

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: P332683-840

Luminaire Tested: **S124DIP-S1195D590U840-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332683-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S1195D590U840-4F0-1E-UDD-D1  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1195 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 590 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6977.3 lumens  
Efficiency: N/A  
Efficacy: 126.6 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

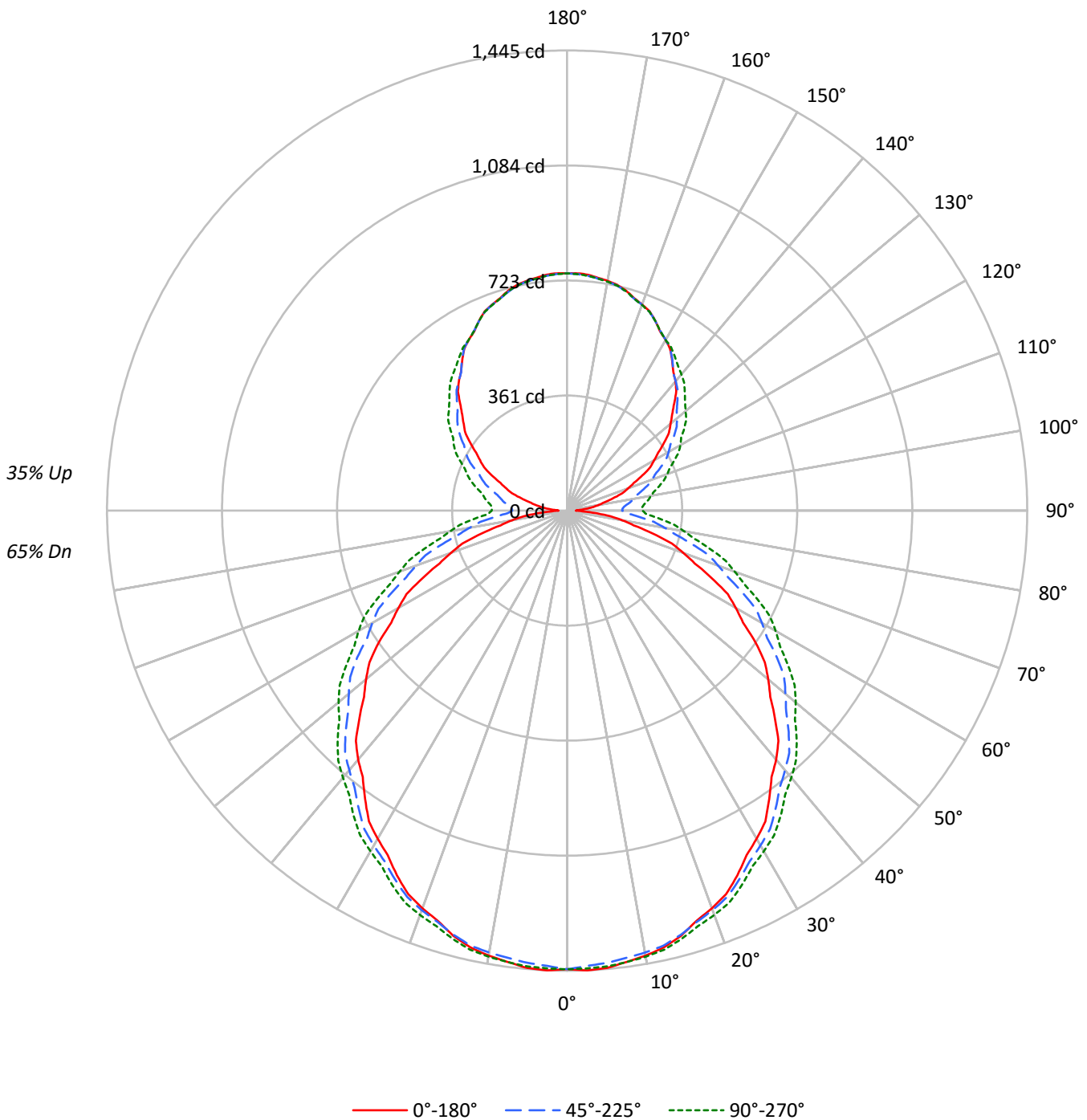
Input Watts (W): 55.1  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	111	111	111	111	104	104	104	104	92	92	92	80	80	80	70	70	70	65
1	100	95	90	86	94	89	85	82	79	76	73	69	66	64	60	58	57	52
2	90	82	75	69	84	77	71	66	68	63	59	60	56	53	52	49	47	43
3	82	72	64	57	77	68	60	54	60	54	49	52	48	44	45	42	39	35
4	75	63	55	48	70	60	52	46	53	46	42	46	41	37	40	36	33	30
5	69	56	47	41	64	53	45	39	47	41	36	41	36	32	36	32	29	26
6	63	50	42	35	59	48	40	34	42	36	31	37	32	28	33	28	25	22
7	59	45	37	31	55	43	35	30	38	32	27	34	29	25	30	26	22	20
8	54	41	33	27	51	39	32	26	35	29	24	31	26	22	27	23	20	18
9	51	38	30	24	47	36	28	23	32	26	22	29	23	20	25	21	18	16
10	47	35	27	22	44	33	26	21	30	24	19	26	21	18	23	19	16	14

