

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: P332068-940

Luminaire Tested: **S123DIP-S1165D805U940-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332068-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-17,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIP-S1165D805U940-4F0-1E-UDD-D4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 805 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6917.8 lumens  
Efficiency: N/A  
Efficacy: 114.0 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

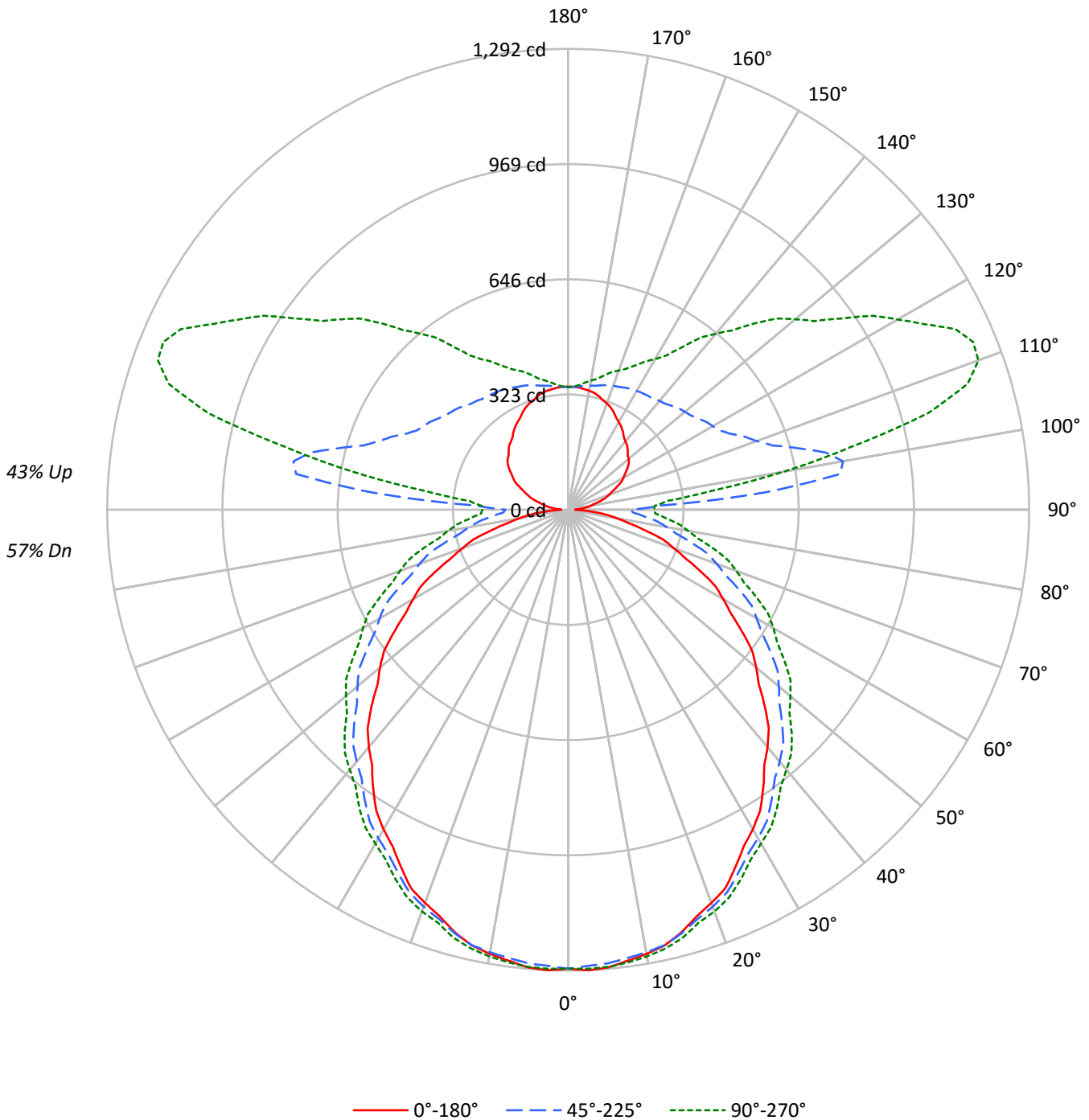
Input Watts (W): 60.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	109	109	109	109	101	101	101	101	87	87	87	75	75	75	63	63	63	57
1	98	93	89	85	91	87	83	80	75	72	69	64	62	60	54	52	51	46
2	89	81	74	68	82	75	69	64	65	60	56	55	52	49	46	44	42	37
3	81	71	63	56	75	66	59	53	57	51	47	49	44	41	41	38	35	31
4	74	62	54	47	68	58	51	45	50	44	40	43	38	35	36	33	30	26
5	68	55	47	40	63	52	44	38	45	39	34	39	34	30	33	29	26	23
6	62	50	41	35	58	46	39	33	40	34	30	35	30	26	29	26	23	20
7	58	45	36	31	53	42	34	29	37	30	26	32	27	23	27	23	20	17
8	53	41	33	27	50	38	31	26	33	27	23	29	24	20	25	21	18	16
9	50	37	29	24	46	35	28	23	31	25	21	27	22	18	23	19	16	14
10	46	34	27	22	43	32	25	21	28	22	19	25	20	17	21	17	15	13

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

	0°	45°	90°
0°	13850	13850	13850
5°	13894	13501	13509
10°	13769	13190	13124
15°	13592	12837	12705
20°	13338	12435	12243
25°	13025	11969	11757
30°	12705	11553	11264
35°	12344	11111	10871
40°	12002	10709	10450
45°	11622	10323	10113
50°	11245	9942	9744
55°	10831	9553	9410
60°	10426	9156	9068
65°	10013	8733	8661
70°	9389	8257	8243
75°	8597	7713	7819
80°	7695	7181	7334
85°	6853	6811	7053



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	122.0	1.8
10°-20°	347.7	5.0
20°-30°	520.1	7.5
30°-40°	621.1	9.0
40°-50°	649.8	9.4
50°-60°	609.8	8.8
60°-70°	509.3	7.4
70°-80°	364.4	5.3
80°-90°	220.0	3.2
90°-100°	328.0	4.7
100°-110°	642.9	9.3
110°-120°	600.8	8.7
120°-130°	464.1	6.7
130°-140°	352.9	5.1
140°-150°	254.3	3.7
150°-160°	174.7	2.5
160°-170°	102.6	1.5
