

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: P332819-935

Luminaire Tested: **S124DIW-S1020D1050U935-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332819-935
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: S124DIW-S1020D1050U935-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1050 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7235.0 lumens
Efficiency: N/A
Efficacy: 118.2 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

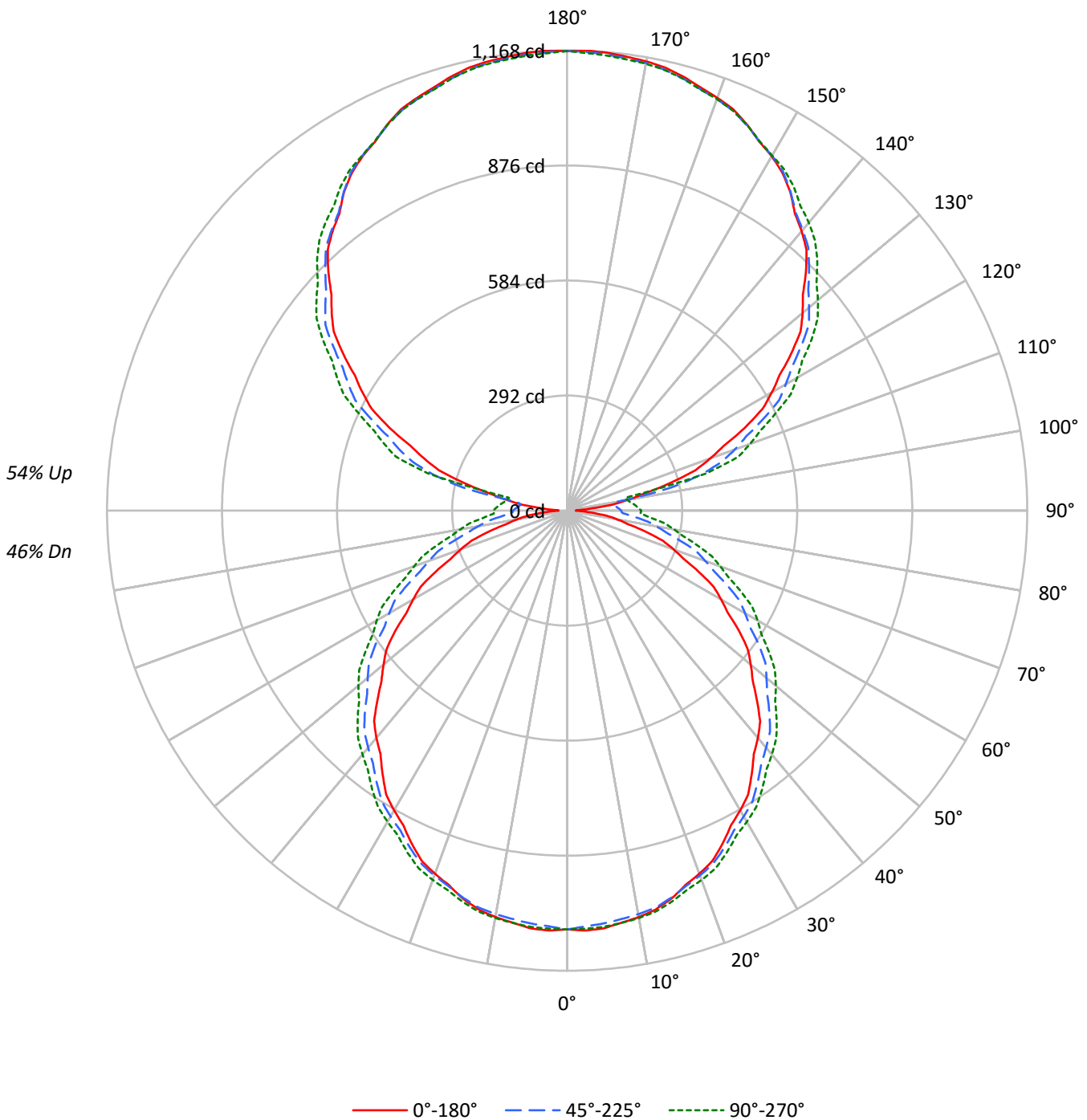
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332819-935

CATALOG NUMBER: S124DIW-S1020D1050U935-4F0-1E-UDD-D

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	98	98	98	98	81	81	81	66	66	66	53	53	53	46
1	96	91	87	83	88	84	80	77	70	67	65	57	55	53	45	44	43	37
2	87	79	73	67	79	73	67	62	61	56	53	49	46	44	39	37	35	30
3	79	69	62	55	72	64	57	52	53	48	44	43	40	37	34	32	29	25
4	72	61	53	47	66	56	49	43	47	41	37	38	34	31	30	28	25	21
5	66	54	46	40	60	50	43	37	42	36	32	34	30	27	27	24	22	18
6	61	48	40	34	56	45	37	32	38	32	28	31	27	23	25	21	19	16
7	56	44	36	30	51	40	33	28	34	28	24	28	24	20	23	19	17	14
8	52	40	32	26	48	37	30	25	31	25	21	26	21	18	21	17	15	12
9	48	36	28	23	44	33	27	22	28	23	19	24	19	16	19	16	13	11
10	45	33	26	21	41	31	24	20	26	21	17	22	18	15	18	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8582	8582	8582
5°	8608	8387	8412
10°	8556	8250	8244
15°	8479	8091	8047
20°	8364	7916	7856
25°	8233	7719	7645
30°	8093	7524	7428
35°	7933	7324	7239
40°	7804	7134	7041
45°	7615	6958	6871
50°	7455	6755	6692
55°	7289	6565	6482
60°	7031	6322	6290
65°	6747	6061	6055
70°	6405	5763	5780
75°	5924	5435	5533
80°	5397	5119	5288
85°	4721	4842	5146



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.7	1.4
10°-20°	288.4	4.0
20°-30°	436.1	6.0
30°-40°	527.7	7.3
40°-50°	557.9	7.7
50°-60°	525.0	7.3
60°-70°	435.6	6.0
70°-80°	306.0	4.2
80°-90°	176.3	2.4
90°-100°	142.6	2.0
100°-110°	330.4	4.6
110°-120°	537.6	7.4
120°-130°	646.4	8.9
130°-140°	673.3	9.3
140°-150°	620.5	8.6
150°-160°	498.4	6.9
160°-170°	321.4	4.4
170°-180°	110.8	1.5
0°-30°	825.2	11.4
0°-40°	1352.9	18.7
