

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: P332185-930

Luminaire Tested: **S123DIW-S1000D460U930-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332185-930  
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-S1000D460U930-4F0-1E-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: 4662.6 lumens  
Efficiency: N/A  
Efficacy: 100.9 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

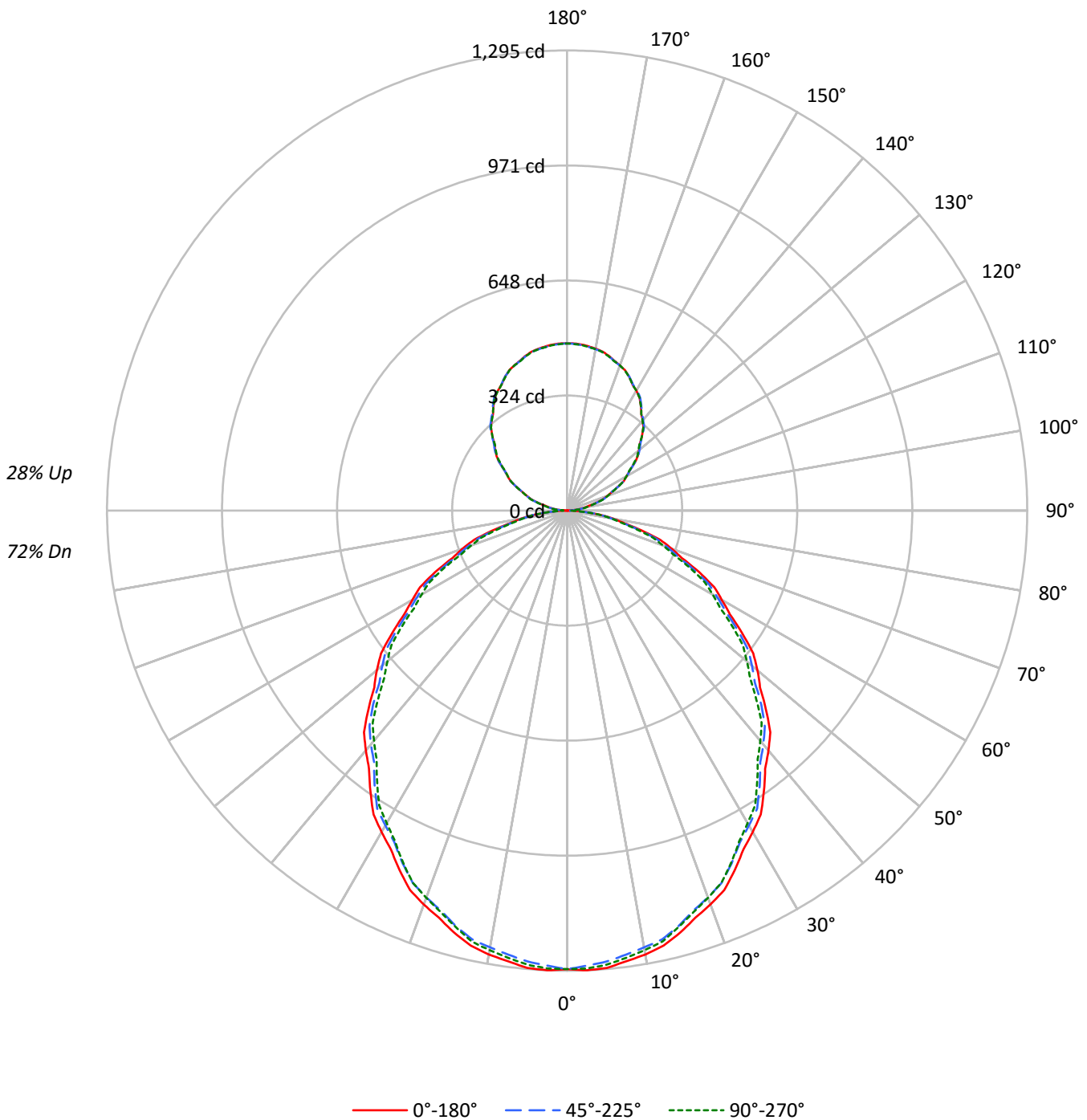
Input Watts (W): 46.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332185-930

