

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: P331835-840

Luminaire Tested: **S122RDIW-S865D970U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331835-840
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: S122RDIW-S865D970U840-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 970 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6956.8 lumens
Efficiency: N/A
Efficacy: 113.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

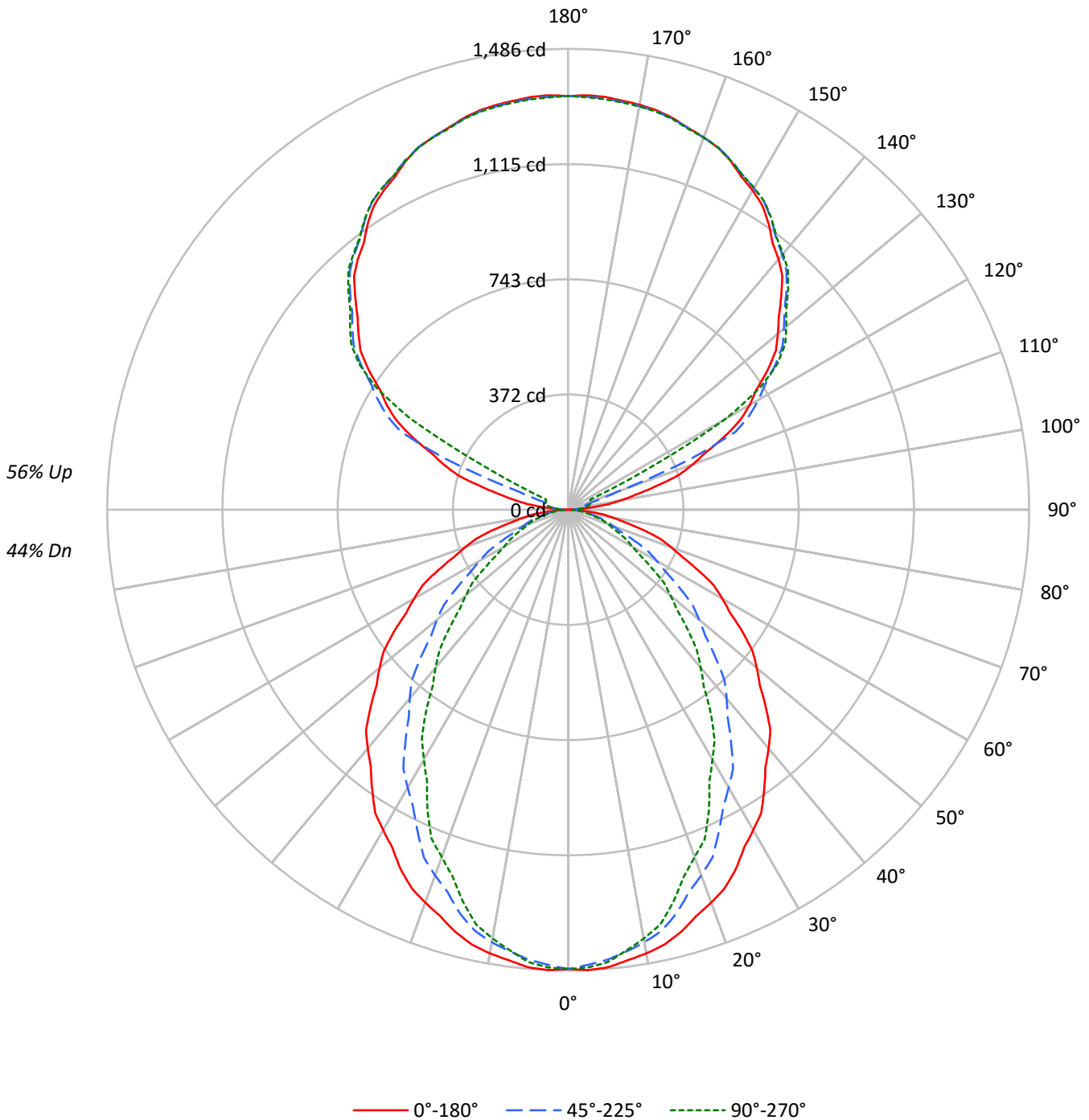
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	50	50	50	44				
1	97	93	89	86	88	85	82	79	71	68	66	57	56	55	45	44	43	38				
2	88	81	76	71	81	75	70	65	62	59	56	51	48	46	40	39	37	32				
3	81	72	65	59	74	66	60	55	55	51	47	45	42	40	36	34	32	28				
4	74	64	56	50	68	59	52	47	49	45	41	41	37	34	33	30	28	24				
5	68	57	49	43	62	53	46	41	44	39	35	37	33	30	29	27	25	21				
6	63	51	44	38	58	47	41	36	40	35	31	33	29	26	27	24	22	19				
7	58	46	39	33	53	43	36	31	36	31	27	30	26	23	25	22	20	17				
8	54	42	35	30	50	39	32	28	33	28	24	28	24	21	23	20	18	15				
9	50	39	31	26	46	36	29	25	31	26	22	26	22	19	21	18	16	14				
10	47	35	28	24	43	33	27	22	28	23	20	24	20	17	20	17	15	13				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	23909	23909	23909
5°	24000	23608	23738
10°	23815	23222	23023
15°	23542	22534	21884
20°	23163	21551	20469
25°	22775	20436	19099
30°	22236	19287	17339
35°	21711	18039	15794
40°	21182	16750	14010
45°	20562	15299	12392
50°	19926	13835	10803
55°	19277	12262	9278
60°	18519	10601	7702
65°	17662	8909	7014
70°	16636	7336	6449
75°	15384	6687	6014
80°	13575	5979	5486
85°	10689	4705	4705



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.6	2.0
10°-20°	380.6	5.5
20°-30°	534.4	7.7
30°-40°	582.7	8.4
40°-50°	535.8	7.7
50°-60°	420.8	6.0
60°-70°	274.4	3.9
70°-80°	141.5	2.0
80°-90°	40.0	0.6
90°-100°	44.5	0.6
100°-110°	163.1	2.3
110°-120°	436.1	6.3
120°-130°	719.8	10.3
130°-140°	765.5	11.0
140°-150°	711.5	10.2
150°-160°	572.1	8.2
160°-170°	368.6	5.3
170°-180°	126.9	1.8
0°-30°	1053.6	15.1
0°-40°	1636.3	23.5
0°-60°	2593.0	37.3
0°-90°	3048.8	43.8
