

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: P331571

Luminaire Tested: **S122DIW-S865D970U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331571
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DIW-S865D970U835-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 970 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7384.1 lumens
Efficiency: N/A
Efficacy: 120.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

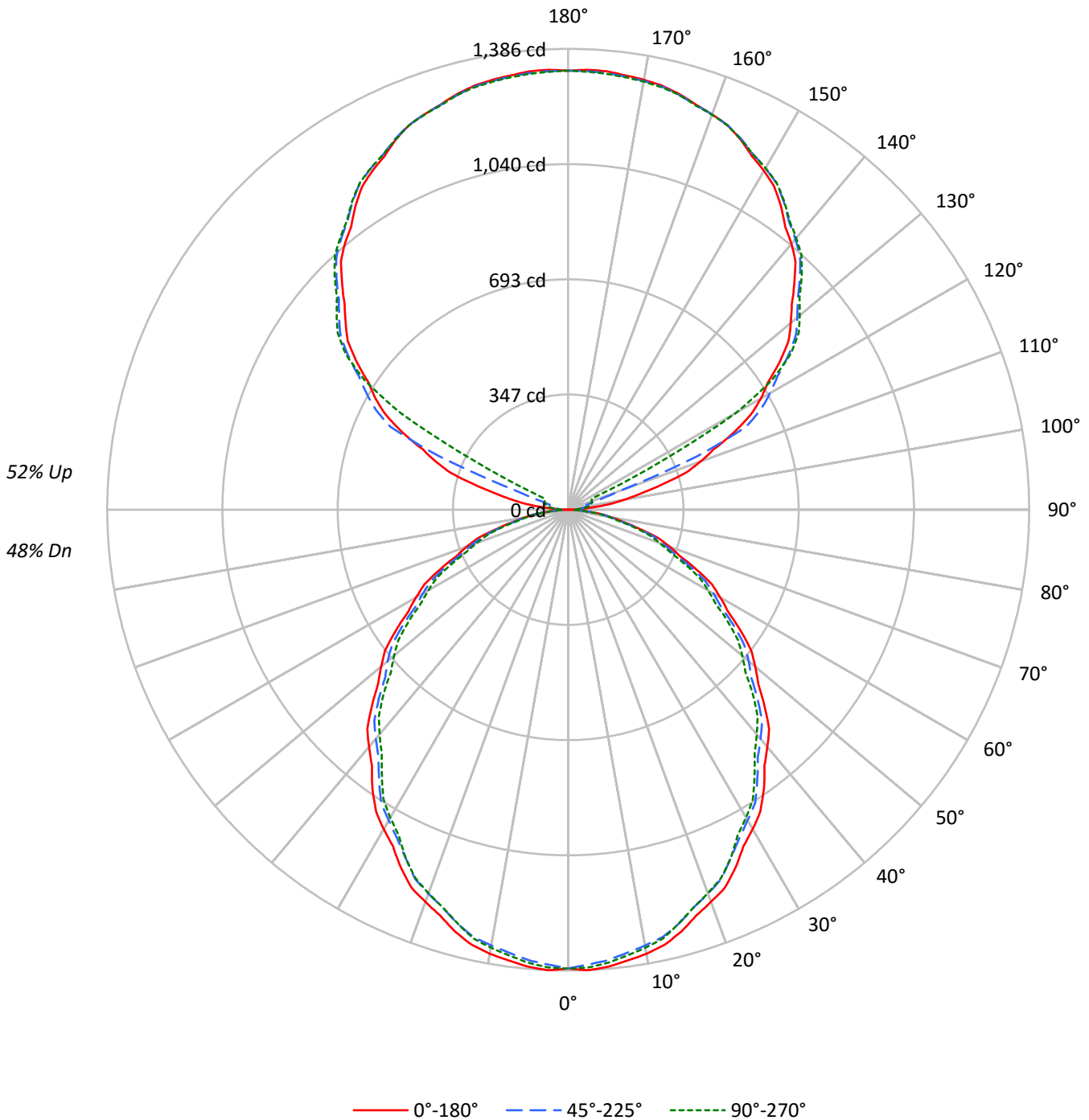
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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									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	98	98	98	98	82	82	82	67	67	67	54	54	54	48						48													
1	97	93	89	86	89	86	82	79	72	69	67	59	58	56	48	47	46						40														
2	89	81	75	70	81	75	70	65	63	59	56	52	49	47	42	40	38						34														
3	81	71	64	58	74	66	59	54	56	51	47	46	43	40	37	35	33						28														
4	74	63	55	49	68	58	51	46	49	44	40	41	37	34	33	30	28						24														
5	68	56	48	42	62	52	45	40	44	39	34	37	33	29	30	27	24						21														
6	62	50	42	37	57	47	40	34	40	34	30	33	29	26	27	24	22						19														
7	58	45	38	32	53	42	35	30	36	30	26	30	26	23	25	22	19						17														
8	54	41	34	28	49	38	31	27	33	27	23	28	23	20	23	20	17						15														
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	16						13														
10	47	35	27	23	43	32	26	21	28	23	19	23	19	16	20	16	14						12														

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	22281	22281	22281
5°	22366	22044	22174
10°	22233	21820	21930
15°	21959	21538	21514
20°	21569	21113	21089
25°	21180	20591	20591
30°	20681	20113	19939
35°	20217	19537	19249
40°	19633	18963	18598
45°	19057	18393	17938
50°	18432	17799	17166
55°	17779	17106	16473
60°	17053	16281	15684
65°	16275	15461	14751
70°	15286	14469	13780
75°	13905	13325	12994
80°	12338	11967	11353
85°	10078	9596	8596



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	129.8	1.8
10°-20°	365.1	4.9
20°-30°	536.7	7.3
30°-40°	623.4	8.4
40°-50°	622.7	8.4
50°-60°	543.1	7.4
60°-70°	401.6	5.4
70°-80°	227.4	3.1
80°-90°	64.4	0.9
