

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: P331571-930

Luminaire Tested: **S122DIW-S865D970U930-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331571-930  
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-S865D970U930-4F0-1E-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: 6020.3 lumens  
Efficiency: N/A  
Efficacy: 98.4 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

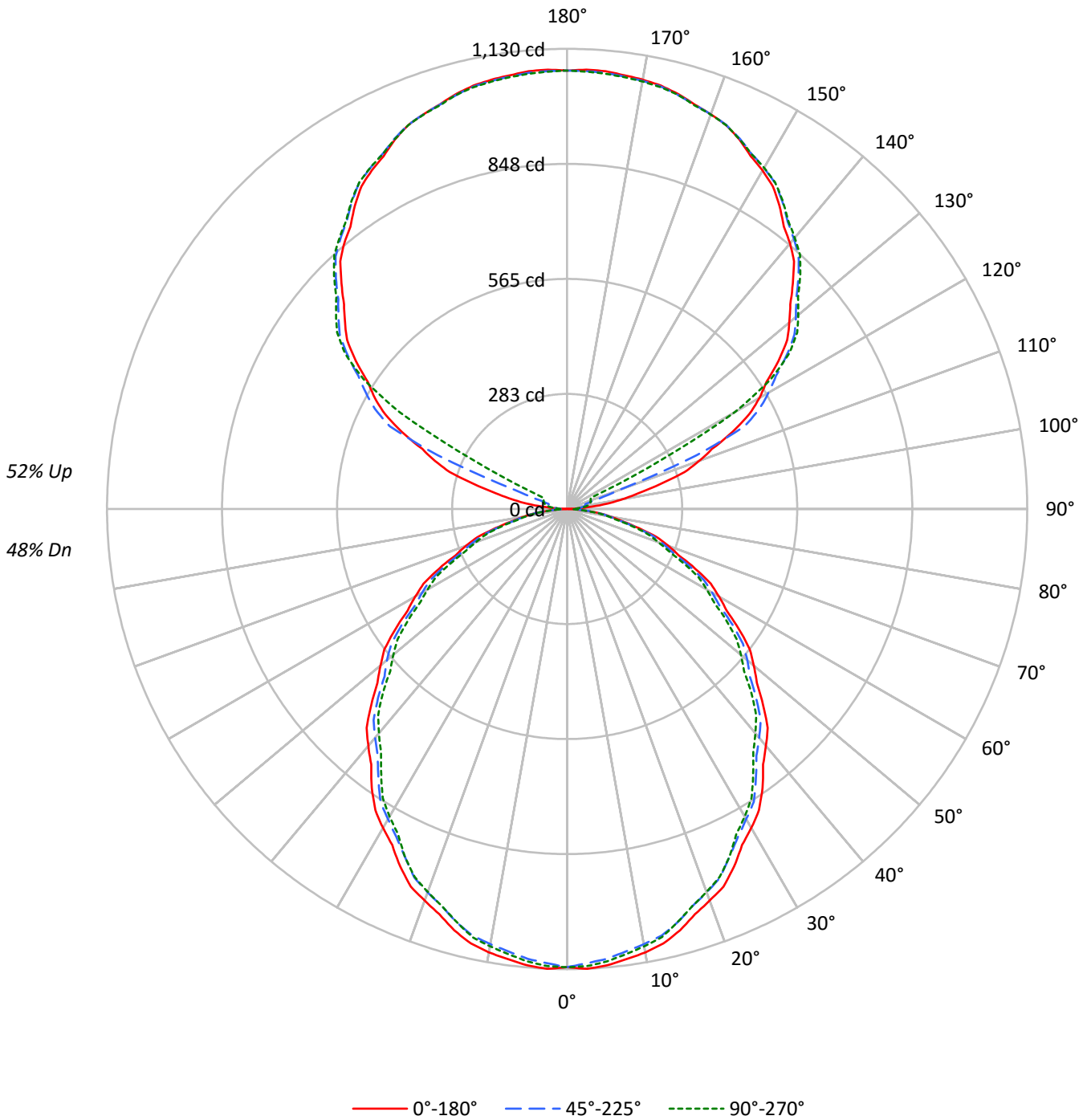
Input Watts (W): 61.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	107	107	107	107	98	98	98	98	82	82	82	67	67	67	54	54	54	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°	18166	18166	18166
5°	18235	17973	18078
10°	18126	17790	17879
15°	17904	17560	17541
20°	17584	17213	17194
25°	17268	16787	16787
30°	16861	16397	16257
35°	16484	15928	15693
40°	16008	15460	15163
45°	15536	14995	14625
50°	15028	14511	13996
55°	14494	13948	13430
60°	13905	13275	12788
65°	13268	12607	12027
70°	12463	11797	11235
75°	11335	10861	10593
80°	10060	9754	9252
85°	8225	7818	7003



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	105.8	1.8
10°-20°	297.7	4.9
20°-30°	437.6	7.3
30°-40°	508.3	8.4
40°-50°	507.7	8.4
50°-60°	442.8	7.4
60°-70°	327.4	5.4
70°-80°	185.4	3.1
80°-90°	52.5	0.9
90°-100°	35.9	0.6
100°-110°	131.7	2.2
110°-120°	352.0	5.8
120°-130°	581.1	9.7
130°-140°	618.0	10.3
140°-150°	574.4	9.5
150°-160°	461.8	7.7
160°-170°	297.6	4.9
170°-180°	102.4	1.7
0°-30°	841.1	14.0
0°-40°	1349.3	22.4
0°-60°	2299.8	38.2
0°-90°	2865.1	47.6
90°-120°	519.7	8.6
90°-150°	2293.2	38.1
90°-180°	3155.0	52.4
0°-180°	6020.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1125	1125	1125	1125	1125	
5°	1125	1120	1109	1117	1115	107
15°	1071	1064	1050	1054	1049	301
25°	969	960	942	944	942	446
35°	836	825	808	802	796	522
45°	680	672	657	645	640	525
55°	515	508	496	483	477	460
65°	347	341	330	320	315	343
75°	182	179	174	168	170	194
85°	44	43	42	39	38	51
90°	1	9	16	19	21	5
95°	51	27	30	34	34	62
105°	237	247	48	56	59	253
115°	448	462	481	137	64	441
125°	633	644	658	664	666	565
135°	784	796	803	810	809	605
145°	909	909	922	927	923	568
155°	1001	995	1003	1007	1002	461
165°	1055	1051	1052	1057	1052	298
175°	1079	1074	1075	1080	1073	103
180°	1077	1077	1077	1077	1077	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1
2.5°	1130.3	1129.4	1128.4	1127.5	1126.5	1124.9	1122.8	1120.7	1118.6	1116.5	1118.4
