

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: HALO COMMERCIAL

Report Number: P242005

Luminaire Tested: **PRS420D010-S4M12-41SWWC-4000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242005
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1802-584-61)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PRS420D010-S4M12-41SWWC-4000K
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM SPECULAR
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1302.8 lumens
Efficiency: N/A
Efficacy: 65.1 lumens/watt
Spacing Criteria (0/90/45): 0.94 / 0.9 / 0.99
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')
CIE Type: Direct

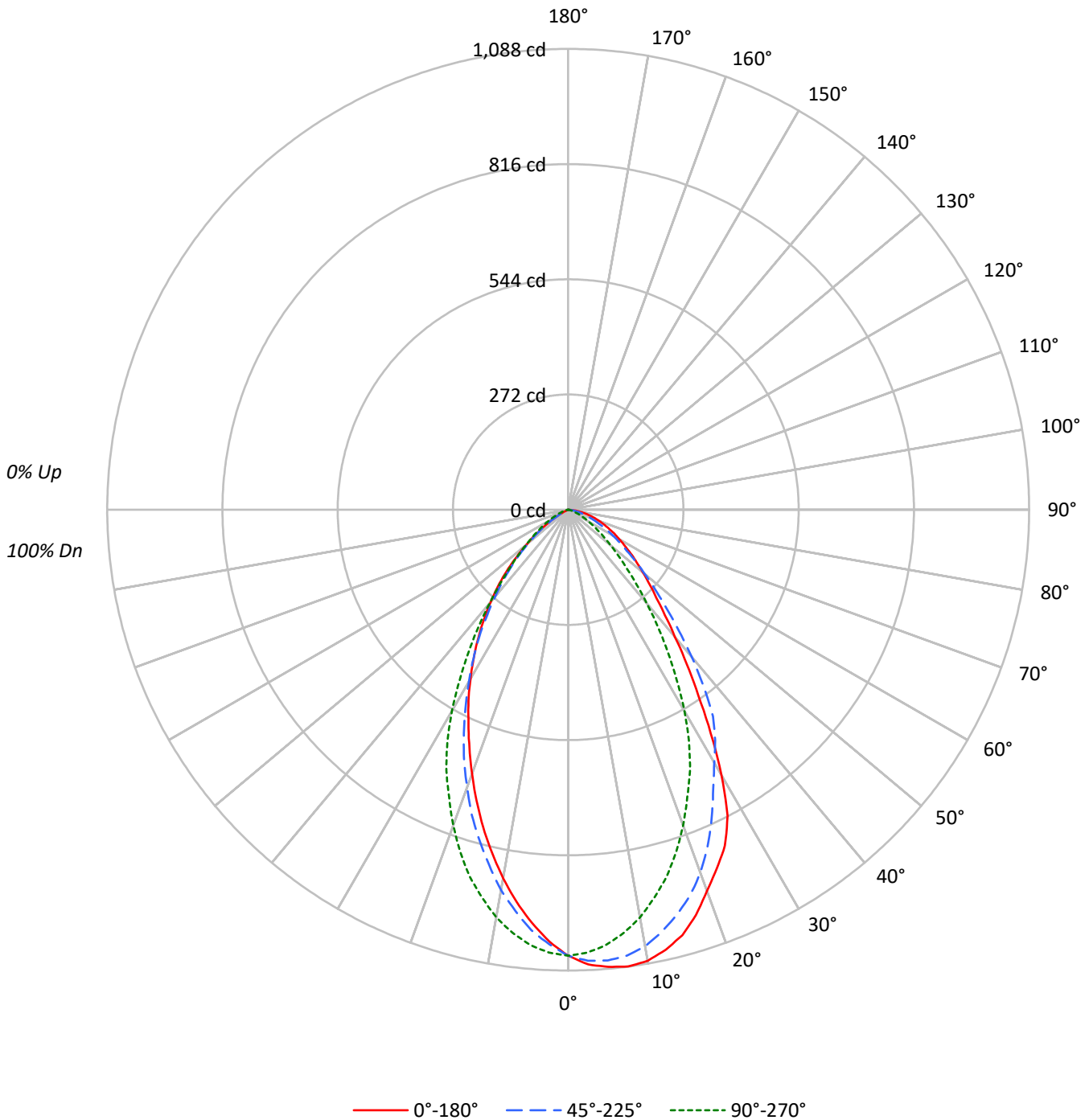
Input Watts (W): 20
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	112	109	106	103	110	107	104	101	102	100	98	99	97	95	95	94	92	91
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	85	83	81
3	98	90	84	79	96	89	83	79	86	81	77	83	79	76	81	78	75	73
4	92	83	76	71	90	81	75	70	79	74	69	77	72	69	75	71	68	66
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	70	65	62	60
6	81	70	63	58	79	69	63	58	68	62	57	66	61	57	65	60	56	55
7	76	65	58	53	74	64	58	53	63	57	52	62	56	52	60	55	52	50
8	72	60	53	49	70	60	53	48	59	53	48	58	52	48	56	51	48	46
9	68	56	50	45	66	56	49	45	55	49	45	54	48	44	53	48	44	43
10	64	53	46	42	63	52	46	42	51	46	41	51	45	41	50	45	41	40

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	80600	80600	80600
5°	83244	79248	75253
10°	84035	75952	68708
15°	82413	71081	61469
20°	78010	64594	54005
25°	73933	57456	47025
30°	63964	48452	40790
35°	50010	38265	34620
40°	39189	28797	28357
45°	31901	21108	22278
50°	27353	15480	15480
55°	23994	11570	9248
60°	21233	8297	4317
65°	19235	5886	779
70°	17456	3872	0
75°	15379	2573	0
80°	12430	970	0
85°	7641	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	96.8	7.4
10°-20°	251.7	19.3
20°-30°	317.7	24.4
30°-40°	281.6	21.6
40°-50°	186.9	14.3
50°-60°	101.7	7.8
60°-70°	45.7	3.5
70°-80°	17.7	1.4
80°-90°	3.0	0.2
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	666.2	51.1
0°-40°	947.9	72.8
0°-60°	1236.5	94.9
0°-90°	1302.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1302.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1053	1053	1053	1053	1053	