170°-180°	33.4	0.5
0°-30°	989.8	14.3
0°-40°	1610.9	23.3
0°-60°	2870.5	41.5
0°-90°	3964.2	57.3
90°-120°	1571.7	22.7
90°-150°	2642.9	38.2
90°-180°	2954.0	42.7
0°-180°	6917.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1287	1287	1287	1287	1287	
5°	1288	1285	1277	1287	1287	122
15°	1226	1230	1229	1242	1242	345
25°	1107	1121	1126	1143	1144	510
35°	953	975	994	1014	1020	596
45°	779	813	848	874	886	601
55°	594	641	691	727	740	532
65°	411	466	527	568	583	406
75°	223	289	359	403	422	238
85°	69	139	213	259	275	72
90°	20	95	176	224	240	14
95°	39	148	552	301	277	38
105°	92	166	666	1123	1044	97
115°	150	204	503	1047	1198	149
125°	203	241	445	798	935	181
135°	236	280	411	638	738	182
145°	267	304	390	501	556	167
155°	302	326	377	429	447	139
165°	330	339	361	383	390	93
175°	344	344	346	351	351	33
180°	344	344	344	344	344	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7
2.5°	1292.4	1291.6	1290.8	1290.1	1289.3	1288.0	1286.0	1284.0	1282.0	1280.1	1282.0
5°	1288.2	1287.5	1286.9	1286.3	1285.7	1284.4	1282.5	1280.7	1278.8	1276.9	1279.4
7.5°	1275.5	1275.7	1275.8	1275.9	1276.0	1275.2	1273.4	1271.6	1269.8	1267.9	1271.0
10°	1264.4	1265.0	1265.6	1266.2	1266.9	1266.3	1264.8	1263.2	1261.7	1260.1	1263.2
12.5°	1250.9	1251.7	1252.6	1253.5	1254.4	1254.3	1253.2	1252.1	1251.1	1250.0	1252.9
15°	1226.5	1227.4	1228.3	1229.3	1230.2	1230.6	1230.2	1229.9	1229.6	1229.3	1232.4
17.5°	1195.6	1197.5	1199.4	1201.2	1203.1	1204.0	1203.9	1203.7	1203.6	1203.5	1206.3
20°	1173.2	1175.1	1177.0	1178.8	1180.7	1182.0	1182.6	1183.2	1183.8	1184.5	1187.2
22.5°	1149.7	1151.6	1153.4	1155.3	1157.2	1158.5	1159.4	1160.3	1161.1	1162.0	1165.6
25°	1107.3	1110.4	1113.6	1116.7	1119.8	1121.8	1122.8	1123.6	1124.6	1125.5	1129.6
27.5°	1064.7	1068.3	1071.8	1075.4	1078.9	1081.7	1083.7	1085.7	1087.7	1089.7	1093.1
30°	1034.5	1038.5	1042.5	1046.6	1050.6	1053.9	1056.4	1058.9	1061.4	1063.9	1067.6
32.5°	1000.8	1005.3	1009.9	1014.4	1019.0	1022.9	1026.1	1029.4	1032.6	1035.8	1039.8
35°	953.1	958.1	963.1	968.1	973.1	977.6	981.7	985.7	989.7	993.8	998.4
37.5°	902.7	908.3	913.9	919.5	925.1	930.4	935.4	940.4	945.4	950.4	955.6
