

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: P331542-840

Luminaire Tested: **S122DIW-S675D970U840-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331542-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIW-S675D970U840-4F0-1E-UDD-F1  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 675 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 970 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

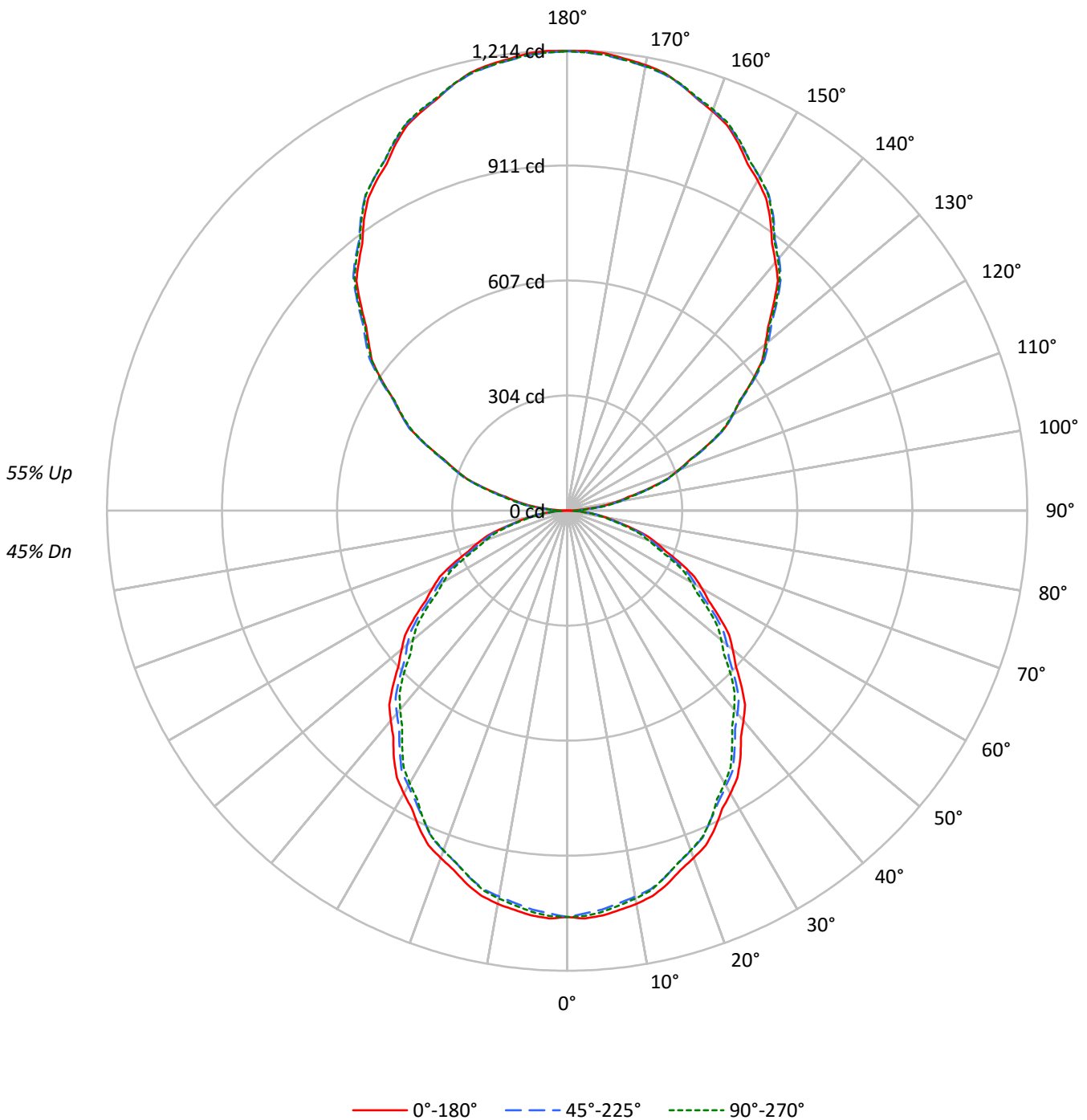
Lumens per Lamp: N/A  
Luminaire Lumens: 6121.7 lumens  
Efficiency: N/A  
Efficacy: 116.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: General Diffuse  
  
