

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: P332140-930

Luminaire Tested: **S123DIW-S560D1320U930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332140-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S560D1320U930-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1320 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6233.6 lumens  
Efficiency: N/A  
Efficacy: 115.9 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: Semi-Indirect

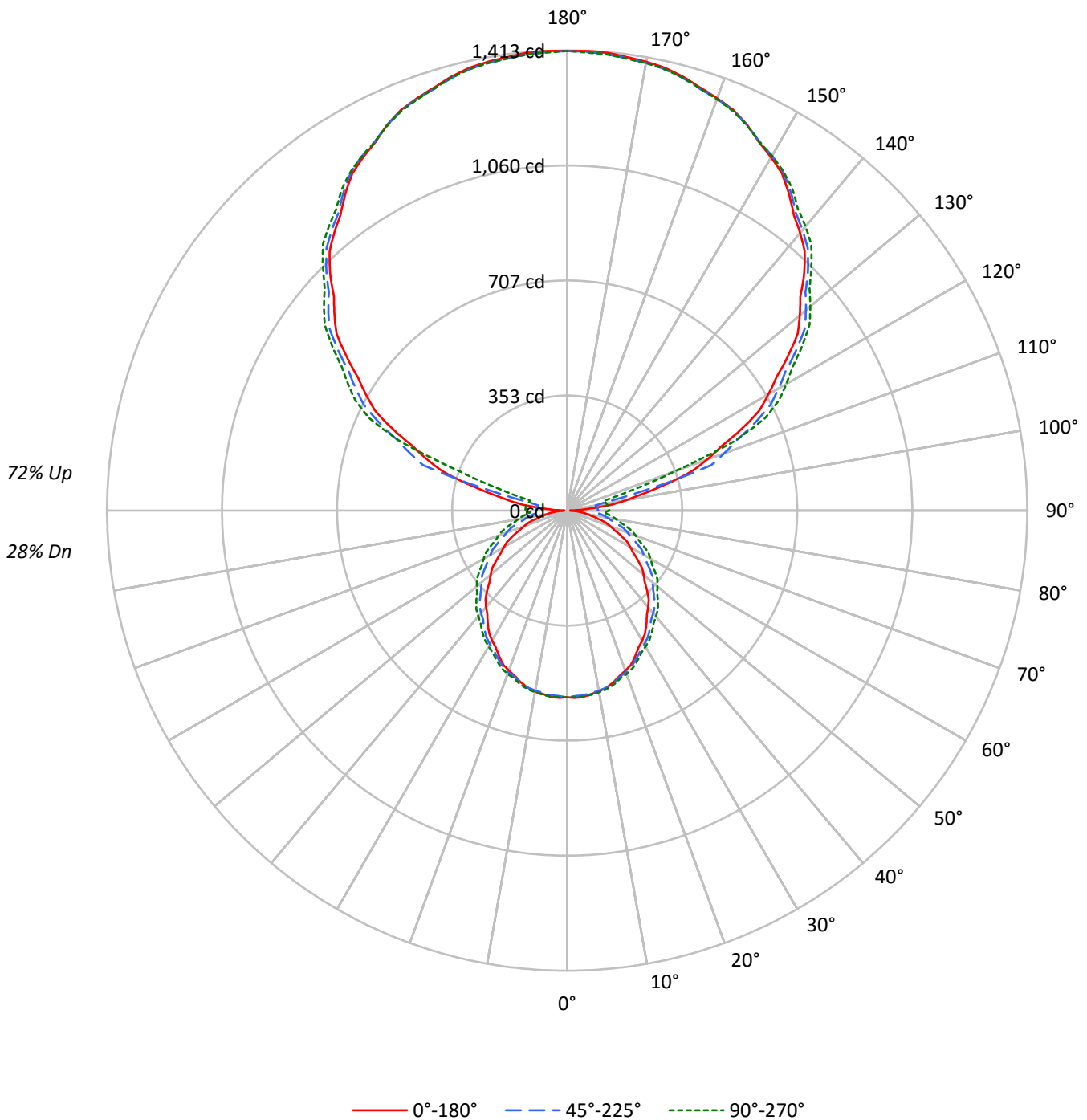
Input Watts (W): 53.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332140-930

