

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: P332646-930

Luminaire Tested: **S124DIP-S1020D810U930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

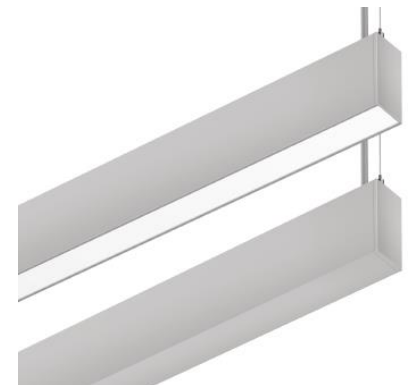
Test Information

Test Method: LM-79-08
Report Number: P332646-930
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: S124DIP-S1020D810U930-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 810 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

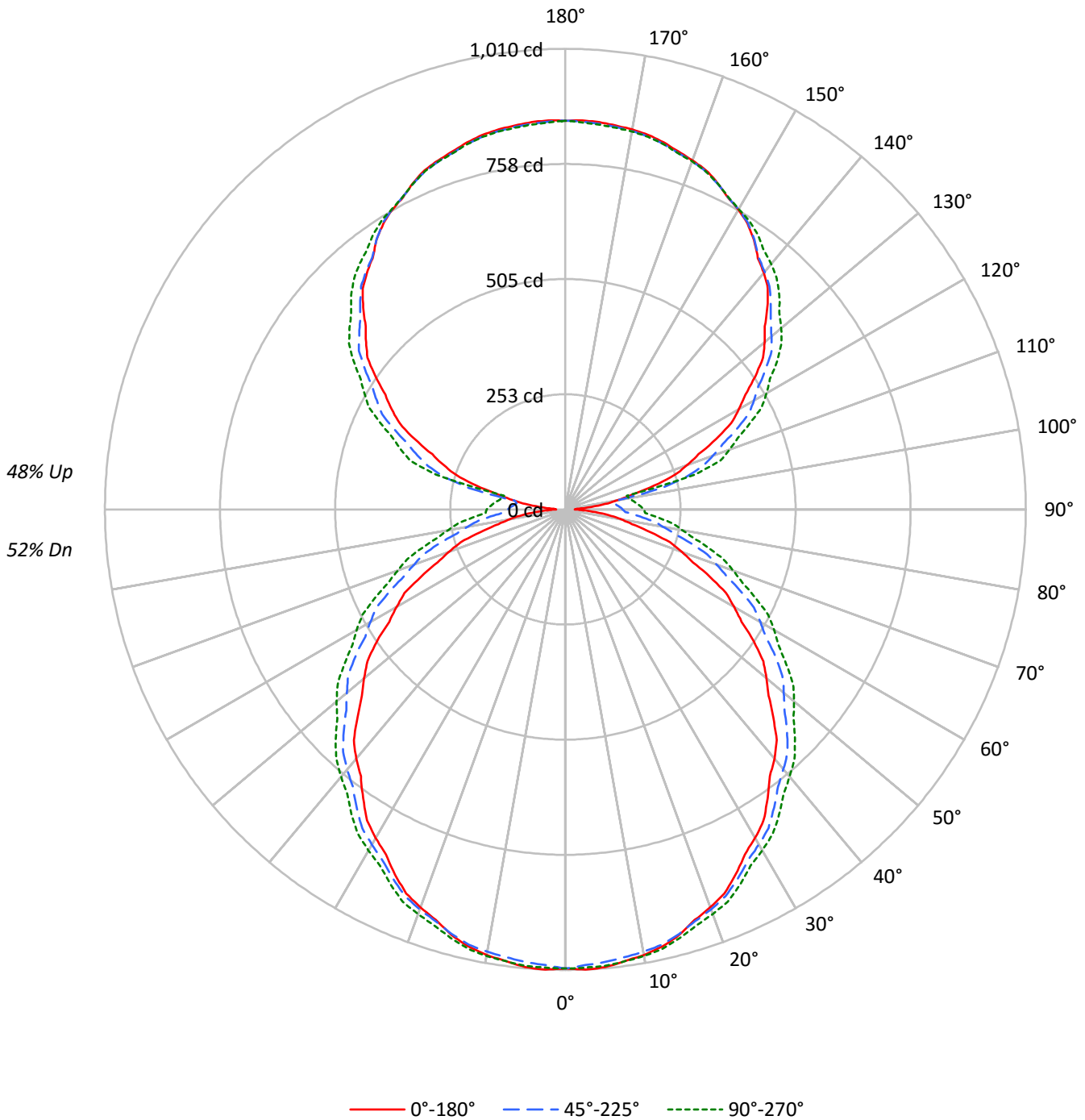
Lumens per Lamp: N/A
Luminaire Lumens: 6070.4 lumens
Efficiency: N/A
Efficacy: 111.6 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: General Diffuse

