

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: P332682-830

Luminaire Tested: **S124DIP-S1195D590U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332682-830  
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-S1195D590U830-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 590 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6807.2 lumens  
Efficiency: N/A  
Efficacy: 123.5 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

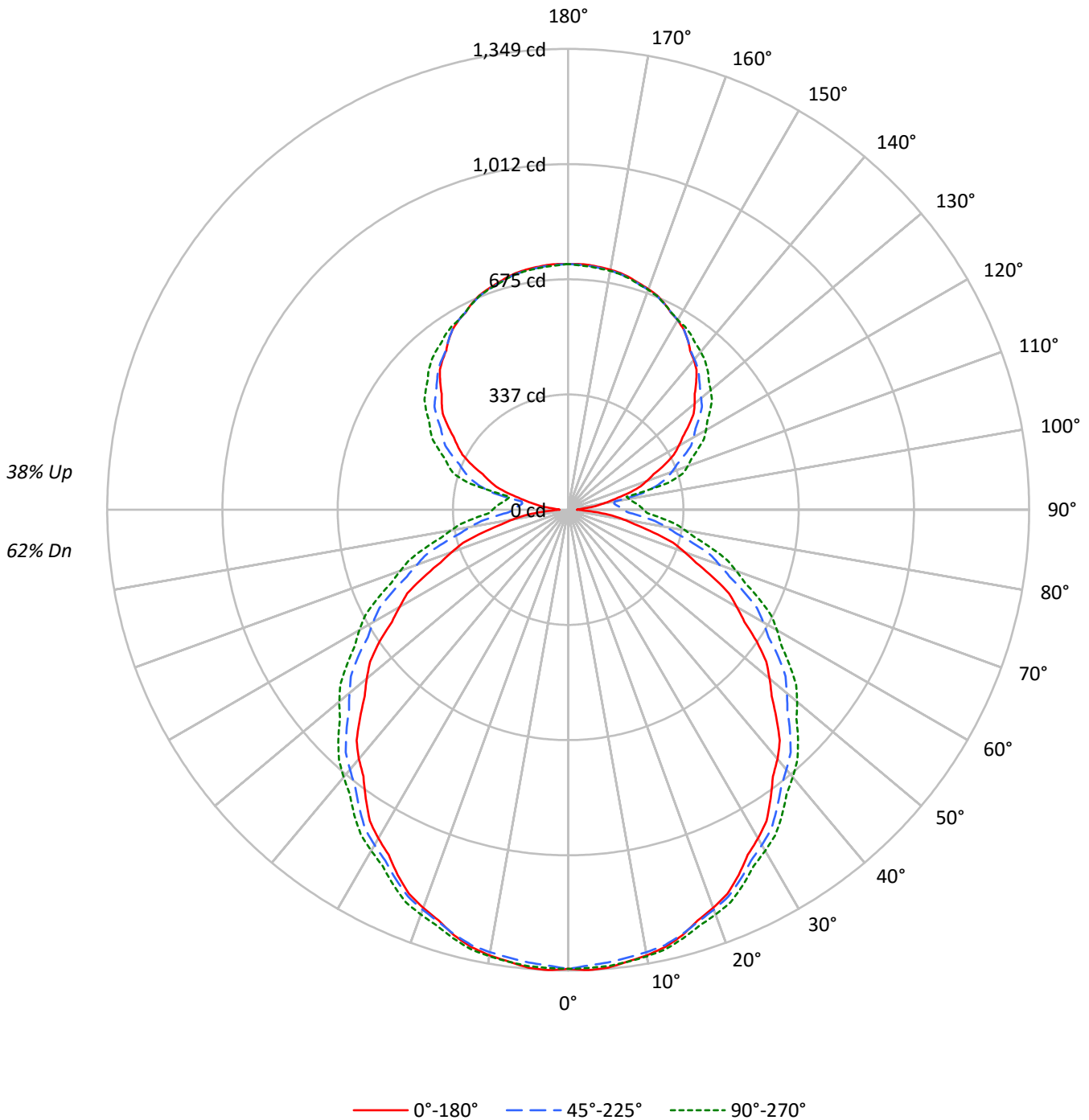
Input Watts (W): 55.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20						20								20		
RC	80					70						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	55	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°	10851	10851	10851
5°	10884	10604	10635
10°	10818	10431	10423
15°	10721	10231	10174
20°	10574	10009	9931
25°	10410	9760	9665
30°	10231	9513	9392
35°	10029	9259	9152
40°	9868	9019	8902
45°	9628	8797	8688
50°	9425	8541	8461
55°	9216	8300	8195
60°	8889	7992	7953
65°	8532	7663	7655
70°	8098	7286	7308
75°	7493	6872	6995
80°	6823	6474	6686
85°	5963	6123	6505



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	127.3	1.9
10°-20°	364.7	5.4
20°-30°	551.4	8.1
30°-40°	667.1	9.8
40°-50°	705.3	10.4
50°-60°	663.8	9.8
60°-70°	550.7	8.1
70°-80°	386.8	5.7
80°-90°	220.8	3.2
90°-100°	154.4	2.3
100°-110°	252.9	3.7
110°-120°	364.4	5.4
120°-130°	417.1	6.1
130°-140°	423.0	6.2
140°-150°	384.1	5.6
150°-160°	307.2	4.5
160°-170°	198.1	2.9
170°-180°	68.3	1.0
0°-30°	1043.3	15.3
0°-40°	1710.5	25.1
0°-60°	3079.5	45.2
0°-90°	4237.9	62.3
90°-120°	771.7	11.3
90°-150°	1995.9	29.3
90°-180°	2569.0	37.7
0°-180°	6807.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1344	1344	1344	1344	1344	
5°	1346	1341	1330	1342	1341	128
15°	1290	1291	1287	1300	1299	363
25°	1180	1189	1194	1209	1212	543
35°	1032	1050	1066	1086	1091	646
45°	861	890	918	943	951	665
55°	674	707	751	780	790	601
65°	467	515	566	602	616	462
75°	259	315	378	418	434	275
85°	80	143	211	254	271	85
90°	26	92	161	206	221	17
95°	49	82	143	185	201	54
105°	175	210	267	307	302	185
115°	311	328	374	407	419	307
125°	431	433	468	497	508	385
135°	530	530	542	566	577	409
145°	609	609	609	619	626	381
155°	666	667	665	667	666	307
165°	703	700	700	704	700	198
175°	719	716	716	720	714	68
180°	719	719	719	719	719	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1
