

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: P332691-940

Luminaire Tested: **S124DIP-S1195D810U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332691-940  
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-S1195D810U940-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 810 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7220.7 lumens  
Efficiency: N/A  
Efficacy: 119.0 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

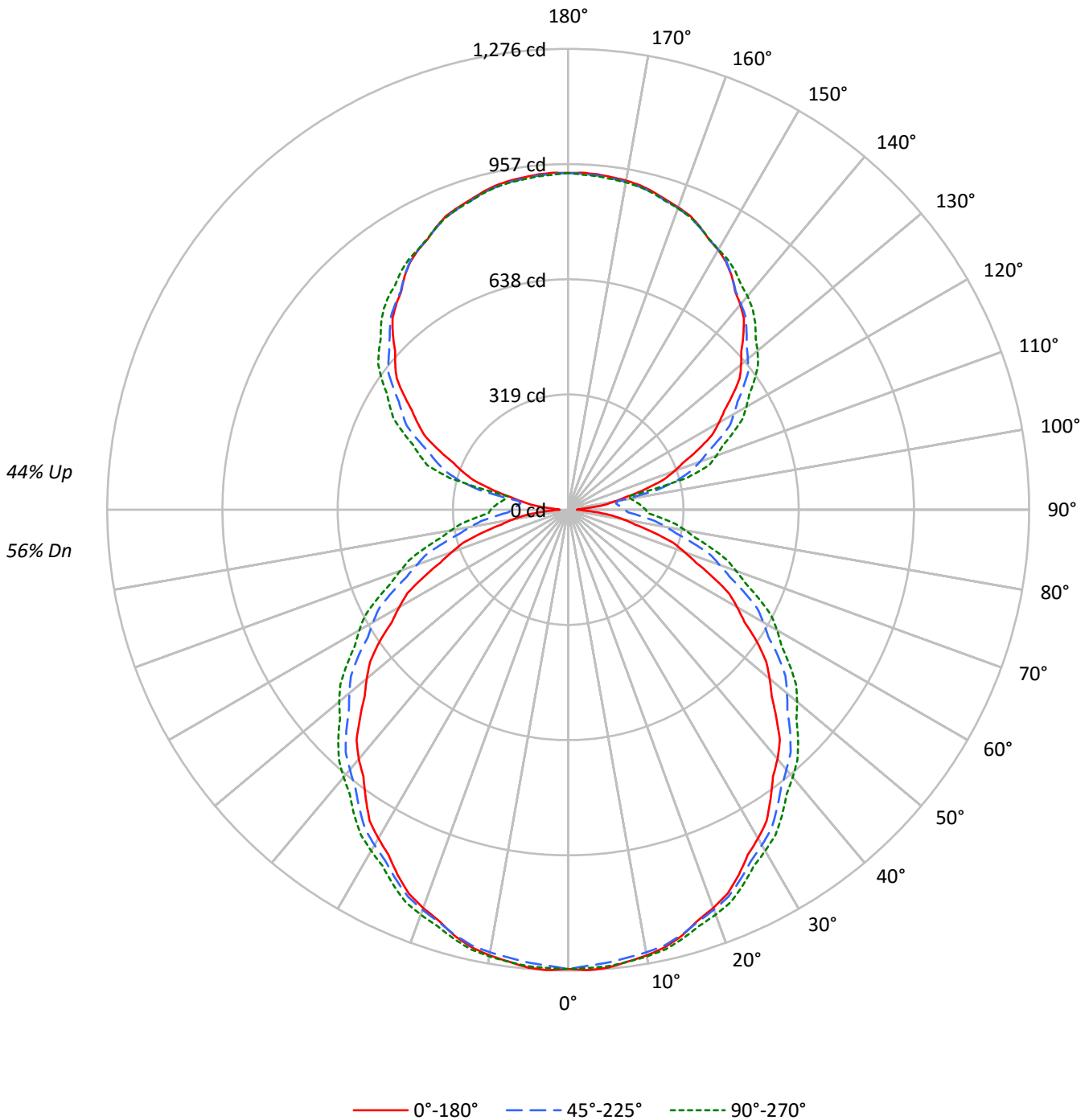
Input Watts (W): 60.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	10266	10266	10266
5°	10297	10032	10061
10°	10234	9869	9861
15°	10142	9679	9625
20°	10004	9469	9396
25°	9848	9234	9144
30°	9679	9000	8885
35°	9488	8760	8658
40°	9335	8533	8422
45°	9109	8323	8219
50°	8917	8080	8004
55°	8719	7852	7753
60°	8410	7562	7524
65°	8071	7250	7242
70°	7660	6893	6914
75°	7091	6501	6617
80°	6453	6124	6326
85°	5641	5792	6154



