

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: P242044

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

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242044
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1802-584-64)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PRS415D010-S4M12-41SWWMB
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM MATTE BLACK
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 608.3 lumens
Efficiency: N/A
Efficacy: 50.7 lumens/watt
Spacing Criteria (0/90/45): 0.96 / 0.94 / 1.03
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')
CIE Type: Direct

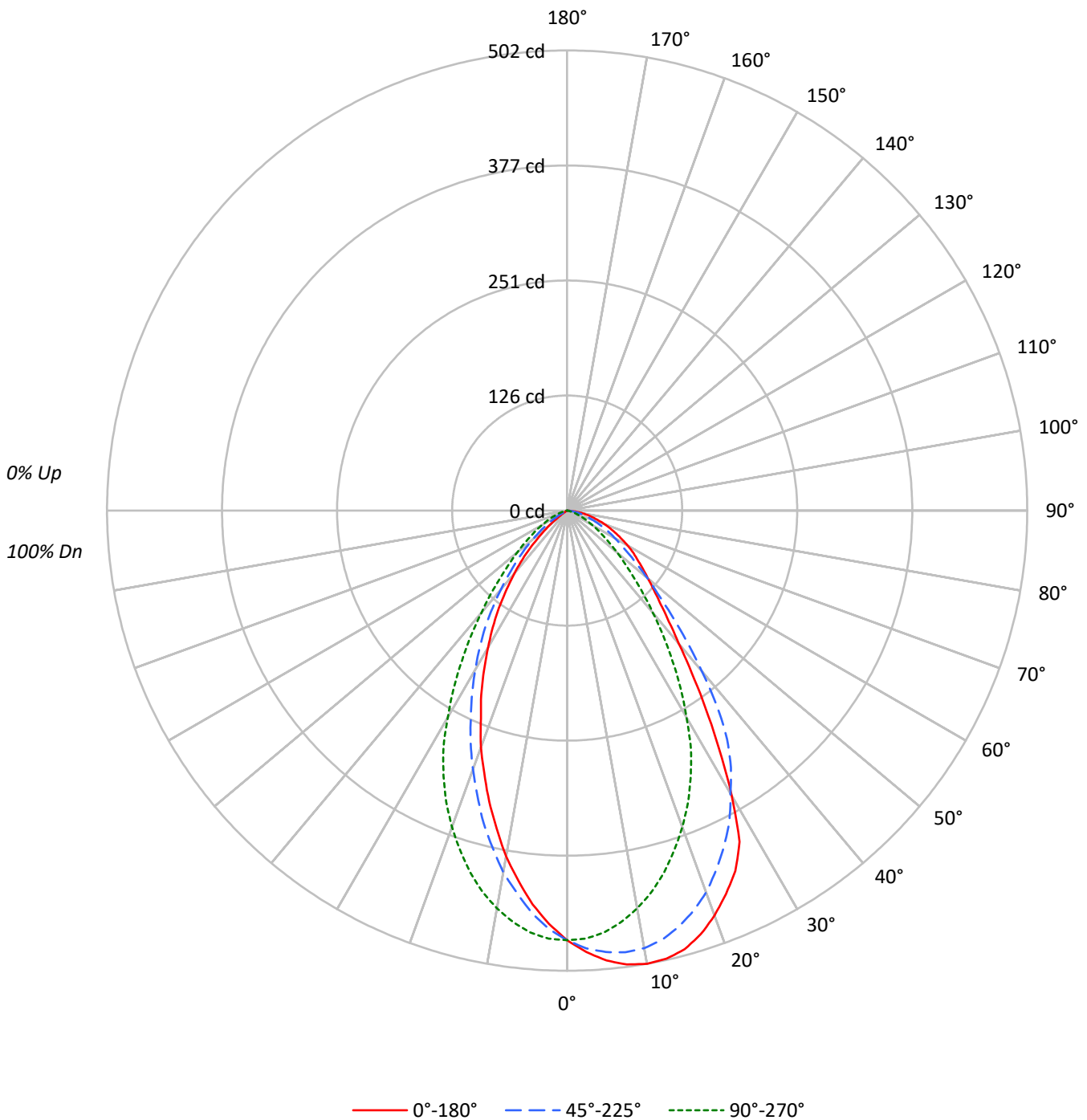
Input Watts (W): 12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	112	108	105	103	109	106	104	101	102	100	98	98	97	95	95	93	92	90					90			
2	105	99	94	89	102	97	92	88	93	90	86	90	87	84	88	85	83	81					81			
3	98	90	84	79	96	88	83	78	86	81	77	83	79	76	81	77	74	73					73			
4	91	82	75	70	89	81	75	70	79	73	69	77	72	68	75	71	67	65					65			
5	86	75	68	63	84	74	68	63	73	67	62	71	66	62	69	65	61	59					59			
6	80	70	62	57	79	69	62	57	67	61	57	66	60	56	64	59	56	54					54			
7	76	64	57	52	74	64	57	52	62	56	52	61	56	51	60	55	51	50					50			
8	71	60	53	48	70	59	53	48	58	52	48	57	51	47	56	51	47	46					46			
9	67	56	49	44	66	55	49	44	54	48	44	53	48	44	52	47	44	42					42			
10	64	52	46	41	62	52	45	41	51	45	41	50	45	41	49	44	41	39					39			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	35876	35876	35876
5°	37857	35498	33139
10°	39025	34245	29784
15°	39257	32379	26032
20°	38284	29911	22408
25°	36654	26950	18724
30°	31748	23015	15229
35°	24585	18716	12101
40°	18945	14538	8943
45°	15609	10987	5921
50°	13670	8431	3025
55°	12478	6419	707
60°	11650	4899	199
65°	10650	3622	0
70°	9869	2395	0
75°	8695	1567	0
80°	7670	573	0
85°	4655	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	43.4	7.1
10°-20°	114.9	18.9
20°-30°	148.5	24.4
30°-40°	131.9	21.7
40°-50°	85.8	14.1
50°-60°	47.7	7.8
60°-70°	24.1	4.0
70°-80°	10.1	1.7
80°-90°	1.8	0.3
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°	306.9	50.5
0°-40°	438.8	72.1
0°-60°	572.3	94.1
