

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: P332637-935

Luminaire Tested: **S124DIP-S1020D590U935-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332637-935
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-S1020D590U935-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5656.9 lumens
Efficiency: N/A
Efficacy: 115.9 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

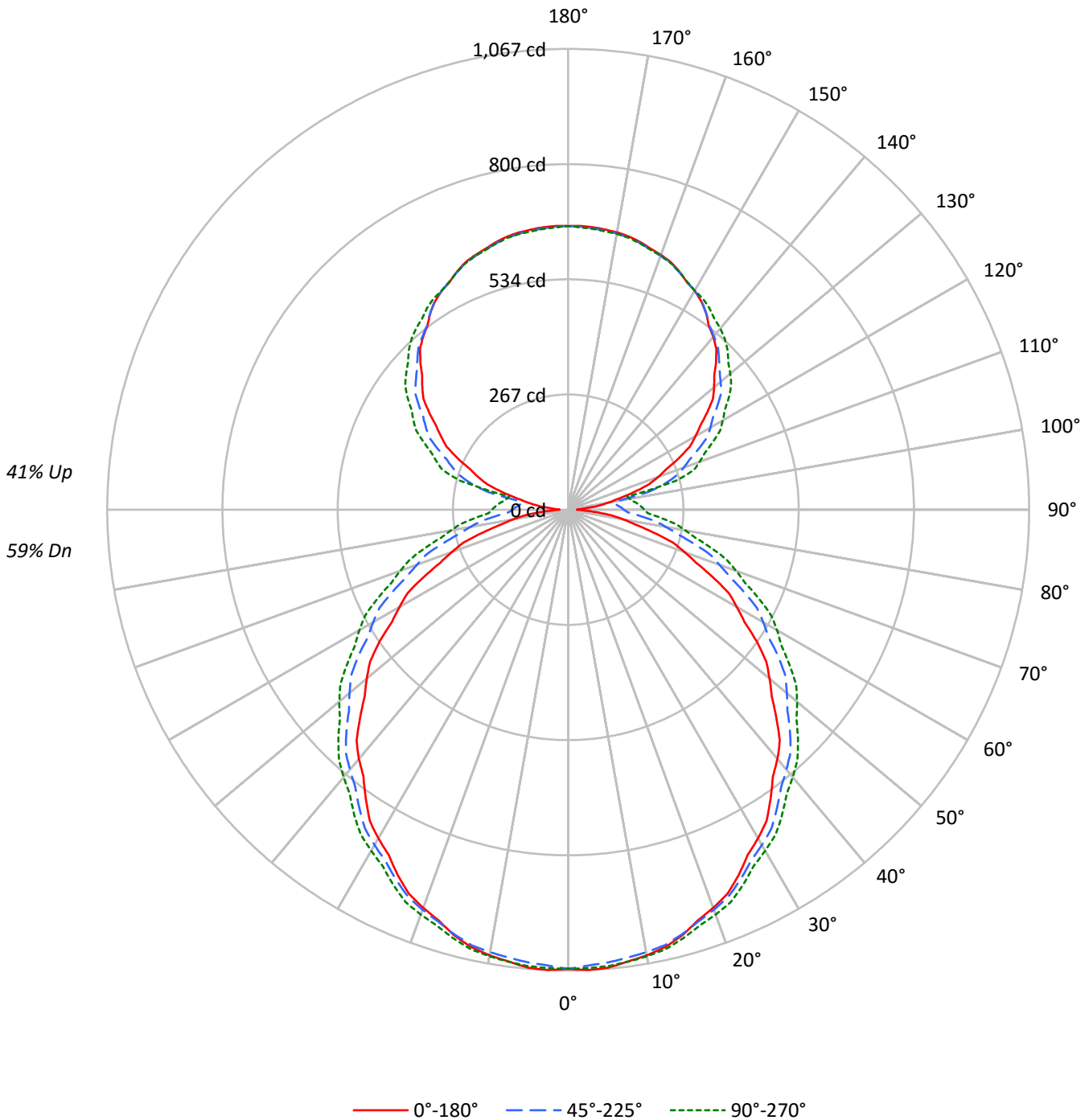
Input Watts (W): 48.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332637-935

