

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: P331775-927

Luminaire Tested: **S122RDIW-S290D970U927-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331775-927  
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: S122RDIW-S290D970U927-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 970 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3886.1 lumens  
Efficiency: N/A  
Efficacy: 102.3 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

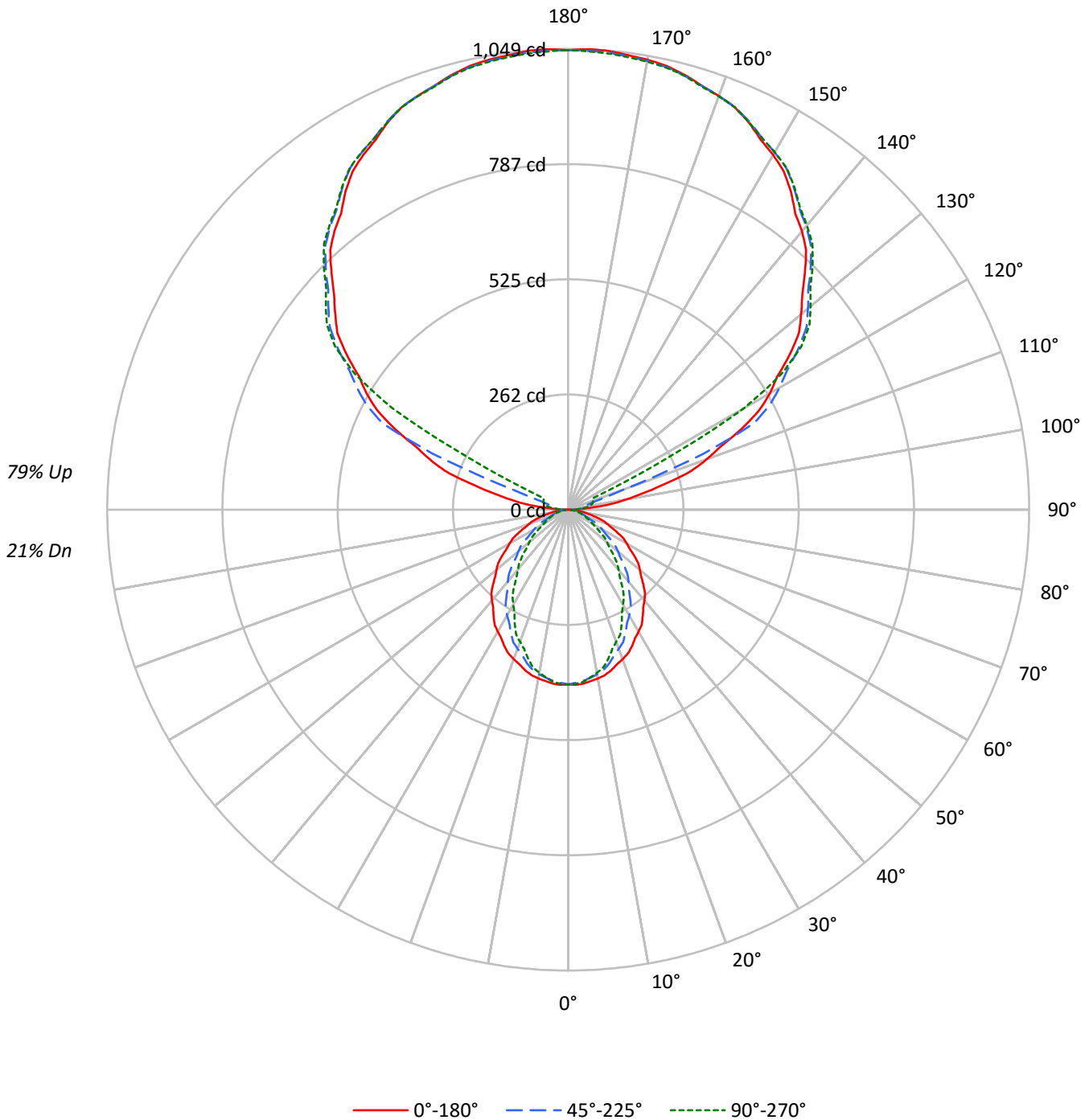
Input Watts (W): 38  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331775-927

