

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: P332647-840

Luminaire Tested: **S124DIP-S1020D810U840-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332647-840
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-S1020D810U840-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 810 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7085.6 lumens
Efficiency: N/A
Efficacy: 130.3 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: General Diffuse

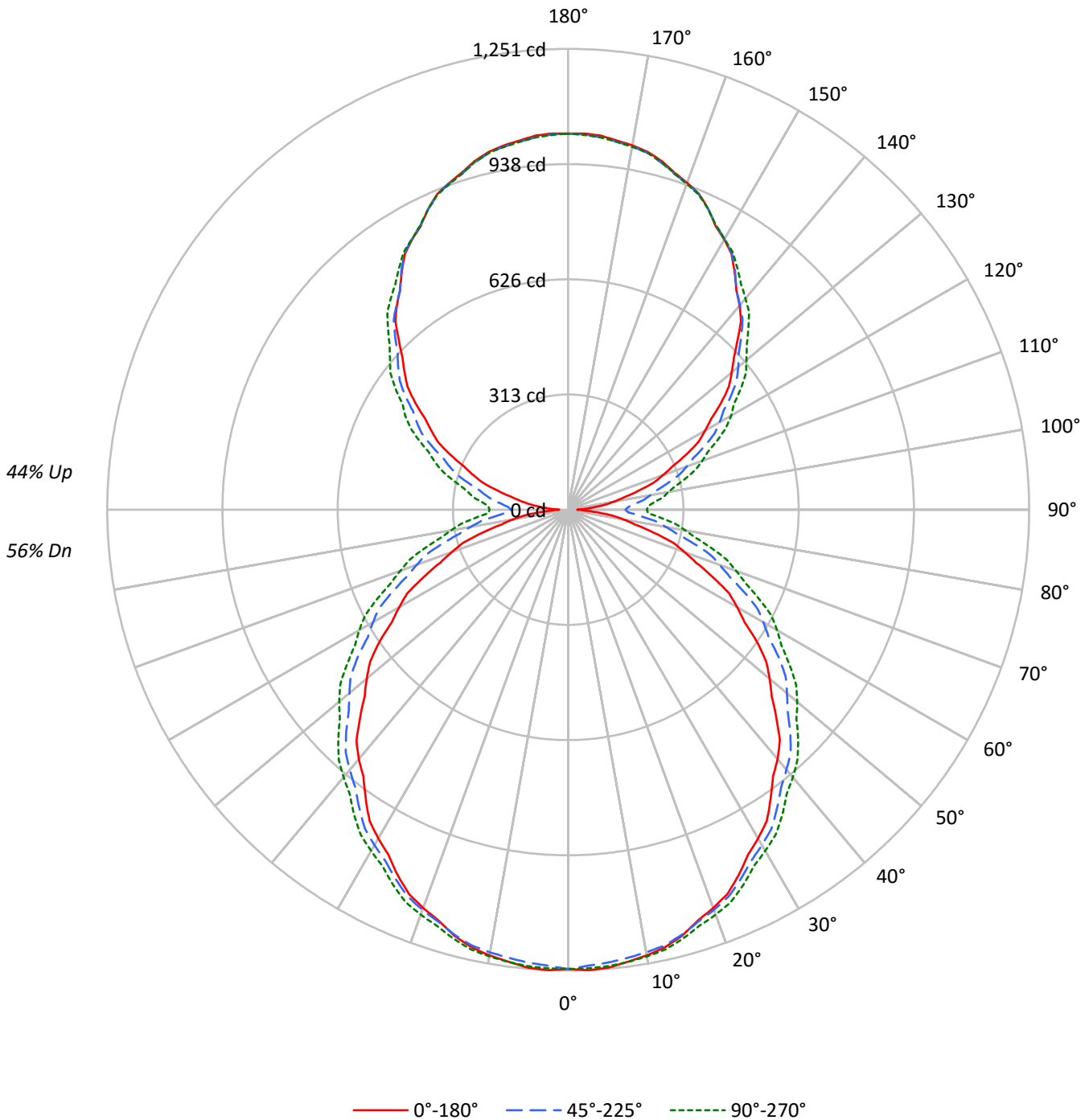
Input Watts (W): 54.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332647-840

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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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	56
1	98	93	89	85	91	86	83	79	74	71	69	63	61	59	52	51	49	44
2	89	81	74	68	82	75	69	64	64	60	56	54	51	48	45	43	41	36
3	81	70	63	56	74	66	59	53	56	51	46	48	44	40	40	37	34	30
4	74	62	54	47	68	58	50	45	50	44	39	42	38	34	35	32	29	26
5	67	55	47	40	62	51	44	38	44	38	34	38	33	29	32	28	25	22
6	62	49	41	35	57	46	38	33	40	34	29	34	29	26	29	25	22	19
7	57	45	36	30	53	42	34	29	36	30	26	31	26	23	26	22	19	17
8	53	40	32	27	49	38	31	25	33	27	23	28	23	20	24	20	17	15
9	49	37	29	24	46	35	27	23	30	24	20	26	21	18	22	18	16	13
10	46	34	26	21	43	32	25	20	28	22	18	24	19	16	20	17	14	12

