

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: P332826-940

Luminaire Tested: **S124DIW-S1020D1340U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332826-940
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: S124DIW-S1020D1340U940-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7906.1 lumens
Efficiency: N/A
Efficacy: 113.3 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

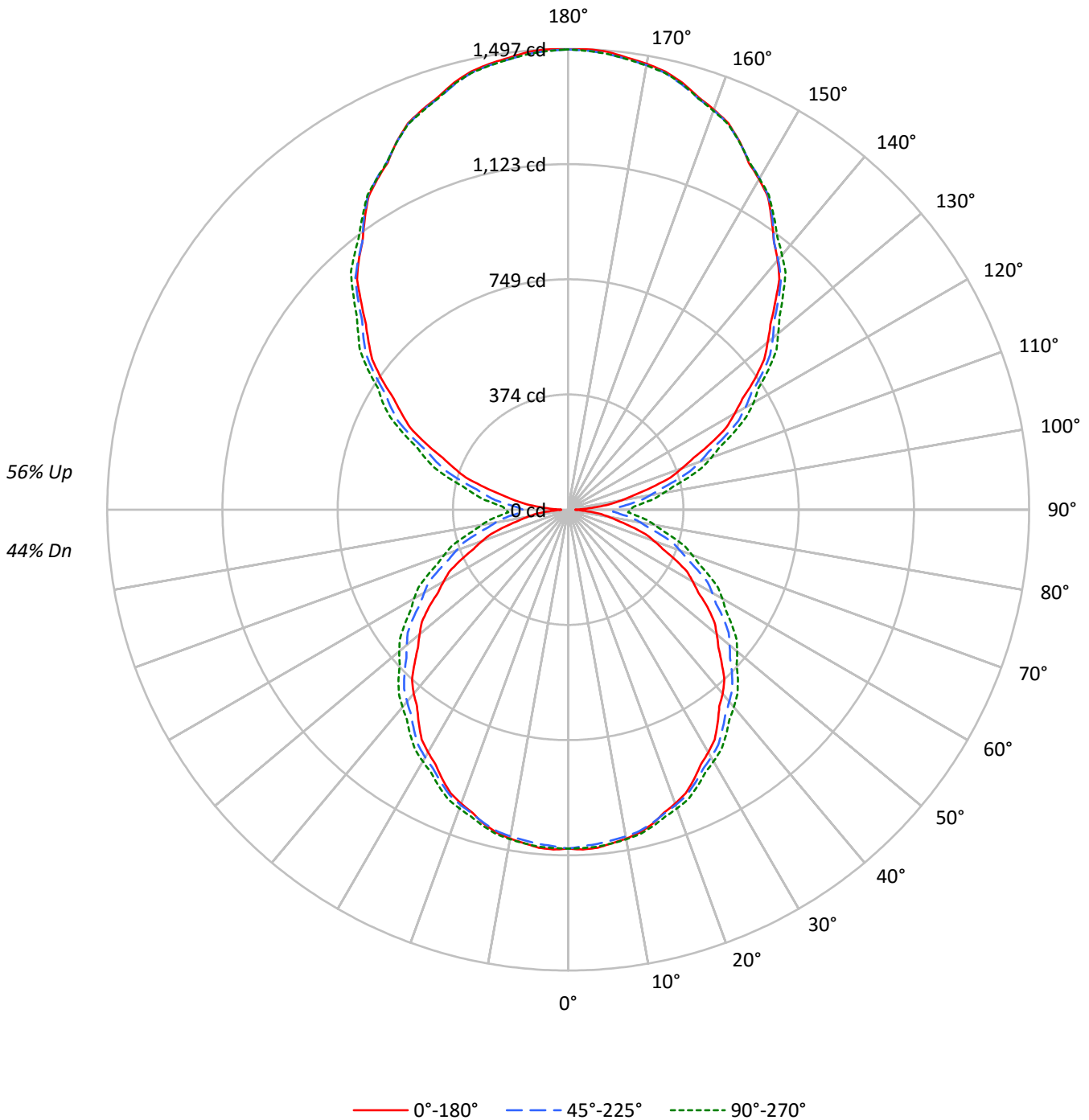
Input Watts (W): 69.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44
1	96	91	87	83	87	83	80	76	69	66	64	55	54	52	43	42	41	35
2	87	79	72	67	79	72	67	62	60	56	52	48	45	43	38	36	34	29
3	79	69	61	55	72	63	57	51	52	47	43	42	39	36	33	30	28	24
4	72	61	53	46	65	56	49	43	46	41	37	37	33	30	29	26	24	20
5	66	54	46	39	60	50	42	37	41	36	31	33	29	26	26	23	21	17
6	61	48	40	34	55	44	37	32	37	31	27	30	26	23	24	21	18	15
7	56	43	35	30	51	40	33	28	33	28	24	27	23	20	22	18	16	13
8	52	39	31	26	47	36	29	24	30	25	21	25	21	18	20	17	14	12
9	48	36	28	23	44	33	26	22	28	22	19	23	19	16	18	15	13	11
10	45	33	25	21	41	30	24	19	26	20	17	21	17	14	17	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8888	8888	8888
5°	8916	8686	8711
10°	8861	8544	8538
15°	8782	8380	8334
20°	8662	8198	8135
25°	8527	7995	7918
30°	8381	7793	7693
35°	8216	7585	7497
40°	8083	7388	7292
45°	7887	7207	7117
50°	7721	6996	6931
55°	7549	6799	6714
60°	7282	6547	6515
65°	6989	6278	6271
70°	6633	5968	5986
75°	6136	5628	5730
80°	5588	5302	5476
85°	4893	5013	5328



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	104.3	1.3
10°-20°	298.7	3.8
20°-30°	451.7	5.7
30°-40°	546.5	6.9
40°-50°	577.7	7.3
50°-60°	543.7	6.9
60°-70°	451.1	5.7
70°-80°	316.9	4.0
80°-90°	183.6	2.3
90°-100°	205.0	2.6
100°-110°	370.9	4.7
110°-120°	548.7	6.9
120°-130°	683.7	8.6
130°-140°	747.2	9.5
140°-150°	724.2	9.2
150°-160°	606.9	7.7
160°-170°	403.8	5.1
170°-180°	141.4	1.8
0°-30°	854.6	10.8
0°-40°	1401.1	17.7
0°-60°	2522.6	31.9
0°-90°	3474.2	43.9
90°-120°	1124.6	14.2
90°-150°	3279.7	41.5
90°-180°	4432.0	56.1
0°-180°	7906.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1101	1101	1101	1101	1101	