CATALOG NUMBER: S122RDIW-S290D970U927-4F0-1E-UDD-F

### 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	100	100	100	100	89	89	89	89	67	67	67	48	48	48	30	30	30	21
1	92	87	84	81	81	78	75	72	59	57	55	42	41	40	26	26	25	18
2	83	77	71	66	74	68	63	59	52	49	46	37	35	34	23	22	22	16
3	76	67	61	55	67	60	54	50	46	42	39	33	31	29	21	20	19	13
4	70	60	52	47	61	53	47	42	41	37	33	29	27	25	19	17	16	12
5	64	53	45	40	56	47	41	36	36	32	29	26	24	21	17	15	14	10
6	59	47	40	34	52	42	36	31	33	28	25	24	21	19	15	14	12	9
7	54	43	35	30	48	38	32	27	30	25	22	22	19	16	14	12	11	8
8	50	39	31	26	44	35	28	24	27	22	19	20	17	15	13	11	10	7
9	47	35	28	23	41	32	25	21	25	20	17	18	15	13	12	10	9	7
10	43	32	25	21	39	29	23	19	23	18	15	17	14	12	11	9	8	6

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

	0°	45°	90°
0°	6421	6421	6421
5°	6446	6340	6374
10°	6396	6237	6184
15°	6322	6051	5877
20°	6220	5787	5498
25°	6116	5489	5129
30°	5972	5179	4657
35°	5830	4845	4242
40°	5689	4498	3762
45°	5523	4108	3329
50°	5350	3715	2901
55°	5177	3291	2494
60°	4973	2848	2070
65°	4741	2392	1883
70°	4471	1969	1733
75°	4130	1797	1616
80°	3645	1609	1469
85°	2853	1260	1260



TEST NUMBER: P331775-927

CATALOG NUMBER: S122RDIW-S290D970U927-4F0-1E-UDD-F

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.2	1.0
10°-20°	102.2	2.6
20°-30°	143.5	3.7
30°-40°	156.5	4.0
40°-50°	143.9	3.7
50°-60°	113.0	2.9
60°-70°	73.7	1.9
70°-80°	38.0	1.0
80°-90°	12.4	0.3
90°-100°	34.9	0.9
100°-110°	128.0	3.3
110°-120°	342.1	8.8
120°-130°	564.7	14.5
130°-140°	600.5	15.5
140°-150°	558.1	14.4
150°-160°	448.7	11.5
160°-170°	289.2	7.4
170°-180°	99.5	2.6
0°-30°	282.9	7.3
0°-40°	439.4	11.3
0°-60°	696.4	17.9
0°-90°	820.4	21.1
90°-120°	504.9	13.0
90°-150°	2228.2	57.3
90°-180°	3066.0	78.9
0°-180°	3886.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	398	398	398	398	398	
5°	398	396	391	394	393	38
15°	378	374	362	355	352	106
25°	343	331	308	294	288	158
35°	296	277	246	224	215	185
45°	242	217	180	155	146	187
55°	184	155	117	96	89	164
65°	124	95	63	51	49	123
75°	66	42	29	26	26	70
85°	15	8	7	7	7	18
90°	1	9	15	19	20	3
95°	49	26	30	33	33	60
105°	230	240	46	54	58	246
115°	435	448	467	133	62	428
125°	615	626	640	645	647	549
135°	762	773	780	787	786	588
145°	883	883	896	900	897	552
155°	973	967	975	979	973	448
165°	1025	1021	1023	1027	1023	289
175°	1048	1043	1045	1049	1042	100
180°	1046	1046	1046	1046	1046	



