

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: P332666-940

Luminaire Tested: **S124DIP-S1020D1205U940-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332666-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S1020D1205U940-4F0-1E-UDD-D4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1205 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7591.7 lumens  
Efficiency: N/A  
Efficacy: 116.1 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

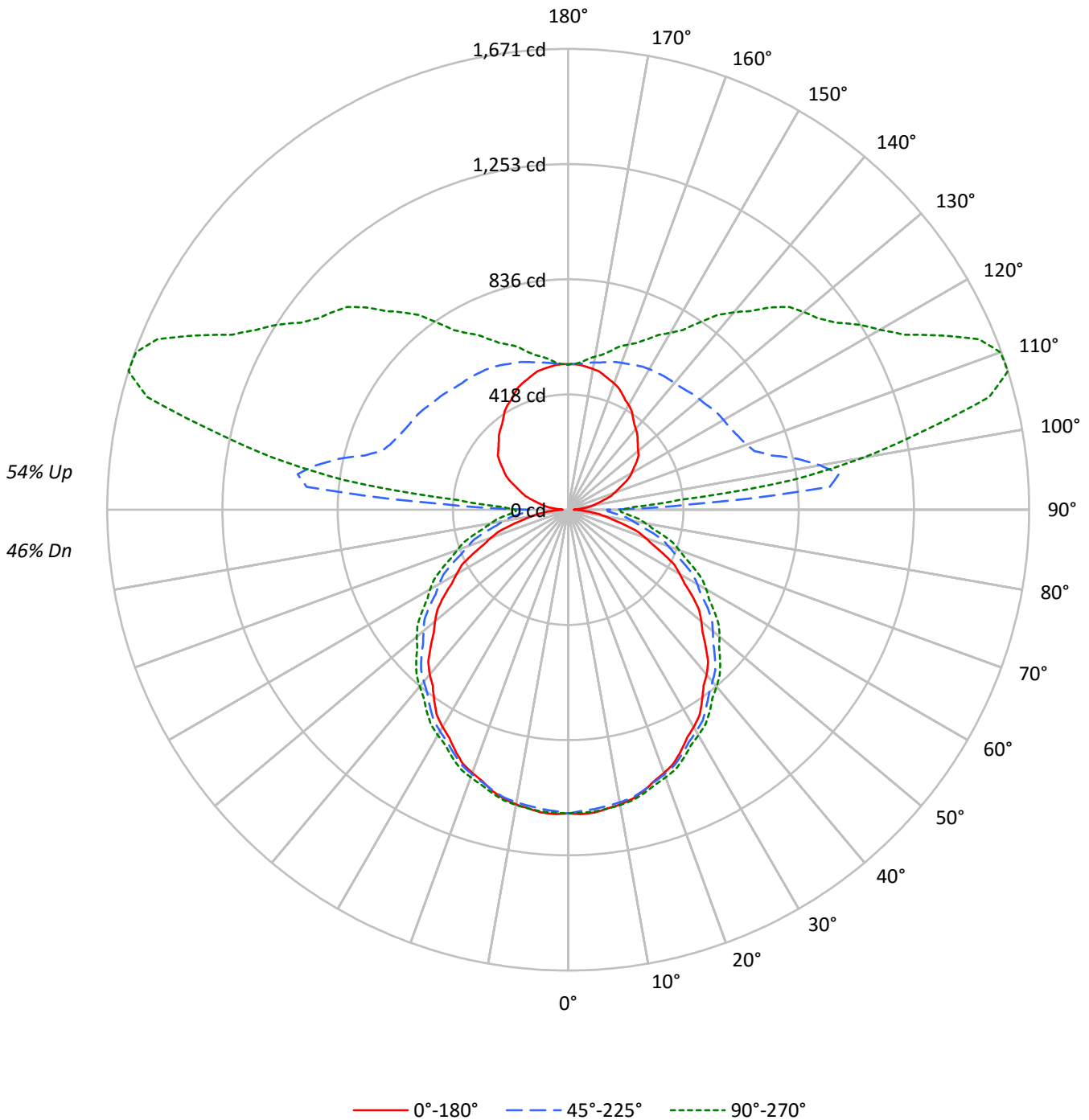
Input Watts (W): 65.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	81	81	81	66	66	66	52	52	52	46
1	96	91	87	83	88	84	80	77	70	67	65	57	55	53	45	43	42	37
2	87	79	73	67	79	73	67	62	60	56	53	49	46	44	39	37	35	30
3	79	69	62	55	72	64	57	51	53	48	44	43	39	36	34	31	29	25
4	72	61	53	47	66	56	49	43	47	41	37	38	34	31	30	27	25	21
5	66	54	46	40	60	50	42	37	42	36	32	34	30	27	27	24	21	18
6	61	48	40	34	55	45	37	32	37	32	27	31	26	23	24	21	19	16
7	56	44	35	30	51	40	33	28	34	28	24	28	24	20	22	19	17	14
8	52	39	32	26	47	36	29	25	31	25	21	25	21	18	20	17	15	12
9	48	36	28	23	44	33	26	22	28	23	19	23	19	16	19	16	13	11
10	45	33	26	21	41	31	24	19	26	21	17	22	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	1.4
10°-20°	298.7	3.9
20°-30°	451.7	5.9
30°-40°	546.5	7.2
40°-50°	577.7	7.6
50°-60°	543.7	7.2
60°-70°	451.1	5.9
70°-80°	316.9	4.2
80°-90°	182.1	2.4
90°-100°	487.3	6.4
100°-110°	871.6	11.5
110°-120°	763.0	10.1
120°-130°	627.2	8.3
130°-140°	510.9	6.7
140°-150°	383.1	5.0
150°-160°	267.5	3.5
160°-170°	157.3	2.1
170°-180°	51.2	0.7
0°-30°	854.6	11.3
0°-40°	1401.1	18.5
0°-60°	2522.6	33.2
0°-90°	3472.7	45.7
90°-120°	2121.9	27.9
90°-150°	3643.1	48.0
90°-180°	4119.0	54.3
0°-180°	7591.7	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°	21	78	141	177	189	15
95°	50	165	952	557	404	51
105°	132	213	761	1575	1580	142
115°	221	288	664	1249	1494	219
125°	302	359	638	1048	1182	269
135°	356	424	609	910	1037	275
145°	408	466	595	749	828	256
155°	463	500	578	655	683	214
165°	505	520	554	587	596	142
175°	526	527	532	539	537	50
180°	527	527	527	527	527	



