

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: P332664

Luminaire Tested: **S124DIP-S1020D1205U835-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332664  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S1020D1205U835-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1205 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9018.8 lumens  
Efficiency: N/A  
Efficacy: 137.9 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

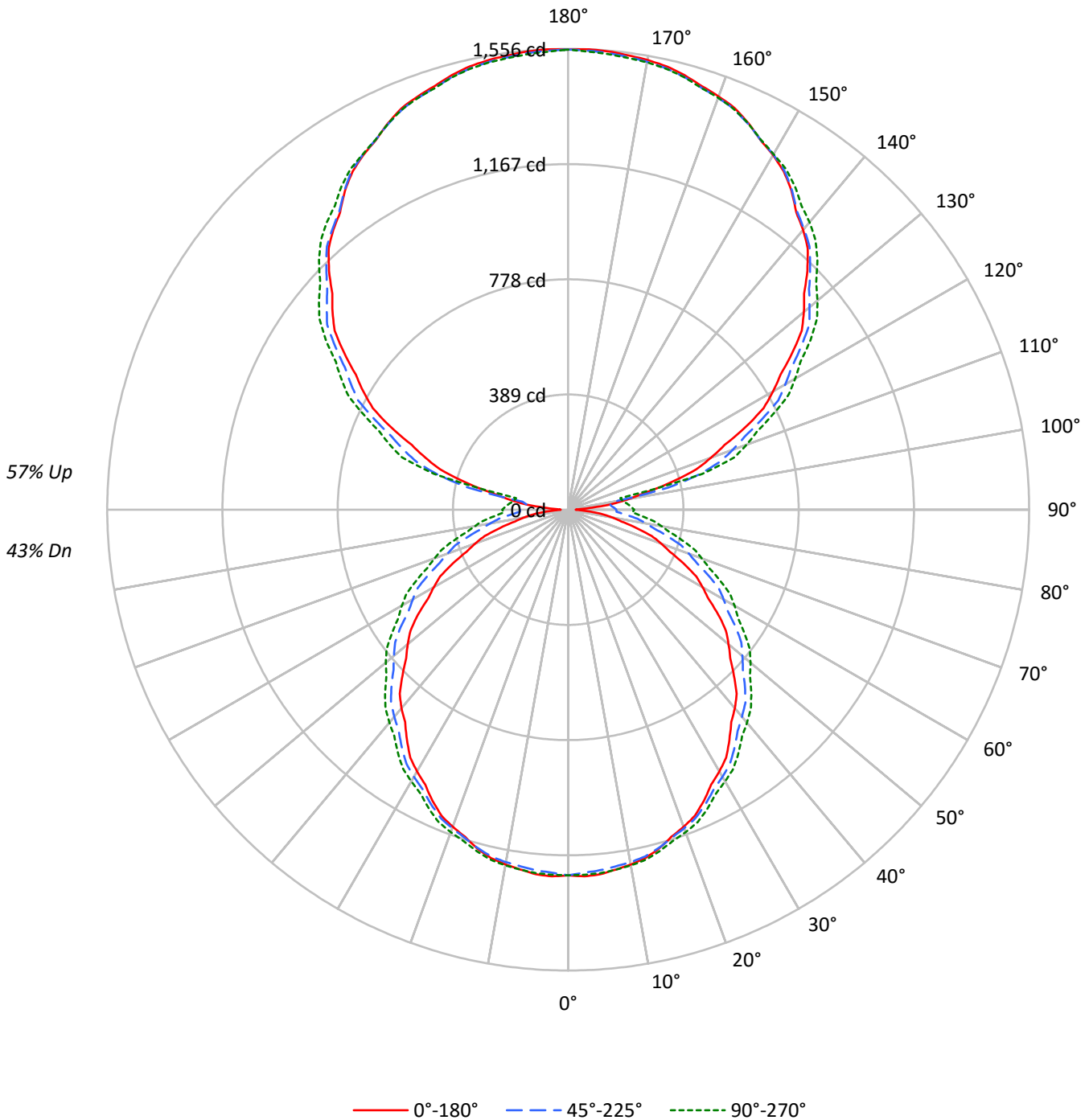
Input Watts (W): 65.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	106	106	106	106	96	96	96	96	80	80	80	64	64	64	50	50	50	43				43
1	95	91	87	83	87	83	79	76	68	66	63	55	53	52	43	41	40				35	
2	86	79	72	67	79	72	66	62	59	55	52	48	45	42	37	35	33				28	
3	79	69	61	55	71	63	56	51	52	47	43	42	38	35	32	30	28				23	
4	72	61	53	46	65	56	48	43	46	41	36	37	33	30	29	26	24				20	
5	66	54	46	39	60	49	42	37	41	35	31	33	29	26	26	23	21				17	
6	60	48	40	34	55	44	37	32	37	31	27	30	26	22	23	20	18				15	
7	56	43	35	30	51	40	33	28	33	28	24	27	23	20	21	18	16				13	
8	52	39	31	26	47	36	29	24	30	25	21	25	21	17	19	16	14				12	
9	48	36	28	23	44	33	26	22	28	22	19	23	19	16	18	15	13				10	
10	45	33	25	21	41	30	24	19	25	20	17	21	17	14	17	14	11				9	

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

	0°	45°	90°
0°	9968	9968	9968
5°	9998	9741	9769
10°	9937	9582	9575
15°	9848	9397	9346
20°	9714	9194	9123
25°	9563	8966	8879
30°	9399	8739	8627
35°	9213	8507	8407
40°	9065	8285	8178
45°	8844	8081	7981
50°	8658	7846	7773
55°	8466	7625	7529
60°	8166	7342	7306
65°	7837	7040	7032
70°	7439	6694	6714
75°	6882	6312	6425
80°	6266	5946	6141
85°	5484	5623	5977



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	116.9	1.3
10°-20°	335.0	3.7
20°-30°	506.5	5.6
30°-40°	612.9	6.8
40°-50°	647.9	7.2
50°-60°	609.8	6.8
60°-70°	505.9	5.6
70°-80°	355.4	3.9
80°-90°	205.4	2.3
90°-100°	172.4	1.9
100°-110°	427.1	4.7
110°-120°	707.3	7.8
120°-130°	856.1	9.5
130°-140°	894.7	9.9
140°-150°	826.0	9.2
150°-160°	663.8	7.4
160°-170°	428.1	4.7
170°-180°	147.6	1.6
0°-30°	958.4	10.6
0°-40°	1571.3	17.4
0°-60°	2829.0	31.4
0°-90°	3895.6	43.2