CATALOG NUMBER: S124DIP-S1020D590U935-4F0-1E-UDD-D

Luminous Intensity Polar Plot





TEST NUMBER: P332637-935

CATALOG NUMBER: S124DIP-S1020D590U935-4F0-1E-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	0
RCR																		
0	109	109	109	109	102	102	102	102	88	88	88	76	76	76	65	65	65	59
1	99	94	89	85	92	88	84	80	76	73	70	65	63	61	55	54	52	47
2	89	81	74	69	83	76	70	65	66	61	57	56	53	50	48	45	43	39
3	81	71	63	57	75	66	59	54	58	52	48	50	45	42	42	39	36	32
4	74	63	54	48	69	59	51	45	51	45	40	44	39	35	37	34	31	27
5	68	56	47	41	63	52	44	39	45	39	34	39	34	30	33	30	27	23
6	63	50	41	35	58	47	39	33	41	35	30	35	30	27	30	26	23	20
7	58	45	37	31	54	42	35	29	37	31	26	32	27	23	28	24	21	18
8	54	41	33	27	50	38	31	26	34	28	23	29	24	21	25	21	18	16
9	50	37	29	24	46	35	28	23	31	25	21	27	22	19	23	19	16	14
10	47	34	27	22	43	32	25	21	28	23	19	25	20	17	22	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8582	8582	8582
5°	8608	8387	8412
10°	8556	8250	8244
15°	8479	8091	8047
20°	8364	7916	7856
25°	8233	7719	7645
30°	8093	7524	7428
35°	7933	7324	7239
40°	7804	7134	7041
45°	7615	6958	6871
50°	7455	6755	6692
55°	7289	6565	6482
60°	7031	6322	6290
65°	6747	6061	6055
70°	6405	5763	5780
75°	5924	5435	5533
80°	5397	5119	5288
85°	4721	4842	5146



TEST NUMBER: P332637-935

CATALOG NUMBER: S124DIP-S1020D590U935-4F0-1E-UDD-D

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.7	1.8
10°-20°	288.4	5.1
20°-30°	436.1	7.7
30°-40°	527.7	9.3
40°-50°	557.9	9.9
50°-60°	525.0	9.3
60°-70°	435.6	7.7
70°-80°	306.0	5.4
80°-90°	174.9	3.1
90°-100°	125.2	2.2
100°-110°	219.2	3.9
110°-120°	325.0	5.7
120°-130°	376.5	6.7
130°-140°	384.5	6.8
140°-150°	350.4	6.2
150°-160°	280.6	5.0
160°-170°	181.0	3.2
170°-180°	62.4	1.1
0°-30°	825.2	14.6
0°-40°	1352.9	23.9
0°-60°	2435.8	43.1
0°-90°	3352.2	59.3
90°-120°	669.4	11.8
90°-150°	1780.8	31.5
90°-180°	2305.0	40.7
0°-180°	5656.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1063	1063	1063	1063	1063	
5°	1064	1060	1052	1061	1061	101
15°	1020	1021	1018	1028	1027	287
25°	933	940	944	956	958	430
35°	817	831	843	859	863	511
45°	681	704	726	746	752	526
55°	533	559	594	617	625	475
65°	369	407	448	476	487	366
75°	205	249	299	331	343	218
85°	63	113	167	201	214	67
90°	20	74	129	165	177	14
95°	42	67	114	148	161	47
105°	158	186	232	264	258	167
115°	283	297	333	359	368	279
125°	393	395	422	446	454	351
135°	484	484	494	513	522	373
145°	556	556	556	564	570	348
155°	609	609	608	609	608	281
165°	642	640	640	643	639	181
175°	657	654	654	658	653	63
180°	657	657	657	657	657	



