

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: P332638-840

Luminaire Tested: **S124DIP-S1020D590U840-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332638-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIP-S1020D590U840-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6318.8 lumens
Efficiency: N/A
Efficacy: 129.5 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: Semi-Direct

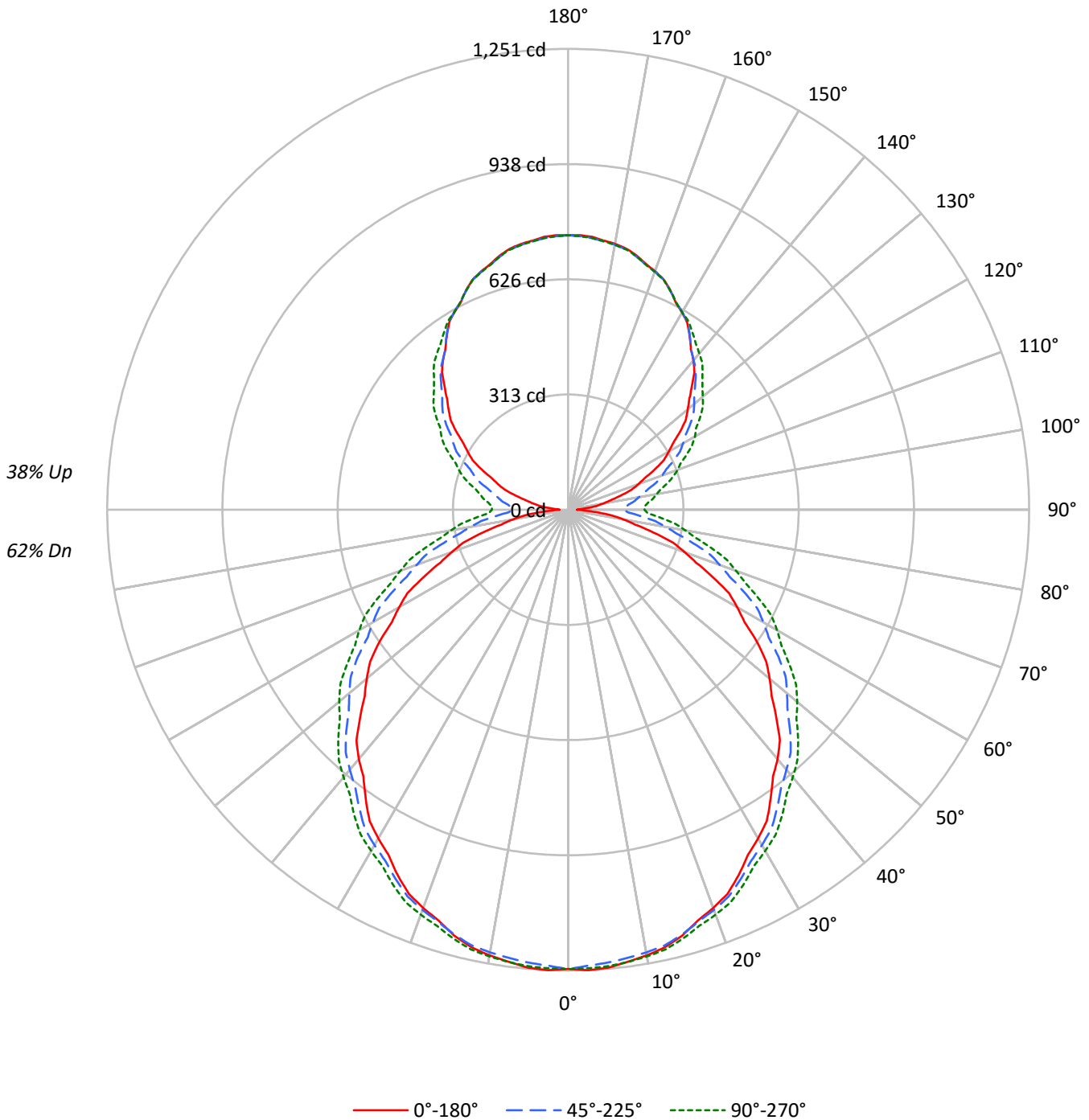
Input Watts (W): 48.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332638-840

