

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: P331486-927

Luminaire Tested: **S122DIW-S290D1240U927-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331486-927  
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-S290D1240U927-4F0-1E-UDD-D1  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1240 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4355.7 lumens  
Efficiency: N/A  
Efficacy: 93.5 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: Semi-Indirect

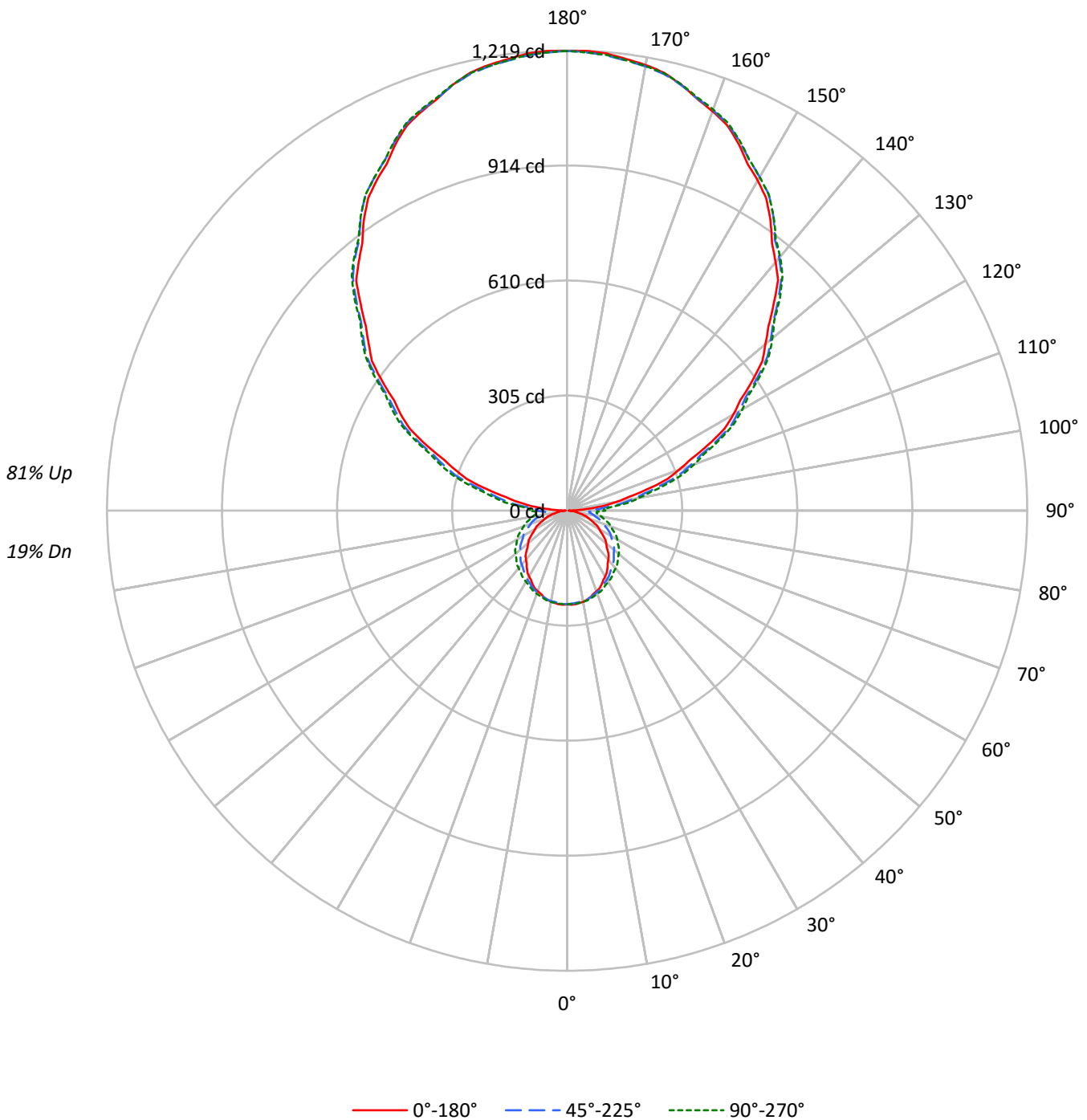
Input Watts (W): 46.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	100	100	100	100	88	88	88	88	66	66	66	46	46	46	28	28	28	19				
1	90	86	82	78	79	76	73	70	57	55	53	40	38	37	24	23	22	15				
2	82	75	69	63	72	66	61	57	50	46	43	34	32	31	21	19	18	12				
3	75	65	58	52	65	58	52	47	43	39	36	30	28	25	18	17	15	10				
4	68	58	50	44	60	51	44	39	38	34	30	27	24	22	16	14	13	8				
5	62	51	43	37	55	45	38	33	34	29	26	24	21	18	14	13	11	7				
6	57	45	38	32	50	40	34	29	31	26	22	21	18	16	13	11	10	6				
7	53	41	33	28	46	36	30	25	27	23	19	19	16	14	12	10	9	6				
8	49	37	29	24	43	33	26	22	25	20	17	18	14	12	11	9	8	5				
9	45	33	26	21	40	30	23	19	23	18	15	16	13	11	10	8	7	4				
10	42	30	23	19	37	27	21	17	21	16	13	15	12	10	9	7	6	4				

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

	0°	45°	90°
0°	4009	4009	4009
5°	4030	3859	3845
10°	4004	3746	3703
15°	3948	3624	3554
20°	3878	3495	3410
25°	3809	3371	3279
30°	3712	3242	3150
35°	3615	3118	3059
40°	3511	3013	2965
45°	3413	2919	2886
50°	3309	2833	2810
55°	3196	2741	2731
60°	3061	2646	2648
65°	2922	2534	2548
70°	2764	2415	2440
75°	2564	2299	2342
80°	2245	2177	2240
85°	1945	2073	2163



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	23.5	0.5
10°-20°	67.5	1.5
20°-30°	102.2	2.3
30°-40°	124.5	2.9
40°-50°	134.0	3.1
50°-60°	130.1	3.0
60°-70°	113.6	2.6
70°-80°	87.5	2.0
80°-90°	63.6	1.5
90°-100°	117.6	2.7
100°-110°	269.1	6.2
110°-120°	429.0	9.8
120°-130°	549.4	12.6
130°-140°	608.9	14.0
140°-150°	593.4	13.6
150°-160°	497.0	11.4
160°-170°	329.7	7.6