90°-100°	44.1	0.6
100°-110°	161.5	2.2
110°-120°	431.8	5.8
120°-130°	712.8	9.7
130°-140°	758.0	10.3
140°-150°	704.6	9.5
150°-160°	566.5	7.7
160°-170°	365.0	4.9
170°-180°	125.6	1.7
0°-30°	1031.6	14.0
0°-40°	1655.0	22.4
0°-60°	2820.8	38.2
0°-90°	3514.2	47.6
90°-120°	637.4	8.6
90°-150°	2812.8	38.1
90°-180°	3870.0	52.4
0°-180°	7384.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1380	1380	1380	1380	1380	
5°	1380	1374	1360	1370	1368	131
15°	1314	1305	1288	1293	1287	370
25°	1189	1178	1156	1158	1156	547
35°	1026	1012	991	983	977	640
45°	835	825	806	791	786	644
55°	632	623	608	592	585	565
65°	426	418	405	393	386	421
75°	223	220	214	206	208	238
85°	54	53	52	48	46	62
90°	1	11	19	24	26	6
95°	62	33	37	42	41	76
105°	290	303	58	68	73	310
115°	549	566	590	168	78	541
125°	777	790	807	814	817	692
135°	961	976	985	994	993	742
145°	1115	1115	1130	1136	1132	697
155°	1228	1220	1231	1236	1229	566
165°	1294	1289	1291	1297	1291	365
175°	1323	1317	1319	1324	1316	126
180°	1320	1320	1320	1320	1320	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0
2.5°	1386.4	1385.2	1384.0	1382.9	1381.7	1379.8	1377.2	1374.6	1372.0	1369.4	1371.8
5°	1380.0	1378.8	1377.7	1376.5	1375.3	1373.1	1369.9	1366.6	1363.4	1360.1	1362.5
7.5°	1367.8	1366.0	1364.2	1362.3	1360.5	1357.9	1354.6	1351.3	1348.0	1344.7	1347.1
10°	1356.1	1354.1	1352.0	1349.9	1347.9	1345.1	1341.5	1338.0	1334.5	1330.9	1333.3
12.5°	1340.2	1338.4	1336.6	1334.7	1332.9	1330.2	1326.7	1323.1	1319.6	1316.1	1317.7
15°	1313.7	1311.9	1310.1	1308.4	1306.6	1303.8	1300.0	1296.1	1292.3	1288.5	1289.6
17.5°	1279.7	1277.9	1276.2	1274.4	1272.6	1269.8	1265.9	1262.0	1258.1	1254.2	1255.6
20°	1255.3	1253.5	1251.8	1250.0	1248.2	1245.3	1241.1	1237.0	1232.9	1228.8	1229.6
22.5°	1230.9	1228.4	1225.9	1223.4	1221.0	1217.8	1213.9	1210.0	1206.1	1202.2	1202.4
25°	1188.9	1186.6	1184.2	1181.9	1179.5	1175.8	1170.8	1165.8	1160.8	1155.8	1156.4
27.5°	1141.2	1139.1	1136.9	1134.8	1132.7	1129.6	1125.7	1121.7	1117.8	1113.8	1113.0
30°	1109.3	1107.0	1104.6	1102.3	1099.9	1096.5	1092.1	1087.7	1083.2	1078.8	1077.9
32.5°	1075.4	1073.5	1071.6	1069.7	1067.8	1064.5	1059.9	1055.2	1050.6	1045.9	1044.3
