

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: P332638-927

Luminaire Tested: **SA4XXDIP-C1020D590U927-4F0-1E-UDD-D1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332638-927
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA4XXDIP-C1020D590U927-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

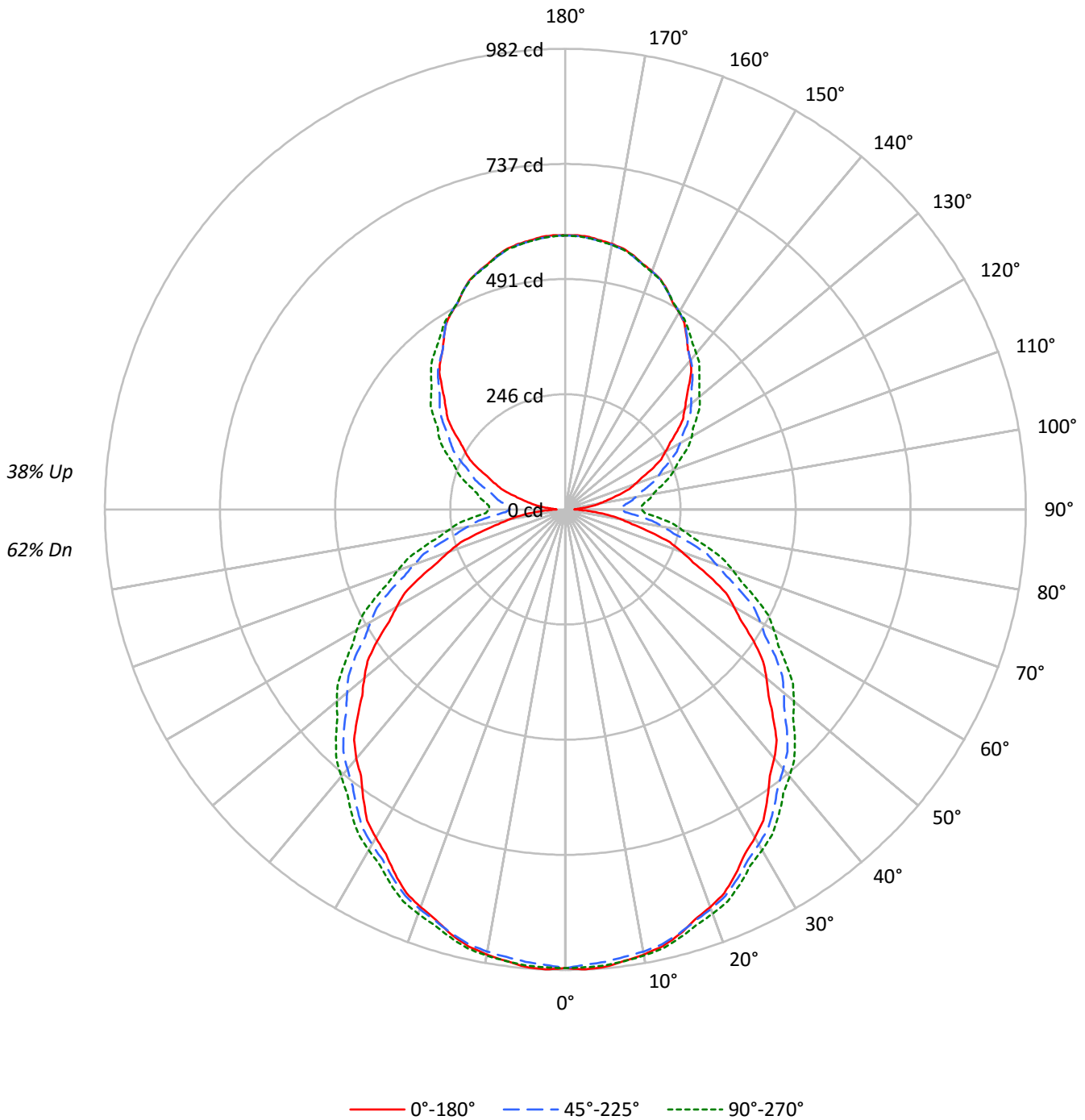
Lumens per Lamp: N/A
Luminaire Lumens: 4956.7 lumens
Efficiency: N/A
Efficacy: 101.6 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: Semi-Direct

