

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: P332648-830

Luminaire Tested: **S124DIP-S1020D810U830-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332648-830
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-S1020D810U830-4F0-1E-UDD-D4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 810 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6697.3 lumens
Efficiency: N/A
Efficacy: 123.1 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

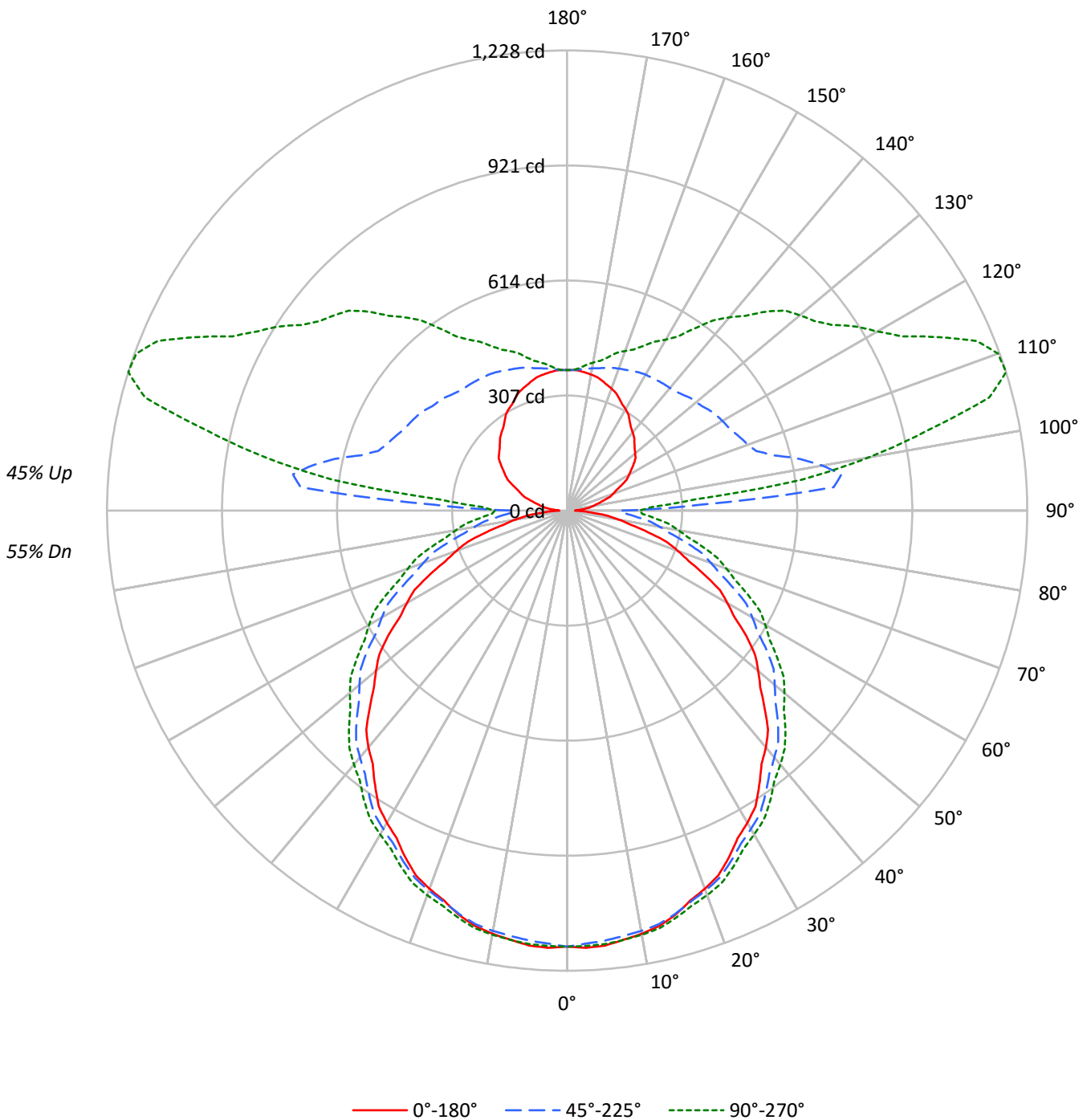
Input Watts (W): 54.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332648-830

