

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: P332637-940

Luminaire Tested: **SA4XXDIP-C1020D590U940-4F0-1E-UDD-D**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332637-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA4XXDIP-C1020D590U940-4F0-1E-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: 5858.7 lumens
Efficiency: N/A
Efficacy: 120.1 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

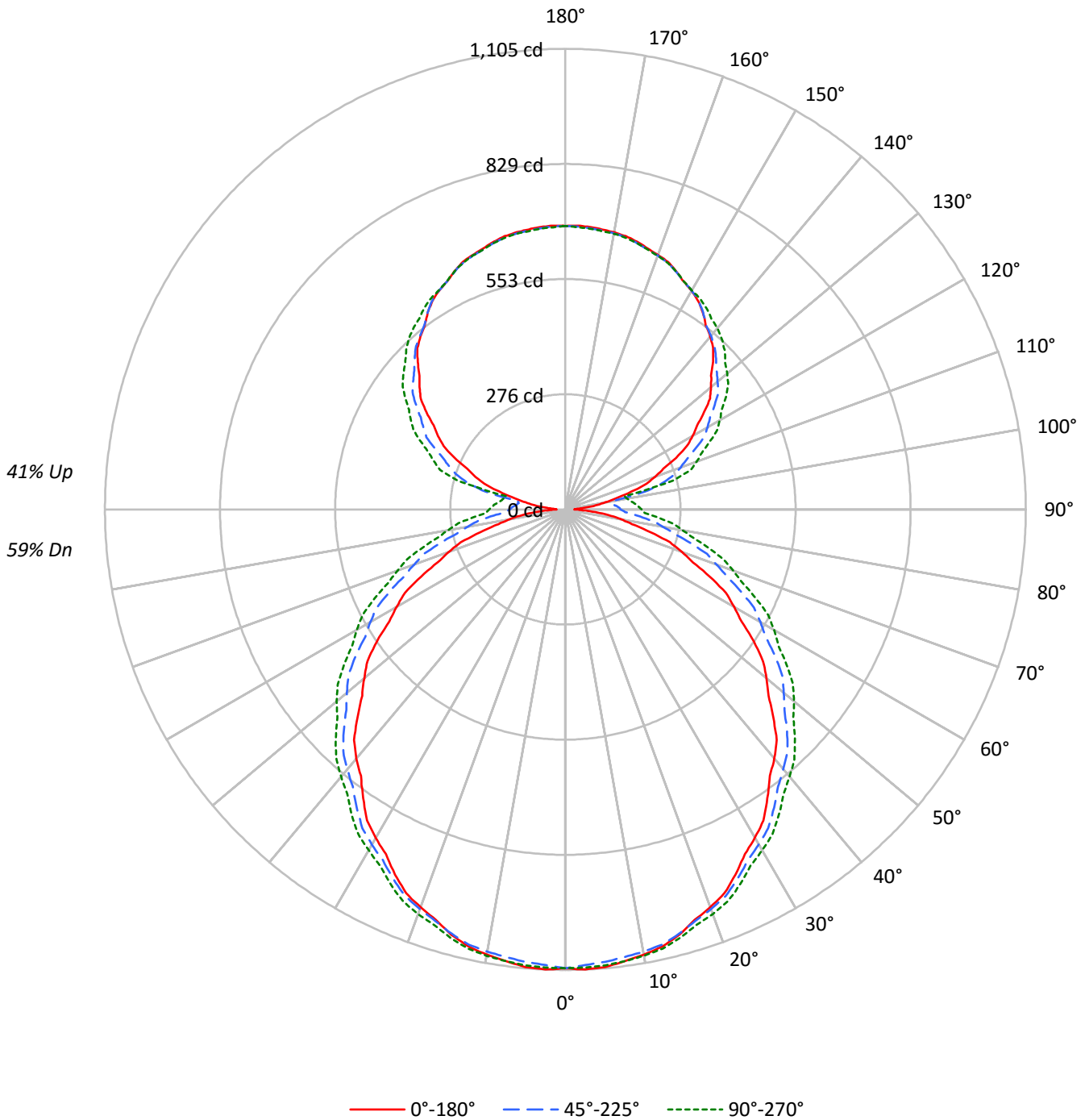
Input Watts (W): 48.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332637-940

