

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: P331599-930

Luminaire Tested: **S122DIW-S1005D970U930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331599-930  
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-S1005D970U930-4F0-1E-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: 6446.9 lumens  
Efficiency: N/A  
Efficacy: 95.7 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

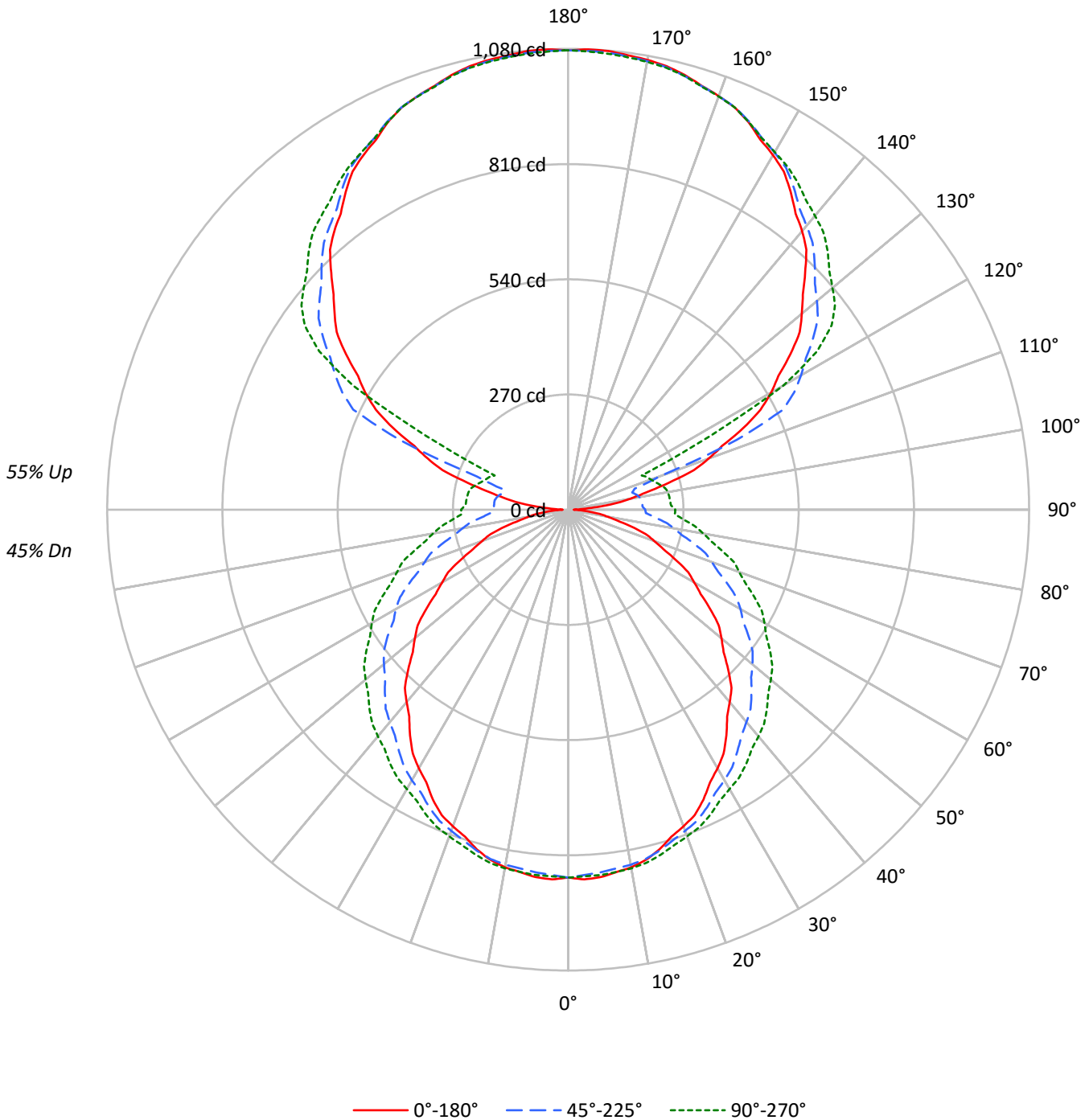
Input Watts (W): 67.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331599-930

