

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: P332665-930

Luminaire Tested: **S124DIP-S1020D1205U930-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332665-930  
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-S1020D1205U930-4F0-1E-UDD-D1  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1205 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6833.1 lumens  
Efficiency: N/A  
Efficacy: 104.5 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

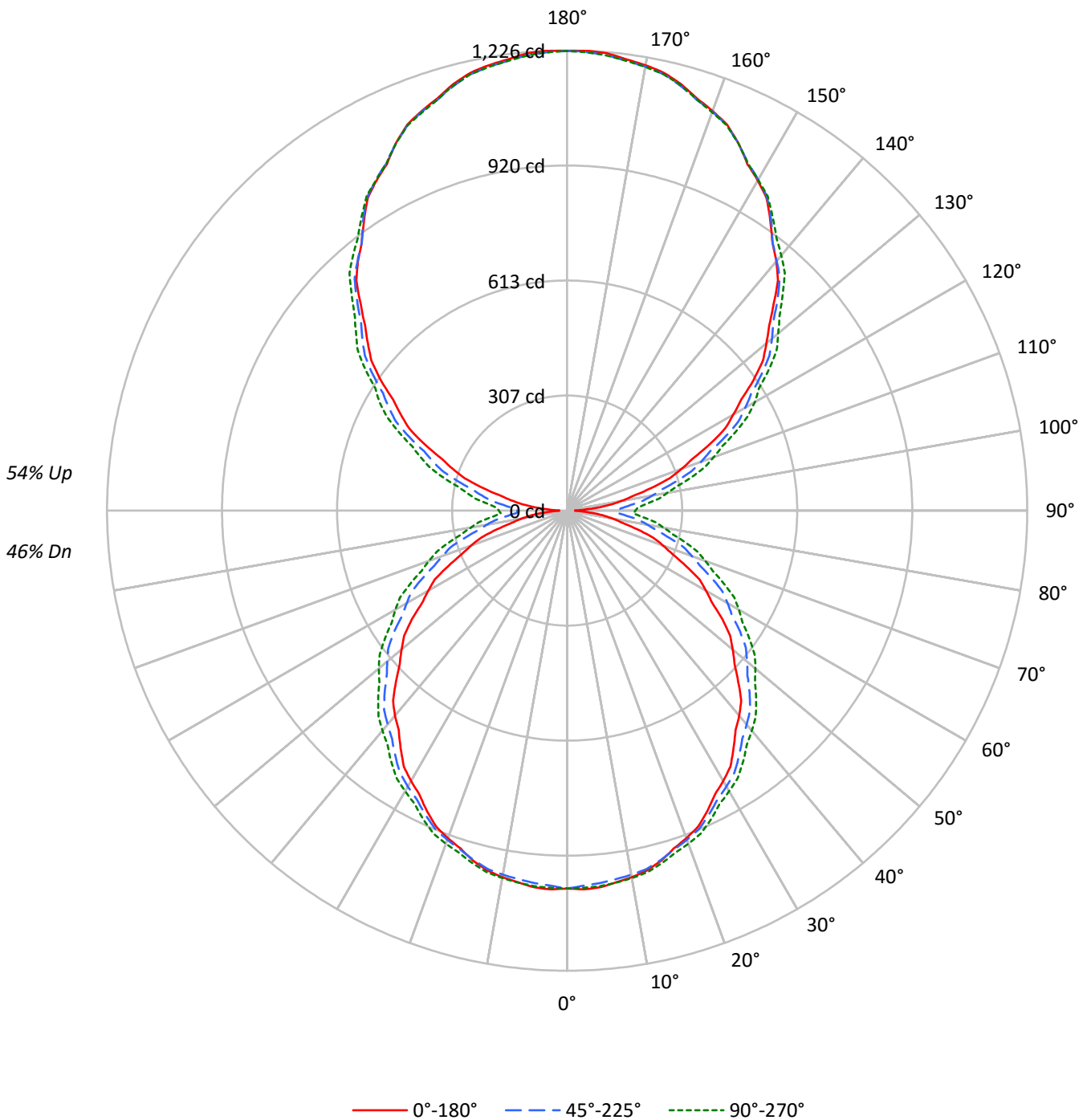
Input Watts (W): 65.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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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	98	98	98	98	81	81	81	67	67	67	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	50	47	44	39	37	35	30
3	79	69	62	55	72	64	57	52	53	48	44	43	40	37	34	32	30	25
4	72	61	53	47	66	56	49	43	47	42	37	38	34	31	31	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	22	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	13
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