TEST NUMBER: P331775-927

CATALOG NUMBER: S122RDIW-S290D970U927-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	397.7	397.7	397.7	397.7	397.7	397.7	397.7	397.7	397.7	397.7	397.7
2.5°	399.1	398.8	398.5	398.2	397.8	397.3	396.6	395.9	395.2	394.5	395.1
5°	397.7	397.3	396.9	396.5	396.1	395.3	394.3	393.2	392.2	391.2	391.9
7.5°	393.6	393.1	392.5	392.1	391.6	390.7	389.5	388.2	387.1	385.9	386.0
10°	390.1	389.5	389.0	388.4	387.9	386.7	385.2	383.6	382.0	380.4	380.2
12.5°	385.8	385.1	384.4	383.7	383.0	381.7	379.6	377.6	375.5	373.4	373.0
15°	378.2	377.3	376.4	375.6	374.7	372.9	370.2	367.5	364.7	362.0	360.5
17.5°	368.9	367.6	366.2	364.9	363.5	361.2	357.7	354.2	350.7	347.2	345.4
20°	362.0	360.4	358.9	357.2	355.6	352.8	348.8	344.8	340.9	336.8	334.9
22.5°	354.6	352.8	350.9	349.2	347.4	344.2	339.7	335.2	330.7	326.2	323.6
25°	343.3	340.7	338.2	335.6	333.1	329.2	323.8	318.6	313.3	308.1	304.8
27.5°	329.8	327.0	324.2	321.5	318.6	314.3	308.3	302.4	296.4	290.5	286.7
30°	320.3	317.3	314.2	311.2	308.2	303.4	297.0	290.7	284.2	277.8	273.8
32.5°	311.1	307.5	304.0	300.4	296.8	291.8	285.3	278.8	272.3	265.7	261.1
35°	295.8	291.8	287.6	283.6	279.5	273.9	266.9	259.8	252.9	245.8	240.7
37.5°	280.6	276.1	271.6	267.1	262.6	256.7	249.1	241.6	234.2	226.6	221.1
40°	269.9	265.1	260.3	255.5	250.7	244.5	236.7	228.9	221.2	213.4	207.7
42.5°	259.0	253.9	248.8	243.8	238.8	232.2	224.2	216.2	208.2	200.2	194.3
45°	241.9	236.5	231.1	225.8	220.4	213.5	205.1	196.7	188.3	179.9	174.3
47.5°	225.1	219.4	213.8	208.1	202.4	195.3	186.6	177.9	169.2	160.6	155.0
50°	213.0	207.4	201.7	196.0	190.4	183.1	174.3	165.5	156.7	147.9	142.4
52.5°	201.2	195.3	189.4	183.5	177.5	170.2	161.6	153.0	144.4	135.8	130.5
55°	183.9	177.7	171.4	165.2	158.9	151.5	142.8	134.2	125.6	116.9	112.2
57.5°	166.1	159.7	153.3	146.9	140.5	133.2	124.8	116.6	108.3	100.0	95.5
60°	154.0	147.7	141.2	134.8	128.4	121.1	112.9	104.6	96.4	88.2	84.1
62.5°	142.2	135.9	129.4	123.0	116.6	109.5	101.6	93.8	86.0	78.1	74.2
65°	124.1	117.6	111.2	104.7	98.2	91.4	84.2	77.0	69.8	62.6	59.9
67.5°	106.7	100.3	93.9	87.5	81.0	74.5	68.0	61.6	55.1	48.6	47.4
70°	94.7	88.4	82.1	76.0	69.7	63.8	58.3	52.8	47.3	41.7	41.0
72.5°	83.1	77.2	71.1	65.2	59.2	54.0	49.6	45.2	40.7	36.3	35.6
75°	66.2	60.6	55.1	49.4	43.8	39.7	36.9	34.2	31.5	28.8	28.2
77.5°	49.6	44.7	39.8	34.9	29.9	26.9	25.5	24.2	22.9	21.6	21.3
80°	39.2	35.2	31.1	27.0	22.9	20.4	19.6	18.9	18.1	17.3	17.0
82.5°	29.7	26.5	23.4	20.2	17.0	15.1	14.6	14.0	13.5	13.0	12.8
85°	15.4	13.8	12.1	10.5	8.8	7.8	7.5	7.3	7.1	6.8	6.8
87.5°	4.8	4.6	4.4	4.4	4.2	4.3	4.5	4.8	5.1	5.3	5.5
90°	0.8	2.6	4.4	6.3	8.2	9.7	11.1	12.4	13.8	15.1	16.0
92.5°	15.3	15.1	15.0	14.8	14.7	14.9	15.5	16.2	16.9	17.6	18.0
95°	49.2	43.6	38.1	32.6	27.0	24.8	26.0	27.2	28.4	29.5	30.3
97.5°	97.7	82.0	66.4	50.7	35.1	28.6	31.4	34.1	36.8	39.5	40.2
100°	134.0	110.9	87.9	64.9	41.8	31.7	34.5	37.4	40.3	43.2	44.5
102.5°	174.0	169.1	164.2	159.3	154.4	140.1	116.1	92.2	68.3	44.4	46.1
105°	230.1	235.2	240.2	245.3	250.3	229.9	183.9	138.0	92.1	46.2	48.0
107.5°	294.1	298.3	302.3	306.3	310.5	284.9	229.9	174.8	119.7	64.6	62.7
110°	335.3	338.9	342.4	345.9	349.4	326.9	278.3	229.7	181.1	132.5	115.7