170°-180°	115.2	2.6
0°-30°	193.2	4.4
0°-40°	317.8	7.3
0°-60°	581.9	13.4
0°-90°	846.5	19.4
90°-120°	815.6	18.7
90°-150°	2567.3	58.9
90°-180°	3509.0	80.6
0°-180°	4355.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	248	248	248	248	248	
5°	249	248	246	248	248	24
15°	238	238	238	241	241	67
25°	216	218	222	226	227	99
35°	186	192	199	207	210	116
45°	153	162	175	186	190	118
55°	117	130	149	161	166	105
65°	80	98	119	133	138	79
75°	44	65	88	102	108	47
85°	13	35	58	73	78	14
90°	5	38	83	95	101	5
95°	56	83	107	120	123	64
105°	223	236	257	271	276	235
115°	412	423	437	446	447	408
125°	599	608	616	623	625	535
135°	774	785	791	797	797	598
145°	939	946	952	955	953	586
155°	1073	1076	1080	1084	1082	494
165°	1168	1167	1167	1173	1169	329
175°	1215	1212	1210	1216	1211	115
180°	1217	1217	1217	1217	1217	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3
2.5°	249.8	249.5	249.4	249.1	249.0	248.7	248.2	247.8	247.3	246.8	247.2
5°	249.1	248.8	248.6	248.3	248.0	247.7	247.2	246.8	246.3	245.8	246.3
7.5°	246.8	246.6	246.4	246.3	246.1	245.9	245.5	245.2	244.8	244.4	245.0
10°	245.1	244.9	244.8	244.6	244.5	244.2	244.0	243.8	243.5	243.3	243.9
12.5°	242.2	242.2	242.2	242.3	242.3	242.2	242.1	241.9	241.7	241.5	242.2
15°	237.5	237.7	237.8	238.0	238.1	238.2	238.2	238.2	238.2	238.2	238.9
17.5°	231.5	231.8	232.1	232.5	232.8	233.1	233.4	233.6	233.9	234.2	234.9
20°	227.4	227.8	228.2	228.6	229.0	229.4	229.7	230.0	230.4	230.7	231.6
22.5°	223.2	223.6	224.0	224.5	225.0	225.5	225.9	226.3	226.8	227.2	228.1
25°	215.9	216.5	217.1	217.6	218.2	218.8	219.5	220.2	220.9	221.7	222.6
27.5°	207.3	208.2	209.1	210.0	211.0	211.8	212.6	213.5	214.4	215.2	216.4
30°	201.5	202.6	203.6	204.6	205.7	206.8	207.8	208.8	209.8	210.9	212.1
32.5°	195.2	196.4	197.5	198.7	199.9	201.1	202.3	203.5	204.8	206.0	207.5
35°	186.1	187.4	188.8	190.1	191.5	192.9	194.5	196.0	197.5	199.0	200.7
37.5°	176.1	177.7	179.3	180.9	182.4	184.2	186.2	188.1	190.0	192.0	194.0
40°	169.5	171.3	173.0	174.8	176.5	178.5	180.6	182.8	185.0	187.1	189.2