CATALOG NUMBER: S122DIW-S1005D970U930-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P331599-930

CATALOG NUMBER: S122DIW-S1005D970U930-4F0-1E-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°	13919	13919	13919
5°	13988	13400	13350
10°	13899	13004	12858
15°	13709	12584	12339
20°	13467	12136	11842
25°	13227	11701	11390
30°	12890	11257	10936
35°	12550	10828	10617
40°	12191	10461	10297
45°	11850	10133	10022
50°	11485	9837	9754
55°	11101	9519	9479
60°	10631	9187	9189
65°	10145	8801	8846
70°	9596	8384	8474
75°	8897	7976	8132
80°	7792	7559	7784
85°	6733	7197	7515



TEST NUMBER: P331599-930

CATALOG NUMBER: S122DIW-S1005D970U930-4F0-1E-UDD-D

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	81.7	1.3
10°-20°	234.3	3.6
20°-30°	355.0	5.5
30°-40°	432.4	6.7
40°-50°	465.2	7.2
50°-60°	451.7	7.0
60°-70°	394.4	6.1
70°-80°	303.7	4.7
80°-90°	206.4	3.2
90°-100°	176.3	2.7
100°-110°	234.2	3.6
110°-120°	419.8	6.5
120°-130°	618.9	9.6
130°-140°	633.9	9.8
140°-150°	577.2	9.0
150°-160°	461.8	7.2
160°-170°	297.6	4.6
170°-180°	102.4	1.6
0°-30°	670.9	10.4
0°-40°	1103.3	17.1
0°-60°	2020.2	31.3
0°-90°	2924.7	45.4
90°-120°	830.3	12.9
90°-150°	2660.3	41.3
90°-180°	3522.0	54.6
0°-180°	6446.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	862	862	862	862	862	
5°	865	861	853	860	860	82
15°	825	827	827	838	837	232
25°	750	759	770	784	788	345
35°	646	667	691	717	727	404
45°	530	564	607	644	658	409
55°	406	452	516	559	577	363
65°	277	339	412	462	480	275
75°	154	224	304	355	374	163
85°	45	123	202	253	272	48
90°	13	95	180	232	251	11
95°	61	96	174	223	240	70
105°	243	291	155	205	224	260
115°	453	483	556	248	190	445
125°	636	648	701	738	754	567
135°	785	798	817	850	859	606
145°	909	909	922	934	937	569
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	