TEST NUMBER: P331775-927

CATALOG NUMBER: S122RDIW-S290D970U927-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	374.1	377.2	380.3	383.5	386.6	382.1	370.2	358.1	346.1	334.1	272.7
115°	435.2	438.1	441.0	443.9	446.7	450.2	454.4	458.6	462.9	467.1	389.1
117.5°	489.9	493.1	496.3	499.5	502.7	505.7	508.7	511.5	514.4	517.3	498.4
120°	529.9	532.4	534.9	537.4	540.0	542.7	545.7	548.8	551.8	554.8	556.9
122.5°	563.8	566.4	569.1	571.7	574.4	577.4	580.7	584.0	587.2	590.6	591.8
125°	615.4	617.6	619.8	621.9	624.2	626.9	630.0	633.3	636.4	639.6	640.8
127.5°	662.2	664.6	667.0	669.5	671.8	674.3	676.7	679.1	681.4	683.8	685.6
130°	691.9	694.6	697.3	699.9	702.6	704.9	706.7	708.6	710.4	712.3	714.2
132.5°	722.2	724.5	726.7	729.0	731.3	733.3	735.2	737.0	738.9	740.8	742.4
135°	761.5	764.2	766.9	769.6	772.3	774.4	775.9	777.4	778.9	780.5	782.1
137.5°	801.3	803.2	805.1	807.0	808.8	810.6	812.4	814.0	815.8	817.5	819.2
140°	827.4	828.7	830.0	831.4	832.7	834.3	836.1	838.0	839.9	841.8	843.3
142.5°	849.1	850.3	851.6	852.8	854.0	855.6	857.8	859.9	862.1	864.1	865.5
145°	883.4	883.2	883.0	882.9	882.7	884.1	886.9	889.8	892.6	895.5	896.7
147.5°	913.2	912.5	911.9	911.2	910.6	911.7	914.6	917.3	920.2	923.1	923.9
150°	932.6	931.4	930.2	929.1	927.9	928.6	931.3	934.0	936.7	939.4	940.4
152.5°	949.0	947.6	946.3	945.0	943.6	944.3	946.8	949.4	952.0	954.5	955.5
155°	972.7	971.1	969.6	968.1	966.6	966.9	968.9	970.9	973.0	974.9	976.0
157.5°	991.3	990.1	988.7	987.5	986.2	986.3	987.7	989.1	990.5	991.9	993.1
160°	1002.2	1001.2	1000.2	999.2	998.1	998.1	999.2	1000.2	1001.2	1002.2	1003.2
162.5°	1011.9	1010.9	1009.9	1008.8	1007.9	1007.8	1008.7	1009.6	1010.4	1011.3	1012.4
165°	1024.9	1023.9	1022.9	1021.9	1020.9	1020.6	1021.1	1021.6	1022.2	1022.6	1023.8
167.5°	1034.6	1033.6	1032.6	1031.6	1030.5	1030.3	1030.8	1031.3	1031.7	1032.2	1033.3
170°	1040.1	1039.0	1038.1	1037.0	1036.0	1035.7	1036.0	1036.3	1036.7	1037.0	1038.2
172.5°	1043.7	1042.7	1041.6	1040.7	1039.7	1039.3	1039.7	1040.0	1040.3	1040.7	1041.9
175°	1048.4	1047.2	1046.0	1044.9	1043.7	1043.2	1043.6	1043.9	1044.3	1044.6	1045.8
177.5°	1049.2	1048.2	1047.3	1046.3	1045.4	1045.0	1045.1	1045.2	1045.4	1045.5	1046.5
180°	1046.1	1046.1	1046.1	1046.1	1046.1	1046.1	1046.1	1046.1	1046.1	1046.1	1046.1