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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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	62
1	99	94	90	86	93	88	84	81	77	74	72	67	65	63	58	56	54	50
2	90	82	75	69	84	77	70	65	67	62	58	58	54	51	50	47	45	41
3	82	71	63	57	76	67	60	54	59	53	48	51	47	43	44	40	38	34
4	75	63	54	48	69	59	51	45	52	46	41	45	40	36	39	35	32	29
5	68	56	47	41	64	53	45	39	46	40	35	40	35	31	35	31	28	25
6	63	50	41	35	59	47	39	34	42	35	30	36	31	27	32	27	24	21
7	58	45	37	31	54	43	35	29	38	31	27	33	28	24	29	25	21	19
8	54	41	33	27	50	39	31	26	34	28	24	30	25	21	26	22	19	17
9	50	37	30	24	47	35	28	23	31	25	21	28	23	19	24	20	17	15
10	47	34	27	22	44	33	26	21	29	23	19	26	21	17	23	18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10066	10066	10066
5°	10097	9838	9866
10°	10035	9677	9669
15°	9945	9490	9439
20°	9810	9285	9213
25°	9657	9054	8967
30°	9492	8825	8712
35°	9305	8591	8490
40°	9154	8367	8259
45°	8931	8161	8059
50°	8744	7924	7849
55°	8549	7700	7603
60°	8247	7415	7378
65°	7914	7109	7102
70°	7513	6760	6779
75°	6949	6374	6488
80°	6328	6004	6203
85°	5536	5679	6037



TEST NUMBER: P332638-840

CATALOG NUMBER: S124DIP-S1020D590U840-4F0-1E-UDD-D1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.1	1.9
10°-20°	338.3	5.4
20°-30°	511.5	8.1
30°-40°	618.9	9.8
40°-50°	654.3	10.4
50°-60°	615.8	9.7
60°-70°	510.9	8.1
70°-80°	358.9	5.7
80°-90°	205.1	3.2
90°-100°	169.6	2.7
100°-110°	234.7	3.7
110°-120°	306.8	4.9
120°-130°	359.4	5.7
130°-140°	380.3	6.0
140°-150°	362.3	5.7
150°-160°	302.3	4.8
160°-170°	201.1	3.2
170°-180°	70.4	1.1
0°-30°	967.9	15.3
0°-40°	1586.8	25.1
0°-60°	2856.9	45.2
0°-90°	3931.8	62.2
90°-120°	711.1	11.3
90°-150°	1813.2	28.7
90°-180°	2387.0	37.8
0°-180°	6318.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1247	1247	1247	1247	1247	
5°	1248	1244	1234	1245	1244	118
15°	1197	1198	1194	1206	1205	337
25°	1095	1103	1107	1122	1124	504
35°	958	974	989	1007	1012	600
45°	799	825	852	875	882	617
55°	626	656	697	724	733	557
65°	433	478	525	559	571	429
75°	240	292	350	388	402	255
85°	74	133	196	236	251	79
90°	24	86	151	193	207	17
95°	53	105	165	203	217	53
105°	147	177	229	265	279	157
115°	260	274	316	345	355	256
125°	371	372	404	429	437	331
135°	474	478	488	508	516	367
145°	574	575	576	584	588	360
155°	657	657	656	658	656	302
165°	715	713	712	715	713	201
175°	744	741	740	744	740	71
180°	745	745	745	745	745	