90°-120°	643.7	9.3
90°-150°	2840.5	40.8
90°-180°	3908.0	56.2
0°-180°	6956.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1481	1481	1481	1481	1481	
5°	1481	1473	1457	1468	1465	140
15°	1408	1392	1348	1323	1309	397
25°	1278	1233	1147	1094	1072	588
35°	1102	1030	915	834	801	689
45°	900	808	670	578	543	695
55°	685	578	436	358	330	612
65°	462	353	233	190	184	458
75°	247	155	107	98	96	261
85°	58	31	25	25	25	68
90°	1	11	19	24	26	5
95°	63	33	38	42	42	77
105°	293	306	59	69	73	313
115°	555	572	595	170	79	546
125°	784	797	815	822	825	699
135°	971	986	995	1004	1003	750
145°	1126	1126	1142	1148	1144	704
155°	1240	1232	1243	1248	1241	571
165°	1307	1301	1304	1310	1304	369
175°	1336	1330	1332	1338	1329	127
180°	1334	1334	1334	1334	1334	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8
2.5°	1486.1	1484.9	1483.7	1482.5	1481.4	1479.5	1476.8	1474.2	1471.6	1468.9	1471.4
5°	1480.8	1479.3	1477.7	1476.2	1474.8	1472.1	1468.2	1464.4	1460.5	1456.6	1459.3
7.5°	1465.4	1463.6	1461.8	1460.0	1458.0	1454.9	1450.4	1445.8	1441.3	1436.7	1437.5
10°	1452.6	1450.5	1448.4	1446.3	1444.2	1440.3	1434.3	1428.4	1422.4	1416.4	1415.5
12.5°	1436.5	1433.9	1431.4	1428.9	1426.2	1421.2	1413.5	1405.9	1398.3	1390.7	1389.1
15°	1408.4	1405.1	1401.8	1398.6	1395.2	1388.6	1378.5	1368.4	1358.2	1348.1	1342.4
17.5°	1373.8	1368.8	1363.8	1358.8	1353.8	1344.8	1331.8	1318.8	1305.9	1292.8	1286.2
20°	1348.1	1342.1	1336.2	1330.2	1324.2	1313.8	1298.9	1284.0	1269.2	1254.3	1246.8
22.5°	1320.2	1313.5	1306.9	1300.2	1293.5	1281.8	1265.0	1248.2	1231.4	1214.6	1205.0
25°	1278.4	1268.9	1259.3	1249.8	1240.3	1225.7	1206.0	1186.4	1166.7	1147.1	1134.9
27.5°	1228.0	1217.6	1207.3	1196.9	1186.6	1170.3	1148.1	1126.0	1103.8	1081.7	1067.4
30°	1192.7	1181.3	1170.0	1158.7	1147.4	1129.8	1106.0	1082.2	1058.3	1034.5	1019.4
32.5°	1158.3	1145.1	1131.9	1118.6	1105.4	1086.7	1062.4	1038.0	1013.8	989.5	972.2
35°	1101.5	1086.3	1071.2	1055.9	1040.8	1020.1	993.8	967.7	941.5	915.2	896.5
37.5°	1044.7	1028.0	1011.4	994.6	978.0	955.6	927.8	899.8	871.9	843.9	823.2
40°	1005.0	987.1	969.3	951.4	933.5	910.2	881.3	852.4	823.5	794.7	773.5