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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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	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°	8888	8888	8888
5°	8916	8686	8711
10°	8861	8544	8538
15°	8782	8380	8334
20°	8662	8198	8135
25°	8527	7995	7918
30°	8381	7793	7693
35°	8216	7585	7497
40°	8083	7388	7292
45°	7887	7207	7117
50°	7721	6996	6931
55°	7549	6799	6714
60°	7282	6547	6515
65°	6989	6278	6271
70°	6633	5968	5986
75°	6136	5628	5730
80°	5588	5302	5476
85°	4893	5013	5328



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	104.3	1.8
10°-20°	298.7	5.1
20°-30°	451.7	7.7
30°-40°	546.5	9.3
40°-50°	577.7	9.9
50°-60°	543.7	9.3
60°-70°	451.1	7.7
70°-80°	316.9	5.4
80°-90°	181.1	3.1
90°-100°	129.6	2.2
100°-110°	227.0	3.9
110°-120°	336.6	5.7
120°-130°	390.0	6.7
130°-140°	398.2	6.8
140°-150°	362.9	6.2
150°-160°	290.6	5.0
160°-170°	187.4	3.2
170°-180°	64.6	1.1
0°-30°	854.6	14.6
0°-40°	1401.1	23.9
0°-60°	2522.6	43.1
0°-90°	3471.7	59.3
90°-120°	693.2	11.8
90°-150°	1844.3	31.5
90°-180°	2387.0	40.7
0°-180°	5858.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1101	1101	1101	1101	1101	
5°	1102	1098	1090	1099	1098	105
15°	1057	1058	1054	1065	1064	298
25°	967	974	978	991	992	445
35°	846	860	873	889	894	529
45°	705	729	752	772	779	545
55°	552	579	615	639	647	492
65°	382	422	464	493	504	379
75°	212	258	309	343	355	226
85°	65	117	173	208	222	70
90°	21	76	133	170	183	14
95°	44	69	118	153	166	49
105°	164	193	240	273	267	173
115°	293	307	345	372	382	289
125°	407	409	437	461	470	363
135°	501	501	511	531	540	386
145°	576	576	576	584	590	360
155°	630	631	629	631	630	291
165°	665	662	662	666	662	188
175°	680	677	678	682	676	65
180°	680	680	680	680	680	