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

	0°	45°	90°
0°	11626	11626	11626
5°	11661	11362	11394
10°	11590	11176	11167
15°	11486	10961	10900
20°	11330	10723	10641
25°	11153	10457	10356
30°	10961	10193	10063
35°	10745	9921	9805
40°	10573	9663	9538
45°	10316	9426	9309
50°	10098	9151	9066
55°	9875	8894	8781
60°	9525	8563	8521
65°	9141	8210	8201
70°	8676	7806	7830
75°	8028	7363	7494
80°	7309	6935	7163
85°	6389	6559	6968



TEST NUMBER: P332683-840

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	136.4	2.0
10°-20°	390.7	5.6
20°-30°	590.8	8.5
30°-40°	714.8	10.2
40°-50°	755.7	10.8
50°-60°	711.2	10.2
60°-70°	590.1	8.5
70°-80°	414.5	5.9
80°-90°	236.5	3.4
90°-100°	188.2	2.7
100°-110°	248.5	3.6
110°-120°	316.1	4.5
120°-130°	364.6	5.2
130°-140°	382.6	5.5
140°-150°	362.8	5.2
150°-160°	302.3	4.3
160°-170°	201.1	2.9
170°-180°	70.4	1.0
0°-30°	1117.8	16.0
0°-40°	1832.6	26.3
0°-60°	3299.5	47.3
0°-90°	4540.6	65.1
90°-120°	752.8	10.8
90°-150°	1862.9	26.7
90°-180°	2437.0	34.9
0°-180°	6977.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1440	1440	1440	1440	1440	
5°	1442	1436	1426	1438	1437	137
15°	1382	1383	1379	1392	1392	389
25°	1264	1274	1279	1296	1298	582
35°	1106	1125	1142	1163	1169	692
45°	922	953	984	1010	1019	713
55°	722	757	805	836	847	643
65°	500	552	606	645	660	495
75°	277	338	405	448	464	295
85°	85	153	226	272	290	91
90°	28	98	172	220	237	19
95°	56	115	184	228	244	55
105°	149	183	244	284	300	159
115°	261	277	326	359	371	258
125°	372	373	410	439	448	332
135°	475	479	490	513	522	368
145°	575	575	576	585	590	360
155°	657	657	656	658	656	302
165°	715	713	712	715	713	201
175°	744	741	740	744	740	71
180°	745	745	745	745	745	