CATALOG NUMBER: S124DIP-S1020D810U830-4F0-1E-UDD-D4

Luminous Intensity Polar Plot





TEST NUMBER: P332648-830

CATALOG NUMBER: S124DIP-S1020D810U830-4F0-1E-UDD-D4

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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55
1	98	93	89	85	90	86	82	79	74	71	68	62	60	58	52	50	49	44
2	89	80	74	68	82	75	69	64	64	60	56	54	51	48	45	42	40	36
3	80	70	63	56	74	65	58	53	56	51	46	47	43	40	39	36	34	30
4	73	62	54	47	68	58	50	45	50	44	39	42	38	34	35	32	29	25
5	67	55	47	40	62	51	44	38	44	38	34	38	33	29	31	28	25	22
6	62	49	41	35	57	46	38	33	40	34	29	34	29	25	28	25	22	19
7	57	44	36	30	53	42	34	29	36	30	26	31	26	22	26	22	19	17
8	53	40	32	27	49	38	30	25	33	27	23	28	23	20	24	20	17	15
9	49	37	29	24	46	34	27	23	30	24	20	26	21	18	22	18	15	13
10	46	34	26	21	43	32	25	20	28	22	18	24	19	16	20	17	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9395	9395	9395
5°	9424	9182	9208
10°	9366	9032	9024
15°	9282	8858	8809
20°	9156	8666	8599
25°	9013	8450	8368
30°	8859	8237	8131
35°	8684	8018	7924
40°	8544	7809	7708
45°	8336	7617	7522
50°	8161	7395	7326
55°	7979	7187	7096
60°	7697	6921	6885
65°	7387	6635	6628
70°	7013	6309	6327
75°	6486	5950	6056
80°	5904	5605	5788
85°	5170	5301	5633



TEST NUMBER: P332648-830

CATALOG NUMBER: S124DIP-S1020D810U830-4F0-1E-UDD-D4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.2	1.6
10°-20°	315.7	4.7
20°-30°	477.4	7.1
30°-40°	577.6	8.6
40°-50°	610.7	9.1
50°-60°	574.7	8.6
60°-70°	476.8	7.1
70°-80°	334.9	5.0
80°-90°	191.4	2.9
90°-100°	383.4	5.7
100°-110°	647.2	9.7
110°-120°	561.0	8.4
120°-130°	456.4	6.8
130°-140°	367.9	5.5
140°-150°	273.4	4.1
150°-160°	190.2	2.8
160°-170°	111.9	1.7
170°-180°	36.4	0.5
0°-30°	903.4	13.5
0°-40°	1481.0	22.1
0°-60°	2666.4	39.8
0°-90°	3669.6	54.8
90°-120°	1591.5	23.8
90°-150°	2689.2	40.2
90°-180°	3028.0	45.2
0°-180°	6697.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1164	1164	1164	1164	1164	
5°	1165	1161	1152	1162	1161	111
15°	1117	1118	1114	1125	1125	315
25°	1022	1029	1033	1047	1049	470
35°	894	910	923	940	945	560
45°	745	770	795	816	824	576
55°	584	612	650	675	684	520
65°	404	446	490	521	533	400
75°	224	273	327	362	375	238
85°	69	124	182	220	235	73
90°	22	79	142	180	193	15
95°	41	137	714	445	340	41
105°	98	164	570	1158	1166	105
115°	160	212	492	917	1095	159
125°	217	257	465	765	864	193
135°	254	302	437	658	751	197
145°	291	332	423	535	593	183
155°	329	356	411	466	486	152
165°	359	370	394	418	424	101
175°	374	375	378	383	382	36
180°	375	375	375	375	375	



