

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: P332648-935

Luminaire Tested: **SA4XXDIP-C1020D810U935-4F0-1E-UDD-D4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P332648-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA4XXDIP-C1020D810U935-4F0-1E-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**

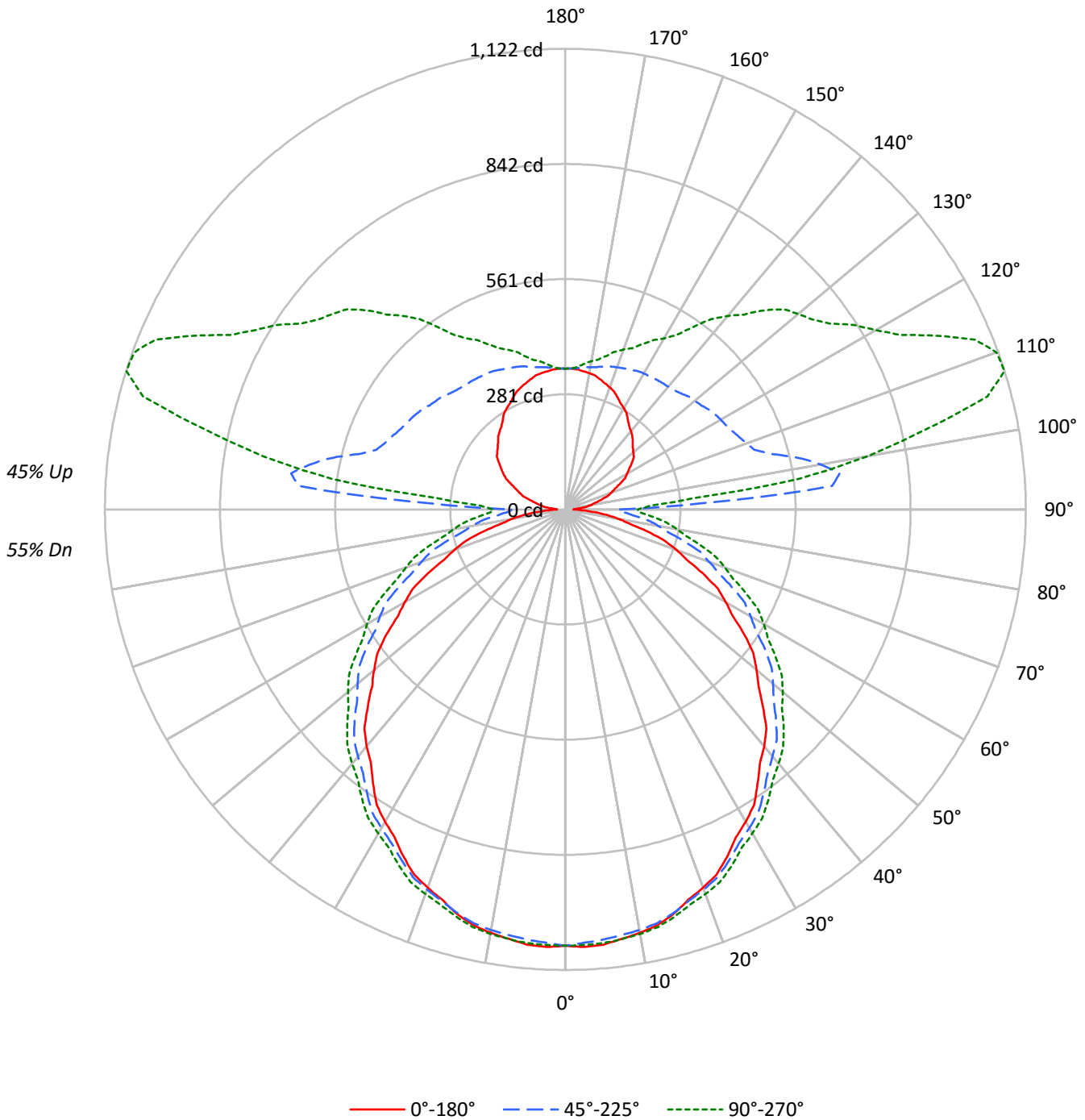
Lumens per Lamp: N/A  
Luminaire Lumens: 6117.9 lumens  
Efficiency: N/A  
Efficacy: 112.5 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

Input Watts (W): 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



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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	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°	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



