

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: P241999

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

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P241999
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: PRS415D010-S4M12-41SWWC
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM SPECULAR
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 801.7 lumens
Efficiency: N/A
Efficacy: 66.8 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

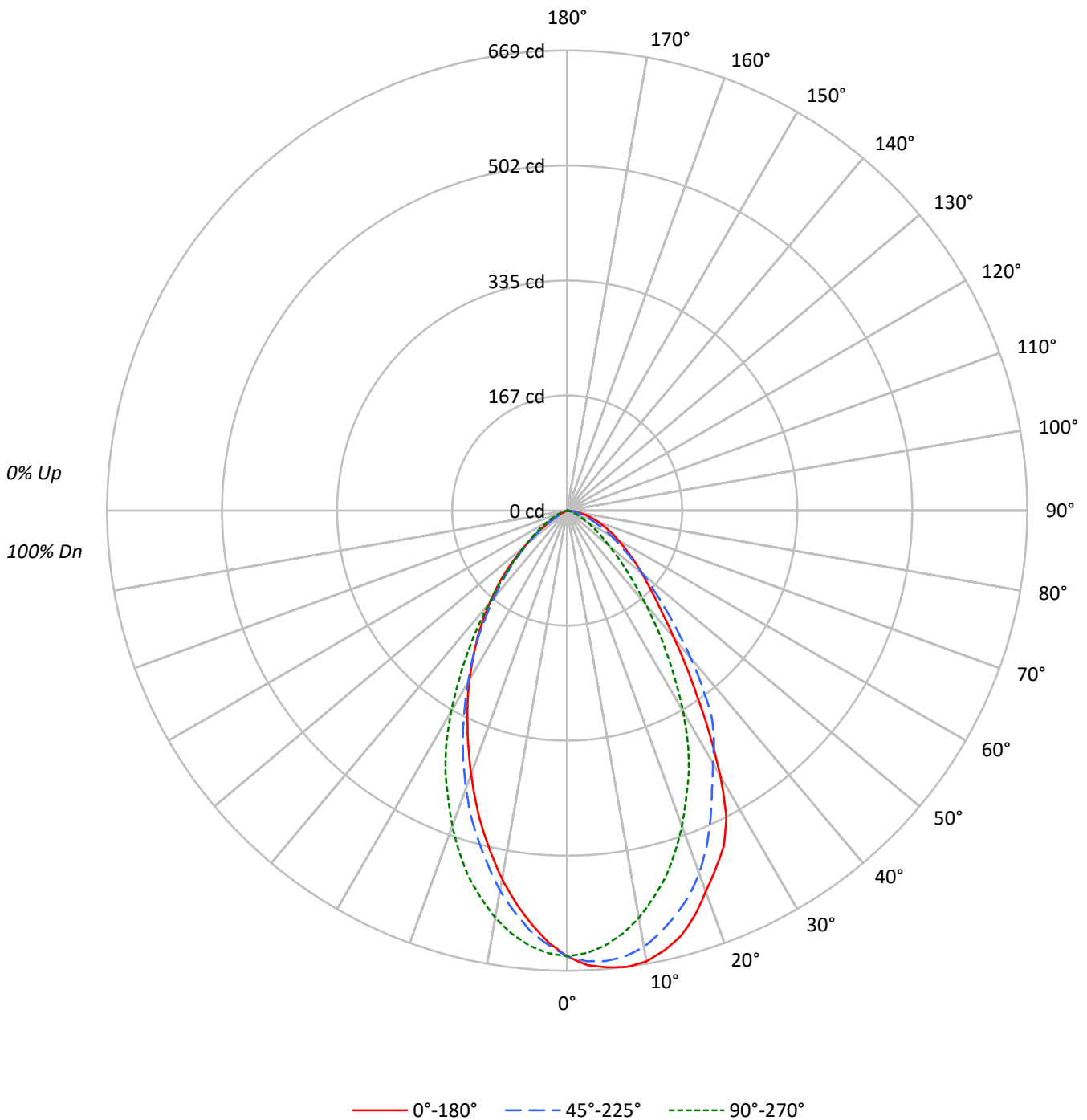
Input Watts (W): 12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	49600	49600	49600
5°	51219	48760	46301
10°	51710	46736	42282
15°	50716	43742	37823
20°	48002	39750	33234
25°	45488	35353	28935
30°	39358	29812	25101
35°	30771	23547	21305
40°	24111	17716	17456
45°	19625	12990	13715
50°	16826	9526	9526
55°	14773	7113	5698
60°	13058	5098	2648
65°	11827	3622	489
70°	10742	2395	0
75°	9464	1567	0
80°	7626	573	0
85°	4655	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.6	7.4
10°-20°	154.9	19.3
20°-30°	195.5	24.4
30°-40°	173.3	21.6
40°-50°	115.0	14.3
50°-60°	62.6	7.8
60°-70°	28.1	3.5
70°-80°	10.9	1.4
80°-90°	1.8	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°	410.0	51.1
0°-40°	583.3	72.8
0°-60°	760.8	94.9
0°-90°	801.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	801.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	648	648	648	648	648	
5°	667	657	635	613	603	64
15°	640	609	552	497	477	179
25°	539	493	419	359	343	244
35°	329	367	252	225	228	208
45°	181	201	120	116	127	142
55°	111	104	53	41	43	100
65°	65	51	20	1	3	65
75°	32	20	5	0	0	34
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°	648.0	648.0	648.0	648.0	648.0	648.0	648.0	648.0	648.0	648.0	648.0
2.5°	661.3	660.0	660.0	660.0	658.6	658.6	658.6	658.6	657.3	656.0	656.0
5°	666.6	668.0	666.6	665.3	665.3	665.3	664.0	662.6	661.3	660.0	657.3
7.5°	669.3	668.0	668.0	666.6	665.3	664.0	662.6	661.3	658.6	656.0	653.3
10°	665.3	664.0	662.6	662.6	658.6	658.6	657.3	654.6	650.6	648.0	644.0
12.5°	654.6	654.6	653.3	652.0	648.0	648.0	645.3	642.6	638.6	633.3	628.0
15°	640.0	640.0	637.3	636.0	633.3	632.0	629.3	625.3	621.3	616.0	609.3
17.5°	617.3	617.3	616.0	613.3	612.0	610.6	606.6	604.0	598.6	593.3	588.0
20°	589.3	586.6	586.6	585.3	582.6	581.3	580.0	576.0	572.0	566.6	561.3
22.5°	564.0	562.6	558.6	556.0	552.0	549.3	548.0	542.6	540.0	536.0	529.3
25°	538.6	536.0	534.6	530.6	525.3	524.0	520.0	512.0	506.6	500.0	493.3