CATALOG NUMBER: S123DIW-S1000D460U930-4F0-1E-UDD-F1

### Luminous Intensity Polar Plot





TEST NUMBER: P332185-930

CATALOG NUMBER: S123DIW-S1000D460U930-4F0-1E-UDD-F1

**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°	13891	13891	13891
5°	13956	13765	13861
10°	13864	13645	13729
15°	13701	13490	13515
20°	13512	13270	13283
25°	13258	13007	12981
30°	12978	12716	12619
35°	12686	12408	12248
40°	12381	12067	11880
45°	12044	11756	11469
50°	11707	11372	11055
55°	11265	10975	10640
60°	10820	10512	10176
65°	10427	10004	9694
70°	9847	9429	9010
75°	9000	8675	8305
80°	8114	7773	7705
85°	7126	6854	6570



TEST NUMBER: P332185-930

CATALOG NUMBER: S123DIW-S1000D460U930-4F0-1E-UDD-F1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	121.6	2.6
10°-20°	343.3	7.4
20°-30°	507.0	10.9
30°-40°	592.3	12.7
40°-50°	595.5	12.8
50°-60°	523.1	11.2
60°-70°	389.7	8.4
70°-80°	222.0	4.8
80°-90°	65.1	1.4
90°-100°	30.6	0.7
100°-110°	91.7	2.0
110°-120°	156.0	3.3
120°-130°	205.2	4.4
130°-140°	230.6	4.9
140°-150°	226.7	4.9
150°-160°	190.8	4.1
160°-170°	127.0	2.7
170°-180°	44.5	1.0
0°-30°	971.9	20.8
0°-40°	1564.1	33.5
0°-60°	2682.6	57.5
0°-90°	3359.5	72.1
90°-120°	278.3	6.0
90°-150°	940.8	20.2
90°-180°	1303.0	27.9
0°-180°	4662.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1290	1290	1290	1290	1290	
5°	1292	1286	1274	1284	1283	122
15°	1230	1224	1211	1219	1213	346
25°	1116	1109	1095	1096	1093	514
35°	965	958	944	938	932	604
45°	791	786	772	759	753	611
55°	600	598	585	573	567	538
65°	409	404	393	384	381	404
75°	216	212	209	203	200	231
85°	58	56	56	53	53	63
90°	0	4	9	10	11	5
95°	22	24	27	29	29	24
105°	83	84	87	87	88	89
115°	157	158	157	158	157	155
125°	230	231	230	229	227	205
135°	298	300	300	299	298	230
145°	362	362	364	363	362	226
155°	414	414	415	416	413	191
165°	451	450	450	452	450	127
175°	469	468	468	470	467	45
180°	470	470	470	470	470	