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	100.7	1.6
10°-20°	288.4	4.7
20°-30°	436.1	7.1
30°-40°	527.7	8.6
40°-50°	557.9	9.1
50°-60°	525.0	8.6
60°-70°	435.6	7.1
70°-80°	306.0	5.0
80°-90°	174.9	2.9
90°-100°	350.2	5.7
100°-110°	591.2	9.7
110°-120°	512.4	8.4
120°-130°	416.9	6.8
130°-140°	336.1	5.5
140°-150°	249.8	4.1
150°-160°	173.8	2.8
160°-170°	102.2	1.7
170°-180°	33.3	0.5
0°-30°	825.2	13.5
0°-40°	1352.9	22.1
0°-60°	2435.8	39.8
0°-90°	3352.2	54.8
90°-120°	1453.8	23.8
90°-150°	2456.5	40.2
90°-180°	2766.0	45.2
0°-180°	6117.9	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	72	130	164	176	14
95°	38	125	652	406	311	37
105°	90	150	520	1058	1065	96
115°	146	193	450	838	1000	145
125°	198	235	425	699	789	176
135°	232	276	399	601	686	180
145°	266	303	386	489	542	167
155°	301	325	376	426	444	139
165°	328	338	360	381	387	93
175°	342	343	345	350	349	32
180°	343	343	343	343	343	



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**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°	35.4	46.4	57.6	68.5	79.5	90.7	103.1	114.7	126.5	138.4	145.9
90°	19.7	31.7	44.3	55.5	66.7	77.7	93.2	104.5	117.3	130.0	137.0
92.5°	25.7	38.8	54.7	72.4	91.7	116.1	161.8	225.4	287.7	325.7	297.5
95°	37.7	48.5	63.9	81.4	106.2	144.3	213.8	335.0	506.8	652.3	674.9
97.5°	53.9	61.4	74.7	90.3	111.7	144.5	200.4	302.3	472.9	674.1	811.9
100°	64.2	71.1	82.7	97.7	117.4	147.5	197.5	284.0	431.6	631.7	811.2
102.5°	75.0	82.1	92.4	105.9	124.2	152.7	198.8	275.8	402.8	581.2	765.9
105°	89.5	96.8	105.5	118.8	136.2	163.3	205.4	271.0	375.1	520.2	685.0
107.5°	107.8	113.5	121.2	134.1	150.1	176.2	215.0	275.2	365.0	483.1	618.8
110°	119.2	124.3	131.4	143.2	159.0	183.7	222.5	278.9	362.2	469.1	585.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	130.2	134.7	142.0	152.8	168.2	192.4	229.8	283.1	361.1	459.5	563.3
115°	145.9	150.2	157.3	166.4	181.6	205.2	240.6	289.5	360.5	449.8	540.4
117.5°	163.3	166.7	172.3	181.2	194.5	218.0	251.5	296.5	360.6	442.0	526.0
120°	174.3	176.4	181.9	190.1	202.3	225.4	258.6	301.4	360.8	437.2	517.2
122.5°	185.0	186.6	191.4	198.5	211.1	233.2	266.0	306.1	361.4	431.9	508.2
125°	197.9	200.4	204.1	211.3	223.9	245.9	276.7	314.4	363.3	425.2	494.8
127.5°	210.3	212.2	216.7	225.0	238.0	259.4	287.9	321.4	363.5	416.6	477.9
130°	216.3	218.8	223.9	233.7	246.2	267.8	294.9	325.4	363.9	411.2	467.2
132.5°	223.3	225.2	232.0	241.3	254.9	274.8	301.1	330.2	364.7	406.9	457.8
135°	232.0	234.6	241.3	252.8	267.0	285.4	309.4	335.5	365.0	399.2	442.5
137.5°	241.8	244.1	251.2	261.8	276.3	293.3	315.0	338.5	363.9	393.6	429.6
140°	248.7	250.6	257.7	268.9	282.8	298.9	319.3	341.1	364.3	390.2	422.6
142.5°	255.4	257.4	264.2	275.0	288.5	304.1	323.6	343.4	365.0	388.2	417.0
145°	265.8	267.5	274.0	283.2	295.7	310.4	327.9	346.0	365.6	386.4	409.6
147.5°	277.8	278.2	283.8	293.3	303.6	316.8	333.3	349.1	366.3	384.0	403.2
150°	285.3	285.7	290.8	298.7	308.5	321.2	336.0	350.8	366.3	382.4	399.2
152.5°	291.4	291.4	296.8	304.3	313.2	324.9	338.1	351.8	365.2	379.7	394.9
155°	300.9	301.6	305.7	312.4	319.8	329.8	341.3	352.8	363.5	375.7	388.5
157.5°	310.5	310.5	314.3	319.5	326.0	333.9	343.6	352.8	361.8	371.5	381.9
160°	316.4	316.4	319.1	323.8	329.2	336.7	344.7	352.8	360.2	368.2	377.0
162.5°	321.8	321.2	323.4	327.6	332.4	338.2	345.8	352.8	358.6	365.1	372.7
165°	327.9	327.9	329.2	332.6	336.0	340.0	346.0	351.5	355.5	360.2	365.6
167.5°	333.9	333.3	333.9	336.5	338.4	341.5	345.9	349.8	352.2	355.3	359.1
170°	336.7	336.0	336.7	338.6	340.0	342.0	345.3	348.7	350.1	352.1	354.8
172.5°	339.3	338.6	338.8	340.3	341.0	342.5	344.8	347.7	347.9	348.9	351.0
175°	342.0	341.3	341.3	342.0	342.7	342.7	344.1	346.0	345.3	345.3	346.7
177.5°	343.2	342.7	342.2	342.7	342.7	342.7	343.2	344.3	343.2	343.2	343.7
180°	342.7	342.7	342.7	342.7	342.7	342.7	342.7	342.7	342.7	342.7	342.7



