	1387.2	1385.9	1384.5	1383.1	1381.8	1379.4	1375.9	1372.3	1368.9	1365.4	1367.8
12.5°	1371.6	1370.6	1369.4	1368.2	1367.2	1364.9	1361.6	1358.3	1355.0	1351.7	1353.5
15°	1344.7	1343.6	1342.6	1341.5	1340.4	1338.1	1334.6	1331.1	1327.6	1324.1	1326.2
17.5°	1313.4	1312.0	1310.6	1309.2	1307.8	1305.4	1301.8	1298.3	1294.9	1291.3	1292.8
20°	1290.1	1288.5	1286.9	1285.2	1283.6	1281.0	1277.6	1274.1	1270.6	1267.0	1268.1
22.5°	1263.9	1262.3	1260.7	1259.0	1257.4	1254.9	1251.3	1247.9	1244.4	1240.8	1241.7
25°	1220.9	1219.3	1217.7	1216.1	1214.4	1211.9	1208.4	1204.9	1201.4	1197.8	1198.1
27.5°	1175.1	1173.5	1171.9	1170.4	1168.8	1166.1	1162.3	1158.6	1154.8	1151.0	1151.2
30°	1142.0	1140.7	1139.3	1138.0	1136.7	1134.1	1130.3	1126.5	1122.8	1119.0	1119.0
32.5°	1109.0	1107.2	1105.5	1103.7	1101.9	1099.6	1096.6	1093.8	1090.8	1087.9	1086.4
35°	1055.9	1054.3	1052.7	1051.1	1049.4	1046.9	1043.3	1039.8	1036.3	1032.8	1031.2
37.5°	1001.5	999.4	997.4	995.3	993.3	990.5	986.9	983.4	979.8	976.2	974.3
40°	963.7	962.0	960.4	958.8	957.2	954.5	950.7	946.9	943.2	939.3	937.2
42.5°	925.8	923.9	922.1	920.2	918.5	915.6	911.9	908.1	904.3	900.5	898.4
45°	865.3	864.2	863.2	862.1	861.0	858.7	855.2	851.7	848.2	844.7	841.5
47.5°	805.4	803.8	802.3	800.7	799.2	796.7	793.4	790.1	786.8	783.5	780.3
50°	764.6	763.2	761.9	760.5	759.2	756.8	753.2	749.8	746.3	742.8	739.8
52.5°	721.8	720.9	720.1	719.2	718.2	715.9	712.2	708.5	704.7	701.0	698.5
55°	656.6	656.3	656.0	655.8	655.5	653.6	650.1	646.6	643.1	639.6	636.6
57.5°	594.4	593.5	592.6	591.7	590.8	588.9	586.1	583.3	580.5	577.7	575.1
60°	549.7	549.5	549.2	548.9	548.7	547.0	543.7	540.5	537.3	534.0	531.5
62.5°	510.0	509.3	508.5	507.8	507.2	505.2	501.9	498.7	495.5	492.2	489.8
65°	447.8	446.5	445.1	443.8	442.5	440.4	437.7	435.1	432.3	429.6	427.5
67.5°	382.1	380.8	379.7	378.5	377.3	375.7	373.6	371.6	369.5	367.5	365.6
70°	342.2	340.6	339.0	337.4	335.8	334.1	332.5	330.9	329.3	327.7	325.8
72.5°	300.5	299.3	298.1	296.9	295.8	294.3	292.4	290.6	288.7	286.9	285.3
75°	236.7	235.6	234.5	233.4	232.4	231.4	230.6	229.8	229.0	228.2	226.9
77.5°	180.1	179.5	178.9	178.3	177.7	176.9	176.0	175.0	174.1	173.1	172.2
80°	143.2	142.4	141.6	140.8	140.0	139.3	138.8	138.2	137.7	137.1	136.9
82.5°	107.3	107.1	107.0	106.8	106.6	106.5	106.4	106.3	106.2	106.1	105.6
85°	63.1	62.6	62.1	61.5	61.0	60.7	60.7	60.7	60.7	60.7	60.1
87.5°	25.3	24.9	24.4	23.9	23.5	23.2	23.3	23.3	23.3	23.3	23.2
90°	0.4	1.3	2.2	3.1	4.0	5.0	6.2	7.4	8.6	9.7	10.1
92.5°	9.8	10.4	11.0	11.6	12.2	12.8	13.6	14.2	14.9	15.5	15.8
95°	23.8	24.4	25.1	25.8	26.4	27.0	27.7	28.4	29.2	29.9	30.2
97.5°	42.4	42.8	43.2	43.8	44.2	44.7	45.2	45.7	46.3	46.8	47.2
100°	54.9	55.5	56.0	56.5	57.1	57.6	58.1	58.5	58.9	59.4	59.7
102.5°	69.5	69.8	70.2	70.4	70.8	71.2	71.9	72.4	73.0	73.7	73.9
105°	91.0	91.1	91.3	91.5	91.7	92.1	92.9	93.7	94.5	95.3	95.3
107.5°	115.8	115.9	116.0	116.1	116.3	116.5	116.8	117.1	117.4	117.8	118.1
110°	131.3	131.5	131.7	131.9	132.1	132.2	132.4	132.6	132.8	133.0	133.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	147.5	147.6	147.8	147.8	147.9	148.0	148.0	148.1	148.1	148.1	148.6
