

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: P332657-840

Luminaire Tested: **S124DIP-S1020D1035U840-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332657-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIP-S1020D1035U840-4F0-1E-UDD-D4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1035 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

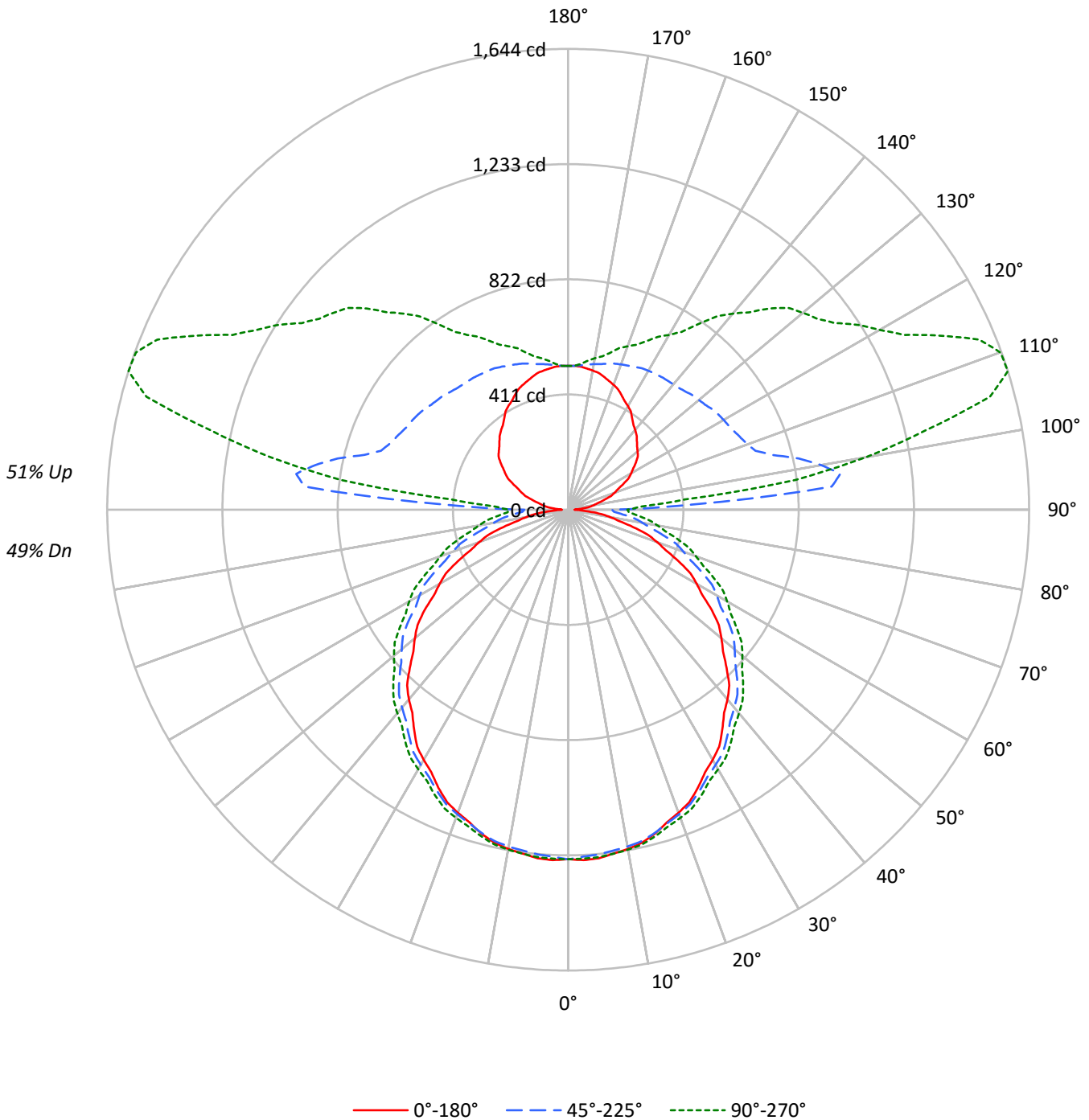
Lumens per Lamp: N/A
Luminaire Lumens: 7985.3 lumens
Efficiency: N/A
Efficacy: 132.0 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: General Diffuse

Input Watts (W): 60.5
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	0
RCR																		
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	55	55	55	49
1	97	92	88	84	89	85	81	78	71	68	66	59	57	55	47	46	45	39
2	88	80	73	68	80	73	68	63	62	58	54	51	48	45	41	39	37	32
3	80	70	62	56	73	64	57	52	54	49	45	45	41	38	36	33	31	27
4	73	61	53	47	66	57	49	44	48	42	38	40	35	32	32	29	26	23
5	67	55	46	40	61	50	43	37	43	37	32	35	31	28	29	25	23	19
6	61	49	40	34	56	45	38	32	38	32	28	32	27	24	26	23	20	17
7	57	44	36	30	52	41	33	28	35	29	25	29	24	21	24	20	18	15
8	52	40	32	26	48	37	30	25	32	26	22	26	22	19	22	18	16	13
9	49	36	29	23	45	34	27	22	29	23	19	24	20	17	20	17	14	12
10	46	33	26	21	42	31	24	20	27	21	17	22	18	15	19	15	13	11