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### Luminous Intensity Polar Plot





TEST NUMBER: P332140-930

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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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	28
1	92	88	84	80	82	79	75	72	61	59	57	46	44	43	31	30	29	23
2	84	76	70	65	75	68	63	59	53	50	47	40	37	35	27	26	24	18
3	76	67	60	54	68	60	54	49	47	43	39	35	32	29	24	22	20	15
4	70	59	51	45	62	53	46	41	41	37	33	31	28	25	21	19	17	13
5	64	52	44	38	57	47	40	35	37	32	28	28	24	21	19	17	15	11
6	59	47	39	33	52	42	35	30	33	28	24	25	21	19	17	15	13	10
7	54	42	34	29	48	38	31	26	30	25	21	22	19	16	16	13	12	9
8	50	38	30	25	45	34	28	23	27	22	19	20	17	14	14	12	10	8
9	46	34	27	22	41	31	25	20	25	20	17	19	15	13	13	11	9	7
10	43	31	24	20	39	28	22	18	23	18	15	17	14	12	12	10	8	6

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

	0°	45°	90°
0°	6171	6171	6171
5°	6191	6015	6019
10°	6135	5878	5848
15°	6056	5720	5660
20°	5943	5540	5454
25°	5804	5333	5238
30°	5660	5147	5019
35°	5500	4950	4844
40°	5347	4771	4656
45°	5177	4599	4506
50°	5010	4430	4341
55°	4826	4256	4193
60°	4646	4080	4040
65°	4462	3891	3859
70°	4185	3680	3673
75°	3832	3437	3484
80°	3426	3199	3268
85°	3052	3034	3143



TEST NUMBER: P332140-930

CATALOG NUMBER: S123DIW-S560D1320U930-4F0-1E-UDD-D

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	54.4	0.9
10°-20°	154.9	2.5
20°-30°	231.7	3.7
30°-40°	276.7	4.4
40°-50°	289.5	4.6
50°-60°	271.7	4.4
60°-70°	226.9	3.6
70°-80°	162.4	2.6
80°-90°	100.8	1.6
90°-100°	112.0	1.8
100°-110°	289.2	4.6
110°-120°	617.1	9.9
120°-130°	764.9	12.3
130°-140°	806.7	12.9
140°-150°	748.9	12.0
150°-160°	602.7	9.7
160°-170°	389.0	6.2
170°-180°	134.1	2.2
0°-30°	441.0	7.1
0°-40°	717.7	11.5
0°-60°	1279.0	20.5
0°-90°	1769.0	28.4
90°-120°	1018.3	16.3
90°-150°	3338.8	53.6
90°-180°	4465.0	71.6
0°-180°	6233.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	573	573	573	573	573	
5°	574	573	569	574	573	54
15°	546	548	548	554	553	154
25°	493	499	502	509	510	227
35°	425	435	443	452	455	266
45°	347	362	378	389	395	268
55°	265	286	308	324	330	237
65°	183	208	235	253	260	181
75°	99	129	160	180	188	106
85°	31	62	95	115	122	32
90°	9	50	96	120	130	9
95°	71	56	94	120	127	84
105°	317	339	276	118	116	336
115°	589	604	635	659	670	581
125°	828	837	859	873	880	739
135°	1030	1036	1046	1060	1061	792
145°	1187	1194	1196	1203	1206	743
155°	1307	1305	1306	1311	1305	602
165°	1379	1376	1374	1382	1375	389
175°	1411	1406	1407	1413	1406	134
180°	1411	1411	1411	1411	1411	