0°-90°	608.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	608.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	469	469	469	469	469	
5°	493	483	462	441	431	47
15°	495	470	409	352	328	139
25°	434	405	319	248	222	196
35°	263	304	200	156	130	166
45°	144	160	102	77	55	113
55°	94	82	48	28	5	85
65°	59	43	20	1	0	58
75°	29	19	5	0	0	31
85°	5	3	0	0	0	7
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°	468.7	468.7	468.7	468.7	468.7	468.7	468.7	468.7	468.7	468.7	468.7
2.5°	482.0	480.7	482.0	480.7	480.7	480.7	480.7	479.4	479.4	478.0	478.0
5°	492.7	492.7	491.4	491.4	490.0	490.0	490.0	488.7	487.4	486.0	483.4
7.5°	499.4	499.4	498.1	498.1	496.7	495.4	495.4	492.7	491.4	488.7	486.0
10°	502.1	502.1	500.7	499.4	498.1	496.7	496.7	494.1	491.4	487.4	484.7
12.5°	500.7	500.7	499.4	498.1	496.7	495.4	494.1	491.4	487.4	483.4	479.4
15°	495.4	495.4	494.1	492.7	490.0	488.7	487.4	484.7	480.7	475.4	470.0
17.5°	484.7	484.7	483.4	482.0	480.7	479.4	476.7	474.0	468.7	463.3	458.0
20°	470.0	470.0	470.0	468.7	466.0	464.7	463.3	459.3	455.3	450.0	443.3
22.5°	452.7	452.7	451.3	450.0	447.3	447.3	444.6	440.6	436.6	431.3	424.6
25°	434.0	432.6	431.3	431.3	427.3	426.0	424.6	420.6	416.6	411.3	404.6
27.5°	407.3	405.9	407.3	407.3	405.9	404.6	403.3	399.2	392.6	387.2	383.2
30°	359.2	360.5	360.5	363.2	368.5	372.5	375.2	375.2	369.9	364.5	356.5
32.5°	308.5	311.1	312.5	317.8	323.1	327.1	329.8	335.2	341.8	340.5	332.5
35°	263.1	265.7	267.1	271.1	277.7	280.4	284.4	292.4	300.4	307.1	304.4
37.5°	223.0	223.0	227.0	231.0	236.3	240.4	244.4	251.0	261.7	267.1	268.4
40°	189.6	190.9	192.3	197.6	201.6	205.6	208.3	215.0	224.3	228.3	228.3
42.5°	164.2	164.2	165.6	168.2	173.6	174.9	177.6	182.9	188.3	190.9	192.3
45°	144.2	144.2	144.2	146.9	149.6	150.9	153.6	157.6	158.9	160.2	160.2
47.5°	128.2	128.2	128.2	129.5	130.9	132.2	133.5	134.9	136.2	136.2	133.5
50°	114.8	114.8	116.2	116.2	116.2	117.5	117.5	117.5	116.2	114.8	113.5
52.5°	104.2	104.2	104.2	104.2	104.2	104.2	104.2	102.8	100.1	98.8	96.1
55°	93.5	94.8	94.8	94.8	93.5	93.5	92.1	90.8	86.8	84.1	81.5
57.5°	85.5	85.5	85.5	84.1	84.1	82.8	81.5	78.8	76.1	73.4	69.4
60°	76.1	76.1	76.1	74.8	74.8	73.4	72.1	69.4	66.8	62.8	60.1
