

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: P242029

Luminaire Tested: **PRS415D010-S4M12-41SWWMW**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242029
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1802-584-63)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PRS415D010-S4M12-41SWWMW
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM MATTE WHITE
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 792.3 lumens
Efficiency: N/A
Efficacy: 66.0 lumens/watt
Spacing Criteria (0/90/45): 1 / 0.97 / 1.07
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')
CIE Type: Direct

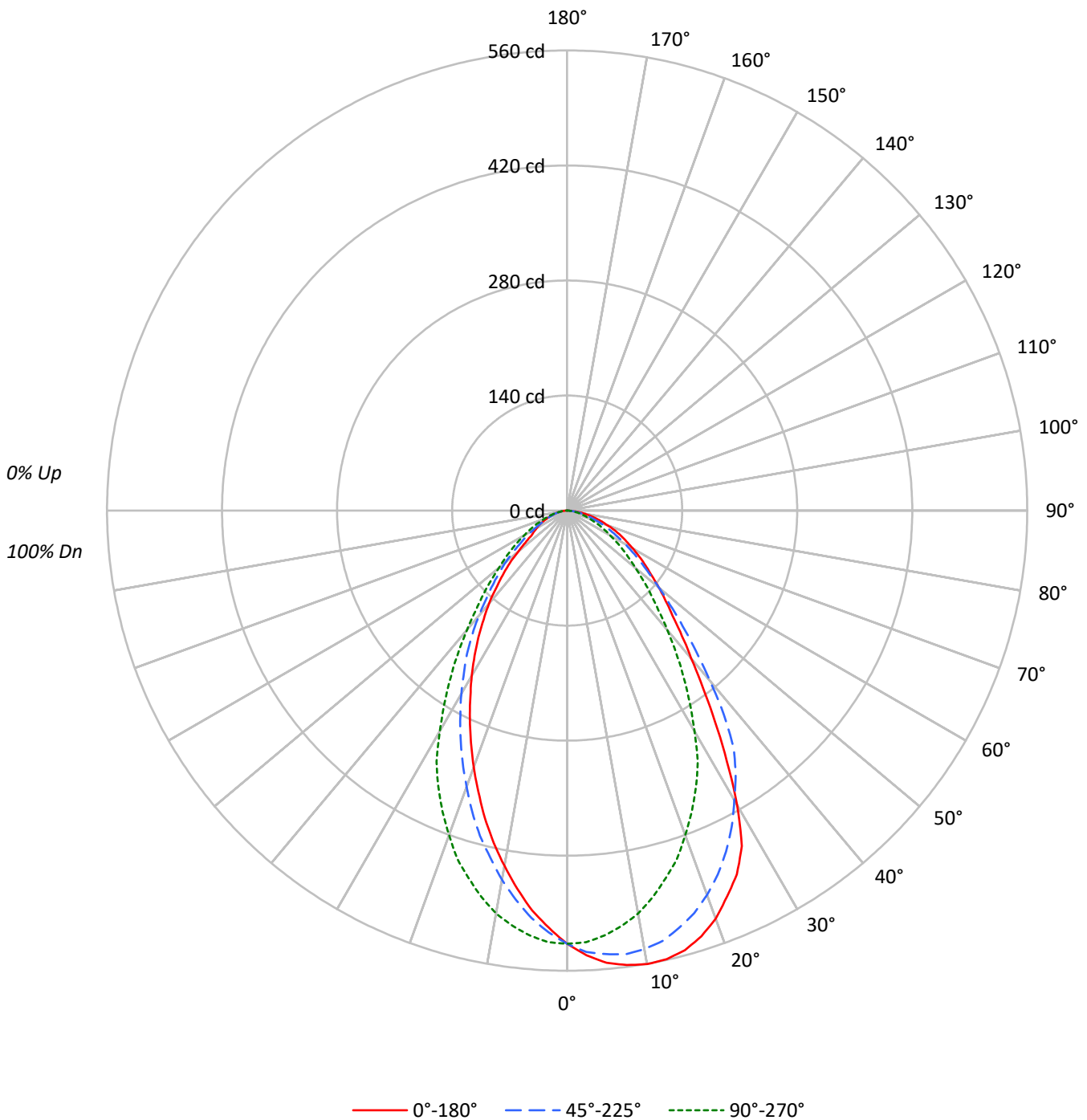
Input Watts (W): 12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	111	107	104	101	109	105	102	99	101	98	96	97	95	93	94	92	91	89				89
2	103	97	91	86	101	95	90	85	91	87	84	88	85	82	85	82	80	78				78
3	96	87	81	75	94	86	80	75	83	78	73	80	76	72	78	74	71	69				69
4	89	79	72	66	87	78	71	66	76	70	65	73	68	64	71	67	63	62				62
5	83	72	65	59	81	71	64	59	69	63	58	67	62	58	66	61	57	55				55
6	78	66	59	53	76	65	58	53	64	57	53	62	57	52	61	56	52	50				50
7	73	61	54	48	71	60	53	48	59	53	48	58	52	48	56	51	47	45				45
8	68	57	49	44	67	56	49	44	55	48	44	54	48	44	53	47	43	42				42
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38				38
10	61	49	42	37	60	49	42	37	48	41	37	47	41	37	46	41	37	35				35

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	40346	40346	40346
5°	42452	39885	37527
10°	43564	38691	34129
15°	43885	36698	30667
20°	43049	34244	27068
25°	41248	31333	23665
30°	36565	27364	20523
35°	29303	23071	17586
40°	23471	18935	14798
45°	19647	15599	11994
50°	17326	12873	9217
55°	15493	11036	7126
60°	14099	9201	6537
65°	13059	7969	6049
70°	11637	6580	5371
75°	10647	5530	4732
80°	9433	4717	4099
85°	5884	3513	3513



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.0	6.2
10°-20°	130.9	16.5
20°-30°	173.8	21.9
30°-40°	163.8	20.7
40°-50°	119.8	15.1
50°-60°	78.7	9.9
60°-70°	47.4	6.0
70°-80°	23.3	2.9
80°-90°	5.6	0.7
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°	353.7	44.6
0°-40°	517.4	65.3
0°-60°	716.0	90.4
0°-90°	792.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	792.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	527	527	527	527	527	
5°	552	542	519	498	488	53
15°	554	526	463	410	387	155
25°	488	458	371	307	280	222
35°	314	354	247	212	188	197