TEST NUMBER: P332665-930

CATALOG NUMBER: S124DIP-S1020D1205U930-4F0-1E-UDD-D1

**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°	167.4	2.5
90°-100°	178.0	2.6
100°-110°	311.3	4.6
110°-120°	454.5	6.7
120°-130°	562.8	8.2
130°-140°	613.2	9.0
140°-150°	593.4	8.7
150°-160°	497.1	7.3
160°-170°	330.7	4.8
170°-180°	115.8	1.7
0°-30°	781.4	11.4
0°-40°	1281.1	18.7
0°-60°	2306.5	33.8
0°-90°	3176.1	46.5
90°-120°	943.8	13.8
90°-150°	2713.3	39.7
90°-180°	3657.0	53.5
0°-180°	6833.1	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°	21	76	132	169	182	15
95°	72	118	170	202	213	75
105°	231	256	300	330	343	246
115°	420	431	464	487	495	414
125°	606	606	632	651	656	540
135°	778	784	792	807	812	602
145°	944	946	947	953	955	590
155°	1080	1080	1079	1082	1079	497
165°	1176	1173	1171	1176	1173	331
175°	1223	1218	1217	1223	1217	116
180°	1225	1225	1225	1225	1225	



TEST NUMBER: P332665-930

CATALOG NUMBER: S124DIP-S1020D1205U930-4F0-1E-UDD-D1

**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°	33.9	44.6	55.3	66.0	76.6	87.6	99.0	110.3	121.6	132.9	140.4
90°	20.9	33.2	45.6	57.9	70.2	82.6	95.1	107.5	120.0	132.4	141.0
92.5°	37.4	49.1	60.7	72.4	84.1	95.9	107.9	119.8	131.8	143.7	151.5
95°	71.5	81.6	91.8	102.0	112.1	123.1	134.9	146.6	158.3	170.1	177.5
97.5°	112.6	121.2	129.8	138.4	147.1	157.4	169.3	181.2	193.1	205.0	212.2
100°	145.0	152.4	159.7	167.1	174.4	183.9	195.6	207.2	218.9	230.6	237.7
102.5°	179.9	185.9	192.0	198.0	204.1	212.7	224.0	235.3	246.6	257.9	265.1
105°	230.8	236.0	241.2	246.5	251.8	259.4	269.5	279.6	289.8	299.9	306.7
107.5°	286.5	290.9	295.2	299.6	303.9	310.5	319.4	328.4	337.3	346.2	352.9
110°	323.5	327.4	331.3	335.3	339.2	345.4	354.0	362.6	371.1	379.7	385.0



TEST NUMBER: P332665-930

CATALOG NUMBER: S124DIP-S1020D1205U930-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	362.0	365.2	368.4	371.5	374.8	380.3	388.3	396.3	404.3	412.3	417.8
115°	419.7	422.0	424.3	426.5	428.8	433.7	441.3	448.9	456.5	464.1	469.4
117.5°	475.2	476.7	478.3	479.8	481.3	485.7	492.8	500.0	507.2	514.3	518.9
120°	511.4	513.1	514.6	516.2	517.8	522.0	528.6	535.2	541.8	548.5	552.4
122.5°	550.1	550.6	551.1	551.5	552.0	555.5	562.1	568.7	575.3	581.9	586.1
125°	606.0	605.8	605.5	605.3	605.0	607.9	613.9	620.0	626.1	632.1	636.4
127.5°	657.5	657.9	658.3	658.6	659.0	661.5	665.9	670.3	674.8	679.3	683.4
130°	692.9	693.3	693.7	694.1	694.5	696.7	700.7	704.7	708.7	712.7	716.8
132.5°	730.1	730.3	730.5	730.8	730.9	732.5	735.6	738.7	741.7	744.7	748.6
135°	778.0	779.3	780.6	781.8	783.1	784.6	786.4	788.1	789.9	791.6	795.2
137.5°	831.4	831.8	832.1	832.5	832.8	833.6	834.8	835.9	837.1	838.3	841.4
140°	867.1	867.2	867.4	867.6	867.7	868.0	868.2	868.5	868.7	868.9	872.0
142.5°	898.7	899.1	899.5	899.8	900.3	900.3	899.9	899.6	899.3	898.9	901.8
145°	943.6	944.2	944.8	945.3	946.0	946.4	946.6	946.8	947.0	947.2	948.5
147.5°	988.3	989.0	989.9	990.6	991.3	991.6	991.5	991.3	991.2	991.0	991.0
150°	1015.6	1016.2	1016.8	1017.3	1018.0	1018.2	1018.2	1018.2	1018.2	1018.2	1018.2
152.5°	1040.5	1040.9	1041.4	1041.8	1042.3	1042.6	1042.8	1042.9	1043.1	1043.3	1043.7
155°	1079.8	1079.8	1079.8	1079.8	1079.8	1079.7	1079.5	1079.3	1079.0	1078.9	1079.7
157.5°	1113.1	1112.8	1112.4	1112.1	1111.7	1111.4	1111.4	1111.3	1111.3	1111.3	1111.9
160°	1132.9	1132.7	1132.5	1132.2	1132.0	1131.8	1131.6	1131.4	1131.1	1131.0	1131.6
162.5°	1151.0	1150.5	1150.0	1149.4	1148.8	1148.5	1148.3	1148.1	1147.9	1147.6	1148.8
165°	1175.5	1174.8	1174.2	1173.6	1173.0	1172.4	1172.0	1171.6	1171.2	1170.8	1172.0
167.5°	1194.3	1193.4	1192.5	1191.6	1190.7	1190.3	1190.3	1190.3	1190.4	1190.4	1191.7
170°	1204.8	1203.8	1202.7	1201.7	1200.6	1200.2	1200.4	1200.6	1200.9	1201.1	1202.3
172.5°	1212.4	1211.5	1210.6	1209.7	1208.9	1208.4	1208.5	1208.6	1208.6	1208.7	1210.1
175°	1222.9	1221.8	1220.7	1219.7	1218.6	1218.0	1217.8	1217.6	1217.4	1217.2	1218.6
177.5°	1226.3	1225.4	1224.6	1223.8	1222.9	1222.5	1222.5	1222.5	1222.5	1222.5	1223.7
180°	1224.7	1224.7	1224.7	1224.7	1224.7	1224.7	1224.7	1224.7	1224.7	1224.7	1224.7