40°	869.1	874.7	880.3	885.8	891.4	897.4	903.7	909.8	916.1	922.3	927.6
42.5°	832.1	838.9	845.8	852.6	859.4	866.1	872.6	879.0	885.6	892.1	897.9
45°	779.4	786.8	794.2	801.7	809.2	816.9	824.7	832.4	840.3	848.0	853.9
47.5°	724.1	732.5	741.0	749.6	758.0	766.7	775.6	784.5	793.4	802.4	809.0
50°	688.2	697.0	705.7	714.3	723.1	732.3	742.0	751.6	761.3	770.9	778.1
52.5°	650.1	659.3	668.5	677.8	687.0	697.0	707.6	718.2	728.9	739.5	747.0
55°	594.3	604.6	614.8	625.2	635.4	646.1	657.4	668.6	679.8	691.1	699.5
57.5°	539.9	550.6	561.3	572.0	582.8	594.3	606.5	618.8	631.1	643.4	651.8
60°	501.8	513.0	524.2	535.5	546.6	558.7	571.4	584.2	597.0	609.8	618.5
62.5°	465.9	477.4	488.8	500.3	511.8	524.2	537.8	551.3	564.8	578.4	587.0
65°	410.7	422.8	435.0	447.1	459.3	472.3	485.9	499.6	513.4	527.0	536.4
67.5°	354.6	367.6	380.4	393.3	406.2	419.6	433.5	447.5	461.5	475.5	485.6
70°	315.4	328.8	342.1	355.5	369.0	383.2	398.1	413.0	428.0	442.9	452.9
72.5°	279.5	292.9	306.3	319.7	333.1	347.5	362.9	378.4	393.9	409.3	419.5
75°	222.8	237.6	252.2	266.8	281.4	296.5	312.1	327.7	343.2	358.8	369.1
77.5°	173.5	188.3	203.0	217.8	232.6	247.8	263.5	279.2	294.9	310.6	321.5
80°	138.8	154.0	169.3	184.6	199.8	215.5	231.8	248.0	264.1	280.4	291.0
82.5°	108.5	124.0	139.6	155.1	170.5	186.5	203.0	219.5	235.9	252.3	262.9
85°	68.7	84.3	99.9	115.4	131.0	147.0	163.5	180.0	196.5	213.0	223.6
87.5°	37.5	53.3	69.1	85.1	100.9	116.8	133.1	149.5	165.8	182.1	192.5
90°	19.6	36.3	53.0	70.3	86.9	103.9	121.9	139.9	157.8	175.8	185.7
92.5°	25.8	43.7	63.3	82.5	102.2	127.2	161.0	206.7	251.7	256.6	240.7
95°	39.1	53.3	73.2	97.2	127.4	168.4	242.9	362.0	491.6	552.1	483.8
97.5°	54.2	65.8	82.8	104.1	132.9	175.0	246.3	378.0	583.2	769.4	823.4
100°	64.2	74.9	89.7	109.4	136.2	175.5	238.6	356.1	553.8	782.1	928.5
102.5°	74.8	85.0	98.4	116.5	140.5	177.0	234.9	336.5	513.9	739.1	927.1
105°	92.1	101.7	113.3	129.1	149.9	181.9	233.0	318.2	463.3	665.7	874.4
107.5°	109.1	117.5	128.0	142.5	161.3	190.9	236.7	309.0	428.0	599.8	789.8
110°	121.4	129.0	138.1	151.4	168.9	197.4	241.3	306.7	412.6	562.4	737.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	133.6	140.4	148.4	160.7	177.2	204.4	245.5	306.6	400.7	534.5	689.4