62.5°	66.8	66.8	66.8	66.8	65.4	64.1	62.8	60.1	57.4	54.7	52.1
65°	58.8	58.8	58.8	58.8	56.1	54.7	53.4	50.7	48.1	45.4	42.7
67.5°	50.7	50.7	50.7	49.4	48.1	46.7	45.4	44.1	41.4	38.7	36.1
70°	44.1	44.1	42.7	41.4	40.1	40.1	38.7	36.1	34.7	32.0	29.4
72.5°	36.1	36.1	36.1	34.7	33.4	32.0	30.7	29.4	28.0	25.4	24.0
75°	29.4	29.4	29.4	28.0	26.7	25.4	25.4	22.7	21.4	20.0	18.7
77.5°	22.7	22.7	22.7	21.4	20.0	20.0	18.7	17.4	16.0	14.7	13.4
80°	17.4	17.4	16.0	16.0	14.7	14.7	13.4	13.4	12.0	10.7	9.3
82.5°	10.7	10.7	10.7	10.7	9.3	9.3	9.3	8.0	8.0	6.7	5.3
85°	5.3	5.3	5.3	5.3	4.0	4.0	4.0	4.0	4.0	2.7	2.7
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	468.7	468.7	468.7	468.7	468.7	468.7	468.7	468.7	468.7	468.7	468.7
2.5°	476.7	475.4	474.0	472.7	472.7	471.4	471.4	470.0	468.7	467.3	466.0
5°	482.0	479.4	476.7	475.4	474.0	472.7	470.0	467.3	464.7	462.0	459.3
7.5°	482.0	479.4	475.4	472.7	470.0	468.7	464.7	460.7	456.7	452.7	448.7
10°	480.7	475.4	471.4	467.3	463.3	460.7	456.7	451.3	446.0	440.6	435.3
12.5°	474.0	468.7	463.3	458.0	454.0	451.3	444.6	438.0	432.6	426.0	419.3
15°	464.7	459.3	452.7	444.6	442.0	438.0	431.3	423.3	416.6	408.6	401.9
17.5°	452.7	444.6	438.0	430.0	426.0	421.9	413.9	404.6	397.9	388.6	380.6
20°	436.6	430.0	419.3	412.6	407.3	403.3	393.9	384.6	375.2	367.2	356.5
22.5°	417.9	409.9	400.6	391.2	387.2	381.9	372.5	361.9	353.9	344.5	333.8
25°	397.9	388.6	379.2	368.5	364.5	360.5	349.8	340.5	329.8	319.1	311.1
27.5°	373.9	365.9	356.5	345.8	341.8	336.5	324.5	313.8	303.1	292.4	283.1
30°	349.8	343.2	331.2	319.1	312.5	305.8	293.8	281.7	269.7	260.4	252.4
32.5°	325.8	312.5	299.1	285.8	277.7	271.1	260.4	249.7	239.0	231.0	221.7
35°	293.8	280.4	265.7	252.4	245.7	240.4	228.3	217.7	208.3	200.3	192.3
37.5°	260.4	247.0	233.7	220.3	215.0	209.6	197.6	188.3	178.9	172.3	164.2
40°	224.3	217.7	203.0	190.9	185.6	180.3	170.9	160.2	153.6	145.5	138.9
42.5°	190.9	184.3	173.6	162.9	157.6	153.6	144.2	136.2	129.5	122.8	117.5
45°	160.2	154.9	146.9	138.9	133.5	129.5	120.2	113.5	108.2	101.5	97.5
47.5°	133.5	129.5	124.2	116.2	112.2	108.2	100.1	94.8	89.5	85.5	81.5
50°	110.8	108.2	102.8	97.5	93.5	90.8	84.1	78.8	74.8	70.8	68.1
