

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: P332819-930

Luminaire Tested: **S124DIW-S1020D1050U930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332819-930
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-S1020D1050U930-4F0-1E-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: 6851.0 lumens
Efficiency: N/A
Efficacy: 111.9 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

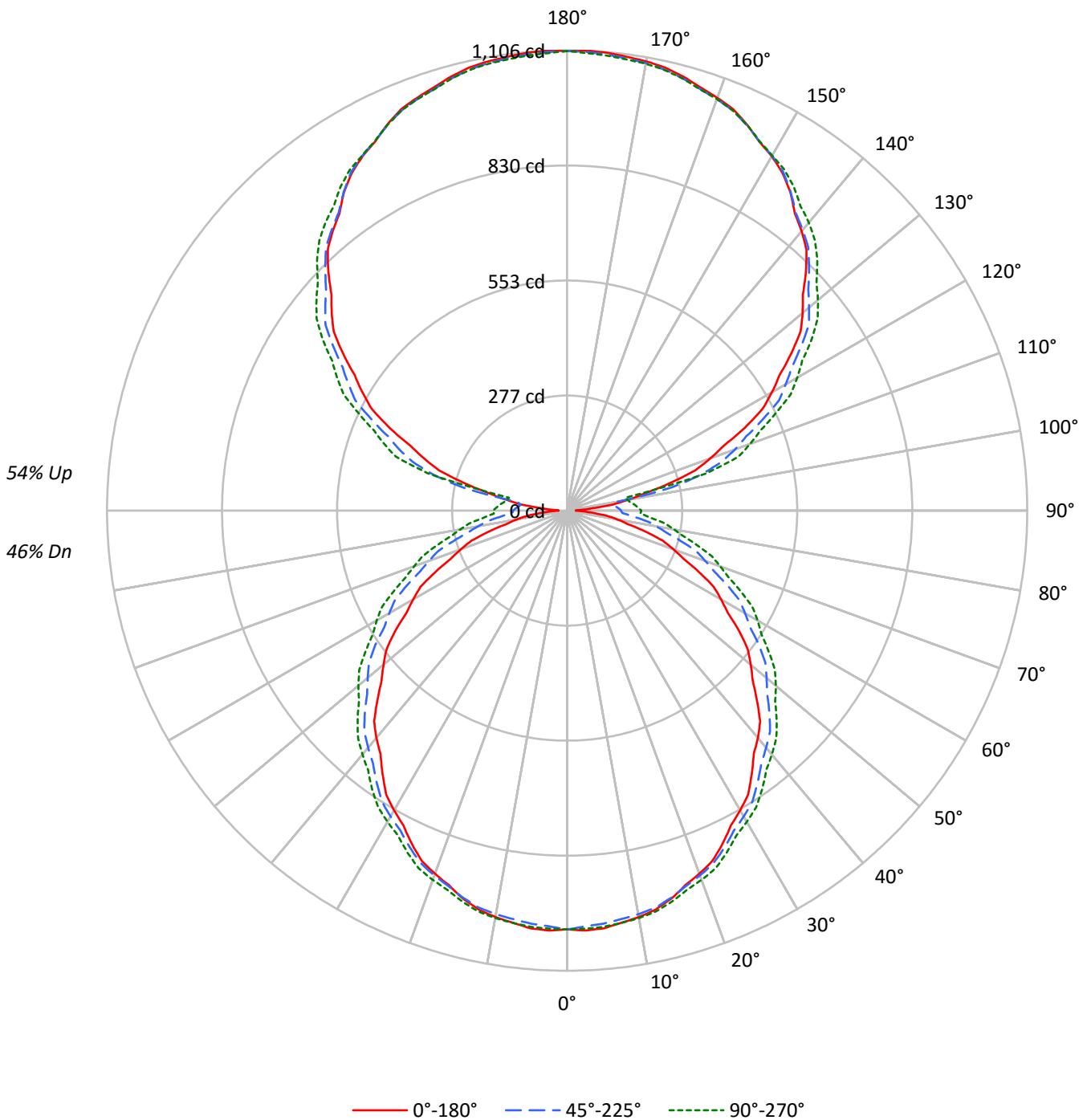
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332819-930

CATALOG NUMBER: S124DIW-S1020D1050U930-4F0-1E-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	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°	8127	8127	8127
5°	8151	7942	7965
10°	8102	7812	7807
15°	8029	7662	7620
20°	7920	7496	7438
25°	7797	7310	7239
30°	7663	7125	7034
35°	7511	6935	6855
40°	7390	6755	6667
45°	7210	6588	6507
50°	7059	6397	6337
55°	6902	6217	6138
60°	6657	5986	5956
65°	6389	5740	5734
70°	6066	5458	5474
75°	5612	5146	5239
80°	5110	4847	5007
85°	4474	4583	4872



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.3	1.4
10°-20°	273.1	4.0
20°-30°	413.0	6.0
30°-40°	499.7	7.3
40°-50°	528.2	7.7
50°-60°	497.1	7.3
60°-70°	412.5	6.0
70°-80°	289.7	4.2
80°-90°	167.0	2.4
90°-100°	135.0	2.0
100°-110°	312.8	4.6
110°-120°	509.1	7.4
120°-130°	612.1	8.9
130°-140°	637.5	9.3
140°-150°	587.5	8.6
150°-160°	471.9	6.9
160°-170°	304.4	4.4
170°-180°	104.9	1.5
0°-30°	781.4	11.4
0°-40°	1281.1	18.7
0°-60°	2306.5	33.7
0°-90°	3175.6	46.4
90°-120°	956.9	14.0
90°-150°	2794.1	40.8
90°-180°	3675.0	53.6
0°-180°	6851.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1007	1007	1007	1007	1007	
5°	1008	1004	996	1005	1004	96
15°	966	967	964	973	973	272
25°	884	890	894	906	907	407
35°	773	787	798	813	817	484
45°	645	666	688	706	712	498
55°	505	529	562	584	592	450
65°	349	386	424	451	461	346
75°	194	236	283	313	325	206
85°	60	107	158	190	203	64
90°	20	75	130	166	178	14
95°	60	71	116	150	163	70
105°	259	287	332	365	347	272
115°	471	485	519	544	553	464
125°	657	661	686	709	717	587
135°	812	812	822	841	850	626
145°	935	936	936	943	950	584
155°	1023	1024	1022	1025	1023	472
165°	1080	1076	1076	1081	1075	305
175°	1104	1100	1100	1107	1098	105
180°	1104	1104	1104	1104	1104	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7
2.5°	1010.2	1009.7	1009.0	1008.4	1007.8	1006.7	1005.1	1003.6	1001.9	1000.3	1001.7