TEST NUMBER: P332638-840

CATALOG NUMBER: S124DIP-S1020D590U840-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9
2.5°	1251.3	1250.6	1249.8	1249.1	1248.3	1247.0	1245.0	1243.0	1241.0	1239.0	1240.7
5°	1248.2	1247.3	1246.4	1245.5	1244.6	1242.9	1240.8	1238.6	1236.5	1234.3	1236.8
7.5°	1237.6	1237.1	1236.5	1236.0	1235.4	1234.3	1232.4	1230.6	1228.8	1227.0	1229.8
10°	1228.7	1228.4	1228.1	1227.8	1227.5	1226.5	1225.0	1223.5	1221.8	1220.3	1223.1
12.5°	1216.4	1216.4	1216.3	1216.2	1216.2	1215.6	1214.6	1213.5	1212.4	1211.3	1214.0
15°	1196.6	1196.9	1197.2	1197.5	1197.8	1197.5	1196.6	1195.7	1194.7	1193.8	1196.6
17.5°	1169.5	1170.4	1171.3	1172.3	1173.3	1173.6	1173.4	1173.3	1173.1	1172.9	1175.7
20°	1150.5	1151.4	1152.4	1153.3	1154.3	1154.9	1155.2	1155.5	1155.8	1156.1	1159.2
22.5°	1129.2	1130.4	1131.7	1132.9	1134.0	1134.9	1135.4	1136.0	1136.5	1137.1	1140.2
25°	1094.7	1096.5	1098.3	1100.2	1102.1	1103.5	1104.4	1105.4	1106.3	1107.2	1110.6
27.5°	1056.1	1058.8	1061.6	1064.3	1067.0	1069.1	1070.6	1072.0	1073.4	1074.8	1078.0
30°	1030.5	1032.9	1035.4	1037.8	1040.4	1042.7	1044.8	1047.0	1049.1	1051.4	1054.8
32.5°	1002.5	1005.5	1008.5	1011.5	1014.4	1017.1	1019.6	1022.0	1024.4	1026.8	1030.7
35°	957.9	961.6	965.2	969.0	972.7	976.1	979.3	982.3	985.4	988.6	992.9
37.5°	912.8	917.2	921.4	925.7	930.0	934.0	937.9	941.7	945.6	949.5	953.8
40°	883.8	887.9	891.9	896.0	900.0	904.1	908.5	912.8	917.2	921.5	926.1
42.5°	850.3	854.9	859.4	863.9	868.4	873.2	878.3	883.4	888.5	893.6	898.8
45°	798.6	804.6	810.4	816.4	822.2	828.1	834.0	839.9	845.8	851.7	857.0
47.5°	749.2	755.3	761.3	767.5	773.6	780.0	786.8	793.7	800.5	807.3	812.7
50°	713.5	720.3	727.1	734.0	740.7	747.6	754.5	761.2	768.1	774.9	781.1
52.5°	677.7	684.6	691.4	698.2	705.1	712.4	720.1	728.0	735.8	743.7	749.8
55°	625.5	632.1	638.5	645.1	651.6	659.4	668.8	678.1	687.4	696.7	703.0
57.5°	567.1	575.2	583.3	591.4	599.5	608.0	617.3	626.6	635.8	645.1	652.5
60°	529.2	537.2	545.3	553.4	561.5	570.6	580.9	591.1	601.3	611.6	618.6
62.5°	492.3	501.1	510.0	518.8	527.6	537.0	547.3	557.5	567.8	578.0	585.2
65°	432.8	442.7	452.7	462.6	472.5	482.8	493.3	503.9	514.4	525.0	532.7
67.5°	375.6	386.2	396.7	407.3	417.8	428.7	440.0	451.3	462.6	473.9	481.8
70°	336.5	347.1	357.6	368.1	378.7	389.9	401.6	413.4	425.3	437.1	445.5
72.5°	298.5	309.3	320.1	330.9	341.7	353.4	365.9	378.4	391.0	403.5	411.6
75°	240.1	251.7	263.1	274.6	286.1	298.3	311.3	324.4	337.4	350.4	359.1
77.5°	185.7	197.8	210.1	222.2	234.4	247.2	260.9	274.6	288.2	301.8	310.6
80°	152.2	164.6	177.0	189.5	201.9	214.9	228.5	242.2	255.8	269.4	278.8
82.5°	118.7	131.6	144.5	157.4	170.3	183.6	197.2	210.9	224.6	238.2	247.7
85°	74.0	87.1	100.1	113.1	126.1	139.7	153.6	167.5	181.5	195.5	204.8
87.5°	41.7	54.6	67.6	80.5	93.4	106.8	120.6	134.4	148.1	162.0	171.2
90°	24.0	37.9	51.7	65.5	79.4	93.4	107.8	122.2	136.5	150.9	160.7
92.5°	33.5	46.4	59.1	71.9	84.7	98.1	112.2	126.2	140.3	154.3	163.5
95°	52.7	64.1	75.5	86.8	98.3	110.8	124.4	138.0	151.6	165.2	174.0
97.5°	76.9	86.5	96.3	106.0	115.7	127.4	141.1	154.7	168.4	182.1	190.7
100°	96.0	104.6	113.1	121.7	130.3	141.2	154.5	167.7	181.0	194.2	202.9
102.5°	117.1	124.5	131.8	139.1	146.3	156.4	169.3	182.2	195.1	208.0	216.5
105°	146.7	153.1	159.5	165.7	172.1	181.3	193.3	205.2	217.2	229.2	237.4
107.5°	180.5	185.7	191.0	196.2	201.5	209.5	220.5	231.4	242.4	253.3	261.3
110°	202.4	207.0	211.6	216.2	220.8	228.4	239.2	249.9	260.6	271.4	278.2