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



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.1	1.5
10°-20°	338.3	4.2
20°-30°	511.5	6.4
30°-40°	618.9	7.8
40°-50°	654.3	8.2
50°-60°	615.8	7.7
60°-70°	510.9	6.4
70°-80°	358.9	4.5
80°-90°	205.7	2.6
90°-100°	491.1	6.2
100°-110°	860.6	10.8
110°-120°	750.8	9.4
120°-130°	615.0	7.7
130°-140°	499.2	6.3
140°-150°	373.2	4.7
150°-160°	260.2	3.3
160°-170°	153.1	1.9
170°-180°	49.8	0.6
0°-30°	967.9	12.1
0°-40°	1586.8	19.9
0°-60°	2856.9	35.8
0°-90°	3932.4	49.2
90°-120°	2102.5	26.3
90°-150°	3589.8	45.0
90°-180°	4053.0	50.8
0°-180°	7985.3	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°	23	86	156	197	211	17
95°	51	170	943	565	418	52
105°	130	213	754	1550	1557	140
115°	216	283	655	1228	1468	215
125°	295	350	626	1029	1161	263
135°	347	413	594	890	1015	268
145°	398	454	579	730	807	250
155°	451	486	563	637	664	208
165°	491	506	539	571	580	139
175°	512	513	517	524	522	49
180°	513	513	513	513	513	



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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°	41.5	54.6	67.9	80.7	93.6	106.7	121.5	135.1	149.1	163.1	171.9
90°	23.3	37.8	53.2	66.7	80.1	92.9	112.3	125.6	141.0	156.3	164.4
92.5°	32.7	49.1	69.8	93.2	119.2	152.4	216.9	308.5	398.1	451.3	406.7
95°	51.4	64.7	85.0	108.4	142.8	196.6	297.0	475.1	728.8	943.1	974.7
97.5°	76.1	84.9	102.5	123.4	152.9	199.1	279.2	428.4	680.5	978.3	1182.3
100°	92.0	100.1	115.1	135.3	162.6	204.9	276.5	402.5	620.3	916.7	1183.2
102.5°	108.2	116.8	130.2	148.5	173.9	214.0	279.7	391.7	578.7	842.5	1116.8
105°	130.5	139.8	151.0	169.3	193.7	231.8	291.6	386.8	539.4	753.5	998.2
107.5°	158.0	165.2	175.3	193.3	215.7	252.6	307.7	394.9	526.2	700.2	901.2
110°	175.5	181.9	191.3	207.7	230.1	265.0	320.2	401.6	523.4	680.4	851.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	192.1	198.0	207.7	222.8	244.8	279.1	332.2	409.2	523.1	667.6	821.1
115°	216.0	221.9	231.8	244.6	266.5	300.1	350.4	420.8	524.5	655.4	789.2
117.5°	242.4	246.9	254.8	267.6	287.2	320.9	368.5	433.3	526.6	646.0	770.0
120°	259.0	262.0	269.9	282.0	300.0	333.3	380.5	442.0	528.6	640.5	758.5
122.5°	275.2	277.3	284.6	295.1	314.0	345.8	392.5	450.3	530.8	634.0	746.5
125°	294.9	298.6	304.4	315.2	334.0	366.0	410.0	464.1	535.4	625.8	728.5
127.5°	313.4	316.3	323.3	335.7	355.3	386.6	427.6	476.2	537.6	615.2	705.5
130°	322.8	326.5	334.3	349.0	367.9	399.5	438.7	483.0	539.4	608.8	691.1
132.5°	333.3	336.2	346.4	360.3	380.8	410.3	448.5	491.0	541.6	603.6	678.3
135°	346.6	350.6	360.7	377.8	399.0	426.3	461.7	500.2	543.7	594.3	657.7
137.5°	361.3	364.9	375.6	391.6	413.2	438.7	470.8	505.7	543.4	587.6	640.4
140°	371.7	374.5	385.3	402.1	422.9	447.2	477.7	510.3	544.8	583.5	630.9
142.5°	381.9	385.0	395.2	411.4	431.7	454.9	484.2	513.9	546.3	581.3	623.3
145°	397.6	400.3	410.1	423.9	442.7	464.7	491.0	518.2	547.4	578.7	612.8
147.5°	415.6	416.3	424.9	439.0	454.6	474.4	499.1	522.8	548.5	575.0	603.7
150°	426.9	427.6	435.3	447.1	461.9	480.9	503.1	525.2	548.5	572.6	597.8
152.5°	436.2	436.4	444.3	455.6	469.0	486.6	506.3	526.8	546.8	568.6	591.4
155°	450.6	451.6	457.7	467.8	478.9	494.0	511.1	528.3	544.4	562.6	581.7
157.5°	464.9	464.9	470.6	478.5	488.2	500.1	514.5	528.3	541.8	556.3	571.8
160°	473.8	473.8	477.9	484.9	493.0	504.1	516.1	528.3	539.4	551.5	564.6
162.5°	481.9	481.1	484.3	490.6	497.9	506.5	517.8	528.3	536.9	546.6	558.2
165°	491.0	491.0	493.0	498.1	503.1	509.1	518.2	526.2	532.3	539.4	547.4
167.5°	500.1	499.1	500.1	503.9	506.8	511.3	518.0	523.8	527.5	532.1	537.8
170°	504.1	503.1	504.1	507.2	509.1	512.1	517.2	522.2	524.2	527.3	531.3
172.5°	508.1	507.2	507.3	509.5	510.7	512.9	516.3	520.6	521.0	522.4	525.6
175°	512.1	511.1	511.1	512.1	513.1	513.1	515.1	518.2	517.2	517.2	519.2
177.5°	513.9	513.1	512.3	513.1	513.1	513.1	513.9	515.5	513.9	513.9	514.7
180°	513.1	513.1	513.1	513.1	513.1	513.1	513.1	513.1	513.1	513.1	513.1