27.5°	501.3	501.3	502.6	501.3	496.0	494.6	492.0	485.3	474.6	464.0	456.0
30°	445.3	444.0	445.3	448.0	452.0	453.3	456.0	454.6	446.6	434.6	424.0
32.5°	385.3	385.3	390.6	394.6	398.6	400.0	402.6	409.3	409.3	405.3	397.3
35°	329.3	332.0	336.0	340.0	345.3	346.6	353.3	354.6	362.6	368.0	366.6
37.5°	282.6	285.3	286.6	290.6	296.0	297.3	300.0	309.3	318.6	325.3	322.6
40°	241.3	241.3	245.3	249.3	254.6	256.0	260.0	265.3	276.0	278.6	278.6
42.5°	208.0	209.3	210.7	213.3	217.3	220.0	222.7	230.7	236.0	240.0	237.3
45°	181.3	182.7	184.0	186.7	189.3	190.7	193.3	198.7	202.7	202.7	201.3
47.5°	160.0	160.0	161.3	162.7	165.3	166.7	169.3	172.0	173.3	172.0	170.7
50°	141.3	142.7	142.7	144.0	145.3	148.0	149.3	149.3	149.3	148.0	145.3
52.5°	125.3	125.3	126.7	126.7	129.3	130.7	130.7	130.7	129.3	126.7	122.7
55°	110.7	110.7	110.7	112.0	114.7	114.7	114.7	113.3	112.0	108.0	104.0
57.5°	97.3	98.7	98.7	98.7	100.0	100.0	100.0	98.7	96.0	92.0	88.0
60°	85.3	86.7	86.7	86.7	88.0	88.0	86.7	85.3	82.7	77.3	74.7
62.5°	76.0	76.0	76.0	76.0	76.0	76.0	74.7	72.0	69.3	65.3	62.7
65°	65.3	65.3	65.3	66.7	65.3	64.0	64.0	61.3	58.7	54.7	50.7
67.5°	56.0	56.0	56.0	56.0	54.7	54.7	53.3	50.7	48.0	45.3	41.3
70°	48.0	48.0	48.0	46.7	45.3	45.3	44.0	41.3	38.7	36.0	33.3
72.5°	40.0	40.0	40.0	38.7	37.3	36.0	36.0	33.3	30.7	28.0	26.7
75°	32.0	32.0	32.0	30.7	29.3	28.0	28.0	25.3	24.0	22.7	20.0
77.5°	25.3	25.3	24.0	22.7	22.7	21.3	21.3	20.0	18.7	16.0	14.7
80°	17.3	17.3	17.3	17.3	16.0	14.7	14.7	13.3	12.0	10.7	9.3
82.5°	12.0	12.0	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	1.3	0.0	0.0	0.0	1.3	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°	648.0	648.0	648.0	648.0	648.0	648.0	648.0	648.0	648.0	648.0	648.0
2.5°	654.6	653.3	653.3	650.6	650.6	649.3	648.0	646.6	645.3	644.0	642.6
5°	656.0	653.3	650.6	648.0	648.0	645.3	642.6	640.0	638.6	634.6	632.0
7.5°	650.6	646.6	644.0	640.0	638.6	636.0	632.0	628.0	624.0	620.0	616.0
10°	640.0	634.6	630.6	626.6	622.6	621.3	616.0	612.0	605.3	601.3	597.3
12.5°	624.0	618.6	613.3	606.6	605.3	602.6	596.0	589.3	584.0	577.3	572.0
15°	604.0	598.6	590.6	585.3	581.3	577.3	572.0	565.3	557.3	552.0	545.3
17.5°	581.3	573.3	565.3	558.6	553.3	550.6	541.3	533.3	528.0	521.3	514.6
20°	554.6	545.3	536.0	526.6	522.6	517.3	509.3	501.3	493.3	488.0	478.6
22.5°	522.6	513.3	504.0	493.3	490.6	485.3	476.0	468.0	461.3	452.0	444.0
25°	486.6	478.6	472.0	462.6	457.3	452.0	444.0	434.6	425.3	418.6	409.3
27.5°	450.6	445.3	438.6	429.3	424.0	418.6	408.0	398.6	386.6	380.0	369.3