TEST NUMBER: P331599-930

CATALOG NUMBER: S122DIW-S1005D970U930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	862.1	862.1	862.1	862.1	862.1	862.1	862.1	862.1	862.1	862.1	862.1
2.5°	867.2	866.5	865.8	865.1	864.5	863.3	861.8	860.2	858.7	857.1	858.3
5°	864.6	863.8	863.0	862.1	861.3	860.1	858.4	856.7	855.1	853.4	855.1
7.5°	856.9	856.3	855.7	855.2	854.7	853.8	852.5	851.2	849.9	848.6	850.6
10°	850.9	850.4	849.8	849.2	848.6	848.0	847.2	846.3	845.5	844.7	846.9
12.5°	840.9	841.0	841.1	841.2	841.3	841.1	840.5	839.8	839.3	838.6	840.9
15°	824.7	825.2	825.7	826.3	826.9	827.1	827.1	827.1	827.1	827.1	829.6
17.5°	803.6	804.9	806.0	807.1	808.3	809.3	810.2	811.1	812.0	812.9	815.5
20°	789.7	791.1	792.5	793.9	795.2	796.5	797.6	798.7	799.8	801.0	804.0
22.5°	774.7	776.2	777.9	779.5	781.1	782.7	784.2	785.8	787.3	788.9	792.0
25°	749.7	751.6	753.6	755.5	757.5	759.7	762.1	764.7	767.2	769.6	773.0
27.5°	719.7	722.8	726.0	729.2	732.4	735.4	738.3	741.3	744.2	747.2	751.4
30°	699.7	703.3	706.9	710.5	714.1	717.8	721.4	725.0	728.6	732.2	736.6
32.5°	677.7	681.8	685.8	689.9	693.9	698.1	702.4	706.6	710.9	715.2	720.3
35°	646.0	650.7	655.4	660.1	664.9	669.8	675.1	680.4	685.7	691.0	697.1
37.5°	611.5	616.9	622.4	627.8	633.2	639.4	646.2	653.1	659.9	666.8	673.5
40°	588.5	594.6	600.7	606.8	612.9	619.7	627.2	634.7	642.2	649.7	657.0
42.5°	566.6	572.6	578.7	584.8	590.9	598.3	606.9	615.6	624.1	632.8	640.6
45°	529.8	537.3	544.8	552.3	559.8	568.3	578.1	587.8	597.5	607.2	615.9
47.5°	493.6	501.7	509.9	518.0	526.2	536.0	547.4	558.7	570.1	581.5	590.5
50°	468.6	477.2	485.8	494.4	503.0	513.6	526.0	538.5	551.0	563.5	573.0
52.5°	444.6	453.6	462.7	471.7	480.8	491.9	505.0	518.2	531.3	544.5	554.2
55°	406.1	416.0	426.1	436.1	446.1	458.3	472.7	487.1	501.6	516.0	526.0
57.5°	368.1	379.4	390.6	401.9	413.2	426.2	440.9	455.6	470.3	485.0	495.8
60°	341.1	353.0	365.0	376.9	388.9	402.8	418.6	434.4	450.2	466.0	476.6
62.5°	317.2	329.5	341.9	354.2	366.6	380.7	396.6	412.4	428.3	444.1	455.3
65°	277.4	291.0	304.6	318.2	331.8	346.8	363.2	379.5	395.9	412.3	423.7
67.5°	240.9	255.1	269.3	283.6	297.7	313.2	330.0	346.8	363.5	380.3	391.8
70°	214.9	229.3	243.8	258.2	272.6	288.5	305.7	322.9	340.1	357.3	369.2
72.5°	190.9	205.8	220.7	235.5	250.5	266.6	284.1	301.5	318.9	336.4	348.1
75°	153.7	169.3	184.7	200.3	215.9	232.5	250.3	268.1	285.8	303.6	315.5
77.5°	117.7	134.0	150.3	166.5	182.8	199.9	218.0	236.0	254.0	272.1	284.1
80°	93.7	110.6	127.6	144.6	161.4	179.0	197.0	215.1	233.1	251.1	262.8
82.5°	73.7	90.4	107.1	123.8	140.6	158.1	176.3	194.6	212.9	231.1	242.8
85°	45.0	62.2	79.4	96.6	113.8	131.3	149.1	166.9	184.7	202.4	214.1
87.5°	24.6	41.6	58.5	75.4	92.4	109.8	127.9	145.9	164.0	182.1	193.6
90°	13.3	31.3	49.3	67.3	85.3	103.9	123.0	142.2	161.3	180.5	192.5
92.5°	27.2	42.1	56.9	71.7	86.5	102.8	120.6	138.4	156.2	174.0	185.3
95°	60.7	68.0	75.3	82.7	90.0	102.6	120.4	138.4	156.2	174.1	185.5
97.5°	109.3	104.8	100.3	95.8	91.2	98.4	117.2	136.0	154.8	173.6	184.6
100°	146.7	133.2	119.8	106.3	92.9	95.4	113.9	132.4	150.8	169.3	181.0
102.5°	186.8	191.1	195.5	199.8	204.2	201.6	192.2	182.6	173.1	163.6	175.5
105°	243.0	256.3	269.5	282.8	296.0	286.3	253.5	220.6	187.8	155.0	166.6
107.5°	308.8	319.4	330.0	340.6	351.2	335.2	292.3	249.5	206.6	163.7	171.1
110°	350.1	359.3	368.5	377.6	386.9	373.2	336.8	300.4	264.0	227.6	219.2