Input Watts (W): 52.6  
Input Voltage (V): 120  
Input Current (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				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	106	106	106	106	97	97	97	97	80	80	80		65	65	65		51	51	51	45
1	97	92	88	85	88	85	81	78	70	68	66		57	56	54		45	44	43	38
2	88	81	74	69	80	74	69	64	62	58	55		50	48	45		40	38	36	31
3	80	71	64	58	73	65	59	54	54	50	46		44	41	38		35	33	31	27
4	73	63	55	49	67	58	51	45	48	43	39		40	36	33		32	29	27	23
5	67	56	48	42	61	51	44	39	43	38	34		36	32	28		28	26	23	20
6	62	50	42	36	57	46	39	34	39	33	29		32	28	25		26	23	20	17
7	57	45	37	32	52	42	35	30	35	30	26		29	25	22		24	20	18	15
8	53	41	33	28	49	38	31	26	32	27	23		27	23	20		22	19	16	14
9	49	37	30	25	45	35	28	23	29	24	20		25	20	18		20	17	15	13
10	46	34	27	22	42	32	25	21	27	22	18		23	19	16		18	16	13	11

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	17312	17312	17312
5°	17378	17126	17227
10°	17274	16952	17038
15°	17060	16732	16715
20°	16756	16402	16385
25°	16456	15998	15998
30°	16067	15627	15491
35°	15707	15179	14954
40°	15253	14731	14450
45°	14805	14289	13935
50°	14320	13828	13335
55°	13813	13292	12797
60°	13249	12649	12184
65°	12642	12015	11461
70°	11877	11240	10707
75°	10805	10356	10100
80°	9586	9298	8815
85°	7836	7447	6688



TEST NUMBER: P331542-840

CATALOG NUMBER: S122DIW-S675D970U840-4F0-1E-UDD-F1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	100.8	1.6
10°-20°	283.7	4.6
20°-30°	417.0	6.8
30°-40°	484.3	7.9
40°-50°	483.8	7.9
50°-60°	421.9	6.9
60°-70°	312.0	5.1
70°-80°	176.7	2.9
80°-90°	52.4	0.9
90°-100°	76.8	1.3
100°-110°	238.5	3.9
110°-120°	407.7	6.7
120°-130°	536.2	8.8
130°-140°	601.8	9.8
140°-150°	590.1	9.6
150°-160°	494.9	8.1
160°-170°	328.3	5.4
170°-180°	114.7	1.9
0°-30°	801.5	13.1
0°-40°	1285.8	21.0
0°-60°	2191.5	35.8
0°-90°	2732.6	44.6
90°-120°	723.1	11.8
90°-150°	2451.2	40.0
90°-180°	3389.0	55.4
0°-180°	6121.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1072	1072	1072	1072	1072	
5°	1072	1068	1057	1064	1063	102
15°	1021	1014	1001	1005	1000	287
25°	924	915	898	900	898	425
35°	797	786	770	764	759	497
45°	648	641	626	615	610	500
55°	491	484	472	460	455	439
65°	331	324	314	305	300	327
75°	173	171	166	160	162	185
85°	42	41	40	37	36	48
90°	1	14	36	34	35	5
95°	53	63	65	65	63	61
105°	220	223	225	227	227	232
115°	409	415	413	412	409	405
125°	595	604	602	598	597	532
135°	770	781	784	782	779	595
145°	935	942	948	949	945	584
155°	1069	1072	1075	1080	1077	492
165°	1163	1162	1162	1168	1164	328
175°	1210	1207	1205	1211	1206	115
180°	1212	1212	1212	1212	1212	