TEST NUMBER: P332185-930

CATALOG NUMBER: S123DIW-S1000D460U930-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1290.5	1290.5	1290.5	1290.5	1290.5	1290.5	1290.5	1290.5	1290.5	1290.5	1290.5
2.5°	1294.9	1294.2	1293.4	1292.6	1291.8	1290.3	1288.2	1286.0	1283.9	1281.7	1283.6
5°	1291.6	1290.4	1289.2	1287.9	1286.7	1284.7	1282.1	1279.3	1276.6	1273.9	1276.4
7.5°	1279.0	1277.7	1276.5	1275.3	1274.1	1272.0	1269.3	1266.4	1263.6	1260.8	1263.0
10°	1268.4	1267.1	1265.8	1264.6	1263.4	1261.2	1258.0	1254.7	1251.6	1248.4	1250.6
12.5°	1254.1	1253.1	1252.1	1251.0	1250.0	1248.0	1245.0	1241.9	1238.9	1235.9	1237.5
15°	1229.5	1228.5	1227.5	1226.5	1225.6	1223.4	1220.3	1217.1	1213.8	1210.6	1212.6
17.5°	1200.9	1199.5	1198.3	1197.0	1195.7	1193.5	1190.3	1187.1	1183.9	1180.6	1182.0
20°	1179.6	1178.1	1176.6	1175.1	1173.6	1171.3	1168.1	1164.9	1161.7	1158.5	1159.4
22.5°	1155.6	1154.1	1152.7	1151.1	1149.7	1147.4	1144.1	1140.9	1137.8	1134.5	1135.3
25°	1116.3	1114.8	1113.4	1111.9	1110.4	1108.1	1104.8	1101.6	1098.5	1095.2	1095.4
27.5°	1074.4	1072.9	1071.5	1070.1	1068.6	1066.2	1062.7	1059.3	1055.8	1052.4	1052.6
30°	1044.2	1042.9	1041.7	1040.5	1039.3	1036.9	1033.5	1030.0	1026.5	1023.1	1023.1
32.5°	1014.0	1012.4	1010.7	1009.1	1007.5	1005.3	1002.7	1000.0	997.4	994.7	993.3
35°	965.4	963.9	962.5	961.0	959.4	957.2	953.9	950.7	947.5	944.3	942.8
37.5°	915.7	913.8	911.9	910.0	908.2	905.6	902.4	899.1	895.9	892.6	890.8
40°	881.1	879.5	878.1	876.6	875.1	872.7	869.2	865.8	862.3	858.8	856.9
42.5°	846.4	844.7	843.1	841.4	839.8	837.1	833.7	830.3	826.8	823.4	821.4
45°	791.2	790.2	789.2	788.2	787.3	785.1	782.0	778.7	775.5	772.3	769.4
47.5°	736.4	734.9	733.5	732.1	730.7	728.4	725.5	722.4	719.4	716.4	713.5
50°	699.1	697.8	696.6	695.4	694.1	691.9	688.7	685.5	682.3	679.1	676.4
52.5°	660.0	659.2	658.4	657.5	656.6	654.5	651.2	647.8	644.3	640.9	638.6
55°	600.3	600.1	599.8	599.6	599.3	597.6	594.4	591.2	588.0	584.8	582.0
57.5°	543.5	542.7	541.8	541.0	540.1	538.4	535.9	533.3	530.8	528.2	525.8
60°	502.6	502.4	502.1	501.9	501.7	500.1	497.1	494.2	491.2	488.3	486.0
62.5°	466.3	465.6	465.0	464.3	463.7	461.9	458.9	456.0	453.1	450.0	447.8
65°	409.4	408.2	407.0	405.8	404.6	402.7	400.2	397.8	395.3	392.8	390.9
67.5°	349.4	348.2	347.2	346.1	345.0	343.5	341.6	339.7	337.9	336.0	334.3
70°	312.9	311.4	310.0	308.5	307.0	305.5	304.0	302.6	301.1	299.6	297.9
72.5°	274.8	273.7	272.6	271.5	270.4	269.0	267.3	265.7	264.0	262.3	260.8
75°	216.4	215.4	214.4	213.4	212.5	211.6	210.8	210.1	209.4	208.6	207.4
77.5°	164.7	164.1	163.5	163.1	162.5	161.8	160.9	160.0	159.1	158.2	157.4
80°	130.9	130.2	129.5	128.7	128.0	127.3	126.9	126.4	125.9	125.4	125.1
82.5°	98.1	97.9	97.8	97.7	97.5	97.3	97.3	97.2	97.1	97.0	96.5
85°	57.7	57.2	56.7	56.3	55.8	55.5	55.5	55.5	55.5	55.5	55.0
87.5°	23.2	22.7	22.3	21.9	21.4	21.2	21.3	21.3	21.3	21.3	21.2
90°	0.4	1.2	2.0	2.9	3.7	4.6	5.6	6.8	7.8	8.9	9.2
92.5°	9.0	9.5	10.0	10.6	11.2	11.7	12.4	13.0	13.6	14.2	14.4
95°	21.8	22.3	22.9	23.6	24.1	24.7	25.4	26.0	26.7	27.3	27.6
97.5°	38.7	39.1	39.5	40.0	40.4	40.8	41.3	41.8	42.3	42.8	43.1
100°	50.2	50.7	51.2	51.7	52.2	52.7	53.1	53.5	53.9	54.3	54.5
102.5°	63.5	63.8	64.2	64.4	64.7	65.1	65.7	66.2	66.8	67.3	67.6
105°	83.2	83.3	83.5	83.6	83.8	84.2	85.0	85.7	86.4	87.2	87.2
107.5°	105.9	106.0	106.1	106.2	106.3	106.5	106.8	107.0	107.4	107.7	107.9
110°	120.1	120.3	120.4	120.6	120.7	120.9	121.1	121.2	121.4	121.6	121.9