0°-60°	2435.8	33.7
0°-90°	3353.6	46.4
90°-120°	1010.6	14.0
90°-150°	2950.8	40.8
90°-180°	3881.0	53.6
0°-180°	7235.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1063	1063	1063	1063	1063	
5°	1064	1060	1052	1061	1061	101
15°	1020	1021	1018	1028	1027	287
25°	933	940	944	956	958	430
35°	817	831	843	859	863	511
45°	681	704	726	746	752	526
55°	533	559	594	617	625	475
65°	369	407	448	476	487	366
75°	205	249	299	331	343	218
85°	63	113	167	201	214	67
90°	22	79	137	175	188	15
95°	64	75	123	159	172	74
105°	273	303	351	385	366	287
115°	497	512	548	575	584	490
125°	694	698	724	749	758	620
135°	857	857	868	888	898	661
145°	987	988	988	996	1003	617
155°	1081	1082	1079	1082	1080	498
165°	1140	1136	1136	1142	1135	322
175°	1166	1161	1162	1169	1159	111
180°	1166	1166	1166	1166	1166	



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CATALOG NUMBER: S124DIW-S1020D1050U935-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1
2.5°	1066.9	1066.3	1065.6	1065.0	1064.3	1063.2	1061.4	1059.8	1058.1	1056.4	1057.8
5°	1064.2	1063.4	1062.6	1061.9	1061.1	1059.7	1057.9	1056.0	1054.2	1052.3	1054.5
7.5°	1055.2	1054.7	1054.2	1053.8	1053.3	1052.3	1050.8	1049.2	1047.7	1046.1	1048.5
10°	1047.6	1047.3	1047.1	1046.8	1046.5	1045.7	1044.4	1043.1	1041.7	1040.4	1042.8
12.5°	1037.1	1037.1	1037.0	1036.9	1036.9	1036.4	1035.5	1034.6	1033.7	1032.8	1035.0
15°	1020.2	1020.5	1020.7	1021.0	1021.2	1021.0	1020.2	1019.4	1018.6	1017.8	1020.2
17.5°	997.1	997.9	998.7	999.4	1000.3	1000.6	1000.4	1000.3	1000.1	1000.0	1002.4
20°	980.9	981.7	982.5	983.3	984.1	984.6	984.9	985.2	985.4	985.7	988.3
22.5°	962.8	963.8	964.8	965.9	966.8	967.6	968.0	968.5	969.0	969.5	972.2
25°	933.3	934.9	936.4	938.1	939.6	940.8	941.6	942.5	943.2	944.0	946.9
27.5°	900.4	902.8	905.1	907.4	909.7	911.5	912.7	914.0	915.2	916.4	919.1
30°	878.6	880.6	882.8	884.8	887.0	889.0	890.8	892.7	894.5	896.4	899.3
32.5°	854.7	857.3	859.8	862.4	864.9	867.2	869.3	871.3	873.4	875.5	878.7
35°	816.7	819.8	822.9	826.1	829.3	832.2	834.9	837.5	840.2	842.8	846.5
37.5°	778.3	782.0	785.6	789.3	792.9	796.3	799.6	802.9	806.2	809.5	813.2