30°	416.0	412.0	402.6	393.3	384.0	380.0	365.3	354.6	344.0	337.3	329.3
32.5°	385.3	373.3	361.3	348.0	342.6	337.3	322.6	312.0	302.6	293.3	285.3
35°	350.6	332.0	318.6	306.6	300.0	294.6	282.6	270.6	262.6	252.0	246.6
37.5°	313.3	297.3	281.3	266.6	261.3	253.3	244.0	230.7	222.7	213.3	205.3
40°	273.3	262.6	245.3	230.7	224.0	218.7	206.7	196.0	185.3	177.3	172.0
42.5°	232.0	225.3	212.0	197.3	190.7	185.3	174.7	162.7	153.3	146.7	140.0
45°	197.3	192.0	181.3	168.0	160.0	154.7	144.0	133.3	125.3	120.0	116.0
47.5°	166.7	161.3	152.0	140.0	133.3	128.0	117.3	108.0	102.7	98.7	96.0
50°	140.0	133.3	125.3	117.3	110.7	105.3	96.0	89.3	84.0	80.0	78.7
52.5°	117.3	112.0	104.0	96.0	90.7	86.7	77.3	72.0	69.3	65.3	62.7
55°	98.7	93.3	86.7	78.7	74.7	70.7	64.0	60.0	56.0	53.3	50.7
57.5°	82.7	77.3	70.7	64.0	60.0	57.3	52.0	48.0	45.3	42.7	40.0
60°	69.3	64.0	58.7	52.0	49.3	46.7	42.7	38.7	36.0	33.3	30.7
62.5°	57.3	52.0	46.7	41.3	40.0	37.3	34.7	30.7	28.0	26.7	24.0
65°	48.0	42.7	37.3	33.3	32.0	29.3	26.7	24.0	21.3	20.0	18.7
67.5°	38.7	33.3	29.3	26.7	25.3	24.0	21.3	18.7	17.3	14.7	13.3
70°	30.7	26.7	22.7	20.0	18.7	17.3	16.0	14.7	12.0	10.7	9.3
72.5°	22.7	20.0	17.3	14.7	14.7	13.3	12.0	10.7	9.3	8.0	6.7
75°	17.3	14.7	13.3	10.7	10.7	9.3	8.0	6.7	5.3	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°	5.3	4.0	2.7	2.7	2.7	1.3	1.3	1.3	1.3	1.3	0.0
85°	1.3	1.3	1.3	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°	648.0	648.0	648.0	648.0	648.0	648.0	648.0	648.0	648.0	648.0	648.0
2.5°	641.3	640.0	638.6	637.3	637.3	634.6	634.6	633.3	632.0	632.0	630.6
5°	629.3	626.6	624.0	622.6	622.6	618.6	616.0	614.6	613.3	612.0	609.3
7.5°	612.0	609.3	605.3	602.6	601.3	597.3	594.6	590.6	588.0	586.6	582.6
10°	592.0	588.0	581.3	580.0	577.3	573.3	569.3	565.3	561.3	557.3	554.6
12.5°	566.6	560.0	556.0	552.0	549.3	545.3	538.6	533.3	529.3	526.6	522.6
15°	538.6	532.0	526.6	522.6	520.0	514.6	506.6	502.6	497.3	492.0	490.6
17.5°	506.6	498.6	493.3	489.3	485.3	481.3	473.3	469.3	465.3	460.0	456.0
20°	472.0	464.0	458.6	453.3	449.3	445.3	440.0	433.3	429.3	426.6	421.3
22.5°	436.0	429.3	421.3	418.6	416.0	406.6	402.6	397.3	394.6	390.6	388.0
25°	401.3	392.0	386.6	382.6	378.6	372.0	365.3	361.3	358.6	356.0	352.0
27.5°	362.6	357.3	350.6	345.3	344.0	337.3	330.6	326.6	322.6	320.0	316.0
30°	321.3	314.6	309.3	309.3	306.6	301.3	298.6	293.3	288.0	286.6	285.3
32.5°	278.6	274.6	270.6	268.0	268.0	264.0	260.0	258.6	256.0	253.3	253.3
35°	240.0	236.0	232.0	230.7	230.7	228.0	226.7	225.3	225.3	224.0	222.7