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CATALOG NUMBER: S124DIP-S1195D810U940-4F0-1E-UDD-D

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	120.4	1.7
10°-20°	345.0	4.8
20°-30°	521.7	7.2
30°-40°	631.2	8.7
40°-50°	667.3	9.2
50°-60°	628.0	8.7
60°-70°	521.0	7.2
70°-80°	366.0	5.1
80°-90°	209.6	2.9
90°-100°	154.7	2.1
100°-110°	294.2	4.1
110°-120°	449.9	6.2
120°-130°	528.1	7.3
130°-140°	543.1	7.5
140°-150°	496.9	6.9
150°-160°	398.3	5.5
160°-170°	256.9	3.6
170°-180°	88.5	1.2
0°-30°	987.1	13.7
0°-40°	1618.2	22.4
0°-60°	2913.5	40.3
0°-90°	4010.0	55.5
90°-120°	898.9	12.4
90°-150°	2466.9	34.2
90°-180°	3211.0	44.5
0°-180°	7220.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1272	1272	1272	1272	1272	
5°	1273	1268	1259	1269	1269	121
15°	1220	1221	1218	1229	1229	344
25°	1116	1125	1129	1144	1146	514
35°	977	994	1008	1027	1032	611
45°	814	842	869	892	900	629
55°	638	668	710	738	748	568
65°	441	487	535	570	582	437
75°	245	298	357	396	410	260
85°	75	136	199	240	256	80
90°	25	90	156	200	214	17
95°	57	82	139	180	195	64
105°	223	257	312	350	340	234
115°	400	417	460	492	503	394
125°	556	560	592	620	630	497
135°	686	686	698	722	732	529
145°	789	790	790	799	806	493
155°	864	864	862	865	863	398
165°	911	908	908	913	907	257
175°	932	928	929	934	927	89
180°	932	932	932	932	932	



