

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: P331599-935

Luminaire Tested: **S122DIW-S1005D970U935-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331599-935  
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-S1005D970U935-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1005 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 970 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

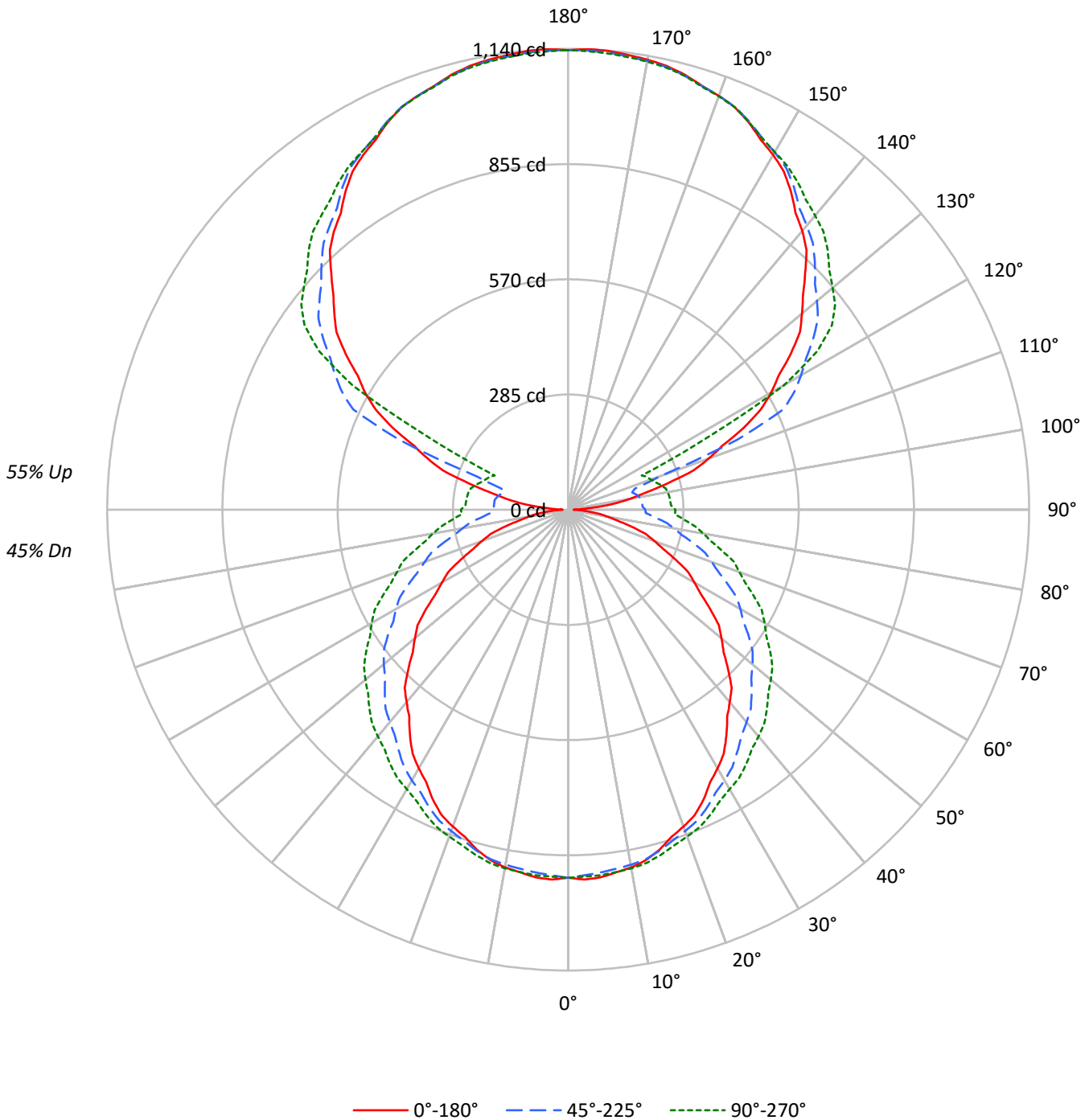
Lumens per Lamp: N/A  
Luminaire Lumens: 6808.3 lumens  
Efficiency: N/A  
Efficacy: 101.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: General Diffuse  
  
