

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: P242050

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

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242050
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: PRS420D010-S4M12-41SWWMB-4000K
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 / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 988.5 lumens
Efficiency: N/A
Efficacy: 49.4 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

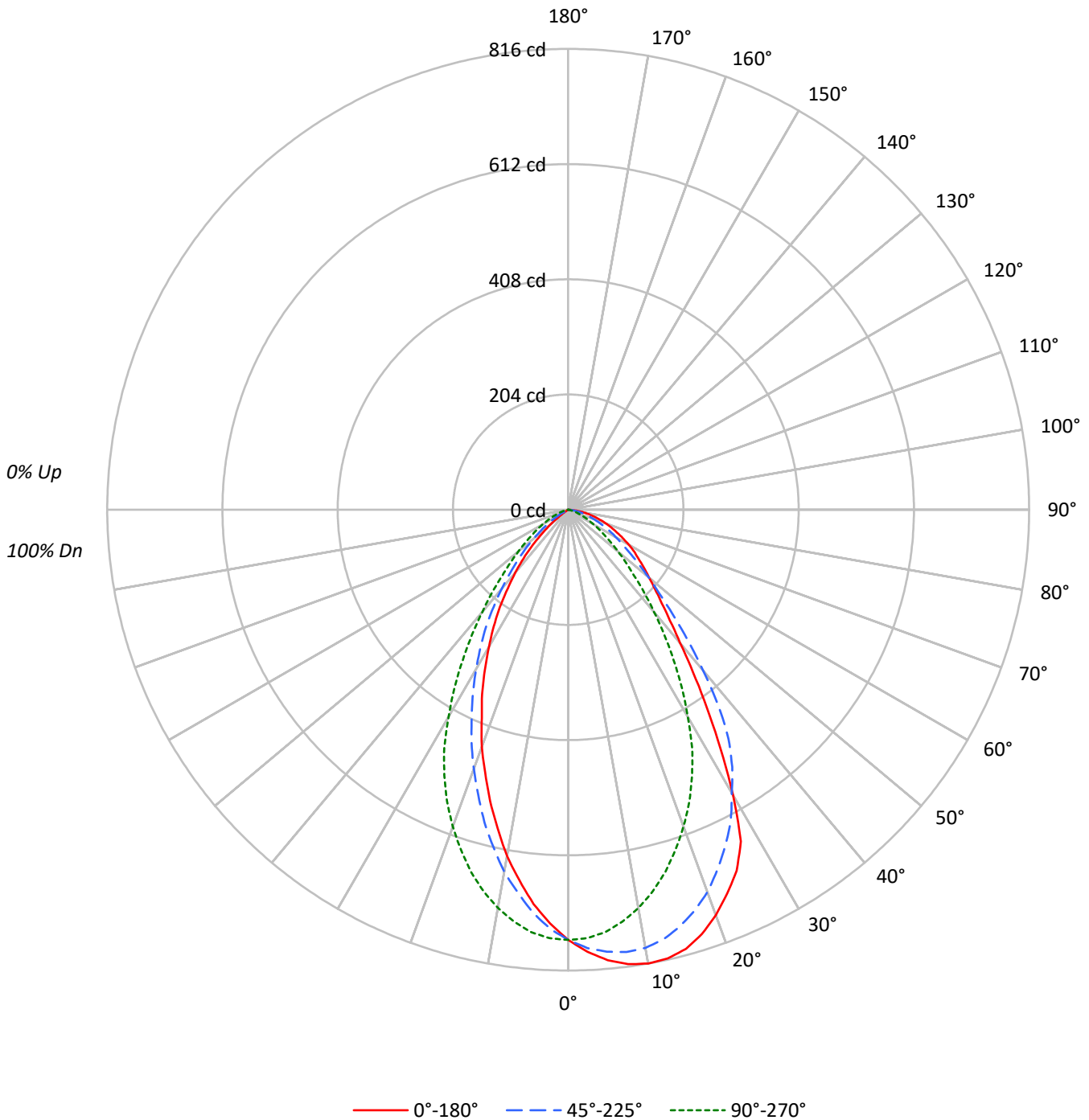
Input Watts (W): 20
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	58303	58303	58303
5°	61522	57688	53854
10°	63415	55658	48407
15°	63799	52618	42300
20°	62224	48613	36411
25°	59567	43799	30421
30°	51590	37404	24739
35°	39947	30415	19670
40°	30785	23631	14528
45°	25373	17850	9634
50°	22220	13694	4906
55°	20271	10422	1161
60°	18937	7976	337
65°	17297	5904	0
70°	16024	3894	0
75°	14107	2573	0
80°	12430	970	0
85°	7641	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.6	7.1
10°-20°	186.8	18.9
20°-30°	241.4	24.4
30°-40°	214.4	21.7
40°-50°	139.4	14.1
50°-60°	77.5	7.8
60°-70°	39.1	4.0
70°-80°	16.5	1.7
80°-90°	2.9	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°	498.8	50.5
0°-40°	713.2	72.1
0°-60°	930.0	94.1
0°-90°	988.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	988.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	762	762	762	762	762	
5°	801	786	751	716	701	77
15°	805	764	664	573	534	226
25°	705	658	519	404	360	319
35°	428	495	326	254	210	269
45°	234	260	165	126	89	184
55°	152	132	78	46	9	137
65°	96	69	33	2	0	95
75°	48	30	9	0	0	51
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°	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7
2.5°	783.4	781.2	783.4	781.2	781.2	781.2	781.2	779.0	779.0	776.9	776.9
5°	800.7	800.7	798.6	798.6	796.4	796.4	796.4	794.2	792.1	789.9	785.6
7.5°	811.6	811.6	809.4	809.4	807.3	805.1	805.1	800.7	798.6	794.2	789.9
10°	815.9	815.9	813.8	811.6	809.4	807.3	807.3	802.9	798.6	792.1	787.7
12.5°	813.8	813.8	811.6	809.4	807.3	805.1	802.9	798.6	792.1	785.6	779.0
15°	805.1	805.1	802.9	800.7	796.4	794.2	792.1	787.7	781.2	772.5	763.9
17.5°	787.7	787.7	785.6	783.4	781.2	779.0	774.7	770.4	761.7	753.0	744.3
20°	763.9	763.9	763.9	761.7	757.3	755.2	753.0	746.5	740.0	731.3	720.5
22.5°	735.6	735.6	733.5	731.3	727.0	727.0	722.6	716.1	709.6	700.9	690.1
25°	705.3	703.1	700.9	700.9	694.4	692.2	690.1	683.6	677.1	668.4	657.5
27.5°	661.9	659.7	661.9	661.9	659.7	657.5	655.4	648.8	638.0	629.3	622.8