40°	753.5	757.0	760.4	763.9	767.3	770.9	774.6	778.3	782.0	785.7	789.6
42.5°	725.0	728.8	732.7	736.6	740.4	744.5	748.8	753.2	757.5	761.9	766.3
45°	680.9	686.0	691.0	696.0	701.0	706.0	711.1	716.1	721.1	726.2	730.6
47.5°	638.8	643.9	649.1	654.4	659.5	665.0	670.8	676.7	682.5	688.3	692.9
50°	608.3	614.2	619.9	625.8	631.5	637.4	643.3	649.0	654.9	660.6	666.0
52.5°	577.8	583.7	589.4	595.3	601.2	607.3	614.0	620.7	627.3	634.0	639.3
55°	533.3	538.9	544.4	550.0	555.5	562.2	570.2	578.2	586.1	594.0	599.3
57.5°	483.5	490.4	497.3	504.2	511.1	518.4	526.3	534.3	542.1	550.0	556.3
60°	451.2	458.1	464.9	471.8	478.7	486.5	495.2	503.9	512.6	521.4	527.4
62.5°	419.7	427.2	434.8	442.3	449.8	457.9	466.7	475.4	484.1	492.8	498.9
65°	369.0	377.5	386.0	394.4	402.9	411.6	420.6	429.6	438.6	447.6	454.2
67.5°	320.2	329.2	338.2	347.2	356.2	365.5	375.1	384.8	394.4	404.1	410.8
70°	286.9	295.9	304.9	313.8	322.9	332.4	342.4	352.5	362.6	372.6	379.8
72.5°	254.5	263.7	272.9	282.1	291.4	301.3	311.9	322.6	333.4	344.1	350.9
75°	204.7	214.6	224.3	234.1	243.9	254.3	265.4	276.6	287.7	298.8	306.2
77.5°	158.3	168.7	179.1	189.4	199.8	210.8	222.5	234.1	245.7	257.4	264.8
80°	129.8	140.3	150.9	161.5	172.1	183.2	194.8	206.5	218.1	229.7	237.7
82.5°	101.2	112.2	123.2	134.2	145.2	156.5	168.2	179.8	191.5	203.1	211.2
85°	63.1	74.2	85.3	96.4	107.5	119.1	131.0	142.8	154.7	166.7	174.6
87.5°	35.7	47.0	58.2	69.4	80.7	92.2	104.1	116.0	127.9	139.8	147.7
90°	21.7	34.4	47.1	59.8	72.5	85.3	98.2	111.2	124.2	137.1	145.9
92.5°	29.1	38.7	48.4	58.0	67.7	79.0	91.9	104.8	117.7	130.6	139.2
95°	63.5	65.6	67.8	69.9	72.0	78.6	89.6	100.7	111.8	122.8	131.0
97.5°	116.0	127.6	139.2	150.8	162.4	162.8	151.9	141.0	130.1	119.2	126.2
100°	156.2	166.5	176.9	187.3	197.6	194.6	178.1	161.7	145.3	128.9	132.7
102.5°	202.2	210.8	219.4	228.0	236.6	244.2	250.8	257.4	264.1	270.6	242.0
105°	273.3	279.7	286.2	292.7	299.1	307.7	318.5	329.2	340.0	350.8	359.1
107.5°	341.3	346.2	351.1	356.0	360.9	368.7	379.3	389.9	400.5	411.0	418.4
110°	386.4	390.6	394.9	399.2	403.6	410.9	421.3	431.7	442.1	452.5	459.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	430.1	434.4	438.8	443.1	447.4	454.3	463.6	473.0	482.4	491.8	497.6