Input Watts (W): 67.4  
Input Voltage (V): 120  
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



TEST NUMBER: P331599-935

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### Luminous Intensity Polar Plot





TEST NUMBER: P331599-935

CATALOG NUMBER: S122DIW-S1005D970U935-4F0-1E-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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	45
1	95	90	86	82	87	83	79	76	69	66	63	56	54	52	44	42	41	35
2	86	78	72	66	79	72	66	61	59	55	51	48	45	42	38	35	34	29
3	78	68	61	54	71	63	56	50	52	47	43	42	38	35	33	30	28	24
4	71	60	52	45	65	55	48	42	46	40	36	37	33	30	29	26	24	20
5	65	53	45	39	60	49	42	36	41	35	31	33	29	25	26	23	20	17
6	60	48	39	33	55	44	36	31	37	31	27	30	25	22	24	20	18	15
7	56	43	35	29	51	40	32	27	33	27	23	27	23	19	21	18	16	13
8	51	39	31	25	47	36	29	24	30	24	20	25	20	17	20	16	14	11
9	48	35	28	23	44	33	26	21	28	22	18	23	18	15	18	15	13	10
10	45	32	25	20	41	30	23	19	25	20	16	21	17	14	17	14	11	9

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

	0°	45°	90°
0°	14699	14699	14699
5°	14772	14150	14097
10°	14679	13733	13578
15°	14477	13289	13032
20°	14222	12815	12506
25°	13968	12358	12028
30°	13612	11889	11549
35°	13253	11434	11211
40°	12874	11047	10874
45°	12515	10702	10584
50°	12128	10388	10300
55°	11724	10052	10011
60°	11226	9702	9705
65°	10711	9294	9342
70°	10136	8856	8949
75°	9394	8423	8587
80°	8224	7984	8220
85°	7107	7603	7937



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	86.3	1.3
10°-20°	247.4	3.6
20°-30°	374.9	5.5
30°-40°	456.6	6.7
40°-50°	491.2	7.2
50°-60°	477.0	7.0
60°-70°	416.5	6.1
70°-80°	320.7	4.7
80°-90°	218.0	3.2
90°-100°	186.2	2.7
100°-110°	247.3	3.6
110°-120°	443.3	6.5
120°-130°	653.6	9.6
130°-140°	669.4	9.8
140°-150°	609.5	9.0
150°-160°	487.7	7.2
160°-170°	314.3	4.6
170°-180°	108.2	1.6
0°-30°	708.5	10.4
0°-40°	1165.2	17.1
0°-60°	2133.4	31.3
0°-90°	3088.7	45.4
90°-120°	876.8	12.9
90°-150°	2809.4	41.3
90°-180°	3720.0	54.6
0°-180°	6808.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	910	910	910	910	910	
5°	913	909	901	909	908	87
15°	871	873	874	885	884	245
25°	792	801	813	828	833	364
35°	682	705	730	758	768	426
45°	560	596	641	681	695	432
55°	429	478	545	591	610	383
65°	293	358	435	488	507	291
75°	162	237	321	375	394	172
85°	48	129	214	267	288	51
90°	14	100	191	245	265	11
95°	64	102	184	236	253	74
105°	257	307	164	217	237	275
115°	478	510	587	262	201	470
125°	672	685	740	780	796	599
135°	829	843	863	897	908	640
145°	960	960	973	986	990	601
155°	1057	1051	1060	1064	1058	487
165°	1114	1109	1112	1117	1112	315
175°	1139	1134	1135	1140	1133	108
180°	1137	1137	1137	1137	1137	



