

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: P332657-935

Luminaire Tested: **SA4XXDIP-C1020D1035U935-4F0-1E-UDD-D4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P332657-935  
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-C1020D1035U935-4F0-1E-UDD-D4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1035 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6808.2 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

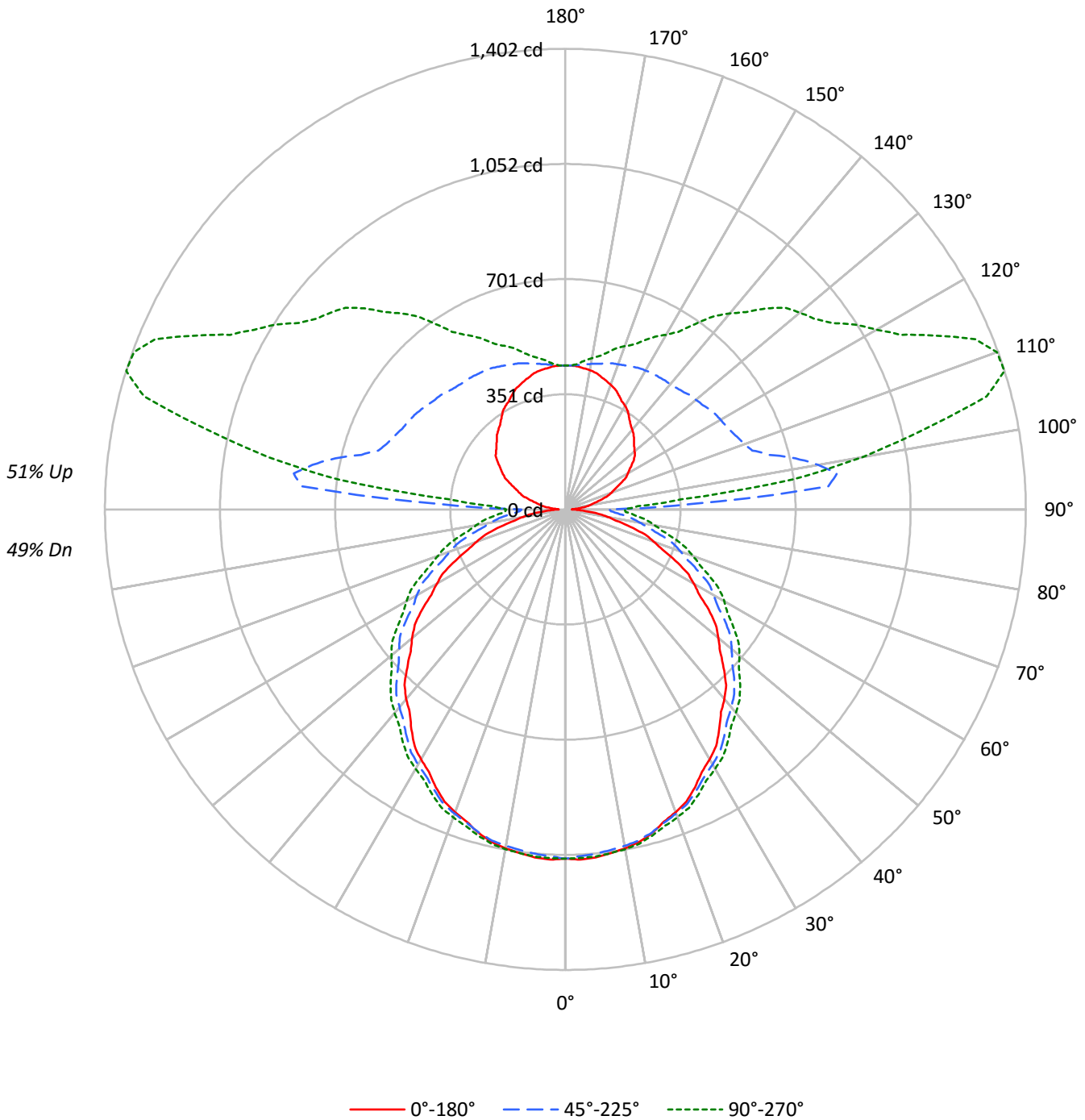
Input Watts (W): 60.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	55	55	55	49
1	97	92	88	84	89	85	81	78	71	68	66	59	57	55	47	46	45	39
2	88	80	73	68	80	73	68	63	62	58	54	51	48	45	41	39	37	32
3	80	70	62	56	73	64	57	52	54	49	45	45	41	38	36	33	31	27
4	73	61	53	47	66	57	49	44	48	42	38	40	35	32	32	29	26	23
5	67	55	46	40	61	50	43	37	43	37	32	35	31	28	29	25	23	19
6	61	49	40	34	56	45	38	32	38	32	28	32	27	24	26	23	20	17
7	57	44	36	30	52	41	33	28	35	29	25	29	24	21	24	20	18	15
8	52	40	32	26	48	37	30	25	32	26	22	26	22	19	22	18	16	13
9	49	36	29	23	45	34	27	22	29	23	19	24	20	17	20	17	14	12
10	46	33	26	21	42	31	24	20	27	21	17	22	18	15	19	15	13	11