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: P332638-927
CATALOG NUMBER: SA4XXDIP-C1020D590U927-4F0-1E-UDD-D1

Luminous Intensity Polar Plot





TEST NUMBER: P332638-927

CATALOG NUMBER: SA4XXDIP-C1020D590U927-4F0-1E-UDD-D1

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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	62
1	99	94	90	86	93	88	84	81	77	74	72	67	65	63	58	56	54	50
2	90	82	75	69	84	77	70	65	67	62	58	58	54	51	50	47	45	41
3	82	71	63	57	76	67	60	54	59	53	48	51	47	43	44	40	38	34
4	75	63	54	48	69	59	51	45	52	46	41	45	40	36	39	35	32	29
5	68	56	47	41	64	53	45	39	46	40	35	40	35	31	35	31	28	25
6	63	50	41	35	59	47	39	34	42	35	30	36	31	27	32	27	24	21
7	58	45	37	31	54	43	35	29	38	31	27	33	28	24	29	25	21	19
8	54	41	33	27	50	39	31	26	34	28	24	30	25	21	26	22	19	17
9	50	37	30	24	47	35	28	23	31	25	21	28	23	19	24	20	17	15
10	47	34	27	22	44	33	26	21	29	23	19	26	21	17	23	18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7896	7896	7896
5°	7920	7717	7739
10°	7872	7591	7585
15°	7802	7444	7404
20°	7695	7284	7227
25°	7575	7102	7034
30°	7445	6922	6835
35°	7299	6739	6660
40°	7181	6564	6478
45°	7007	6402	6322
50°	6859	6215	6158
55°	6707	6040	5964
60°	6469	5816	5788
65°	6208	5578	5571
70°	5894	5303	5319
75°	5453	5001	5089
80°	4964	4711	4865
85°	4347	4456	4735



TEST NUMBER: P332638-927

CATALOG NUMBER: SA4XXDIP-C1020D590U927-4F0-1E-UDD-D1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	92.6	1.9
10°-20°	265.4	5.4
20°-30°	401.3	8.1
30°-40°	485.5	9.8
40°-50°	513.3	10.4
50°-60°	483.1	9.7
60°-70°	400.8	8.1
70°-80°	281.5	5.7
80°-90°	160.9	3.2
90°-100°	133.0	2.7
100°-110°	184.1	3.7
110°-120°	240.7	4.9
120°-130°	281.9	5.7
130°-140°	298.3	6.0
140°-150°	284.2	5.7
150°-160°	237.1	4.8
160°-170°	157.8	3.2
170°-180°	55.2	1.1
0°-30°	759.3	15.3
0°-40°	1244.8	25.1
0°-60°	2241.1	45.2
0°-90°	3084.3	62.2
90°-120°	557.8	11.3
90°-150°	1422.3	28.7
90°-180°	1872.0	37.8
0°-180°	4956.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	978	978	978	978	978	
5°	979	976	968	976	976	93
15°	939	940	936	946	945	264
25°	859	865	868	880	882	395
35°	751	764	776	790	794	470
45°	626	647	668	686	692	484
55°	491	514	546	568	575	437
65°	340	375	412	438	448	336
75°	188	229	275	304	315	200
85°	58	104	153	185	197	62
90°	19	68	118	151	162	13
95°	41	82	130	159	170	41
105°	115	139	180	208	219	123
115°	204	215	248	270	278	201
125°	291	292	317	336	343	260
135°	372	375	383	399	404	288
145°	451	451	452	458	461	282
155°	515	515	515	516	515	237
165°	561	559	558	561	559	158
175°	583	581	581	583	581	55
180°	584	584	584	584	584	