5°	1125.1	1124.1	1123.2	1122.3	1121.3	1119.5	1116.9	1114.2	1111.6	1108.9	1110.8
7.5°	1115.2	1113.7	1112.2	1110.7	1109.2	1107.1	1104.4	1101.7	1099.0	1096.3	1098.3
10°	1105.6	1104.0	1102.3	1100.6	1098.9	1096.7	1093.7	1090.9	1088.0	1085.1	1087.0
12.5°	1092.7	1091.2	1089.7	1088.2	1086.7	1084.5	1081.7	1078.7	1075.9	1073.0	1074.3
15°	1071.1	1069.6	1068.1	1066.7	1065.3	1063.0	1059.9	1056.7	1053.6	1050.5	1051.4
17.5°	1043.3	1041.9	1040.5	1039.0	1037.5	1035.3	1032.1	1028.9	1025.7	1022.5	1023.7
20°	1023.4	1022.0	1020.6	1019.1	1017.7	1015.3	1011.9	1008.5	1005.2	1001.8	1002.5
22.5°	1003.6	1001.5	999.5	997.4	995.5	992.9	989.7	986.5	983.3	980.2	980.3
25°	969.3	967.4	965.5	963.6	961.6	958.6	954.6	950.5	946.4	942.3	942.8
27.5°	930.4	928.7	926.9	925.2	923.5	921.0	917.8	914.5	911.3	908.1	907.4
30°	904.4	902.5	900.6	898.7	896.7	894.0	890.4	886.8	883.1	879.5	878.8
32.5°	876.8	875.2	873.7	872.1	870.6	867.9	864.1	860.3	856.6	852.7	851.4
35°	836.3	833.9	831.4	829.1	826.6	823.5	819.7	815.9	812.0	808.1	806.7
37.5°	790.6	788.5	786.4	784.2	782.2	779.2	775.3	771.5	767.6	763.8	762.0
40°	759.5	757.6	755.6	753.7	751.8	748.9	745.0	741.2	737.4	733.5	731.3
42.5°	729.2	727.2	725.3	723.4	721.5	718.6	714.8	710.9	707.0	703.2	700.8
45°	680.4	678.8	677.1	675.5	673.8	671.1	667.5	663.9	660.3	656.7	654.0
47.5°	632.0	630.5	628.8	627.3	625.7	623.0	619.2	615.5	611.7	608.0	605.2
50°	598.3	597.0	595.9	594.7	593.5	591.2	587.8	584.4	581.1	577.7	574.4
52.5°	565.4	563.8	562.2	560.6	559.1	556.7	553.5	550.3	547.1	544.0	541.2
55°	514.9	513.6	512.1	510.6	509.2	507.0	504.2	501.2	498.4	495.5	492.6
57.5°	464.3	463.2	462.0	460.9	459.7	457.5	454.4	451.2	448.0	444.8	442.1
60°	430.6	429.6	428.7	427.7	426.7	424.6	421.2	417.8	414.5	411.1	408.5
62.5°	397.7	396.2	394.6	393.1	391.5	389.5	386.9	384.3	381.6	379.1	376.7
65°	347.3	345.8	344.4	342.9	341.5	339.6	337.2	334.8	332.4	330.0	327.8
67.5°	296.0	294.8	293.7	292.5	291.4	289.8	287.6	285.4	283.2	281.0	279.4
70°	264.0	263.0	262.0	261.1	260.2	258.5	256.4	254.2	252.1	249.9	248.3
72.5°	231.1	230.2	229.2	228.2	227.2	226.1	224.7	223.3	221.8	220.5	218.8
75°	181.7	181.2	180.8	180.3	179.9	179.0	177.8	176.6	175.4	174.1	172.8
77.5°	137.6	136.8	136.0	135.2	134.4	133.7	133.2	132.7	132.2	131.8	131.0
80°	108.2	107.9	107.7	107.5	107.2	106.9	106.4	105.9	105.4	104.9	104.2