45°	182	199	144	128	111	143
55°	116	109	83	69	53	105
65°	72	59	44	32	33	71
75°	36	27	19	16	16	38
85°	7	5	4	4	4	9
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°	527.1	527.1	527.1	527.1	527.1	527.1	527.1	527.1	527.1	527.1	527.1
2.5°	541.8	541.8	541.8	541.8	540.5	540.5	540.5	539.1	539.1	537.8	537.8
5°	552.5	552.5	551.2	551.2	549.8	549.8	548.5	547.1	545.8	544.5	541.8
7.5°	557.8	557.8	556.5	556.5	555.2	555.2	553.8	552.5	549.8	547.1	544.5
10°	560.5	559.2	559.2	557.8	556.5	555.2	553.8	552.5	548.5	545.8	541.8
12.5°	559.2	557.8	557.8	555.2	553.8	552.5	551.2	548.5	544.5	540.5	536.5
15°	553.8	552.5	551.2	549.8	547.1	545.8	544.5	540.5	536.5	531.1	525.8
17.5°	543.1	541.8	541.8	539.1	536.5	535.1	533.8	529.8	524.5	519.1	513.8
20°	528.5	527.1	525.8	524.5	521.8	520.5	519.1	515.1	509.8	504.4	497.8
22.5°	508.4	507.1	507.1	505.8	503.1	501.8	500.4	496.4	492.4	485.8	479.1
25°	488.4	487.1	485.8	484.4	481.8	479.1	477.8	473.8	469.7	465.7	457.7
27.5°	460.4	461.7	461.7	460.4	459.1	457.7	456.4	451.1	445.7	440.4	433.7
30°	413.7	411.0	413.7	417.7	421.7	423.0	427.0	427.0	421.7	415.0	407.0
32.5°	361.7	363.0	364.3	369.7	375.0	376.3	379.0	387.0	393.7	389.7	381.7
35°	313.6	314.9	317.6	321.6	325.6	332.3	335.0	341.6	348.3	356.3	353.6
37.5°	270.9	272.2	274.9	277.6	284.3	286.9	292.3	297.6	308.3	314.9	313.6
40°	234.9	236.2	237.5	240.2	248.2	249.6	252.2	260.2	266.9	272.2	269.6
42.5°	206.8	205.5	208.2	210.9	214.9	216.2	218.9	224.2	229.5	232.2	232.2
45°	181.5	182.8	184.2	186.8	188.2	190.8	192.2	196.2	197.5	198.8	198.8
47.5°	162.8	162.8	164.1	165.5	166.8	168.1	169.5	170.8	170.8	170.8	169.5
50°	145.5	145.5	146.8	148.1	148.1	149.5	149.5	149.5	148.1	146.8	145.5
52.5°	129.4	129.4	130.8	132.1	132.1	132.1	132.1	130.8	129.4	128.1	125.4
55°	116.1	116.1	117.4	117.4	117.4	117.4	117.4	114.8	112.1	110.8	109.4
57.5°	104.1	104.1	104.1	104.1	104.1	104.1	102.8	100.1	98.8	96.1	94.8
60°	92.1	92.1	92.1	92.1	92.1	90.7	89.4	88.1	85.4	82.7	81.4
62.5°	81.4	81.4	81.4	81.4	80.1	78.7	78.7	76.1	74.7	72.1	69.4
65°	72.1	72.1	70.7	70.7	69.4	68.1	68.1	65.4	64.1	61.4	58.7
67.5°	62.7	61.4	61.4	61.4	60.1	58.7	57.4	56.0	54.7	52.0	49.4
70°	52.0	52.0	53.4	52.0	50.7	49.4	49.4	46.7	45.4	44.0	41.4
72.5°	44.0	44.0	44.0	42.7	42.7	41.4	40.0	38.7	37.4	36.0	33.4
75°	36.0	36.0	36.0	34.7	33.4	33.4	33.4	30.7	30.7	28.0	26.7
77.5°	28.0	28.0	28.0	26.7	26.7	26.7	25.4	24.0	22.7	22.7	21.4