30°	583.7	585.9	585.9	590.3	598.9	605.4	609.8	609.8	601.1	592.4	579.4
32.5°	501.3	505.6	507.8	516.5	525.1	531.7	536.0	544.7	555.5	553.4	540.3
35°	427.5	431.8	434.0	440.5	451.4	455.7	462.2	475.2	488.3	499.1	494.8
37.5°	362.4	362.4	368.9	375.4	384.1	390.6	397.1	408.0	425.3	434.0	436.2
40°	308.1	310.3	312.5	321.2	327.7	334.2	338.5	349.4	364.6	371.1	371.1
42.5°	266.9	266.9	269.1	273.4	282.1	284.3	288.6	297.3	306.0	310.3	312.5
45°	234.4	234.4	234.4	238.7	243.0	245.2	249.6	256.1	258.2	260.4	260.4
47.5°	208.3	208.3	208.3	210.5	212.7	214.8	217.0	219.2	221.3	221.3	217.0
50°	186.6	186.6	188.8	188.8	188.8	191.0	191.0	191.0	188.8	186.6	184.5
52.5°	169.3	169.3	169.3	169.3	169.3	169.3	169.3	167.1	162.8	160.6	156.2
55°	151.9	154.1	154.1	154.1	151.9	151.9	149.7	147.6	141.1	136.7	132.4
57.5°	138.9	138.9	138.9	136.7	136.7	134.5	132.4	128.0	123.7	119.4	112.8
60°	123.7	123.7	123.7	121.5	121.5	119.4	117.2	112.8	108.5	102.0	97.7
62.5°	108.5	108.5	108.5	108.5	106.3	104.2	102.0	97.7	93.3	89.0	84.6
65°	95.5	95.5	95.5	95.5	91.1	89.0	86.8	82.5	78.1	73.8	69.4
67.5°	82.5	82.5	82.5	80.3	78.1	76.0	73.8	71.6	67.3	62.9	58.6
70°	71.6	71.6	69.4	67.3	65.1	65.1	62.9	58.6	56.4	52.1	47.7
72.5°	58.6	58.6	58.6	56.4	54.3	52.1	49.9	47.7	45.6	41.2	39.1
75°	47.7	47.7	47.7	45.6	43.4	41.2	41.2	36.9	34.7	32.6	30.4
77.5°	36.9	36.9	36.9	34.7	32.6	32.6	30.4	28.2	26.0	23.9	21.7
80°	28.2	28.2	26.0	26.0	23.9	23.9	21.7	21.7	19.5	17.4	15.2
82.5°	17.4	17.4	17.4	17.4	15.2	15.2	15.2	13.0	13.0	10.9	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	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°	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7
2.5°	774.7	772.5	770.4	768.2	768.2	766.0	766.0	763.9	761.7	759.5	757.3
5°	783.4	779.0	774.7	772.5	770.4	768.2	763.9	759.5	755.2	750.8	746.5
7.5°	783.4	779.0	772.5	768.2	763.9	761.7	755.2	748.7	742.2	735.6	729.1
10°	781.2	772.5	766.0	759.5	753.0	748.7	742.2	733.5	724.8	716.1	707.4
12.5°	770.4	761.7	753.0	744.3	737.8	733.5	722.6	711.8	703.1	692.2	681.4
15°	755.2	746.5	735.6	722.6	718.3	711.8	700.9	687.9	677.1	664.0	653.2
17.5°	735.6	722.6	711.8	698.8	692.2	685.7	672.7	657.5	646.7	631.5	618.5
20°	709.6	698.8	681.4	670.5	661.9	655.4	640.2	625.0	609.8	596.8	579.4
22.5°	679.2	666.2	651.0	635.8	629.3	620.6	605.4	588.1	575.1	559.9	542.5
25°	646.7	631.5	616.3	598.9	592.4	585.9	568.6	553.4	536.0	518.6	505.6
27.5°	607.6	594.6	579.4	562.0	555.5	546.9	527.3	510.0	492.6	475.2	460.0
30°	568.6	557.7	538.2	518.6	507.8	496.9	477.4	457.9	438.3	423.2	410.1