TEST NUMBER: P332638-927

CATALOG NUMBER: SA4XXDIP-C1020D590U927-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	981.6	981.0	980.4	979.9	979.2	978.2	976.6	975.1	973.5	971.9	973.3
5°	979.1	978.4	977.7	977.0	976.3	975.0	973.4	971.6	969.9	968.2	970.2
7.5°	970.8	970.4	969.9	969.6	969.1	968.2	966.8	965.4	963.9	962.5	964.7
10°	963.8	963.6	963.4	963.1	962.9	962.1	960.9	959.7	958.5	957.3	959.5
12.5°	954.2	954.2	954.1	954.0	954.0	953.5	952.8	951.9	951.1	950.2	952.3
15°	938.7	938.9	939.1	939.4	939.6	939.4	938.7	937.9	937.2	936.4	938.7
17.5°	917.4	918.1	918.9	919.6	920.4	920.6	920.4	920.4	920.2	920.0	922.3
20°	902.5	903.2	904.0	904.7	905.5	905.9	906.2	906.4	906.7	906.9	909.3
22.5°	885.8	886.8	887.7	888.7	889.5	890.3	890.7	891.1	891.5	892.0	894.5
25°	858.7	860.2	861.6	863.1	864.5	865.6	866.3	867.1	867.8	868.5	871.2
27.5°	828.5	830.6	832.7	834.9	837.0	838.7	839.8	840.9	842.0	843.1	845.7
30°	808.3	810.2	812.2	814.1	816.1	817.9	819.6	821.3	823.0	824.7	827.4
32.5°	786.4	788.8	791.1	793.4	795.7	797.9	799.8	801.7	803.6	805.5	808.5
35°	751.4	754.3	757.2	760.1	763.0	765.7	768.2	770.6	773.0	775.5	778.9
37.5°	716.1	719.5	722.8	726.2	729.5	732.7	735.7	738.7	741.8	744.8	748.2
40°	693.3	696.5	699.7	702.8	706.0	709.2	712.6	716.1	719.5	722.9	726.5
42.5°	667.0	670.6	674.1	677.7	681.2	685.0	689.0	693.0	697.0	701.0	705.0
45°	626.5	631.1	635.7	640.4	645.0	649.6	654.3	658.9	663.5	668.1	672.2
47.5°	587.7	592.5	597.2	602.1	606.8	611.9	617.2	622.6	628.0	633.3	637.5
50°	559.7	565.1	570.4	575.8	581.1	586.5	591.8	597.1	602.5	607.8	612.8
52.5°	531.6	537.0	542.3	547.7	553.1	558.8	564.9	571.1	577.2	583.4	588.2
55°	490.7	495.8	500.9	506.0	511.1	517.3	524.7	532.0	539.2	546.5	551.4
57.5°	444.9	451.2	457.6	463.9	470.2	477.0	484.3	491.5	498.8	506.0	511.8
60°	415.1	421.4	427.8	434.1	440.5	447.6	455.7	463.7	471.7	479.7	485.3
62.5°	386.2	393.1	400.1	406.9	413.8	421.3	429.4	437.4	445.4	453.4	459.1
65°	339.5	347.3	355.1	362.9	370.7	378.7	387.0	395.3	403.5	411.9	417.9
67.5°	294.6	302.9	311.2	319.5	327.7	336.3	345.2	354.0	362.9	371.8	378.0
70°	264.0	272.3	280.5	288.8	297.1	305.9	315.1	324.3	333.6	342.9	349.4
72.5°	234.2	242.6	251.1	259.6	268.1	277.2	287.0	296.8	306.7	316.6	322.9
75°	188.4	197.4	206.4	215.4	224.4	234.0	244.2	254.4	264.7	274.9	281.7
77.5°	145.7	155.2	164.8	174.3	183.9	193.9	204.7	215.4	226.1	236.8	243.7
80°	119.4	129.1	138.9	148.6	158.4	168.6	179.3	190.0	200.7	211.4	218.7
82.5°	93.1	103.2	113.4	123.5	133.6	144.0	154.7	165.4	176.2	186.9	194.3
85°	58.1	68.3	78.5	88.7	98.9	109.6	120.5	131.4	142.4	153.4	160.7
87.5°	32.7	42.9	53.0	63.1	73.3	83.8	94.6	105.4	116.2	127.1	134.3
90°	18.9	29.7	40.6	51.4	62.3	73.3	84.5	95.9	107.1	118.4	126.0
92.5°	26.3	36.4	46.3	56.4	66.5	76.9	88.0	99.0	110.0	121.0	128.3
95°	41.4	50.3	59.3	68.1	77.1	86.9	97.6	108.3	118.9	129.6	136.5
97.5°	60.3	67.9	75.6	83.2	90.8	100.0	110.7	121.4	132.1	142.8	149.6
100°	75.3	82.1	88.7	95.5	102.2	110.7	121.2	131.6	142.0	152.3	159.1
102.5°	91.9	97.7	103.4	109.1	114.8	122.7	132.8	142.9	153.0	163.2	169.8
105°	115.1	120.1	125.1	130.0	135.0	142.2	151.6	161.0	170.4	179.8	186.2
107.5°	141.6	145.7	149.8	153.9	158.0	164.4	172.9	181.5	190.1	198.7	204.9
110°	158.8	162.4	166.0	169.6	173.2	179.2	187.7	196.1	204.5	212.9	218.2