TEST NUMBER: P332140-930

CATALOG NUMBER: S123DIW-S560D1320U930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3
2.5°	575.8	575.5	575.2	574.8	574.5	573.9	573.0	572.1	571.2	570.3	571.2
5°	574.0	573.6	573.4	573.2	572.8	572.3	571.4	570.6	569.8	568.9	570.1
7.5°	568.3	568.3	568.4	568.5	568.6	568.2	567.4	566.6	565.7	564.9	566.3
10°	563.4	563.6	563.9	564.2	564.4	564.3	563.5	562.9	562.1	561.5	562.9
12.5°	557.3	557.7	558.2	558.5	558.9	558.9	558.4	557.9	557.4	556.9	558.2
15°	546.5	546.9	547.3	547.7	548.1	548.3	548.1	548.0	547.9	547.7	549.1
17.5°	532.7	533.5	534.4	535.2	536.1	536.5	536.4	536.3	536.3	536.2	537.4
20°	522.8	523.6	524.4	525.2	526.0	526.6	526.9	527.2	527.4	527.7	529.0
22.5°	512.3	513.1	513.9	514.8	515.6	516.2	516.6	517.0	517.4	517.7	519.3
25°	493.4	494.8	496.2	497.6	499.0	499.9	500.3	500.7	501.1	501.5	503.3
27.5°	474.4	476.0	477.6	479.2	480.7	481.9	482.8	483.7	484.6	485.5	487.1
30°	460.9	462.7	464.5	466.4	468.1	469.6	470.7	471.8	472.9	474.0	475.7
32.5°	445.9	447.9	450.0	452.0	454.0	455.8	457.2	458.6	460.1	461.5	463.3
35°	424.7	426.9	429.1	431.4	433.6	435.6	437.4	439.2	441.0	442.8	444.9
37.5°	402.2	404.7	407.2	409.7	412.2	414.6	416.8	419.0	421.2	423.5	425.8
40°	387.2	389.7	392.2	394.7	397.2	399.8	402.6	405.4	408.1	410.9	413.3
42.5°	370.7	373.8	376.8	379.8	382.9	385.9	388.8	391.7	394.6	397.5	400.1
45°	347.2	350.6	353.9	357.3	360.5	363.9	367.5	370.9	374.4	377.8	380.5
47.5°	322.6	326.4	330.2	333.9	337.7	341.6	345.6	349.5	353.5	357.5	360.4
50°	306.6	310.5	314.4	318.3	322.2	326.3	330.6	334.9	339.2	343.5	346.7
52.5°	289.7	293.8	297.9	302.0	306.1	310.5	315.3	320.0	324.7	329.5	332.8
55°	264.8	269.4	273.9	278.5	283.2	287.9	292.9	297.9	302.9	307.9	311.6
57.5°	240.6	245.3	250.1	254.9	259.7	264.8	270.3	275.7	281.2	286.7	290.4
60°	223.6	228.6	233.6	238.6	243.5	248.9	254.6	260.3	266.0	271.7	275.6
62.5°	207.6	212.7	217.8	222.9	228.0	233.6	239.6	245.6	251.7	257.7	261.5
65°	183.0	188.4	193.8	199.3	204.6	210.4	216.5	222.6	228.7	234.8	239.0
67.5°	158.0	163.8	169.5	175.2	181.0	186.9	193.2	199.4	205.6	211.8	216.4
70°	140.6	146.5	152.5	158.4	164.4	170.7	177.3	184.0	190.7	197.4	201.8
72.5°	124.5	130.5	136.5	142.4	148.4	154.8	161.7	168.6	175.5	182.4	186.9
75°	99.3	105.8	112.3	118.9	125.4	132.2	139.1	146.0	153.0	159.9	164.4
77.5°	77.3	83.9	90.5	97.0	103.6	110.4	117.4	124.4	131.4	138.4	143.2
80°	61.8	68.6	75.4	82.3	89.0	96.0	103.2	110.5	117.7	124.9	129.6
82.5°	48.3	55.3	62.1	69.1	76.0	83.1	90.4	97.8	105.1	112.4	117.2
85°	30.6	37.5	44.5	51.4	58.4	65.5	72.9	80.2	87.6	94.9	99.6
87.5°	16.8	24.2	31.6	39.0	46.3	53.9	61.6	69.2	76.9	84.6	89.5
90°	9.1	18.3	27.4	36.5	45.7	55.3	65.4	75.5	85.6	95.7	101.4
92.5°	27.1	32.6	38.1	43.5	49.1	56.4	65.6	74.9	84.1	93.4	99.5
95°	70.8	66.7	62.5	58.4	54.3	56.9	66.2	75.6	85.0	94.3	100.3
97.5°	134.6	135.3	135.8	136.5	137.1	132.2	121.9	111.6	101.3	91.1	97.1
100°	182.8	191.9	201.0	210.1	219.2	208.8	178.8	148.9	118.9	88.9	94.8
102.5°	237.7	245.0	252.3	259.7	267.0	254.0	220.6	187.2	153.8	120.3	118.5
105°	317.4	323.3	329.2	335.1	341.0	336.4	321.4	306.4	291.4	276.4	239.0
107.5°	401.0	405.9	410.7	415.6	420.4	427.4	436.3	445.3	454.3	463.3	436.8
110°	456.6	461.0	465.4	469.7	474.1	480.3	488.4	496.5	504.7	512.7	508.7



