

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: P242010

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

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242010  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1802-584-62)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 03/03/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: PRS420D010-S4M12-41SWWH-3000K  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM HAZE  
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1189.0 lumens  
Efficiency: N/A  
Efficacy: 59.4 lumens/watt  
Spacing Criteria (0/90/45): 1 / 0.96 / 1.05  
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')  
CIE Type: Direct

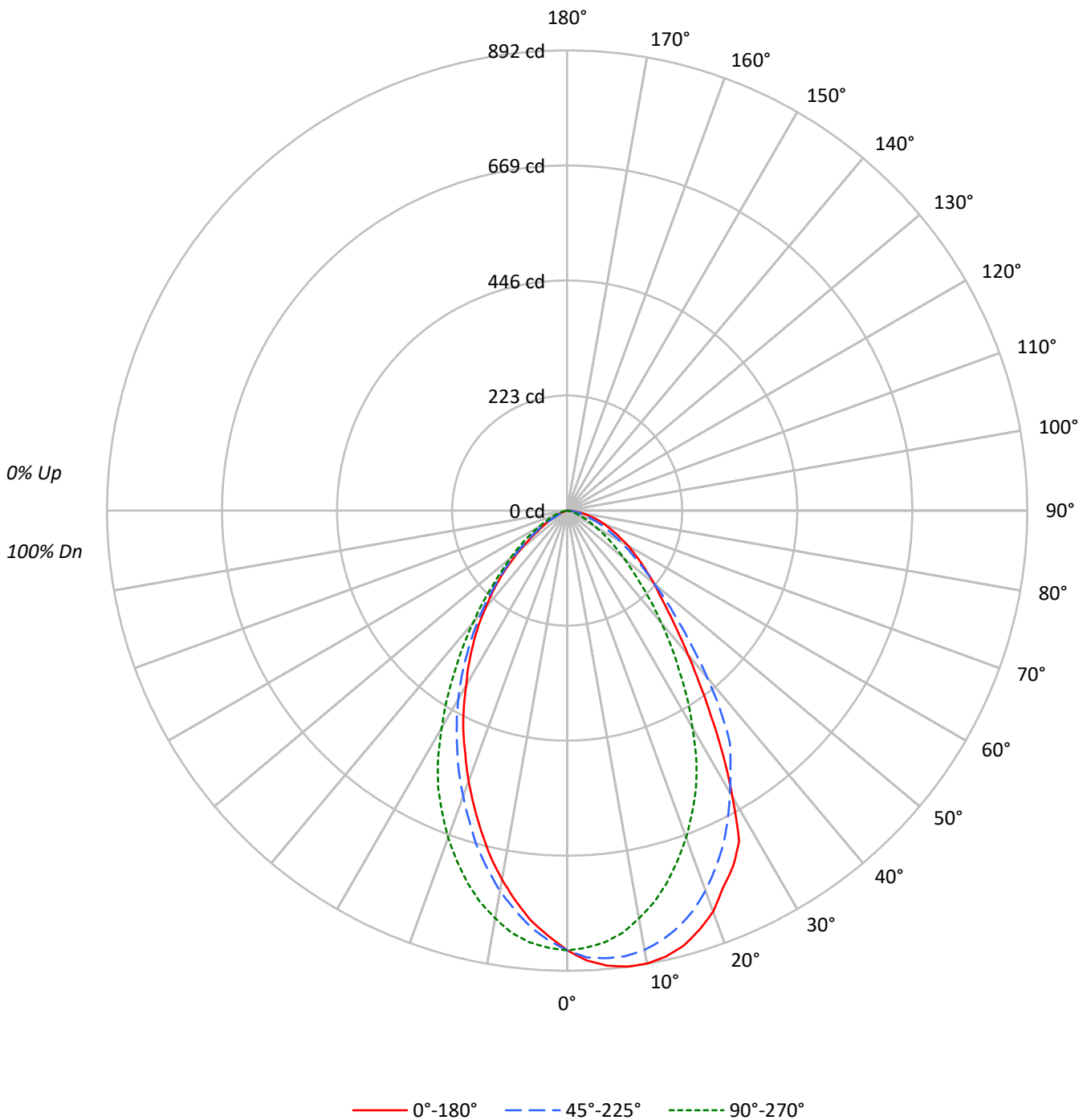
Input Watts (W): 20  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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	102	109	106	103	101	102	100	97	98	96	95	95	93	92	90					90			
2	104	98	93	88	102	96	91	87	93	89	86	90	87	84	87	84	82	80					80			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	74	80	76	73	71					71			
4	91	81	74	69	89	80	73	68	78	72	68	76	71	67	74	69	66	64					64			
5	85	74	67	62	83	73	67	61	71	65	61	70	64	60	68	63	60	58					58			
6	79	68	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53					53			
7	75	63	56	51	73	62	56	51	61	55	50	60	54	50	59	53	50	48					48			
8	70	59	51	46	69	58	51	46	57	51	46	56	50	46	55	49	46	44					44			
9	66	55	48	43	65	54	47	43	53	47	42	52	46	42	51	46	42	41					41			
10	62	51	44	40	61	51	44	39	50	44	39	49	43	39	48	43	39	38					38			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	65238	65238	65238
5°	68030	64527	61353
10°	69299	62381	56436
15°	69172	59179	50977
20°	67397	54934	45493
25°	64288	49964	40184
30°	56681	42964	34558
35°	45422	35377	29771
40°	36381	28317	24600
45°	30007	21942	19701
50°	26114	16993	14290
55°	23193	13252	9115
60°	20896	9813	6016
65°	18728	7118	3749
70°	17121	5103	2305
75°	15290	3046	1213
80°	12783	1807	926
85°	9046	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	79.2	6.7
10°-20°	211.0	17.7
20°-30°	277.7	23.4
30°-40°	257.8	21.7
40°-50°	180.0	15.1
50°-60°	105.7	8.9
60°-70°	52.5	4.4
70°-80°	21.1	1.8
80°-90°	3.9	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°	567.9	47.8
0°-40°	825.7	69.4
0°-60°	1111.4	93.5