5°	1007.7	1007.0	1006.2	1005.5	1004.8	1003.5	1001.8	1000.0	998.3	996.5	998.5
7.5°	999.1	998.7	998.3	997.8	997.4	996.5	995.0	993.5	992.1	990.6	992.9
10°	992.0	991.7	991.5	991.2	991.0	990.2	989.0	987.7	986.4	985.2	987.5
12.5°	982.0	982.0	981.9	981.9	981.9	981.4	980.6	979.7	978.8	978.0	980.1
15°	966.0	966.3	966.5	966.8	967.0	966.8	966.0	965.3	964.5	963.8	966.0
17.5°	944.2	944.9	945.7	946.4	947.2	947.5	947.3	947.2	947.1	946.9	949.2
20°	928.9	929.6	930.3	931.1	931.9	932.4	932.6	932.9	933.1	933.4	935.9
22.5°	911.7	912.6	913.6	914.6	915.5	916.2	916.6	917.1	917.5	918.0	920.6
25°	883.8	885.3	886.7	888.3	889.7	890.9	891.6	892.4	893.2	893.9	896.7
27.5°	852.6	854.8	857.0	859.2	861.4	863.2	864.3	865.4	866.6	867.7	870.3
30°	831.9	833.9	835.9	837.9	839.9	841.8	843.5	845.3	847.0	848.8	851.6
32.5°	809.3	811.8	814.2	816.6	819.0	821.2	823.1	825.1	827.0	829.0	832.1
35°	773.3	776.3	779.3	782.3	785.3	788.1	790.6	793.0	795.6	798.1	801.6
37.5°	736.9	740.5	743.9	747.4	750.8	754.1	757.2	760.3	763.4	766.5	770.1
40°	713.5	716.8	720.1	723.3	726.6	729.9	733.4	736.9	740.5	744.0	747.7
42.5°	686.5	690.2	693.8	697.5	701.1	705.0	709.1	713.2	717.3	721.5	725.6
45°	644.7	649.5	654.3	659.1	663.8	668.5	673.4	678.1	682.8	687.6	691.9
47.5°	604.9	609.8	614.7	619.6	624.5	629.7	635.2	640.7	646.3	651.8	656.2
50°	576.0	581.6	587.0	592.6	598.0	603.6	609.1	614.6	620.1	625.6	630.6
52.5°	547.1	552.7	558.2	563.7	569.2	575.1	581.4	587.7	594.0	600.4	605.4
55°	505.0	510.3	515.5	520.8	526.0	532.4	540.0	547.5	555.0	562.5	567.5
57.5°	457.9	464.4	470.9	477.4	484.0	490.9	498.4	505.9	513.3	520.8	526.8
60°	427.2	433.7	440.3	446.8	453.3	460.6	469.0	477.2	485.4	493.7	499.5
62.5°	397.5	404.6	411.7	418.8	425.9	433.6	441.9	450.1	458.4	466.7	472.5
65°	349.4	357.4	365.5	373.5	381.5	389.8	398.3	406.8	415.3	423.9	430.1
67.5°	303.2	311.8	320.2	328.8	337.3	346.1	355.2	364.4	373.5	382.6	389.0
70°	271.7	280.2	288.7	297.2	305.7	314.8	324.2	333.8	343.3	352.9	359.6
72.5°	241.0	249.7	258.4	267.2	275.9	285.3	295.4	305.5	315.7	325.8	332.3
75°	193.9	203.2	212.4	221.7	231.0	240.8	251.4	261.9	272.4	282.9	289.9
77.5°	149.9	159.7	169.6	179.4	189.2	199.6	210.7	221.7	232.7	243.7	250.8
80°	122.9	132.9	142.9	153.0	163.0	173.5	184.5	195.5	206.5	217.5	225.1
82.5°	95.8	106.2	116.7	127.1	137.5	148.2	159.2	170.2	181.3	192.3	200.0
85°	59.8	70.3	80.8	91.3	101.8	112.8	124.0	135.3	146.5	157.8	165.3