5°	1102	1098	1090	1099	1098	105
15°	1057	1058	1054	1065	1064	298
25°	967	974	978	991	992	445
35°	846	860	873	889	894	529
45°	705	729	752	772	779	545
55°	552	579	615	639	647	492
65°	382	422	464	493	504	379
75°	212	258	309	343	355	226
85°	65	117	173	208	222	70
90°	23	85	148	188	202	17
95°	85	137	195	230	243	90
105°	280	308	357	390	404	298
115°	512	524	560	585	593	505
125°	739	740	768	788	794	659
135°	950	957	965	982	986	735
145°	1152	1155	1156	1162	1164	721
155°	1318	1318	1317	1321	1317	606
165°	1435	1432	1429	1436	1432	404
175°	1493	1487	1486	1493	1486	142
180°	1495	1495	1495	1495	1495	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0
2.5°	1104.9	1104.3	1103.6	1103.0	1102.2	1101.1	1099.3	1097.6	1095.8	1094.0	1095.6
5°	1102.2	1101.4	1100.5	1099.7	1098.9	1097.5	1095.6	1093.7	1091.8	1089.8	1092.1
7.5°	1092.8	1092.3	1091.8	1091.4	1090.8	1089.8	1088.2	1086.6	1085.0	1083.4	1085.9
10°	1084.9	1084.7	1084.4	1084.1	1083.9	1083.0	1081.6	1080.3	1078.9	1077.5	1080.0
12.5°	1074.1	1074.1	1074.0	1073.9	1073.9	1073.4	1072.5	1071.5	1070.6	1069.6	1071.9
15°	1056.6	1056.9	1057.1	1057.4	1057.7	1057.4	1056.6	1055.8	1054.9	1054.1	1056.6
17.5°	1032.7	1033.5	1034.3	1035.1	1036.0	1036.3	1036.1	1036.0	1035.8	1035.6	1038.1
20°	1015.9	1016.7	1017.5	1018.3	1019.2	1019.8	1020.0	1020.3	1020.6	1020.8	1023.6
22.5°	997.1	998.2	999.3	1000.3	1001.3	1002.1	1002.6	1003.1	1003.5	1004.1	1006.8
25°	966.6	968.2	969.8	971.5	973.1	974.4	975.2	976.1	976.9	977.7	980.7
27.5°	932.6	935.0	937.4	939.8	942.2	944.1	945.3	946.6	947.8	949.0	951.9
30°	909.9	912.0	914.3	916.4	918.6	920.7	922.6	924.5	926.4	928.4	931.4
32.5°	885.2	887.9	890.5	893.1	895.7	898.1	900.3	902.4	904.6	906.7	910.1
35°	845.8	849.1	852.3	855.6	858.9	861.9	864.7	867.4	870.1	872.9	876.7
37.5°	806.0	809.9	813.6	817.4	821.2	824.7	828.1	831.5	835.0	838.4	842.2
40°	780.4	784.0	787.6	791.1	794.7	798.3	802.2	806.0	809.9	813.7	817.8
42.5°	750.8	754.8	758.8	762.9	766.8	771.1	775.5	780.1	784.5	789.1	793.6
45°	705.2	710.4	715.6	720.9	726.0	731.2	736.5	741.6	746.8	752.1	756.7