0°-90°	1189.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1189.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	852	852	852	852	852	
5°	885	871	840	811	798	85
15°	873	836	747	674	643	245
25°	761	716	592	505	476	346
35°	486	550	379	337	319	306
45°	277	306	203	188	182	217
55°	174	161	99	81	68	156
65°	103	83	39	16	21	103
75°	52	35	10	4	4	55
85°	10	6	0	0	0	12
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°	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3
2.5°	872.9	870.9	870.9	870.9	870.9	868.8	868.8	868.8	866.7	866.7	866.7
5°	885.4	885.4	883.3	883.3	881.2	881.2	881.2	879.1	877.1	875.0	870.9
7.5°	891.6	891.6	889.5	889.5	887.4	885.4	885.4	881.2	879.1	875.0	870.9
10°	891.6	891.6	889.5	889.5	885.4	883.3	883.3	881.2	875.0	870.9	864.7
12.5°	885.4	885.4	883.3	881.2	879.1	877.1	875.0	870.9	864.7	858.5	852.3
15°	872.9	872.9	870.9	868.8	864.7	862.6	860.5	856.4	850.2	841.9	835.7
17.5°	852.3	852.3	850.2	848.1	846.1	841.9	839.8	833.6	827.4	821.2	813.0
20°	827.4	825.4	825.4	823.3	819.2	819.2	815.0	808.8	802.6	792.3	784.0
22.5°	790.2	792.3	792.3	788.1	784.0	784.0	779.9	777.8	769.5	761.2	750.9
25°	761.2	759.2	759.2	755.0	748.8	748.8	746.8	740.6	732.3	724.0	715.7
27.5°	721.9	719.9	719.9	719.9	713.7	713.7	709.5	701.3	693.0	686.8	674.4
30°	641.3	647.5	647.5	653.7	659.9	664.0	668.2	664.0	653.7	643.3	630.9
32.5°	562.7	566.8	570.9	577.1	585.4	591.6	597.8	604.0	612.3	602.0	589.5
35°	486.1	490.3	492.3	500.6	510.9	513.0	521.3	535.8	544.0	552.3	550.2
37.5°	419.9	422.0	426.1	432.3	440.6	446.8	453.0	463.4	477.8	490.3	488.2
40°	364.1	362.0	368.2	370.3	378.6	384.8	393.0	401.3	415.8	422.0	422.0
42.5°	316.5	316.5	318.6	322.7	328.9	333.0	337.2	345.5	357.9	359.9	359.9
45°	277.2	277.2	279.3	283.4	287.5	287.5	293.7	302.0	304.1	306.2	306.2
47.5°	244.1	246.2	246.2	248.2	250.3	254.4	256.5	260.6	260.6	260.6	260.6
50°	219.3	219.3	219.3	221.3	223.4	225.5	225.5	225.5	225.5	223.4	221.3
52.5°	194.4	194.4	194.4	196.5	196.5	198.6	198.6	196.5	194.4	192.4	190.3
55°	173.8	171.7	173.8	173.8	175.8	175.8	173.8	171.7	169.6	165.5	161.3
57.5°	153.1	153.1	153.1	153.1	155.1	153.1	153.1	151.0	146.9	142.7	138.6
60°	136.5	134.5	134.5	134.5	136.5	134.5	134.5	130.3	128.3	122.0	117.9
62.5°	117.9	117.9	117.9	120.0	117.9	117.9	115.8	111.7	109.6	105.5	101.4