80°	21.4	21.4	20.0	20.0	18.7	18.7	18.7	17.3	17.3	16.0	14.7
82.5°	14.7	13.3	13.3	13.3	13.3	13.3	12.0	12.0	10.7	10.7	9.3
85°	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	5.3	5.3	5.3
87.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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°	527.1	527.1	527.1	527.1	527.1	527.1	527.1	527.1	527.1	527.1	527.1
2.5°	535.1	535.1	533.8	532.5	531.1	531.1	529.8	528.5	527.1	525.8	523.1
5°	540.5	537.8	535.1	532.5	532.5	531.1	527.1	524.5	521.8	519.1	516.5
7.5°	540.5	536.5	533.8	529.8	528.5	525.8	521.8	517.8	513.8	509.8	505.8
10°	537.8	532.5	528.5	523.1	520.5	517.8	512.5	507.1	501.8	497.8	491.1
12.5°	529.8	524.5	519.1	512.5	509.8	507.1	500.4	493.8	488.4	481.8	476.4
15°	519.1	513.8	507.1	500.4	496.4	493.8	485.8	477.8	469.7	463.1	456.4
17.5°	507.1	499.1	492.4	484.4	480.4	475.1	467.1	459.1	451.1	444.4	436.4
20°	489.8	483.1	473.8	464.4	460.4	455.1	447.1	437.7	429.7	420.4	412.4
22.5°	472.4	463.1	453.7	443.1	439.1	433.7	424.4	413.7	405.7	396.3	387.0
25°	449.7	440.4	431.0	421.7	415.0	411.0	401.7	391.0	381.7	371.0	361.7
27.5°	425.7	416.4	407.0	396.3	391.0	385.7	373.7	363.0	352.3	344.3	333.6
30°	399.0	391.0	380.3	365.7	359.0	353.6	340.3	328.3	317.6	309.6	302.9
32.5°	372.3	360.3	345.6	331.0	324.3	317.6	304.3	293.6	285.6	277.6	269.6
35°	337.6	324.3	310.9	297.6	290.9	284.3	273.6	262.9	253.6	246.9	240.2
37.5°	305.6	290.9	276.2	264.2	257.6	252.2	240.2	232.2	224.2	217.5	210.9
40°	266.9	258.9	242.9	232.2	225.5	220.2	209.5	201.5	194.8	189.5	184.2
42.5°	229.5	225.5	212.2	201.5	196.2	192.2	182.8	176.2	169.5	164.1	161.5
45°	196.2	190.8	185.5	174.8	170.8	166.8	158.8	152.1	146.8	144.1	140.1
47.5°	168.1	164.1	158.8	150.8	146.8	144.1	137.5	132.1	128.1	125.4	122.8
50°	142.8	140.1	136.1	130.8	126.8	124.1	118.8	114.8	110.8	108.1	106.8
52.5°	122.8	120.1	116.1	112.1	109.4	106.8	102.8	98.8	97.4	94.8	92.1
55°	105.4	102.8	100.1	96.1	94.8	93.4	89.4	86.7	84.1	82.7	81.4
57.5°	92.1	89.4	85.4	82.7	81.4	80.1	77.4	74.7	72.1	70.7	69.4
60°	78.7	76.1	73.4	70.7	69.4	68.1	66.7	64.1	61.4	60.1	60.1
62.5°	68.1	65.4	62.7	60.1	60.1	58.7	56.0	54.7	53.4	52.0	50.7
65°	57.4	54.7	53.4	50.7	49.4	49.4	48.0	45.4	44.0	44.0	42.7
67.5°	48.0	46.7	44.0	42.7	41.4	41.4	38.7	38.7	37.4	36.0	34.7
70°	40.0	37.4	36.0	34.7	34.7	33.4	32.0	32.0	30.7	29.4	28.0
72.5°	32.0	30.7	29.4	28.0	28.0	26.7	26.7	25.4	24.0	24.0	22.7