115°	149.9	156.5	164.3	175.0	190.6	217.0	254.7	308.4	390.7	503.0	631.2
117.5°	167.4	172.9	178.7	187.3	203.0	226.8	263.5	312.0	382.9	479.8	591.6
120°	178.5	182.2	187.2	195.7	210.5	233.9	269.2	315.8	379.8	468.1	570.1
122.5°	189.1	192.0	196.3	204.6	218.1	242.0	276.3	319.5	378.5	458.6	551.4
125°	202.9	204.3	208.5	216.2	229.3	252.7	286.1	325.8	376.7	445.1	526.2
127.5°	214.5	216.2	221.1	228.6	242.9	265.3	296.4	331.4	376.6	434.1	502.8
130°	221.7	223.5	229.4	237.6	251.8	273.7	302.8	335.6	376.7	426.9	489.2
132.5°	226.1	228.7	235.5	245.5	260.1	280.8	308.3	339.1	375.7	420.6	476.1
135°	235.7	238.1	245.5	255.7	269.9	290.3	315.4	342.5	373.8	411.4	458.2
137.5°	244.6	247.3	254.5	265.5	279.7	297.9	320.7	345.2	371.9	403.1	442.5
140°	249.6	253.1	260.0	271.2	285.2	303.0	324.2	346.1	370.7	398.1	432.7
142.5°	256.3	259.0	266.3	276.1	289.7	306.0	325.8	346.4	368.6	392.5	423.3
145°	267.0	268.8	274.7	284.9	296.4	312.4	330.5	349.3	368.8	389.7	414.6
147.5°	276.5	277.8	283.9	292.9	304.3	318.1	334.7	351.5	368.8	387.1	406.9
150°	283.7	284.5	290.0	299.1	308.8	321.4	337.4	352.0	368.8	384.9	402.3
152.5°	291.0	291.1	296.7	304.7	313.3	325.3	339.1	353.2	367.1	382.0	397.8
155°	301.8	301.8	306.0	313.0	320.7	330.5	342.3	353.5	365.3	377.2	391.1
157.5°	310.5	311.0	314.4	320.6	327.1	334.7	344.1	354.2	362.9	372.8	383.6
160°	317.2	317.2	320.0	325.6	330.5	337.4	345.8	354.2	361.9	369.5	378.5
162.5°	322.3	322.3	324.5	329.0	333.2	339.1	346.3	353.6	359.6	366.1	373.5
165°	329.8	329.0	330.5	333.9	336.7	341.6	347.1	352.0	356.2	361.1	366.7
167.5°	335.5	334.7	335.4	338.0	339.9	343.0	347.1	351.0	352.9	356.1	360.2
170°	338.9	337.4	338.1	340.2	341.6	343.0	346.5	349.3	350.7	352.8	356.2
172.5°	341.1	340.2	340.4	341.9	342.7	343.6	346.5	348.7	349.0	350.0	352.3
175°	343.7	343.0	342.3	343.7	343.7	344.4	345.8	347.1	346.5	346.5	347.9
177.5°	344.9	344.4	343.8	344.4	344.4	344.4	344.9	346.1	344.9	344.4	344.9
180°	344.4	344.4	344.4	344.4	344.4	344.4	344.4	344.4	344.4	344.4	344.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7