90°-120°	1306.8	14.5
90°-150°	3883.7	43.1
90°-180°	5123.0	56.8
0°-180°	9018.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1235	1235	1235	1235	1235	
5°	1236	1232	1222	1233	1232	117
15°	1185	1186	1182	1194	1193	334
25°	1084	1092	1096	1111	1113	499
35°	948	965	979	997	1002	594
45°	791	817	843	866	874	611
55°	619	649	690	716	726	552
65°	429	473	520	553	566	425
75°	238	289	347	384	398	253
85°	73	132	194	234	249	78
90°	26	94	162	208	223	18
95°	82	91	146	188	204	96
105°	362	398	454	495	468	380
115°	661	679	720	752	763	651
125°	924	928	959	988	998	824
135°	1142	1141	1155	1178	1190	880
145°	1314	1316	1316	1326	1334	821
155°	1440	1441	1437	1442	1438	664
165°	1519	1513	1513	1521	1512	429
175°	1554	1547	1548	1557	1544	148
180°	1554	1554	1554	1554	1554	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7
2.5°	1239.1	1238.4	1237.6	1236.9	1236.1	1234.8	1232.8	1230.9	1228.9	1226.9	1228.6
5°	1236.0	1235.1	1234.2	1233.3	1232.4	1230.8	1228.7	1226.5	1224.4	1222.2	1224.7
7.5°	1225.5	1225.0	1224.4	1223.9	1223.3	1222.2	1220.4	1218.6	1216.8	1215.0	1217.8
10°	1216.7	1216.4	1216.1	1215.8	1215.5	1214.5	1213.0	1211.5	1209.9	1208.4	1211.2
12.5°	1204.5	1204.5	1204.4	1204.3	1204.3	1203.7	1202.7	1201.6	1200.6	1199.5	1202.1
15°	1184.9	1185.2	1185.5	1185.8	1186.1	1185.8	1184.9	1184.0	1183.0	1182.1	1184.9
17.5°	1158.1	1159.0	1159.9	1160.8	1161.8	1162.1	1161.9	1161.8	1161.6	1161.4	1164.2
20°	1139.3	1140.2	1141.1	1142.0	1143.0	1143.6	1143.9	1144.2	1144.5	1144.8	1147.9
22.5°	1118.2	1119.4	1120.6	1121.8	1122.9	1123.8	1124.3	1124.9	1125.4	1126.0	1129.1
25°	1084.0	1085.8	1087.6	1089.5	1091.3	1092.7	1093.6	1094.6	1095.5	1096.4	1099.8
27.5°	1045.8	1048.5	1051.2	1053.9	1056.6	1058.7	1060.1	1061.5	1062.9	1064.3	1067.5
30°	1020.4	1022.8	1025.3	1027.7	1030.2	1032.5	1034.6	1036.8	1038.9	1041.1	1044.5
32.5°	992.7	995.7	998.6	1001.6	1004.5	1007.2	1009.6	1012.0	1014.4	1016.8	1020.6
35°	948.5	952.2	955.8	959.5	963.2	966.6	969.7	972.7	975.8	978.9	983.2
37.5°	903.9	908.2	912.4	916.7	920.9	924.9	928.7	932.5	936.4	940.2	944.5
40°	875.2	879.2	883.2	887.2	891.2	895.3	899.6	903.9	908.2	912.5	917.1
42.5°	842.0	846.5	851.0	855.5	859.9	864.7	869.7	874.8	879.8	884.9	890.0