TEST NUMBER: P332638-840

CATALOG NUMBER: S124DIP-S1020D590U840-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	225.2	229.1	233.1	236.9	240.9	247.8	258.0	268.1	278.2	288.4	295.2
115°	259.5	262.3	265.1	267.9	270.6	276.9	286.6	296.3	305.9	315.6	322.2
117.5°	293.1	294.9	296.6	298.4	300.2	305.6	314.7	323.8	332.9	341.9	347.9
120°	314.6	316.0	317.4	318.9	320.3	325.4	334.0	342.5	351.2	359.8	365.4
122.5°	338.1	338.4	338.8	339.2	339.6	344.0	352.3	360.6	368.9	377.3	383.0
125°	371.3	371.0	370.7	370.4	370.1	373.8	381.4	389.0	396.7	404.2	409.9
127.5°	402.5	402.5	402.6	402.7	402.8	405.7	411.4	417.2	422.9	428.7	434.0
130°	423.5	423.5	423.6	423.7	423.8	426.3	431.3	436.3	441.2	446.2	451.5
132.5°	446.1	446.1	446.1	446.0	446.0	447.9	451.7	455.7	459.5	463.3	468.5
135°	474.5	475.2	476.1	476.9	477.6	479.1	481.2	483.4	485.5	487.8	492.4
137.5°	507.0	507.1	507.1	507.2	507.2	507.9	509.1	510.4	511.6	512.9	517.1
140°	528.7	528.6	528.6	528.5	528.5	528.6	528.9	529.2	529.5	529.8	533.7
142.5°	547.3	547.5	547.8	548.0	548.2	548.1	547.8	547.5	547.2	546.9	550.5
145°	574.5	574.7	574.9	575.1	575.3	575.4	575.6	575.7	575.8	575.9	577.7
147.5°	601.7	602.0	602.3	602.6	602.9	603.0	602.9	602.8	602.7	602.6	602.7
150°	618.2	618.4	618.6	618.8	619.0	619.1	619.1	619.1	619.1	619.1	619.1
152.5°	632.8	633.1	633.3	633.6	633.8	634.0	634.1	634.2	634.3	634.4	634.7
155°	656.6	656.6	656.6	656.6	656.6	656.5	656.4	656.3	656.2	656.0	656.5
157.5°	676.9	676.6	676.4	676.2	676.0	675.8	675.8	675.8	675.8	675.7	676.1
160°	688.8	688.7	688.6	688.5	688.3	688.2	688.1	688.0	687.8	687.7	688.1
162.5°	699.9	699.6	699.2	698.9	698.6	698.3	698.2	698.1	698.0	697.8	698.5
165°	714.8	714.4	714.0	713.7	713.3	713.0	712.7	712.5	712.2	712.0	712.7
167.5°	726.2	725.7	725.1	724.6	724.1	723.8	723.8	723.9	723.9	723.9	724.7
170°	732.7	732.1	731.3	730.7	730.0	729.8	729.9	730.0	730.2	730.3	731.1
172.5°	737.2	736.7	736.2	735.7	735.1	734.9	734.9	734.9	734.9	735.0	735.8
175°	743.6	743.0	742.4	741.6	741.0	740.6	740.5	740.4	740.2	740.1	741.0
177.5°	745.7	745.2	744.7	744.2	743.6	743.4	743.4	743.4	743.4	743.4	744.1
180°	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8



