

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: P242040

Luminaire Tested: **PRS420D010-S4M12-41SWWMB-3000K**

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242040  
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-3000K  
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 / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 942.9 lumens  
Efficiency: N/A  
Efficacy: 47.1 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

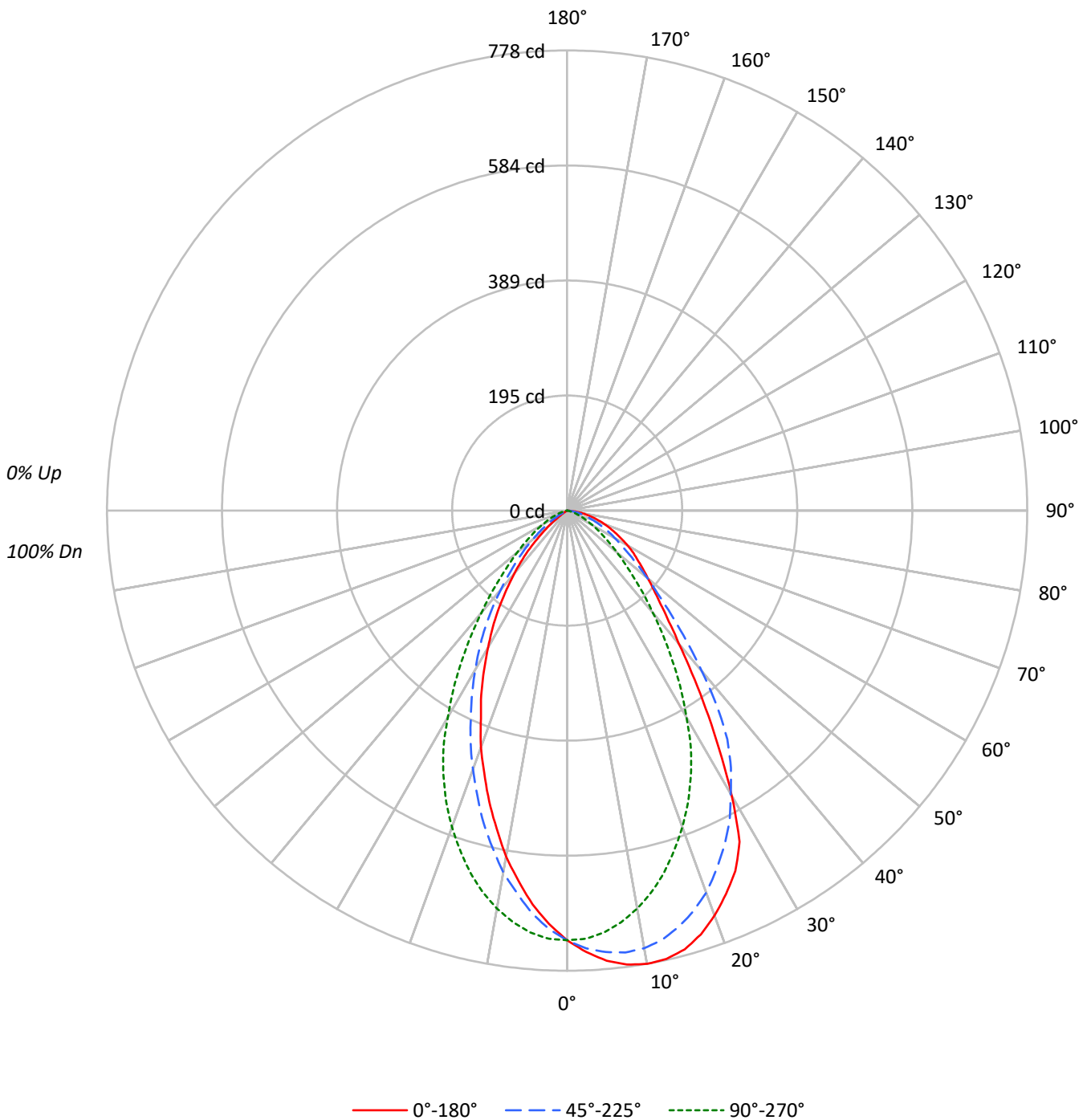
Input Watts (W): 20  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	55609	55609	55609
5°	58687	55030	51372
10°	60493	53093	46176
15°	60851	50193	40351
20°	59349	46365	34733
25°	56814	41781	29019
30°	49213	35672	23599
35°	38106	29014	18763
40°	29367	22542	13859
45°	24194	17028	9190
50°	21196	13063	4680
55°	19337	9942	1108
60°	18064	7608	321
65°	16500	5615	0
70°	15285	3715	0
75°	13456	2455	0
80°	11857	926	0
85°	7289	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	67.3	7.1
10°-20°	178.2	18.9
20°-30°	230.2	24.4
30°-40°	204.5	21.7
40°-50°	133.0	14.1
50°-60°	73.9	7.8
60°-70°	37.3	4.0
70°-80°	15.7	1.7
80°-90°	2.8	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°	475.8	50.5
0°-40°	680.2	72.1
0°-60°	887.1	94.1
0°-90°	942.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	942.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	726	726	726	726	726	
5°	764	749	716	683	669	73
15°	768	729	633	546	509	215
25°	673	627	495	385	344	304
35°	408	472	310	242	201	257
45°	224	248	157	120	85	176
55°	145	126	74	44	8	131
65°	91	66	31	2	0	91
75°	46	29	8	0	0	49
85°	8	4	0	0	0	10
90°	0	0	0	0	0	



TEST NUMBER: P242040

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	726.5	726.5	726.5	726.5	726.5	726.5	726.5	726.5	726.5	726.5	726.5
2.5°	747.2	745.2	747.2	745.2	745.2	745.2	745.2	743.1	743.1	741.0	741.0
5°	763.8	763.8	761.7	761.7	759.6	759.6	759.6	757.6	755.5	753.4	749.3
7.5°	774.1	774.1	772.1	772.1	770.0	767.9	767.9	763.8	761.7	757.6	753.4
10°	778.3	778.3	776.2	774.1	772.1	770.0	770.0	765.9	761.7	755.5	751.4