5°	1083	1068	1031	997	979	103
15°	1040	990	897	808	776	291
25°	875	802	680	583	557	396
35°	535	596	410	366	370	338
45°	295	327	195	188	206	231
55°	180	169	87	67	69	162
65°	106	82	32	2	4	106
75°	52	32	9	0	0	56
85°	9	4	0	0	0	11
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0
2.5°	1074.7	1072.5	1072.5	1072.5	1070.4	1070.4	1070.4	1070.4	1068.2	1066.0	1066.0
5°	1083.4	1085.5	1083.4	1081.2	1081.2	1081.2	1079.0	1076.9	1074.7	1072.5	1068.2
7.5°	1087.7	1085.5	1085.5	1083.4	1081.2	1079.0	1076.9	1074.7	1070.4	1066.0	1061.7
10°	1081.2	1079.0	1076.9	1076.9	1070.4	1070.4	1068.2	1063.9	1057.4	1053.0	1046.5
12.5°	1063.9	1063.9	1061.7	1059.5	1053.0	1053.0	1048.7	1044.4	1037.9	1029.2	1020.5
15°	1040.0	1040.0	1035.7	1033.5	1029.2	1027.0	1022.7	1016.2	1009.7	1001.0	990.2
17.5°	1003.2	1003.2	1001.0	996.7	994.5	992.4	985.9	981.5	972.9	964.2	955.5
20°	957.7	953.4	953.4	951.2	946.9	944.7	942.5	936.0	929.5	920.9	912.2
22.5°	916.5	914.4	907.9	903.5	897.0	892.7	890.5	881.9	877.5	871.0	860.2
25°	875.4	871.0	868.9	862.4	853.7	851.5	845.0	832.0	823.4	812.5	801.7
27.5°	814.7	814.7	816.9	814.7	806.0	803.9	799.5	788.7	771.4	754.0	741.0
30°	723.7	721.5	723.7	728.0	734.5	736.7	741.0	738.9	725.9	706.4	689.0
32.5°	626.2	626.2	634.8	641.3	647.8	650.0	654.3	665.2	665.2	658.7	645.7
35°	535.2	539.5	546.0	552.5	561.2	563.3	574.2	576.3	589.3	598.0	595.8
37.5°	459.3	463.7	465.8	472.3	481.0	483.2	487.5	502.7	517.8	528.7	524.3
40°	392.2	392.2	398.7	405.2	413.8	416.0	422.5	431.2	448.5	452.8	452.8
42.5°	338.0	340.2	342.3	346.7	353.2	357.5	361.8	374.8	383.5	390.0	385.7
45°	294.7	296.8	299.0	303.3	307.7	309.8	314.2	322.8	329.3	329.3	327.2
47.5°	260.0	260.0	262.2	264.3	268.7	270.8	275.2	279.5	281.7	279.5	277.3
50°	229.7	231.8	231.8	234.0	236.2	240.5	242.7	242.7	242.7	240.5	236.2
52.5°	203.7	203.7	205.8	205.8	210.2	212.3	212.3	212.3	210.2	205.8	199.3
55°	179.8	179.8	179.8	182.0	186.3	186.3	186.3	184.2	182.0	175.5	169.0
57.5°	158.2	160.3	160.3	160.3	162.5	162.5	162.5	160.3	156.0	149.5	143.0
60°	138.7	140.8	140.8	140.8	143.0	143.0	140.8	138.7	134.3	125.7	121.3