TEST NUMBER: P332185-930

CATALOG NUMBER: S123DIW-S1000D460U930-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	134.9	134.9	135.1	135.2	135.3	135.3	135.3	135.4	135.4	135.4	135.8
115°	157.0	157.3	157.5	157.8	158.0	158.1	157.9	157.8	157.6	157.4	157.5
117.5°	179.4	179.5	179.7	179.9	180.0	179.9	179.8	179.5	179.4	179.1	179.1
120°	193.2	193.7	194.2	194.7	195.2	195.3	194.9	194.4	194.0	193.6	193.6
122.5°	207.7	208.1	208.5	208.8	209.1	209.2	209.0	208.8	208.6	208.4	208.1
125°	229.8	230.1	230.3	230.6	230.8	230.8	230.6	230.5	230.3	230.2	229.8
127.5°	250.2	250.7	251.3	251.8	252.3	252.5	252.3	252.1	251.9	251.8	251.3
130°	263.8	264.5	265.1	265.8	266.4	266.6	266.4	266.1	265.9	265.6	265.3
132.5°	277.4	278.0	278.8	279.4	280.1	280.3	280.1	279.9	279.7	279.6	279.2
135°	298.2	298.6	299.1	299.6	300.1	300.4	300.3	300.2	300.1	300.0	299.7
137.5°	317.4	317.8	318.2	318.6	319.0	319.4	319.5	319.8	320.0	320.2	319.8
140°	330.7	331.1	331.5	331.9	332.3	332.6	332.6	332.7	332.8	332.9	332.8
142.5°	342.8	343.2	343.6	344.1	344.5	344.7	344.9	345.0	345.2	345.3	345.2
145°	361.7	361.9	362.1	362.2	362.4	362.6	362.8	363.1	363.3	363.5	363.5
147.5°	378.3	378.5	378.9	379.1	379.4	379.7	379.9	380.2	380.4	380.7	380.7
150°	389.8	390.0	390.1	390.3	390.4	390.6	390.8	390.9	391.1	391.3	391.3
152.5°	399.3	399.5	399.7	399.9	400.1	400.3	400.4	400.6	400.6	400.7	400.9
155°	414.2	414.2	414.2	414.2	414.2	414.3	414.3	414.4	414.5	414.6	414.9
157.5°	426.9	426.8	426.7	426.6	426.5	426.5	426.6	426.6	426.6	426.7	427.1
160°	434.9	434.7	434.6	434.4	434.2	434.1	434.1	434.1	434.1	434.1	434.6
162.5°	442.0	441.7	441.5	441.2	441.1	441.0	441.0	441.1	441.2	441.2	441.6
165°	451.1	450.9	450.6	450.4	450.1	450.0	450.0	450.0	450.0	450.0	450.5
167.5°	458.4	458.1	457.8	457.5	457.1	457.0	457.1	457.1	457.2	457.2	457.8
170°	462.6	462.3	461.9	461.6	461.3	461.1	461.1	461.1	461.1	461.1	461.7
172.5°	465.9	465.5	465.2	464.9	464.5	464.3	464.3	464.3	464.3	464.3	464.9
175°	469.2	468.9	468.6	468.2	467.9	467.7	467.7	467.7	467.7	467.7	468.2
177.5°	470.7	470.3	470.1	469.9	469.6	469.4	469.4	469.4	469.4	469.4	469.9
180°	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3