TEST NUMBER: P332140-930

CATALOG NUMBER: S123DIW-S560D1320U930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	510.3	514.0	517.8	521.5	525.2	531.0	538.9	546.8	554.7	562.6	566.2
115°	589.1	592.2	595.3	598.3	601.4	606.5	613.6	620.7	627.8	634.9	640.5
117.5°	665.9	668.7	671.5	674.3	676.9	681.3	687.0	692.8	698.5	704.3	709.5
120°	713.3	716.1	718.8	721.6	724.4	728.5	733.8	739.0	744.3	749.6	754.6
122.5°	761.9	764.0	766.1	768.2	770.2	773.9	779.2	784.4	789.6	794.9	799.2
125°	827.9	829.8	831.7	833.6	835.4	838.9	843.8	848.7	853.7	858.7	862.0
127.5°	892.5	894.3	896.0	897.7	899.4	902.5	906.9	911.4	915.9	920.3	923.8
130°	932.8	934.5	936.2	938.0	939.7	942.4	946.2	949.8	953.5	957.2	960.8
132.5°	970.9	972.7	974.5	976.4	978.2	980.6	983.6	986.5	989.5	992.5	996.0
135°	1029.6	1030.9	1032.2	1033.5	1034.7	1036.6	1039.0	1041.5	1043.9	1046.4	1049.6
137.5°	1079.9	1081.5	1083.2	1084.8	1086.5	1088.0	1089.4	1090.8	1092.1	1093.5	1096.8
140°	1112.9	1114.3	1115.7	1117.1	1118.5	1119.7	1120.9	1122.0	1123.1	1124.2	1127.2
142.5°	1143.9	1145.3	1146.5	1147.8	1149.1	1150.1	1150.9	1151.7	1152.4	1153.2	1155.8
145°	1187.3	1188.9	1190.3	1191.8	1193.3	1194.3	1194.7	1195.2	1195.7	1196.1	1197.8
147.5°	1227.6	1228.7	1229.7	1230.8	1231.9	1232.7	1233.1	1233.5	1234.0	1234.5	1235.3
150°	1252.8	1253.4	1254.2	1254.8	1255.6	1256.1	1256.6	1257.0	1257.5	1258.0	1258.5
152.5°	1275.4	1275.7	1276.0	1276.4	1276.7	1277.0	1277.3	1277.6	1277.8	1278.1	1279.0
155°	1307.3	1306.8	1306.4	1305.9	1305.4	1305.3	1305.5	1305.8	1306.0	1306.2	1307.4
157.5°	1332.0	1332.0	1332.0	1331.9	1331.8	1331.7	1331.5	1331.2	1331.0	1330.7	1332.1
160°	1347.1	1346.9	1346.6	1346.4	1346.1	1346.0	1345.7	1345.5	1345.2	1345.0	1346.4
162.5°	1361.4	1360.7	1360.2	1359.5	1358.9	1358.5	1358.3	1358.0	1357.8	1357.6	1359.2
165°	1378.6	1377.9	1377.1	1376.5	1375.7	1375.3	1375.1	1374.8	1374.6	1374.4	1376.2
167.5°	1392.0	1391.1	1390.1	1389.2	1388.2	1387.8	1387.8	1387.8	1387.8	1387.8	1389.7
170°	1399.5	1398.6	1397.7	1396.8	1395.8	1395.3	1395.3	1395.3	1395.3	1395.3	1397.2
172.5°	1404.6	1403.5	1402.3	1401.2	1400.1	1399.6	1399.8	1400.0	1400.2	1400.4	1402.2
175°	1411.0	1409.9	1408.8	1407.5	1406.4	1405.9	1406.1	1406.4	1406.6	1406.9	1408.5
177.5°	1412.8	1411.8	1410.9	1410.0	1409.0	1408.7	1408.8	1409.0	1409.2	1409.4	1410.9
180°	1411.0	1411.0	1411.0	1411.0	1411.0	1411.0	1411.0	1411.0	1411.0	1411.0	1411.0