TEST NUMBER: P331542-840

CATALOG NUMBER: S122DIW-S675D970U840-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1072.2	1072.2	1072.2	1072.2	1072.2	1072.2	1072.2	1072.2	1072.2	1072.2	1072.2
2.5°	1077.1	1076.2	1075.3	1074.4	1073.5	1072.0	1070.0	1067.9	1065.9	1063.9	1065.7
5°	1072.2	1071.3	1070.4	1069.4	1068.5	1066.8	1064.3	1061.8	1059.2	1056.7	1058.5
7.5°	1062.7	1061.3	1059.9	1058.4	1057.0	1055.0	1052.5	1049.9	1047.3	1044.7	1046.5
10°	1053.6	1052.0	1050.4	1048.7	1047.2	1045.0	1042.3	1039.6	1036.7	1034.0	1035.8
12.5°	1041.3	1039.9	1038.3	1036.9	1035.5	1033.5	1030.7	1027.9	1025.2	1022.5	1023.8
15°	1020.6	1019.3	1017.8	1016.5	1015.1	1012.9	1010.0	1006.9	1004.0	1001.0	1002.0
17.5°	994.2	992.8	991.5	990.1	988.8	986.5	983.5	980.5	977.4	974.4	975.5
20°	975.2	973.9	972.5	971.1	969.8	967.5	964.2	961.1	957.9	954.6	955.3
22.5°	956.2	954.3	952.4	950.5	948.6	946.1	943.1	940.1	937.1	934.0	934.1
25°	923.7	921.9	920.1	918.2	916.4	913.5	909.6	905.7	901.8	898.0	898.4
27.5°	886.6	884.9	883.3	881.6	880.0	877.7	874.5	871.5	868.4	865.4	864.6
30°	861.8	860.0	858.2	856.4	854.5	851.9	848.5	845.1	841.6	838.2	837.5
32.5°	835.5	833.9	832.5	831.0	829.6	827.1	823.4	819.8	816.2	812.5	811.3
35°	796.9	794.7	792.3	790.0	787.7	784.8	781.1	777.4	773.8	770.1	768.7
37.5°	753.4	751.3	749.3	747.3	745.4	742.5	738.8	735.2	731.5	727.8	726.1
40°	723.7	721.9	720.0	718.2	716.4	713.7	709.9	706.3	702.7	698.9	696.9
42.5°	694.9	693.0	691.2	689.3	687.5	684.8	681.1	677.4	673.8	670.1	667.8
45°	648.4	646.8	645.2	643.7	642.1	639.5	636.1	632.7	629.2	625.8	623.3
47.5°	602.3	600.8	599.3	597.7	596.2	593.7	590.1	586.5	583.0	579.4	576.7
50°	570.1	569.0	567.8	566.6	565.5	563.3	560.2	556.9	553.7	550.5	547.3
52.5°	538.8	537.2	535.7	534.2	532.7	530.5	527.5	524.4	521.4	518.4	515.7
55°	490.7	489.4	488.0	486.6	485.2	483.1	480.4	477.7	474.9	472.2	469.4
57.5°	442.4	441.4	440.3	439.2	438.1	436.1	433.0	430.0	427.0	423.9	421.2
60°	410.3	409.4	408.5	407.6	406.7	404.6	401.4	398.2	395.0	391.7	389.2
62.5°	379.0	377.5	376.1	374.6	373.1	371.1	368.7	366.2	363.8	361.2	358.9
65°	330.9	329.5	328.2	326.8	325.4	323.6	321.3	319.0	316.7	314.5	312.4
67.5°	282.1	280.9	279.8	278.7	277.6	276.1	274.0	272.0	269.9	267.8	266.2
70°	251.6	250.6	249.7	248.8	247.9	246.4	244.3	242.3	240.2	238.1	236.5
72.5°	220.3	219.2	218.3	217.4	216.5	215.4	214.1	212.8	211.5	210.1	208.5
75°	173.2	172.7	172.3	171.8	171.4	170.6	169.5	168.2	167.1	166.0	164.6
77.5°	131.2	130.4	129.6	128.8	128.1	127.4	126.9	126.4	126.0	125.5	124.9
80°	103.1	102.9	102.6	102.4	102.2	101.8	101.4	100.9	100.5	100.0	99.3
82.5°	76.7	76.6	76.6	76.5	76.5	76.3	76.0	75.8	75.5	75.2	74.4
85°	42.3	42.0	41.8	41.6	41.3	41.1	40.9	40.7	40.4	40.2	39.5
87.5°	15.0	15.2	15.5	15.6	15.8	16.2	16.8	17.5	18.1	18.7	18.1
90°	1.0	3.7	6.5	9.2	11.9	15.8	20.8	25.8	30.8	35.7	35.3
92.5°	18.2	20.2	22.2	24.2	26.3	27.8	29.0	30.2	31.3	32.5	32.6
95°	53.2	55.4	57.8	60.0	62.3	63.6	64.1	64.5	65.0	65.4	65.4
97.5°	97.1	99.2	101.2	103.2	105.1	106.6	107.4	108.4	109.2	110.1	110.1
100°	129.9	131.7	133.5	135.3	137.1	138.5	139.1	139.8	140.5	141.2	141.2
102.5°	164.3	165.7	167.1	168.6	170.1	171.3	172.1	173.0	173.8	174.7	174.9
105°	219.9	220.6	221.3	222.0	222.7	223.2	223.7	224.1	224.6	225.0	225.5
107.5°	276.0	277.0	277.9	278.9	279.9	280.4	280.4	280.4	280.4	280.4	280.6
110°	311.9	313.4	314.7	316.1	317.4	318.1	318.1	318.1	318.1	318.1	318.1