TEST NUMBER: P331599-935

CATALOG NUMBER: S122DIW-S1005D970U935-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	910.4	910.4	910.4	910.4	910.4	910.4	910.4	910.4	910.4	910.4	910.4
2.5°	915.8	915.1	914.3	913.6	912.9	911.7	910.1	908.4	906.8	905.2	906.4
5°	913.1	912.2	911.4	910.4	909.6	908.3	906.5	904.7	903.0	901.2	903.0
7.5°	904.9	904.3	903.7	903.2	902.6	901.6	900.3	898.9	897.6	896.2	898.3
10°	898.6	898.0	897.4	896.8	896.2	895.5	894.7	893.7	892.9	892.0	894.3
12.5°	888.0	888.1	888.3	888.4	888.5	888.2	887.6	886.9	886.3	885.6	888.0
15°	870.9	871.5	872.0	872.6	873.2	873.5	873.5	873.5	873.5	873.5	876.2
17.5°	848.7	850.0	851.2	852.4	853.6	854.7	855.7	856.6	857.6	858.5	861.3
20°	834.0	835.4	836.9	838.4	839.8	841.1	842.3	843.4	844.6	845.8	849.0
22.5°	818.1	819.8	821.5	823.2	824.9	826.6	828.2	829.8	831.5	833.1	836.4
25°	791.7	793.8	795.8	797.9	800.0	802.3	804.9	807.5	810.2	812.8	816.3
27.5°	760.0	763.4	766.7	770.1	773.4	776.6	779.7	782.8	785.9	789.1	793.5
30°	738.9	742.7	746.6	750.4	754.1	758.0	761.8	765.6	769.4	773.3	777.9
32.5°	715.7	720.0	724.3	728.6	732.8	737.2	741.8	746.2	750.8	755.3	760.7
35°	682.2	687.2	692.2	697.2	702.1	707.4	713.0	718.5	724.1	729.7	736.2
37.5°	645.8	651.5	657.3	663.0	668.7	675.2	682.4	689.7	696.9	704.1	711.3
40°	621.5	627.9	634.4	640.8	647.3	654.4	662.4	670.3	678.2	686.1	693.8
42.5°	598.3	604.7	611.1	617.6	624.1	631.8	640.9	650.1	659.1	668.2	676.5
45°	559.5	567.4	575.3	583.2	591.2	600.2	610.5	620.8	631.0	641.3	650.4
47.5°	521.2	529.9	538.5	547.1	555.7	566.0	578.1	590.0	602.1	614.1	623.6
50°	494.8	503.9	513.0	522.1	531.2	542.3	555.5	568.7	581.9	595.1	605.1
52.5°	469.5	479.1	488.6	498.2	507.7	519.4	533.3	547.3	561.1	575.1	585.2
55°	428.9	439.4	450.0	460.5	471.1	484.0	499.2	514.4	529.7	544.9	555.5
57.5°	388.7	400.6	412.5	424.5	436.4	450.0	465.6	481.1	496.7	512.2	523.6
60°	360.2	372.8	385.5	398.0	410.7	425.3	442.0	458.7	475.4	492.1	503.3
62.5°	334.9	347.9	361.0	374.1	387.2	402.1	418.8	435.5	452.3	469.0	480.8
65°	292.9	307.3	321.7	336.0	350.4	366.3	383.6	400.8	418.1	435.4	447.5
67.5°	254.4	269.4	284.4	299.5	314.4	330.8	348.5	366.3	383.9	401.7	413.8
70°	227.0	242.2	257.4	272.7	287.9	304.6	322.9	341.0	359.2	377.4	389.9
72.5°	201.6	217.3	233.1	248.7	264.5	281.5	300.0	318.4	336.8	355.2	367.6
75°	162.3	178.7	195.1	211.5	228.0	245.6	264.3	283.1	301.9	320.6	333.2
77.5°	124.3	141.5	158.7	175.8	193.0	211.1	230.2	249.3	268.3	287.4	300.0
80°	98.9	116.8	134.7	152.7	170.5	189.0	208.0	227.1	246.2	265.2	277.5
82.5°	77.8	95.5	113.1	130.8	148.4	166.9	186.2	205.5	224.8	244.1	256.4
85°	47.5	65.7	83.9	102.0	120.2	138.7	157.5	176.2	195.0	213.8	226.1