2.5°	1348.9	1348.0	1347.3	1346.4	1345.7	1344.2	1342.0	1339.9	1337.8	1335.6	1337.5
5°	1345.5	1344.5	1343.5	1342.6	1341.5	1339.8	1337.5	1335.1	1332.8	1330.5	1333.1
7.5°	1334.1	1333.5	1332.8	1332.3	1331.7	1330.4	1328.5	1326.5	1324.6	1322.7	1325.7
10°	1324.5	1324.1	1323.8	1323.4	1323.1	1322.1	1320.4	1318.8	1317.1	1315.4	1318.4
12.5°	1311.2	1311.2	1311.1	1311.0	1311.0	1310.3	1309.2	1308.1	1306.9	1305.8	1308.5
15°	1289.9	1290.2	1290.5	1290.8	1291.2	1290.8	1289.9	1288.8	1287.8	1286.9	1289.9
17.5°	1260.7	1261.7	1262.6	1263.7	1264.6	1265.1	1264.9	1264.6	1264.4	1264.2	1267.3
20°	1240.2	1241.1	1242.2	1243.2	1244.2	1244.8	1245.2	1245.6	1245.9	1246.2	1249.5
22.5°	1217.3	1218.5	1219.8	1221.1	1222.4	1223.3	1223.9	1224.6	1225.1	1225.7	1229.1
25°	1180.0	1181.9	1184.0	1186.0	1188.0	1189.5	1190.5	1191.5	1192.5	1193.5	1197.2
27.5°	1138.4	1141.4	1144.3	1147.3	1150.2	1152.4	1154.0	1155.6	1157.1	1158.6	1162.0
30°	1110.7	1113.4	1116.1	1118.8	1121.4	1124.0	1126.2	1128.6	1131.0	1133.3	1137.0
32.5°	1080.6	1083.8	1087.0	1090.2	1093.4	1096.4	1099.0	1101.6	1104.2	1106.8	1111.1
35°	1032.5	1036.5	1040.5	1044.5	1048.5	1052.2	1055.6	1058.9	1062.2	1065.5	1070.3
37.5°	984.0	988.6	993.3	997.9	1002.5	1006.8	1011.0	1015.1	1019.3	1023.4	1028.2
40°	952.7	957.1	961.4	965.7	970.1	974.6	979.3	984.0	988.6	993.3	998.3
42.5°	916.6	921.4	926.3	931.2	936.1	941.3	946.8	952.3	957.7	963.3	968.8
45°	860.9	867.2	873.6	880.0	886.3	892.7	899.0	905.4	911.7	918.1	923.8
47.5°	807.6	814.2	820.8	827.3	833.9	840.8	848.2	855.5	862.9	870.2	876.1
50°	769.1	776.5	783.8	791.2	798.5	805.9	813.2	820.6	827.9	835.3	842.0
52.5°	730.6	737.9	745.3	752.6	760.0	767.9	776.3	784.8	793.1	801.6	808.3
55°	674.3	681.3	688.3	695.3	702.4	710.9	721.0	730.9	741.0	751.0	757.7
57.5°	611.3	620.1	628.8	637.4	646.1	655.4	665.4	675.4	685.4	695.3	703.3
60°	570.4	579.1	587.8	596.5	605.2	615.1	626.1	637.2	648.2	659.2	666.9
62.5°	530.7	540.2	549.7	559.2	568.6	578.9	590.0	601.1	612.1	623.1	630.7
65°	466.6	477.3	488.0	498.7	509.3	520.4	531.8	543.2	554.5	565.9	574.3
67.5°	404.8	416.2	427.6	438.9	450.3	462.1	474.3	486.4	498.6	510.9	519.3
70°	362.7	374.1	385.5	396.8	408.2	420.3	432.9	445.6	458.4	471.1	480.1
72.5°	321.8	333.4	345.1	356.7	368.3	380.9	394.5	407.9	421.4	435.0	443.7
75°	258.9	271.3	283.6	296.0	308.4	321.6	335.6	349.7	363.7	377.8	387.1
77.5°	200.2	213.3	226.4	239.5	252.6	266.6	281.3	296.0	310.7	325.4	334.9
80°	164.1	177.4	190.8	204.2	217.5	231.6	246.3	261.1	275.8	290.5	300.5