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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°	181.1	190.3	199.4	205.3	208.2	211.2	213.7	216.4
90°	174.4	184.4	194.4	200.2	203.6	207.1	208.5	211.1
92.5°	347.0	306.8	285.1	270.5	261.2	258.1	257.2	259.7
95°	885.2	737.4	610.7	518.5	471.8	443.4	428.1	417.7
97.5°	1232.8	1182.9	1092.4	992.5	922.8	864.8	837.2	818.9
100°	1338.7	1367.3	1326.3	1256.9	1171.3	1112.1	1084.0	1078.0
102.5°	1327.0	1435.1	1457.5	1431.8	1380.4	1338.3	1308.8	1304.7
105°	1236.8	1419.0	1526.5	1573.0	1577.5	1572.0	1560.2	1556.7
107.5°	1113.3	1306.7	1454.8	1549.7	1601.7	1627.0	1639.3	1644.2
110°	1038.5	1220.0	1373.4	1489.0	1563.2	1608.0	1628.6	1640.1



TEST NUMBER: P332657-840

CATALOG NUMBER: S124DIP-S1020D1035U840-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	981.6	1142.8	1287.8	1403.3	1487.0	1540.8	1568.6	1585.9
115°	922.1	1052.9	1177.7	1279.0	1360.8	1423.5	1457.9	1468.1
117.5°	888.0	997.0	1096.3	1182.8	1253.2	1306.6	1341.7	1350.4
120°	870.6	970.6	1057.4	1133.4	1193.3	1240.1	1268.8	1282.4
122.5°	855.4	952.1	1031.7	1098.6	1149.4	1189.5	1214.0	1227.3
125°	831.2	923.8	999.3	1058.5	1100.8	1131.9	1152.9	1160.8
127.5°	802.0	890.5	965.4	1021.9	1064.6	1092.7	1111.0	1119.0
130°	780.3	865.6	939.7	996.8	1040.1	1067.1	1085.1	1093.0
132.5°	758.4	838.6	910.8	967.9	1010.3	1040.6	1057.7	1065.6
135°	726.2	796.7	863.1	917.0	959.2	989.3	1007.2	1015.1
137.5°	697.7	757.7	814.1	862.6	901.9	931.3	946.1	954.9
140°	681.3	732.7	782.1	827.3	864.0	887.8	903.4	913.1
142.5°	666.8	712.1	754.5	793.7	826.2	848.1	861.8	868.8
145°	646.9	683.1	715.2	745.0	771.4	789.8	801.1	807.4
147.5°	630.6	658.0	682.5	705.3	724.9	740.5	749.2	752.0
150°	622.1	645.2	665.4	683.6	699.6	712.8	718.8	719.8
152.5°	613.2	633.1	651.7	666.6	680.3	690.9	694.6	695.6
155°	599.9	616.0	631.1	643.2	653.3	661.4	664.4	664.4
157.5°	585.5	599.1	611.8	621.5	629.0	635.1	636.9	636.9
160°	576.6	587.7	598.8	606.9	613.0	619.0	620.1	620.1
162.5°	567.7	577.2	585.9	593.2	597.6	603.7	604.7	603.9
165°	555.5	561.6	568.6	573.6	577.6	581.7	580.7	579.7
167.5°	543.6	548.3	553.9	556.9	559.0	561.6	561.4	560.6
170°	536.3	539.4	543.4	546.4	548.5	549.5	548.5	548.5
172.5°	529.9	532.1	534.5	536.7	538.0	539.0	538.0	536.3
175°	521.2	522.2	524.2	524.2	524.2	526.2	524.2	522.2
177.5°	515.5	516.3	516.3	517.2	516.3	517.2	515.5	513.9
180°	513.1	513.1	513.1	513.1	513.1	513.1	513.1	513.1

(END OF REPORT)