87.5°	33.8	44.5	55.1	65.7	76.4	87.3	98.6	109.8	121.1	132.4	139.8
90°	20.5	32.5	44.6	56.7	68.6	80.8	93.0	105.3	117.6	129.8	138.1
92.5°	27.6	36.7	45.8	55.0	64.1	74.8	87.0	99.2	111.5	123.7	131.8
95°	60.1	62.1	64.2	66.2	68.2	74.4	84.9	95.3	105.8	116.3	124.1
97.5°	109.8	120.8	131.8	142.8	153.8	154.2	143.8	133.5	123.2	112.9	119.5
100°	147.9	157.7	167.5	177.3	187.1	184.3	168.7	153.1	137.5	122.1	125.6
102.5°	191.5	199.6	207.7	215.9	224.0	231.2	237.5	243.8	250.1	256.2	229.2
105°	258.8	264.9	271.0	277.1	283.2	291.4	301.6	311.8	322.0	332.2	340.1
107.5°	323.2	327.8	332.5	337.1	341.8	349.1	359.1	369.2	379.2	389.2	396.2
110°	365.9	369.9	374.0	378.1	382.1	389.1	398.9	408.8	418.7	428.5	434.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	407.2	411.3	415.5	419.6	423.6	430.2	439.0	447.9	456.8	465.7	471.2
115°	471.0	473.8	476.6	479.4	482.2	487.5	495.4	503.2	511.0	518.9	524.7
117.5°	529.5	531.5	533.6	535.7	537.8	542.7	550.7	558.5	566.4	574.2	579.4
120°	568.2	569.6	571.1	572.7	574.1	578.4	585.5	592.6	599.7	606.7	612.1
122.5°	605.2	605.8	606.3	607.0	607.6	611.4	618.5	625.7	632.8	639.8	645.1
125°	657.0	657.5	658.0	658.5	659.0	662.2	668.1	674.0	679.9	685.7	691.1
127.5°	707.1	707.0	706.9	706.9	706.8	709.6	715.3	720.9	726.6	732.2	736.6
130°	738.6	738.5	738.4	738.3	738.3	740.5	745.1	749.7	754.2	758.8	763.4
132.5°	768.3	768.3	768.4	768.5	768.6	770.6	774.5	778.4	782.4	786.2	790.7
135°	811.8	811.6	811.4	811.2	811.1	812.2	814.6	817.2	819.6	822.1	826.6
137.5°	851.3	851.1	850.9	850.8	850.5	851.3	853.0	854.6	856.3	857.9	862.0
140°	877.0	877.2	877.3	877.3	877.5	877.8	878.5	879.1	879.7	880.4	884.1
142.5°	899.3	899.8	900.5	901.1	901.7	902.0	902.1	902.2	902.3	902.3	905.6
145°	934.6	934.8	935.1	935.5	935.7	935.9	935.9	935.9	935.9	935.9	937.6
147.5°	962.8	963.6	964.3	965.2	965.9	966.2	966.0	965.9	965.6	965.5	965.8
150°	983.3	983.7	984.2	984.7	985.2	985.4	985.2	985.0	984.8	984.6	984.6
152.5°	999.6	1000.1	1000.6	1001.2	1001.8	1001.8	1001.5	1001.2	1000.9	1000.5	1000.8
155°	1023.4	1023.7	1023.9	1024.0	1024.2	1024.0	1023.4	1023.0	1022.4	1021.8	1022.5
157.5°	1043.8	1043.7	1043.6	1043.4	1043.3	1043.0	1042.4	1041.7	1041.1	1040.5	1041.5
160°	1055.6	1055.2	1054.6	1054.0	1053.4	1053.1	1053.0	1052.7	1052.6	1052.4	1053.4
162.5°	1066.2	1065.6	1064.9	1064.1	1063.5	1063.0	1062.8	1062.7	1062.5	1062.3	1063.4