TEST NUMBER: P332691-940

CATALOG NUMBER: S124DIP-S1195D810U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6
2.5°	1276.1	1275.3	1274.6	1273.8	1273.1	1271.7	1269.6	1267.7	1265.6	1263.6	1265.3
5°	1272.9	1272.0	1271.0	1270.2	1269.2	1267.6	1265.3	1263.1	1261.0	1258.7	1261.2
7.5°	1262.1	1261.6	1261.0	1260.4	1259.9	1258.6	1256.9	1255.0	1253.1	1251.3	1254.2
10°	1253.0	1252.7	1252.4	1252.1	1251.8	1250.8	1249.2	1247.7	1246.1	1244.5	1247.3
12.5°	1240.5	1240.5	1240.4	1240.3	1240.3	1239.7	1238.6	1237.5	1236.4	1235.4	1238.0
15°	1220.3	1220.6	1220.9	1221.2	1221.6	1221.2	1220.3	1219.3	1218.3	1217.5	1220.3
17.5°	1192.7	1193.6	1194.5	1195.5	1196.4	1196.9	1196.7	1196.4	1196.2	1196.1	1199.0
20°	1173.3	1174.2	1175.2	1176.2	1177.1	1177.7	1178.0	1178.4	1178.7	1179.0	1182.1
22.5°	1151.6	1152.8	1154.1	1155.2	1156.5	1157.4	1157.9	1158.5	1159.0	1159.6	1162.8
25°	1116.3	1118.2	1120.2	1122.0	1123.9	1125.3	1126.3	1127.2	1128.2	1129.2	1132.7
27.5°	1077.0	1079.9	1082.6	1085.4	1088.2	1090.3	1091.7	1093.2	1094.7	1096.1	1099.3
30°	1050.8	1053.4	1055.9	1058.5	1061.0	1063.4	1065.5	1067.7	1070.0	1072.2	1075.7
32.5°	1022.3	1025.4	1028.4	1031.4	1034.5	1037.2	1039.7	1042.2	1044.6	1047.1	1051.1
35°	976.8	980.6	984.4	988.2	991.9	995.4	998.6	1001.7	1005.0	1008.1	1012.5
37.5°	930.9	935.3	939.7	944.1	948.4	952.5	956.4	960.4	964.3	968.2	972.8
40°	901.3	905.4	909.5	913.6	917.7	922.0	926.5	930.9	935.3	939.8	944.5
42.5°	867.2	871.7	876.4	881.0	885.6	890.6	895.7	900.9	906.1	911.3	916.6
45°	814.5	820.5	826.5	832.5	838.5	844.5	850.5	856.6	862.6	868.6	874.0
47.5°	764.0	770.3	776.5	782.7	788.9	795.5	802.5	809.4	816.4	823.3	828.8
50°	727.6	734.6	741.5	748.5	755.5	762.4	769.4	776.3	783.3	790.2	796.6
52.5°	691.2	698.1	705.1	712.0	719.0	726.5	734.4	742.4	750.4	758.4	764.7
55°	637.9	644.5	651.2	657.8	664.5	672.5	682.1	691.5	701.1	710.5	716.8
57.5°	578.4	586.7	594.9	603.1	611.3	620.1	629.5	639.0	648.5	657.8	665.4
60°	539.7	547.9	556.1	564.4	572.6	581.9	592.4	602.8	613.2	623.7	631.0
62.5°	502.0	511.0	520.0	529.1	538.0	547.7	558.2	568.6	579.1	589.5	596.7
65°	441.4	451.6	461.6	471.8	481.9	492.3	503.1	513.9	524.6	535.4	543.3
67.5°	383.0	393.8	404.6	415.3	426.1	437.2	448.7	460.2	471.7	483.3	491.3
70°	343.1	353.9	364.7	375.4	386.2	397.6	409.6	421.6	433.6	445.7	454.2
72.5°	304.4	315.4	326.5	337.4	348.5	360.3	373.2	385.9	398.7	411.5	419.8
75°	245.0	256.6	268.3	280.0	291.8	304.3	317.5	330.8	344.1	357.4	366.2
77.5°	189.4	201.8	214.2	226.6	239.0	252.2	266.1	280.0	293.9	307.8	316.8
80°	155.2	167.8	180.5	193.1	205.8	219.1	233.0	247.0	260.9	274.8	284.3
82.5°	121.0	134.2	147.4	160.5	173.7	187.3	201.2	215.1	229.0	242.9	252.6
85°	75.4	88.7	102.0	115.3	128.6	142.4	156.6	170.9	185.1	199.4	208.8
87.5°	42.5	55.8	69.1	82.3	95.6	109.2	123.3	137.5	151.6	165.7	175.0
90°	24.9	39.2	53.6	67.9	82.3	96.9	111.7	126.6	141.4	156.3	166.4
92.5°	30.4	41.9	53.4	64.9	76.3	89.5	104.4	119.2	134.0	148.9	158.7
95°	56.9	62.1	67.2	72.4	77.6	86.7	99.9	113.0	126.1	139.2	148.6
97.5°	98.3	110.5	122.8	135.1	147.3	151.2	146.8	142.3	137.9	133.5	141.9
100°	130.0	141.0	152.0	163.1	174.1	175.0	166.0	156.9	147.9	138.9	144.8
102.5°	166.8	176.1	185.3	194.6	203.8	213.1	222.4	231.8	241.0	250.3	230.2
105°	222.7	230.0	237.2	244.4	251.7	261.5	274.0	286.5	299.0	311.5	320.8
107.5°	276.9	282.6	288.2	293.9	299.5	308.4	320.6	332.7	344.8	357.0	365.4
110°	312.6	317.4	322.4	327.3	332.2	340.6	352.6	364.6	376.7	388.6	396.2