37.5°	202.7	197.3	193.3	193.3	193.3	193.3	193.3	193.3	193.3	196.0	194.7
40°	168.0	165.3	164.0	162.7	162.7	162.7	164.0	164.0	165.3	168.0	169.3
42.5°	137.3	137.3	136.0	136.0	134.7	136.0	137.3	138.7	140.0	140.0	142.7
45°	114.7	113.3	112.0	112.0	113.3	112.0	113.3	116.0	116.0	117.3	118.7
47.5°	93.3	92.0	92.0	92.0	92.0	92.0	92.0	93.3	94.7	94.7	96.0
50°	76.0	74.7	73.3	74.7	73.3	73.3	74.7	74.7	74.7	76.0	76.0
52.5°	60.0	58.7	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3	57.3
55°	46.7	45.3	44.0	44.0	42.7	42.7	41.3	41.3	41.3	41.3	41.3
57.5°	37.3	34.7	33.3	32.0	32.0	29.3	28.0	28.0	26.7	26.7	26.7
60°	28.0	26.7	24.0	24.0	22.7	20.0	18.7	16.0	16.0	14.7	14.7
62.5°	21.3	20.0	18.7	17.3	16.0	13.3	10.7	8.0	5.3	5.3	6.7
65°	16.0	14.7	12.0	10.7	10.7	8.0	5.3	2.7	1.3	1.3	2.7
67.5°	12.0	10.7	8.0	6.7	5.3	4.0	1.3	0.0	0.0	0.0	0.0
70°	8.0	6.7	4.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	2.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	1.3	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°	648.0	648.0	648.0	648.0	648.0	648.0	648.0	648.0
2.5°	629.3	629.3	629.3	629.3	628.0	628.0	628.0	628.0
5°	609.3	605.3	605.3	605.3	605.3	605.3	604.0	602.6
7.5°	581.3	578.6	578.6	577.3	577.3	576.0	576.0	574.6
10°	552.0	549.3	549.3	546.6	546.6	545.3	544.0	544.0
12.5°	518.6	516.0	516.0	516.0	513.3	513.3	510.6	510.6
15°	485.3	482.6	481.3	481.3	478.6	478.6	477.3	477.3
17.5°	450.6	449.3	446.6	446.6	445.3	442.6	442.6	442.6
20°	418.6	414.6	413.3	413.3	409.3	409.3	408.0	408.0
22.5°	384.0	381.3	380.0	378.6	376.0	377.3	374.6	374.6
25°	349.3	349.3	346.6	346.6	345.3	344.0	342.6	342.6
27.5°	316.0	316.0	314.6	314.6	313.3	312.0	312.0	313.3
30°	284.0	284.0	284.0	285.3	284.0	282.6	284.0	284.0
32.5°	253.3	253.3	254.6	253.3	254.6	254.6	254.6	254.6
35°	224.0	224.0	225.3	225.3	226.7	226.7	228.0	228.0
37.5°	194.7	197.3	197.3	197.3	200.0	200.0	201.3	201.3
40°	169.3	169.3	170.7	172.0	173.3	174.7	176.0	174.7
42.5°	144.0	144.0	145.3	146.7	148.0	149.3	150.7	150.7
45°	118.7	120.0	121.3	121.3	124.0	125.3	125.3	126.7
47.5°	96.0	98.7	98.7	98.7	100.0	101.3	102.7	101.3
50°	76.0	77.3	77.3	77.3	78.7	80.0	80.0	80.0
52.5°	57.3	58.7	58.7	58.7	60.0	60.0	60.0	61.3
55°	41.3	41.3	41.3	42.7	42.7	42.7	42.7	42.7
57.5°	26.7	26.7	26.7	28.0	29.3	29.3	28.0	28.0
60°	14.7	16.0	17.3	17.3	17.3	18.7	17.3	17.3
62.5°	8.0	9.3	9.3	9.3	9.3	9.3	9.3	9.3
65°	2.7	4.0	4.0	4.0	4.0	4.0	2.7	2.7
67.5°	1.3	1.3	1.3	1.3	1.3	0.0	1.3	1.3
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)