82.5°	80.5	80.5	80.4	80.3	80.3	80.1	79.8	79.6	79.2	79.0	78.0
85°	44.4	44.1	43.9	43.6	43.4	43.1	42.9	42.6	42.4	42.2	41.5
87.5°	15.7	15.7	15.7	15.7	15.7	15.7	15.6	15.4	15.3	15.2	14.8
90°	0.8	2.7	4.6	6.5	8.4	10.0	11.4	12.8	14.2	15.6	16.5
92.5°	15.7	15.6	15.4	15.2	15.1	15.3	16.0	16.7	17.4	18.1	18.5
95°	50.6	44.9	39.2	33.5	27.8	25.5	26.7	28.0	29.2	30.4	31.2
97.5°	100.5	84.4	68.3	52.2	36.1	29.4	32.3	35.1	37.8	40.7	41.3
100°	137.9	114.1	90.4	66.8	43.0	32.6	35.5	38.5	41.5	44.4	45.8
102.5°	179.0	174.0	169.0	164.0	158.9	144.1	119.5	94.9	70.3	45.7	47.5
105°	236.8	242.1	247.2	252.4	257.6	236.6	189.3	142.0	94.8	47.5	49.4
107.5°	302.7	307.0	311.1	315.3	319.5	293.3	236.6	179.9	123.2	66.5	64.6
110°	345.1	348.8	352.4	356.0	359.6	336.5	286.4	236.4	186.4	136.3	119.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	385.0	388.2	391.4	394.7	397.9	393.3	381.0	368.6	356.2	343.9	280.7
115°	447.9	450.9	453.9	456.8	459.7	463.3	467.7	472.0	476.4	480.7	400.5
117.5°	504.2	507.5	510.8	514.0	517.4	520.5	523.5	526.4	529.5	532.4	513.0
120°	545.4	548.0	550.5	553.1	555.7	558.6	561.7	564.8	567.9	571.0	573.2
122.5°	580.2	582.9	585.7	588.4	591.2	594.3	597.6	601.0	604.4	607.8	609.0
125°	633.3	635.6	637.9	640.1	642.4	645.1	648.4	651.8	655.0	658.3	659.5
127.5°	681.5	684.0	686.5	689.0	691.5	694.0	696.4	698.9	701.3	703.8	705.6
130°	712.1	714.9	717.6	720.3	723.1	725.5	727.3	729.3	731.2	733.1	735.0
132.5°	743.2	745.6	748.0	750.2	752.6	754.7	756.7	758.6	760.4	762.4	764.0
135°	783.7	786.5	789.3	792.1	794.8	797.0	798.5	800.1	801.6	803.2	804.9
137.5°	824.7	826.6	828.6	830.5	832.4	834.3	836.1	837.8	839.6	841.4	843.1
140°	851.5	852.9	854.3	855.7	857.0	858.7	860.5	862.5	864.4	866.3	867.9
142.5°	873.9	875.1	876.4	877.7	878.9	880.6	882.8	885.0	887.2	889.3	890.8
145°	909.1	909.0	908.8	908.7	908.5	909.9	912.8	915.7	918.7	921.6	922.8
147.5°	939.9	939.1	938.5	937.8	937.2	938.3	941.3	944.1	947.1	950.0	950.9
150°	959.8	958.5	957.3	956.2	955.0	955.7	958.5	961.2	964.0	966.8	967.8
152.5°	976.6	975.3	973.9	972.6	971.2	971.8	974.4	977.1	979.7	982.4	983.4
155°	1001.1	999.5	997.9	996.4	994.8	995.1	997.2	999.2	1001.4	1003.4	1004.4
157.5°	1020.3	1019.0	1017.6	1016.3	1015.0	1015.0	1016.5	1018.0	1019.4	1020.8	1022.1
160°	1031.4	1030.5	1029.4	1028.3	1027.3	1027.3	1028.3	1029.4	1030.5	1031.4	1032.5
162.5°	1041.5	1040.4	1039.3	1038.3	1037.3	1037.2	1038.1	1039.0	1039.9	1040.8	1042.0