45°	790.8	796.7	802.5	808.4	814.2	820.0	825.9	831.7	837.5	843.4	848.6
47.5°	741.9	747.9	753.9	760.0	766.0	772.4	779.1	785.9	792.7	799.4	804.8
50°	706.5	713.3	720.0	726.8	733.5	740.3	747.1	753.8	760.6	767.3	773.5
52.5°	671.1	677.9	684.6	691.4	698.2	705.4	713.1	720.9	728.6	736.4	742.5
55°	619.4	625.9	632.3	638.8	645.2	653.0	662.3	671.5	680.7	689.9	696.1
57.5°	561.6	569.6	577.6	585.6	593.6	602.1	611.3	620.5	629.6	638.8	646.1
60°	524.0	532.0	540.0	548.0	556.0	565.0	575.2	585.3	595.4	605.6	612.6
62.5°	487.5	496.2	505.0	513.7	522.4	531.8	542.0	552.1	562.3	572.4	579.5
65°	428.6	438.4	448.3	458.1	467.9	478.1	488.5	499.0	509.4	519.9	527.5
67.5°	371.9	382.4	392.8	403.3	413.7	424.5	435.7	446.9	458.1	469.3	477.1
70°	333.2	343.7	354.1	364.5	375.0	386.1	397.7	409.4	421.1	432.8	441.1
72.5°	295.6	306.3	317.0	327.7	338.4	349.9	362.3	374.7	387.2	399.6	407.6
75°	237.8	249.2	260.5	271.9	283.3	295.4	308.3	321.2	334.1	347.0	355.6
77.5°	183.9	195.9	208.0	220.0	232.1	244.8	258.4	271.9	285.4	298.9	307.6
80°	150.7	163.0	175.3	187.6	199.9	212.8	226.3	239.8	253.3	266.8	276.1
82.5°	117.5	130.3	143.1	155.9	168.6	181.8	195.3	208.8	222.4	235.9	245.3
85°	73.3	86.2	99.1	112.0	124.9	138.3	152.1	165.9	179.7	193.6	202.8
87.5°	41.6	54.7	67.8	80.9	94.0	107.5	121.4	135.3	149.1	163.0	172.2
90°	25.6	40.7	55.9	71.0	86.1	101.3	116.6	131.9	147.2	162.4	172.9
92.5°	35.7	46.9	58.1	69.3	80.5	93.8	109.0	124.3	139.6	154.9	165.1
95°	81.9	83.2	84.6	86.0	87.3	94.4	107.3	120.1	133.0	145.8	155.7
97.5°	152.0	166.2	180.4	194.6	208.8	207.8	191.4	175.1	158.7	142.4	150.6
100°	205.8	218.4	231.0	243.7	256.3	250.8	227.2	203.5	179.9	156.2	160.1
102.5°	267.1	277.5	287.9	298.4	308.8	317.5	324.6	331.7	338.8	345.9	306.6
105°	362.2	369.9	377.6	385.3	393.0	403.1	415.8	428.5	441.1	453.8	463.8
107.5°	452.8	458.6	464.4	470.2	476.0	485.2	497.7	510.2	522.7	535.2	543.9
110°	513.0	518.1	523.2	528.3	533.3	542.0	554.3	566.6	578.9	591.2	598.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	571.4	576.6	581.8	587.0	592.2	600.3	611.3	622.3	633.3	644.3	651.0
115°	661.3	664.9	668.4	671.9	675.5	682.0	691.6	701.2	710.8	720.3	727.6