12.5°	776.2	776.2	774.1	772.1	770.0	767.9	765.9	761.7	755.5	749.3	743.1
15°	767.9	767.9	765.9	763.8	759.6	757.6	755.5	751.4	745.2	736.9	728.6
17.5°	751.4	751.4	749.3	747.2	745.2	743.1	738.9	734.8	726.5	718.2	710.0
20°	728.6	728.6	728.6	726.5	722.4	720.3	718.2	712.0	705.8	697.6	687.2
22.5°	701.7	701.7	699.6	697.6	693.4	693.4	689.3	683.1	676.9	668.6	658.2
25°	672.7	670.6	668.6	668.6	662.4	660.3	658.2	652.0	645.8	637.5	627.2
27.5°	631.3	629.2	631.3	631.3	629.2	627.2	625.1	618.9	608.5	600.3	594.1
30°	556.8	558.9	558.9	563.0	571.3	577.5	581.6	581.6	573.4	565.1	552.7
32.5°	478.1	482.3	484.4	492.6	500.9	507.1	511.3	519.5	529.9	527.8	515.4
35°	407.8	411.9	414.0	420.2	430.5	434.7	440.9	453.3	465.7	476.1	471.9
37.5°	345.7	345.7	351.9	358.1	366.4	372.6	378.8	389.1	405.7	414.0	416.0
40°	293.9	296.0	298.1	306.3	312.6	318.8	322.9	333.3	347.7	354.0	354.0
42.5°	254.6	254.6	256.7	260.8	269.1	271.2	275.3	283.6	291.9	296.0	298.1
45°	223.5	223.5	223.5	227.7	231.8	233.9	238.0	244.2	246.3	248.4	248.4
47.5°	198.7	198.7	198.7	200.8	202.8	204.9	207.0	209.1	211.1	211.1	207.0
50°	178.0	178.0	180.1	180.1	180.1	182.1	182.1	182.1	180.1	178.0	175.9
52.5°	161.5	161.5	161.5	161.5	161.5	161.5	161.5	159.4	155.2	153.2	149.0
55°	144.9	147.0	147.0	147.0	144.9	144.9	142.8	140.8	134.5	130.4	126.3
57.5°	132.5	132.5	132.5	130.4	130.4	128.3	126.3	122.1	118.0	113.8	107.6
60°	118.0	118.0	118.0	115.9	115.9	113.8	111.8	107.6	103.5	97.3	93.1
62.5°	103.5	103.5	103.5	103.5	101.4	99.4	97.3	93.1	89.0	84.9	80.7
65°	91.1	91.1	91.1	91.1	86.9	84.9	82.8	78.7	74.5	70.4	66.2
67.5°	78.7	78.7	78.7	76.6	74.5	72.4	70.4	68.3	64.2	60.0	55.9
70°	68.3	68.3	66.2	64.2	62.1	62.1	60.0	55.9	53.8	49.7	45.5
72.5°	55.9	55.9	55.9	53.8	51.7	49.7	47.6	45.5	43.5	39.3	37.3
75°	45.5	45.5	45.5	43.5	41.4	39.3	39.3	35.2	33.1	31.0	29.0
77.5°	35.2	35.2	35.2	33.1	31.0	31.0	29.0	26.9	24.8	22.8	20.7
80°	26.9	26.9	24.8	24.8	22.8	22.8	20.7	20.7	18.6	16.6	14.5
82.5°	16.6	16.6	16.6	16.6	14.5	14.5	14.5	12.4	12.4	10.3	8.3
85°	8.3	8.3	8.3	8.3	6.2	6.2	6.2	6.2	6.2	4.1	4.1