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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°	36.7	48.3	60.1	71.5	82.8	94.4	107.7	119.7	132.2	144.5	152.3
90°	20.8	33.8	47.9	59.8	71.9	83.2	101.2	113.0	126.9	140.7	147.6
92.5°	30.6	45.8	65.4	87.9	112.9	145.3	209.7	301.8	392.0	444.8	397.6
95°	50.2	62.3	81.8	104.2	138.2	191.8	293.2	474.4	733.3	951.7	982.9
97.5°	75.9	83.6	100.3	120.6	149.7	195.6	276.2	427.6	684.9	989.1	1197.7
100°	92.3	99.4	113.8	133.4	160.2	202.2	274.0	401.8	623.9	926.8	1199.4
102.5°	108.9	116.8	129.5	147.3	172.5	212.3	278.0	391.6	581.8	851.4	1132.1
105°	132.3	140.9	151.6	169.5	193.6	231.5	291.3	387.4	542.7	761.1	1011.5
107.5°	160.7	167.3	176.9	194.7	217.0	253.7	308.9	396.8	530.3	707.5	913.0
110°	178.8	184.7	193.7	209.9	232.5	267.2	322.3	404.4	528.0	687.9	863.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	196.0	201.4	210.9	225.9	247.9	282.2	335.3	412.8	528.5	675.5	832.1
115°	220.9	226.4	236.1	249.0	271.1	304.7	354.9	425.9	531.0	664.1	800.7
117.5°	248.0	252.4	260.2	273.1	293.0	326.9	374.4	439.8	534.3	655.7	782.2
120°	265.2	268.1	276.2	288.4	306.8	340.2	387.5	449.3	537.1	650.8	771.2
122.5°	281.8	284.0	291.4	302.2	321.6	353.7	400.5	458.6	540.1	645.0	759.6
125°	302.3	306.2	312.1	323.2	342.7	375.0	419.1	473.6	545.7	637.6	742.3
127.5°	321.4	324.4	331.5	344.4	364.6	396.3	437.7	486.6	548.8	627.9	719.9
130°	331.1	335.0	343.0	358.3	377.7	409.8	449.4	494.2	551.4	622.1	705.8
132.5°	341.9	344.9	355.4	369.9	390.9	421.0	459.7	502.7	554.2	617.3	693.4
135°	355.8	360.0	370.3	387.9	409.7	437.6	473.7	512.9	557.3	608.9	673.4
137.5°	371.0	374.6	385.8	402.3	424.5	450.6	483.4	519.2	557.8	603.1	656.7
140°	381.7	384.5	395.7	413.0	434.5	459.3	490.7	524.1	559.6	599.3	647.4
142.5°	392.4	395.4	405.9	422.6	443.5	467.4	497.5	528.0	561.4	597.4	640.1
145°	408.4	411.3	421.3	435.6	455.0	477.7	504.6	532.6	562.7	594.8	629.5
147.5°	426.9	427.7	436.5	451.1	467.3	487.6	512.9	537.3	563.7	591.0	620.5
150°	438.5	439.3	447.3	459.4	474.7	494.3	517.0	539.8	563.7	588.5	614.5
152.5°	448.3	448.4	456.6	468.2	482.1	500.1	520.4	541.5	562.0	584.4	607.8
155°	463.2	464.2	470.4	480.8	492.2	507.7	525.3	543.0	559.5	578.2	597.9
157.5°	477.9	477.9	483.7	491.8	501.7	514.0	528.9	543.0	556.9	571.8	587.7
160°	487.0	487.0	491.2	498.4	506.7	518.1	530.5	543.0	554.4	566.8	580.2
162.5°	495.3	494.5	497.8	504.2	511.7	520.6	532.2	543.0	551.9	561.8	573.6
165°	504.6	504.6	506.7	511.8	517.0	523.3	532.6	540.9	547.1	554.4	562.7
167.5°	514.0	512.9	514.0	517.9	520.8	525.6	532.4	538.4	542.2	546.9	552.7
170°	518.1	517.0	518.1	521.2	523.3	526.4	531.5	536.7	538.8	541.9	546.1
172.5°	522.2	521.2	521.4	523.7	525.0	527.2	530.7	535.1	535.5	536.9	540.3
175°	526.4	525.3	525.3	526.4	527.4	527.4	529.5	532.6	531.5	531.5	533.6
177.5°	528.2	527.4	526.6	527.4	527.4	527.4	528.2	529.9	528.2	528.2	529.1
180°	527.4	527.4	527.4	527.4	527.4	527.4	527.4	527.4	527.4	527.4	527.4