TEST NUMBER: P331599-930

CATALOG NUMBER: S122DIW-S1005D970U930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	390.0	397.9	405.8	413.7	421.5	425.7	426.3	426.9	427.5	428.1	373.8
115°	453.0	458.9	465.0	470.9	477.0	488.4	505.2	522.0	538.8	555.6	483.8
117.5°	507.9	513.2	518.5	523.8	529.1	539.0	553.5	568.1	582.6	597.1	586.0
120°	549.1	552.8	556.5	560.2	563.9	572.9	587.1	601.3	615.6	629.7	639.6
122.5°	584.0	587.2	590.4	593.5	596.7	605.2	619.1	632.8	646.7	660.6	669.4
125°	635.9	638.1	640.3	642.6	644.9	652.1	664.2	676.5	688.6	700.7	709.5
127.5°	684.0	686.2	688.4	690.6	692.8	698.8	708.4	718.0	727.7	737.3	745.9
130°	714.5	717.1	719.5	722.0	724.5	729.6	737.4	745.1	752.8	760.6	769.2
132.5°	745.7	747.8	749.8	752.0	754.0	758.2	764.7	771.0	777.5	783.8	791.9
135°	785.0	787.7	790.5	793.3	796.1	799.6	804.0	808.3	812.6	816.9	824.5
137.5°	826.0	827.9	829.7	831.6	833.5	835.9	838.9	841.9	844.9	847.8	854.7
140°	852.7	853.9	854.9	856.1	857.2	858.9	861.4	863.9	866.3	868.8	874.8
142.5°	875.1	876.1	877.1	878.1	879.1	880.7	883.0	885.3	887.5	889.8	894.8
145°	909.1	909.0	908.8	908.7	908.5	909.9	912.8	915.7	918.7	921.6	924.5
147.5°	939.9	939.1	938.5	937.8	937.2	938.3	941.3	944.1	947.1	950.0	951.1
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