2.5°	1284.0	1286.0	1288.0	1288.9	1288.6	1288.3	1288.1	1287.9
5°	1281.9	1284.4	1286.9	1288.0	1287.7	1287.4	1287.1	1286.7
7.5°	1274.2	1277.3	1280.4	1281.8	1281.4	1281.0	1280.7	1280.3
10°	1266.3	1269.4	1272.6	1273.8	1273.2	1272.6	1271.9	1271.3
12.5°	1255.8	1258.6	1261.5	1262.6	1261.9	1261.3	1260.7	1260.1
15°	1235.5	1238.6	1241.7	1243.1	1242.9	1242.5	1242.2	1241.9
17.5°	1209.1	1211.9	1214.7	1215.8	1215.5	1215.0	1214.6	1214.2
20°	1190.0	1192.8	1195.6	1197.2	1197.5	1197.8	1198.1	1198.5
22.5°	1169.1	1172.7	1176.2	1177.9	1177.7	1177.5	1177.3	1177.1
25°	1133.6	1137.7	1141.7	1143.8	1143.8	1143.8	1143.8	1143.8
27.5°	1096.6	1100.1	1103.6	1105.5	1105.7	1106.0	1106.3	1106.5
30°	1071.4	1075.1	1078.8	1080.7	1080.7	1080.7	1080.7	1080.7
32.5°	1043.8	1047.8	1051.8	1054.2	1054.9	1055.7	1056.4	1057.1
35°	1003.2	1007.8	1012.4	1015.5	1016.7	1018.0	1019.2	1020.4
37.5°	960.9	966.3	971.5	974.6	975.7	976.7	977.7	978.7
40°	932.9	938.2	943.5	946.7	948.0	949.2	950.5	951.7
42.5°	903.7	909.5	915.3	919.0	920.7	922.5	924.2	926.0
45°	859.9	865.8	871.7	875.9	878.4	880.9	883.4	885.8
47.5°	815.6	822.3	829.0	833.3	835.2	837.1	839.1	841.0
50°	785.2	792.5	799.6	804.2	806.5	808.6	810.8	813.0
52.5°	754.4	761.8	769.2	774.3	776.9	779.6	782.3	785.0
55°	707.8	716.2	724.7	730.1	732.6	735.1	737.6	740.1
57.5°	660.3	668.8	677.3	683.0	685.9	688.8	691.8	694.6
60°	627.1	635.9	644.6	650.7	654.2	657.5	660.9	664.4
62.5°	595.8	604.5	613.2	619.2	622.3	625.5	628.7	631.9
65°	545.7	555.1	564.5	570.6	573.7	576.8	580.0	583.1
67.5°	495.9	506.1	516.3	522.7	525.4	528.0	530.6	533.2
70°	462.9	472.9	482.8	489.4	492.5	495.6	498.6	501.8
72.5°	429.7	440.0	450.1	456.8	459.9	463.1	466.2	469.3
75°	379.4	389.7	399.9	407.0	410.7	414.5	418.2	421.9
77.5°	332.3	343.1	354.0	360.8	363.7	366.6	369.4	372.3
80°	301.5	312.1	322.7	329.6	332.7	335.8	338.9	342.0
82.5°	273.5	284.1	294.6	301.5	304.6	307.7	310.9	314.0
85°	234.3	244.9	255.4	262.3	265.4	268.5	271.6	274.7
87.5°	203.2	214.0	224.7	231.8	234.8	238.1	241.3	244.3
90°	197.0	208.3	219.5	227.8	230.2	234.1	237.9	240.3
92.5°	228.8	227.0	231.9	234.9	236.5	237.3	240.9	242.5