TEST NUMBER: P332637-935

CATALOG NUMBER: S124DIP-S1020D590U935-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1
2.5°	1066.9	1066.3	1065.6	1065.0	1064.3	1063.2	1061.4	1059.8	1058.1	1056.4	1057.8
5°	1064.2	1063.4	1062.6	1061.9	1061.1	1059.7	1057.9	1056.0	1054.2	1052.3	1054.5
7.5°	1055.2	1054.7	1054.2	1053.8	1053.3	1052.3	1050.8	1049.2	1047.7	1046.1	1048.5
10°	1047.6	1047.3	1047.1	1046.8	1046.5	1045.7	1044.4	1043.1	1041.7	1040.4	1042.8
12.5°	1037.1	1037.1	1037.0	1036.9	1036.9	1036.4	1035.5	1034.6	1033.7	1032.8	1035.0
15°	1020.2	1020.5	1020.7	1021.0	1021.2	1021.0	1020.2	1019.4	1018.6	1017.8	1020.2
17.5°	997.1	997.9	998.7	999.4	1000.3	1000.6	1000.4	1000.3	1000.1	1000.0	1002.4
20°	980.9	981.7	982.5	983.3	984.1	984.6	984.9	985.2	985.4	985.7	988.3
22.5°	962.8	963.8	964.8	965.9	966.8	967.6	968.0	968.5	969.0	969.5	972.2
25°	933.3	934.9	936.4	938.1	939.6	940.8	941.6	942.5	943.2	944.0	946.9
27.5°	900.4	902.8	905.1	907.4	909.7	911.5	912.7	914.0	915.2	916.4	919.1
30°	878.6	880.6	882.8	884.8	887.0	889.0	890.8	892.7	894.5	896.4	899.3
32.5°	854.7	857.3	859.8	862.4	864.9	867.2	869.3	871.3	873.4	875.5	878.7
35°	816.7	819.8	822.9	826.1	829.3	832.2	834.9	837.5	840.2	842.8	846.5
37.5°	778.3	782.0	785.6	789.3	792.9	796.3	799.6	802.9	806.2	809.5	813.2
40°	753.5	757.0	760.4	763.9	767.3	770.9	774.6	778.3	782.0	785.7	789.6
42.5°	725.0	728.8	732.7	736.6	740.4	744.5	748.8	753.2	757.5	761.9	766.3
45°	680.9	686.0	691.0	696.0	701.0	706.0	711.1	716.1	721.1	726.2	730.6
47.5°	638.8	643.9	649.1	654.4	659.5	665.0	670.8	676.7	682.5	688.3	692.9
50°	608.3	614.2	619.9	625.8	631.5	637.4	643.3	649.0	654.9	660.6	666.0
52.5°	577.8	583.7	589.4	595.3	601.2	607.3	614.0	620.7	627.3	634.0	639.3
55°	533.3	538.9	544.4	550.0	555.5	562.2	570.2	578.2	586.1	594.0	599.3
57.5°	483.5	490.4	497.3	504.2	511.1	518.4	526.3	534.3	542.1	550.0	556.3
60°	451.2	458.1	464.9	471.8	478.7	486.5	495.2	503.9	512.6	521.4	527.4
62.5°	419.7	427.2	434.8	442.3	449.8	457.9	466.7	475.4	484.1	492.8	498.9
65°	369.0	377.5	386.0	394.4	402.9	411.6	420.6	429.6	438.6	447.6	454.2
67.5°	320.2	329.2	338.2	347.2	356.2	365.5	375.1	384.8	394.4	404.1	410.8
70°	286.9	295.9	304.9	313.8	322.9	332.4	342.4	352.5	362.6	372.6	379.8
72.5°	254.5	263.7	272.9	282.1	291.4	301.3	311.9	322.6	333.4	344.1	350.9
75°	204.7	214.6	224.3	234.1	243.9	254.3	265.4	276.6	287.7	298.8	306.2
77.5°	158.3	168.7	179.1	189.4	199.8	210.8	222.5	234.1	245.7	257.4	264.8
80°	129.8	140.3	150.9	161.5	172.1	183.2	194.8	206.5	218.1	229.7	237.7
82.5°	101.2	112.2	123.2	134.2	145.2	156.5	168.2	179.8	191.5	203.1	211.2
85°	63.1	74.2	85.3	96.4	107.5	119.1	131.0	142.8	154.7	166.7	174.6
87.5°	35.6	46.6	57.6	68.6	79.6	91.1	102.8	114.6	126.3	138.1	145.9
90°	20.5	32.3	44.1	55.9	67.7	79.6	92.0	104.2	116.4	128.6	137.0
92.5°	24.3	33.8	43.5	53.0	62.7	73.5	85.8	98.1	110.3	122.5	130.7
95°	42.4	47.5	52.5	57.5	62.6	70.5	81.5	92.5	103.4	114.3	122.2
97.5°	71.4	81.3	91.1	100.9	110.7	114.9	113.5	112.0	110.6	109.2	116.1
100°	93.7	102.5	111.3	120.2	129.0	131.0	126.3	121.6	116.8	112.1	117.4
102.5°	119.6	127.1	134.5	142.0	149.5	157.3	165.4	173.6	181.7	189.9	176.8
105°	158.5	164.5	170.5	176.4	182.4	190.5	200.8	211.1	221.4	231.8	239.4
107.5°	196.7	201.4	206.0	210.7	215.3	222.7	232.7	242.7	252.7	262.7	269.7
110°	221.7	225.8	229.7	233.8	237.8	244.8	254.7	264.6	274.6	284.5	290.8