47.5°	661.6	666.9	672.3	677.7	683.1	688.8	694.7	700.8	706.9	712.8	717.6
50°	630.0	636.1	642.0	648.1	654.1	660.1	666.2	672.2	678.2	684.2	689.7
52.5°	598.4	604.5	610.5	616.5	622.6	629.0	635.9	642.8	649.7	656.7	662.1
55°	552.3	558.1	563.8	569.6	575.3	582.3	590.6	598.8	607.0	615.2	620.7
57.5°	500.8	507.9	515.1	522.2	529.3	536.9	545.1	553.3	561.4	569.6	576.1
60°	467.3	474.4	481.5	488.7	495.8	503.8	512.9	521.9	530.9	540.0	546.3
62.5°	434.7	442.5	450.3	458.1	465.8	474.2	483.3	492.3	501.4	510.4	516.7
65°	382.2	390.9	399.8	408.5	417.2	426.3	435.6	445.0	454.2	463.6	470.4
67.5°	331.6	341.0	350.3	359.6	368.9	378.5	388.5	398.5	408.5	418.5	425.4
70°	297.1	306.5	315.8	325.0	334.4	344.3	354.6	365.1	375.5	385.9	393.3
72.5°	263.6	273.1	282.7	292.2	301.8	312.0	323.1	334.1	345.3	356.3	363.5
75°	212.0	222.2	232.3	242.5	252.6	263.4	274.9	286.4	297.9	309.4	317.1
77.5°	164.0	174.7	185.5	196.2	207.0	218.3	230.4	242.5	254.5	266.5	274.3
80°	134.4	145.3	156.3	167.3	178.3	189.8	201.8	213.8	225.9	237.9	246.2
82.5°	104.8	116.2	127.6	139.0	150.3	162.1	174.2	186.2	198.3	210.4	218.7
85°	65.4	76.9	88.4	99.9	111.4	123.3	135.6	147.9	160.2	172.6	180.8
87.5°	37.2	49.0	60.6	72.4	84.2	96.2	108.6	121.1	133.5	145.9	154.2
90°	23.2	37.0	50.7	64.6	78.4	92.1	106.0	119.8	133.7	147.5	156.9
92.5°	43.5	56.6	69.7	82.8	95.9	109.1	122.3	135.5	148.7	161.9	170.6
95°	85.4	96.8	108.2	119.5	130.8	143.0	156.0	169.1	182.1	195.1	203.3
97.5°	135.7	145.3	155.0	164.6	174.2	185.7	198.9	212.1	225.4	238.6	246.7
100°	175.5	183.6	191.8	199.9	208.0	218.6	231.7	244.6	257.6	270.6	278.6
102.5°	218.0	224.7	231.3	238.0	244.7	254.2	266.8	279.4	291.9	304.5	312.5
105°	280.5	286.3	292.0	297.7	303.4	311.9	323.1	334.3	345.4	356.6	364.3
107.5°	348.6	353.3	358.1	362.9	367.7	375.1	384.8	394.5	404.2	414.0	421.4
110°	393.8	398.1	402.5	406.9	411.2	418.0	427.4	436.7	446.0	455.4	461.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	441.0	444.4	447.9	451.4	455.0	461.0	469.7	478.4	487.1	495.8	501.8
115°	511.6	514.1	516.6	519.0	521.5	526.8	535.1	543.3	551.6	559.8	565.6
117.5°	579.3	581.0	582.7	584.4	586.1	590.8	598.6	606.5	614.3	622.1	626.9