42.5°	964.3	945.4	926.7	907.9	889.0	864.6	834.9	805.0	775.2	745.3	723.5
45°	900.5	880.5	860.6	840.6	820.7	795.1	763.9	732.6	701.3	670.0	648.8
47.5°	838.3	817.2	796.1	774.9	753.8	727.0	694.8	662.5	630.2	597.9	576.9
50°	793.3	772.1	751.0	729.8	708.7	681.8	649.0	616.2	583.5	550.8	530.2
52.5°	749.3	727.2	705.2	683.1	661.0	633.9	601.9	569.8	537.8	505.7	485.8
55°	684.8	661.6	638.3	615.1	591.9	564.1	532.0	499.8	467.7	435.6	417.7
57.5°	618.5	594.7	570.9	547.0	523.3	495.9	464.9	434.0	403.1	372.2	355.9
60°	573.5	549.7	525.9	502.1	478.3	451.0	420.3	389.6	359.0	328.3	313.2
62.5°	529.6	505.7	481.9	458.1	434.2	407.8	378.5	349.3	320.0	290.7	276.3
65°	462.3	438.2	414.0	389.9	365.9	340.3	313.6	286.8	259.9	233.2	223.1
67.5°	397.5	373.5	349.6	325.6	301.6	277.6	253.6	229.4	205.3	181.2	176.5
70°	352.4	329.2	306.0	282.8	259.5	237.6	217.1	196.5	176.0	155.4	152.5
72.5°	309.5	287.3	265.0	242.8	220.5	201.1	184.6	168.0	151.6	135.1	132.6
75°	246.6	225.7	204.9	184.0	163.2	147.7	137.5	127.4	117.3	107.2	105.1
77.5°	184.7	166.3	148.0	129.8	111.5	100.0	95.0	90.2	85.3	80.4	79.2
80°	146.0	130.9	115.7	100.5	85.3	76.2	73.2	70.3	67.3	64.3	63.1
82.5°	110.7	98.9	86.9	75.1	63.3	56.4	54.3	52.3	50.3	48.3	47.6
85°	57.7	51.4	45.1	38.9	32.6	29.1	28.2	27.3	26.4	25.4	25.4
87.5°	17.4	16.0	14.4	13.0	11.6	11.1	11.4	11.7	12.1	12.4	12.4
90°	1.0	3.3	5.7	8.1	10.4	12.4	14.1	15.9	17.6	19.3	20.4
92.5°	19.5	19.3	19.1	18.9	18.7	19.0	19.8	20.7	21.5	22.4	22.9
95°	62.7	55.6	48.6	41.5	34.4	31.6	33.1	34.6	36.2	37.7	38.7
97.5°	124.5	104.5	84.6	64.6	44.7	36.5	40.0	43.4	46.9	50.4	51.2
100°	170.8	141.4	112.0	82.7	53.3	40.4	44.0	47.7	51.4	55.0	56.8
102.5°	221.8	215.5	209.3	203.1	196.8	178.5	148.0	117.5	87.1	56.6	58.8
105°	293.4	299.8	306.2	312.7	319.1	293.1	234.5	175.9	117.4	58.9	61.2
107.5°	375.0	380.2	385.4	390.5	395.8	363.2	293.1	222.8	152.6	82.4	80.0
110°	427.5	432.0	436.5	441.0	445.5	416.8	354.8	292.9	230.9	168.8	147.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	476.9	480.9	484.8	488.9	492.8	487.2	471.9	456.6	441.2	426.0	347.7
115°	554.8	558.5	562.2	565.8	569.5	573.9	579.3	584.6	590.1	595.4	496.0