**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	1.5
10°-20°	288.4	4.2
20°-30°	436.1	6.4
30°-40°	527.7	7.8
40°-50°	557.9	8.2
50°-60°	525.0	7.7
60°-70°	435.6	6.4
70°-80°	306.0	4.5
80°-90°	175.4	2.6
90°-100°	418.7	6.2
100°-110°	733.7	10.8
110°-120°	640.1	9.4
120°-130°	524.3	7.7
130°-140°	425.6	6.3
140°-150°	318.2	4.7
150°-160°	221.9	3.3
160°-170°	130.5	1.9
170°-180°	42.5	0.6
0°-30°	825.2	12.1
0°-40°	1352.9	19.9
0°-60°	2435.8	35.8
0°-90°	3352.7	49.2
90°-120°	1792.6	26.3
90°-150°	3060.6	45.0
90°-180°	3455.0	50.7
0°-180°	6808.2	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	133	168	180	14
95°	44	145	804	481	356	44
105°	111	181	642	1321	1327	119
115°	184	242	559	1047	1252	183
125°	251	298	534	877	990	224
135°	296	352	507	759	866	229
145°	339	387	493	622	688	213
155°	384	415	480	543	566	177
165°	419	432	460	487	494	118
175°	437	438	441	447	445	41
180°	438	438	438	438	438	



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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	46.6	57.9	68.8	79.8	91.0	103.6	115.2	127.1	139.1	146.5
90°	19.9	32.2	45.4	56.8	68.3	79.2	95.7	107.1	120.2	133.3	140.2
92.5°	27.9	41.8	59.5	79.5	101.6	129.9	184.9	263.0	339.4	384.8	346.7
95°	43.8	55.2	72.5	92.4	121.7	167.6	253.2	405.1	621.4	804.1	831.0
97.5°	64.9	72.4	87.4	105.2	130.4	169.8	238.1	365.2	580.2	834.1	1008.1
100°	78.4	85.3	98.2	115.4	138.6	174.7	235.7	343.2	528.8	781.5	1008.7
102.5°	92.2	99.6	111.0	126.6	148.3	182.4	238.5	334.0	493.4	718.3	952.2
105°	111.2	119.2	128.7	144.3	165.1	197.6	248.7	329.8	459.9	642.4	851.0
107.5°	134.7	140.9	149.5	164.8	183.9	215.3	262.3	336.7	448.7	597.0	768.4
110°	149.6	155.1	163.1	177.1	196.2	225.9	273.0	342.4	446.3	580.1	726.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	163.8	168.8	177.1	189.9	208.7	238.0	283.3	348.9	446.0	569.2	700.1
115°	184.2	189.2	197.6	208.5	227.2	255.9	298.8	358.8	447.2	558.8	672.9
117.5°	206.6	210.5	217.2	228.2	244.9	273.6	314.2	369.5	449.0	550.8	656.5
120°	220.8	223.3	230.1	240.4	255.8	284.1	324.4	376.9	450.6	546.0	646.7
122.5°	234.6	236.4	242.6	251.6	267.7	294.8	334.7	383.9	452.5	540.5	636.5
125°	251.4	254.6	259.5	268.7	284.7	312.0	349.6	395.7	456.5	533.6	621.1
127.5°	267.2	269.7	275.6	286.2	302.9	329.6	364.5	406.0	458.3	524.5	601.5
130°	275.2	278.4	285.0	297.6	313.7	340.6	374.0	411.8	459.9	519.1	589.2
132.5°	284.1	286.6	295.3	307.2	324.7	349.8	382.4	418.6	461.8	514.6	578.3
135°	295.5	298.9	307.5	322.1	340.2	363.4	393.6	426.5	463.6	506.7	560.8
137.5°	308.1	311.1	320.2	333.9	352.3	374.0	401.4	431.2	463.3	501.0	546.0
140°	316.9	319.3	328.5	342.9	360.6	381.3	407.3	435.1	464.5	497.5	537.9
142.5°	325.6	328.2	336.9	350.8	368.1	387.9	412.8	438.2	465.8	495.6	531.4
145°	339.0	341.3	349.7	361.4	377.5	396.2	418.6	441.8	466.7	493.4	522.5
147.5°	354.3	354.9	362.2	374.3	387.6	404.5	425.5	445.7	467.6	490.3	514.7
150°	363.9	364.5	371.1	381.2	393.8	410.0	429.0	447.8	467.6	488.2	509.7
152.5°	371.9	372.0	378.8	388.4	399.8	414.8	431.7	449.2	466.2	484.7	504.2
155°	384.2	385.0	390.2	398.8	408.3	421.2	435.8	450.4	464.2	479.7	495.9
157.5°	396.4	396.4	401.2	407.9	416.2	426.4	438.7	450.4	461.9	474.3	487.5
160°	404.0	404.0	407.4	413.5	420.3	429.8	440.1	450.4	459.9	470.2	481.4
162.5°	410.9	410.2	412.9	418.3	424.5	431.9	441.4	450.4	457.8	466.1	475.9
165°	418.6	418.6	420.3	424.6	429.0	434.0	441.8	448.7	453.8	459.9	466.7
167.5°	426.4	425.5	426.4	429.6	432.0	435.9	441.6	446.6	449.7	453.7	458.5
170°	429.8	429.0	429.8	432.4	434.0	436.6	440.9	445.2	446.9	449.5	453.0
172.5°	433.2	432.4	432.5	434.4	435.4	437.3	440.2	443.8	444.2	445.4	448.2
175°	436.6	435.8	435.8	436.6	437.5	437.5	439.2	441.8	440.9	440.9	442.6
177.5°	438.2	437.5	436.8	437.5	437.5	437.5	438.2	439.5	438.2	438.2	438.9
180°	437.5	437.5	437.5	437.5	437.5	437.5	437.5	437.5	437.5	437.5	437.5