165°	1079.6	1078.7	1077.8	1076.8	1076.0	1075.5	1075.5	1075.5	1075.5	1075.5	1077.0
167.5°	1090.2	1089.2	1088.3	1087.4	1086.4	1085.9	1085.7	1085.7	1085.6	1085.4	1087.0
170°	1096.2	1095.0	1094.0	1092.8	1091.8	1091.3	1091.4	1091.7	1091.8	1092.0	1093.5
172.5°	1100.1	1099.0	1097.9	1096.8	1095.7	1095.3	1095.4	1095.6	1095.8	1096.0	1097.5
175°	1104.4	1103.3	1102.2	1101.1	1100.0	1099.6	1099.8	1099.9	1100.1	1100.3	1102.0
177.5°	1106.4	1105.4	1104.3	1103.3	1102.3	1102.0	1102.2	1102.5	1102.8	1103.1	1104.2
180°	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7	1006.7
2.5°	1003.1	1004.5	1005.9	1006.5	1006.3	1006.1	1005.9	1005.8
5°	1000.5	1002.5	1004.5	1005.3	1005.1	1004.9	1004.6	1004.4
7.5°	995.2	997.4	999.6	1000.6	1000.4	1000.1	999.9	999.6
10°	989.7	992.0	994.3	995.2	995.0	994.7	994.5	994.3
12.5°	982.1	984.1	986.2	987.2	987.2	987.1	987.1	987.0
15°	968.3	970.5	972.8	973.8	973.5	973.3	973.1	972.8
17.5°	951.5	953.8	956.1	957.2	956.9	956.8	956.5	956.3
20°	938.3	940.9	943.4	944.6	944.6	944.6	944.6	944.6
22.5°	923.0	925.5	928.1	929.5	929.9	930.3	930.7	931.1
25°	899.4	902.1	904.9	906.4	906.7	906.9	907.2	907.4
27.5°	872.9	875.4	878.0	879.4	879.7	880.0	880.3	880.6
30°	854.4	857.0	859.8	861.4	861.9	862.4	863.0	863.5
32.5°	835.3	838.5	841.6	843.4	843.9	844.4	844.9	845.5
35°	805.1	808.6	812.1	814.2	815.0	815.7	816.5	817.3
37.5°	773.6	777.2	780.7	782.9	783.7	784.6	785.3	786.1
40°	751.5	755.2	759.0	761.4	762.4	763.4	764.4	765.4
42.5°	729.8	733.9	738.1	740.5	741.4	742.2	743.0	743.7
45°	696.1	700.4	704.7	707.4	708.7	709.9	711.2	712.4
47.5°	660.6	665.0	669.4	672.4	673.8	675.4	676.9	678.4
50°	635.6	640.7	645.6	648.9	650.4	651.9	653.4	654.9
52.5°	610.4	615.4	620.4	623.6	625.2	626.6	628.2	629.7
55°	572.5	577.6	582.5	585.8	587.3	588.8	590.3	591.8
57.5°	532.7	538.7	544.6	548.3	549.7	551.1	552.5	553.9
60°	505.2	511.0	516.7	520.7	522.7	524.6	526.7	528.6
62.5°	478.2	484.0	489.8	493.6	495.6	497.6	499.6	501.7
65°	436.3	442.6	448.9	453.1	455.0	457.1	459.0	461.1
67.5°	395.3	401.7	408.1	412.2	414.2	416.1	418.1	420.0
70°	366.3	373.1	379.8	384.2	385.9	387.7	389.4	391.2
72.5°	338.9	345.4	352.0	356.3	358.2	360.2	362.2	364.1
75°	296.9	303.9	311.0	315.6	317.9	320.2	322.4	324.7
77.5°	258.0	265.1	272.1	277.0	279.3	281.8	284.1	286.6
80°	232.6	240.1	247.6	252.3	254.4	256.4	258.4	260.4
82.5°	207.7	215.5	223.1	228.1	230.3	232.5	234.7	236.9