35°	1025.7	1022.8	1019.8	1016.9	1013.9	1010.1	1005.4	1000.7	995.9	991.2	989.5
37.5°	969.7	967.1	964.5	961.9	959.4	955.7	951.0	946.3	941.5	936.8	934.6
40°	931.5	929.2	926.8	924.4	922.1	918.5	913.8	909.1	904.4	899.7	897.0
42.5°	894.4	892.0	889.6	887.3	884.9	881.4	876.7	872.0	867.2	862.5	859.6
45°	834.6	832.6	830.5	828.5	826.4	823.1	818.7	814.3	809.9	805.5	802.2
47.5°	775.2	773.3	771.3	769.4	767.4	764.1	759.5	754.9	750.3	745.7	742.3
50°	733.8	732.3	730.9	729.4	727.9	725.1	721.0	716.8	712.7	708.6	704.5
52.5°	693.5	691.5	689.6	687.6	685.7	682.8	678.9	675.0	671.1	667.2	663.8
55°	631.6	629.9	628.1	626.3	624.5	621.9	618.4	614.8	611.3	607.7	604.2
57.5°	569.5	568.1	566.7	565.3	563.9	561.2	557.3	553.4	549.5	545.6	542.2
60°	528.1	526.9	525.8	524.6	523.4	520.8	516.6	512.5	508.4	504.2	501.0
62.5°	487.8	485.9	484.0	482.1	480.2	477.7	474.5	471.3	468.1	465.0	462.0
65°	426.0	424.2	422.4	420.6	418.9	416.5	413.6	410.6	407.7	404.7	402.1
67.5°	363.1	361.6	360.2	358.8	357.4	355.4	352.7	350.0	347.4	344.7	342.7
70°	323.8	322.6	321.4	320.2	319.1	317.1	314.5	311.8	309.2	306.5	304.5
72.5°	283.4	282.3	281.1	279.9	278.7	277.3	275.6	273.9	272.1	270.4	268.4
75°	222.9	222.3	221.7	221.2	220.6	219.5	218.1	216.6	215.1	213.6	211.9
77.5°	168.8	167.8	166.8	165.8	164.8	164.0	163.4	162.8	162.2	161.6	160.7
80°	132.7	132.4	132.1	131.8	131.5	131.1	130.5	129.9	129.3	128.7	127.8
82.5°	98.7	98.7	98.6	98.5	98.5	98.3	97.9	97.6	97.2	96.9	95.7
85°	54.4	54.1	53.8	53.5	53.2	52.9	52.6	52.3	52.0	51.8	50.9
87.5°	19.3	19.3	19.3	19.3	19.3	19.2	19.1	18.9	18.8	18.7	18.2
90°	1.0	3.3	5.6	8.0	10.3	12.3	14.0	15.7	17.4	19.1	20.2
92.5°	19.3	19.1	18.9	18.7	18.5	18.8	19.6	20.5	21.3	22.2	22.7
95°	62.1	55.1	48.1	41.1	34.1	31.3	32.8	34.3	35.8	37.3	38.3
97.5°	123.3	103.5	83.8	64.0	44.3	36.1	39.6	43.0	46.4	49.9	50.7
100°	169.1	140.0	110.9	81.9	52.8	40.0	43.6	47.2	50.9	54.5	56.2
102.5°	219.6	213.4	207.3	201.1	194.9	176.8	146.6	116.4	86.2	56.0	58.2
105°	290.5	296.9	303.2	309.6	316.0	290.2	232.2	174.2	116.3	58.3	60.6
107.5°	371.3	376.5	381.6	386.7	391.9	359.7	290.2	220.6	151.1	81.6	79.2