95°	409.0	337.9	310.6	291.9	281.7	278.6	276.8	277.1
97.5°	772.8	657.6	577.0	499.8	451.5	423.2	407.5	404.7
100°	962.0	914.5	842.0	749.0	681.8	634.0	609.9	613.8
102.5°	1020.0	1027.0	988.2	931.4	879.8	842.6	823.0	810.0
105°	1028.9	1107.3	1129.3	1117.0	1087.6	1064.0	1044.5	1043.7
107.5°	963.4	1084.9	1154.3	1184.7	1188.0	1181.9	1177.1	1173.4
110°	904.8	1041.3	1137.2	1191.2	1213.3	1221.4	1222.4	1223.5





TEST NUMBER: P332068-940

CATALOG NUMBER: S123DIP-S1165D805U940-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	845.8	984.6	1090.9	1159.0	1197.4	1217.5	1225.5	1228.5
115°	767.6	896.3	1006.3	1087.3	1142.1	1175.3	1191.7	1197.7
117.5°	707.8	820.0	919.4	1001.5	1058.4	1096.0	1118.5	1125.6
120°	675.6	776.9	867.6	942.7	1000.0	1041.3	1060.2	1066.5
122.5°	648.8	740.9	825.4	895.3	946.4	983.7	1004.3	1011.8
125°	612.2	694.7	768.2	828.3	875.1	907.9	927.6	934.6
127.5°	579.1	653.0	719.5	774.4	816.3	844.6	862.5	869.1
130°	557.9	626.5	688.9	740.2	779.0	806.0	822.5	830.0
132.5°	537.8	601.2	659.4	708.6	745.4	772.6	787.6	793.7
135°	510.5	565.6	616.5	659.8	695.5	718.0	732.1	738.5
137.5°	485.2	530.7	574.7	612.3	642.7	665.4	677.5	682.3
140°	470.2	510.4	548.6	581.7	609.7	630.8	643.5	644.4
142.5°	455.2	489.9	523.1	552.1	576.2	595.0	606.6	607.5
145°	439.3	464.8	489.6	511.7	530.4	546.3	553.0	555.7
147.5°	426.5	445.5	464.2	479.6	493.9	504.9	511.3	513.0
150°	418.3	434.4	449.0	462.5	473.6	481.9	486.7	487.3
152.5°	412.1	426.0	438.9	450.0	458.3	465.6	468.2	468.3
155°	403.0	414.1	424.5	432.9	439.2	444.8	446.2	446.8
157.5°	393.2	402.5	410.6	417.1	422.6	426.8	427.9	427.8
160°	387.6	395.3	402.3	407.2	412.1	416.2	416.2	415.5
162.5°	380.9	387.4	393.9	398.2	401.4	405.0	405.0	404.4
165°	372.3	376.5	381.4	384.9	387.6	390.4	389.7	389.7
167.5°	364.7	367.9	370.8	373.3	374.5	376.5	375.8	375.8
170°	359.7	361.9	364.6	366.0	366.7	368.1	367.4	367.4
172.5°	355.3	356.8	359.0	359.9	360.0	361.4	360.2	359.6
175°	349.3	350.0	351.3	351.3	351.3	352.0	351.3	350.7
177.5°	345.5	346.1	346.6	346.6	346.1	346.6	345.5	345.5
180°	344.4	344.4	344.4	344.4	344.4	344.4	344.4	344.4

(END OF REPORT)