TEST NUMBER: P332648-830

CATALOG NUMBER: S124DIP-S1020D810U830-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1167.9	1167.2	1166.5	1165.8	1165.1	1163.9	1162.0	1160.2	1158.3	1156.4	1158.0
5°	1165.0	1164.1	1163.3	1162.4	1161.6	1160.1	1158.1	1156.0	1154.0	1152.0	1154.3
7.5°	1155.1	1154.6	1154.0	1153.6	1153.0	1152.0	1150.3	1148.6	1146.9	1145.2	1147.8
10°	1146.8	1146.5	1146.2	1145.9	1145.7	1144.7	1143.3	1141.9	1140.4	1139.0	1141.6
12.5°	1135.3	1135.3	1135.2	1135.1	1135.1	1134.5	1133.6	1132.6	1131.6	1130.6	1133.0
15°	1116.8	1117.1	1117.4	1117.7	1117.9	1117.7	1116.8	1116.0	1115.0	1114.2	1116.8
17.5°	1091.6	1092.4	1093.3	1094.1	1095.0	1095.3	1095.1	1095.0	1094.9	1094.7	1097.3
20°	1073.8	1074.7	1075.5	1076.4	1077.3	1077.9	1078.2	1078.5	1078.7	1079.0	1081.9
22.5°	1054.0	1055.1	1056.2	1057.3	1058.4	1059.2	1059.7	1060.3	1060.7	1061.3	1064.2
25°	1021.7	1023.4	1025.1	1026.9	1028.6	1029.9	1030.8	1031.7	1032.6	1033.4	1036.6
27.5°	985.7	988.3	990.8	993.3	995.9	997.9	999.2	1000.5	1001.8	1003.1	1006.2
30°	961.8	964.0	966.4	968.7	971.0	973.2	975.2	977.2	979.2	981.3	984.5
32.5°	935.7	938.5	941.2	944.1	946.8	949.3	951.6	953.9	956.1	958.4	962.0
35°	894.0	897.5	900.9	904.4	907.9	911.1	914.0	916.8	919.7	922.7	926.7
37.5°	852.0	856.0	860.0	864.0	868.0	871.8	875.3	878.9	882.6	886.2	890.2
40°	824.9	828.7	832.5	836.2	840.0	843.9	847.9	852.0	856.0	860.1	864.4
42.5°	793.6	797.9	802.1	806.3	810.5	815.0	819.7	824.5	829.2	834.1	838.9
45°	745.4	750.9	756.4	762.0	767.4	772.9	778.4	783.9	789.4	794.9	799.8
47.5°	699.3	704.9	710.6	716.3	722.0	728.0	734.3	740.7	747.2	753.5	758.6
50°	665.9	672.3	678.6	685.0	691.4	697.8	704.2	710.5	716.9	723.2	729.1
52.5°	632.5	638.9	645.3	651.7	658.1	664.9	672.1	679.5	686.7	694.1	699.8
55°	583.8	589.9	596.0	602.1	608.1	615.5	624.2	632.9	641.6	650.3	656.1
57.5°	529.3	536.9	544.4	552.0	559.5	567.5	576.2	584.8	593.4	602.1	609.0
60°	493.9	501.4	509.0	516.5	524.1	532.5	542.2	551.7	561.2	570.8	577.4
62.5°	459.5	467.7	476.0	484.2	492.4	501.2	510.9	520.4	530.0	539.5	546.2
65°	404.0	413.2	422.5	431.8	441.0	450.6	460.4	470.3	480.1	490.0	497.2
67.5°	350.5	360.4	370.2	380.1	389.9	400.1	410.7	421.2	431.8	442.3	449.7
70°	314.1	324.0	333.8	343.6	353.5	363.9	374.8	385.9	396.9	407.9	415.8
72.5°	278.6	288.7	298.8	308.9	319.0	329.8	341.5	353.2	365.0	376.6	384.2
75°	224.1	234.9	245.5	256.3	267.0	278.4	290.6	302.7	314.9	327.1	335.2
77.5°	173.3	184.6	196.0	207.4	218.8	230.7	243.6	256.3	269.0	281.7	289.9
80°	142.0	153.6	165.2	176.8	188.4	200.6	213.3	226.0	238.7	251.5	260.2
82.5°	110.7	122.8	134.9	146.9	158.9	171.4	184.1	196.8	209.6	222.3	231.2
85°	69.1	81.2	93.4	105.6	117.7	130.4	143.4	156.4	169.4	182.5	191.1
87.5°	38.7	50.8	63.1	75.0	87.0	99.2	112.8	125.5	138.5	151.5	159.8
90°	21.6	34.7	48.4	60.8	73.0	85.1	102.0	114.4	128.4	142.3	150.0
92.5°	28.2	42.5	59.9	79.3	100.4	127.1	177.1	246.8	314.9	356.6	325.6
95°	41.3	53.1	69.9	89.1	116.3	158.0	234.0	366.7	554.8	714.1	738.8
97.5°	59.0	67.2	81.8	98.9	122.2	158.2	219.3	330.9	517.7	737.9	888.8
100°	70.3	77.9	90.6	107.0	128.5	161.5	216.2	310.9	472.5	691.5	888.1
102.5°	82.1	89.9	101.1	115.9	136.0	167.2	217.6	301.9	440.9	636.2	838.4
105°	97.9	105.9	115.5	130.1	149.1	178.8	224.9	296.7	410.7	569.5	749.9
107.5°	118.0	124.2	132.7	146.8	164.3	192.8	235.4	301.2	399.5	528.9	677.4
110°	130.5	136.1	143.8	156.7	174.1	201.0	243.6	305.3	396.5	513.5	640.4