TEST NUMBER: P331775-927

CATALOG NUMBER: S122RDIW-S290D970U927-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	397.7	397.7	397.7	397.7	397.7	397.7	397.7	397.7
2.5°	395.8	396.4	397.0	397.3	397.2	397.0	396.9	396.8
5°	392.6	393.3	394.0	394.3	394.0	393.8	393.6	393.3
7.5°	386.3	386.5	386.7	386.6	386.2	385.7	385.3	384.9
10°	379.9	379.7	379.5	379.1	378.6	378.1	377.6	377.2
12.5°	372.6	372.2	371.8	371.1	370.3	369.6	368.8	368.0
15°	359.0	357.4	355.9	354.8	354.0	353.2	352.4	351.6
17.5°	343.6	341.7	340.0	338.4	337.0	335.6	334.2	332.9
20°	332.9	330.8	328.8	326.9	325.2	323.4	321.7	320.0
22.5°	321.1	318.5	315.9	313.9	312.6	311.3	310.0	308.7
25°	301.5	298.2	294.9	292.7	291.5	290.3	289.1	287.9
27.5°	282.8	279.0	275.2	272.4	270.5	268.5	266.6	264.7
30°	269.7	265.6	261.5	258.4	256.2	254.1	251.9	249.8
32.5°	256.4	251.8	247.1	243.8	241.8	239.7	237.7	235.7
35°	235.8	230.7	225.6	222.2	220.5	218.7	217.0	215.2
37.5°	215.6	210.0	204.5	200.7	198.7	196.6	194.6	192.6
40°	202.1	196.4	190.7	186.8	184.7	182.7	180.5	178.5
42.5°	188.4	182.5	176.7	172.8	170.7	168.7	166.7	164.7
45°	168.6	162.9	157.2	153.4	151.5	149.6	147.7	145.8
47.5°	149.2	143.6	138.0	134.3	132.5	130.8	129.0	127.3
50°	136.9	131.3	125.8	122.2	120.6	118.9	117.2	115.5
52.5°	125.2	119.9	114.5	111.1	109.6	108.0	106.4	104.9
55°	107.3	102.6	97.8	94.6	93.1	91.6	90.1	88.6
57.5°	91.2	86.7	82.4	79.5	78.3	77.0	75.7	74.4
60°	80.0	76.0	71.9	69.2	67.9	66.6	65.4	64.1
62.5°	70.3	66.5	62.6	60.2	59.4	58.7	57.9	57.1
65°	57.2	54.4	51.7	50.2	50.0	49.7	49.5	49.3
67.5°	46.2	44.9	43.6	42.9	42.6	42.4	42.1	41.9
70°	40.2	39.4	38.6	38.0	37.6	37.3	37.0	36.7
72.5°	34.9	34.2	33.6	33.2	33.0	32.8	32.6	32.4
75°	27.6	27.1	26.5	26.2	26.1	26.1	26.0	25.9
77.5°	20.9	20.6	20.3	20.1	20.0	19.8	19.7	19.6
80°	16.6	16.3	16.0	15.8	15.8	15.8	15.8	15.8
82.5°	12.6	12.4	12.2	12.1	12.1	12.1	12.1	12.1
85°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
87.5°	5.5	5.6	5.8	5.9	5.9	5.9	6.0	6.1
90°	16.8	17.7	18.5	19.1	19.4	19.7	20.1	20.4
92.5°	18.5	18.9	19.3	19.6	19.8	20.0	20.2	20.4
95°	31.2	32.1	32.9	33.2	33.0	32.9	32.7	32.6
97.5°	40.9	41.5	42.2	42.6	42.9	43.0	43.3	43.4
100°	45.9	47.2	48.6	49.4	49.7	50.1	50.4	50.7
102.5°	47.8	49.6	51.3	52.4	52.9	53.4	53.9	54.3
105°	49.9	51.7	53.6	54.8	55.5	56.2	56.9	57.5
107.5°	60.8	59.0	57.1	56.5	57.2	57.8	58.5	59.2
110°	98.8	82.0	65.2	57.1	57.8	58.5	59.1	59.8