87.5°	26.0	43.9	61.8	79.6	97.6	116.0	135.1	154.1	173.1	192.3	204.4
90°	14.0	33.1	52.1	71.0	90.1	109.7	129.9	150.2	170.4	190.6	203.3
92.5°	28.8	44.4	60.1	75.7	91.4	108.6	127.3	146.2	165.0	183.7	195.7
95°	64.1	71.8	79.6	87.3	95.1	108.3	127.2	146.1	165.0	183.8	195.9
97.5°	115.4	110.6	105.9	101.2	96.3	103.9	123.8	143.6	163.5	183.3	194.9
100°	154.9	140.7	126.5	112.3	98.1	100.7	120.3	139.8	159.3	178.8	191.1
102.5°	197.3	201.8	206.5	211.0	215.7	212.9	202.9	192.9	182.8	172.8	185.3
105°	256.7	270.7	284.6	298.7	312.6	302.3	267.7	233.0	198.3	163.7	175.9
107.5°	326.1	337.3	348.5	359.7	370.9	354.0	308.7	263.5	218.2	172.9	180.7
110°	369.7	379.4	389.2	398.8	408.5	394.2	355.7	317.3	278.8	240.3	231.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	411.9	420.2	428.5	436.9	445.1	449.6	450.2	450.8	451.5	452.1	394.8
115°	478.4	484.7	491.0	497.3	503.7	515.7	533.5	551.2	569.0	586.8	510.9
117.5°	536.4	542.0	547.6	553.2	558.8	569.2	584.5	599.9	615.3	630.6	618.8
120°	579.9	583.8	587.7	591.6	595.6	605.0	620.0	635.0	650.1	665.0	675.5
122.5°	616.7	620.1	623.5	626.8	630.2	639.1	653.8	668.3	682.9	697.6	706.9
125°	671.5	673.9	676.2	678.6	681.1	688.6	701.5	714.4	727.2	740.0	749.2
127.5°	722.4	724.7	727.0	729.4	731.7	738.0	748.1	758.3	768.4	778.6	787.7
130°	754.6	757.2	759.8	762.5	765.1	770.5	778.7	786.9	795.0	803.2	812.3
132.5°	787.5	789.7	791.9	794.1	796.3	800.7	807.5	814.2	821.0	827.8	836.3
135°	829.0	831.9	834.8	837.8	840.7	844.4	849.0	853.6	858.2	862.7	870.7
137.5°	872.3	874.3	876.2	878.2	880.2	882.8	886.0	889.1	892.3	895.4	902.6
140°	900.5	901.7	902.8	904.0	905.3	907.1	909.7	912.3	914.9	917.5	923.9
142.5°	924.2	925.2	926.3	927.3	928.3	930.1	932.5	934.9	937.3	939.7	944.9
145°	960.1	959.9	959.8	959.6	959.4	960.9	964.0	967.1	970.2	973.3	976.3
147.5°	992.6	991.8	991.1	990.4	989.7	990.9	994.0	997.0	1000.1	1003.2	1004.4
150°	1013.6	1012.3	1011.0	1009.8	1008.5	1009.3	1012.2	1015.1	1018.0	1021.0	1022.1
152.5°	1031.4	1029.9	1028.5	1027.1	1025.6	1026.3	1029.1	1031.9	1034.7	1037.4	1038.5
155°	1057.2	1055.5	1053.9	1052.2	1050.6	1050.9	1053.1	1055.2	1057.5	1059.6	1060.8
157.5°	1077.5	1076.1	1074.6	1073.2	1071.9	1071.9	1073.5	1075.0	1076.5	1078.1	1079.3
160°	1089.3	1088.2	1087.1	1086.0	1084.9	1084.9	1086.0	1087.1	1088.2	1089.3	1090.4
162.5°	1099.8	1098.7	1097.6	1096.5	1095.5	1095.4	1096.3	1097.3	1098.2	1099.2	1100.4
165°	1114.0	1112.8	1111.7	1110.7	1109.6	1109.3	1109.8	1110.3	1110.9	1111.5	1112.8
167.5°	1124.5	1123.3	1122.3	1121.2	1120.1	1119.8	1120.3	1120.8	1121.4	1121.9	1123.1
170°	1130.4	1129.3	1128.3	1127.1	1126.0	1125.7	1126.0	1126.4	1126.8	1127.1	1128.4
172.5°	1134.4	1133.2	1132.1	1131.1	1130.0	1129.6	1130.0	1130.3	1130.7	1131.1	1132.4