TEST NUMBER: P332637-940

CATALOG NUMBER: SA4XXDIP-C1020D590U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0
2.5°	1104.9	1104.3	1103.6	1103.0	1102.2	1101.1	1099.3	1097.6	1095.8	1094.0	1095.6
5°	1102.2	1101.4	1100.5	1099.7	1098.9	1097.5	1095.6	1093.7	1091.8	1089.8	1092.1
7.5°	1092.8	1092.3	1091.8	1091.4	1090.8	1089.8	1088.2	1086.6	1085.0	1083.4	1085.9
10°	1084.9	1084.7	1084.4	1084.1	1083.9	1083.0	1081.6	1080.3	1078.9	1077.5	1080.0
12.5°	1074.1	1074.1	1074.0	1073.9	1073.9	1073.4	1072.5	1071.5	1070.6	1069.6	1071.9
15°	1056.6	1056.9	1057.1	1057.4	1057.7	1057.4	1056.6	1055.8	1054.9	1054.1	1056.6
17.5°	1032.7	1033.5	1034.3	1035.1	1036.0	1036.3	1036.1	1036.0	1035.8	1035.6	1038.1
20°	1015.9	1016.7	1017.5	1018.3	1019.2	1019.8	1020.0	1020.3	1020.6	1020.8	1023.6
22.5°	997.1	998.2	999.3	1000.3	1001.3	1002.1	1002.6	1003.1	1003.5	1004.1	1006.8
25°	966.6	968.2	969.8	971.5	973.1	974.4	975.2	976.1	976.9	977.7	980.7
27.5°	932.6	935.0	937.4	939.8	942.2	944.1	945.3	946.6	947.8	949.0	951.9
30°	909.9	912.0	914.3	916.4	918.6	920.7	922.6	924.5	926.4	928.4	931.4
32.5°	885.2	887.9	890.5	893.1	895.7	898.1	900.3	902.4	904.6	906.7	910.1
35°	845.8	849.1	852.3	855.6	858.9	861.9	864.7	867.4	870.1	872.9	876.7
37.5°	806.0	809.9	813.6	817.4	821.2	824.7	828.1	831.5	835.0	838.4	842.2
40°	780.4	784.0	787.6	791.1	794.7	798.3	802.2	806.0	809.9	813.7	817.8
42.5°	750.8	754.8	758.8	762.9	766.8	771.1	775.5	780.1	784.5	789.1	793.6
45°	705.2	710.4	715.6	720.9	726.0	731.2	736.5	741.6	746.8	752.1	756.7
47.5°	661.6	666.9	672.3	677.7	683.1	688.8	694.7	700.8	706.9	712.8	717.6
50°	630.0	636.1	642.0	648.1	654.1	660.1	666.2	672.2	678.2	684.2	689.7
52.5°	598.4	604.5	610.5	616.5	622.6	629.0	635.9	642.8	649.7	656.7	662.1
55°	552.3	558.1	563.8	569.6	575.3	582.3	590.6	598.8	607.0	615.2	620.7
57.5°	500.8	507.9	515.1	522.2	529.3	536.9	545.1	553.3	561.4	569.6	576.1
60°	467.3	474.4	481.5	488.7	495.8	503.8	512.9	521.9	530.9	540.0	546.3
62.5°	434.7	442.5	450.3	458.1	465.8	474.2	483.3	492.3	501.4	510.4	516.7
65°	382.2	390.9	399.8	408.5	417.2	426.3	435.6	445.0	454.2	463.6	470.4
67.5°	331.6	341.0	350.3	359.6	368.9	378.5	388.5	398.5	408.5	418.5	425.4
70°	297.1	306.5	315.8	325.0	334.4	344.3	354.6	365.1	375.5	385.9	393.3
72.5°	263.6	273.1	282.7	292.2	301.8	312.0	323.1	334.1	345.3	356.3	363.5
75°	212.0	222.2	232.3	242.5	252.6	263.4	274.9	286.4	297.9	309.4	317.1
77.5°	164.0	174.7	185.5	196.2	207.0	218.3	230.4	242.5	254.5	266.5	274.3
80°	134.4	145.3	156.3	167.3	178.3	189.8	201.8	213.8	225.9	237.9	246.2
82.5°	104.8	116.2	127.6	139.0	150.3	162.1	174.2	186.2	198.3	210.4	218.7
85°	65.4	76.9	88.4	99.9	111.4	123.3	135.6	147.9	160.2	172.6	180.8
87.5°	36.8	48.2	59.7	71.1	82.5	94.3	106.5	118.7	130.8	143.0	151.1
90°	21.2	33.4	45.7	57.9	70.1	82.5	95.2	107.9	120.6	133.2	141.9
92.5°	25.1	35.0	45.0	54.9	64.9	76.2	88.9	101.6	114.2	126.9	135.4
95°	44.0	49.2	54.4	59.6	64.8	73.0	84.4	95.8	107.1	118.4	126.5
97.5°	73.9	84.2	94.3	104.5	114.7	119.0	117.5	116.0	114.5	113.1	120.3
100°	97.0	106.1	115.3	124.5	133.6	135.7	130.8	125.9	121.0	116.1	121.5
102.5°	123.9	131.6	139.3	147.0	154.8	162.9	171.3	179.8	188.2	196.6	183.1
105°	164.2	170.3	176.6	182.7	188.9	197.2	207.9	218.6	229.3	240.0	247.9
107.5°	203.8	208.6	213.4	218.2	223.0	230.7	241.0	251.4	261.7	272.1	279.3
110°	229.6	233.8	237.9	242.1	246.3	253.5	263.8	274.0	284.4	294.6	301.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	254.7	258.7	262.7	266.7	270.7	277.4	286.9	296.4	305.9	315.3	321.4
115°	293.3	296.0	298.9	301.7	304.5	310.2	318.9	327.5	336.2	344.8	351.1
117.5°	329.1	331.1	333.0	334.9	336.9	342.1	350.4	358.8	367.3	375.7	381.3
120°	352.6	353.8	355.1	356.4	357.7	362.2	370.1	377.9	385.7	393.5	399.2
122.5°	375.3	375.8	376.2	376.7	377.1	381.1	388.8	396.5	404.1	411.8	417.4
125°	406.8	407.0	407.2	407.3	407.5	410.9	417.5	424.1	430.8	437.4	442.9
127.5°	437.5	437.3	437.1	436.9	436.8	439.6	445.4	451.2	456.9	462.7	467.6
130°	456.4	456.2	456.1	455.9	455.8	458.1	462.8	467.5	472.3	476.9	482.0