110°	423.3	427.8	432.2	436.7	441.1	412.7	351.3	290.0	228.6	167.2	146.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	472.2	476.2	480.1	484.1	488.0	482.4	467.3	452.1	436.9	421.8	344.3
115°	549.4	553.0	556.7	560.3	563.9	568.3	573.6	578.9	584.3	589.6	491.2
117.5°	618.4	622.5	626.5	630.5	634.6	638.4	642.1	645.7	649.4	653.0	629.2
120°	668.9	672.1	675.2	678.4	681.6	685.1	688.9	692.8	696.6	700.4	703.0
122.5°	711.7	715.0	718.4	721.7	725.1	728.9	733.0	737.2	741.3	745.5	747.0
125°	776.8	779.6	782.4	785.1	787.9	791.3	795.3	799.4	803.4	807.4	808.9
127.5°	835.9	839.0	842.0	845.1	848.1	851.2	854.2	857.2	860.2	863.2	865.4
130°	873.4	876.8	880.2	883.5	886.9	889.8	892.1	894.5	896.8	899.2	901.5
132.5°	911.6	914.5	917.4	920.2	923.1	925.7	928.1	930.4	932.7	935.1	937.1
135°	961.3	964.7	968.1	971.5	974.9	977.5	979.4	981.3	983.2	985.2	987.3
137.5°	1011.5	1013.9	1016.3	1018.7	1021.0	1023.3	1025.5	1027.6	1029.8	1032.0	1034.1
140°	1044.4	1046.1	1047.8	1049.5	1051.2	1053.2	1055.5	1057.9	1060.2	1062.6	1064.5
142.5°	1071.9	1073.4	1075.0	1076.5	1078.0	1080.1	1082.8	1085.5	1088.2	1090.8	1092.6
145°	1115.1	1114.9	1114.7	1114.5	1114.3	1116.0	1119.6	1123.2	1126.8	1130.4	1131.9
147.5°	1152.8	1151.9	1151.1	1150.3	1149.5	1150.9	1154.5	1158.0	1161.6	1165.2	1166.3
150°	1177.2	1175.7	1174.2	1172.8	1171.3	1172.2	1175.6	1179.0	1182.4	1185.8	1187.1
152.5°	1197.9	1196.2	1194.5	1192.9	1191.2	1192.0	1195.2	1198.5	1201.7	1204.9	1206.2
155°	1227.9	1225.9	1224.0	1222.1	1220.2	1220.5	1223.1	1225.6	1228.2	1230.7	1232.0
157.5°	1251.4	1249.8	1248.1	1246.5	1244.9	1245.0	1246.8	1248.6	1250.3	1252.1	1253.6
160°	1265.1	1263.9	1262.6	1261.3	1260.0	1260.0	1261.3	1262.6	1263.9	1265.1	1266.4
162.5°	1277.4	1276.1	1274.8	1273.5	1272.3	1272.2	1273.3	1274.4	1275.5	1276.6	1278.0
165°	1293.8	1292.5	1291.2	1290.0	1288.7	1288.4	1289.0	1289.6	1290.3	1290.9	1292.4
167.5°	1306.0	1304.7	1303.5	1302.2	1300.9	1300.6	1301.2	1301.8	1302.4	1303.0	1304.4
170°	1312.9	1311.6	1310.4	1309.1	1307.8	1307.4	1307.8	1308.2	1308.7	1309.1	1310.6
172.5°	1317.5	1316.2	1314.9	1313.7	1312.4	1312.0	1312.4	1312.8	1313.2	1313.7	1315.2
175°	1323.4	1321.9	1320.4	1319.0	1317.5	1316.9	1317.4	1317.8	1318.2	1318.6	1320.1