TEST NUMBER: P332638-927

CATALOG NUMBER: SA4XXDIP-C1020D590U927-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	176.7	179.7	182.8	185.8	188.9	194.4	202.4	210.3	218.2	226.2	231.6
115°	203.6	205.7	207.9	210.2	212.3	217.2	224.8	232.4	240.0	247.6	252.8
117.5°	229.9	231.3	232.7	234.1	235.5	239.7	246.8	254.0	261.1	268.2	272.9
120°	246.8	247.9	249.0	250.2	251.3	255.2	262.0	268.7	275.5	282.3	286.6
122.5°	265.2	265.5	265.8	266.1	266.4	269.8	276.4	282.9	289.4	296.0	300.5
125°	291.3	291.0	290.8	290.6	290.3	293.2	299.2	305.1	311.2	317.1	321.5
127.5°	315.8	315.8	315.8	315.9	316.0	318.2	322.7	327.3	331.8	336.3	340.5
130°	332.2	332.2	332.3	332.4	332.5	334.4	338.3	342.2	346.1	350.0	354.2
132.5°	349.9	349.9	349.9	349.8	349.8	351.3	354.3	357.4	360.4	363.5	367.5
135°	372.2	372.8	373.4	374.1	374.6	375.8	377.5	379.2	380.9	382.6	386.3
137.5°	397.7	397.8	397.8	397.8	397.8	398.4	399.3	400.4	401.3	402.3	405.6
140°	414.7	414.6	414.6	414.5	414.5	414.6	414.9	415.1	415.3	415.6	418.7
142.5°	429.4	429.5	429.7	429.8	430.0	429.9	429.7	429.5	429.3	429.0	431.8
145°	450.7	450.8	451.0	451.1	451.3	451.4	451.5	451.6	451.7	451.8	453.2
147.5°	472.0	472.2	472.5	472.7	472.9	473.0	472.9	472.9	472.8	472.7	472.8
150°	485.0	485.1	485.3	485.4	485.6	485.7	485.7	485.7	485.7	485.7	485.7
152.5°	496.4	496.6	496.8	497.0	497.2	497.3	497.4	497.5	497.6	497.6	497.9
155°	515.1	515.1	515.1	515.1	515.1	515.0	514.9	514.8	514.8	514.6	515.0
157.5°	531.0	530.8	530.6	530.4	530.3	530.1	530.1	530.1	530.1	530.0	530.4
160°	540.3	540.3	540.2	540.1	540.0	539.9	539.8	539.7	539.6	539.5	539.8
162.5°	549.1	548.8	548.5	548.3	548.0	547.8	547.7	547.6	547.6	547.4	548.0
165°	560.7	560.4	560.1	559.8	559.5	559.3	559.0	558.9	558.6	558.5	559.0
167.5°	569.7	569.3	568.8	568.4	568.0	567.8	567.8	567.8	567.8	567.8	568.5
170°	574.7	574.3	573.7	573.2	572.7	572.5	572.6	572.7	572.8	572.9	573.5
172.5°	578.3	577.9	577.5	577.1	576.6	576.5	576.5	576.5	576.5	576.6	577.2
175°	583.3	582.8	582.3	581.8	581.3	581.0	580.9	580.8	580.7	580.6	581.3
177.5°	584.9	584.6	584.2	583.8	583.3	583.1	583.1	583.1	583.1	583.1	583.7
180°	584.2	584.2	584.2	584.2	584.2	584.2	584.2	584.2	584.2	584.2	584.2



