

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: P331569-840

Luminaire Tested: **S122DIW-S865D970U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331569-840
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: S122DIW-S865D970U840-4F0-1E-UDD-D
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 970 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7438.9 lumens
Efficiency: N/A
Efficacy: 121.6 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')
CIE Type: General Diffuse

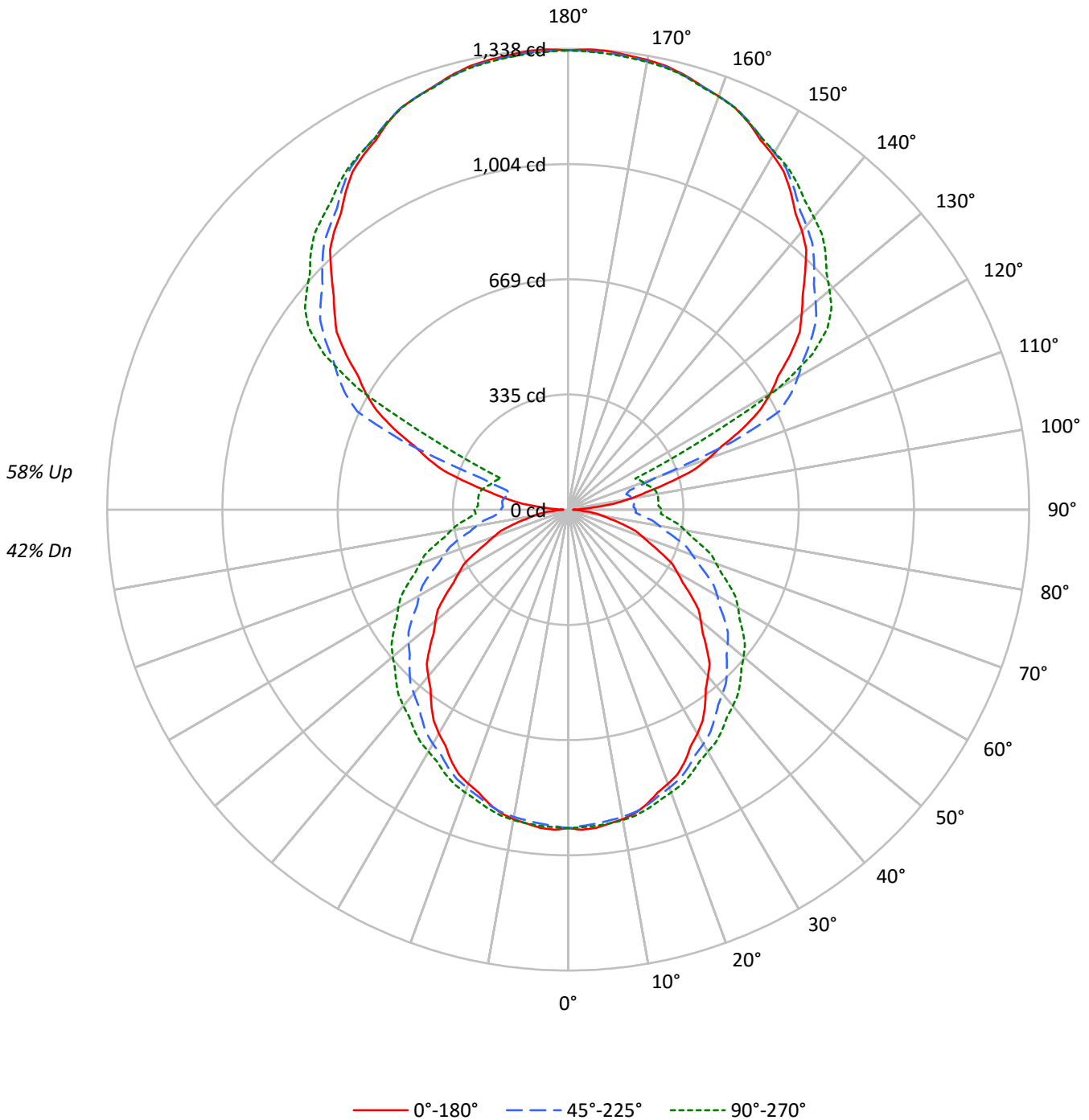
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P331569-840