32.5°	529.5	507.8	486.1	464.4	451.4	440.5	423.2	405.8	388.4	375.4	360.2
35°	477.4	455.7	431.8	410.1	399.3	390.6	371.1	353.7	338.5	325.5	312.5
37.5°	423.2	401.5	379.8	358.1	349.4	340.7	321.2	306.0	290.8	279.9	266.9
40°	364.6	353.7	329.8	310.3	301.6	293.0	277.8	260.4	249.6	236.5	225.7
42.5°	310.3	299.5	282.1	264.7	256.1	249.6	234.4	221.3	210.5	199.6	191.0
45°	260.4	251.7	238.7	225.7	217.0	210.5	195.3	184.5	175.8	164.9	158.4
47.5°	217.0	210.5	201.8	188.8	182.3	175.8	162.8	154.1	145.4	138.9	132.4
50°	180.1	175.8	167.1	158.4	151.9	147.6	136.7	128.0	121.5	115.0	110.7
52.5°	151.9	145.4	138.9	130.2	125.9	121.5	115.0	106.3	102.0	95.5	91.1
55°	128.0	123.7	117.2	108.5	104.2	102.0	95.5	89.0	82.5	78.1	73.8
57.5°	108.5	104.2	97.7	91.1	89.0	84.6	78.1	71.6	67.3	65.1	60.8
60°	93.3	86.8	82.5	76.0	71.6	69.4	62.9	58.6	54.3	52.1	47.7
62.5°	78.1	73.8	67.3	60.8	58.6	56.4	52.1	47.7	43.4	41.2	36.9
65°	65.1	60.8	56.4	49.9	47.7	45.6	41.2	36.9	34.7	32.6	30.4
67.5°	54.3	49.9	45.6	41.2	39.1	34.7	32.6	30.4	26.0	23.9	21.7
70°	43.4	39.1	34.7	30.4	30.4	28.2	23.9	21.7	19.5	17.4	15.2
72.5°	34.7	30.4	28.2	23.9	21.7	21.7	19.5	17.4	15.2	13.0	10.9
75°	26.0	23.9	19.5	17.4	15.2	15.2	13.0	10.9	10.9	8.7	6.5
77.5°	19.5	17.4	15.2	13.0	10.9	10.9	8.7	6.5	6.5	4.3	4.3
80°	13.0	10.9	8.7	6.5	6.5	6.5	4.3	4.3	4.3	2.2	2.2
82.5°	6.5	6.5	4.3	4.3	4.3	4.3	2.2	2.2	2.2	2.2	0.0
85°	2.2	2.2	2.2	2.2	2.2	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°	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7
2.5°	755.2	753.0	750.8	750.8	748.7	746.5	744.3	744.3	742.2	740.0	740.0
5°	742.2	737.8	733.5	731.3	729.1	724.8	722.6	718.3	716.1	711.8	709.6
7.5°	722.6	716.1	709.6	707.4	705.3	700.9	694.4	687.9	683.6	681.4	677.1
10°	700.9	692.2	683.6	679.2	677.1	668.4	661.9	655.4	651.0	644.5	638.0
12.5°	670.5	661.9	653.2	648.8	644.5	635.8	629.3	620.6	612.0	605.4	598.9
15°	640.2	629.3	618.5	614.1	607.6	598.9	590.3	581.6	572.9	564.2	557.7
17.5°	605.4	594.6	581.6	575.1	570.7	559.9	546.9	540.3	529.5	523.0	514.3
20°	568.6	555.5	542.5	538.2	531.7	518.6	507.8	496.9	488.3	479.6	470.9
22.5°	529.5	514.3	501.3	496.9	490.4	477.4	466.6	457.9	447.0	436.2	427.5
25°	490.4	475.2	462.2	453.5	447.0	436.2	423.2	414.5	403.6	394.9	388.4
27.5°	447.0	431.8	418.8	412.3	408.0	397.1	386.3	375.4	364.6	355.9	347.2
30°	397.1	386.3	375.4	371.1	364.6	355.9	345.0	336.4	325.5	316.8	308.1
32.5°	349.4	338.5	327.7	325.5	321.2	312.5	306.0	297.3	288.6	279.9	273.4
35°	303.8	293.0	286.4	282.1	277.8	271.3	264.7	260.4	253.9	245.2	238.7