117.5°	743.5	746.2	748.9	751.6	754.3	760.5	770.2	780.0	789.7	799.4	805.7
120°	798.2	800.2	802.1	804.1	806.0	811.3	820.0	828.6	837.3	845.9	852.6
122.5°	850.3	851.1	851.9	852.7	853.5	858.3	867.0	875.8	884.6	893.4	899.8
125°	923.5	924.2	924.9	925.7	926.4	930.3	937.5	944.7	951.8	959.0	965.6
127.5°	993.8	993.8	993.7	993.7	993.6	997.2	1004.3	1011.3	1018.4	1025.5	1030.9
130°	1038.3	1038.2	1038.2	1038.1	1038.1	1040.9	1046.6	1052.3	1058.0	1063.7	1069.5
132.5°	1080.1	1080.3	1080.4	1080.6	1080.7	1083.3	1088.2	1093.1	1098.0	1102.9	1108.5
135°	1141.5	1141.2	1141.0	1140.7	1140.4	1141.9	1145.1	1148.3	1151.5	1154.6	1160.1
137.5°	1197.0	1196.8	1196.6	1196.4	1196.2	1197.2	1199.4	1201.6	1203.7	1205.9	1211.0
140°	1233.3	1233.5	1233.7	1233.9	1234.1	1234.6	1235.5	1236.3	1237.1	1237.9	1242.7
142.5°	1264.7	1265.6	1266.4	1267.3	1268.2	1268.7	1268.8	1268.9	1269.0	1269.2	1273.2
145°	1314.4	1314.9	1315.3	1315.8	1316.3	1316.5	1316.5	1316.5	1316.5	1316.5	1318.6
147.5°	1354.1	1355.3	1356.4	1357.5	1358.7	1359.1	1358.9	1358.6	1358.3	1358.1	1358.5
150°	1382.9	1383.7	1384.4	1385.1	1385.8	1386.1	1385.8	1385.6	1385.3	1385.0	1385.0
152.5°	1406.0	1406.8	1407.5	1408.3	1409.1	1409.2	1408.8	1408.3	1407.8	1407.4	1407.8
155°	1439.7	1439.9	1440.2	1440.4	1440.7	1440.4	1439.7	1438.9	1438.1	1437.3	1438.4
157.5°	1468.2	1468.1	1467.9	1467.8	1467.6	1467.1	1466.2	1465.4	1464.5	1463.6	1464.9
160°	1485.0	1484.2	1483.4	1482.7	1481.9	1481.4	1481.1	1480.8	1480.6	1480.3	1481.9
162.5°	1499.8	1498.9	1497.9	1496.9	1495.9	1495.3	1495.0	1494.8	1494.5	1494.3	1495.8
165°	1518.7	1517.4	1516.1	1514.8	1513.5	1512.9	1512.9	1512.9	1512.9	1512.9	1514.9
167.5°	1533.5	1532.2	1530.9	1529.5	1528.2	1527.4	1527.3	1527.1	1527.0	1526.8	1529.1
170°	1541.9	1540.4	1538.8	1537.3	1535.7	1535.1	1535.3	1535.6	1535.8	1536.1	1538.2
172.5°	1547.5	1545.9	1544.4	1542.8	1541.3	1540.6	1540.9	1541.2	1541.4	1541.7	1543.7
175°	1553.5	1552.0	1550.4	1548.9	1547.3	1546.7	1546.9	1547.2	1547.5	1547.7	1550.0
177.5°	1556.3	1554.9	1553.4	1552.0	1550.5	1550.0	1550.4	1550.8	1551.3	1551.7	1553.3
180°	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7