65°	103.4	103.4	103.4	103.4	101.4	99.3	99.3	95.2	93.1	88.9	82.7
67.5°	88.9	88.9	88.9	88.9	86.9	84.8	84.8	80.7	78.6	74.5	70.3
70°	76.5	74.5	76.5	74.5	72.4	70.3	70.3	68.3	64.1	60.0	55.9
72.5°	64.1	64.1	64.1	62.1	60.0	57.9	57.9	53.8	51.7	49.6	45.5
75°	51.7	51.7	51.7	49.6	47.6	47.6	45.5	43.4	41.4	39.3	35.2
77.5°	39.3	39.3	39.3	39.3	37.2	35.2	35.2	33.1	31.0	29.0	26.9
80°	29.0	29.0	29.0	26.9	26.9	26.9	24.8	24.8	22.8	20.7	18.6
82.5°	18.6	18.6	18.6	18.6	16.5	16.5	16.5	14.5	14.5	12.4	10.3
85°	10.3	10.3	10.3	10.3	8.3	8.3	8.3	8.3	8.3	6.2	6.2
87.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
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°	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3
2.5°	864.7	862.6	860.5	858.5	858.5	856.4	854.3	852.3	850.2	848.1	848.1
5°	868.8	864.7	862.6	858.5	856.4	856.4	852.3	848.1	844.0	839.8	835.7
7.5°	866.7	862.6	856.4	852.3	850.2	846.1	841.9	835.7	829.5	825.4	819.2
10°	858.5	852.3	846.1	837.8	835.7	831.6	825.4	817.1	810.9	802.6	796.4
12.5°	846.1	837.8	829.5	821.2	817.1	813.0	804.7	794.3	786.1	777.8	767.4
15°	825.4	819.2	806.7	798.5	792.3	788.1	777.8	767.4	757.1	746.8	738.5
17.5°	800.5	792.3	781.9	769.5	763.3	759.2	746.8	732.3	721.9	711.6	703.3
20°	775.7	763.3	750.9	738.5	730.2	726.1	711.6	697.1	686.8	674.4	661.9
22.5°	742.6	728.1	715.7	701.3	695.0	686.8	674.4	657.8	643.3	633.0	618.5
25°	703.3	693.0	676.4	661.9	653.7	647.5	630.9	618.5	604.0	591.6	577.1
27.5°	664.0	649.5	637.1	622.6	612.3	604.0	589.5	573.0	558.5	542.0	529.6
30°	620.6	610.2	593.7	570.9	560.6	552.3	533.7	515.1	500.6	486.1	475.8
32.5°	577.1	556.4	537.8	517.1	506.8	498.5	477.8	463.4	446.8	434.4	424.1
35°	525.4	504.7	484.0	459.2	451.0	440.6	422.0	407.5	391.0	378.6	370.3
37.5°	473.7	448.9	426.1	407.5	399.2	386.8	370.3	353.7	341.3	331.0	320.6
40°	417.9	397.2	376.5	353.7	345.5	337.2	320.6	308.2	291.7	283.4	275.1
42.5°	355.8	347.5	326.8	308.2	297.9	289.6	273.1	260.6	250.3	242.0	233.8
45°	302.0	295.8	281.3	262.7	256.5	248.2	233.8	219.3	211.0	202.7	196.5
47.5°	256.5	250.3	240.0	223.4	215.1	208.9	196.5	186.2	177.9	169.6	165.5
50°	217.2	211.0	200.7	190.3	184.1	175.8	165.5	157.2	148.9	142.7	138.6
52.5°	184.1	177.9	167.6	159.3	155.1	148.9	138.6	132.4	124.1	120.0	115.8
55°	157.2	151.0	142.7	134.5	130.3	124.1	115.8	107.6	103.4	99.3	95.2