165°	1054.8	1053.8	1052.7	1051.7	1050.7	1050.4	1050.9	1051.4	1052.0	1052.5	1053.7
167.5°	1064.8	1063.7	1062.7	1061.7	1060.6	1060.4	1060.9	1061.4	1061.8	1062.3	1063.5
170°	1070.4	1069.3	1068.4	1067.3	1066.2	1065.9	1066.2	1066.6	1067.0	1067.3	1068.5
172.5°	1074.2	1073.1	1072.0	1071.1	1070.0	1069.7	1070.0	1070.3	1070.7	1071.1	1072.3
175°	1079.0	1077.7	1076.5	1075.4	1074.2	1073.7	1074.1	1074.4	1074.7	1075.1	1076.3
177.5°	1079.8	1078.8	1077.8	1076.8	1075.9	1075.5	1075.6	1075.7	1075.9	1076.0	1077.0
180°	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1	1125.1
2.5°	1120.3	1122.3	1124.1	1124.9	1124.5	1124.1	1123.8	1123.4
5°	1112.7	1114.7	1116.6	1117.3	1116.9	1116.4	1115.9	1115.4
7.5°	1100.2	1102.1	1104.1	1104.7	1104.2	1103.7	1103.2	1102.6
10°	1088.9	1090.9	1092.8	1093.4	1092.7	1091.9	1091.2	1090.5
12.5°	1075.7	1077.0	1078.4	1078.8	1078.2	1077.7	1077.2	1076.7
15°	1052.4	1053.4	1054.3	1054.2	1053.0	1051.8	1050.6	1049.4
17.5°	1024.7	1025.9	1027.0	1027.0	1025.8	1024.7	1023.5	1022.4
20°	1003.2	1004.0	1004.7	1004.5	1003.6	1002.7	1001.7	1000.7
22.5°	980.5	980.6	980.7	980.6	979.9	979.3	978.8	978.2
25°	943.3	943.7	944.2	944.2	943.7	943.3	942.8	942.3
27.5°	906.7	906.0	905.2	904.3	903.1	902.0	900.8	899.7
30°	878.1	877.4	876.7	875.8	874.9	873.9	872.9	872.0
32.5°	850.1	848.8	847.5	846.4	845.5	844.5	843.5	842.5
35°	805.3	803.8	802.4	801.0	799.9	798.7	797.4	796.2
37.5°	760.3	758.5	756.7	755.2	754.1	752.9	751.8	750.6
40°	729.2	727.0	724.9	723.3	722.4	721.4	720.4	719.4
42.5°	698.5	696.1	693.8	691.9	690.6	689.3	687.9	686.6
45°	651.4	648.7	646.1	644.3	643.4	642.4	641.4	640.5
47.5°	602.4	599.7	596.9	594.8	593.4	592.0	590.6	589.2
50°	571.0	567.6	564.3	562.0	560.8	559.5	558.4	557.2
52.5°	538.3	535.6	532.8	530.6	529.0	527.4	525.9	524.2
55°	489.8	486.8	484.0	481.9	480.7	479.5	478.3	477.1
57.5°	439.2	436.3	433.5	431.6	430.7	429.8	428.9	428.0
60°	405.9	403.2	400.6	398.8	398.1	397.4	396.6	396.0
62.5°	374.1	371.7	369.2	367.6	366.6	365.7	364.8	363.9
65°	325.6	323.5	321.3	319.6	318.5	317.2	316.0	314.8
67.5°	277.7	276.0	274.3	273.0	272.1	271.1	270.1	269.1
70°	246.5	244.8	243.2	241.8	240.9	239.9	239.0	238.0
72.5°	217.1	215.4	213.8	212.5	211.7	211.0	210.2	209.5
75°	171.3	169.8	168.4	168.0	168.4	168.9	169.3	169.8
77.5°	130.4	129.6	128.9	128.2	127.5	126.9	126.2	125.5