117.5°	624.5	628.6	632.7	636.7	640.9	644.7	648.4	652.1	655.8	659.4	635.4
120°	675.5	678.7	681.9	685.1	688.3	691.9	695.7	699.6	703.5	707.3	709.9
122.5°	718.7	722.1	725.5	728.8	732.3	736.1	740.2	744.5	748.6	752.9	754.4
125°	784.5	787.3	790.1	792.8	795.7	799.1	803.1	807.3	811.3	815.4	816.9
127.5°	844.1	847.3	850.3	853.4	856.5	859.6	862.6	865.7	868.7	871.7	873.9
130°	882.0	885.4	888.9	892.2	895.6	898.6	900.9	903.3	905.6	908.1	910.4
132.5°	920.6	923.5	926.5	929.3	932.2	934.8	937.3	939.6	941.9	944.3	946.3
135°	970.8	974.2	977.7	981.1	984.5	987.1	989.1	991.0	992.9	994.9	997.0
137.5°	1021.5	1023.9	1026.3	1028.7	1031.1	1033.4	1035.6	1037.7	1040.0	1042.2	1044.3
140°	1054.7	1056.4	1058.1	1059.9	1061.6	1063.6	1065.9	1068.3	1070.7	1073.1	1075.0
142.5°	1082.5	1084.0	1085.6	1087.1	1088.6	1090.8	1093.5	1096.2	1098.9	1101.6	1103.4
145°	1126.1	1125.9	1125.7	1125.5	1125.3	1127.0	1130.6	1134.3	1137.9	1141.6	1143.1
147.5°	1164.2	1163.3	1162.5	1161.6	1160.8	1162.3	1165.9	1169.4	1173.1	1176.7	1177.8
150°	1188.8	1187.3	1185.8	1184.4	1182.9	1183.8	1187.2	1190.6	1194.1	1197.5	1198.8
152.5°	1209.7	1208.0	1206.3	1204.7	1203.0	1203.8	1207.0	1210.3	1213.6	1216.8	1218.1
155°	1240.0	1238.0	1236.1	1234.2	1232.2	1232.5	1235.2	1237.7	1240.3	1242.8	1244.2
157.5°	1263.7	1262.1	1260.4	1258.8	1257.2	1257.3	1259.1	1260.9	1262.6	1264.5	1266.0
160°	1277.6	1276.4	1275.1	1273.7	1272.4	1272.4	1273.7	1275.1	1276.4	1277.6	1278.9
162.5°	1290.0	1288.7	1287.4	1286.1	1284.9	1284.8	1285.9	1287.0	1288.1	1289.2	1290.6
165°	1306.6	1305.3	1303.9	1302.7	1301.4	1301.1	1301.7	1302.3	1303.0	1303.6	1305.1
167.5°	1318.9	1317.6	1316.4	1315.0	1313.7	1313.4	1314.0	1314.6	1315.2	1315.9	1317.3
170°	1325.9	1324.5	1323.3	1322.0	1320.7	1320.3	1320.7	1321.1	1321.6	1322.0	1323.5
172.5°	1330.5	1329.2	1327.9	1326.7	1325.3	1324.9	1325.3	1325.8	1326.2	1326.7	1328.2
175°	1336.5	1334.9	1333.4	1332.0	1330.5	1329.9	1330.4	1330.8	1331.2	1331.6	1333.1
177.5°	1337.5	1336.3	1335.0	1333.8	1332.6	1332.1	1332.3	1332.4	1332.6	1332.8	1334.0
180°	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8