57.5°	134.5	126.2	120.0	113.8	109.6	103.4	95.2	91.0	84.8	80.7	76.5
60°	113.8	107.6	101.4	93.1	88.9	86.9	78.6	72.4	68.3	64.1	60.0
62.5°	95.2	88.9	82.7	76.5	74.5	70.3	64.1	57.9	53.8	49.6	47.6
65°	78.6	74.5	68.3	62.1	60.0	55.9	49.6	45.5	41.4	39.3	37.2
67.5°	66.2	60.0	55.9	49.6	47.6	45.5	39.3	35.2	33.1	31.0	26.9
70°	51.7	47.6	43.4	39.3	37.2	35.2	31.0	26.9	24.8	22.8	20.7
72.5°	41.4	37.2	33.1	29.0	26.9	26.9	22.8	20.7	18.6	16.5	14.5
75°	33.1	29.0	24.8	22.8	20.7	18.6	16.5	14.5	12.4	10.3	10.3
77.5°	22.8	20.7	18.6	14.5	14.5	12.4	10.3	10.3	8.3	8.3	6.2
80°	16.5	14.5	12.4	10.3	8.3	8.3	6.2	6.2	4.1	4.1	4.1
82.5°	10.3	8.3	6.2	6.2	6.2	4.1	4.1	4.1	2.1	2.1	2.1
85°	4.1	4.1	2.1	2.1	2.1	2.1	2.1	2.1	0.0	0.0	0.0
87.5°	2.1	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°	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3
2.5°	846.1	844.0	841.9	839.8	839.8	839.8	835.7	835.7	833.6	831.6	831.6
5°	833.6	829.5	825.4	825.4	821.2	819.2	817.1	813.0	810.9	808.8	806.7
7.5°	813.0	808.8	802.6	800.5	798.5	794.3	788.1	786.1	779.9	777.8	775.7
10°	790.2	781.9	777.8	771.6	771.6	763.3	759.2	753.0	748.8	744.7	740.6
12.5°	761.2	750.9	742.6	740.6	736.4	728.1	724.0	715.7	711.6	707.5	703.3
15°	728.1	719.9	709.5	705.4	701.3	693.0	686.8	680.6	674.4	668.2	664.0
17.5°	690.9	682.6	670.2	666.1	664.0	653.7	645.4	637.1	630.9	626.8	620.6
20°	651.6	641.3	630.9	626.8	622.6	614.4	606.1	597.8	589.5	583.3	579.2
22.5°	608.2	595.8	587.5	583.3	579.2	568.9	562.7	554.4	548.2	542.0	537.8
25°	566.8	554.4	544.0	539.9	533.7	525.4	519.2	513.0	504.7	498.5	494.4
27.5°	519.2	506.8	498.5	496.5	490.3	484.0	475.8	467.5	463.4	457.2	453.0
30°	467.5	459.2	453.0	446.8	444.7	438.5	434.4	428.2	422.0	415.8	409.6
32.5°	413.7	407.5	399.2	399.2	397.2	393.0	388.9	384.8	380.6	376.5	370.3
35°	364.1	355.8	351.7	351.7	347.5	345.5	345.5	341.3	337.2	335.1	333.0
37.5°	314.4	310.3	304.1	304.1	302.0	302.0	299.9	297.9	297.9	297.9	295.8
40°	268.9	264.8	260.6	258.6	258.6	258.6	256.5	258.6	258.6	258.6	258.6
42.5°	227.5	225.5	221.3	221.3	221.3	221.3	221.3	221.3	221.3	223.4	223.4
45°	194.4	190.3	188.2	186.2	188.2	186.2	186.2	188.2	188.2	190.3	188.2
47.5°	161.3	161.3	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	159.3
50°	136.5	132.4	132.4	130.3	130.3	130.3	130.3	130.3	128.3	130.3	130.3
52.5°	113.8	109.6	109.6	107.6	107.6	105.5	105.5	103.4	103.4	103.4	103.4