TEST NUMBER: P332683-840

CATALOG NUMBER: S124DIP-S1195D590U840-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1
2.5°	1445.2	1444.3	1443.5	1442.6	1441.8	1440.2	1437.8	1435.6	1433.3	1431.0	1433.0
5°	1441.6	1440.6	1439.5	1438.5	1437.3	1435.5	1433.0	1430.5	1428.1	1425.5	1428.4
7.5°	1429.4	1428.8	1428.1	1427.4	1426.8	1425.4	1423.4	1421.3	1419.2	1417.1	1420.4
10°	1419.1	1418.7	1418.4	1418.0	1417.6	1416.5	1414.7	1413.0	1411.2	1409.4	1412.6
12.5°	1404.8	1404.8	1404.7	1404.6	1404.6	1403.9	1402.7	1401.5	1400.3	1399.1	1402.0
15°	1382.0	1382.3	1382.7	1383.0	1383.4	1383.0	1382.0	1380.9	1379.8	1378.8	1382.0
17.5°	1350.7	1351.8	1352.8	1353.9	1354.9	1355.4	1355.2	1354.9	1354.7	1354.5	1357.9
20°	1328.8	1329.8	1330.9	1332.0	1333.0	1333.7	1334.1	1334.5	1334.8	1335.2	1338.8
22.5°	1304.2	1305.6	1307.0	1308.3	1309.7	1310.7	1311.3	1312.0	1312.6	1313.2	1316.9
25°	1264.3	1266.4	1268.6	1270.7	1272.8	1274.4	1275.6	1276.6	1277.7	1278.8	1282.7
27.5°	1219.7	1222.9	1226.1	1229.2	1232.3	1234.8	1236.4	1238.1	1239.7	1241.3	1245.0
30°	1190.0	1193.0	1195.8	1198.7	1201.5	1204.3	1206.7	1209.2	1211.7	1214.3	1218.2
32.5°	1157.8	1161.2	1164.7	1168.1	1171.5	1174.7	1177.5	1180.3	1183.1	1185.9	1190.4
35°	1106.2	1110.5	1114.8	1119.1	1123.4	1127.3	1130.9	1134.5	1138.1	1141.7	1146.7
37.5°	1054.3	1059.2	1064.2	1069.1	1074.1	1078.7	1083.2	1087.6	1092.1	1096.5	1101.7
40°	1020.8	1025.4	1030.1	1034.7	1039.4	1044.2	1049.2	1054.3	1059.2	1064.3	1069.6
42.5°	982.1	987.2	992.5	997.7	1003.0	1008.6	1014.4	1020.3	1026.1	1032.1	1038.0
45°	922.4	929.2	936.0	942.8	949.6	956.4	963.2	970.1	976.8	983.7	989.8
47.5°	865.3	872.3	879.4	886.4	893.4	900.9	908.8	916.7	924.5	932.4	938.7
50°	824.0	831.9	839.8	847.7	855.6	863.4	871.3	879.2	887.1	894.9	902.1
52.5°	782.7	790.6	798.5	806.4	814.3	822.7	831.7	840.8	849.8	858.9	866.1
55°	722.5	729.9	737.5	745.0	752.6	761.6	772.4	783.2	794.0	804.7	811.8
57.5°	655.0	664.4	673.7	683.0	692.3	702.3	713.0	723.7	734.4	745.0	753.6
60°	611.2	620.5	629.8	639.1	648.4	659.0	670.9	682.7	694.5	706.3	714.6
62.5°	568.6	578.8	589.0	599.2	609.3	620.3	632.2	644.0	655.8	667.6	675.8
65°	499.9	511.4	522.8	534.3	545.7	557.5	569.8	582.0	594.1	606.3	615.3
67.5°	433.7	446.0	458.2	470.3	482.5	495.1	508.2	521.2	534.2	547.3	556.4
70°	388.6	400.8	413.0	425.2	437.4	450.3	463.8	477.5	491.1	504.7	514.4
72.5°	344.8	357.2	369.7	382.1	394.7	408.1	422.6	437.1	451.5	466.1	475.4
75°	277.4	290.6	303.9	317.1	330.4	344.6	359.6	374.7	389.7	404.8	414.8
77.5°	214.5	228.5	242.6	256.6	270.6	285.6	301.3	317.1	332.9	348.6	358.8
80°	175.8	190.1	204.4	218.7	233.1	248.1	263.9	279.7	295.5	311.2	321.9
82.5°	137.0	152.0	166.9	181.8	196.7	212.1	227.8	243.6	259.3	275.1	286.1
85°	85.4	100.5	115.5	130.6	145.6	161.3	177.3	193.5	209.6	225.8	236.5
87.5°	48.1	63.0	77.9	92.8	107.7	123.1	139.0	154.9	170.8	186.7	197.2
90°	27.6	43.2	59.0	74.7	90.5	106.5	123.0	139.5	155.9	172.3	183.5
92.5°	36.9	51.3	65.8	80.4	94.9	110.2	126.3	142.5	158.5	174.7	185.3
95°	55.5	68.5	81.5	94.4	107.4	121.7	137.3	152.9	168.4	184.1	194.1
97.5°	79.4	90.5	101.6	112.7	123.8	137.1	152.7	168.3	183.9	199.5	209.3
100°	98.4	108.2	118.1	127.8	137.6	150.2	165.3	180.5	195.5	210.7	220.7
102.5°	119.6	127.9	136.3	144.7	153.1	164.6	179.4	194.1	208.8	223.6	233.3
105°	148.8	156.0	163.3	170.6	177.9	188.4	202.2	216.0	229.7	243.5	252.9
107.5°	182.4	188.4	194.4	200.5	206.5	215.8	228.4	241.1	253.7	266.3	275.5
110°	204.1	209.4	214.7	219.9	225.2	234.1	246.5	258.9	271.4	283.7	291.8