115°	497.4	500.3	503.3	506.3	509.3	514.9	523.1	531.4	539.7	547.9	554.1
117.5°	559.1	561.3	563.5	565.7	567.9	573.2	581.5	589.8	598.1	606.4	611.8
120°	600.0	601.6	603.1	604.8	606.3	610.8	618.3	625.8	633.3	640.8	646.4
122.5°	639.1	639.7	640.3	641.0	641.6	645.7	653.2	660.7	668.2	675.7	681.3
125°	693.9	694.4	694.9	695.4	695.9	699.3	705.6	711.8	718.0	724.2	729.9
127.5°	746.7	746.7	746.6	746.5	746.4	749.4	755.4	761.3	767.3	773.3	777.9
130°	780.0	779.9	779.8	779.7	779.6	782.0	786.9	791.7	796.5	801.3	806.2
132.5°	811.4	811.4	811.5	811.6	811.7	813.8	817.9	822.1	826.2	830.3	835.0
135°	857.3	857.1	856.9	856.7	856.5	857.7	860.3	863.0	865.6	868.2	872.9
137.5°	899.0	898.8	898.6	898.5	898.2	899.0	900.8	902.5	904.3	906.0	910.3
140°	926.2	926.3	926.4	926.5	926.7	927.0	927.7	928.4	929.0	929.7	933.7
142.5°	949.7	950.3	951.0	951.6	952.3	952.6	952.7	952.8	952.9	952.9	956.3
145°	987.0	987.2	987.6	987.9	988.2	988.3	988.3	988.3	988.3	988.3	990.2
147.5°	1016.8	1017.6	1018.4	1019.3	1020.0	1020.4	1020.2	1020.0	1019.8	1019.6	1019.9
150°	1038.5	1038.9	1039.4	1039.9	1040.4	1040.6	1040.4	1040.3	1040.0	1039.8	1039.8
152.5°	1055.6	1056.2	1056.7	1057.3	1057.9	1058.0	1057.7	1057.3	1057.0	1056.6	1056.9
155°	1080.8	1081.1	1081.2	1081.4	1081.6	1081.4	1080.8	1080.3	1079.7	1079.1	1079.9
157.5°	1102.3	1102.2	1102.1	1101.9	1101.8	1101.5	1100.8	1100.1	1099.5	1098.8	1099.8
160°	1114.8	1114.3	1113.7	1113.1	1112.5	1112.2	1112.0	1111.7	1111.6	1111.4	1112.5
162.5°	1126.0	1125.3	1124.6	1123.8	1123.1	1122.6	1122.4	1122.2	1122.1	1121.8	1123.0
165°	1140.1	1139.2	1138.2	1137.2	1136.3	1135.8	1135.8	1135.8	1135.8	1135.8	1137.4
167.5°	1151.3	1150.3	1149.3	1148.3	1147.3	1146.8	1146.6	1146.5	1146.4	1146.2	1148.0
170°	1157.6	1156.4	1155.3	1154.1	1153.0	1152.4	1152.6	1152.9	1153.1	1153.2	1154.8
172.5°	1161.7	1160.6	1159.4	1158.3	1157.1	1156.7	1156.8	1157.0	1157.3	1157.4	1159.0
175°	1166.3	1165.2	1164.0	1162.9	1161.7	1161.2	1161.4	1161.6	1161.7	1162.0	1163.7
177.5°	1168.4	1167.3	1166.2	1165.2	1164.1	1163.7	1164.0	1164.3	1164.6	1164.9	1166.1
180°	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1