TEST NUMBER: P332648-830

CATALOG NUMBER: S124DIP-S1020D810U830-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	142.5	147.5	155.4	167.3	184.1	210.7	251.6	309.9	395.3	503.0	616.6
115°	159.7	164.5	172.2	182.2	198.8	224.6	263.3	316.9	394.6	492.4	591.6
117.5°	178.8	182.5	188.6	198.3	212.9	238.7	275.3	324.6	394.7	483.8	575.8
120°	190.8	193.1	199.2	208.1	221.5	246.8	283.1	329.9	395.0	478.6	566.2
122.5°	202.6	204.2	209.5	217.3	231.1	255.2	291.2	335.1	395.6	472.8	556.3
125°	216.7	219.4	223.5	231.3	245.1	269.2	302.9	344.1	397.8	465.4	541.7
127.5°	230.2	232.2	237.2	246.3	260.5	284.0	315.2	351.9	397.9	456.0	523.1
130°	236.8	239.5	245.1	255.8	269.6	293.1	322.8	356.2	398.4	450.2	511.4
132.5°	244.5	246.6	253.9	264.1	279.0	300.9	329.6	361.5	399.3	445.4	501.1
135°	253.9	256.8	264.2	276.7	292.3	312.5	338.7	367.3	399.5	437.0	484.4
137.5°	264.7	267.2	275.0	286.6	302.5	321.0	344.8	370.5	398.3	430.8	470.3
140°	272.3	274.3	282.1	294.4	309.5	327.2	349.6	373.4	398.8	427.2	462.6
142.5°	279.6	281.7	289.2	301.0	315.8	332.9	354.2	375.9	399.5	425.0	456.5
145°	291.0	292.8	299.9	310.0	323.7	339.8	358.9	378.8	400.2	423.0	448.4
147.5°	304.1	304.5	310.7	321.0	332.3	346.9	364.9	382.2	401.0	420.4	441.4
150°	312.4	312.7	318.4	327.0	337.7	351.6	367.8	384.0	401.0	418.6	437.1
152.5°	319.0	319.1	324.9	333.1	342.9	355.7	370.1	385.1	399.7	415.7	432.3
155°	329.4	330.2	334.6	342.0	350.1	361.1	373.6	386.2	397.9	411.2	425.3
157.5°	339.9	339.9	344.0	349.8	356.8	365.5	376.2	386.2	396.1	406.7	418.0
160°	346.4	346.4	349.3	354.5	360.4	368.5	377.3	386.2	394.3	403.1	412.7
162.5°	352.3	351.7	354.0	358.6	363.9	370.2	378.5	386.2	392.6	399.6	408.0
165°	358.9	358.9	360.4	364.1	367.8	372.2	378.8	384.7	389.2	394.3	400.2
167.5°	365.5	364.9	365.5	368.3	370.4	373.8	378.7	383.0	385.6	389.0	393.1
170°	368.5	367.8	368.5	370.7	372.2	374.4	378.1	381.7	383.2	385.4	388.4
172.5°	371.5	370.7	370.9	372.5	373.3	374.9	377.5	380.6	380.9	381.9	384.3
175°	374.4	373.6	373.6	374.4	375.1	375.1	376.6	378.8	378.1	378.1	379.6
177.5°	375.7	375.1	374.6	375.1	375.1	375.1	375.7	376.9	375.7	375.7	376.3
180°	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1