132.5°	474.7	474.7	474.6	474.5	474.4	476.4	480.3	484.2	488.2	492.1	497.0
135°	501.0	500.9	500.7	500.6	500.5	501.6	504.0	506.4	508.7	511.1	515.7
137.5°	525.2	525.0	524.8	524.6	524.3	525.0	526.4	527.8	529.2	530.7	534.9
140°	541.1	541.1	541.0	541.0	540.9	541.2	541.6	542.2	542.7	543.1	547.1
142.5°	554.4	554.7	555.1	555.4	555.8	556.0	555.9	555.9	555.9	555.8	559.2
145°	576.0	576.0	576.1	576.2	576.3	576.3	576.3	576.3	576.3	576.3	578.1
147.5°	593.4	593.8	594.1	594.5	594.9	594.9	594.9	594.8	594.6	594.5	594.9
150°	606.0	606.2	606.4	606.5	606.7	606.8	606.6	606.5	606.5	606.3	606.3
152.5°	615.6	615.9	616.3	616.5	616.9	616.9	616.7	616.5	616.3	616.1	616.3
155°	630.3	630.4	630.4	630.5	630.7	630.5	630.3	629.9	629.5	629.2	629.6
157.5°	642.7	642.7	642.6	642.6	642.5	642.2	641.9	641.5	641.1	640.7	641.3
160°	650.1	649.7	649.3	649.1	648.7	648.5	648.4	648.3	648.1	648.0	648.7
162.5°	656.6	656.1	655.7	655.3	654.9	654.6	654.4	654.3	654.2	654.2	654.8
165°	664.8	664.2	663.7	663.1	662.5	662.3	662.3	662.3	662.3	662.3	663.2
167.5°	671.3	670.7	670.1	669.6	669.0	668.6	668.6	668.5	668.4	668.3	669.4
170°	675.0	674.3	673.6	673.0	672.3	672.0	672.1	672.2	672.3	672.4	673.3
172.5°	677.4	676.7	676.1	675.4	674.8	674.4	674.6	674.7	674.8	674.8	675.8
175°	680.1	679.4	678.7	678.1	677.3	677.1	677.2	677.3	677.4	677.5	678.5
177.5°	681.3	680.6	680.0	679.4	678.8	678.5	678.7	678.9	679.0	679.2	680.0
180°	680.1	680.1	680.1	680.1	680.1	680.1	680.1	680.1	680.1	680.1	680.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0
2.5°	1097.2	1098.7	1100.2	1100.8	1100.6	1100.4	1100.2	1100.0
5°	1094.2	1096.4	1098.7	1099.6	1099.3	1099.0	1098.8	1098.5
7.5°	1088.4	1090.8	1093.3	1094.4	1094.1	1093.9	1093.6	1093.3
10°	1082.4	1084.9	1087.4	1088.5	1088.2	1088.0	1087.7	1087.4
12.5°	1074.2	1076.4	1078.6	1079.8	1079.7	1079.6	1079.6	1079.5
15°	1059.1	1061.5	1064.0	1065.1	1064.8	1064.5	1064.3	1064.0
17.5°	1040.6	1043.2	1045.7	1046.9	1046.6	1046.4	1046.2	1046.0
20°	1026.3	1029.0	1031.8	1033.1	1033.1	1033.1	1033.1	1033.1
22.5°	1009.5	1012.3	1015.0	1016.6	1017.1	1017.4	1017.9	1018.3
25°	983.7	986.7	989.7	991.4	991.7	991.9	992.2	992.5
27.5°	954.7	957.4	960.3	961.8	962.2	962.5	962.8	963.1
30°	934.4	937.4	940.4	942.2	942.7	943.3	943.9	944.4
32.5°	913.6	917.0	920.5	922.5	923.0	923.5	924.1	924.7
35°	880.6	884.4	888.2	890.6	891.4	892.2	893.0	893.9
37.5°	846.1	850.1	853.9	856.3	857.2	858.1	858.9	859.8
40°	821.9	826.0	830.2	832.8	833.8	834.9	836.1	837.1
42.5°	798.2	802.7	807.3	809.9	810.8	811.7	812.6	813.4
45°	761.3	766.1	770.7	773.7	775.1	776.4	777.8	779.2
47.5°	722.5	727.3	732.2	735.4	737.0	738.7	740.3	742.0
50°	695.2	700.7	706.1	709.7	711.4	713.0	714.6	716.3
52.5°	667.6	673.1	678.6	682.1	683.8	685.4	687.1	688.7
55°	626.2	631.7	637.1	640.7	642.3	644.0	645.6	647.3
57.5°	582.6	589.2	595.7	599.7	601.2	602.8	604.3	605.8
60°	552.6	558.9	565.2	569.4	571.7	573.8	576.0	578.2
62.5°	523.0	529.3	535.7	539.8	542.1	544.2	546.4	548.7
65°	477.2	484.1	491.0	495.5	497.7	499.9	502.0	504.3
67.5°	432.4	439.3	446.3	450.8	453.0	455.1	457.3	459.4
70°	400.6	408.0	415.4	420.2	422.0	424.0	425.9	427.8
72.5°	370.7	377.8	385.0	389.7	391.8	394.0	396.1	398.2
75°	324.8	332.4	340.1	345.2	347.7	350.2	352.6	355.1
77.5°	282.1	289.9	297.7	302.9	305.5	308.2	310.8	313.4
80°	254.4	262.6	270.8	276.0	278.2	280.4	282.6	284.8
82.5°	227.2	235.7	244.1	249.5	251.9	254.3	256.7	259.1
85°	189.0	197.2	205.5	211.0	213.7	216.4	219.2	221.9
87.5°	159.2	167.3	175.4	180.7	183.1	185.6	188.0	190.5
90°	150.5	159.1	167.7	173.3	175.7	178.1	180.5	182.9
92.5°	143.7	152.1	160.5	165.9	168.1	170.3	172.5	174.8
95°	134.6	142.7	150.8	156.0	158.6	161.2	163.8	166.4
97.5°	127.5	134.8	142.0	146.9	149.4	151.9	154.3	156.8
100°	127.1	132.5	137.9	141.7	143.7	145.8	147.8	149.9
102.5°	169.5	156.0	142.4	136.7	138.8	141.0	143.2	145.3
105°	255.8	263.7	271.5	274.6	272.7	270.8	268.9	267.0
107.5°	286.6	293.8	301.0	305.9	308.3	310.7	313.1	315.5
110°	307.6	314.1	320.7	325.2	327.8	330.3	332.8	335.4