TEST NUMBER: P332691-940

CATALOG NUMBER: S124DIP-S1195D810U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	347.1	351.9	356.7	361.4	366.2	374.1	385.0	396.1	407.1	418.1	425.1
115°	400.4	403.7	407.0	410.3	413.7	420.3	430.3	440.2	450.2	460.1	467.4
117.5°	449.6	451.9	454.2	456.6	458.9	464.9	474.7	484.5	494.3	504.1	510.6
120°	482.0	483.5	485.1	486.6	488.2	493.5	502.5	511.6	520.6	529.6	536.2
122.5°	513.2	513.7	514.2	514.9	515.4	520.1	529.1	537.9	546.8	555.7	562.2
125°	556.5	556.8	557.1	557.4	557.7	561.7	569.3	576.8	584.4	592.1	598.5
127.5°	598.6	598.4	598.2	598.2	598.0	601.3	608.1	614.8	621.6	628.4	634.0
130°	624.8	624.6	624.5	624.3	624.1	626.9	632.4	637.9	643.5	649.0	654.8
132.5°	649.9	649.9	649.8	649.8	649.8	652.0	656.7	661.3	665.9	670.6	676.2
135°	686.1	686.0	685.8	685.6	685.5	686.9	689.6	692.5	695.4	698.2	703.6
137.5°	719.4	719.2	719.0	718.7	718.5	719.2	720.9	722.7	724.4	726.2	731.2
140°	741.2	741.2	741.2	741.2	741.2	741.5	742.1	742.7	743.3	744.0	748.6
142.5°	759.6	760.1	760.5	761.1	761.5	761.8	761.8	761.8	761.8	761.8	765.7
145°	789.3	789.4	789.6	789.7	789.9	790.0	790.0	790.0	790.0	790.0	792.0
147.5°	813.2	813.7	814.2	814.8	815.3	815.6	815.4	815.2	815.0	814.9	815.3
150°	830.5	830.7	831.0	831.3	831.6	831.7	831.5	831.4	831.3	831.1	831.1
152.5°	843.8	844.2	844.6	845.1	845.5	845.6	845.3	845.1	844.7	844.5	844.7
155°	863.9	864.0	864.2	864.3	864.5	864.3	863.9	863.4	862.9	862.5	863.1
157.5°	881.0	880.9	880.8	880.7	880.7	880.3	879.8	879.3	878.8	878.2	879.0
160°	891.1	890.6	890.1	889.7	889.2	888.9	888.8	888.6	888.4	888.2	889.2
162.5°	900.0	899.4	898.8	898.2	897.6	897.2	897.1	897.0	896.8	896.6	897.6
165°	911.2	910.5	909.7	908.9	908.2	907.8	907.8	907.8	907.8	907.8	909.0
167.5°	920.2	919.4	918.6	917.7	916.9	916.5	916.4	916.3	916.2	916.1	917.5
170°	925.2	924.3	923.4	922.4	921.5	921.1	921.2	921.4	921.6	921.8	922.9
172.5°	928.5	927.6	926.7	925.8	924.9	924.4	924.6	924.8	924.9	925.1	926.3
175°	932.2	931.2	930.3	929.4	928.4	928.1	928.3	928.4	928.5	928.7	930.1
177.5°	933.9	933.0	932.1	931.2	930.4	930.1	930.3	930.6	930.9	931.0	932.0
180°	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2



TEST NUMBER: P332691-940

CATALOG NUMBER: S124DIP-S1195D810U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6	1271.6
2.5°	1267.1	1268.9	1270.7	1271.4	1271.1	1270.9	1270.7	1270.4
5°	1263.8	1266.3	1268.8	1270.0	1269.6	1269.4	1269.0	1268.7
7.5°	1257.0	1259.9	1262.8	1264.0	1263.6	1263.4	1263.0	1262.8
10°	1250.2	1253.0	1255.9	1257.1	1256.9	1256.5	1256.2	1255.9
12.5°	1240.5	1243.1	1245.7	1247.1	1247.0	1246.9	1246.8	1246.8
15°	1223.2	1226.0	1228.8	1230.1	1229.8	1229.5	1229.1	1228.8
17.5°	1201.9	1204.8	1207.7	1209.1	1208.8	1208.5	1208.3	1208.0
20°	1185.4	1188.5	1191.7	1193.2	1193.2	1193.2	1193.2	1193.2
22.5°	1165.9	1169.1	1172.2	1174.1	1174.7	1175.1	1175.6	1176.2
25°	1136.1	1139.6	1143.1	1145.0	1145.3	1145.6	1145.9	1146.2
27.5°	1102.6	1105.8	1109.0	1110.8	1111.3	1111.6	1112.0	1112.3
30°	1079.1	1082.6	1086.1	1088.2	1088.8	1089.4	1090.0	1090.7
32.5°	1055.1	1059.1	1063.1	1065.4	1066.0	1066.7	1067.3	1067.9
35°	1017.0	1021.4	1025.8	1028.5	1029.5	1030.5	1031.4	1032.3
37.5°	977.2	981.7	986.2	989.0	990.0	991.0	992.0	993.0
40°	949.2	954.0	958.8	961.8	963.0	964.3	965.5	966.8
42.5°	921.8	927.0	932.3	935.4	936.5	937.5	938.4	939.5
45°	879.3	884.8	890.1	893.6	895.2	896.7	898.3	899.9
47.5°	834.5	840.0	845.6	849.3	851.2	853.1	855.0	856.9
50°	802.9	809.2	815.6	819.7	821.6	823.5	825.4	827.2
52.5°	771.1	777.4	783.6	787.8	789.7	791.6	793.4	795.4
55°	723.2	729.5	735.8	739.9	741.8	743.8	745.6	747.5
57.5°	672.9	680.5	688.0	692.6	694.4	696.2	697.9	699.7
60°	638.2	645.5	652.7	657.6	660.2	662.7	665.3	667.8
62.5°	604.0	611.4	618.6	623.5	626.1	628.6	631.1	633.6
65°	551.2	559.1	567.0	572.2	574.8	577.3	579.9	582.4
67.5°	499.4	507.4	515.4	520.7	523.2	525.6	528.1	530.6
70°	462.8	471.3	479.8	485.3	487.4	489.6	491.9	494.1
72.5°	428.1	436.4	444.7	450.0	452.5	455.0	457.4	459.9
75°	375.1	384.0	392.8	398.7	401.5	404.4	407.2	410.1
77.5°	325.8	334.8	343.8	349.8	352.8	355.9	358.9	361.9
80°	293.8	303.3	312.8	318.8	321.3	323.9	326.4	329.0
82.5°	262.4	272.2	281.9	288.2	291.0	293.7	296.5	299.3
85°	218.3	227.8	237.3	243.6	246.8	249.9	253.2	256.3
87.5°	184.4	193.8	203.1	209.2	212.0	214.9	217.8	220.6
90°	176.6	186.6	196.7	203.2	206.1	208.9	211.7	214.5
92.5°	168.6	178.4	188.3	194.6	197.2	199.7	202.3	204.9
95°	158.2	167.6	177.1	183.3	186.4	189.3	192.3	195.4
97.5°	150.3	158.6	167.0	172.6	175.5	178.3	181.3	184.1
100°	150.7	156.6	162.6	166.7	169.1	171.4	173.8	176.1
102.5°	210.1	189.9	169.9	161.0	163.5	166.0	168.5	171.0
105°	330.1	339.4	348.7	351.9	348.8	345.8	342.7	339.7
107.5°	373.9	382.4	390.8	396.5	399.3	402.2	405.1	408.0
110°	403.9	411.4	419.0	424.3	427.3	430.3	433.3	436.2