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: P332646-930
CATALOG NUMBER: S124DIP-S1020D810U930-4F0-1E-UDD-D

Luminous Intensity Polar Plot





TEST NUMBER: P332646-930

CATALOG NUMBER: S124DIP-S1020D810U930-4F0-1E-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	0	
RCR																						
0	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	52				
1	97	92	88	84	90	86	82	78	73	70	67	61	59	57	50	48	47	42				
2	88	80	73	68	81	74	68	63	63	59	55	53	49	47	43	41	39	34				
3	80	70	62	56	74	65	58	52	55	50	46	46	42	39	38	35	33	28				
4	73	62	53	47	67	57	50	44	49	43	39	41	37	33	34	30	28	24				
5	67	55	46	40	62	51	43	38	44	38	33	37	32	28	30	27	24	21				
6	62	49	41	35	57	46	38	33	39	33	29	33	28	25	27	24	21	18				
7	57	44	36	30	52	41	34	29	35	29	25	30	25	22	25	21	18	16				
8	53	40	32	27	49	37	30	25	32	26	22	27	23	19	23	19	16	14				
9	49	37	29	24	45	34	27	22	29	24	20	25	21	17	21	17	15	13				
10	46	33	26	21	42	31	25	20	27	22	18	23	19	16	19	16	13	11				

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: P332646-930

CATALOG NUMBER: S124DIP-S1020D810U930-4F0-1E-UDD-D

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.3	1.6
10°-20°	273.1	4.5
20°-30°	413.0	6.8
30°-40°	499.7	8.2
40°-50°	528.2	8.7
50°-60°	497.1	8.2
60°-70°	412.5	6.8
70°-80°	289.7	4.8
80°-90°	166.3	2.7
90°-100°	126.4	2.1
100°-110°	257.9	4.2
110°-120°	403.9	6.7
120°-130°	478.6	7.9
130°-140°	494.7	8.1
140°-150°	454.0	7.5
150°-160°	364.2	6.0
160°-170°	234.9	3.9
170°-180°	81.0	1.3
0°-30°	781.4	12.9
0°-40°	1281.1	21.1
0°-60°	2306.5	38.0
0°-90°	3174.9	52.3
90°-120°	788.1	13.0
90°-150°	2215.4	36.5
90°-180°	2895.0	47.7
0°-180°	6070.4	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	72	126	161	172	14
95°	50	67	112	145	157	57
105°	202	229	273	305	293	212
115°	365	378	412	438	446	360
125°	508	511	536	559	567	454
135°	627	627	637	656	664	483
145°	722	722	722	730	736	451
155°	790	790	789	791	789	364
165°	833	830	830	834	829	235
175°	852	849	849	854	847	81
180°	852	852	852	852	852	