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°	726.5	726.5	726.5	726.5	726.5	726.5	726.5	726.5	726.5	726.5	726.5
2.5°	738.9	736.9	734.8	732.7	732.7	730.7	730.7	728.6	726.5	724.5	722.4
5°	747.2	743.1	738.9	736.9	734.8	732.7	728.6	724.5	720.3	716.2	712.0
7.5°	747.2	743.1	736.9	732.7	728.6	726.5	720.3	714.1	707.9	701.7	695.5
10°	745.2	736.9	730.7	724.5	718.2	714.1	707.9	699.6	691.3	683.1	674.8
12.5°	734.8	726.5	718.2	710.0	703.8	699.6	689.3	678.9	670.6	660.3	649.9
15°	720.3	712.0	701.7	689.3	685.1	678.9	668.6	656.2	645.8	633.4	623.0
17.5°	701.7	689.3	678.9	666.5	660.3	654.1	641.7	627.2	616.8	602.3	589.9
20°	676.9	666.5	649.9	639.6	631.3	625.1	610.6	596.1	581.6	569.2	552.7
22.5°	647.9	635.5	621.0	606.5	600.3	592.0	577.5	560.9	548.5	534.0	517.5
25°	616.8	602.3	587.8	571.3	565.1	558.9	542.3	527.8	511.3	494.7	482.3
27.5°	579.6	567.1	552.7	536.1	529.9	521.6	503.0	486.4	469.9	453.3	438.8
30°	542.3	532.0	513.3	494.7	484.4	474.0	455.4	436.7	418.1	403.6	391.2
32.5°	505.1	484.4	463.7	443.0	430.5	420.2	403.6	387.1	370.5	358.1	343.6
35°	455.4	434.7	411.9	391.2	380.9	372.6	354.0	337.4	322.9	310.5	298.1
37.5°	403.6	382.9	362.2	341.5	333.3	325.0	306.3	291.9	277.4	267.0	254.6
40°	347.7	337.4	314.6	296.0	287.7	279.4	264.9	248.4	238.0	225.6	215.3
42.5°	296.0	285.6	269.1	252.5	244.2	238.0	223.5	211.1	200.8	190.4	182.1
45°	248.4	240.1	227.7	215.3	207.0	200.8	186.3	175.9	167.7	157.3	151.1
47.5°	207.0	200.8	192.5	180.1	173.9	167.7	155.2	147.0	138.7	132.5	126.3
50°	171.8	167.7	159.4	151.1	144.9	140.8	130.4	122.1	115.9	109.7	105.6
52.5°	144.9	138.7	132.5	124.2	120.1	115.9	109.7	101.4	97.3	91.1	86.9
55°	122.1	118.0	111.8	103.5	99.4	97.3	91.1	84.9	78.7	74.5	70.4
57.5°	103.5	99.4	93.1	86.9	84.9	80.7	74.5	68.3	64.2	62.1	58.0
60°	89.0	82.8	78.7	72.4	68.3	66.2	60.0	55.9	51.7	49.7	45.5
62.5°	74.5	70.4	64.2	58.0	55.9	53.8	49.7	45.5	41.4	39.3	35.2
65°	62.1	58.0	53.8	47.6	45.5	43.5	39.3	35.2	33.1	31.0	29.0
67.5°	51.7	47.6	43.5	39.3	37.3	33.1	31.0	29.0	24.8	22.8	20.7