TEST NUMBER: P332638-927

CATALOG NUMBER: SA4XXDIP-C1020D590U927-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	974.7	976.0	977.4	977.9	977.8	977.6	977.4	977.2
5°	972.1	974.1	976.0	976.8	976.6	976.4	976.1	975.9
7.5°	966.9	969.1	971.3	972.2	972.0	971.8	971.5	971.3
10°	961.6	963.8	966.1	967.0	966.8	966.5	966.3	966.1
12.5°	954.3	956.2	958.2	959.3	959.2	959.1	959.1	959.0
15°	940.9	943.0	945.2	946.2	945.9	945.7	945.5	945.2
17.5°	924.5	926.8	929.0	930.0	929.8	929.6	929.4	929.2
20°	911.7	914.2	916.6	917.8	917.8	917.8	917.8	917.8
22.5°	896.8	899.3	901.7	903.2	903.6	903.9	904.3	904.7
25°	873.9	876.5	879.2	880.7	881.0	881.2	881.5	881.7
27.5°	848.1	850.6	853.1	854.4	854.8	855.1	855.3	855.6
30°	830.1	832.7	835.4	837.0	837.5	838.0	838.5	839.0
32.5°	811.6	814.7	817.8	819.5	820.0	820.5	820.9	821.5
35°	782.3	785.7	789.1	791.2	791.9	792.6	793.4	794.1
37.5°	751.7	755.2	758.6	760.7	761.5	762.3	763.0	763.8
40°	730.2	733.8	737.5	739.8	740.8	741.7	742.8	743.7
42.5°	709.1	713.1	717.2	719.5	720.3	721.1	721.9	722.6
45°	676.4	680.6	684.7	687.4	688.6	689.8	691.0	692.2
47.5°	641.8	646.1	650.5	653.3	654.7	656.2	657.7	659.2
50°	617.6	622.5	627.3	630.5	632.0	633.4	634.9	636.4
52.5°	593.1	597.9	602.9	605.9	607.4	608.9	610.4	611.8
55°	556.3	561.2	566.0	569.2	570.6	572.1	573.5	575.0
57.5°	517.6	523.4	529.2	532.7	534.1	535.5	536.9	538.2
60°	490.9	496.5	502.1	505.9	507.9	509.8	511.7	513.7
62.5°	464.6	470.2	475.9	479.6	481.6	483.5	485.4	487.4
65°	424.0	430.1	436.2	440.2	442.1	444.1	446.0	448.0
67.5°	384.1	390.3	396.5	400.5	402.4	404.3	406.2	408.1
70°	355.9	362.5	369.1	373.3	374.9	376.7	378.3	380.1
72.5°	329.3	335.6	342.1	346.2	348.1	350.0	351.9	353.8
75°	288.5	295.3	302.1	306.7	308.9	311.1	313.2	315.4
77.5°	250.6	257.5	264.4	269.1	271.4	273.8	276.1	278.5
80°	226.0	233.3	240.6	245.2	247.2	249.1	251.0	253.0
82.5°	201.8	209.4	216.8	221.7	223.8	225.9	228.1	230.2
85°	167.9	175.2	182.5	187.4	189.9	192.3	194.7	197.2
87.5°	141.4	148.6	155.8	160.5	162.6	164.9	167.0	169.2
90°	133.7	141.3	149.0	153.9	156.1	158.2	160.3	162.5
92.5°	135.5	142.8	150.0	154.6	156.7	158.8	160.8	162.9
95°	143.4	150.3	157.1	161.7	163.8	166.0	168.3	170.4
97.5°	156.3	163.0	169.8	174.2	176.3	178.4	180.5	182.5
100°	165.9	172.7	179.4	183.7	185.4	187.1	188.8	190.5
102.5°	176.5	183.2	189.8	194.1	196.1	198.0	200.0	202.0
105°	192.6	199.0	205.3	209.7	211.9	214.2	216.4	218.6
107.5°	211.2	217.5	223.8	227.8	229.5	231.2	233.0	234.7
110°	223.7	229.1	234.5	238.3	240.6	242.8	245.0	247.3