75°	25.4	24.0	24.0	21.4	21.4	21.4	20.0	20.0	18.7	18.7	17.3
77.5°	20.0	18.7	17.3	17.3	16.0	16.0	16.0	14.7	14.7	14.7	13.3
80°	13.3	13.3	12.0	12.0	12.0	12.0	10.7	10.7	10.7	10.7	9.3
82.5°	9.3	8.0	8.0	8.0	8.0	8.0	6.7	6.7	6.7	6.7	6.7
85°	5.3	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
87.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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°	527.1	527.1	527.1	527.1	527.1	527.1	527.1	527.1	527.1	527.1	527.1
2.5°	521.8	520.5	519.1	519.1	517.8	516.5	516.5	515.1	513.8	512.5	511.1
5°	513.8	511.1	508.4	507.1	505.8	504.4	501.8	499.1	497.8	495.1	493.8
7.5°	501.8	497.8	495.1	492.4	491.1	487.1	484.4	481.8	477.8	476.4	473.8
10°	487.1	481.8	476.4	475.1	472.4	468.4	464.4	459.1	456.4	453.7	451.1
12.5°	469.7	464.4	457.7	455.1	452.4	447.1	441.7	437.7	432.4	429.7	425.7
15°	449.7	443.1	436.4	433.7	431.0	424.4	419.0	413.7	409.7	404.4	400.4
17.5°	428.4	420.4	412.4	409.7	407.0	400.4	395.0	388.3	384.3	379.0	375.0
20°	404.4	396.3	388.3	387.0	381.7	375.0	368.3	363.0	357.6	353.6	348.3
22.5°	379.0	371.0	364.3	360.3	356.3	349.6	343.0	337.6	332.3	325.6	321.6
25°	355.0	345.6	337.6	336.3	331.0	325.6	318.9	312.3	306.9	301.6	297.6
27.5°	327.0	320.3	312.3	308.3	305.6	298.9	293.6	286.9	281.6	276.2	272.2
30°	294.9	288.3	282.9	280.2	277.6	273.6	266.9	262.9	257.6	252.2	248.2
32.5°	264.2	260.2	254.9	252.2	250.9	245.5	242.9	238.9	233.5	229.5	225.5
35°	233.5	230.9	225.5	225.5	222.9	220.2	217.5	214.9	212.2	208.2	204.2
37.5°	206.8	204.2	200.2	197.5	197.5	194.8	193.5	190.8	189.5	186.8	184.2
40°	181.5	177.5	174.8	173.5	172.2	170.8	168.1	166.8	166.8	165.5	162.8
42.5°	156.1	154.8	152.1	150.8	152.1	149.5	149.5	148.1	145.5	144.1	142.8
45°	137.5	134.8	134.8	133.5	133.5	132.1	130.8	129.4	128.1	125.4	125.4
47.5°	120.1	118.8	117.4	117.4	116.1	116.1	114.8	113.4	112.1	110.8	108.1
50°	105.4	104.1	102.8	102.8	101.4	101.4	100.1	98.8	97.4	94.8	92.1
52.5°	92.1	90.7	89.4	89.4	88.1	88.1	86.7	84.1	82.7	81.4	78.7
55°	80.1	78.7	77.4	77.4	76.1	76.1	74.7	72.1	69.4	68.1	65.4
57.5°	68.1	68.1	66.7	66.7	65.4	64.1	62.7	60.1	58.7	57.4	54.7
60°	58.7	57.4	57.4	56.0	56.0	54.7	52.0	50.7	48.0	46.7	44.0
62.5°	49.4	49.4	48.0	46.7	46.7	44.0	42.7	41.4	40.0	37.4	38.7
65°	41.4	40.0	40.0	38.7	38.7	36.0	34.7	33.4	32.0	32.0	33.4
67.5°	34.7	33.4	32.0	32.0	30.7	29.4	28.0	28.0	28.0	28.0	28.0
70°	28.0	26.7	25.4	25.4	25.4	24.0	22.7	22.7	22.7	24.0	24.0