TEST NUMBER: P331599-930

CATALOG NUMBER: S122DIW-S1005D970U930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	862.1	862.1	862.1	862.1	862.1	862.1	862.1	862.1
2.5°	859.3	860.5	861.6	861.9	861.4	861.0	860.5	860.1
5°	856.7	858.4	860.1	860.7	860.5	860.2	859.9	859.7
7.5°	852.6	854.7	856.6	857.5	857.2	857.0	856.6	856.4
10°	849.1	851.3	853.5	854.5	854.2	853.9	853.7	853.4
12.5°	843.1	845.3	847.5	848.5	848.2	847.9	847.7	847.4
15°	832.2	834.6	837.1	838.3	838.0	837.7	837.4	837.1
17.5°	818.2	820.8	823.4	824.7	824.7	824.7	824.7	824.7
20°	807.0	810.1	813.1	814.6	814.6	814.6	814.6	814.6
22.5°	795.0	798.1	801.1	802.9	803.3	803.8	804.2	804.7
25°	776.3	779.7	783.0	785.1	785.9	786.8	787.6	788.4
27.5°	755.6	759.9	764.1	766.5	767.1	767.7	768.3	768.9
30°	741.1	745.5	750.0	752.6	753.4	754.2	755.1	755.9
32.5°	725.5	730.5	735.6	738.9	740.5	741.9	743.5	744.9
35°	703.2	709.3	715.4	719.4	721.4	723.3	725.3	727.2
37.5°	680.3	687.1	693.8	698.2	700.3	702.4	704.4	706.5
40°	664.1	671.4	678.6	683.5	686.0	688.4	691.0	693.5
42.5°	648.5	656.4	664.3	669.4	672.0	674.5	676.9	679.5
45°	624.4	633.1	641.6	647.3	650.1	652.9	655.7	658.4
47.5°	599.5	608.5	617.5	623.5	626.6	629.7	632.7	635.8
50°	582.4	591.8	601.3	607.6	610.6	613.6	616.7	619.7
52.5°	563.9	573.5	583.2	589.6	592.9	596.2	599.5	602.8
55°	536.1	546.0	556.0	562.8	566.4	570.1	573.6	577.2
57.5°	506.6	517.4	528.2	535.3	539.0	542.7	546.3	550.0
60°	487.1	497.7	508.3	515.5	519.3	523.3	527.2	531.0
62.5°	466.5	477.7	488.9	496.4	500.0	503.7	507.4	511.0
65°	435.1	446.5	457.9	465.4	469.0	472.5	476.2	479.8
67.5°	403.3	414.8	426.3	434.0	437.7	441.5	445.3	449.1
70°	381.2	393.1	405.1	412.7	416.0	419.4	422.7	426.1
72.5°	359.8	371.5	383.2	391.1	395.1	399.1	403.1	407.1
75°	327.5	339.4	351.4	359.1	362.7	366.4	370.0	373.6
77.5°	295.9	307.8	319.7	327.6	331.4	335.3	339.2	343.1
80°	274.4	286.2	297.8	305.6	309.5	313.3	317.2	321.1
82.5°	254.5	266.1	277.8	285.4	289.1	292.8	296.4	300.1
85°	225.8	237.4	249.1	256.8	260.7	264.6	268.5	272.4
87.5°	205.0	216.5	228.0	235.6	239.2	242.9	246.5	250.1
90°	204.5	216.5	228.4	236.2	239.9	243.6	247.3	250.9
92.5°	196.7	208.0	219.3	226.8	230.3	233.8	237.4	240.9
95°	196.9	208.3	219.7	227.1	230.2	233.3	236.5	239.7
97.5°	195.5	206.5	217.4	224.7	228.2	231.6	235.1	238.6
100°	192.7	204.3	216.0	223.6	226.9	230.3	233.7	237.1
102.5°	187.3	199.2	211.0	218.7	222.3	225.8	229.3	232.8
105°	178.2	189.9	201.5	209.1	212.9	216.6	220.4	224.1
107.5°	178.6	185.9	193.3	198.9	202.6	206.4	210.1	213.9
110°	210.7	202.3	193.8	191.5	195.3	199.0	202.8	206.5





TEST NUMBER: P331599-930

CATALOG NUMBER: S122DIW-S1005D970U930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	319.5	265.3	211.0	185.6	189.3	192.9	196.5	200.1
115°	412.0	340.1	268.3	227.7	218.3	208.9	199.5	190.0
117.5°	574.8	563.6	552.4	527.8	489.7	451.5	413.4	375.3
120°	649.5	659.3	669.2	664.0	643.6	623.3	603.0	582.7
122.5°	678.2	687.0	695.7	699.2	697.2	695.3	693.4	691.5
125°	718.2	726.9	735.6	741.4	744.5	747.5	750.6	753.6
127.5°	754.6	763.2	771.8	777.5	780.0	782.6	785.1	787.7
130°	777.7	786.3	794.8	800.1	802.2	804.2	806.3	808.4
132.5°	800.0	808.0	816.1	821.2	823.2	825.3	827.4	829.4
135°	832.1	839.6	847.2	851.9	853.8	855.7	857.5	859.4
137.5°	861.4	868.3	875.1	879.1	880.4	881.7	883.1	884.4
140°	880.8	886.8	892.8	896.2	897.0	897.8	898.6	899.4
142.5°	899.8	904.7	909.7	912.6	913.1	913.7	914.3	914.8
145°	927.4	930.3	933.1	934.8	935.3	935.9	936.4	936.9
147.5°	952.2	953.3	954.5	955.0	955.0	954.9	954.8	954.7
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)