TEST NUMBER: P332648-830

CATALOG NUMBER: S124DIP-S1020D810U830-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1159.7	1161.3	1162.9	1163.6	1163.4	1163.1	1162.9	1162.7
5°	1156.6	1159.0	1161.3	1162.2	1162.0	1161.7	1161.4	1161.1
7.5°	1150.5	1153.0	1155.7	1156.8	1156.5	1156.2	1155.9	1155.7
10°	1144.2	1146.8	1149.4	1150.6	1150.3	1150.0	1149.7	1149.4
12.5°	1135.4	1137.7	1140.1	1141.3	1141.2	1141.1	1141.1	1141.0
15°	1119.5	1122.0	1124.6	1125.8	1125.5	1125.2	1124.9	1124.6
17.5°	1099.9	1102.7	1105.3	1106.5	1106.3	1106.1	1105.8	1105.6
20°	1084.8	1087.7	1090.6	1092.0	1092.0	1092.0	1092.0	1092.0
22.5°	1067.1	1070.0	1072.9	1074.6	1075.1	1075.4	1075.9	1076.4
25°	1039.8	1042.9	1046.1	1047.9	1048.2	1048.5	1048.8	1049.0
27.5°	1009.1	1012.0	1015.0	1016.6	1017.0	1017.4	1017.7	1018.0
30°	987.7	990.8	994.0	995.9	996.5	997.0	997.7	998.2
32.5°	965.6	969.3	973.0	975.1	975.6	976.2	976.8	977.4
35°	930.8	934.8	938.9	941.3	942.2	943.0	944.0	944.8
37.5°	894.4	898.5	902.6	905.1	906.1	907.0	907.9	908.8
40°	868.7	873.1	877.5	880.2	881.4	882.5	883.7	884.9
42.5°	843.7	848.5	853.3	856.1	857.1	858.0	858.9	859.8
45°	804.7	809.7	814.6	817.8	819.3	820.7	822.2	823.6
47.5°	763.6	768.7	773.9	777.3	779.0	780.8	782.5	784.3
50°	734.8	740.6	746.4	750.2	752.0	753.7	755.4	757.1
52.5°	705.7	711.4	717.3	721.0	722.7	724.4	726.2	727.9
55°	661.9	667.7	673.4	677.2	678.9	680.7	682.4	684.2
57.5°	615.9	622.7	629.6	633.9	635.5	637.2	638.8	640.4
60°	584.1	590.8	597.4	601.9	604.3	606.5	608.9	611.1
62.5°	552.8	559.5	566.2	570.6	573.0	575.2	577.6	579.9
65°	504.4	511.7	519.0	523.8	526.0	528.4	530.7	533.0
67.5°	457.0	464.4	471.7	476.5	478.8	481.1	483.3	485.6
70°	423.5	431.3	439.1	444.1	446.1	448.2	450.2	452.2
72.5°	391.8	399.4	407.0	411.9	414.2	416.4	418.7	420.9
75°	343.3	351.4	359.5	364.9	367.5	370.1	372.7	375.3
77.5°	298.2	306.4	314.6	320.2	322.9	325.7	328.5	331.3
80°	268.9	277.6	286.3	291.7	294.1	296.4	298.7	301.0
82.5°	240.2	249.1	258.0	263.7	266.3	268.8	271.4	273.9
85°	199.8	208.5	217.2	223.0	225.9	228.8	231.7	234.6
87.5°	168.2	176.8	185.4	190.9	193.5	196.2	198.6	201.1
90°	159.1	168.2	177.4	182.7	185.8	188.8	190.4	192.7
92.5°	283.8	256.2	242.1	232.6	226.2	224.5	224.3	226.7
95°	675.1	568.7	477.8	411.5	378.0	357.8	347.0	340.1
97.5°	927.4	892.5	828.0	756.1	705.7	663.7	644.1	631.3
100°	1003.5	1026.1	997.8	948.1	886.1	843.1	823.0	819.2
102.5°	993.7	1074.4	1092.4	1074.7	1037.6	1007.3	986.2	983.7
105°	926.0	1060.6	1140.9	1175.8	1179.7	1176.1	1168.1	1165.9
107.5°	834.0	976.9	1086.8	1157.1	1195.5	1214.5	1223.9	1227.9
110°	778.2	912.3	1025.9	1111.4	1166.0	1199.3	1214.9	1223.9