TEST NUMBER: P332637-935

CATALOG NUMBER: S124DIP-S1020D590U935-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	245.9	249.8	253.7	257.5	261.4	267.9	277.0	286.2	295.3	304.4	310.3
115°	283.2	285.9	288.6	291.3	294.0	299.5	307.9	316.2	324.6	332.9	339.0
117.5°	317.8	319.7	321.5	323.4	325.3	330.3	338.4	346.5	354.6	362.7	368.2
120°	340.4	341.6	342.9	344.1	345.3	349.7	357.3	364.9	372.4	380.0	385.5
122.5°	362.4	362.8	363.3	363.7	364.1	368.0	375.4	382.8	390.2	397.6	403.0
125°	392.8	393.0	393.1	393.3	393.5	396.7	403.1	409.5	415.9	422.3	427.7
127.5°	422.4	422.2	422.1	421.9	421.8	424.5	430.1	435.7	441.2	446.8	451.5
130°	440.7	440.5	440.4	440.2	440.1	442.3	446.9	451.4	456.0	460.5	465.4
132.5°	458.4	458.3	458.2	458.1	458.1	459.9	463.7	467.5	471.4	475.2	479.8
135°	483.7	483.6	483.5	483.4	483.3	484.3	486.6	489.0	491.2	493.5	497.9
137.5°	507.1	507.0	506.7	506.5	506.3	506.9	508.2	509.6	511.0	512.4	516.5
140°	522.5	522.5	522.4	522.4	522.3	522.5	523.0	523.5	524.0	524.4	528.2
142.5°	535.3	535.6	536.0	536.3	536.7	536.8	536.7	536.7	536.7	536.7	539.9
145°	556.2	556.2	556.3	556.4	556.5	556.5	556.5	556.5	556.5	556.5	558.2
147.5°	573.0	573.3	573.7	574.0	574.4	574.5	574.4	574.3	574.1	574.0	574.4
150°	585.1	585.3	585.5	585.7	585.8	585.9	585.7	585.7	585.6	585.4	585.4
152.5°	594.4	594.7	595.0	595.3	595.6	595.6	595.5	595.3	595.0	594.9	595.0
155°	608.6	608.6	608.7	608.8	609.0	608.8	608.6	608.2	607.9	607.5	608.0
157.5°	620.6	620.5	620.4	620.4	620.4	620.1	619.7	619.4	619.0	618.6	619.2
160°	627.7	627.3	627.0	626.7	626.4	626.1	626.0	625.9	625.8	625.7	626.4
162.5°	634.0	633.5	633.1	632.7	632.3	632.1	631.9	631.8	631.7	631.6	632.2
165°	641.9	641.4	640.8	640.2	639.7	639.5	639.5	639.5	639.5	639.5	640.3
167.5°	648.2	647.6	647.0	646.5	645.9	645.6	645.6	645.5	645.4	645.3	646.4
170°	651.8	651.1	650.4	649.8	649.1	648.8	648.9	649.0	649.2	649.3	650.1
172.5°	654.1	653.4	652.8	652.1	651.5	651.2	651.3	651.4	651.5	651.6	652.6
175°	656.7	656.0	655.3	654.7	654.0	653.8	653.8	654.0	654.1	654.2	655.1
177.5°	657.8	657.2	656.6	656.0	655.4	655.1	655.3	655.5	655.7	655.8	656.6
180°	656.7	656.7	656.7	656.7	656.7	656.7	656.7	656.7	656.7	656.7	656.7