CATALOG NUMBER: S122DIW-S865D970U840-4F0-1E-UDD-D

Luminous Intensity Polar Plot





TEST NUMBER: P331569-840

CATALOG NUMBER: S122DIW-S865D970U840-4F0-1E-UDD-D

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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49	42
1	95	90	86	82	86	82	78	75	67	65	62	54	52	50	41	40	39	33
2	86	78	71	66	78	71	65	60	58	54	50	46	43	41	36	33	32	27
3	78	68	60	54	71	62	55	50	51	46	42	41	37	34	31	29	26	22
4	71	60	52	45	64	55	47	42	45	40	35	36	32	29	28	25	22	18
5	65	53	45	38	59	49	41	36	40	34	30	32	28	25	25	22	19	16
6	60	47	39	33	54	43	36	31	36	30	26	29	25	21	22	19	17	14
7	55	43	35	29	50	39	32	27	32	27	23	26	22	19	20	17	15	12
8	51	39	31	25	46	35	28	24	29	24	20	24	20	17	19	15	13	11
9	48	35	28	22	43	32	26	21	27	22	18	22	18	15	17	14	12	10
10	44	32	25	20	40	30	23	19	25	20	16	20	16	13	16	13	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14928	14928	14928
5°	15002	14370	14315
10°	14907	13945	13789
15°	14701	13496	13236
20°	14442	13015	12701
25°	14187	12551	12216
30°	13824	12074	11729
35°	13459	11611	11386
40°	13075	11219	11044
45°	12709	10869	10750
50°	12316	10551	10462
55°	11908	10209	10166
60°	11404	9856	9857
65°	10880	9439	9485
70°	10292	8992	9089
75°	9539	8554	8722
80°	8357	8107	8349
85°	7227	7720	8061



TEST NUMBER: P331569-840

CATALOG NUMBER: S122DIW-S865D970U840-4F0-1E-UDD-D

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.6	1.2
10°-20°	251.2	3.4
20°-30°	380.7	5.1
30°-40°	463.7	6.2
40°-50°	498.9	6.7
50°-60°	484.5	6.5
60°-70°	423.0	5.7
70°-80°	325.7	4.4
80°-90°	221.8	3.0
90°-100°	195.1	2.6
100°-110°	273.1	3.7
110°-120°	508.7	6.8
120°-130°	760.3	10.2
130°-140°	782.5	10.5
140°-150°	714.5	9.6
150°-160°	572.1	7.7
160°-170°	368.6	5.0
170°-180°	126.9	1.7
0°-30°	719.6	9.7
0°-40°	1183.3	15.9
0°-60°	2166.6	29.1
0°-90°	3137.2	42.2
90°-120°	976.8	13.1
90°-150°	3234.1	43.5
90°-180°	4302.0	57.8
0°-180°	7438.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	925	925	925	925	925	
5°	927	923	915	923	922	88
15°	884	887	887	898	898	249
25°	804	814	826	841	846	369
35°	693	716	741	769	780	433
45°	568	605	651	691	706	438
55°	436	485	553	600	619	389
65°	298	364	442	495	514	295
75°	165	240	326	381	401	174
85°	48	132	217	271	292	52
90°	14	103	196	252	273	12
95°	73	108	192	245	263	85
105°	300	353	174	229	250	321
115°	560	594	676	289	214	551
125°	787	802	861	902	919	702
135°	972	988	1010	1046	1056	751
145°	1126	1126	1142	1156	1158	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	