TEST NUMBER: P331775-927

CATALOG NUMBER: S122RDIW-S290D970U927-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	211.4	150.0	88.6	58.2	58.8	59.3	59.9	60.4
115°	311.2	233.4	155.5	110.5	98.4	86.3	74.1	62.1
117.5°	479.6	460.8	442.0	412.6	372.8	333.0	293.3	253.4
120°	558.9	560.9	562.9	552.5	529.9	507.2	484.4	461.8
122.5°	593.0	594.2	595.4	593.8	589.4	585.0	580.6	576.2
125°	642.0	643.2	644.4	645.2	645.7	646.2	646.7	647.2
127.5°	687.3	689.0	690.7	691.6	691.7	691.8	691.9	692.0
130°	716.0	717.9	719.7	720.6	720.3	720.2	720.0	719.9
132.5°	743.9	745.5	747.1	747.8	747.6	747.4	747.3	747.1
135°	783.8	785.4	787.1	787.8	787.5	787.1	786.8	786.5
137.5°	820.8	822.4	824.1	824.7	824.1	823.5	822.9	822.4
140°	844.8	846.3	847.8	848.1	847.3	846.4	845.6	844.8
142.5°	866.9	868.3	869.7	869.9	869.1	868.2	867.4	866.6
145°	897.9	899.0	900.2	900.4	899.5	898.7	897.9	897.0
147.5°	924.8	925.7	926.5	926.6	925.9	925.2	924.5	923.8
150°	941.4	942.4	943.4	943.5	942.7	941.8	941.0	940.2
152.5°	956.6	957.5	958.5	958.5	957.4	956.3	955.2	954.1
155°	977.0	977.9	979.0	978.8	977.5	976.1	974.8	973.4
157.5°	994.2	995.4	996.5	996.4	995.1	993.8	992.4	991.2
160°	1004.2	1005.2	1006.2	1006.2	1005.0	1003.8	1002.7	1001.5
162.5°	1013.6	1014.7	1015.9	1015.7	1014.2	1012.8	1011.4	1010.0
165°	1025.0	1026.2	1027.4	1027.4	1026.2	1025.0	1023.8	1022.6
167.5°	1034.5	1035.7	1036.9	1036.7	1035.2	1033.7	1032.2	1030.7
170°	1039.4	1040.5	1041.7	1041.6	1040.1	1038.6	1037.0	1035.5
172.5°	1043.0	1044.2	1045.4	1045.2	1043.7	1042.2	1040.7	1039.2
175°	1046.9	1048.1	1049.3	1049.1	1047.3	1045.7	1044.0	1042.4
177.5°	1047.4	1048.3	1049.2	1049.2	1047.9	1046.7	1045.5	1044.3
180°	1046.1	1046.1	1046.1	1046.1	1046.1	1046.1	1046.1	1046.1

(END OF REPORT)