2.5°	1059.4	1060.8	1062.3	1062.9	1062.7	1062.5	1062.3	1062.1
5°	1056.5	1058.7	1060.8	1061.7	1061.4	1061.2	1060.9	1060.7
7.5°	1050.9	1053.3	1055.7	1056.7	1056.4	1056.2	1055.9	1055.7
10°	1045.2	1047.6	1050.0	1051.0	1050.8	1050.5	1050.2	1050.0
12.5°	1037.2	1039.3	1041.5	1042.6	1042.5	1042.4	1042.4	1042.3
15°	1022.6	1024.9	1027.3	1028.4	1028.1	1027.9	1027.6	1027.3
17.5°	1004.8	1007.3	1009.7	1010.8	1010.6	1010.4	1010.1	1010.0
20°	990.9	993.6	996.3	997.6	997.6	997.6	997.6	997.6
22.5°	974.7	977.4	980.1	981.6	982.1	982.4	982.8	983.3
25°	949.9	952.7	955.6	957.3	957.5	957.8	958.0	958.3
27.5°	921.8	924.5	927.2	928.7	929.0	929.4	929.6	930.0
30°	902.2	905.1	908.0	909.7	910.2	910.8	911.4	911.9
32.5°	882.1	885.5	888.8	890.7	891.2	891.7	892.3	892.9
35°	850.2	853.9	857.6	859.9	860.7	861.4	862.3	863.1
37.5°	817.0	820.8	824.5	826.8	827.7	828.5	829.3	830.2
40°	793.6	797.5	801.6	804.1	805.1	806.2	807.3	808.3
42.5°	770.7	775.1	779.5	782.0	782.9	783.8	784.6	785.4
45°	735.1	739.7	744.2	747.1	748.4	749.7	751.1	752.3
47.5°	697.6	702.2	707.0	710.1	711.6	713.3	714.8	716.4
50°	671.2	676.6	681.8	685.3	686.9	688.5	690.0	691.6
52.5°	644.6	649.9	655.2	658.6	660.2	661.8	663.4	665.0
55°	604.6	609.9	615.2	618.6	620.2	621.8	623.4	625.0
57.5°	562.6	568.9	575.1	579.0	580.5	582.0	583.5	585.0
60°	533.6	539.7	545.7	549.8	552.0	554.1	556.2	558.3
62.5°	505.0	511.1	517.2	521.2	523.4	525.5	527.6	529.8
65°	460.8	467.4	474.1	478.5	480.5	482.7	484.7	486.9
67.5°	417.5	424.2	430.9	435.3	437.4	439.5	441.5	443.6
70°	386.8	394.0	401.1	405.7	407.5	409.4	411.2	413.1
72.5°	357.9	364.8	371.8	376.3	378.3	380.4	382.5	384.5
75°	313.6	321.0	328.4	333.3	335.7	338.1	340.4	342.9
77.5°	272.4	279.9	287.4	292.5	295.0	297.6	300.1	302.6
80°	245.6	253.6	261.5	266.5	268.6	270.8	272.9	275.0
82.5°	219.4	227.6	235.7	240.9	243.2	245.6	247.9	250.2
85°	182.5	190.5	198.4	203.7	206.4	209.0	211.6	214.3
87.5°	155.6	163.5	171.4	176.6	179.0	181.3	183.7	186.1
90°	154.7	163.6	172.4	178.1	180.6	183.0	185.5	188.0
92.5°	147.9	156.5	165.1	170.6	172.7	175.0	177.1	179.3
95°	139.4	147.7	156.0	161.4	164.0	166.6	169.2	171.7