TEST NUMBER: P331542-840

CATALOG NUMBER: S122DIW-S675D970U840-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	351.2	352.6	354.0	355.4	356.7	357.3	357.1	356.9	356.8	356.6	356.0
115°	409.1	410.5	411.8	413.2	414.5	415.1	414.5	414.1	413.6	413.2	413.0
117.5°	466.9	468.7	470.5	472.3	474.1	474.3	473.1	471.8	470.6	469.3	468.8
120°	505.3	507.2	509.0	510.8	512.6	512.6	510.8	509.0	507.2	505.3	505.3
122.5°	540.5	542.7	544.8	547.0	549.2	549.7	548.4	547.1	545.8	544.5	544.0
125°	595.3	597.3	599.4	601.5	603.5	604.2	603.5	602.8	602.1	601.5	600.8
127.5°	648.7	651.3	653.9	656.5	659.0	659.9	659.1	658.3	657.5	656.7	655.8
130°	682.3	685.2	688.1	691.2	694.1	695.3	694.9	694.4	694.0	693.5	693.1
132.5°	719.8	722.3	724.7	727.1	729.5	730.7	730.8	730.9	731.0	731.1	730.1
135°	770.2	772.7	775.2	777.7	780.2	781.6	782.1	782.5	783.0	783.5	783.3
137.5°	823.1	825.3	827.3	829.3	831.3	832.7	833.2	833.8	834.5	835.1	834.9
140°	855.1	857.2	859.2	861.2	863.2	864.8	866.1	867.2	868.3	869.4	869.4
142.5°	887.9	889.9	891.9	893.9	896.1	897.5	898.2	899.0	899.8	900.5	900.7
145°	934.8	936.4	938.1	939.7	941.3	942.7	944.1	945.4	946.8	948.2	948.4
147.5°	976.8	978.8	980.7	982.5	984.4	985.8	986.7	987.6	988.6	989.5	990.0
150°	1005.4	1006.8	1008.1	1009.6	1010.9	1012.1	1013.0	1013.9	1014.8	1015.7	1016.3
152.5°	1030.9	1032.2	1033.6	1034.9	1036.3	1037.5	1038.6	1039.7	1040.8	1041.9	1042.7
155°	1068.8	1069.5	1070.3	1071.0	1071.6	1072.3	1073.0	1073.7	1074.3	1075.0	1076.1
157.5°	1101.4	1101.9	1102.3	1102.8	1103.2	1103.7	1104.1	1104.5	1104.9	1105.3	1106.8
160°	1121.1	1121.5	1122.0	1122.4	1122.9	1123.2	1123.5	1123.7	1123.9	1124.1	1125.5
162.5°	1139.0	1139.1	1139.2	1139.3	1139.4	1139.5	1139.8	1140.0	1140.2	1140.4	1142.1
165°	1163.0	1162.8	1162.6	1162.3	1162.1	1162.0	1162.0	1162.0	1162.0	1162.0	1163.6
167.5°	1183.1	1182.3	1181.6	1180.9	1180.3	1179.9	1179.9	1179.8	1179.8	1179.7	1181.3
170°	1193.7	1193.0	1192.3	1191.6	1190.9	1190.5	1190.2	1190.0	1189.8	1189.6	1191.1
172.5°	1201.0	1200.3	1199.6	1199.0	1198.3	1197.8	1197.6	1197.4	1197.2	1196.9	1198.5
175°	1210.0	1209.3	1208.7	1208.0	1207.3	1206.7	1206.3	1205.8	1205.4	1204.9	1206.5
177.5°	1213.8	1213.2	1212.6	1212.0	1211.5	1211.0	1210.7	1210.3	1210.0	1209.6	1210.7
180°	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0