TEST NUMBER: P332691-940

CATALOG NUMBER: S124DIP-S1195D810U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	432.0	439.0	445.9	450.9	454.1	457.2	460.3	463.4
115°	474.7	482.0	489.3	494.0	496.2	498.4	500.6	502.8
117.5°	517.1	523.6	530.1	534.6	537.1	539.6	542.0	544.5
120°	542.9	549.5	556.2	560.5	562.8	565.0	567.2	569.4
122.5°	568.7	575.2	581.8	585.9	587.9	590.0	591.9	593.9
125°	605.0	611.5	618.0	622.2	624.3	626.3	628.4	630.4
127.5°	639.6	645.2	650.9	654.7	656.7	658.7	660.8	662.7
130°	660.7	666.5	672.3	676.2	678.1	680.0	681.9	683.9
132.5°	681.8	687.4	693.0	696.7	698.5	700.3	702.0	703.7
135°	708.9	714.3	719.7	723.4	725.7	727.9	730.1	732.3
137.5°	736.1	741.1	746.1	749.3	750.7	752.2	753.8	755.3
140°	753.1	757.7	762.3	765.4	767.2	768.9	770.7	772.4
142.5°	769.7	773.6	777.6	780.2	781.6	782.9	784.3	785.7
145°	794.1	796.1	798.2	800.0	801.6	803.2	804.7	806.3
147.5°	815.6	816.0	816.5	817.2	818.3	819.6	820.7	821.9
150°	831.1	831.1	831.1	831.2	831.3	831.4	831.6	831.8
152.5°	845.0	845.3	845.4	845.5	845.4	845.3	845.3	845.2
155°	863.7	864.3	865.0	865.0	864.5	864.1	863.6	863.2
157.5°	879.9	880.7	881.5	881.5	880.7	879.9	879.0	878.2
160°	890.1	891.1	892.0	892.0	891.1	890.1	889.2	888.2
162.5°	898.5	899.4	900.4	900.3	899.2	898.1	897.2	896.1
165°	910.3	911.5	912.8	912.7	911.2	909.9	908.5	907.0
167.5°	918.9	920.2	921.6	921.5	920.0	918.4	916.9	915.3
170°	924.2	925.4	926.7	926.5	925.0	923.5	921.9	920.3
172.5°	927.6	928.8	930.1	929.8	928.2	926.5	924.8	923.1
175°	931.5	932.9	934.2	934.1	932.2	930.3	928.4	926.6
177.5°	933.1	934.1	935.0	934.8	933.3	931.8	930.3	928.8
180°	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2

(END OF REPORT)