52.5°	93.5	89.5	85.5	80.1	77.4	74.8	70.8	65.4	62.8	58.8	56.1
55°	78.8	76.1	72.1	66.8	64.1	62.8	58.8	54.7	50.7	48.1	45.4
57.5°	66.8	64.1	60.1	56.1	54.7	52.1	48.1	44.1	41.4	40.1	37.4
60°	57.4	53.4	50.7	46.7	44.1	42.7	38.7	36.1	33.4	32.0	29.4
62.5°	48.1	45.4	41.4	37.4	36.1	34.7	32.0	29.4	26.7	25.4	22.7
65°	40.1	37.4	34.7	30.7	29.4	28.0	25.4	22.7	21.4	20.0	18.7
67.5°	33.4	30.7	28.0	25.4	24.0	21.4	20.0	18.7	16.0	14.7	13.4
70°	26.7	24.0	21.4	18.7	18.7	17.4	14.7	13.4	12.0	10.7	9.3
72.5°	21.4	18.7	17.4	14.7	13.4	13.4	12.0	10.7	9.3	8.0	6.7
75°	16.0	14.7	12.0	10.7	9.3	9.3	8.0	6.7	6.7	5.3	4.0
77.5°	12.0	10.7	9.3	8.0	6.7	6.7	5.3	4.0	4.0	2.7	2.7
80°	8.0	6.7	5.3	4.0	4.0	4.0	2.7	2.7	2.7	1.3	1.3
82.5°	4.0	4.0	2.7	2.7	2.7	2.7	1.3	1.3	1.3	1.3	0.0
85°	1.3	1.3	1.3	1.3	1.3	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°	468.7	468.7	468.7	468.7	468.7	468.7	468.7	468.7	468.7	468.7	468.7
2.5°	464.7	463.3	462.0	462.0	460.7	459.3	458.0	458.0	456.7	455.3	455.3
5°	456.7	454.0	451.3	450.0	448.7	446.0	444.6	442.0	440.6	438.0	436.6
7.5°	444.6	440.6	436.6	435.3	434.0	431.3	427.3	423.3	420.6	419.3	416.6
10°	431.3	426.0	420.6	417.9	416.6	411.3	407.3	403.3	400.6	396.6	392.6
12.5°	412.6	407.3	401.9	399.2	396.6	391.2	387.2	381.9	376.5	372.5	368.5
15°	393.9	387.2	380.6	377.9	373.9	368.5	363.2	357.9	352.5	347.2	343.2
17.5°	372.5	365.9	357.9	353.9	351.2	344.5	336.5	332.5	325.8	321.8	316.5
20°	349.8	341.8	333.8	331.2	327.1	319.1	312.5	305.8	300.4	295.1	289.8
22.5°	325.8	316.5	308.5	305.8	301.8	293.8	287.1	281.7	275.1	268.4	263.1
25°	301.8	292.4	284.4	279.1	275.1	268.4	260.4	255.0	248.4	243.0	239.0
27.5°	275.1	265.7	257.7	253.7	251.0	244.4	237.7	231.0	224.3	219.0	213.6
30°	244.4	237.7	231.0	228.3	224.3	219.0	212.3	207.0	200.3	195.0	189.6
32.5°	215.0	208.3	201.6	200.3	197.6	192.3	188.3	182.9	177.6	172.3	168.2
35°	186.9	180.3	176.3	173.6	170.9	166.9	162.9	160.2	156.2	150.9	146.9
37.5°	158.9	156.2	149.6	148.2	146.9	142.9	140.2	137.5	133.5	130.9	126.9
40°	134.9	130.9	126.9	125.5	122.8	120.2	117.5	114.8	112.2	110.8	106.8
42.5°	112.2	109.5	105.5	105.5	102.8	100.1	97.5	96.1	93.5	90.8	89.5
45°	94.8	90.8	89.5	86.8	86.8	84.1	81.5	80.1	77.4	74.8	72.1