TEST NUMBER: P332648-830

CATALOG NUMBER: S124DIP-S1020D810U830-4F0-1E-UDD-D4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	735.4	854.5	962.0	1047.4	1109.1	1148.9	1169.7	1182.8
115°	690.1	787.1	879.8	954.7	1014.9	1061.2	1086.8	1094.8
117.5°	663.4	744.4	818.2	882.4	934.3	973.8	1000.0	1006.9
120°	649.4	723.7	788.4	844.9	889.2	924.0	945.4	955.8
122.5°	637.1	709.1	768.5	818.3	855.9	885.7	904.0	914.2
125°	617.9	686.8	743.2	787.3	818.5	841.7	857.4	863.6
127.5°	594.7	660.6	716.5	758.6	790.1	811.2	824.9	831.3
130°	577.8	641.2	696.5	739.0	771.0	791.2	804.7	810.9
132.5°	560.8	620.5	674.4	716.8	748.1	770.6	783.6	789.8
135°	535.5	588.0	637.5	677.6	708.8	731.1	744.7	750.8
137.5°	513.1	557.9	600.0	636.1	665.2	686.9	698.1	704.9
140°	500.2	538.7	575.6	609.2	636.4	654.0	665.8	673.2
142.5°	489.0	522.8	554.5	583.6	607.7	624.0	634.3	639.6
145°	473.7	500.5	524.3	546.4	566.0	579.7	588.2	593.0
147.5°	461.1	481.3	499.2	515.9	530.5	542.1	548.7	550.9
150°	454.7	471.6	486.4	499.6	511.5	521.0	525.5	526.2
152.5°	448.3	462.8	476.4	487.3	497.3	505.1	507.7	508.5
155°	438.5	450.3	461.4	470.2	477.6	483.4	485.7	485.7
157.5°	428.0	437.9	447.2	454.3	459.9	464.3	465.6	465.6
160°	421.6	429.7	437.8	443.7	448.1	452.5	453.3	453.3
162.5°	415.1	422.0	428.4	433.7	436.9	441.3	442.1	441.5
165°	406.0	410.5	415.7	419.3	422.3	425.3	424.5	423.8
167.5°	397.4	400.8	404.9	407.1	408.6	410.5	410.4	409.7
170°	392.1	394.3	397.3	399.4	401.0	401.6	401.0	401.0
172.5°	387.4	389.0	390.8	392.4	393.2	394.0	393.2	392.1
175°	381.1	381.7	383.2	383.2	383.2	384.7	383.2	381.7
177.5°	376.9	377.5	377.5	378.1	377.5	378.1	376.9	375.7
180°	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1

(END OF REPORT)