80°	103.5	102.8	102.1	101.4	100.9	100.5	100.0	99.5
82.5°	77.1	76.2	75.3	74.8	74.7	74.6	74.5	74.4
85°	40.8	40.0	39.3	38.8	38.6	38.3	38.1	37.8
87.5°	14.4	14.0	13.6	13.4	13.2	13.1	13.0	12.9
90°	17.3	18.2	19.1	19.6	20.0	20.3	20.7	21.0
92.5°	19.0	19.4	19.9	20.2	20.4	20.6	20.8	21.0
95°	32.1	33.0	33.8	34.2	34.0	33.8	33.7	33.5
97.5°	42.1	42.7	43.5	43.9	44.1	44.3	44.5	44.7
100°	47.2	48.6	50.0	50.8	51.1	51.5	51.9	52.2
102.5°	49.2	51.0	52.8	54.0	54.5	55.0	55.4	55.9
105°	51.4	53.2	55.1	56.4	57.2	57.8	58.5	59.2
107.5°	62.6	60.7	58.8	58.1	58.9	59.5	60.3	60.9
110°	101.7	84.4	67.1	58.8	59.4	60.2	60.8	61.6





TEST NUMBER: P331571-930

CATALOG NUMBER: S122DIW-S865D970U930-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	217.5	154.4	91.2	59.9	60.5	61.1	61.6	62.2
115°	320.3	240.2	160.0	113.7	101.3	88.8	76.3	63.9
117.5°	493.6	474.3	454.9	424.7	383.7	342.8	301.8	260.8
120°	575.2	577.2	579.4	568.7	545.4	522.0	498.6	475.2
122.5°	610.3	611.6	612.8	611.1	606.6	602.1	597.5	593.0
125°	660.7	661.9	663.2	664.0	664.6	665.0	665.5	666.1
127.5°	707.4	709.1	710.9	711.8	711.9	712.0	712.1	712.2
130°	736.9	738.8	740.7	741.6	741.4	741.2	741.0	740.9
132.5°	765.6	767.3	768.9	769.6	769.4	769.2	769.1	768.9
135°	806.7	808.4	810.1	810.8	810.5	810.1	809.8	809.4
137.5°	844.7	846.4	848.2	848.7	848.2	847.5	846.9	846.4
140°	869.4	871.0	872.5	872.9	872.0	871.1	870.3	869.4
142.5°	892.2	893.6	895.0	895.3	894.5	893.6	892.8	891.9
145°	924.1	925.3	926.4	926.7	925.8	924.9	924.1	923.2
147.5°	951.8	952.7	953.6	953.7	952.9	952.2	951.5	950.7
150°	968.9	969.9	970.9	971.0	970.2	969.3	968.4	967.6
152.5°	984.5	985.5	986.5	986.5	985.4	984.2	983.1	981.9
155°	1005.5	1006.5	1007.5	1007.4	1006.0	1004.6	1003.2	1001.8
157.5°	1023.2	1024.4	1025.6	1025.5	1024.1	1022.8	1021.4	1020.1
160°	1033.6	1034.5	1035.6	1035.5	1034.3	1033.1	1031.9	1030.7
162.5°	1043.2	1044.3	1045.5	1045.4	1043.8	1042.4	1040.9	1039.4
165°	1054.9	1056.1	1057.4	1057.4	1056.1	1054.9	1053.7	1052.5
167.5°	1064.7	1065.9	1067.1	1067.0	1065.4	1063.9	1062.3	1060.8
170°	1069.8	1070.9	1072.1	1072.0	1070.4	1068.9	1067.3	1065.8
172.5°	1073.4	1074.6	1075.9	1075.7	1074.2	1072.6	1071.1	1069.5
175°	1077.5	1078.7	1079.9	1079.7	1077.9	1076.2	1074.5	1072.8
177.5°	1078.0	1078.9	1079.9	1079.8	1078.5	1077.3	1076.0	1074.8
180°	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6	1076.6

(END OF REPORT)