2.5°	1473.7	1476.1	1478.4	1479.5	1478.9	1478.4	1478.0	1477.5
5°	1462.0	1464.6	1467.3	1468.2	1467.3	1466.4	1465.5	1464.6
7.5°	1438.4	1439.1	1439.9	1439.5	1437.9	1436.4	1434.8	1433.3
10°	1414.6	1413.7	1412.8	1411.5	1409.7	1408.0	1406.1	1404.3
12.5°	1387.5	1385.8	1384.2	1382.0	1379.0	1376.0	1373.0	1370.1
15°	1336.8	1331.1	1325.4	1321.1	1318.2	1315.1	1312.2	1309.2
17.5°	1279.4	1272.6	1266.0	1260.0	1254.9	1249.8	1244.7	1239.5
20°	1239.4	1231.9	1224.5	1217.5	1210.9	1204.4	1197.8	1191.3
22.5°	1195.5	1185.9	1176.3	1169.0	1164.2	1159.2	1154.4	1149.5
25°	1122.7	1110.4	1098.2	1089.8	1085.4	1081.0	1076.5	1072.1
27.5°	1053.2	1038.9	1024.7	1014.1	1007.0	999.9	992.8	985.7
30°	1004.1	989.0	973.7	962.1	954.1	946.0	938.1	930.0
32.5°	954.8	937.5	920.2	907.7	900.2	892.6	885.0	877.5
35°	877.7	859.0	840.2	827.6	821.0	814.5	807.9	801.3
37.5°	802.6	781.9	761.3	747.2	739.7	732.2	724.7	717.2
40°	752.3	731.2	710.0	695.6	687.9	680.1	672.4	664.7
42.5°	701.7	679.7	657.9	643.2	635.7	628.2	620.7	613.2
45°	627.7	606.6	585.4	571.3	564.1	557.0	549.9	542.7
47.5°	555.8	534.8	513.8	500.1	493.6	487.1	480.6	474.1
50°	509.7	489.1	468.6	455.1	448.9	442.6	436.4	430.1
52.5°	466.1	446.3	426.4	413.6	407.8	402.0	396.3	390.5
55°	399.8	381.9	364.1	352.2	346.6	340.9	335.3	329.6
57.5°	339.5	323.2	306.8	296.2	291.4	286.6	281.9	277.1
60°	297.9	282.8	267.5	257.6	252.8	248.0	243.3	238.5
62.5°	261.9	247.4	232.9	224.2	221.4	218.5	215.6	212.8
65°	212.9	202.8	192.7	187.1	186.2	185.4	184.5	183.6
67.5°	171.9	167.2	162.6	159.8	158.9	157.8	156.9	156.0
70°	149.5	146.5	143.5	141.5	140.3	139.1	137.8	136.6
72.5°	130.1	127.5	125.0	123.5	122.7	122.0	121.3	120.6
75°	103.0	101.0	98.9	97.7	97.4	97.0	96.7	96.4
77.5°	78.1	76.9	75.6	74.8	74.3	73.8	73.4	72.9
80°	61.9	60.8	59.6	59.0	59.0	59.0	59.0	59.0
82.5°	46.9	46.0	45.3	45.0	45.0	45.0	45.0	45.0
85°	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4
87.5°	12.4	12.3	12.3	12.4	12.4	12.5	12.6	12.7
90°	21.4	22.5	23.6	24.3	24.7	25.1	25.7	26.1
92.5°	23.5	24.0	24.6	25.0	25.2	25.5	25.8	26.1
95°	39.8	40.9	41.9	42.3	42.1	41.9	41.7	41.5