62.5°	123.5	123.5	123.5	123.5	123.5	123.5	121.3	117.0	112.7	106.2	101.8
65°	106.2	106.2	106.2	108.3	106.2	104.0	104.0	99.7	95.3	88.8	82.3
67.5°	91.0	91.0	91.0	91.0	88.8	88.8	86.7	82.3	78.0	73.7	67.2
70°	78.0	78.0	78.0	75.8	73.7	73.7	71.5	67.2	62.8	58.5	54.2
72.5°	65.0	65.0	65.0	62.8	60.7	58.5	58.5	54.2	49.8	45.5	43.3
75°	52.0	52.0	52.0	49.8	47.7	45.5	45.5	41.2	39.0	36.8	32.5
77.5°	41.2	41.2	39.0	36.8	36.8	34.7	34.7	32.5	30.3	26.0	23.8
80°	28.2	28.2	28.2	28.2	26.0	23.8	23.8	21.7	19.5	17.3	15.2
82.5°	19.5	19.5	17.3	17.3	15.2	15.2	15.2	13.0	13.0	10.8	8.7
85°	8.7	8.7	8.7	8.7	6.5	6.5	6.5	6.5	6.5	4.3	4.3
87.5°	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	2.2	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0
2.5°	1063.9	1061.7	1061.7	1057.4	1057.4	1055.2	1053.0	1050.9	1048.7	1046.5	1044.4
5°	1066.0	1061.7	1057.4	1053.0	1053.0	1048.7	1044.4	1040.0	1037.9	1031.4	1027.0
7.5°	1057.4	1050.9	1046.5	1040.0	1037.9	1033.5	1027.0	1020.5	1014.0	1007.5	1001.0
10°	1040.0	1031.4	1024.9	1018.4	1011.9	1009.7	1001.0	994.5	983.7	977.2	970.7
12.5°	1014.0	1005.4	996.7	985.9	983.7	979.4	968.5	957.7	949.0	938.2	929.5
15°	981.5	972.9	959.9	951.2	944.7	938.2	929.5	918.7	905.7	897.0	886.2
17.5°	944.7	931.7	918.7	907.9	899.2	894.9	879.7	866.7	858.0	847.2	836.4
20°	901.4	886.2	871.0	855.9	849.4	840.7	827.7	814.7	801.7	793.0	777.9
22.5°	849.4	834.2	819.0	801.7	797.4	788.7	773.5	760.5	749.7	734.5	721.5
25°	790.9	777.9	767.0	751.9	743.2	734.5	721.5	706.4	691.2	680.3	665.2
27.5°	732.4	723.7	712.9	697.7	689.0	680.3	663.0	647.8	628.3	617.5	600.2
30°	676.0	669.5	654.3	639.2	624.0	617.5	593.7	576.3	559.0	548.2	535.2
32.5°	626.2	606.7	587.2	565.5	556.8	548.2	524.3	507.0	491.8	476.7	463.7
35°	569.8	539.5	517.8	498.3	487.5	478.8	459.3	439.8	426.8	409.5	400.8
37.5°	509.2	483.2	457.2	433.3	424.7	411.7	396.5	374.8	361.8	346.7	333.7
40°	444.2	426.8	398.7	374.8	364.0	355.3	335.8	318.5	301.2	288.2	279.5
42.5°	377.0	366.2	344.5	320.7	309.8	301.2	283.8	264.3	249.2	238.3	227.5
45°	320.7	312.0	294.7	273.0	260.0	251.3	234.0	216.7	203.7	195.0	188.5
47.5°	270.8	262.2	247.0	227.5	216.7	208.0	190.7	175.5	166.8	160.3	156.0
50°	227.5	216.7	203.7	190.7	179.8	171.2	156.0	145.2	136.5	130.0	127.8