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: P332647-840

CATALOG NUMBER: S124DIP-S1020D810U840-4F0-1E-UDD-D1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.1	1.7
10°-20°	338.3	4.8
20°-30°	511.5	7.2
30°-40°	618.9	8.7
40°-50°	654.3	9.2
50°-60°	615.8	8.7
60°-70°	510.9	7.2
70°-80°	358.9	5.1
80°-90°	205.9	2.9
90°-100°	187.8	2.7
100°-110°	288.6	4.1
110°-120°	398.4	5.6
120°-130°	480.1	6.8
130°-140°	515.9	7.3
140°-150°	495.6	7.0
150°-160°	414.4	5.8
160°-170°	275.7	3.9
170°-180°	96.5	1.4
0°-30°	967.9	13.7
0°-40°	1586.8	22.4
0°-60°	2856.9	40.3
0°-90°	3932.6	55.5
90°-120°	874.8	12.3
90°-150°	2366.5	33.4
90°-180°	3153.0	44.5
0°-180°	7085.6	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°	25	89	156	199	214	18
95°	66	119	182	220	234	67
105°	196	227	280	316	331	209
115°	353	367	408	437	447	348
125°	507	507	540	564	571	452
135°	649	654	664	684	691	503
145°	787	789	790	797	800	492
155°	900	900	899	902	899	414
165°	980	977	976	980	977	276
175°	1019	1015	1014	1020	1014	97
180°	1021	1021	1021	1021	1021	



TEST NUMBER: P332647-840

CATALOG NUMBER: S124DIP-S1020D810U840-4F0-1E-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°	41.8	54.8	67.9	80.9	94.0	107.4	121.3	135.2	149.1	162.9	172.2
90°	24.7	39.1	53.4	67.8	82.1	96.6	111.4	126.1	140.9	155.6	165.6
92.5°	38.1	51.5	64.8	78.3	91.6	105.5	119.8	134.1	148.5	162.8	172.2
95°	65.5	77.4	89.2	101.0	112.8	125.6	139.7	153.6	167.5	181.5	190.4
97.5°	99.2	109.3	119.4	129.5	139.6	151.6	165.6	179.7	193.7	207.7	216.5
100°	125.9	134.6	143.4	152.2	161.0	172.2	185.9	199.5	213.2	226.9	235.6
102.5°	154.9	162.3	169.7	177.0	184.4	194.7	207.9	221.3	234.6	247.8	256.5
105°	196.5	202.9	209.2	215.7	222.1	231.4	243.5	255.7	267.9	280.0	288.3
107.5°	242.8	248.1	253.4	258.7	264.0	272.2	283.1	294.1	305.1	316.0	324.2
110°	273.3	278.0	282.7	287.4	292.1	299.7	310.4	321.1	331.8	342.4	349.3



TEST NUMBER: P332647-840

CATALOG NUMBER: S124DIP-S1020D810U840-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	305.0	308.9	312.9	316.8	320.6	327.7	337.7	347.8	357.8	367.9	374.7
115°	352.6	355.4	358.2	361.0	363.8	369.9	379.5	389.1	398.7	408.3	415.0
117.5°	398.7	400.5	402.3	404.1	406.0	411.4	420.4	429.4	438.4	447.4	453.2
120°	428.6	430.2	431.8	433.4	435.2	440.2	448.6	457.1	465.5	474.0	479.4
122.5°	460.8	461.2	461.7	462.2	462.6	467.1	475.2	483.5	491.8	500.1	505.6
125°	507.0	506.6	506.3	505.9	505.6	509.3	516.8	524.5	532.1	539.7	545.2
127.5°	549.8	550.0	550.2	550.4	550.6	553.5	559.3	564.9	570.6	576.2	581.5
130°	579.0	579.2	579.4	579.6	579.8	582.4	587.3	592.3	597.3	602.3	607.5
132.5°	609.9	610.0	610.1	610.2	610.2	612.2	616.0	619.9	623.6	627.4	632.5
135°	649.3	650.5	651.5	652.6	653.6	655.2	657.4	659.5	661.8	663.9	668.5
137.5°	693.9	694.1	694.3	694.5	694.7	695.4	696.7	698.1	699.4	700.7	704.8
140°	723.6	723.7	723.7	723.8	723.8	724.0	724.3	724.6	724.9	725.2	729.0
142.5°	749.6	749.9	750.2	750.5	750.8	750.7	750.4	750.1	749.8	749.5	753.0
145°	787.0	787.3	787.7	788.1	788.5	788.8	789.0	789.1	789.3	789.5	791.2
147.5°	824.3	824.8	825.3	825.8	826.4	826.6	826.4	826.3	826.1	826.0	826.1
150°	847.0	847.4	847.8	848.1	848.5	848.7	848.7	848.7	848.7	848.7	848.7
152.5°	867.3	867.7	868.0	868.4	868.8	869.0	869.1	869.3	869.4	869.6	870.0
155°	900.0	900.0	900.0	900.0	900.0	899.9	899.8	899.6	899.4	899.3	899.9
157.5°	927.9	927.5	927.2	926.9	926.6	926.3	926.3	926.3	926.2	926.2	926.8
160°	944.2	944.0	943.9	943.7	943.5	943.3	943.2	943.0	942.8	942.7	943.2
162.5°	959.4	959.0	958.5	958.1	957.6	957.3	957.0	956.9	956.7	956.5	957.6
165°	979.8	979.3	978.8	978.2	977.7	977.2	976.8	976.5	976.1	975.8	976.8
167.5°	995.4	994.6	993.9	993.2	992.5	992.1	992.1	992.2	992.2	992.2	993.3
170°	1004.2	1003.4	1002.5	1001.6	1000.8	1000.4	1000.6	1000.8	1000.9	1001.1	1002.1
172.5°	1010.6	1009.9	1009.1	1008.4	1007.6	1007.2	1007.3	1007.3	1007.3	1007.4	1008.6
175°	1019.3	1018.3	1017.4	1016.6	1015.7	1015.2	1015.0	1014.8	1014.7	1014.5	1015.7
177.5°	1022.1	1021.4	1020.7	1020.0	1019.3	1019.0	1019.0	1019.0	1019.0	1019.0	1019.9
180°	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8