TEST NUMBER: P331569-840

CATALOG NUMBER: S122DIW-S865D970U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6
2.5°	930.0	929.3	928.6	927.9	927.2	925.9	924.2	922.6	920.9	919.3	920.5
5°	927.3	926.5	925.5	924.6	923.7	922.4	920.6	918.8	917.1	915.2	917.1
7.5°	919.0	918.4	917.8	917.3	916.7	915.6	914.2	912.9	911.5	910.2	912.3
10°	912.6	912.0	911.4	910.8	910.2	909.5	908.6	907.7	906.8	905.8	908.3
12.5°	901.8	902.0	902.1	902.2	902.3	902.0	901.4	900.7	900.1	899.4	901.8
15°	884.4	885.0	885.7	886.3	886.8	887.1	887.1	887.1	887.1	887.1	889.8
17.5°	861.9	863.1	864.4	865.7	866.9	868.0	869.0	869.9	870.9	871.8	874.6
20°	846.9	848.4	849.9	851.4	852.8	854.2	855.4	856.6	857.8	859.0	862.2
22.5°	830.8	832.5	834.2	836.0	837.7	839.4	841.1	842.7	844.4	846.1	849.4
25°	804.1	806.1	808.2	810.3	812.3	814.8	817.4	820.1	822.7	825.5	829.0
27.5°	771.8	775.3	778.6	782.0	785.5	788.7	791.8	795.1	798.2	801.3	805.9
30°	750.4	754.3	758.2	762.0	765.9	769.8	773.7	777.5	781.4	785.3	790.0
32.5°	726.8	731.1	735.5	739.9	744.3	748.7	753.3	757.9	762.4	767.0	772.5
35°	692.8	697.8	703.0	708.0	713.1	718.4	724.1	729.7	735.4	741.0	747.6
37.5°	655.8	661.7	667.5	673.3	679.1	685.7	693.1	700.4	707.7	715.1	722.4
40°	631.2	637.7	644.3	650.9	657.3	664.7	672.7	680.8	688.8	696.8	704.6
42.5°	607.5	614.1	620.7	627.2	633.8	641.7	650.9	660.1	669.3	678.6	687.0
45°	568.2	576.2	584.2	592.3	600.4	609.6	620.0	630.5	640.9	651.3	660.5
47.5°	529.3	538.1	546.8	555.6	564.3	574.8	587.0	599.3	611.5	623.7	633.3
50°	502.5	511.7	521.0	530.2	539.5	550.8	564.1	577.5	591.0	604.4	614.5
52.5°	476.8	486.5	496.2	505.9	515.6	527.6	541.7	555.7	569.9	584.0	594.3
55°	435.6	446.3	457.0	467.7	478.4	491.5	507.0	522.5	538.0	553.4	564.1
57.5°	394.8	406.9	419.0	431.0	443.1	457.1	472.8	488.7	504.4	520.2	531.8
60°	365.9	378.6	391.4	404.2	417.1	431.9	448.9	465.9	482.8	499.9	511.2
62.5°	340.1	353.4	366.7	379.9	393.2	408.4	425.4	442.3	459.3	476.3	488.3
65°	297.5	312.0	326.7	341.2	355.9	371.9	389.5	407.1	424.6	442.2	454.4
67.5°	258.3	273.6	288.8	304.1	319.3	336.0	354.0	371.9	389.9	407.9	420.2
70°	230.5	246.0	261.5	276.9	292.5	309.4	327.9	346.3	364.8	383.2	396.1
72.5°	204.8	220.8	236.7	252.7	268.6	285.9	304.7	323.4	342.0	360.7	373.3
75°	164.8	181.5	198.1	214.9	231.6	249.4	268.4	287.5	306.6	325.6	338.4
77.5°	126.2	143.7	161.2	178.5	196.0	214.4	233.8	253.2	272.5	291.9	304.6
80°	100.5	118.7	136.8	155.0	173.2	191.9	211.3	230.7	249.9	269.3	281.9
82.5°	79.1	96.9	114.9	132.8	150.8	169.6	189.1	208.7	228.3	247.9	260.4
85°	48.3	66.8	85.1	103.6	122.1	140.9	159.9	178.9	198.0	217.1	229.6
87.5°	26.5	44.6	62.9	81.1	99.4	118.2	137.5	156.9	176.3	195.7	208.1
90°	14.3	34.0	53.6	73.2	92.9	113.1	133.9	154.6	175.4	196.2	209.1
92.5°	31.8	47.7	63.5	79.4	95.3	112.8	132.0	151.2	170.5	189.7	201.9
95°	73.4	80.4	87.3	94.2	101.1	114.2	133.6	153.0	172.4	191.8	204.1
97.5°	133.9	126.3	118.9	111.4	103.9	110.5	131.1	151.7	172.3	193.0	204.8
100°	180.2	161.8	143.5	125.1	106.7	107.8	128.1	148.3	168.6	189.0	201.8
102.5°	230.0	233.9	237.7	241.6	245.4	240.2	225.9	211.7	197.3	183.1	196.0
105°	300.0	315.1	330.2	345.3	360.3	346.3	303.3	260.2	217.1	174.1	186.9
107.5°	381.4	393.5	405.6	417.7	429.8	408.2	352.7	297.4	242.1	186.6	194.3
110°	432.8	443.3	453.7	464.2	474.6	456.3	408.8	361.4	314.1	266.7	254.8