2.5°	1230.4	1232.1	1233.8	1234.5	1234.3	1234.0	1233.8	1233.6
5°	1227.1	1229.6	1232.1	1233.1	1232.8	1232.5	1232.2	1231.9
7.5°	1220.6	1223.3	1226.1	1227.3	1227.0	1226.7	1226.4	1226.1
10°	1213.9	1216.7	1219.5	1220.7	1220.4	1220.1	1219.8	1219.5
12.5°	1204.6	1207.1	1209.6	1210.9	1210.8	1210.7	1210.7	1210.6
15°	1187.7	1190.4	1193.2	1194.4	1194.1	1193.8	1193.5	1193.2
17.5°	1167.0	1169.9	1172.7	1174.0	1173.7	1173.5	1173.2	1173.0
20°	1150.9	1154.0	1157.1	1158.6	1158.6	1158.6	1158.6	1158.6
22.5°	1132.1	1135.2	1138.3	1140.1	1140.6	1141.0	1141.5	1142.0
25°	1103.2	1106.5	1109.9	1111.8	1112.1	1112.4	1112.7	1113.0
27.5°	1070.6	1073.7	1076.9	1078.6	1079.0	1079.4	1079.7	1080.1
30°	1047.9	1051.2	1054.6	1056.6	1057.2	1057.8	1058.5	1059.1
32.5°	1024.5	1028.4	1032.3	1034.5	1035.1	1035.7	1036.3	1037.0
35°	987.5	991.8	996.1	998.7	999.6	1000.5	1001.5	1002.4
37.5°	948.9	953.3	957.6	960.3	961.3	962.3	963.2	964.2
40°	921.7	926.3	931.0	933.9	935.1	936.3	937.6	938.8
42.5°	895.1	900.2	905.3	908.3	909.3	910.3	911.3	912.2
45°	853.8	859.1	864.3	867.7	869.2	870.7	872.3	873.8
47.5°	810.2	815.6	821.1	824.7	826.5	828.4	830.2	832.1
50°	779.6	785.8	791.9	795.9	797.8	799.6	801.4	803.3
52.5°	748.7	754.8	761.0	764.9	766.8	768.6	770.5	772.3
55°	702.2	708.4	714.5	718.5	720.3	722.2	724.0	725.9
57.5°	653.4	660.7	668.0	672.5	674.2	676.0	677.7	679.4
60°	619.7	626.8	633.8	638.6	641.1	643.5	646.0	648.4
62.5°	586.5	593.6	600.7	605.4	607.9	610.3	612.8	615.3
65°	535.2	542.9	550.6	555.7	558.1	560.6	563.0	565.5
67.5°	484.9	492.7	500.5	505.6	508.0	510.4	512.8	515.2
70°	449.3	457.6	465.9	471.2	473.3	475.5	477.6	479.8
72.5°	415.7	423.7	431.8	437.0	439.4	441.8	444.2	446.6
75°	364.2	372.8	381.4	387.1	389.9	392.7	395.4	398.2
77.5°	316.4	325.1	333.8	339.7	342.6	345.6	348.5	351.5
80°	285.3	294.5	303.7	309.5	312.0	314.5	316.9	319.4
82.5°	254.8	264.3	273.7	279.8	282.5	285.2	287.9	290.6
85°	212.0	221.2	230.4	236.6	239.7	242.7	245.8	248.9
87.5°	181.4	190.7	199.9	205.9	208.7	211.5	214.3	217.1
90°	183.4	193.8	204.3	211.0	214.0	216.9	219.9	222.9
92.5°	175.3	185.5	195.7	202.1	204.7	207.2	209.8	212.4
95°	165.5	175.4	185.2	191.7	194.7	197.7	200.7	203.8