TEST NUMBER: P332665-930

CATALOG NUMBER: S124DIP-S1020D1205U930-4F0-1E-UDD-D1

**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°	147.9	155.5	163.0	167.9	170.2	172.4	174.7	177.0
90°	149.5	158.0	166.6	172.0	174.5	176.8	179.3	181.7
92.5°	159.3	167.1	175.0	180.0	182.3	184.5	186.8	189.1
95°	184.8	192.2	199.7	204.5	206.7	209.0	211.2	213.4
97.5°	219.6	226.9	234.2	239.0	241.1	243.3	245.4	247.6
100°	245.0	252.2	259.3	263.8	265.5	267.3	269.0	270.8
102.5°	272.2	279.4	286.5	291.1	293.3	295.4	297.5	299.6
105°	313.6	320.5	327.4	332.2	334.8	337.5	340.1	342.8
107.5°	359.6	366.4	373.2	377.4	379.2	380.9	382.7	384.5
110°	390.4	395.7	401.0	405.0	407.6	410.3	412.9	415.6





TEST NUMBER: P332665-930

CATALOG NUMBER: S124DIP-S1020D1205U930-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	423.2	428.8	434.2	438.0	440.1	442.3	444.4	446.5
115°	474.7	480.0	485.3	488.7	490.2	491.8	493.3	494.9
117.5°	523.3	527.8	532.3	535.3	537.0	538.5	540.1	541.7
120°	556.4	560.4	564.3	567.4	569.9	572.3	574.8	577.2
122.5°	590.4	594.8	599.0	601.7	602.8	603.8	604.9	605.8
125°	640.7	645.1	649.5	652.2	653.2	654.4	655.4	656.5
127.5°	687.5	691.6	695.7	698.4	699.8	701.2	702.5	703.8
130°	720.9	725.0	729.0	731.4	732.1	732.8	733.4	734.1
132.5°	752.5	756.4	760.3	762.8	763.9	765.2	766.3	767.4
135°	798.7	802.3	805.9	808.2	809.0	809.9	810.8	811.6
137.5°	844.6	847.7	850.8	853.0	854.4	855.7	857.1	858.5
140°	875.1	878.1	881.2	883.2	884.2	885.3	886.3	887.4
142.5°	904.6	907.4	910.2	912.2	913.1	914.2	915.2	916.2
145°	949.8	951.1	952.4	953.2	953.6	954.0	954.3	954.7
147.5°	991.1	991.1	991.1	991.4	992.0	992.6	993.2	993.8
150°	1018.2	1018.2	1018.2	1018.1	1017.9	1017.7	1017.5	1017.3
152.5°	1044.2	1044.8	1045.3	1045.3	1044.7	1044.2	1043.6	1043.1
155°	1080.6	1081.4	1082.2	1082.2	1081.4	1080.6	1079.7	1078.9
157.5°	1112.6	1113.1	1113.8	1113.8	1113.0	1112.3	1111.6	1110.9
160°	1132.2	1132.9	1133.5	1133.3	1132.2	1131.1	1130.2	1129.1
162.5°	1149.9	1151.0	1152.2	1152.3	1151.2	1150.1	1149.1	1148.0
165°	1173.3	1174.5	1175.8	1176.0	1175.2	1174.4	1173.5	1172.6
167.5°	1192.9	1194.3	1195.5	1195.5	1194.2	1192.9	1191.6	1190.3
170°	1203.6	1204.8	1206.2	1206.0	1204.5	1203.1	1201.6	1200.1
172.5°	1211.5	1212.9	1214.4	1214.4	1212.8	1211.4	1209.9	1208.4
175°	1220.1	1221.6	1223.0	1223.0	1221.6	1220.1	1218.6	1217.2
177.5°	1224.8	1226.0	1227.2	1227.1	1225.7	1224.4	1223.0	1221.7
180°	1224.7	1224.7	1224.7	1224.7	1224.7	1224.7	1224.7	1224.7

(END OF REPORT)