TEST NUMBER: P332637-935

CATALOG NUMBER: S124DIP-S1020D590U935-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1	1063.1
2.5°	1059.4	1060.8	1062.3	1062.9	1062.7	1062.5	1062.3	1062.1
5°	1056.5	1058.7	1060.8	1061.7	1061.4	1061.2	1060.9	1060.7
7.5°	1050.9	1053.3	1055.7	1056.7	1056.4	1056.2	1055.9	1055.7
10°	1045.2	1047.6	1050.0	1051.0	1050.8	1050.5	1050.2	1050.0
12.5°	1037.2	1039.3	1041.5	1042.6	1042.5	1042.4	1042.4	1042.3
15°	1022.6	1024.9	1027.3	1028.4	1028.1	1027.9	1027.6	1027.3
17.5°	1004.8	1007.3	1009.7	1010.8	1010.6	1010.4	1010.1	1010.0
20°	990.9	993.6	996.3	997.6	997.6	997.6	997.6	997.6
22.5°	974.7	977.4	980.1	981.6	982.1	982.4	982.8	983.3
25°	949.9	952.7	955.6	957.3	957.5	957.8	958.0	958.3
27.5°	921.8	924.5	927.2	928.7	929.0	929.4	929.6	930.0
30°	902.2	905.1	908.0	909.7	910.2	910.8	911.4	911.9
32.5°	882.1	885.5	888.8	890.7	891.2	891.7	892.3	892.9
35°	850.2	853.9	857.6	859.9	860.7	861.4	862.3	863.1
37.5°	817.0	820.8	824.5	826.8	827.7	828.5	829.3	830.2
40°	793.6	797.5	801.6	804.1	805.1	806.2	807.3	808.3
42.5°	770.7	775.1	779.5	782.0	782.9	783.8	784.6	785.4
45°	735.1	739.7	744.2	747.1	748.4	749.7	751.1	752.3
47.5°	697.6	702.2	707.0	710.1	711.6	713.3	714.8	716.4
50°	671.2	676.6	681.8	685.3	686.9	688.5	690.0	691.6
52.5°	644.6	649.9	655.2	658.6	660.2	661.8	663.4	665.0
55°	604.6	609.9	615.2	618.6	620.2	621.8	623.4	625.0
57.5°	562.6	568.9	575.1	579.0	580.5	582.0	583.5	585.0
60°	533.6	539.7	545.7	549.8	552.0	554.1	556.2	558.3
62.5°	505.0	511.1	517.2	521.2	523.4	525.5	527.6	529.8
65°	460.8	467.4	474.1	478.5	480.5	482.7	484.7	486.9
67.5°	417.5	424.2	430.9	435.3	437.4	439.5	441.5	443.6
70°	386.8	394.0	401.1	405.7	407.5	409.4	411.2	413.1
72.5°	357.9	364.8	371.8	376.3	378.3	380.4	382.5	384.5
75°	313.6	321.0	328.4	333.3	335.7	338.1	340.4	342.9
77.5°	272.4	279.9	287.4	292.5	295.0	297.6	300.1	302.6
80°	245.6	253.6	261.5	266.5	268.6	270.8	272.9	275.0
82.5°	219.4	227.6	235.7	240.9	243.2	245.6	247.9	250.2
85°	182.5	190.5	198.4	203.7	206.4	209.0	211.6	214.3
87.5°	153.7	161.5	169.4	174.4	176.8	179.2	181.5	183.9
90°	145.3	153.6	162.0	167.3	169.6	171.9	174.3	176.6
92.5°	138.8	146.9	155.0	160.1	162.3	164.5	166.6	168.8
95°	129.9	137.8	145.6	150.7	153.2	155.7	158.2	160.7
97.5°	123.1	130.2	137.2	141.8	144.2	146.6	149.0	151.4
100°	122.7	127.9	133.2	136.8	138.8	140.8	142.8	144.7
102.5°	163.7	150.6	137.5	132.0	134.1	136.1	138.3	140.3
105°	247.0	254.6	262.2	265.1	263.3	261.5	259.7	257.8
107.5°	276.7	283.7	290.7	295.3	297.6	300.0	302.3	304.6
110°	297.0	303.3	309.6	314.0	316.5	318.9	321.3	323.8