TEST NUMBER: P332647-840

CATALOG NUMBER: S124DIP-S1020D810U840-4F0-1E-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°	181.4	190.6	199.8	205.8	208.5	211.4	214.2	216.9
90°	175.7	185.7	195.8	202.3	205.1	207.9	210.8	213.6
92.5°	181.6	191.0	200.4	206.3	209.0	211.8	214.4	217.1
95°	199.2	208.2	217.1	223.0	225.7	228.5	231.4	234.1
97.5°	225.2	234.0	242.8	248.4	251.2	253.8	256.5	259.1
100°	244.4	253.1	261.9	267.3	269.4	271.7	273.8	276.0
102.5°	265.1	273.7	282.4	287.9	290.4	293.1	295.6	298.2
105°	296.6	304.9	313.2	318.8	321.8	324.9	327.9	330.8
107.5°	332.2	340.4	348.5	353.7	355.9	358.1	360.2	362.4
110°	356.1	362.8	369.6	374.6	377.5	380.5	383.5	386.6



TEST NUMBER: P332647-840

CATALOG NUMBER: S124DIP-S1020D810U840-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	381.5	388.3	395.2	399.8	402.4	405.0	407.6	410.2
115°	421.5	428.2	434.8	439.2	441.2	443.2	445.1	447.2
117.5°	459.1	464.9	470.8	474.8	477.0	479.1	481.2	483.3
120°	484.7	490.0	495.3	499.5	502.3	505.1	508.0	510.8
122.5°	511.3	516.8	522.5	526.0	527.7	529.3	530.9	532.5
125°	550.7	556.2	561.8	565.3	566.8	568.4	569.9	571.4
127.5°	586.7	592.0	597.2	600.8	602.6	604.4	606.2	608.0
130°	612.7	617.9	623.2	626.4	627.5	628.7	629.9	631.1
132.5°	637.4	642.5	647.4	650.7	652.3	653.9	655.4	657.0
135°	673.2	677.7	682.4	685.3	686.7	688.0	689.3	690.6
137.5°	708.9	713.0	717.0	719.9	721.5	723.3	724.9	726.5
140°	732.9	736.8	740.6	743.3	744.6	746.0	747.4	748.7
142.5°	756.5	760.0	763.5	765.9	767.1	768.4	769.7	770.9
145°	792.8	794.6	796.3	797.5	798.2	798.9	799.6	800.3
147.5°	826.2	826.3	826.4	826.9	827.7	828.5	829.3	830.1
150°	848.7	848.7	848.7	848.6	848.5	848.3	848.1	847.9
152.5°	870.4	870.8	871.2	871.2	870.8	870.3	869.9	869.4
155°	900.6	901.3	902.0	902.0	901.3	900.6	899.9	899.3
157.5°	927.3	927.9	928.4	928.3	927.8	927.2	926.6	925.9
160°	943.7	944.2	944.7	944.6	943.7	942.8	942.0	941.1
162.5°	958.5	959.4	960.4	960.4	959.5	958.7	957.8	956.8
165°	978.0	979.0	980.1	980.2	979.5	978.8	978.1	977.4
167.5°	994.3	995.4	996.4	996.4	995.3	994.2	993.2	992.1
170°	1003.2	1004.2	1005.3	1005.2	1004.0	1002.8	1001.5	1000.3
172.5°	1009.8	1011.0	1012.2	1012.2	1011.0	1009.7	1008.5	1007.2
175°	1016.9	1018.1	1019.5	1019.5	1018.1	1016.9	1015.7	1014.5
177.5°	1020.9	1021.9	1022.9	1022.8	1021.7	1020.6	1019.5	1018.2
180°	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8	1020.8

(END OF REPORT)