TEST NUMBER: P331569-840

CATALOG NUMBER: S122DIW-S865D970U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	482.2	491.2	500.2	509.2	518.2	522.0	520.6	519.1	517.7	516.2	447.6
115°	560.2	567.1	574.0	581.0	587.9	600.8	619.5	638.2	657.0	675.8	585.4
117.5°	628.5	634.8	641.0	647.2	653.4	664.6	680.6	696.7	712.8	728.8	713.7
120°	679.5	683.9	688.3	692.7	697.1	707.2	723.0	738.7	754.6	770.3	781.2
122.5°	722.8	726.6	730.4	734.3	738.2	747.8	763.3	778.6	794.1	809.4	819.1
125°	787.2	790.0	792.7	795.6	798.3	806.6	820.1	833.7	847.4	860.9	870.5
127.5°	846.9	849.6	852.4	855.2	858.0	864.7	875.5	886.2	897.0	907.7	917.3
130°	884.6	887.8	890.9	894.0	897.2	903.0	911.7	920.3	928.9	937.5	947.1
132.5°	923.2	925.8	928.5	931.1	933.7	938.7	945.8	953.0	960.2	967.3	976.2
135°	972.1	975.5	979.0	982.4	985.8	990.0	994.9	999.8	1004.7	1009.6	1018.0
137.5°	1022.9	1025.2	1027.5	1029.9	1032.2	1035.1	1038.6	1042.1	1045.6	1049.1	1056.7
140°	1056.0	1057.4	1058.8	1060.3	1061.7	1063.9	1066.8	1069.9	1072.8	1075.7	1082.4
142.5°	1083.8	1085.1	1086.3	1087.5	1088.8	1090.9	1093.7	1096.5	1099.3	1102.2	1107.7
145°	1126.1	1125.9	1125.7	1125.5	1125.3	1127.0	1130.6	1134.3	1137.9	1141.6	1144.8
147.5°	1164.2	1163.3	1162.5	1161.6	1160.8	1162.3	1165.9	1169.4	1173.1	1176.7	1178.0
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