52.5°	190.7	182.0	169.0	156.0	147.3	140.8	125.7	117.0	112.7	106.2	101.8
55°	160.3	151.7	140.8	127.8	121.3	114.8	104.0	97.5	91.0	86.7	82.3
57.5°	134.3	125.7	114.8	104.0	97.5	93.2	84.5	78.0	73.7	69.3	65.0
60°	112.7	104.0	95.3	84.5	80.2	75.8	69.3	62.8	58.5	54.2	49.8
62.5°	93.2	84.5	75.8	67.2	65.0	60.7	56.3	49.8	45.5	43.3	39.0
65°	78.0	69.3	60.7	54.2	52.0	47.7	43.3	39.0	34.7	32.5	30.3
67.5°	62.8	54.2	47.7	43.3	41.2	39.0	34.7	30.3	28.2	23.8	21.7
70°	49.8	43.3	36.8	32.5	30.3	28.2	26.0	23.8	19.5	17.3	15.2
72.5°	36.8	32.5	28.2	23.8	23.8	21.7	19.5	17.3	15.2	13.0	10.8
75°	28.2	23.8	21.7	17.3	17.3	15.2	13.0	10.8	8.7	8.7	6.5
77.5°	19.5	17.3	15.2	13.0	10.8	10.8	8.7	6.5	6.5	4.3	4.3
80°	13.0	10.8	8.7	6.5	6.5	6.5	4.3	4.3	4.3	2.2	2.2
82.5°	8.7	6.5	4.3	4.3	4.3	2.2	2.2	2.2	2.2	2.2	0.0
85°	2.2	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0
2.5°	1042.2	1040.0	1037.9	1035.7	1035.7	1031.4	1031.4	1029.2	1027.0	1027.0	1024.9
5°	1022.7	1018.4	1014.0	1011.9	1011.9	1005.4	1001.0	998.9	996.7	994.5	990.2
7.5°	994.5	990.2	983.7	979.4	977.2	970.7	966.4	959.9	955.5	953.4	946.9
10°	962.0	955.5	944.7	942.5	938.2	931.7	925.2	918.7	912.2	905.7	901.4
12.5°	920.9	910.0	903.5	897.0	892.7	886.2	875.4	866.7	860.2	855.9	849.4
15°	875.4	864.5	855.9	849.4	845.0	836.4	823.4	816.9	808.2	799.5	797.4
17.5°	823.4	810.4	801.7	795.2	788.7	782.2	769.2	762.7	756.2	747.5	741.0
20°	767.0	754.0	745.4	736.7	730.2	723.7	715.0	704.2	697.7	693.3	684.7
22.5°	708.5	697.7	684.7	680.3	676.0	660.8	654.3	645.7	641.3	634.8	630.5
25°	652.2	637.0	628.3	621.8	615.3	604.5	593.7	587.2	582.8	578.5	572.0
27.5°	589.3	580.7	569.8	561.2	559.0	548.2	537.3	530.8	524.3	520.0	513.5
30°	522.2	511.3	502.7	502.7	498.3	489.7	485.3	476.7	468.0	465.8	463.7
32.5°	452.8	446.3	439.8	435.5	435.5	429.0	422.5	420.3	416.0	411.7	411.7
35°	390.0	383.5	377.0	374.8	374.8	370.5	368.3	366.2	366.2	364.0	361.8
37.5°	329.3	320.7	314.2	314.2	314.2	314.2	314.2	314.2	314.2	318.5	316.3
40°	273.0	268.7	266.5	264.3	264.3	264.3	266.5	266.5	268.7	273.0	275.2
42.5°	223.2	223.2	221.0	221.0	218.8	221.0	223.2	225.3	227.5	227.5	231.8
45°	186.3	184.2	182.0	182.0	184.2	182.0	184.2	188.5	188.5	190.7	192.8