TEST NUMBER: P332637-935

CATALOG NUMBER: S124DIP-S1020D590U935-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	316.1	321.9	327.8	331.9	334.5	337.0	339.5	342.1
115°	345.0	351.0	357.1	361.0	362.9	364.7	366.6	368.4
117.5°	373.7	379.1	384.6	388.3	390.4	392.5	394.6	396.7
120°	391.0	396.5	402.0	405.7	407.6	409.5	411.4	413.3
122.5°	408.5	413.9	419.3	422.8	424.6	426.2	427.9	429.6
125°	433.0	438.3	443.8	447.3	448.9	450.6	452.4	454.0
127.5°	456.2	460.9	465.5	468.8	470.5	472.2	473.9	475.6
130°	470.3	475.1	480.0	483.2	484.8	486.4	488.0	489.6
132.5°	484.5	489.1	493.8	496.9	498.3	499.9	501.4	502.9
135°	502.4	506.9	511.3	514.4	516.3	518.1	519.9	521.7
137.5°	520.6	524.7	528.8	531.5	532.7	534.0	535.3	536.5
140°	532.0	535.8	539.5	542.1	543.5	545.0	546.4	547.9
142.5°	543.2	546.5	549.7	551.9	553.0	554.2	555.3	556.5
145°	559.8	561.5	563.3	564.7	566.0	567.3	568.5	569.8
147.5°	574.6	575.0	575.2	575.8	576.8	577.8	578.8	579.7
150°	585.4	585.4	585.4	585.5	585.6	585.7	585.8	585.9
152.5°	595.2	595.4	595.6	595.6	595.6	595.5	595.4	595.4
155°	608.4	608.8	609.2	609.3	609.0	608.6	608.4	608.0
157.5°	619.7	620.4	620.9	620.9	620.4	619.7	619.2	618.6
160°	627.0	627.7	628.4	628.4	627.7	627.0	626.4	625.7
162.5°	632.9	633.5	634.2	634.2	633.4	632.7	632.0	631.2
165°	641.2	642.0	643.0	642.9	641.9	640.9	640.0	638.9
167.5°	647.3	648.2	649.2	649.1	648.1	647.0	645.8	644.8
170°	651.0	651.9	652.8	652.6	651.6	650.5	649.4	648.3
172.5°	653.4	654.3	655.1	655.0	653.8	652.6	651.4	650.2
175°	656.2	657.1	658.1	658.0	656.7	655.3	654.0	652.7
177.5°	657.3	658.0	658.7	658.5	657.5	656.4	655.3	654.3
180°	656.7	656.7	656.7	656.7	656.7	656.7	656.7	656.7

(END OF REPORT)