175°	1139.4	1138.2	1136.9	1135.7	1134.4	1133.9	1134.3	1134.6	1135.0	1135.3	1136.6
177.5°	1140.3	1139.3	1138.2	1137.2	1136.2	1135.7	1135.9	1136.0	1136.2	1136.3	1137.4
180°	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	910.4	910.4	910.4	910.4	910.4	910.4	910.4	910.4
2.5°	907.5	908.7	909.9	910.2	909.7	909.3	908.8	908.4
5°	904.7	906.5	908.3	909.0	908.7	908.4	908.1	907.8
7.5°	900.4	902.6	904.7	905.6	905.3	905.0	904.7	904.4
10°	896.6	899.1	901.4	902.4	902.1	901.8	901.6	901.2
12.5°	890.4	892.7	895.0	896.0	895.8	895.4	895.2	894.9
15°	878.8	881.4	884.1	885.3	884.9	884.7	884.3	884.1
17.5°	864.0	866.8	869.5	870.9	870.9	870.9	870.9	870.9
20°	852.2	855.5	858.7	860.3	860.3	860.3	860.3	860.3
22.5°	839.6	842.8	846.0	847.9	848.3	848.9	849.3	849.8
25°	819.8	823.4	826.9	829.1	830.0	830.9	831.7	832.6
27.5°	798.0	802.5	806.9	809.4	810.1	810.7	811.4	812.0
30°	782.6	787.3	792.0	794.8	795.7	796.5	797.5	798.3
32.5°	766.1	771.5	776.9	780.3	782.0	783.5	785.1	786.7
35°	742.6	749.1	755.5	759.7	761.8	763.9	765.9	767.9
37.5°	718.4	725.6	732.7	737.4	739.5	741.8	743.9	746.1
40°	701.4	709.0	716.6	721.8	724.4	727.0	729.7	732.4
42.5°	684.8	693.2	701.5	707.0	709.6	712.3	714.9	717.6
45°	659.4	668.6	677.6	683.6	686.6	689.5	692.4	695.3
47.5°	633.1	642.6	652.1	658.5	661.7	665.0	668.1	671.4
50°	615.0	625.0	635.0	641.6	644.8	648.0	651.3	654.4
52.5°	595.5	605.6	615.9	622.7	626.1	629.6	633.1	636.5
55°	566.1	576.6	587.2	594.3	598.1	602.0	605.8	609.6
57.5°	535.0	546.4	557.8	565.3	569.2	573.1	577.0	580.8
60°	514.4	525.6	536.7	544.4	548.5	552.6	556.7	560.8
62.5°	492.7	504.5	516.3	524.2	528.1	531.9	535.8	539.7
65°	459.5	471.5	483.5	491.5	495.2	499.0	502.9	506.7
67.5°	425.9	438.1	450.2	458.3	462.3	466.2	470.3	474.2
70°	402.6	415.2	427.8	435.8	439.4	442.9	446.4	450.0
72.5°	380.0	392.4	404.7	413.0	417.2	421.5	425.7	429.9
75°	345.9	358.4	371.1	379.3	383.1	386.9	390.7	394.5
77.5°	312.5	325.0	337.6	345.9	350.0	354.1	358.3	362.3
80°	289.8	302.2	314.5	322.7	326.8	330.9	335.0	339.1
82.5°	268.7	281.0	293.3	301.4	305.3	309.2	313.1	316.9
85°	238.4	250.7	263.0	271.2	275.3	279.5	283.5	287.7
87.5°	216.5	228.7	240.8	248.8	252.6	256.5	260.3	264.2
90°	215.9	228.6	241.2	249.4	253.4	257.3	261.1	265.0
92.5°	207.7	219.6	231.6	239.5	243.2	246.9	250.7	254.4
95°	207.9	220.0	232.0	239.8	243.1	246.4	249.8	253.1
97.5°	206.5	218.1	229.6	237.3	241.0	244.6	248.3	252.0
100°	203.5	215.8	228.1	236.1	239.6	243.2	246.8	250.4
102.5°	197.8	210.3	222.8	231.0	234.7	238.4	242.2	245.9
105°	188.2	200.5	212.8	220.8	224.8	228.8	232.7	236.7
107.5°	188.6	196.3	204.1	210.0	214.0	217.9	221.9	225.8
110°	222.5	213.6	204.7	202.2	206.2	210.2	214.1	218.1