115°	171.7	172.0	172.3	172.5	172.8	172.9	172.7	172.5	172.4	172.2	172.3
117.5°	196.2	196.4	196.5	196.7	196.9	196.8	196.6	196.4	196.2	195.9	195.9
120°	211.3	211.9	212.4	212.9	213.5	213.6	213.1	212.7	212.2	211.8	211.7
122.5°	227.2	227.6	228.0	228.4	228.7	228.8	228.6	228.4	228.2	227.9	227.7
125°	251.4	251.6	251.9	252.2	252.4	252.4	252.3	252.1	251.9	251.7	251.4
127.5°	273.7	274.2	274.8	275.4	276.0	276.2	276.0	275.7	275.5	275.4	274.8
130°	288.6	289.3	290.0	290.7	291.4	291.6	291.3	291.1	290.8	290.5	290.2
132.5°	303.4	304.1	304.9	305.6	306.3	306.6	306.3	306.1	305.9	305.8	305.3
135°	326.1	326.6	327.2	327.7	328.2	328.5	328.4	328.3	328.2	328.1	327.8
137.5°	347.1	347.6	348.0	348.5	348.9	349.3	349.5	349.7	350.0	350.2	349.8
140°	361.7	362.1	362.6	363.0	363.5	363.7	363.8	363.9	364.0	364.1	364.0
142.5°	375.0	375.4	375.9	376.3	376.7	377.0	377.2	377.4	377.6	377.6	377.6
145°	395.7	395.8	396.0	396.2	396.4	396.5	396.8	397.1	397.3	397.6	397.5
147.5°	413.8	414.0	414.4	414.6	415.0	415.3	415.5	415.8	416.1	416.3	416.3
150°	426.3	426.5	426.7	426.9	427.0	427.2	427.4	427.6	427.8	427.9	427.9
152.5°	436.7	436.9	437.2	437.4	437.7	437.8	437.9	438.1	438.2	438.3	438.5
155°	453.0	453.0	453.0	453.0	453.0	453.1	453.2	453.3	453.3	453.4	453.8
157.5°	466.9	466.8	466.7	466.5	466.5	466.5	466.5	466.6	466.6	466.7	467.1
160°	475.6	475.5	475.3	475.1	474.9	474.8	474.8	474.8	474.8	474.8	475.3
162.5°	483.4	483.1	482.9	482.6	482.4	482.3	482.3	482.4	482.5	482.6	483.0
165°	493.4	493.1	492.8	492.6	492.3	492.2	492.2	492.2	492.2	492.2	492.8
167.5°	501.4	501.1	500.7	500.3	500.0	499.8	499.9	500.0	500.1	500.1	500.7
170°	506.0	505.6	505.2	504.9	504.5	504.4	504.4	504.4	504.4	504.4	505.0
172.5°	509.5	509.2	508.8	508.5	508.0	507.8	507.8	507.8	507.8	507.8	508.5
175°	513.2	512.8	512.5	512.1	511.8	511.6	511.6	511.6	511.6	511.6	512.1
177.5°	514.8	514.4	514.2	513.9	513.6	513.4	513.4	513.4	513.4	513.4	513.9
180°	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5
2.5°	1406.0	1408.3	1410.4	1411.4	1411.1	1411.0	1410.7	1410.5
5°	1398.6	1401.3	1404.1	1405.2	1404.6	1404.1	1403.6	1403.0
7.5°	1383.8	1386.3	1388.7	1389.7	1389.4	1389.1	1388.8	1388.4
10°	1370.2	1372.6	1375.1	1376.0	1375.5	1374.9	1374.4	1373.9
12.5°	1355.3	1357.1	1358.9	1359.6	1359.3	1359.0	1358.6	1358.3
15°	1328.4	1330.5	1332.8	1333.0	1331.4	1329.7	1328.1	1326.5
17.5°	1294.3	1295.8	1297.4	1297.8	1297.3	1296.6	1296.0	1295.5
20°	1269.2	1270.3	1271.4	1271.5	1270.7	1269.9	1269.1	1268.3
22.5°	1242.6	1243.4	1244.3	1244.2	1243.2	1242.2	1241.2	1240.1
25°	1198.4	1198.7	1199.0	1198.7	1197.8	1197.0	1196.2	1195.4
27.5°	1151.5	1151.6	1151.9	1151.5	1150.5	1149.4	1148.4	1147.4
30°	1119.0	1119.0	1119.0	1118.0	1116.2	1114.3	1112.4	1110.4
32.5°	1084.9	1083.4	1081.9	1080.6	1079.6	1078.5	1077.5	1076.5
35°	1029.6	1028.0	1026.4	1024.8	1023.5	1022.2	1020.8	1019.5
37.5°	972.4	970.4	968.5	967.1	966.3	965.4	964.5	963.7
40°	935.0	932.9	930.8	929.1	928.0	926.9	925.9	924.8
42.5°	896.2	894.0	891.9	890.3	889.2	888.1	887.1	886.0