85°	172.8	180.3	187.8	192.9	195.4	197.9	200.4	202.9
87.5°	147.3	154.8	162.3	167.2	169.5	171.7	174.0	176.3
90°	146.5	154.9	163.2	168.6	171.0	173.3	175.7	178.1
92.5°	140.1	148.2	156.4	161.5	163.5	165.7	167.7	169.8
95°	132.0	139.8	147.7	152.9	155.3	157.8	160.2	162.6
97.5°	126.2	132.9	139.6	144.1	146.4	148.8	151.1	153.4
100°	129.3	133.0	136.6	139.4	141.3	143.2	145.2	147.2
102.5°	202.1	175.0	147.9	135.3	137.3	139.3	141.3	143.2
105°	348.0	355.9	363.8	365.4	360.9	356.2	351.6	347.0
107.5°	403.2	410.1	417.1	421.8	424.3	426.8	429.3	431.8
110°	440.8	446.9	453.1	457.4	459.9	462.5	465.0	467.6



TEST NUMBER: P332819-930

CATALOG NUMBER: S124DIW-S1020D1050U930-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	476.6	482.1	487.6	491.7	494.4	497.1	499.8	502.6
115°	530.6	536.5	542.4	546.2	548.0	549.7	551.5	553.2
117.5°	584.5	589.6	594.8	598.3	600.2	602.2	604.1	606.0
120°	617.5	622.9	628.3	631.8	633.4	635.0	636.7	638.3
122.5°	650.4	655.6	660.8	664.1	665.6	667.0	668.5	669.8
125°	696.4	701.7	707.0	710.5	712.2	713.9	715.6	717.3
127.5°	741.0	745.4	749.8	752.8	754.3	755.9	757.5	759.0
130°	768.2	772.8	777.6	780.6	782.1	783.7	785.1	786.7
132.5°	795.2	799.7	804.2	807.1	808.5	809.8	811.2	812.5
135°	830.9	835.3	839.7	842.8	844.7	846.5	848.4	850.3
137.5°	866.1	870.1	874.2	876.8	877.9	879.1	880.2	881.3
140°	887.9	891.8	895.6	898.2	899.6	901.1	902.5	903.9
142.5°	908.8	912.1	915.3	917.5	918.6	919.7	920.8	921.9
145°	939.3	940.9	942.6	944.2	945.6	946.9	948.3	949.7
147.5°	966.2	966.5	966.9	967.5	968.5	969.5	970.5	971.5
150°	984.6	984.6	984.6	984.7	984.9	985.1	985.3	985.5
152.5°	1001.1	1001.4	1001.7	1001.8	1001.7	1001.5	1001.4	1001.4
155°	1023.3	1024.0	1024.7	1024.8	1024.3	1023.8	1023.2	1022.6
157.5°	1042.4	1043.3	1044.3	1044.3	1043.3	1042.4	1041.5	1040.5
160°	1054.6	1055.6	1056.8	1056.8	1055.6	1054.6	1053.4	1052.4
162.5°	1064.5	1065.6	1066.7	1066.7	1065.4	1064.1	1062.9	1061.6
165°	1078.5	1079.9	1081.4	1081.2	1079.6	1078.0	1076.4	1074.6
167.5°	1088.7	1090.3	1091.8	1091.8	1090.0	1088.1	1086.3	1084.4
170°	1094.9	1096.4	1097.9	1097.7	1095.8	1094.1	1092.2	1090.4
172.5°	1098.9	1100.4	1101.9	1101.6	1099.6	1097.6	1095.7	1093.6
175°	1103.6	1105.2	1106.9	1106.6	1104.4	1102.2	1100.0	1097.8
177.5°	1105.5	1106.6	1107.8	1107.5	1105.7	1104.0	1102.2	1100.5
180°	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4	1104.4

(END OF REPORT)