TEST NUMBER: P332683-840

CATALOG NUMBER: S124DIP-S1195D590U840-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	226.8	231.3	235.8	240.2	244.8	252.9	264.6	276.4	288.1	299.8	307.7
115°	260.8	264.0	267.2	270.4	273.7	280.9	292.2	303.4	314.6	325.8	333.6
117.5°	294.4	296.4	298.4	300.4	302.5	308.7	319.2	329.7	340.2	350.7	357.8
120°	315.7	317.2	318.8	320.4	321.9	327.8	337.8	347.8	357.8	367.8	374.4
122.5°	339.1	339.5	340.0	340.4	340.8	345.9	355.5	365.2	374.8	384.4	391.1
125°	372.2	371.8	371.4	371.1	370.7	375.0	383.8	392.6	401.5	410.3	416.9
127.5°	403.3	403.3	403.3	403.4	403.4	406.8	413.4	420.1	426.8	433.4	439.7
130°	424.1	424.1	424.2	424.2	424.2	427.2	432.8	438.6	444.3	450.1	456.3
132.5°	446.8	446.7	446.6	446.5	446.5	448.6	453.1	457.6	462.1	466.6	472.5
135°	474.9	475.7	476.5	477.3	478.1	479.7	482.2	484.6	487.2	489.7	495.1
137.5°	507.5	507.5	507.5	507.5	507.5	508.2	509.6	511.0	512.4	513.8	518.8
140°	529.1	529.0	528.9	528.8	528.7	528.8	529.2	529.6	529.9	530.3	534.7
142.5°	547.6	547.8	548.0	548.2	548.4	548.3	548.0	547.6	547.3	547.0	551.1
145°	574.7	574.8	575.0	575.2	575.3	575.4	575.6	575.7	575.8	575.9	578.0
147.5°	601.9	602.2	602.4	602.7	602.9	603.0	602.9	602.8	602.7	602.6	602.8
150°	618.4	618.6	618.7	618.9	619.0	619.1	619.1	619.1	619.1	619.1	619.1
152.5°	632.9	633.1	633.3	633.6	633.8	634.0	634.1	634.2	634.3	634.4	634.7
155°	656.6	656.6	656.6	656.6	656.6	656.5	656.4	656.3	656.2	656.0	656.5
157.5°	676.9	676.6	676.4	676.2	676.0	675.8	675.8	675.8	675.8	675.7	676.1
160°	688.8	688.7	688.6	688.5	688.3	688.2	688.1	688.0	687.8	687.7	688.1
162.5°	699.9	699.6	699.2	698.9	698.6	698.3	698.2	698.1	698.0	697.8	698.5
165°	714.8	714.4	714.0	713.7	713.3	713.0	712.7	712.5	712.2	712.0	712.7
167.5°	726.2	725.7	725.1	724.6	724.1	723.8	723.8	723.9	723.9	723.9	724.7
170°	732.7	732.1	731.3	730.7	730.0	729.8	729.9	730.0	730.2	730.3	731.1
172.5°	737.2	736.7	736.2	735.7	735.1	734.9	734.9	734.9	734.9	735.0	735.8
175°	743.6	743.0	742.4	741.6	741.0	740.6	740.5	740.4	740.2	740.1	741.0
177.5°	745.7	745.2	744.7	744.2	743.6	743.4	743.4	743.4	743.4	743.4	744.1
180°	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8