97.5°	158.8	167.0	175.2	180.8	183.7	186.6	189.5	192.4
100°	164.0	167.9	171.8	175.0	177.4	179.8	182.2	184.6
102.5°	267.3	228.0	188.7	170.2	172.7	175.1	177.6	180.0
105°	473.8	483.8	493.8	495.4	488.5	481.7	474.9	468.0
107.5°	552.6	561.3	570.0	576.0	579.1	582.3	585.5	588.7
110°	606.4	614.0	621.6	627.0	630.2	633.4	636.7	639.9





TEST NUMBER: P332664

CATALOG NUMBER: S124DIP-S1020D1205U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	657.7	664.4	671.1	676.2	679.6	683.1	686.5	690.0
115°	734.9	742.2	749.4	754.1	756.3	758.4	760.6	762.7
117.5°	812.0	818.3	824.6	828.9	831.2	833.6	835.9	838.3
120°	859.3	865.9	872.6	876.9	878.8	880.8	882.7	884.6
122.5°	906.3	912.8	919.2	923.3	925.0	926.7	928.4	930.1
125°	972.2	978.8	985.4	989.8	991.9	994.0	996.1	998.2
127.5°	1036.3	1041.6	1047.0	1050.6	1052.5	1054.4	1056.3	1058.2
130°	1075.3	1081.0	1086.8	1090.6	1092.5	1094.3	1096.2	1098.0
132.5°	1114.0	1119.6	1125.1	1128.7	1130.3	1132.0	1133.6	1135.2
135°	1165.5	1170.9	1176.4	1180.3	1182.6	1185.0	1187.3	1189.7
137.5°	1216.0	1221.1	1226.1	1229.3	1230.7	1232.1	1233.5	1234.9
140°	1247.5	1252.2	1257.0	1260.3	1262.1	1263.9	1265.7	1267.5
142.5°	1277.3	1281.4	1285.5	1288.2	1289.5	1290.8	1292.2	1293.5
145°	1320.7	1322.8	1324.9	1326.8	1328.6	1330.3	1332.1	1333.8
147.5°	1359.0	1359.4	1359.9	1360.7	1362.0	1363.2	1364.5	1365.7
150°	1385.0	1385.0	1385.0	1385.2	1385.4	1385.7	1386.0	1386.2
152.5°	1408.2	1408.6	1409.0	1409.1	1409.0	1408.8	1408.7	1408.5
155°	1439.4	1440.4	1441.5	1441.6	1440.8	1440.0	1439.3	1438.5
157.5°	1466.3	1467.6	1469.0	1469.0	1467.6	1466.3	1464.9	1463.6
160°	1483.4	1485.0	1486.5	1486.5	1485.0	1483.4	1481.9	1480.3
162.5°	1497.4	1498.9	1500.5	1500.4	1498.6	1496.9	1495.1	1493.3
165°	1517.0	1519.1	1521.1	1521.0	1518.7	1516.3	1514.0	1511.7
167.5°	1531.4	1533.6	1535.9	1535.7	1533.2	1530.6	1528.0	1525.4
170°	1540.2	1542.3	1544.4	1544.1	1541.5	1538.9	1536.4	1533.8
172.5°	1545.8	1547.9	1549.9	1549.6	1546.8	1544.0	1541.2	1538.4
175°	1552.4	1554.7	1557.0	1556.6	1553.5	1550.4	1547.3	1544.2
177.5°	1555.0	1556.6	1558.3	1557.9	1555.4	1552.9	1550.4	1548.0
180°	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5

(END OF REPORT)