82.5°	127.9	141.9	155.8	169.7	183.6	197.9	212.6	227.3	242.0	256.7	267.0
85°	79.7	93.8	107.8	121.9	135.9	150.5	165.5	180.6	195.7	210.8	220.7
87.5°	44.9	58.8	72.7	86.6	100.5	114.9	129.7	144.6	159.4	174.3	184.1
90°	25.7	40.3	55.0	69.7	84.5	99.4	114.8	130.2	145.5	160.8	171.3
92.5°	29.7	41.8	53.9	66.0	78.1	91.8	107.2	122.5	137.8	153.2	163.3
95°	49.1	56.1	63.1	70.0	77.0	87.5	101.2	115.1	128.9	142.8	152.5
97.5°	80.6	92.6	104.6	116.7	128.7	134.8	135.1	135.3	135.5	135.8	144.7
100°	104.7	115.6	126.4	137.2	148.1	151.8	148.4	145.0	141.5	138.1	145.1
102.5°	133.1	142.3	151.6	160.7	169.9	179.8	190.5	201.1	211.7	222.3	209.2
105°	175.4	182.8	190.2	197.6	205.0	215.2	228.2	241.1	254.1	267.1	276.5
107.5°	217.2	223.0	228.8	234.7	240.5	249.7	262.2	274.8	287.2	299.7	308.5
110°	244.3	249.3	254.4	259.4	264.5	273.2	285.6	298.0	310.5	322.9	330.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	270.6	275.4	280.2	285.0	289.8	297.9	309.4	320.9	332.4	343.9	351.4
115°	311.2	314.5	317.9	321.3	324.7	331.7	342.2	352.8	363.4	374.0	381.5
117.5°	349.0	351.4	353.6	355.9	358.2	364.5	374.7	384.9	395.1	405.4	412.3
120°	373.6	375.1	376.6	378.1	379.6	385.1	394.7	404.3	413.9	423.5	430.4
122.5°	397.8	398.2	398.7	399.3	399.7	404.6	414.0	423.3	432.6	442.0	448.7
125°	430.7	430.9	431.0	431.2	431.3	435.5	443.6	451.8	459.9	468.0	474.7
127.5°	463.2	463.0	462.7	462.5	462.3	465.7	472.7	479.7	486.5	493.5	499.5
130°	483.1	482.8	482.6	482.4	482.2	484.9	490.6	496.3	502.0	507.7	513.9
132.5°	502.4	502.3	502.2	502.0	501.9	504.2	509.0	513.7	518.4	523.1	529.0
135°	529.9	529.8	529.7	529.5	529.4	530.7	533.6	536.4	539.2	542.1	547.6
137.5°	555.6	555.3	555.1	554.8	554.5	555.2	556.9	558.5	560.2	561.8	566.9
140°	572.4	572.3	572.2	572.1	572.0	572.2	572.8	573.3	573.9	574.6	579.2
142.5°	586.3	586.6	586.9	587.3	587.7	587.9	587.8	587.8	587.7	587.6	591.7
145°	609.1	609.1	609.1	609.2	609.2	609.2	609.2	609.2	609.2	609.2	611.2
147.5°	627.5	627.7	628.1	628.5	628.8	628.9	628.8	628.7	628.5	628.4	628.8
150°	640.7	640.9	641.0	641.2	641.3	641.4	641.2	641.1	641.0	640.8	640.8
152.5°	650.7	651.1	651.4	651.7	652.1	652.1	651.9	651.7	651.4	651.2	651.4
155°	666.2	666.3	666.4	666.5	666.7	666.5	666.2	665.8	665.4	665.1	665.5
157.5°	679.4	679.3	679.2	679.2	679.1	678.8	678.4	678.1	677.6	677.2	677.9
160°	687.1	686.7	686.4	686.1	685.7	685.4	685.3	685.2	685.0	684.9	685.7