TEST NUMBER: P332683-840

CATALOG NUMBER: S124DIP-S1195D590U840-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1	1440.1
2.5°	1435.0	1437.0	1439.1	1439.9	1439.6	1439.3	1439.1	1438.8
5°	1431.3	1434.1	1436.9	1438.2	1437.8	1437.5	1437.1	1436.8
7.5°	1423.6	1426.8	1430.1	1431.5	1431.1	1430.8	1430.4	1430.1
10°	1415.8	1419.1	1422.3	1423.7	1423.4	1423.0	1422.6	1422.3
12.5°	1404.9	1407.9	1410.8	1412.3	1412.2	1412.1	1412.0	1412.0
15°	1385.2	1388.5	1391.6	1393.1	1392.7	1392.4	1392.0	1391.6
17.5°	1361.2	1364.4	1367.8	1369.3	1369.0	1368.7	1368.4	1368.1
20°	1342.4	1345.9	1349.6	1351.3	1351.3	1351.3	1351.3	1351.3
22.5°	1320.4	1324.0	1327.6	1329.7	1330.3	1330.8	1331.4	1332.0
25°	1286.7	1290.6	1294.5	1296.7	1297.1	1297.4	1297.8	1298.1
27.5°	1248.7	1252.3	1256.0	1258.0	1258.5	1258.9	1259.3	1259.7
30°	1222.1	1226.1	1230.0	1232.3	1233.0	1233.8	1234.5	1235.3
32.5°	1194.9	1199.4	1204.0	1206.6	1207.3	1208.0	1208.7	1209.4
35°	1151.8	1156.7	1161.7	1164.8	1165.9	1167.0	1168.0	1169.1
37.5°	1106.7	1111.8	1116.9	1120.0	1121.2	1122.3	1123.5	1124.6
40°	1075.0	1080.5	1085.8	1089.2	1090.7	1092.1	1093.5	1094.9
42.5°	1043.9	1049.9	1055.8	1059.3	1060.6	1061.7	1062.8	1064.0
45°	995.8	1002.0	1008.0	1012.0	1013.8	1015.5	1017.3	1019.2
47.5°	945.0	951.3	957.7	961.8	964.0	966.1	968.3	970.5
50°	909.3	916.5	923.6	928.3	930.5	932.6	934.7	936.9
52.5°	873.2	880.4	887.5	892.2	894.3	896.5	898.6	900.8
55°	819.0	826.2	833.3	838.0	840.1	842.3	844.4	846.6
57.5°	762.0	770.6	779.1	784.4	786.4	788.4	790.4	792.4
60°	722.8	731.0	739.2	744.8	747.7	750.5	753.5	756.3
62.5°	684.1	692.4	700.5	706.1	709.0	711.9	714.7	717.6
65°	624.2	633.2	642.2	648.0	651.0	653.8	656.7	659.5
67.5°	565.5	574.6	583.7	589.7	592.5	595.2	598.0	600.9
70°	524.1	533.7	543.4	549.6	552.0	554.5	557.0	559.6
72.5°	484.8	494.2	503.6	509.7	512.5	515.2	518.1	520.9
75°	424.9	434.8	444.8	451.5	454.7	458.0	461.2	464.4
77.5°	369.0	379.2	389.3	396.2	399.6	403.0	406.5	409.9
80°	332.8	343.5	354.3	361.0	363.9	366.8	369.6	372.5
82.5°	297.2	308.2	319.2	326.4	329.5	332.6	335.8	338.9
85°	247.2	258.0	268.7	275.9	279.5	283.1	286.7	290.2
87.5°	207.8	218.3	228.8	235.7	238.9	242.2	245.4	248.5
90°	194.6	205.8	216.9	224.1	227.2	230.4	233.5	236.6
92.5°	195.8	206.4	217.0	223.8	226.8	229.8	232.9	235.8
95°	204.2	214.3	224.3	231.0	234.2	237.4	240.7	243.9
97.5°	219.2	229.0	238.9	245.4	248.4	251.6	254.6	257.7
100°	230.6	240.4	250.4	256.6	259.1	261.7	264.2	266.7
102.5°	243.1	252.9	262.6	268.9	271.8	274.7	277.6	280.4
105°	262.2	271.6	280.8	287.2	290.4	293.7	296.9	300.1
107.5°	284.7	293.8	303.0	308.8	311.4	314.0	316.5	319.1
110°	299.7	307.7	315.7	321.2	324.6	327.8	331.0	334.3