177.5°	1324.4	1323.2	1322.0	1320.8	1319.6	1319.1	1319.3	1319.4	1319.6	1319.8	1321.0
180°	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0
2.5°	1374.1	1376.5	1378.8	1379.8	1379.3	1378.8	1378.4	1377.9
5°	1364.8	1367.2	1369.6	1370.4	1369.9	1369.3	1368.7	1368.1
7.5°	1349.4	1351.8	1354.2	1355.0	1354.4	1353.7	1353.1	1352.4
10°	1335.6	1338.0	1340.4	1341.1	1340.2	1339.3	1338.4	1337.6
12.5°	1319.4	1321.0	1322.7	1323.2	1322.5	1321.9	1321.2	1320.6
15°	1290.8	1292.0	1293.2	1293.0	1291.6	1290.1	1288.6	1287.1
17.5°	1256.9	1258.3	1259.7	1259.6	1258.2	1256.8	1255.4	1254.0
20°	1230.5	1231.4	1232.3	1232.1	1231.0	1229.8	1228.6	1227.4
22.5°	1202.6	1202.7	1202.9	1202.7	1201.9	1201.2	1200.5	1199.8
25°	1157.0	1157.5	1158.1	1158.1	1157.5	1157.0	1156.4	1155.8
27.5°	1112.1	1111.2	1110.3	1109.2	1107.7	1106.3	1104.9	1103.5
30°	1077.0	1076.2	1075.3	1074.2	1073.1	1071.9	1070.7	1069.5
32.5°	1042.7	1041.1	1039.5	1038.1	1037.0	1035.8	1034.6	1033.4
35°	987.7	985.9	984.2	982.5	981.1	979.6	978.1	976.6
37.5°	932.5	930.3	928.1	926.3	924.9	923.5	922.1	920.6
40°	894.4	891.7	889.1	887.1	886.0	884.8	883.6	882.4
42.5°	856.7	853.8	851.0	848.7	847.0	845.4	843.7	842.1
45°	799.0	795.7	792.5	790.3	789.1	787.9	786.7	785.6
47.5°	738.9	735.5	732.1	729.5	727.8	726.1	724.4	722.7
50°	700.3	696.2	692.1	689.3	687.8	686.3	684.9	683.4
52.5°	660.3	656.9	653.5	650.8	648.9	646.9	645.0	643.0
55°	600.7	597.1	593.6	591.1	589.6	588.1	586.7	585.2
57.5°	538.7	535.2	531.7	529.4	528.3	527.2	526.1	524.9
60°	497.8	494.5	491.3	489.2	488.3	487.4	486.5	485.7
62.5°	458.9	455.9	452.9	450.9	449.7	448.6	447.5	446.4
65°	399.4	396.8	394.1	392.0	390.6	389.1	387.6	386.1
67.5°	340.6	338.5	336.5	334.9	333.7	332.5	331.3	330.1
70°	302.4	300.3	298.3	296.6	295.5	294.3	293.1	291.9
72.5°	266.3	264.2	262.2	260.7	259.7	258.8	257.8	256.9
75°	210.1	208.3	206.6	206.0	206.6	207.2	207.7	208.3
77.5°	159.9	159.0	158.1	157.2	156.4	155.6	154.8	153.9
80°	126.9	126.1	125.2	124.4	123.8	123.3	122.7	122.1
82.5°	94.6	93.5	92.4	91.8	91.6	91.5	91.4	91.3
85°	50.0	49.1	48.2	47.6	47.3	47.0	46.7	46.4
87.5°	17.7	17.2	16.7	16.4	16.2	16.1	15.9	15.8
90°	21.2	22.3	23.4	24.1	24.5	24.9	25.4	25.8
92.5°	23.3	23.8	24.4	24.8	25.0	25.3	25.5	25.8