TEST NUMBER: P331569-840

CATALOG NUMBER: S122DIW-S865D970U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	924.6	924.6	924.6	924.6	924.6	924.6	924.6	924.6
2.5°	921.6	922.8	924.0	924.4	923.9	923.4	922.9	922.5
5°	918.8	920.6	922.4	923.1	922.8	922.5	922.2	921.9
7.5°	914.4	916.6	918.8	919.7	919.4	919.1	918.8	918.5
10°	910.6	913.0	915.4	916.5	916.1	915.8	915.5	915.2
12.5°	904.2	906.6	909.0	910.0	909.7	909.4	909.1	908.8
15°	892.4	895.1	897.9	899.0	898.7	898.4	898.1	897.9
17.5°	877.5	880.2	883.0	884.4	884.4	884.4	884.4	884.4
20°	865.6	868.8	872.0	873.7	873.7	873.7	873.7	873.7
22.5°	852.6	856.0	859.2	861.1	861.5	862.0	862.5	863.0
25°	832.6	836.2	839.8	842.0	842.8	843.7	844.7	845.6
27.5°	810.4	815.0	819.4	822.0	822.7	823.3	824.0	824.7
30°	794.8	799.5	804.4	807.2	808.0	808.9	809.8	810.7
32.5°	778.0	783.5	788.9	792.5	794.1	795.7	797.3	798.9
35°	754.2	760.7	767.3	771.5	773.7	775.8	777.8	779.9
37.5°	729.5	736.8	744.1	748.8	751.0	753.3	755.5	757.7
40°	712.3	720.0	727.8	733.0	735.7	738.3	741.0	743.8
42.5°	695.5	704.0	712.5	718.0	720.6	723.4	726.0	728.7
45°	669.7	678.9	688.2	694.3	697.3	700.2	703.3	706.2
47.5°	643.0	652.6	662.3	668.7	672.0	675.3	678.5	681.9
50°	624.6	634.7	644.9	651.6	654.8	658.1	661.4	664.7
52.5°	604.7	615.1	625.4	632.4	635.9	639.4	642.9	646.4
55°	574.9	585.6	596.3	603.6	607.4	611.4	615.2	619.0
57.5°	543.3	554.8	566.4	574.2	578.0	582.0	585.9	589.9
60°	522.5	533.8	545.1	552.8	557.0	561.2	565.3	569.6
62.5°	500.3	512.3	524.3	532.4	536.2	540.2	544.1	548.1
65°	466.7	478.9	491.1	499.1	502.9	506.9	510.7	514.5
67.5°	432.5	444.8	457.3	465.4	469.5	473.5	477.6	481.6
70°	408.9	421.6	434.4	442.6	446.3	449.8	453.4	457.0
72.5°	385.9	398.4	411.0	419.4	423.7	428.0	432.3	436.6
75°	351.2	364.1	376.9	385.2	389.1	392.9	396.8	400.7
77.5°	317.4	330.1	342.8	351.3	355.5	359.6	363.9	368.0
80°	294.4	306.9	319.4	327.7	331.8	336.1	340.2	344.4
82.5°	273.0	285.4	297.9	306.2	310.1	314.0	317.9	321.8
85°	242.1	254.6	267.1	275.5	279.6	283.8	287.9	292.2
87.5°	220.5	232.9	245.2	253.4	257.2	261.2	265.0	268.9
90°	222.2	235.1	248.1	256.6	260.6	264.6	268.6	272.7
92.5°	214.1	226.3	238.5	246.6	250.4	254.3	258.0	261.9
95°	216.5	228.9	241.3	249.1	252.6	255.9	259.2	262.6
97.5°	216.7	228.5	240.4	248.3	252.1	255.8	259.6	263.4
100°	214.5	227.2	239.9	248.1	251.9	255.6	259.2	263.0
102.5°	209.0	222.1	235.1	243.5	247.4	251.3	255.2	259.0
105°	199.7	212.5	225.2	233.7	237.8	242.0	246.1	250.2
107.5°	201.9	209.4	217.1	223.0	227.1	231.3	235.3	239.4
110°	242.9	231.0	219.0	215.1	219.2	223.4	227.5	231.7



TEST NUMBER: P331569-840

CATALOG NUMBER: S122DIW-S865D970U840-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	378.9	310.1	241.5	209.1	213.1	217.0	221.0	224.9
115°	495.0	404.8	314.4	263.2	251.0	238.8	226.6	214.5
117.5°	698.4	683.3	668.0	636.6	589.0	541.2	493.5	445.9
120°	792.1	803.0	814.0	806.6	780.9	755.2	729.5	703.9
122.5°	828.7	838.4	848.0	851.4	848.6	845.8	842.9	840.1
125°	880.0	889.6	899.1	905.5	908.9	912.2	915.5	918.9
127.5°	926.8	936.3	945.9	952.1	954.8	957.7	960.4	963.1
130°	956.5	966.0	975.5	981.4	983.5	985.7	987.8	990.1
132.5°	985.2	994.1	1003.1	1008.6	1010.8	1012.9	1015.1	1017.2
135°	1026.4	1034.8	1043.2	1048.3	1050.4	1052.3	1054.2	1056.2
137.5°	1064.3	1071.9	1079.4	1083.9	1085.2	1086.5	1087.7	1089.0
140°	1089.1	1095.8	1102.5	1106.2	1106.9	1107.6	1108.3	1109.0
142.5°	1113.3	1118.8	1124.4	1127.4	1127.9	1128.4	1128.8	1129.3
145°	1148.1	1151.4	1154.7	1156.6	1157.0	1157.4	1157.8	1158.2
147.5°	1179.4	1180.7	1182.0	1182.7	1182.5	1182.2	1182.1	1181.9
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)