TEST NUMBER: P332683-840

CATALOG NUMBER: S124DIP-S1195D590U840-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	315.7	323.6	331.4	336.9	339.8	342.7	345.7	348.7
115°	341.2	349.0	356.8	361.8	364.3	366.6	369.0	371.3
117.5°	364.8	371.8	378.8	383.6	386.3	388.9	391.5	394.0
120°	380.8	387.4	393.9	398.7	401.8	405.0	408.1	411.2
122.5°	397.9	404.6	411.3	415.8	417.9	420.0	422.1	424.2
125°	423.4	430.0	436.6	440.7	442.6	444.5	446.5	448.4
127.5°	445.9	452.0	458.3	462.4	464.7	467.0	469.2	471.4
130°	462.4	468.7	474.8	478.8	480.4	482.0	483.6	485.3
132.5°	478.4	484.3	490.2	494.1	496.0	498.0	500.0	501.9
135°	500.7	506.1	511.6	515.2	516.9	518.8	520.5	522.3
137.5°	523.6	528.6	533.4	536.8	538.7	540.6	542.4	544.3
140°	539.3	543.8	548.4	551.5	553.1	554.8	556.4	558.2
142.5°	555.1	559.2	563.3	566.0	567.5	569.0	570.5	572.0
145°	580.1	582.1	584.1	585.6	586.6	587.7	588.8	589.8
147.5°	603.0	603.1	603.3	603.9	604.9	605.9	607.0	608.0
150°	619.1	619.1	619.1	619.1	618.9	618.8	618.7	618.6
152.5°	635.0	635.3	635.6	635.6	635.3	634.9	634.6	634.3
155°	657.0	657.5	658.1	658.1	657.5	657.0	656.5	656.0
157.5°	676.5	676.9	677.3	677.2	676.8	676.4	675.9	675.5
160°	688.5	688.8	689.2	689.1	688.5	687.8	687.2	686.6
162.5°	699.2	699.9	700.6	700.6	700.0	699.3	698.7	698.1
165°	713.5	714.2	715.0	715.1	714.6	714.1	713.6	713.1
167.5°	725.4	726.2	727.0	726.9	726.2	725.4	724.6	723.8
170°	731.8	732.7	733.4	733.4	732.5	731.5	730.6	729.7
172.5°	736.7	737.6	738.4	738.4	737.5	736.6	735.7	734.9
175°	741.9	742.9	743.7	743.7	742.9	741.9	741.0	740.1
177.5°	744.8	745.5	746.2	746.2	745.4	744.6	743.7	742.9
180°	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8

(END OF REPORT)