TEST NUMBER: P332185-930

CATALOG NUMBER: S123DIW-S1000D460U930-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1290.5	1290.5	1290.5	1290.5	1290.5	1290.5	1290.5	1290.5
2.5°	1285.6	1287.6	1289.6	1290.5	1290.2	1290.0	1289.8	1289.6
5°	1278.8	1281.2	1283.8	1284.7	1284.3	1283.8	1283.3	1282.8
7.5°	1265.3	1267.5	1269.7	1270.6	1270.3	1270.1	1269.7	1269.4
10°	1252.8	1255.0	1257.3	1258.1	1257.6	1257.1	1256.6	1256.1
12.5°	1239.2	1240.8	1242.4	1243.1	1242.8	1242.5	1242.2	1241.9
15°	1214.6	1216.5	1218.5	1218.8	1217.3	1215.8	1214.3	1212.8
17.5°	1183.4	1184.8	1186.2	1186.6	1186.1	1185.5	1185.0	1184.5
20°	1160.4	1161.5	1162.5	1162.5	1161.8	1161.1	1160.3	1159.6
22.5°	1136.1	1136.9	1137.7	1137.6	1136.7	1135.7	1134.8	1133.8
25°	1095.7	1096.0	1096.3	1096.0	1095.2	1094.5	1093.7	1093.0
27.5°	1052.8	1053.0	1053.2	1052.8	1051.9	1050.9	1050.0	1049.0
30°	1023.1	1023.1	1023.1	1022.2	1020.5	1018.8	1017.1	1015.3
32.5°	991.9	990.6	989.2	988.0	987.1	986.1	985.2	984.2
35°	941.3	939.9	938.4	937.0	935.8	934.6	933.4	932.1
37.5°	889.1	887.3	885.5	884.2	883.5	882.6	881.8	881.1
40°	854.9	853.0	851.0	849.5	848.5	847.5	846.5	845.5
42.5°	819.4	817.4	815.5	814.0	813.0	812.0	811.1	810.1
45°	766.4	763.4	760.5	758.4	757.2	755.9	754.7	753.4
47.5°	710.5	707.7	704.7	702.8	701.6	700.6	699.5	698.4
50°	673.7	671.0	668.2	666.2	664.7	663.2	661.7	660.2
52.5°	636.3	634.0	631.7	629.7	628.3	626.8	625.3	623.9
55°	579.4	576.7	574.0	571.9	570.7	569.5	568.3	567.0
57.5°	523.3	521.0	518.5	516.6	515.2	513.7	512.3	510.9
60°	483.8	481.6	479.4	477.7	476.4	475.2	473.9	472.7
62.5°	445.6	443.4	441.2	439.7	438.8	438.0	437.2	436.3
65°	388.9	386.9	384.9	383.6	382.9	382.1	381.3	380.6
67.5°	332.6	330.8	329.1	327.8	326.7	325.6	324.6	323.6
70°	296.1	294.4	292.7	291.2	290.0	288.8	287.6	286.3
72.5°	259.3	257.7	256.2	255.1	254.5	253.8	253.2	252.6
75°	206.2	204.9	203.7	202.7	201.9	201.2	200.5	199.7
77.5°	156.5	155.7	154.9	154.5	154.5	154.5	154.5	154.5
80°	124.9	124.7	124.4	124.3	124.3	124.3	124.3	124.3
82.5°	96.1	95.6	95.2	94.9	94.7	94.5	94.3	94.1
85°	54.5	54.0	53.5	53.2	53.2	53.2	53.2	53.2
87.5°	21.0	20.9	20.8	20.7	20.8	20.8	20.8	20.9
90°	9.5	9.9	10.2	10.4	10.6	10.8	10.9	11.1
92.5°	14.7	15.0	15.2	15.3	15.2	15.1	15.0	14.9
95°	28.0	28.3	28.6	28.8	28.8	28.8	28.8	28.8
97.5°	43.5	43.9	44.3	44.4	44.4	44.4	44.4	44.4
100°	54.8	55.0	55.3	55.5	55.7	55.8	56.0	56.2
102.5°	67.8	68.1	68.3	68.4	68.4	68.3	68.3	68.2
105°	87.2	87.2	87.2	87.2	87.5	87.6	87.8	88.0
107.5°	108.2	108.4	108.7	108.8	108.7	108.6	108.5	108.4
110°	122.2	122.5	122.9	122.9	122.8	122.6	122.5	122.3