120°	623.7	625.5	627.4	629.3	631.1	635.6	642.8	650.0	657.1	664.3	668.5
122.5°	670.9	671.5	672.1	672.6	673.2	677.1	684.2	691.3	698.5	705.6	710.2
125°	739.3	739.0	738.7	738.4	738.2	741.4	748.0	754.6	761.1	767.7	772.4
127.5°	802.2	802.6	803.2	803.7	804.1	806.8	811.6	816.5	821.4	826.3	830.6
130°	845.6	846.1	846.6	847.1	847.6	850.0	854.4	858.8	863.2	867.5	872.0
132.5°	890.9	891.2	891.5	891.8	892.1	893.9	897.2	900.4	903.7	907.0	911.3
135°	949.6	951.1	952.7	954.2	955.7	957.5	959.4	961.4	963.2	965.2	969.0
137.5°	1014.9	1015.3	1015.7	1016.2	1016.6	1017.5	1018.9	1020.2	1021.5	1022.9	1026.2
140°	1058.3	1058.5	1058.8	1059.0	1059.3	1059.5	1059.8	1060.1	1060.3	1060.6	1063.9
142.5°	1097.1	1097.5	1098.1	1098.5	1098.9	1098.9	1098.6	1098.2	1097.9	1097.5	1100.5
145°	1151.9	1152.6	1153.4	1154.1	1154.9	1155.4	1155.7	1155.9	1156.2	1156.5	1157.8
147.5°	1206.5	1207.5	1208.4	1209.3	1210.3	1210.7	1210.5	1210.3	1210.1	1209.9	1209.9
150°	1239.7	1240.5	1241.3	1242.1	1242.8	1243.1	1243.1	1243.1	1243.1	1243.1	1243.1
152.5°	1270.2	1270.8	1271.4	1271.9	1272.5	1272.9	1273.1	1273.3	1273.5	1273.7	1274.3
155°	1318.3	1318.3	1318.3	1318.3	1318.3	1318.2	1317.9	1317.7	1317.4	1317.2	1318.2
157.5°	1359.1	1358.6	1358.2	1357.6	1357.2	1356.9	1356.9	1356.8	1356.8	1356.7	1357.5
160°	1383.1	1382.9	1382.6	1382.3	1382.1	1381.8	1381.5	1381.3	1381.1	1380.8	1381.5
162.5°	1405.3	1404.6	1404.0	1403.3	1402.7	1402.2	1401.9	1401.7	1401.4	1401.1	1402.6
165°	1435.1	1434.4	1433.6	1432.8	1432.1	1431.5	1430.9	1430.4	1429.9	1429.3	1430.9
167.5°	1458.0	1457.0	1455.9	1454.8	1453.8	1453.2	1453.3	1453.3	1453.4	1453.4	1455.0
170°	1471.0	1469.7	1468.5	1467.1	1465.9	1465.3	1465.6	1465.9	1466.2	1466.3	1467.9
172.5°	1480.2	1479.2	1478.1	1477.0	1476.0	1475.4	1475.5	1475.5	1475.6	1475.6	1477.4
175°	1493.0	1491.7	1490.4	1489.2	1487.8	1487.0	1486.8	1486.6	1486.3	1486.0	1487.8
177.5°	1497.1	1496.1	1495.0	1494.1	1493.0	1492.5	1492.5	1492.5	1492.5	1492.5	1494.0
180°	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0
2.5°	1097.2	1098.7	1100.2	1100.8	1100.6	1100.4	1100.2	1100.0