TEST NUMBER: P331599-935

CATALOG NUMBER: S122DIW-S1005D970U935-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	337.4	280.2	222.8	196.0	199.9	203.7	207.5	211.3
115°	435.1	359.2	283.4	240.5	230.6	220.6	210.7	200.7
117.5°	607.0	595.2	583.4	557.4	517.1	476.8	436.6	396.3
120°	685.9	696.3	706.7	701.2	679.7	658.2	636.8	615.4
122.5°	716.2	725.5	734.7	738.4	736.3	734.3	732.3	730.2
125°	758.5	767.7	776.9	783.0	786.3	789.5	792.6	795.8
127.5°	796.9	806.0	815.1	821.0	823.7	826.5	829.1	831.8
130°	821.3	830.3	839.4	845.0	847.1	849.3	851.5	853.7
132.5°	844.8	853.3	861.9	867.2	869.4	871.6	873.7	875.9
135°	878.7	886.7	894.7	899.7	901.6	903.6	905.6	907.6
137.5°	909.7	917.0	924.1	928.4	929.8	931.2	932.5	933.9
140°	930.1	936.5	942.9	946.4	947.3	948.1	949.0	949.9
142.5°	950.2	955.5	960.7	963.7	964.3	964.9	965.5	966.1
145°	979.4	982.4	985.4	987.2	987.7	988.3	988.9	989.5
147.5°	1005.6	1006.8	1008.0	1008.5	1008.5	1008.4	1008.3	1008.2
150°	1023.2	1024.2	1025.4	1025.5	1024.6	1023.6	1022.7	1021.8
152.5°	1039.7	1040.7	1041.8	1041.8	1040.6	1039.4	1038.2	1037.0
155°	1061.9	1062.9	1064.0	1063.9	1062.4	1060.9	1059.5	1058.0
157.5°	1080.6	1081.8	1083.1	1083.0	1081.5	1080.1	1078.7	1077.3
160°	1091.5	1092.5	1093.6	1093.6	1092.3	1091.0	1089.8	1088.5
162.5°	1101.6	1102.9	1104.1	1104.0	1102.3	1100.8	1099.2	1097.7
165°	1114.0	1115.3	1116.6	1116.6	1115.3	1114.0	1112.8	1111.5
167.5°	1124.4	1125.7	1127.0	1126.8	1125.2	1123.5	1121.9	1120.2
170°	1129.7	1130.9	1132.2	1132.0	1130.4	1128.8	1127.1	1125.5
172.5°	1133.6	1134.9	1136.2	1136.0	1134.4	1132.7	1131.1	1129.5
175°	1137.9	1139.2	1140.5	1140.2	1138.3	1136.5	1134.7	1132.9
177.5°	1138.4	1139.4	1140.4	1140.3	1138.9	1137.6	1136.3	1135.1
180°	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0

(END OF REPORT)