162.5°	694.0	693.5	693.1	692.7	692.2	691.9	691.7	691.6	691.5	691.4	692.1
165°	702.7	702.1	701.5	700.9	700.3	700.0	700.0	700.0	700.0	700.0	701.0
167.5°	709.5	709.0	708.3	707.8	707.1	706.7	706.7	706.6	706.5	706.4	707.6
170°	713.5	712.8	712.0	711.3	710.6	710.3	710.4	710.5	710.7	710.8	711.7
172.5°	716.0	715.3	714.6	713.9	713.2	712.8	713.0	713.1	713.2	713.3	714.4
175°	718.9	718.1	717.4	716.7	716.0	715.7	715.8	716.0	716.0	716.1	717.2
177.5°	720.1	719.4	718.8	718.1	717.5	717.2	717.4	717.6	717.7	717.9	718.8
180°	718.9	718.9	718.9	718.9	718.9	718.9	718.9	718.9	718.9	718.9	718.9



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1	1344.1
2.5°	1339.4	1341.2	1343.1	1343.9	1343.6	1343.3	1343.1	1342.8
5°	1335.9	1338.5	1341.1	1342.4	1342.0	1341.7	1341.3	1341.0
7.5°	1328.7	1331.7	1334.7	1336.1	1335.7	1335.4	1335.0	1334.7
10°	1321.4	1324.5	1327.5	1328.8	1328.5	1328.1	1327.8	1327.5
12.5°	1311.3	1314.0	1316.7	1318.1	1318.1	1318.0	1317.9	1317.9
15°	1292.9	1295.9	1298.8	1300.2	1299.9	1299.6	1299.2	1298.8
17.5°	1270.5	1273.5	1276.6	1278.0	1277.7	1277.4	1277.1	1276.9
20°	1252.9	1256.2	1259.6	1261.2	1261.2	1261.2	1261.2	1261.2
22.5°	1232.4	1235.8	1239.1	1241.0	1241.6	1242.1	1242.6	1243.2
25°	1200.9	1204.6	1208.2	1210.2	1210.6	1210.9	1211.3	1211.5
27.5°	1165.5	1168.8	1172.2	1174.1	1174.6	1175.0	1175.4	1175.7
30°	1140.7	1144.3	1148.0	1150.2	1150.8	1151.5	1152.2	1152.9
32.5°	1115.2	1119.5	1123.7	1126.1	1126.8	1127.5	1128.1	1128.8
35°	1075.0	1079.6	1084.3	1087.1	1088.2	1089.2	1090.1	1091.2
37.5°	1032.9	1037.6	1042.5	1045.4	1046.4	1047.4	1048.6	1049.6
40°	1003.3	1008.4	1013.4	1016.6	1017.9	1019.3	1020.6	1021.9
42.5°	974.3	979.9	985.4	988.7	989.9	990.9	991.9	993.1
45°	929.4	935.2	940.8	944.5	946.2	947.8	949.5	951.2
47.5°	882.0	887.9	893.8	897.7	899.8	901.7	903.7	905.8
50°	848.7	855.4	862.0	866.4	868.5	870.4	872.4	874.4
52.5°	815.0	821.7	828.3	832.7	834.7	836.7	838.7	840.7
55°	764.4	771.1	777.8	782.1	784.1	786.2	788.2	790.1
57.5°	711.2	719.3	727.2	732.1	734.0	735.8	737.7	739.6
60°	674.6	682.3	689.9	695.1	697.9	700.5	703.2	705.9
62.5°	638.5	646.2	653.8	659.0	661.8	664.4	667.0	669.8
65°	582.6	591.0	599.4	604.8	607.6	610.2	612.9	615.6
67.5°	527.8	536.3	544.8	550.4	553.0	555.5	558.2	560.8
70°	489.2	498.1	507.2	512.9	515.2	517.6	519.9	522.3
72.5°	452.5	461.3	470.0	475.7	478.3	480.9	483.5	486.2
75°	396.5	405.9	415.2	421.4	424.4	427.4	430.5	433.5