97.5°	133.3	140.3	147.4	152.1	154.6	157.1	159.5	162.0
100°	136.6	140.4	144.2	147.2	149.2	151.3	153.3	155.4
102.5°	213.4	184.8	156.2	142.9	145.0	147.1	149.2	151.3
105°	367.5	375.8	384.2	385.9	381.1	376.2	371.3	366.4
107.5°	425.8	433.1	440.5	445.5	448.1	450.7	453.4	456.0
110°	465.5	472.0	478.5	483.0	485.7	488.4	491.1	493.8



TEST NUMBER: P332819-935

CATALOG NUMBER: S124DIW-S1020D1050U935-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	503.3	509.1	515.0	519.3	522.1	525.0	527.8	530.7
115°	560.3	566.5	572.8	576.8	578.7	580.5	582.4	584.2
117.5°	617.3	622.7	628.1	631.8	633.9	635.9	638.0	640.0
120°	652.1	657.8	663.5	667.2	668.9	670.6	672.4	674.1
122.5°	686.8	692.3	697.8	701.4	702.9	704.4	705.9	707.4
125°	735.5	741.1	746.7	750.4	752.2	753.9	755.7	757.5
127.5°	782.6	787.2	791.9	795.0	796.6	798.3	800.0	801.6
130°	811.2	816.1	821.1	824.4	826.0	827.6	829.1	830.8
132.5°	839.8	844.6	849.3	852.4	853.8	855.2	856.7	858.1
135°	877.4	882.1	886.7	890.0	892.0	894.0	896.0	897.9
137.5°	914.6	918.9	923.2	925.9	927.1	928.3	929.5	930.7
140°	937.7	941.8	945.8	948.6	950.0	951.6	953.1	954.6
142.5°	959.8	963.2	966.6	969.0	970.1	971.3	972.4	973.5
145°	992.0	993.7	995.5	997.1	998.6	1000.0	1001.4	1002.9
147.5°	1020.4	1020.7	1021.1	1021.7	1022.8	1023.8	1024.8	1026.0
150°	1039.8	1039.8	1039.8	1039.9	1040.1	1040.3	1040.5	1040.7
152.5°	1057.2	1057.5	1057.8	1057.9	1057.8	1057.7	1057.6	1057.5
155°	1080.6	1081.4	1082.2	1082.3	1081.7	1081.2	1080.6	1080.0
157.5°	1100.8	1101.8	1102.9	1102.9	1101.8	1100.8	1099.8	1098.8
160°	1113.7	1114.8	1116.0	1116.0	1114.8	1113.7	1112.5	1111.4
162.5°	1124.1	1125.3	1126.4	1126.4	1125.1	1123.8	1122.5	1121.1
165°	1138.9	1140.5	1142.0	1141.9	1140.1	1138.4	1136.7	1134.9
167.5°	1149.7	1151.4	1153.1	1153.0	1151.1	1149.1	1147.2	1145.2
170°	1156.3	1157.9	1159.4	1159.3	1157.3	1155.4	1153.4	1151.5
172.5°	1160.5	1162.1	1163.6	1163.4	1161.2	1159.2	1157.1	1154.9
175°	1165.4	1167.2	1169.0	1168.6	1166.3	1164.0	1161.7	1159.3
177.5°	1167.4	1168.6	1169.9	1169.6	1167.7	1165.9	1164.0	1162.2
180°	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3

(END OF REPORT)