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**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	179.3	181.4	183.7
90°	145.3	153.7	162.0	166.9	169.7	172.5	173.9	176.1
92.5°	259.2	234.0	221.2	212.5	206.6	205.1	204.9	207.1
95°	616.7	519.5	436.4	375.9	345.3	326.8	317.0	310.6
97.5°	847.1	815.3	756.4	690.7	644.6	606.3	588.4	576.7
100°	916.7	937.3	911.5	866.1	809.4	770.2	751.8	748.3
102.5°	907.8	981.5	997.9	981.7	947.8	920.2	900.9	898.6
105°	845.8	968.9	1042.2	1074.1	1077.6	1074.4	1067.0	1065.1
107.5°	761.8	892.3	992.7	1057.0	1092.1	1109.4	1118.0	1121.6
110°	710.8	833.4	937.1	1015.3	1065.1	1095.5	1109.8	1118.0





TEST NUMBER: P332648-935

CATALOG NUMBER: SA4XXDIP-C1020D810U935-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	671.8	780.6	878.7	956.7	1013.1	1049.5	1068.5	1080.5
115°	630.4	719.0	803.7	872.1	927.1	969.4	992.7	1000.1
117.5°	606.0	680.0	747.4	806.1	853.5	889.6	913.5	919.8
120°	593.2	661.1	720.2	771.8	812.3	844.0	863.6	873.1
122.5°	581.9	647.7	702.1	747.5	781.9	809.1	825.8	835.1
125°	564.5	627.4	678.9	719.2	747.7	768.9	783.3	788.8
127.5°	543.3	603.5	654.5	692.9	721.8	741.0	753.5	759.4
130°	527.8	585.7	636.3	675.1	704.3	722.7	735.1	740.7
132.5°	512.3	566.8	616.0	654.8	683.4	704.0	715.8	721.4
135°	489.1	537.1	582.4	619.0	647.5	667.9	680.3	685.9
137.5°	468.7	509.6	548.1	581.1	607.6	627.5	637.7	643.9
140°	456.9	492.1	525.8	556.5	581.3	597.4	608.2	614.9
142.5°	446.7	477.6	506.5	533.1	555.1	570.0	579.5	584.3
145°	432.7	457.2	479.0	499.1	517.0	529.5	537.4	541.7
147.5°	421.2	439.6	456.0	471.3	484.6	495.2	501.2	503.3
150°	415.3	430.8	444.4	456.4	467.3	476.0	480.0	480.7
152.5°	409.5	422.8	435.1	445.1	454.3	461.4	463.8	464.5
155°	400.5	411.4	421.5	429.6	436.3	441.6	443.7	443.7
157.5°	391.0	400.0	408.5	415.0	420.1	424.1	425.3	425.3
160°	385.1	392.5	399.9	405.3	409.3	413.4	414.1	414.1
162.5°	379.2	385.5	391.3	396.1	399.1	403.1	403.8	403.3
165°	370.9	375.0	379.7	383.1	385.7	388.5	387.8	387.1
167.5°	363.0	366.1	369.9	371.9	373.2	375.0	374.9	374.3
170°	358.2	360.2	362.9	364.9	366.3	366.9	366.3	366.3
172.5°	353.9	355.3	357.0	358.4	359.2	359.9	359.2	358.2
175°	348.1	348.7	350.1	350.1	350.1	351.5	350.1	348.7
177.5°	344.3	344.8	344.8	345.3	344.8	345.3	344.3	343.2
180°	342.7	342.7	342.7	342.7	342.7	342.7	342.7	342.7

(END OF REPORT)