77.5°	344.4	353.9	363.4	369.8	373.0	376.2	379.4	382.6
80°	310.6	320.6	330.6	337.0	339.6	342.3	345.0	347.7
82.5°	277.4	287.7	297.9	304.6	307.6	310.5	313.4	316.3
85°	230.7	240.8	250.8	257.5	260.9	264.2	267.6	270.9
87.5°	194.0	203.8	213.6	220.0	223.0	226.0	229.0	232.0
90°	181.6	192.1	202.5	209.2	212.1	215.0	217.9	220.8
92.5°	173.4	183.6	193.8	200.2	202.9	205.7	208.4	211.1
95°	162.3	172.0	181.7	188.2	191.3	194.4	197.6	200.8
97.5°	153.4	162.3	171.2	177.0	180.0	183.0	186.1	189.1
100°	152.0	159.0	166.1	170.8	173.2	175.7	178.1	180.6
102.5°	196.0	182.9	169.8	164.5	167.1	169.8	172.4	175.0
105°	286.0	295.4	304.8	308.8	307.1	305.5	303.9	302.3
107.5°	317.3	326.0	334.8	340.5	343.5	346.3	349.1	352.0
110°	338.7	346.7	354.6	360.1	363.2	366.2	369.2	372.2





TEST NUMBER: P332682-830

CATALOG NUMBER: S124DIP-S1195D590U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	358.7	366.1	373.4	378.7	381.8	385.0	388.1	391.2
115°	389.2	396.8	404.4	409.3	411.7	414.1	416.3	418.7
117.5°	419.1	426.1	433.0	437.8	440.5	443.0	445.6	448.3
120°	437.3	444.2	451.2	455.8	458.3	460.7	463.2	465.6
122.5°	455.6	462.4	469.3	473.7	476.0	478.2	480.3	482.5
125°	481.4	488.1	494.8	499.3	501.3	503.5	505.6	507.7
127.5°	505.5	511.4	517.4	521.4	523.6	525.8	527.9	530.1
130°	520.0	526.1	532.3	536.4	538.4	540.4	542.4	544.4
132.5°	534.9	540.7	546.7	550.5	552.4	554.3	556.3	558.2
135°	553.3	558.8	564.4	568.4	570.6	572.8	575.0	577.3
137.5°	572.1	577.2	582.4	585.8	587.4	589.0	590.6	592.2
140°	583.9	588.6	593.3	596.6	598.4	600.2	602.0	603.8
142.5°	595.8	599.8	603.9	606.6	608.1	609.5	611.0	612.4
145°	613.4	615.6	617.6	619.5	621.1	622.6	624.2	625.8
147.5°	629.1	629.5	629.9	630.7	631.8	633.0	634.2	635.4
150°	640.8	640.8	640.8	640.9	641.0	641.2	641.3	641.4
152.5°	651.6	651.8	652.0	652.1	652.0	651.9	651.8	651.8
155°	666.0	666.5	666.9	667.0	666.7	666.3	666.0	665.6
157.5°	678.4	679.1	679.7	679.7	679.1	678.4	677.9	677.2
160°	686.4	687.1	687.9	687.9	687.1	686.4	685.7	684.9
162.5°	692.9	693.5	694.3	694.3	693.4	692.6	691.8	691.0
165°	701.9	702.9	703.9	703.8	702.7	701.6	700.6	699.5
167.5°	708.6	709.6	710.7	710.6	709.5	708.2	707.0	705.9
170°	712.7	713.6	714.6	714.4	713.3	712.1	710.9	709.7
172.5°	715.3	716.2	717.2	717.0	715.8	714.4	713.1	711.8
175°	718.3	719.3	720.5	720.3	718.9	717.4	716.0	714.5
177.5°	719.5	720.3	721.0	720.9	719.7	718.6	717.4	716.2
180°	718.9	718.9	718.9	718.9	718.9	718.9	718.9	718.9

(END OF REPORT)