70°	41.4	37.3	33.1	29.0	29.0	26.9	22.8	20.7	18.6	16.6	14.5
72.5°	33.1	29.0	26.9	22.8	20.7	20.7	18.6	16.6	14.5	12.4	10.3
75°	24.8	22.8	18.6	16.6	14.5	14.5	12.4	10.3	10.3	8.3	6.2
77.5°	18.6	16.6	14.5	12.4	10.3	10.3	8.3	6.2	6.2	4.1	4.1
80°	12.4	10.3	8.3	6.2	6.2	6.2	4.1	4.1	4.1	2.1	2.1
82.5°	6.2	6.2	4.1	4.1	4.1	4.1	2.1	2.1	2.1	2.1	0.0
85°	2.1	2.1	2.1	2.1	2.1	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°	726.5	726.5	726.5	726.5	726.5	726.5	726.5	726.5	726.5	726.5	726.5
2.5°	720.3	718.2	716.2	716.2	714.1	712.0	710.0	710.0	707.9	705.8	705.8
5°	707.9	703.8	699.6	697.6	695.5	691.3	689.3	685.1	683.1	678.9	676.9
7.5°	689.3	683.1	676.9	674.8	672.7	668.6	662.4	656.2	652.0	649.9	645.8
10°	668.6	660.3	652.0	647.9	645.8	637.5	631.3	625.1	621.0	614.8	608.5
12.5°	639.6	631.3	623.0	618.9	614.8	606.5	600.3	592.0	583.7	577.5	571.3
15°	610.6	600.3	589.9	585.8	579.6	571.3	563.0	554.7	546.4	538.2	532.0
17.5°	577.5	567.1	554.7	548.5	544.4	534.0	521.6	515.4	505.1	498.8	490.6
20°	542.3	529.9	517.5	513.3	507.1	494.7	484.4	474.0	465.7	457.4	449.2
22.5°	505.1	490.6	478.1	474.0	467.8	455.4	445.0	436.7	426.4	416.0	407.8
25°	467.8	453.3	440.9	432.6	426.4	416.0	403.6	395.3	385.0	376.7	370.5
27.5°	426.4	411.9	399.5	393.3	389.1	378.8	368.4	358.1	347.7	339.5	331.2
30°	378.8	368.4	358.1	354.0	347.7	339.5	329.1	320.8	310.5	302.2	293.9
32.5°	333.3	322.9	312.6	310.5	306.3	298.1	291.9	283.6	275.3	267.0	260.8
35°	289.8	279.4	273.2	269.1	264.9	258.7	252.5	248.4	242.2	233.9	227.7
37.5°	246.3	242.2	231.8	229.8	227.7	221.5	217.3	213.2	207.0	202.8	196.6
40°	209.1	202.8	196.6	194.6	190.4	186.3	182.1	178.0	173.9	171.8	165.6
42.5°	173.9	169.7	163.5	163.5	159.4	155.2	151.1	149.0	144.9	140.8	138.7
45°	147.0	140.8	138.7	134.5	134.5	130.4	126.3	124.2	120.1	115.9	111.8
47.5°	122.1	118.0	113.8	111.8	111.8	107.6	103.5	99.4	97.3	91.1	86.9
50°	101.4	97.3	95.2	93.1	91.1	89.0	84.9	80.7	76.6	72.4	66.2
52.5°	82.8	80.7	76.6	76.6	74.5	70.4	66.2	62.1	58.0	53.8	47.6
55°	68.3	64.2	62.1	60.0	58.0	55.9	51.7	47.6	43.5	37.3	33.1
57.5°	53.8	51.7	47.6	47.6	45.5	41.4	37.3	33.1	29.0	22.8	18.6