42.5°	163.2	164.9	166.7	168.4	170.2	172.3	174.8	177.3	179.7	182.2	184.5
45°	152.6	154.7	156.9	159.1	161.2	163.7	166.5	169.3	172.1	174.9	177.4
47.5°	142.1	144.5	146.9	149.2	151.5	154.4	157.6	160.9	164.2	167.5	170.1
50°	135.0	137.4	139.9	142.4	144.9	147.9	151.5	155.1	158.7	162.3	165.0
52.5°	128.0	130.6	133.2	135.9	138.5	141.6	145.4	149.2	153.0	156.9	159.6
55°	116.9	119.9	122.7	125.6	128.5	132.0	136.2	140.3	144.5	148.6	151.5
57.5°	106.0	109.2	112.5	115.7	119.0	122.7	127.0	131.2	135.5	139.7	142.8
60°	98.2	101.7	105.1	108.5	112.0	116.0	120.6	125.1	129.7	134.2	137.3
62.5°	91.3	94.9	98.5	102.0	105.6	109.6	114.2	118.7	123.3	127.9	131.1
65°	79.9	83.8	87.7	91.7	95.5	99.9	104.6	109.3	114.1	118.7	122.1
67.5°	69.4	73.5	77.6	81.7	85.8	90.2	95.1	99.9	104.7	109.6	112.9
70°	61.9	66.1	70.2	74.4	78.5	83.1	88.0	93.0	98.0	102.9	106.4
72.5°	55.0	59.3	63.5	67.8	72.2	76.8	81.8	86.8	91.9	96.9	100.3
75°	44.3	48.7	53.2	57.7	62.2	66.9	72.1	77.2	82.3	87.5	90.9
77.5°	33.9	38.6	43.3	47.9	52.7	57.6	62.8	68.0	73.2	78.3	81.8
80°	27.0	31.8	36.8	41.6	46.5	51.6	56.7	61.9	67.1	72.3	75.7
82.5°	21.2	26.1	30.9	35.6	40.5	45.6	50.8	56.1	61.3	66.5	69.9
85°	13.0	17.9	22.9	27.8	32.8	37.8	42.9	48.1	53.2	58.3	61.6
87.5°	7.3	12.6	17.9	23.2	28.5	34.2	40.3	46.5	52.6	58.7	61.9
90°	4.6	12.0	19.4	26.8	34.1	42.9	53.0	63.1	73.3	83.4	86.2
92.5°	21.6	27.9	34.2	40.6	46.9	53.2	59.3	65.4	71.5	77.6	80.8
95°	56.3	62.3	68.4	74.4	80.5	86.1	91.3	96.6	101.9	107.1	110.2
97.5°	100.1	105.4	110.8	116.1	121.5	126.9	132.4	137.8	143.3	148.9	151.8
100°	133.0	137.8	142.5	147.3	152.1	157.1	162.2	167.4	172.5	177.8	180.7
102.5°	167.2	171.3	175.5	179.7	183.9	188.5	193.8	199.0	204.2	209.5	212.5
105°	222.6	225.6	228.6	231.6	234.6	238.4	243.1	247.7	252.3	256.9	260.2
107.5°	278.8	281.7	284.6	287.4	290.3	293.7	297.7	301.7	305.7	309.7	312.5
110°	314.7	317.7	320.7	323.6	326.6	330.0	334.0	337.9	341.8	345.7	348.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	354.2	356.9	359.6	362.3	365.0	368.1	371.7	375.3	378.8	382.3	384.4
115°	412.3	414.5	416.8	419.1	421.3	424.0	427.1	430.3	433.4	436.6	438.7