TEST NUMBER: P332638-927

CATALOG NUMBER: SA4XXDIP-C1020D590U927-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	236.9	242.3	247.6	251.4	253.3	255.4	257.4	259.4
115°	258.1	263.3	268.5	272.0	273.6	275.2	276.8	278.5
117.5°	277.7	282.3	287.1	290.3	292.1	293.8	295.6	297.3
120°	291.0	295.3	299.7	302.9	305.1	307.3	309.4	311.6
122.5°	305.0	309.5	314.0	317.0	318.4	319.8	321.2	322.6
125°	326.0	330.4	334.9	337.6	338.9	340.2	341.4	342.7
127.5°	344.7	348.9	353.0	355.8	357.4	358.9	360.4	361.9
130°	358.4	362.5	366.7	369.3	370.4	371.5	372.5	373.6
132.5°	371.5	375.4	379.5	382.1	383.3	384.7	386.0	387.3
135°	390.0	393.7	397.4	399.8	401.0	402.1	403.3	404.4
137.5°	408.9	412.2	415.5	417.8	419.1	420.3	421.6	422.9
140°	421.8	424.8	427.9	429.9	431.1	432.2	433.3	434.4
142.5°	434.5	437.3	440.1	442.0	442.9	443.9	445.0	445.9
145°	454.6	455.9	457.2	458.3	458.9	459.6	460.3	461.0
147.5°	472.9	473.0	473.2	473.6	474.2	474.9	475.5	476.3
150°	485.7	485.7	485.7	485.7	485.5	485.4	485.4	485.3
152.5°	498.1	498.4	498.6	498.6	498.4	498.0	497.8	497.6
155°	515.4	515.8	516.3	516.3	515.8	515.4	515.0	514.6
157.5°	530.7	531.0	531.3	531.2	530.9	530.6	530.2	529.9
160°	540.1	540.3	540.7	540.6	540.1	539.6	539.1	538.6
162.5°	548.5	549.1	549.6	549.6	549.1	548.6	548.1	547.6
165°	559.7	560.2	560.9	560.9	560.5	560.2	559.8	559.4
167.5°	569.0	569.7	570.3	570.2	569.7	569.0	568.4	567.8
170°	574.1	574.7	575.3	575.3	574.6	573.9	573.1	572.4
172.5°	577.9	578.6	579.2	579.2	578.5	577.8	577.1	576.5
175°	582.0	582.7	583.4	583.4	582.7	582.0	581.3	580.6
177.5°	584.2	584.8	585.3	585.3	584.7	584.1	583.4	582.7
180°	584.2	584.2	584.2	584.2	584.2	584.2	584.2	584.2

(END OF REPORT)