97.5°	52.1	52.9	53.8	54.3	54.6	54.8	55.1	55.3
100°	58.5	60.2	61.9	62.9	63.3	63.8	64.2	64.6
102.5°	61.0	63.2	65.4	66.9	67.5	68.1	68.7	69.3
105°	63.6	65.9	68.3	69.9	70.8	71.6	72.5	73.3
107.5°	77.6	75.2	72.8	72.0	72.9	73.7	74.6	75.4
110°	125.9	104.5	83.1	72.8	73.6	74.5	75.3	76.2



TEST NUMBER: P331835-840

CATALOG NUMBER: S122RDIW-S865D970U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	269.4	191.3	113.0	74.2	74.9	75.6	76.3	77.1
115°	396.8	297.5	198.2	140.9	125.4	110.0	94.5	79.2
117.5°	611.4	587.4	563.4	526.0	475.2	424.5	373.9	323.1
120°	712.5	715.0	717.6	704.4	675.5	646.5	617.5	588.7
122.5°	756.0	757.5	759.0	757.0	751.3	745.8	740.1	734.6
125°	818.4	819.9	821.4	822.4	823.1	823.7	824.4	825.1
127.5°	876.2	878.3	880.5	881.6	881.8	881.9	882.0	882.1
130°	912.7	915.1	917.5	918.6	918.3	918.1	917.9	917.7
132.5°	948.4	950.4	952.4	953.3	953.0	952.8	952.6	952.4
135°	999.2	1001.3	1003.4	1004.3	1003.9	1003.4	1003.0	1002.6
137.5°	1046.3	1048.4	1050.6	1051.3	1050.6	1049.8	1049.0	1048.3
140°	1076.9	1078.8	1080.8	1081.2	1080.2	1079.0	1077.9	1076.9
142.5°	1105.1	1106.9	1108.6	1108.9	1107.9	1106.8	1105.8	1104.7
145°	1144.6	1146.1	1147.5	1147.8	1146.7	1145.6	1144.6	1143.5
147.5°	1178.9	1180.0	1181.1	1181.2	1180.3	1179.4	1178.5	1177.6
150°	1200.1	1201.3	1202.6	1202.7	1201.7	1200.6	1199.5	1198.5
152.5°	1219.4	1220.6	1221.9	1221.9	1220.5	1219.1	1217.7	1216.3
155°	1245.5	1246.7	1248.0	1247.8	1246.1	1244.4	1242.6	1240.9
157.5°	1267.4	1268.9	1270.3	1270.2	1268.5	1266.9	1265.2	1263.5
160°	1280.2	1281.4	1282.7	1282.6	1281.1	1279.6	1278.2	1276.7
162.5°	1292.1	1293.5	1295.1	1294.8	1292.9	1291.1	1289.3	1287.5
165°	1306.7	1308.2	1309.7	1309.7	1308.2	1306.7	1305.1	1303.6
167.5°	1318.8	1320.3	1321.8	1321.6	1319.7	1317.8	1315.9	1313.9
170°	1325.0	1326.5	1328.0	1327.8	1325.9	1323.9	1322.0	1320.1
172.5°	1329.6	1331.1	1332.6	1332.4	1330.5	1328.6	1326.7	1324.7
175°	1334.6	1336.2	1337.7	1337.4	1335.1	1333.0	1330.9	1328.8
177.5°	1335.2	1336.4	1337.6	1337.5	1335.8	1334.3	1332.8	1331.3
180°	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5

(END OF REPORT)