TEST NUMBER: P332140-930

CATALOG NUMBER: S123DIW-S560D1320U930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3
2.5°	572.1	573.0	573.9	574.3	574.1	574.1	574.0	573.8
5°	571.2	572.3	573.4	573.9	573.7	573.6	573.5	573.3
7.5°	567.7	569.1	570.5	571.1	571.0	570.8	570.6	570.5
10°	564.3	565.7	567.0	567.5	567.3	567.0	566.7	566.5
12.5°	559.5	560.8	562.1	562.6	562.3	562.0	561.7	561.5
15°	550.5	551.9	553.3	553.9	553.8	553.6	553.5	553.3
17.5°	538.7	540.0	541.2	541.8	541.5	541.4	541.2	541.0
20°	530.3	531.5	532.7	533.5	533.5	533.7	533.9	533.9
22.5°	520.9	522.5	524.1	524.8	524.7	524.6	524.6	524.5
25°	505.1	507.0	508.7	509.6	509.6	509.6	509.6	509.6
27.5°	488.6	490.2	491.7	492.6	492.7	492.8	492.9	493.0
30°	477.4	479.0	480.7	481.5	481.5	481.5	481.5	481.5
32.5°	465.0	466.8	468.6	469.7	470.0	470.3	470.7	471.0
35°	446.9	449.1	451.1	452.4	453.0	453.6	454.1	454.7
37.5°	428.1	430.5	432.8	434.3	434.7	435.1	435.6	436.0
40°	415.6	418.0	420.4	421.8	422.4	423.0	423.5	424.0
42.5°	402.6	405.2	407.8	409.4	410.3	411.0	411.8	412.5
45°	383.1	385.7	388.4	390.3	391.3	392.5	393.6	394.7
47.5°	363.5	366.4	369.3	371.3	372.1	373.0	373.9	374.7
50°	349.8	353.1	356.3	358.3	359.3	360.3	361.3	362.2
52.5°	336.1	339.4	342.8	345.0	346.2	347.3	348.5	349.8
55°	315.4	319.1	322.9	325.3	326.4	327.5	328.6	329.8
57.5°	294.2	298.0	301.7	304.3	305.6	306.9	308.2	309.5
60°	279.5	283.3	287.2	289.9	291.5	292.9	294.5	296.0
62.5°	265.5	269.4	273.2	275.9	277.3	278.7	280.1	281.5
65°	243.1	247.3	251.5	254.3	255.7	257.1	258.4	259.8
67.5°	220.9	225.5	230.1	232.9	234.1	235.2	236.4	237.6
70°	206.3	210.7	215.2	218.0	219.4	220.8	222.2	223.6
72.5°	191.4	196.0	200.6	203.6	205.0	206.4	207.7	209.1
75°	169.0	173.7	178.2	181.3	183.0	184.7	186.3	188.0
77.5°	148.1	152.9	157.7	160.8	162.1	163.3	164.6	165.9
80°	134.4	139.1	143.8	146.8	148.2	149.6	151.0	152.4
82.5°	121.9	126.5	131.3	134.4	135.7	137.1	138.5	139.9
85°	104.4	109.1	113.8	116.8	118.2	119.6	121.0	122.4
87.5°	94.4	99.3	104.2	107.4	108.9	110.4	111.9	113.3
90°	107.0	112.7	118.3	122.1	123.9	125.8	127.7	129.5
92.5°	105.6	111.7	117.8	121.6	123.2	124.7	126.3	127.8
95°	106.2	112.1	118.1	121.7	123.1	124.5	125.9	127.3
97.5°	103.1	109.1	115.1	118.9	120.5	122.1	123.8	125.4
100°	100.7	106.6	112.5	116.3	117.9	119.4	121.1	122.7
102.5°	116.6	114.7	112.8	112.8	114.6	116.4	118.2	120.1
105°	201.7	164.4	127.0	109.3	111.0	112.7	114.4	116.1
107.5°	410.3	383.7	357.2	329.0	299.1	269.3	239.5	209.6
110°	504.6	500.5	496.4	478.3	446.1	413.9	381.7	349.5