60°	43.5	39.3	37.3	35.2	33.1	31.0	24.8	20.7	16.6	12.4	6.2
62.5°	33.1	31.0	26.9	26.9	24.8	20.7	16.6	12.4	6.2	2.1	0.0
65°	24.8	22.8	20.7	18.6	16.6	12.4	8.3	4.1	2.1	0.0	0.0
67.5°	18.6	16.6	12.4	12.4	10.3	6.2	2.1	0.0	0.0	0.0	0.0
70°	12.4	10.3	8.3	6.2	4.1	2.1	0.0	0.0	0.0	0.0	0.0
72.5°	8.3	6.2	4.1	2.1	2.1	0.0	0.0	0.0	0.0	0.0	0.0
75°	6.2	4.1	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	2.1	2.1	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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CATALOG NUMBER: PRS420D010-S4M12-41SWWMB-3000K

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	726.5	726.5	726.5	726.5	726.5	726.5	726.5	726.5
2.5°	703.8	701.7	703.8	701.7	701.7	699.6	701.7	699.6
5°	674.8	672.7	672.7	670.6	670.6	670.6	668.6	668.6
7.5°	641.7	639.6	637.5	637.5	635.5	633.4	633.4	631.3
10°	606.5	602.3	598.2	600.3	596.1	596.1	594.1	594.1
12.5°	567.1	563.0	563.0	558.9	554.7	554.7	550.6	550.6
15°	527.8	523.7	519.5	517.5	513.3	513.3	511.3	509.2
17.5°	484.4	480.2	476.1	474.0	471.9	469.9	467.8	465.7
20°	443.0	436.7	434.7	432.6	428.5	426.4	424.3	426.4
22.5°	403.6	395.3	393.3	391.2	389.1	385.0	382.9	380.9
25°	362.2	356.0	351.9	351.9	347.7	345.7	341.5	343.6
27.5°	322.9	318.8	314.6	312.6	308.4	306.3	304.3	304.3
30°	287.7	281.5	279.4	275.3	273.2	269.1	267.0	267.0
32.5°	252.5	246.3	244.2	242.2	238.0	233.9	233.9	233.9
35°	221.5	215.3	213.2	209.1	204.9	200.8	200.8	200.8
37.5°	190.4	184.2	180.1	178.0	173.9	171.8	167.7	167.7
40°	161.5	155.2	151.1	149.0	144.9	140.8	138.7	138.7
42.5°	132.5	128.3	124.2	122.1	118.0	113.8	111.8	111.8
45°	105.6	101.4	99.4	97.3	93.1	86.9	84.9	84.9
47.5°	82.8	78.7	76.6	72.4	68.3	64.2	60.0	60.0
50°	62.1	58.0	53.8	51.7	47.6	43.5	39.3	39.3
52.5°	43.5	39.3	37.3	33.1	29.0	24.8	22.8	20.7
55°	26.9	22.8	20.7	18.6	14.5	12.4	8.3	8.3
57.5°	14.5	10.3	8.3	6.2	4.1	2.1	2.1	2.1
60°	4.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
62.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
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)