47.5°	78.8	76.1	73.4	72.1	72.1	69.4	66.8	64.1	62.8	58.8	56.1
50°	65.4	62.8	61.4	60.1	58.8	57.4	54.7	52.1	49.4	46.7	42.7
52.5°	53.4	52.1	49.4	49.4	48.1	45.4	42.7	40.1	37.4	34.7	30.7
55°	44.1	41.4	40.1	38.7	37.4	36.1	33.4	30.7	28.0	24.0	21.4
57.5°	34.7	33.4	30.7	30.7	29.4	26.7	24.0	21.4	18.7	14.7	12.0
60°	28.0	25.4	24.0	22.7	21.4	20.0	16.0	13.4	10.7	8.0	4.0
62.5°	21.4	20.0	17.4	17.4	16.0	13.4	10.7	8.0	4.0	1.3	0.0
65°	16.0	14.7	13.4	12.0	10.7	8.0	5.3	2.7	1.3	0.0	0.0
67.5°	12.0	10.7	8.0	8.0	6.7	4.0	1.3	0.0	0.0	0.0	0.0
70°	8.0	6.7	5.3	4.0	2.7	1.3	0.0	0.0	0.0	0.0	0.0
72.5°	5.3	4.0	2.7	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0
75°	4.0	2.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.3	1.3	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°	468.7	468.7	468.7	468.7	468.7	468.7	468.7	468.7
2.5°	454.0	452.7	454.0	452.7	452.7	451.3	452.7	451.3
5°	435.3	434.0	434.0	432.6	432.6	432.6	431.3	431.3
7.5°	413.9	412.6	411.3	411.3	409.9	408.6	408.6	407.3
10°	391.2	388.6	385.9	387.2	384.6	384.6	383.2	383.2
12.5°	365.9	363.2	363.2	360.5	357.9	357.9	355.2	355.2
15°	340.5	337.8	335.2	333.8	331.2	331.2	329.8	328.5
17.5°	312.5	309.8	307.1	305.8	304.4	303.1	301.8	300.4
20°	285.8	281.7	280.4	279.1	276.4	275.1	273.7	275.1
22.5°	260.4	255.0	253.7	252.4	251.0	248.4	247.0	245.7
25°	233.7	229.7	227.0	227.0	224.3	223.0	220.3	221.7
27.5°	208.3	205.6	203.0	201.6	199.0	197.6	196.3	196.3
30°	185.6	181.6	180.3	177.6	176.3	173.6	172.3	172.3
32.5°	162.9	158.9	157.6	156.2	153.6	150.9	150.9	150.9
35°	142.9	138.9	137.5	134.9	132.2	129.5	129.5	129.5
37.5°	122.8	118.8	116.2	114.8	112.2	110.8	108.2	108.2
40°	104.2	100.1	97.5	96.1	93.5	90.8	89.5	89.5
42.5°	85.5	82.8	80.1	78.8	76.1	73.4	72.1	72.1
45°	68.1	65.4	64.1	62.8	60.1	56.1	54.7	54.7
47.5°	53.4	50.7	49.4	46.7	44.1	41.4	38.7	38.7
50°	40.1	37.4	34.7	33.4	30.7	28.0	25.4	25.4
52.5°	28.0	25.4	24.0	21.4	18.7	16.0	14.7	13.4
55°	17.4	14.7	13.4	12.0	9.3	8.0	5.3	5.3
57.5°	9.3	6.7	5.3	4.0	2.7	1.3	1.3	1.3
60°	2.7	1.3	1.3	1.3	1.3	1.3	1.3	1.3
62.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
65°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)