TEST NUMBER: P332638-840

CATALOG NUMBER: S124DIP-S1020D590U840-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9
2.5°	1242.5	1244.3	1246.0	1246.7	1246.5	1246.2	1246.0	1245.8
5°	1239.2	1241.7	1244.3	1245.3	1245.0	1244.7	1244.4	1244.1
7.5°	1232.6	1235.4	1238.2	1239.4	1239.1	1238.8	1238.5	1238.2
10°	1225.9	1228.7	1231.5	1232.7	1232.4	1232.1	1231.8	1231.5
12.5°	1216.5	1219.0	1221.5	1222.8	1222.7	1222.6	1222.6	1222.5
15°	1199.4	1202.1	1205.0	1206.2	1205.9	1205.6	1205.3	1205.0
17.5°	1178.5	1181.4	1184.3	1185.6	1185.3	1185.1	1184.8	1184.6
20°	1162.3	1165.4	1168.5	1170.0	1170.0	1170.0	1170.0	1170.0
22.5°	1143.3	1146.4	1149.5	1151.3	1151.9	1152.3	1152.8	1153.3
25°	1114.1	1117.4	1120.8	1122.8	1123.1	1123.4	1123.7	1124.0
27.5°	1081.2	1084.3	1087.5	1089.2	1089.6	1090.0	1090.4	1090.8
30°	1058.2	1061.6	1065.0	1067.0	1067.6	1068.2	1068.9	1069.5
32.5°	1034.6	1038.5	1042.5	1044.7	1045.3	1045.9	1046.5	1047.2
35°	997.2	1001.6	1005.9	1008.6	1009.5	1010.4	1011.4	1012.3
37.5°	958.3	962.7	967.0	969.8	970.8	971.8	972.7	973.7
40°	930.8	935.4	940.2	943.1	944.3	945.5	946.8	948.1
42.5°	903.9	909.1	914.2	917.3	918.3	919.3	920.3	921.2
45°	862.2	867.6	872.8	876.3	877.8	879.3	880.9	882.4
47.5°	818.2	823.6	829.2	832.8	834.7	836.6	838.4	840.3
50°	787.3	793.6	799.7	803.8	805.7	807.5	809.3	811.2
52.5°	756.1	762.2	768.5	772.4	774.4	776.2	778.1	779.9
55°	709.1	715.4	721.5	725.6	727.4	729.3	731.1	733.1
57.5°	659.8	667.2	674.6	679.1	680.9	682.7	684.4	686.1
60°	625.8	633.0	640.1	644.9	647.4	649.8	652.4	654.8
62.5°	592.3	599.5	606.6	611.4	613.9	616.3	618.8	621.4
65°	540.5	548.3	556.0	561.2	563.6	566.1	568.6	571.1
67.5°	489.7	497.6	505.4	510.6	513.0	515.4	517.9	520.3
70°	453.7	462.1	470.5	475.8	478.0	480.2	482.3	484.5
72.5°	419.8	427.9	436.1	441.3	443.7	446.2	448.6	451.0
75°	367.8	376.5	385.2	390.9	393.7	396.6	399.3	402.1
77.5°	319.5	328.3	337.1	343.1	346.0	349.0	351.9	355.0
80°	288.1	297.4	306.7	312.6	315.1	317.6	320.0	322.6
82.5°	257.3	266.9	276.4	282.6	285.3	288.0	290.7	293.5
85°	214.1	223.4	232.7	238.9	242.1	245.1	248.2	251.4
87.5°	180.3	189.5	198.6	204.6	207.3	210.2	212.9	215.7
90°	170.5	180.2	190.0	196.2	198.9	201.7	204.4	207.1
92.5°	172.8	182.0	191.2	197.1	199.8	202.4	205.0	207.6
95°	182.8	191.6	200.3	206.1	208.8	211.7	214.5	217.2
97.5°	199.2	207.8	216.4	222.1	224.7	227.4	230.0	232.7
100°	211.5	220.2	228.7	234.2	236.3	238.5	240.7	242.9
102.5°	225.0	233.5	242.0	247.4	249.9	252.5	255.0	257.5
105°	245.5	253.7	261.8	267.3	270.1	273.1	275.9	278.7
107.5°	269.2	277.2	285.3	290.3	292.6	294.8	297.0	299.2
110°	285.2	292.1	298.9	303.8	306.7	309.5	312.4	315.3