TEST NUMBER: P331542-840

CATALOG NUMBER: S122DIW-S675D970U840-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1072.2	1072.2	1072.2	1072.2	1072.2	1072.2	1072.2	1072.2
2.5°	1067.5	1069.4	1071.3	1072.0	1071.6	1071.3	1070.9	1070.6
5°	1060.4	1062.2	1064.0	1064.7	1064.3	1063.8	1063.4	1062.9
7.5°	1048.4	1050.3	1052.1	1052.7	1052.2	1051.8	1051.3	1050.8
10°	1037.6	1039.6	1041.4	1041.9	1041.3	1040.6	1039.9	1039.2
12.5°	1025.0	1026.3	1027.6	1027.9	1027.4	1027.0	1026.5	1026.0
15°	1002.9	1003.8	1004.7	1004.6	1003.4	1002.3	1001.2	1000.0
17.5°	976.5	977.5	978.7	978.7	977.5	976.4	975.3	974.2
20°	956.0	956.7	957.4	957.3	956.3	955.4	954.5	953.6
22.5°	934.3	934.4	934.5	934.3	933.8	933.2	932.7	932.2
25°	898.9	899.3	899.8	899.8	899.3	898.9	898.4	898.0
27.5°	863.9	863.3	862.6	861.7	860.6	859.5	858.4	857.3
30°	836.8	836.1	835.4	834.6	833.6	832.7	831.8	830.9
32.5°	810.1	808.9	807.6	806.6	805.7	804.8	803.8	802.8
35°	767.4	766.0	764.6	763.4	762.2	761.0	759.9	758.7
37.5°	724.5	722.8	721.0	719.6	718.5	717.4	716.4	715.3
40°	694.9	692.8	690.7	689.2	688.3	687.4	686.5	685.6
42.5°	665.6	663.4	661.2	659.3	658.0	656.8	655.5	654.2
45°	620.8	618.2	615.7	614.0	613.1	612.2	611.3	610.3
47.5°	574.1	571.4	568.8	566.7	565.4	564.1	562.8	561.5
50°	544.1	540.9	537.7	535.5	534.3	533.2	532.1	530.9
52.5°	513.0	510.4	507.8	505.6	504.1	502.6	501.1	499.6
55°	466.7	463.9	461.2	459.2	458.1	457.0	455.8	454.6
57.5°	418.5	415.8	413.1	411.3	410.4	409.6	408.7	407.8
60°	386.7	384.2	381.6	380.1	379.4	378.7	378.0	377.3
62.5°	356.6	354.3	351.9	350.3	349.4	348.5	347.7	346.8
65°	310.3	308.2	306.2	304.6	303.5	302.3	301.1	300.0
67.5°	264.6	263.1	261.5	260.1	259.2	258.3	257.4	256.5
70°	234.9	233.4	231.8	230.5	229.5	228.6	227.7	226.8
72.5°	206.9	205.3	203.7	202.5	201.8	201.1	200.4	199.5
75°	163.2	161.9	160.5	160.1	160.5	161.0	161.4	161.9
77.5°	124.2	123.5	122.8	122.2	121.5	120.9	120.3	119.6
80°	98.7	98.0	97.3	96.6	96.2	95.7	95.3	94.8
82.5°	73.5	72.6	71.8	71.3	71.2	71.1	71.0	70.9
85°	38.9	38.2	37.5	37.0	36.8	36.6	36.4	36.1
87.5°	17.5	16.8	16.2	15.8	15.7	15.5	15.3	15.2
90°	34.8	34.4	33.9	33.8	34.1	34.3	34.5	34.7
92.5°	32.7	32.8	32.9	32.9	33.0	33.0	33.1	33.1
95°	65.4	65.4	65.4	65.2	64.7	64.3	63.8	63.4
97.5°	110.1	110.1	110.1	110.1	110.0	110.0	109.9	109.9
100°	141.2	141.2	141.2	141.1	140.8	140.6	140.4	140.2
102.5°	175.1	175.2	175.4	175.4	175.2	174.9	174.7	174.5
105°	225.9	226.4	226.8	227.1	227.1	227.1	227.1	227.1
107.5°	280.8	281.0	281.1	280.7	279.7	278.6	277.6	276.6
110°	318.1	318.1	318.1	317.8	317.1	316.4	315.7	315.1