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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°	160.4	168.5	176.7	181.9	184.5	187.2	189.3	191.7
90°	156.6	165.6	174.6	179.6	182.9	186.1	187.3	189.4
92.5°	335.1	292.5	268.9	253.2	243.1	239.7	238.4	240.6
95°	889.8	736.6	605.2	509.6	461.3	431.7	415.4	404.5
97.5°	1248.4	1195.9	1101.7	998.3	926.2	866.2	837.5	818.3
100°	1358.1	1386.3	1342.8	1270.9	1182.6	1121.3	1092.2	1085.7
102.5°	1346.9	1456.9	1478.8	1451.5	1398.4	1354.7	1324.1	1319.6
105°	1255.6	1441.7	1551.1	1598.1	1602.4	1596.3	1583.9	1579.9
107.5°	1129.9	1327.5	1478.6	1575.5	1628.6	1654.2	1666.5	1671.2
110°	1053.7	1239.3	1395.9	1514.1	1589.8	1635.6	1656.4	1667.9





TEST NUMBER: P332666-940

CATALOG NUMBER: S124DIP-S1020D1205U940-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	996.1	1160.8	1308.9	1426.9	1512.6	1567.4	1595.8	1613.1
115°	936.2	1069.7	1196.9	1300.4	1384.2	1448.3	1483.4	1493.5
117.5°	902.5	1013.7	1114.7	1203.0	1275.0	1329.5	1365.2	1373.8
120°	885.5	987.4	1075.8	1153.2	1214.4	1262.1	1291.3	1304.9
122.5°	870.7	969.2	1050.1	1118.2	1170.2	1211.1	1235.8	1249.2
125°	846.9	941.2	1018.0	1078.3	1121.4	1153.2	1174.5	1182.3
127.5°	818.2	908.4	984.5	1042.1	1085.6	1114.2	1132.7	1140.7
130°	796.7	883.5	958.9	1017.2	1061.2	1088.8	1107.1	1114.9
132.5°	775.0	856.6	930.1	988.2	1031.4	1062.3	1079.7	1087.6
135°	743.2	814.8	882.4	937.3	980.3	1011.0	1029.2	1037.1
137.5°	714.9	775.9	833.1	882.7	922.8	952.8	967.8	976.7
140°	698.7	750.9	801.1	847.0	884.8	908.9	924.8	934.4
142.5°	684.2	730.2	773.3	813.2	846.4	868.7	882.7	889.7
145°	664.3	701.2	734.0	764.4	791.3	810.0	821.5	827.8
147.5°	648.0	676.3	701.3	724.7	744.6	760.6	769.4	772.1
150°	639.4	663.2	683.9	702.5	719.1	732.5	738.8	739.9
152.5°	630.2	650.7	669.8	685.1	699.2	710.2	713.9	715.0
155°	616.5	633.1	648.6	661.1	671.5	679.8	682.9	682.9
157.5°	601.8	615.7	628.7	638.7	646.6	652.8	654.7	654.7
160°	592.7	604.0	615.5	623.8	630.0	636.2	637.2	637.2
162.5°	583.5	593.3	602.3	609.7	614.2	620.5	621.5	620.6
165°	571.0	577.1	584.4	589.6	593.7	597.9	596.8	595.8
167.5°	558.7	563.5	569.3	572.4	574.4	577.1	576.9	576.1
170°	551.3	554.4	558.5	561.6	563.7	564.7	563.7	563.7
172.5°	544.6	546.9	549.4	551.6	552.9	553.9	552.9	551.3
175°	535.7	536.7	538.8	538.8	538.8	540.9	538.8	536.7
177.5°	529.9	530.7	530.7	531.5	530.7	531.5	529.9	528.2
180°	527.4	527.4	527.4	527.4	527.4	527.4	527.4	527.4

(END OF REPORT)