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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°	154.4	162.2	170.0	175.0	177.5	180.0	182.2	184.5
90°	148.7	157.2	165.7	170.7	173.6	176.6	177.8	179.9
92.5°	295.8	261.6	243.1	230.7	222.7	220.1	219.3	221.4
95°	754.8	628.7	520.6	442.0	402.3	378.1	365.0	356.1
97.5°	1051.1	1008.5	931.3	846.2	786.8	737.4	713.8	698.2
100°	1141.3	1165.7	1130.8	1071.6	998.7	948.1	924.2	919.1
102.5°	1131.4	1223.6	1242.7	1220.7	1176.9	1141.0	1115.9	1112.4
105°	1054.5	1209.8	1301.5	1341.1	1345.0	1340.2	1330.2	1327.2
107.5°	949.2	1114.0	1240.4	1321.3	1365.6	1387.2	1397.7	1401.8
110°	885.5	1040.2	1171.0	1269.5	1332.7	1371.0	1388.5	1398.4





TEST NUMBER: P332657-935

CATALOG NUMBER: SA4XXDIP-C1020D1035U935-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	836.9	974.3	1097.9	1196.4	1267.8	1313.6	1337.4	1352.1
115°	786.2	897.7	1004.1	1090.5	1160.2	1213.7	1243.0	1251.7
117.5°	757.1	850.1	934.7	1008.4	1068.5	1114.0	1143.9	1151.3
120°	742.3	827.5	901.6	966.3	1017.4	1057.3	1081.8	1093.4
122.5°	729.3	811.8	879.6	936.7	980.0	1014.2	1035.0	1046.4
125°	708.7	787.6	852.0	902.5	938.5	965.0	982.9	989.7
127.5°	683.8	759.2	823.1	871.2	907.7	931.6	947.2	954.1
130°	665.3	738.0	801.2	849.9	886.7	909.8	925.1	931.9
132.5°	646.6	715.0	776.5	825.2	861.3	887.2	901.8	908.5
135°	619.1	679.2	735.9	781.8	817.8	843.4	858.8	865.5
137.5°	594.9	646.0	694.1	735.5	769.0	794.0	806.7	814.2
140°	580.8	624.7	666.8	705.3	736.7	756.9	770.3	778.5
142.5°	568.5	607.1	643.3	676.7	704.4	723.1	734.8	740.7
145°	551.6	582.4	609.8	635.2	657.7	673.4	683.0	688.4
147.5°	537.6	561.0	581.9	601.3	618.0	631.4	638.8	641.2
150°	530.4	550.1	567.3	582.8	596.5	607.7	612.9	613.7
152.5°	522.8	539.8	555.6	568.3	580.1	589.1	592.2	593.1
155°	511.4	525.2	538.0	548.4	557.0	563.9	566.5	566.5
157.5°	499.2	510.7	521.6	529.9	536.3	541.5	543.0	543.0
160°	491.6	501.1	510.6	517.5	522.6	527.8	528.7	528.7
162.5°	484.1	492.1	499.6	505.8	509.5	514.7	515.6	514.9
165°	473.6	478.8	484.7	489.0	492.5	495.9	495.1	494.2
167.5°	463.5	467.4	472.3	474.8	476.6	478.8	478.6	477.9
170°	457.3	459.9	463.3	465.9	467.6	468.5	467.6	467.6
172.5°	451.8	453.7	455.7	457.6	458.7	459.5	458.7	457.3
175°	444.4	445.2	446.9	446.9	446.9	448.7	446.9	445.2
177.5°	439.5	440.2	440.2	440.9	440.2	440.9	439.5	438.2
180°	437.5	437.5	437.5	437.5	437.5	437.5	437.5	437.5

(END OF REPORT)