TEST NUMBER: P331542-840

CATALOG NUMBER: S122DIW-S675D970U840-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	355.5	355.0	354.4	353.9	353.4	352.8	352.3	351.8
115°	412.7	412.5	412.3	411.8	411.2	410.5	409.8	409.1
117.5°	468.2	467.7	467.1	466.5	465.9	465.1	464.4	463.7
120°	505.3	505.3	505.3	504.9	504.2	503.6	502.9	502.2
122.5°	543.5	542.9	542.4	541.9	541.4	540.9	540.4	539.9
125°	600.1	599.4	598.7	598.2	598.0	597.8	597.5	597.3
127.5°	655.0	654.2	653.4	652.6	651.9	651.2	650.5	649.7
130°	692.6	692.2	691.7	690.9	690.0	689.1	688.2	687.3
132.5°	729.1	728.1	727.1	726.3	725.6	724.8	724.1	723.4
135°	783.0	782.8	782.5	782.1	781.4	780.7	780.1	779.4
137.5°	834.7	834.6	834.4	833.7	832.8	831.9	831.0	830.1
140°	869.4	869.4	869.4	869.0	868.1	867.2	866.3	865.4
142.5°	900.9	901.1	901.2	900.9	900.0	899.1	898.2	897.3
145°	948.7	948.9	949.1	948.8	947.9	947.0	946.0	945.1
147.5°	990.5	991.0	991.5	991.3	990.5	989.6	988.8	987.8
150°	1017.0	1017.7	1018.4	1018.4	1017.7	1017.0	1016.3	1015.7
152.5°	1043.6	1044.5	1045.3	1045.3	1044.5	1043.6	1042.7	1041.9
155°	1077.3	1078.4	1079.5	1079.7	1079.1	1078.4	1077.7	1077.0
157.5°	1108.4	1109.9	1111.5	1111.7	1110.6	1109.5	1108.4	1107.3
160°	1126.8	1128.2	1129.5	1129.8	1128.9	1128.0	1127.1	1126.2
162.5°	1143.6	1145.1	1146.7	1146.9	1145.8	1144.7	1143.6	1142.6
165°	1165.2	1166.7	1168.3	1168.5	1167.4	1166.3	1165.2	1164.0
167.5°	1183.0	1184.6	1186.1	1186.3	1185.2	1184.0	1182.8	1181.6
170°	1192.8	1194.4	1196.0	1196.1	1194.7	1193.4	1191.9	1190.6
172.5°	1200.1	1201.7	1203.3	1203.5	1202.0	1200.7	1199.3	1198.0
175°	1208.1	1209.7	1211.2	1211.4	1210.0	1208.7	1207.3	1206.0
177.5°	1211.8	1212.8	1214.0	1214.0	1212.8	1211.8	1210.7	1209.6
180°	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0

(END OF REPORT)