37.5°	258.2	253.9	243.0	240.9	238.7	232.2	227.9	223.5	217.0	212.7	206.2
40°	219.2	212.7	206.2	204.0	199.6	195.3	191.0	186.6	182.3	180.1	173.6
42.5°	182.3	177.9	171.4	171.4	167.1	162.8	158.4	156.2	151.9	147.6	145.4
45°	154.1	147.6	145.4	141.1	141.1	136.7	132.4	130.2	125.9	121.5	117.2
47.5°	128.0	123.7	119.4	117.2	117.2	112.8	108.5	104.2	102.0	95.5	91.1
50°	106.3	102.0	99.8	97.7	95.5	93.3	89.0	84.6	80.3	76.0	69.4
52.5°	86.8	84.6	80.3	80.3	78.1	73.8	69.4	65.1	60.8	56.4	49.9
55°	71.6	67.3	65.1	62.9	60.8	58.6	54.3	49.9	45.6	39.1	34.7
57.5°	56.4	54.3	49.9	49.9	47.7	43.4	39.1	34.7	30.4	23.9	19.5
60°	45.6	41.2	39.1	36.9	34.7	32.6	26.0	21.7	17.4	13.0	6.5
62.5°	34.7	32.6	28.2	28.2	26.0	21.7	17.4	13.0	6.5	2.2	0.0
65°	26.0	23.9	21.7	19.5	17.4	13.0	8.7	4.3	2.2	0.0	0.0
67.5°	19.5	17.4	13.0	13.0	10.9	6.5	2.2	0.0	0.0	0.0	0.0
70°	13.0	10.9	8.7	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	2.2	0.0	0.0	0.0	0.0	0.0	0.0
75°	6.5	4.3	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	2.2	2.2	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°	761.7	761.7	761.7	761.7	761.7	761.7	761.7	761.7
2.5°	737.8	735.6	737.8	735.6	735.6	733.5	735.6	733.5
5°	707.4	705.3	705.3	703.1	703.1	703.1	700.9	700.9
7.5°	672.7	670.5	668.4	668.4	666.2	664.0	664.0	661.9
10°	635.8	631.5	627.1	629.3	625.0	625.0	622.8	622.8
12.5°	594.6	590.3	590.3	585.9	581.6	581.6	577.2	577.2
15°	553.4	549.0	544.7	542.5	538.2	538.2	536.0	533.8
17.5°	507.8	503.4	499.1	496.9	494.8	492.6	490.4	488.3
20°	464.4	457.9	455.7	453.5	449.2	447.0	444.9	447.0
22.5°	423.2	414.5	412.3	410.1	408.0	403.6	401.5	399.3
25°	379.8	373.2	368.9	368.9	364.6	362.4	358.1	360.2
27.5°	338.5	334.2	329.8	327.7	323.3	321.2	319.0	319.0
30°	301.6	295.1	293.0	288.6	286.4	282.1	279.9	279.9
32.5°	264.7	258.2	256.1	253.9	249.6	245.2	245.2	245.2
35°	232.2	225.7	223.5	219.2	214.8	210.5	210.5	210.5
37.5°	199.6	193.1	188.8	186.6	182.3	180.1	175.8	175.8
40°	169.3	162.8	158.4	156.2	151.9	147.6	145.4	145.4
42.5°	138.9	134.5	130.2	128.0	123.7	119.4	117.2	117.2
45°	110.7	106.3	104.2	102.0	97.7	91.1	89.0	89.0
47.5°	86.8	82.5	80.3	76.0	71.6	67.3	62.9	62.9
50°	65.1	60.8	56.4	54.3	49.9	45.6	41.2	41.2
52.5°	45.6	41.2	39.1	34.7	30.4	26.0	23.9	21.7
55°	28.2	23.9	21.7	19.5	15.2	13.0	8.7	8.7
57.5°	15.2	10.9	8.7	6.5	4.3	2.2	2.2	2.2
60°	4.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2
62.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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)