95°	39.4	40.5	41.5	41.9	41.7	41.5	41.3	41.1
97.5°	51.6	52.4	53.3	53.8	54.1	54.3	54.6	54.8
100°	57.9	59.6	61.3	62.3	62.7	63.2	63.6	64.0
102.5°	60.4	62.6	64.8	66.2	66.8	67.4	68.0	68.6
105°	63.0	65.3	67.6	69.2	70.1	70.9	71.8	72.6
107.5°	76.8	74.5	72.1	71.3	72.2	73.0	73.9	74.7
110°	124.7	103.5	82.3	72.1	72.9	73.8	74.6	75.5



TEST NUMBER: P331571

CATALOG NUMBER: S122DIW-S865D970U835-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	266.8	189.4	111.9	73.5	74.2	74.9	75.6	76.3
115°	392.9	294.6	196.3	139.5	124.2	108.9	93.6	78.4
117.5°	605.4	581.7	557.9	520.9	470.6	420.4	370.2	319.9
120°	705.5	708.0	710.6	697.5	668.9	640.2	611.5	582.9
122.5°	748.6	750.1	751.6	749.6	744.0	738.5	732.9	727.4
125°	810.4	811.9	813.4	814.4	815.1	815.7	816.3	817.0
127.5°	867.6	869.7	871.9	873.0	873.2	873.3	873.4	873.5
130°	903.8	906.2	908.5	909.6	909.3	909.1	908.9	908.7
132.5°	939.1	941.1	943.1	944.0	943.7	943.5	943.3	943.1
135°	989.4	991.5	993.6	994.5	994.1	993.6	993.2	992.8
137.5°	1036.1	1038.2	1040.3	1041.0	1040.3	1039.5	1038.8	1038.1
140°	1066.4	1068.3	1070.2	1070.6	1069.6	1068.5	1067.4	1066.4
142.5°	1094.3	1096.1	1097.8	1098.1	1097.1	1096.0	1095.0	1093.9
145°	1133.4	1134.9	1136.3	1136.6	1135.5	1134.4	1133.4	1132.3
147.5°	1167.4	1168.5	1169.6	1169.7	1168.8	1167.9	1167.0	1166.1
150°	1188.4	1189.6	1190.9	1191.0	1190.0	1188.9	1187.8	1186.8
152.5°	1207.5	1208.7	1210.0	1210.0	1208.6	1207.2	1205.8	1204.4
155°	1233.3	1234.5	1235.8	1235.6	1233.9	1232.2	1230.5	1228.8
157.5°	1255.0	1256.5	1257.9	1257.8	1256.1	1254.5	1252.8	1251.2
160°	1267.7	1268.9	1270.2	1270.1	1268.6	1267.1	1265.7	1264.2
162.5°	1279.5	1280.9	1282.4	1282.2	1280.3	1278.5	1276.7	1274.9
165°	1293.9	1295.4	1296.9	1296.9	1295.4	1293.9	1292.4	1290.9
167.5°	1305.9	1307.4	1308.9	1308.7	1306.8	1304.9	1303.0	1301.1
170°	1312.1	1313.5	1315.0	1314.8	1312.9	1311.0	1309.1	1307.2
172.5°	1316.6	1318.1	1319.6	1319.4	1317.5	1315.6	1313.7	1311.8
175°	1321.6	1323.1	1324.6	1324.3	1322.1	1320.0	1317.9	1315.8
177.5°	1322.2	1323.3	1324.5	1324.4	1322.8	1321.3	1319.8	1318.3
180°	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5	1320.5

(END OF REPORT)