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CATALOG NUMBER: SA4XXDIP-C1020D590U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	327.3	333.4	339.5	343.8	346.4	349.0	351.6	354.3
115°	357.3	363.6	369.9	373.9	375.9	377.7	379.7	381.6
117.5°	387.0	392.6	398.3	402.2	404.3	406.5	408.7	410.8
120°	404.9	410.6	416.3	420.2	422.1	424.1	426.1	428.0
122.5°	423.0	428.6	434.3	437.9	439.7	441.4	443.2	445.0
125°	448.4	454.0	459.6	463.2	464.9	466.7	468.5	470.2
127.5°	472.4	477.3	482.1	485.5	487.3	489.0	490.8	492.6
130°	487.1	492.0	497.1	500.4	502.1	503.7	505.4	507.0
132.5°	501.8	506.6	511.4	514.6	516.1	517.7	519.2	520.8
135°	520.3	525.0	529.5	532.8	534.7	536.5	538.4	540.3
137.5°	539.1	543.4	547.7	550.5	551.7	553.0	554.4	555.6
140°	551.0	554.9	558.7	561.4	562.9	564.5	565.9	567.4
142.5°	562.6	566.0	569.4	571.6	572.7	574.0	575.2	576.3
145°	579.8	581.6	583.4	584.9	586.2	587.5	588.8	590.1
147.5°	595.1	595.5	595.8	596.4	597.4	598.4	599.4	600.4
150°	606.3	606.3	606.3	606.4	606.5	606.6	606.7	606.8
152.5°	616.4	616.6	616.8	616.9	616.8	616.7	616.6	616.6
155°	630.1	630.5	631.0	631.1	630.7	630.4	630.1	629.7
157.5°	641.9	642.5	643.0	643.0	642.5	641.9	641.3	640.7
160°	649.3	650.1	650.8	650.8	650.1	649.3	648.7	648.0
162.5°	655.5	656.1	656.8	656.8	656.0	655.2	654.5	653.7
165°	664.1	664.9	665.9	665.8	664.8	663.8	662.8	661.7
167.5°	670.4	671.4	672.3	672.3	671.2	670.0	668.9	667.8
170°	674.2	675.1	676.1	675.9	674.8	673.7	672.5	671.5
172.5°	676.7	677.6	678.5	678.3	677.2	675.9	674.7	673.4
175°	679.6	680.6	681.6	681.4	680.1	678.7	677.3	676.0
177.5°	680.7	681.4	682.2	682.0	680.9	679.8	678.7	677.6
180°	680.1	680.1	680.1	680.1	680.1	680.1	680.1	680.1

(END OF REPORT)