117.5°	469.9	472.3	474.7	477.1	479.5	481.7	483.8	485.8	487.8	489.9	491.7
120°	508.5	510.6	512.8	514.9	517.1	518.9	520.2	521.6	523.0	524.3	526.6
122.5°	543.8	546.1	548.5	550.8	553.1	555.2	556.9	558.6	560.3	562.1	563.7
125°	598.6	600.6	602.6	604.7	606.7	608.7	610.6	612.4	614.3	616.2	617.7
127.5°	652.1	654.7	657.2	659.7	662.3	664.2	665.4	666.6	667.9	669.1	670.3
130°	685.9	688.7	691.7	694.5	697.4	699.4	700.7	701.9	703.1	704.3	705.8
132.5°	723.7	726.0	728.3	730.6	733.0	734.9	736.3	737.7	739.0	740.5	741.2
135°	773.8	776.3	778.9	781.3	783.9	785.8	787.0	788.3	789.5	790.8	792.3
137.5°	827.0	829.1	831.1	833.1	835.2	836.7	837.7	838.6	839.5	840.4	841.8
140°	859.0	861.0	863.0	865.0	867.0	868.6	869.9	871.2	872.5	873.9	875.1
142.5°	891.9	893.9	895.9	897.9	899.8	901.3	902.1	902.9	903.6	904.4	905.7
145°	938.8	940.5	942.1	943.6	945.2	946.7	948.1	949.4	950.9	952.2	952.9
147.5°	981.0	982.9	984.8	986.7	988.6	990.1	990.9	991.9	992.8	993.7	994.3
150°	1009.7	1011.1	1012.5	1013.8	1015.2	1016.4	1017.2	1018.2	1019.1	1020.0	1020.6
152.5°	1035.2	1036.6	1037.9	1039.3	1040.7	1041.9	1043.0	1044.1	1045.2	1046.3	1047.2
155°	1073.4	1074.1	1074.8	1075.5	1076.2	1076.8	1077.5	1078.2	1078.9	1079.6	1080.7
157.5°	1106.0	1106.5	1107.0	1107.5	1107.9	1108.3	1108.7	1109.1	1109.5	1110.0	1111.5
160°	1125.8	1126.2	1126.7	1127.2	1127.6	1128.0	1128.1	1128.4	1128.6	1128.9	1130.2
162.5°	1143.8	1144.0	1144.1	1144.1	1144.2	1144.4	1144.6	1144.9	1145.1	1145.3	1146.8
165°	1167.9	1167.7	1167.4	1167.2	1167.0	1166.9	1166.9	1166.9	1166.9	1166.9	1168.5
167.5°	1188.0	1187.3	1186.7	1186.0	1185.3	1184.9	1184.9	1184.9	1184.8	1184.7	1186.4
170°	1198.7	1198.0	1197.4	1196.7	1196.0	1195.6	1195.3	1195.1	1194.8	1194.6	1196.2
172.5°	1206.1	1205.5	1204.8	1204.0	1203.4	1202.9	1202.7	1202.5	1202.2	1202.0	1203.6
175°	1215.1	1214.5	1213.8	1213.1	1212.4	1211.9	1211.4	1210.9	1210.5	1210.0	1211.6
177.5°	1218.9	1218.3	1217.7	1217.2	1216.6	1216.2	1215.8	1215.4	1215.1	1214.7	1215.8
180°	1217.2	1217.2	1217.2	1217.2	1217.2	1217.2	1217.2	1217.2	1217.2	1217.2	1217.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3