47.5°	151.7	149.5	149.5	149.5	149.5	149.5	149.5	151.7	153.8	153.8	156.0
50°	123.5	121.3	119.2	121.3	119.2	119.2	121.3	121.3	121.3	123.5	123.5
52.5°	97.5	95.3	93.2	93.2	93.2	93.2	93.2	93.2	93.2	93.2	93.2
55°	75.8	73.7	71.5	71.5	69.3	69.3	67.2	67.2	67.2	67.2	67.2
57.5°	60.7	56.3	54.2	52.0	52.0	47.7	45.5	45.5	43.3	43.3	43.3
60°	45.5	43.3	39.0	39.0	36.8	32.5	30.3	26.0	26.0	23.8	23.8
62.5°	34.7	32.5	30.3	28.2	26.0	21.7	17.3	13.0	8.7	8.7	10.8
65°	26.0	23.8	19.5	17.3	17.3	13.0	8.7	4.3	2.2	2.2	4.3
67.5°	19.5	17.3	13.0	10.8	8.7	6.5	2.2	0.0	0.0	0.0	0.0
70°	13.0	10.8	6.5	6.5	4.3	2.2	0.0	0.0	0.0	0.0	0.0
72.5°	8.7	6.5	4.3	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	4.3	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0	1053.0
2.5°	1022.7	1022.7	1022.7	1022.7	1020.5	1020.5	1020.5	1020.5
5°	990.2	983.7	983.7	983.7	983.7	983.7	981.5	979.4
7.5°	944.7	940.4	940.4	938.2	938.2	936.0	936.0	933.9
10°	897.0	892.7	892.7	888.4	888.4	886.2	884.0	884.0
12.5°	842.9	838.5	838.5	838.5	834.2	834.2	829.9	829.9
15°	788.7	784.4	782.2	782.2	777.9	777.9	775.7	775.7
17.5°	732.4	730.2	725.9	725.9	723.7	719.4	719.4	719.4
20°	680.3	673.8	671.7	671.7	665.2	665.2	663.0	663.0
22.5°	624.0	619.7	617.5	615.3	611.0	613.2	608.8	608.8
25°	567.7	567.7	563.3	563.3	561.2	559.0	556.8	556.8
27.5°	513.5	513.5	511.3	511.3	509.2	507.0	507.0	509.2
30°	461.5	461.5	461.5	463.7	461.5	459.3	461.5	461.5
32.5°	411.7	411.7	413.8	411.7	413.8	413.8	413.8	413.8
35°	364.0	364.0	366.2	366.2	368.3	368.3	370.5	370.5
37.5°	316.3	320.7	320.7	320.7	325.0	325.0	327.2	327.2
40°	275.2	275.2	277.3	279.5	281.7	283.8	286.0	283.8
42.5°	234.0	234.0	236.2	238.3	240.5	242.7	244.8	244.8
45°	192.8	195.0	197.2	197.2	201.5	203.7	203.7	205.8
47.5°	156.0	160.3	160.3	160.3	162.5	164.7	166.8	164.7
50°	123.5	125.7	125.7	125.7	127.8	130.0	130.0	130.0
52.5°	93.2	95.3	95.3	95.3	97.5	97.5	97.5	99.7
55°	67.2	67.2	67.2	69.3	69.3	69.3	69.3	69.3
57.5°	43.3	43.3	43.3	45.5	47.7	47.7	45.5	45.5
60°	23.8	26.0	28.2	28.2	28.2	30.3	28.2	28.2
62.5°	13.0	15.2	15.2	15.2	15.2	15.2	15.2	15.2
65°	4.3	6.5	6.5	6.5	6.5	6.5	4.3	4.3
67.5°	2.2	2.2	2.2	2.2	2.2	0.0	2.2	2.2
70°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)