5°	1094.2	1096.4	1098.7	1099.6	1099.3	1099.0	1098.8	1098.5
7.5°	1088.4	1090.8	1093.3	1094.4	1094.1	1093.9	1093.6	1093.3
10°	1082.4	1084.9	1087.4	1088.5	1088.2	1088.0	1087.7	1087.4
12.5°	1074.2	1076.4	1078.6	1079.8	1079.7	1079.6	1079.6	1079.5
15°	1059.1	1061.5	1064.0	1065.1	1064.8	1064.5	1064.3	1064.0
17.5°	1040.6	1043.2	1045.7	1046.9	1046.6	1046.4	1046.2	1046.0
20°	1026.3	1029.0	1031.8	1033.1	1033.1	1033.1	1033.1	1033.1
22.5°	1009.5	1012.3	1015.0	1016.6	1017.1	1017.4	1017.9	1018.3
25°	983.7	986.7	989.7	991.4	991.7	991.9	992.2	992.5
27.5°	954.7	957.4	960.3	961.8	962.2	962.5	962.8	963.1
30°	934.4	937.4	940.4	942.2	942.7	943.3	943.9	944.4
32.5°	913.6	917.0	920.5	922.5	923.0	923.5	924.1	924.7
35°	880.6	884.4	888.2	890.6	891.4	892.2	893.0	893.9
37.5°	846.1	850.1	853.9	856.3	857.2	858.1	858.9	859.8
40°	821.9	826.0	830.2	832.8	833.8	834.9	836.1	837.1
42.5°	798.2	802.7	807.3	809.9	810.8	811.7	812.6	813.4
45°	761.3	766.1	770.7	773.7	775.1	776.4	777.8	779.2
47.5°	722.5	727.3	732.2	735.4	737.0	738.7	740.3	742.0
50°	695.2	700.7	706.1	709.7	711.4	713.0	714.6	716.3
52.5°	667.6	673.1	678.6	682.1	683.8	685.4	687.1	688.7
55°	626.2	631.7	637.1	640.7	642.3	644.0	645.6	647.3
57.5°	582.6	589.2	595.7	599.7	601.2	602.8	604.3	605.8
60°	552.6	558.9	565.2	569.4	571.7	573.8	576.0	578.2
62.5°	523.0	529.3	535.7	539.8	542.1	544.2	546.4	548.7
65°	477.2	484.1	491.0	495.5	497.7	499.9	502.0	504.3
67.5°	432.4	439.3	446.3	450.8	453.0	455.1	457.3	459.4
70°	400.6	408.0	415.4	420.2	422.0	424.0	425.9	427.8
72.5°	370.7	377.8	385.0	389.7	391.8	394.0	396.1	398.2
75°	324.8	332.4	340.1	345.2	347.7	350.2	352.6	355.1
77.5°	282.1	289.9	297.7	302.9	305.5	308.2	310.8	313.4
80°	254.4	262.6	270.8	276.0	278.2	280.4	282.6	284.8
82.5°	227.2	235.7	244.1	249.5	251.9	254.3	256.7	259.1
85°	189.0	197.2	205.5	211.0	213.7	216.4	219.2	221.9
87.5°	162.4	170.7	178.9	184.3	186.8	189.3	191.8	194.3
90°	166.5	175.9	185.5	191.5	194.2	197.0	199.7	202.3
92.5°	179.2	187.9	196.5	202.2	204.6	207.1	209.6	212.1
95°	211.5	219.6	227.8	233.2	235.6	238.1	240.5	243.0
97.5°	254.9	263.0	271.0	276.3	278.7	281.0	283.3	285.7