72.5°	22.7	21.4	20.0	20.0	18.7	18.7	18.7	18.7	18.7	20.0	20.0
75°	17.3	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
77.5°	13.3	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
80°	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3
82.5°	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
85°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
87.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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°	527.1	527.1	527.1	527.1	527.1	527.1	527.1	527.1
2.5°	511.1	511.1	511.1	509.8	509.8	509.8	509.8	508.4
5°	492.4	492.4	491.1	491.1	489.8	489.8	489.8	488.4
7.5°	471.1	469.7	469.7	468.4	467.1	465.7	465.7	464.4
10°	448.4	445.7	443.1	444.4	441.7	441.7	439.1	439.1
12.5°	423.0	420.4	420.4	417.7	415.0	415.0	413.7	413.7
15°	396.3	393.7	392.3	391.0	389.7	388.3	388.3	387.0
17.5°	369.7	368.3	367.0	365.7	363.0	361.7	360.3	359.0
20°	344.3	340.3	339.0	339.0	335.0	335.0	332.3	332.3
22.5°	317.6	313.6	313.6	312.3	309.6	306.9	306.9	305.6
25°	292.3	289.6	286.9	285.6	284.3	281.6	281.6	280.2
27.5°	266.9	264.2	262.9	261.6	258.9	257.6	256.2	254.9
30°	244.2	240.2	238.9	237.5	234.9	233.5	232.2	232.2
32.5°	221.5	217.5	217.5	214.9	213.5	210.9	209.5	209.5
35°	200.2	197.5	194.8	193.5	190.8	190.8	188.2	188.2
37.5°	178.8	176.2	176.2	173.5	170.8	169.5	168.1	166.8
40°	160.1	156.1	156.1	153.5	150.8	149.5	148.1	148.1
42.5°	141.5	137.5	136.1	134.8	132.1	129.4	129.4	128.1
45°	122.8	120.1	118.8	117.4	114.8	112.1	112.1	110.8
47.5°	105.4	104.1	101.4	100.1	98.8	96.1	94.8	94.8
50°	90.7	89.4	86.7	85.4	82.7	80.1	78.7	77.4
52.5°	76.1	74.7	73.4	72.1	69.4	66.7	65.4	64.1
55°	64.1	62.7	60.1	60.1	57.4	56.0	54.7	53.4
57.5°	52.0	50.7	49.4	49.4	48.0	48.0	48.0	48.0
60°	42.7	44.0	44.0	44.0	44.0	44.0	44.0	42.7
62.5°	38.7	38.7	38.7	38.7	38.7	38.7	38.7	38.7
65°	33.4	33.4	33.4	33.4	33.4	33.4	33.4	33.4
67.5°	28.0	28.0	29.4	28.0	28.0	28.0	28.0	28.0
70°	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
72.5°	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
75°	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
77.5°	13.3	13.3	12.0	12.0	13.3	13.3	12.0	13.3
80°	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3
82.5°	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
85°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
87.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)