2.5°	247.5	247.8	248.1	248.3	248.1	248.0	247.9	247.7
5°	246.8	247.2	247.7	247.9	247.8	247.7	247.6	247.6
7.5°	245.6	246.1	246.8	247.0	246.9	246.8	246.8	246.7
10°	244.5	245.2	245.8	246.1	246.1	246.0	245.9	245.8
12.5°	242.8	243.4	244.1	244.4	244.3	244.2	244.2	244.1
15°	239.6	240.4	241.1	241.5	241.4	241.3	241.2	241.1
17.5°	235.7	236.4	237.1	237.5	237.5	237.5	237.5	237.5
20°	232.4	233.3	234.2	234.6	234.6	234.6	234.6	234.6
22.5°	229.0	229.9	230.8	231.2	231.4	231.5	231.6	231.8
25°	223.6	224.6	225.5	226.1	226.3	226.6	226.8	227.0
27.5°	217.6	218.9	220.1	220.8	220.9	221.1	221.3	221.5
30°	213.4	214.8	216.0	216.7	217.0	217.2	217.5	217.7
32.5°	208.9	210.4	211.9	212.9	213.3	213.7	214.1	214.5
35°	202.6	204.3	206.0	207.2	207.8	208.3	208.9	209.5
37.5°	195.9	197.9	199.9	201.1	201.7	202.3	202.9	203.4
40°	191.3	193.4	195.4	196.9	197.6	198.3	199.0	199.7
42.5°	186.8	189.0	191.3	192.8	193.5	194.2	195.0	195.7
45°	179.8	182.4	184.8	186.5	187.3	188.1	188.9	189.6
47.5°	172.7	175.2	177.8	179.6	180.5	181.3	182.2	183.1
50°	167.7	170.5	173.2	175.0	175.9	176.7	177.6	178.5
52.5°	162.4	165.2	167.9	169.8	170.8	171.7	172.7	173.6
55°	154.4	157.2	160.2	162.1	163.1	164.2	165.2	166.3
57.5°	145.9	149.0	152.1	154.2	155.3	156.3	157.3	158.4
60°	140.3	143.4	146.4	148.5	149.6	150.7	151.9	153.0
62.5°	134.4	137.6	140.9	143.0	144.0	145.0	146.2	147.2
65°	125.3	128.6	131.9	134.0	135.1	136.1	137.1	138.2
67.5°	116.1	119.5	122.8	125.0	126.0	127.1	128.3	129.4
70°	109.8	113.2	116.7	118.9	119.9	120.8	121.8	122.7
72.5°	103.6	107.0	110.4	112.6	113.8	114.9	116.1	117.2
75°	94.3	97.8	101.2	103.5	104.5	105.5	106.5	107.6
77.5°	85.2	88.6	92.1	94.3	95.5	96.6	97.7	98.8
80°	79.1	82.4	85.8	88.0	89.1	90.2	91.3	92.4
82.5°	73.3	76.7	80.0	82.2	83.3	84.4	85.4	86.4
85°	65.0	68.4	71.8	74.0	75.1	76.2	77.3	78.4
87.5°	65.0	68.2	71.4	73.5	74.6	75.7	76.8	77.8
90°	89.0	91.7	94.4	96.4	97.6	98.8	100.0	101.2
92.5°	84.1	87.2	90.5	92.6	93.6	94.6	95.6	96.6
95°	113.2	116.2	119.3	121.0	121.5	122.1	122.6	123.0
97.5°	154.7	157.7	160.7	162.6	163.5	164.4	165.2	166.2