45°	838.2	835.0	831.8	829.5	828.1	826.8	825.5	824.0
47.5°	777.1	774.0	770.8	768.7	767.4	766.2	765.1	763.8
50°	736.8	733.9	730.8	728.6	727.0	725.3	723.7	722.1
52.5°	695.9	693.4	690.9	688.8	687.2	685.5	683.9	682.3
55°	633.6	630.7	627.8	625.5	624.2	622.9	621.5	620.2
57.5°	572.4	569.8	567.1	565.0	563.5	561.9	560.4	558.7
60°	529.1	526.7	524.3	522.5	521.0	519.7	518.4	517.0
62.5°	487.4	485.0	482.5	480.9	479.9	479.0	478.1	477.2
65°	425.3	423.1	421.0	419.5	418.7	417.9	417.1	416.3
67.5°	363.7	361.9	360.0	358.5	357.3	356.1	355.0	353.9
70°	323.9	322.0	320.1	318.5	317.2	315.8	314.5	313.1
72.5°	283.6	281.9	280.2	279.0	278.3	277.6	277.0	276.3
75°	225.5	224.1	222.7	221.7	220.9	220.1	219.3	218.5
77.5°	171.2	170.3	169.4	169.0	169.0	169.0	169.0	169.0
80°	136.6	136.3	136.1	135.9	135.9	135.9	135.9	135.9
82.5°	105.1	104.6	104.2	103.8	103.5	103.3	103.2	102.9
85°	59.6	59.0	58.5	58.2	58.2	58.2	58.2	58.2
87.5°	23.0	22.8	22.7	22.6	22.7	22.7	22.7	22.8
90°	10.4	10.8	11.1	11.4	11.6	11.8	11.9	12.1
92.5°	16.1	16.4	16.7	16.8	16.7	16.5	16.4	16.3
95°	30.6	30.9	31.3	31.5	31.5	31.5	31.5	31.5
97.5°	47.6	48.1	48.4	48.6	48.6	48.6	48.5	48.5
100°	59.9	60.2	60.5	60.7	60.9	61.1	61.3	61.4
102.5°	74.2	74.5	74.7	74.8	74.8	74.7	74.7	74.6
105°	95.3	95.3	95.3	95.4	95.7	95.9	96.0	96.2
107.5°	118.3	118.6	118.9	119.0	118.9	118.8	118.7	118.6
110°	133.7	134.0	134.4	134.5	134.3	134.1	133.9	133.8



TEST NUMBER: P332185-940

CATALOG NUMBER: S123DIW-S1000D460U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	149.0	149.5	149.9	150.1	150.0	150.0	150.0	149.9
115°	172.4	172.5	172.5	172.5	172.5	172.4	172.3	172.2
117.5°	195.9	195.8	195.8	195.7	195.5	195.2	194.9	194.7
120°	211.6	211.5	211.4	211.2	211.1	210.9	210.7	210.5
122.5°	227.5	227.2	226.9	226.8	226.5	226.2	226.0	225.7
125°	251.0	250.7	250.3	249.9	249.6	249.2	248.9	248.5
127.5°	274.4	273.8	273.3	272.9	272.5	272.1	271.6	271.3
130°	289.8	289.4	289.1	288.6	288.0	287.4	286.8	286.1
132.5°	304.9	304.4	304.0	303.5	303.1	302.6	302.1	301.6
135°	327.4	327.1	326.7	326.5	326.3	326.1	325.9	325.7
137.5°	349.5	349.1	348.7	348.3	347.9	347.7	347.3	347.0
140°	363.9	363.8	363.7	363.4	362.7	362.1	361.5	360.9
142.5°	377.5	377.4	377.3	377.0	376.6	376.0	375.6	375.1
145°	397.4	397.3	397.3	397.1	396.7	396.4	396.0	395.7
147.5°	416.3	416.3	416.3	416.1	415.5	414.9	414.4	413.8
150°	427.9	427.9	427.9	427.7	427.1	426.6	426.1	425.5
152.5°	438.5	438.7	438.9	438.7	438.3	437.7	437.3	436.8
155°	454.1	454.5	454.9	454.7	454.1	453.4	452.8	452.2
157.5°	467.5	467.9	468.2	468.1	467.7	467.2	466.6	466.2
160°	475.7	476.2	476.6	476.6	476.3	475.9	475.5	475.2
162.5°	483.5	483.9	484.4	484.3	483.8	483.1	482.6	482.0
165°	493.3	493.8	494.4	494.3	493.7	493.0	492.4	491.8
167.5°	501.2	501.8	502.3	502.3	501.8	501.2	500.7	500.1
170°	505.6	506.2	506.8	506.8	506.2	505.6	505.0	504.4
172.5°	509.0	509.5	510.1	510.1	509.4	508.8	508.2	507.6
175°	512.6	513.2	513.7	513.7	513.1	512.5	511.8	511.2
177.5°	514.3	514.8	515.1	515.1	514.6	514.2	513.6	513.1
180°	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4

(END OF REPORT)