TEST NUMBER: P332140-930

CATALOG NUMBER: S123DIW-S560D1320U930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	569.9	573.5	577.2	576.1	570.2	564.4	558.6	552.8
115°	646.1	651.8	657.5	661.4	663.4	665.4	667.5	669.5
117.5°	714.6	719.7	725.0	728.1	729.4	730.7	732.0	733.2
120°	759.7	764.8	769.8	772.8	773.8	774.8	775.8	776.7
122.5°	803.6	808.0	812.4	815.2	816.4	817.5	818.6	819.9
125°	865.4	868.8	872.2	874.6	876.0	877.4	878.9	880.4
127.5°	927.3	930.8	934.3	936.3	936.8	937.3	937.7	938.2
130°	964.4	967.9	971.5	973.5	973.9	974.2	974.6	974.9
132.5°	999.4	1002.8	1006.3	1008.2	1008.4	1008.8	1009.1	1009.3
135°	1052.8	1056.0	1059.2	1060.8	1060.8	1060.8	1060.8	1060.8
137.5°	1100.2	1103.4	1106.8	1108.5	1108.7	1109.0	1109.2	1109.5
140°	1130.2	1133.3	1136.3	1137.9	1138.2	1138.3	1138.6	1138.8
142.5°	1158.5	1161.1	1163.7	1165.0	1165.1	1165.1	1165.1	1165.1
145°	1199.3	1200.9	1202.5	1203.5	1204.1	1204.6	1205.2	1205.7
147.5°	1236.2	1236.9	1237.7	1237.8	1237.2	1236.6	1236.1	1235.5
150°	1258.9	1259.4	1259.9	1259.9	1259.5	1259.1	1258.7	1258.2
152.5°	1279.8	1280.7	1281.5	1281.4	1280.3	1279.4	1278.3	1277.3
155°	1308.6	1309.7	1310.9	1310.8	1309.4	1308.0	1306.6	1305.2
157.5°	1333.6	1335.0	1336.4	1336.1	1334.3	1332.5	1330.6	1328.9
160°	1347.8	1349.2	1350.6	1350.5	1348.8	1347.2	1345.6	1343.9
162.5°	1360.7	1362.4	1363.9	1364.0	1362.5	1361.1	1359.7	1358.2
165°	1378.1	1380.0	1381.9	1381.9	1380.3	1378.7	1377.0	1375.4
167.5°	1391.6	1393.3	1395.2	1395.2	1393.3	1391.6	1389.7	1387.8
170°	1399.1	1400.9	1402.8	1402.8	1400.9	1399.1	1397.2	1395.3
172.5°	1404.1	1406.0	1407.9	1407.7	1405.7	1403.6	1401.6	1399.5
175°	1410.1	1411.8	1413.4	1413.2	1411.4	1409.6	1407.7	1405.8
177.5°	1412.3	1413.9	1415.4	1415.2	1413.3	1411.4	1409.6	1407.7
180°	1411.0	1411.0	1411.0	1411.0	1411.0	1411.0	1411.0	1411.0

(END OF REPORT)