100°	183.6	186.6	189.6	191.4	192.0	192.7	193.4	194.0
102.5°	215.6	218.6	221.7	223.6	224.3	224.9	225.5	226.2
105°	263.4	266.7	270.0	272.0	272.9	273.8	274.6	275.5
107.5°	315.4	318.3	321.2	322.5	322.3	322.1	321.9	321.8
110°	350.9	353.4	355.9	357.4	357.5	357.7	357.9	358.1





TEST NUMBER: P331486-927

CATALOG NUMBER: S122DIW-S290D1240U927-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	386.3	388.3	390.4	391.6	392.0	392.3	392.7	393.1
115°	440.9	443.1	445.3	446.5	446.6	446.8	447.0	447.2
117.5°	493.5	495.4	497.2	498.1	498.3	498.4	498.5	498.7
120°	528.8	531.1	533.3	534.5	534.7	534.9	535.1	535.3
122.5°	565.3	567.0	568.5	569.5	569.7	570.0	570.3	570.5
125°	619.2	620.7	622.1	623.1	623.6	624.1	624.6	625.0
127.5°	671.5	672.6	673.8	674.3	674.3	674.2	674.2	674.2
130°	707.3	708.8	710.2	710.8	710.5	710.3	710.0	709.7
132.5°	742.1	743.0	743.9	744.2	744.1	744.0	743.9	743.9
135°	793.7	795.1	796.6	797.3	797.3	797.2	797.2	797.1
137.5°	843.0	844.3	845.7	846.1	845.7	845.3	844.9	844.6
140°	876.4	877.7	878.9	879.4	878.9	878.5	878.1	877.7
142.5°	906.9	908.1	909.3	909.7	909.2	908.6	908.2	907.7
145°	953.6	954.3	955.1	955.1	954.6	954.1	953.5	953.1
147.5°	994.8	995.4	995.9	995.9	995.2	994.6	993.9	993.2
150°	1021.4	1022.1	1022.7	1022.7	1022.1	1021.4	1020.6	1020.0
152.5°	1048.1	1048.8	1049.7	1049.7	1048.8	1048.1	1047.2	1046.3
155°	1081.9	1083.0	1084.1	1084.3	1083.7	1083.0	1082.3	1081.6
157.5°	1113.1	1114.6	1116.2	1116.4	1115.3	1114.2	1113.1	1112.0
160°	1131.6	1133.0	1134.3	1134.6	1133.7	1132.7	1131.9	1130.9
162.5°	1148.4	1149.9	1151.5	1151.8	1150.6	1149.5	1148.4	1147.4
165°	1170.1	1171.6	1173.3	1173.5	1172.4	1171.2	1170.1	1168.9
167.5°	1188.0	1189.5	1191.1	1191.4	1190.2	1189.0	1187.8	1186.6
170°	1197.8	1199.4	1201.0	1201.1	1199.8	1198.4	1197.0	1195.6
172.5°	1205.2	1206.8	1208.4	1208.5	1207.1	1205.8	1204.4	1203.0
175°	1213.2	1214.8	1216.4	1216.6	1215.1	1213.8	1212.4	1211.0
177.5°	1217.0	1218.1	1219.1	1219.1	1218.1	1217.0	1215.8	1214.7
180°	1217.2	1217.2	1217.2	1217.2	1217.2	1217.2	1217.2	1217.2

(END OF REPORT)