TEST NUMBER: P332646-930

CATALOG NUMBER: S124DIP-S1020D810U930-4F0-1E-UDD-D

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	44.3	54.8	65.3	75.9	86.7	97.9	109.2	120.3	131.5	139.0
90°	20.0	31.6	43.1	54.7	66.3	78.0	89.9	101.8	113.7	125.6	133.7
92.5°	25.2	34.2	43.4	52.5	61.6	72.1	84.0	95.9	107.8	119.7	127.6
95°	49.7	53.2	56.6	60.1	63.5	70.4	80.9	91.2	101.7	112.1	119.7
97.5°	87.7	97.8	108.0	118.1	128.2	130.4	124.8	119.2	113.6	107.9	114.5
100°	116.9	126.0	135.1	144.1	153.2	152.9	143.1	133.3	123.5	113.7	118.1
102.5°	150.6	158.2	165.8	173.3	180.9	188.3	195.3	202.3	209.3	216.3	196.9
105°	202.0	207.9	213.8	219.6	225.4	233.4	243.4	253.3	263.3	273.3	280.8
107.5°	251.7	256.2	260.7	265.2	269.8	276.9	286.7	296.4	306.1	315.8	322.6
110°	284.4	288.4	292.3	296.2	300.1	306.9	316.5	326.1	335.7	345.4	351.4



TEST NUMBER: P332646-930

CATALOG NUMBER: S124DIP-S1020D810U930-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	316.2	320.0	323.9	327.8	331.7	337.9	346.7	355.5	364.3	373.0	378.5
115°	365.0	367.7	370.4	373.1	375.8	381.0	388.9	396.8	404.6	412.5	418.3
117.5°	410.1	412.0	413.9	415.8	417.8	422.6	430.4	438.1	445.9	453.7	458.9
120°	439.8	441.1	442.4	443.7	445.0	449.2	456.4	463.5	470.6	477.8	483.1
122.5°	468.3	468.8	469.3	469.8	470.3	474.0	481.1	488.2	495.2	502.3	507.4
125°	508.1	508.4	508.7	509.1	509.4	512.5	518.5	524.5	530.4	536.5	541.6
127.5°	546.7	546.6	546.4	546.3	546.3	548.9	554.3	559.8	565.2	570.7	575.2
130°	570.7	570.6	570.5	570.4	570.3	572.4	576.9	581.3	585.8	590.2	594.8
132.5°	593.7	593.7	593.7	593.7	593.7	595.6	599.3	603.1	606.8	610.6	615.0
135°	627.0	626.8	626.7	626.6	626.4	627.5	629.8	632.2	634.5	636.7	641.1
137.5°	657.5	657.3	657.0	656.9	656.6	657.3	658.8	660.2	661.8	663.2	667.2
140°	677.4	677.4	677.4	677.4	677.4	677.8	678.3	678.8	679.4	679.9	683.5
142.5°	694.3	694.7	695.2	695.7	696.1	696.3	696.3	696.4	696.4	696.4	699.6
145°	721.5	721.6	721.8	722.0	722.2	722.3	722.3	722.3	722.3	722.3	723.9
147.5°	743.3	743.8	744.4	744.9	745.4	745.7	745.5	745.3	745.2	745.1	745.4
150°	759.1	759.4	759.7	760.0	760.3	760.4	760.3	760.2	760.0	759.9	759.9
152.5°	771.4	771.8	772.3	772.7	773.1	773.1	772.9	772.7	772.3	772.1	772.3
155°	789.9	789.9	790.1	790.3	790.4	790.3	789.9	789.4	789.0	788.6	789.1
157.5°	805.5	805.4	805.4	805.3	805.2	804.9	804.4	804.0	803.5	803.0	803.7
160°	814.7	814.2	813.8	813.4	813.0	812.7	812.6	812.4	812.3	812.1	813.0
162.5°	822.9	822.3	821.7	821.3	820.7	820.4	820.2	820.1	819.9	819.8	820.7
165°	833.2	832.5	831.8	831.0	830.4	830.0	830.0	830.0	830.0	830.0	831.1
167.5°	841.3	840.6	839.8	839.1	838.4	838.0	837.9	837.8	837.7	837.6	838.9
170°	846.0	845.1	844.2	843.3	842.5	842.2	842.3	842.4	842.6	842.8	843.8
172.5°	849.0	848.2	847.3	846.4	845.6	845.2	845.4	845.5	845.6	845.8	846.9
175°	852.3	851.4	850.6	849.8	848.9	848.6	848.7	848.8	849.0	849.1	850.4
177.5°	853.9	853.0	852.2	851.4	850.7	850.4	850.6	850.8	851.1	851.3	852.2
180°	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3