TEST NUMBER: P332185-930

CATALOG NUMBER: S123DIW-S1000D460U930-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	136.2	136.6	137.1	137.2	137.1	137.1	137.1	137.1
115°	157.6	157.7	157.8	157.8	157.7	157.6	157.5	157.4
117.5°	179.1	179.0	179.0	179.0	178.7	178.5	178.2	178.0
120°	193.5	193.4	193.3	193.1	193.0	192.8	192.7	192.5
122.5°	208.0	207.7	207.5	207.3	207.1	206.8	206.6	206.4
125°	229.5	229.2	228.9	228.5	228.2	227.9	227.6	227.2
127.5°	250.9	250.4	249.9	249.5	249.2	248.7	248.3	248.0
130°	265.0	264.6	264.3	263.9	263.3	262.8	262.2	261.5
132.5°	278.8	278.3	277.9	277.5	277.1	276.6	276.2	275.7
135°	299.4	299.1	298.7	298.5	298.3	298.2	298.0	297.8
137.5°	319.5	319.2	318.8	318.5	318.1	317.9	317.6	317.2
140°	332.7	332.6	332.6	332.2	331.7	331.1	330.5	330.0
142.5°	345.1	345.0	345.0	344.7	344.3	343.8	343.4	342.9
145°	363.4	363.3	363.2	363.1	362.7	362.4	362.1	361.7
147.5°	380.7	380.7	380.7	380.4	379.9	379.4	378.9	378.4
150°	391.3	391.3	391.3	391.0	390.5	390.0	389.6	389.1
152.5°	401.0	401.1	401.3	401.1	400.7	400.2	399.8	399.4
155°	415.2	415.6	415.9	415.7	415.2	414.6	414.0	413.4
157.5°	427.5	427.8	428.1	428.0	427.6	427.1	426.6	426.2
160°	435.0	435.4	435.8	435.8	435.5	435.1	434.8	434.5
162.5°	442.1	442.5	442.9	442.8	442.3	441.7	441.2	440.7
165°	451.0	451.5	452.0	451.9	451.3	450.8	450.2	449.6
167.5°	458.3	458.8	459.3	459.3	458.8	458.3	457.8	457.2
170°	462.3	462.8	463.4	463.4	462.8	462.3	461.7	461.1
172.5°	465.4	465.9	466.4	466.4	465.8	465.2	464.6	464.1
175°	468.7	469.2	469.7	469.7	469.1	468.6	468.0	467.4
177.5°	470.3	470.7	471.0	471.0	470.5	470.1	469.6	469.1
180°	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3

(END OF REPORT)