100°	286.4	294.4	302.3	307.2	309.2	311.0	313.0	314.9
102.5°	320.4	328.2	336.2	341.3	343.6	346.0	348.3	350.6
105°	371.8	379.4	387.1	392.4	395.3	398.3	401.3	404.2
107.5°	428.9	436.4	443.8	448.5	450.4	452.4	454.2	456.2
110°	467.0	472.7	478.5	482.9	485.9	488.8	491.8	494.7



TEST NUMBER: P332826-940

CATALOG NUMBER: S124DIW-S1020D1340U940-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	507.7	513.7	519.7	523.9	526.2	528.5	530.9	533.2
115°	571.4	577.1	582.9	586.7	588.3	590.0	591.7	593.3
117.5°	631.7	636.5	641.3	644.6	646.3	648.0	649.6	651.3
120°	672.7	676.9	681.1	684.6	687.2	689.9	692.7	695.4
122.5°	714.9	719.4	724.1	726.9	727.9	729.0	730.0	731.1
125°	777.1	781.8	786.5	789.3	790.5	791.7	792.7	793.9
127.5°	835.1	839.5	843.9	846.9	848.3	849.7	851.2	852.7
130°	876.4	880.8	885.2	887.7	888.3	888.9	889.6	890.2
132.5°	915.5	919.7	923.9	926.6	927.8	929.1	930.3	931.6
135°	972.9	976.8	980.6	983.0	983.9	984.7	985.6	986.5
137.5°	1029.6	1032.9	1036.2	1038.7	1040.2	1041.7	1043.2	1044.7
140°	1067.2	1070.5	1073.8	1076.0	1077.2	1078.3	1079.4	1080.5
142.5°	1103.7	1106.7	1109.8	1111.9	1112.9	1114.1	1115.2	1116.2
145°	1159.2	1160.6	1162.0	1162.9	1163.1	1163.5	1163.9	1164.1
147.5°	1209.9	1209.9	1210.0	1210.2	1210.9	1211.5	1212.1	1212.7
150°	1243.1	1243.1	1243.1	1243.0	1242.8	1242.5	1242.2	1242.1
152.5°	1275.0	1275.6	1276.2	1276.1	1275.5	1274.8	1274.2	1273.5
155°	1319.3	1320.3	1321.3	1321.3	1320.3	1319.3	1318.2	1317.2
157.5°	1358.3	1359.1	1359.9	1359.8	1358.9	1358.0	1357.2	1356.3
160°	1382.3	1383.1	1383.8	1383.6	1382.3	1381.1	1379.7	1378.5
162.5°	1403.9	1405.3	1406.7	1406.8	1405.4	1404.2	1402.9	1401.6
165°	1432.4	1434.0	1435.6	1435.8	1434.8	1433.7	1432.7	1431.6
167.5°	1456.5	1458.0	1459.6	1459.6	1457.9	1456.3	1454.8	1453.2
170°	1469.5	1471.0	1472.6	1472.4	1470.6	1468.8	1467.0	1465.3
172.5°	1479.1	1480.9	1482.6	1482.6	1480.8	1479.0	1477.2	1475.4
175°	1489.6	1491.4	1493.3	1493.3	1491.4	1489.6	1487.8	1486.0
177.5°	1495.4	1496.8	1498.3	1498.2	1496.6	1494.9	1493.3	1491.6
180°	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3

(END OF REPORT)