TEST NUMBER: P332646-930

CATALOG NUMBER: S124DIP-S1020D810U930-4F0-1E-UDD-D

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°	146.4	153.8	161.3	166.2	168.4	170.6	172.9	175.1
90°	141.9	149.9	158.1	163.3	165.6	167.9	170.2	172.4
92.5°	135.5	143.4	151.3	156.4	158.4	160.5	162.5	164.6
95°	127.3	134.9	142.5	147.6	149.9	152.4	154.7	157.1
97.5°	121.2	127.8	134.5	139.0	141.3	143.6	145.9	148.1
100°	122.5	126.8	131.1	134.3	136.2	138.0	140.0	141.9
102.5°	177.5	158.1	138.6	129.9	131.9	133.9	135.8	137.9
105°	288.4	295.9	303.5	305.7	302.6	299.5	296.4	293.3
107.5°	329.4	336.2	343.0	347.6	349.8	352.2	354.6	356.9
110°	357.5	363.5	369.6	373.8	376.3	378.6	381.1	383.5



TEST NUMBER: P332646-930

CATALOG NUMBER: S124DIP-S1020D810U930-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	384.0	389.6	395.0	399.0	401.6	404.1	406.7	409.2
115°	424.1	429.9	435.7	439.4	441.2	443.0	444.7	446.5
117.5°	464.0	469.1	474.3	477.8	479.8	481.8	483.7	485.7
120°	488.4	493.6	498.9	502.4	504.2	505.9	507.6	509.3
122.5°	512.7	517.9	523.0	526.4	527.9	529.4	530.9	532.5
125°	546.8	552.0	557.2	560.6	562.2	563.9	565.5	567.2
127.5°	579.6	584.0	588.4	591.4	593.0	594.6	596.2	597.8
130°	599.5	604.1	608.8	611.9	613.3	614.9	616.4	617.9
132.5°	619.5	623.9	628.4	631.3	632.7	634.1	635.4	636.8
135°	645.4	649.6	654.0	657.0	658.8	660.6	662.3	664.1
137.5°	671.2	675.1	679.1	681.7	682.8	684.0	685.2	686.3
140°	687.2	691.0	694.6	697.2	698.5	699.9	701.3	702.7
142.5°	702.8	706.0	709.1	711.3	712.3	713.4	714.4	715.6
145°	725.5	727.2	728.9	730.3	731.6	732.9	734.2	735.5
147.5°	745.7	746.0	746.3	747.0	747.9	748.9	749.8	750.7
150°	759.9	759.9	759.9	759.9	760.1	760.2	760.3	760.5
152.5°	772.6	772.8	773.0	773.1	773.0	772.9	772.8	772.7
155°	789.7	790.3	790.8	790.9	790.4	790.0	789.6	789.2
157.5°	804.5	805.2	805.9	805.9	805.2	804.5	803.7	803.0
160°	813.8	814.7	815.5	815.5	814.7	813.8	813.0	812.1
162.5°	821.5	822.3	823.2	823.1	822.1	821.2	820.3	819.3
165°	832.3	833.4	834.5	834.5	833.2	831.9	830.6	829.3
167.5°	840.2	841.4	842.6	842.5	841.1	839.7	838.3	836.9
170°	845.0	846.1	847.3	847.1	845.7	844.3	842.9	841.5
172.5°	848.1	849.2	850.4	850.1	848.6	847.1	845.5	844.0
175°	851.7	853.0	854.2	854.0	852.3	850.6	848.9	847.2
177.5°	853.1	854.0	854.9	854.7	853.3	852.0	850.6	849.2
180°	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3

(END OF REPORT)