TEST NUMBER: P332638-840

CATALOG NUMBER: S124DIP-S1020D590U840-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	302.1	308.9	315.7	320.4	323.0	325.6	328.1	330.6
115°	329.0	335.7	342.3	346.8	348.8	350.8	352.8	355.0
117.5°	354.0	359.9	366.0	370.1	372.3	374.6	376.8	379.0
120°	370.9	376.5	382.0	386.2	389.0	391.7	394.5	397.2
122.5°	388.8	394.6	400.3	404.1	405.9	407.7	409.4	411.2
125°	415.6	421.2	426.9	430.4	432.0	433.6	435.3	436.9
127.5°	439.4	444.7	450.0	453.6	455.6	457.5	459.4	461.3
130°	456.9	462.1	467.5	470.8	472.2	473.5	474.8	476.3
132.5°	473.5	478.6	483.7	487.1	488.7	490.4	492.0	493.7
135°	497.2	501.9	506.5	509.7	511.2	512.6	514.1	515.5
137.5°	521.3	525.4	529.7	532.6	534.2	535.8	537.5	539.1
140°	537.7	541.5	545.4	548.1	549.6	551.0	552.4	553.8
142.5°	553.9	557.4	561.0	563.4	564.6	565.9	567.2	568.5
145°	579.5	581.2	582.9	584.2	585.0	585.9	586.7	587.6
147.5°	602.9	603.0	603.2	603.7	604.5	605.4	606.2	607.1
150°	619.1	619.1	619.1	619.1	618.9	618.8	618.7	618.6
152.5°	635.0	635.3	635.6	635.6	635.3	634.9	634.6	634.3
155°	657.0	657.5	658.1	658.1	657.5	657.0	656.5	656.0
157.5°	676.5	676.9	677.3	677.2	676.8	676.4	675.9	675.5
160°	688.5	688.8	689.2	689.1	688.5	687.8	687.2	686.6
162.5°	699.2	699.9	700.6	700.6	700.0	699.3	698.7	698.1
165°	713.5	714.2	715.0	715.1	714.6	714.1	713.6	713.1
167.5°	725.4	726.2	727.0	726.9	726.2	725.4	724.6	723.8
170°	731.8	732.7	733.4	733.4	732.5	731.5	730.6	729.7
172.5°	736.7	737.6	738.4	738.4	737.5	736.6	735.7	734.9
175°	741.9	742.9	743.7	743.7	742.9	741.9	741.0	740.1
177.5°	744.8	745.5	746.2	746.2	745.4	744.6	743.7	742.9
180°	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8

(END OF REPORT)