55°	93.1	88.9	88.9	86.9	86.9	84.8	84.8	82.7	80.7	80.7	78.6
57.5°	74.5	70.3	70.3	68.3	68.3	66.2	64.1	62.1	60.0	60.0	57.9
60°	57.9	55.9	53.8	53.8	51.7	49.6	47.6	43.4	41.4	41.4	39.3
62.5°	45.5	43.4	41.4	39.3	39.3	35.2	33.1	29.0	26.9	24.8	26.9
65°	35.2	33.1	31.0	29.0	26.9	24.8	20.7	18.6	16.5	18.6	18.6
67.5°	24.8	22.8	20.7	20.7	18.6	16.5	12.4	12.4	12.4	12.4	14.5
70°	18.6	16.5	14.5	12.4	10.3	8.3	8.3	8.3	8.3	8.3	10.3
72.5°	12.4	10.3	8.3	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
75°	8.3	6.2	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
77.5°	6.2	4.1	2.1	2.1	2.1	2.1	2.1	4.1	4.1	2.1	4.1
80°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
82.5°	0.0	0.0	0.0	2.1	2.1	0.0	2.1	2.1	0.0	2.1	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-S4M12-41SWWH-3000K

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	852.3	852.3	852.3	852.3	852.3	852.3	852.3	852.3
2.5°	831.6	829.5	829.5	827.4	827.4	829.5	827.4	825.4
5°	802.6	802.6	802.6	800.5	798.5	798.5	798.5	798.5
7.5°	771.6	769.5	769.5	769.5	767.4	763.3	763.3	763.3
10°	736.4	732.3	732.3	730.2	730.2	728.1	728.1	726.1
12.5°	699.2	695.0	693.0	690.9	688.8	686.8	688.8	686.8
15°	659.9	655.7	651.6	651.6	649.5	645.4	645.4	643.3
17.5°	616.4	610.2	610.2	608.2	604.0	604.0	602.0	599.9
20°	573.0	568.9	566.8	564.7	562.7	558.5	558.5	558.5
22.5°	529.6	525.4	523.4	523.4	521.3	517.1	517.1	515.1
25°	488.2	484.0	482.0	479.9	477.8	477.8	475.8	475.8
27.5°	448.9	442.7	442.7	438.5	436.5	434.4	434.4	434.4
30°	405.4	403.4	399.2	401.3	395.1	395.1	395.1	391.0
32.5°	366.1	364.1	362.0	362.0	357.9	355.8	357.9	355.8
35°	328.9	326.8	324.8	322.7	320.6	320.6	318.6	318.6
37.5°	293.7	289.6	287.5	287.5	285.5	285.5	283.4	283.4
40°	256.5	256.5	254.4	252.4	250.3	248.2	246.2	246.2
42.5°	223.4	221.3	219.3	219.3	217.2	213.1	213.1	213.1
45°	190.3	188.2	186.2	186.2	184.1	182.0	180.0	182.0
47.5°	157.2	157.2	157.2	155.1	153.1	151.0	148.9	148.9
50°	130.3	128.3	128.3	128.3	124.1	122.0	120.0	120.0
52.5°	103.4	101.4	101.4	101.4	99.3	95.2	93.1	93.1
55°	78.6	78.6	78.6	76.5	74.5	72.4	70.3	68.3
57.5°	55.9	55.9	55.9	55.9	55.9	55.9	53.8	53.8
60°	39.3	41.4	41.4	43.4	43.4	41.4	39.3	39.3
62.5°	29.0	31.0	31.0	31.0	31.0	29.0	29.0	29.0
65°	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7
67.5°	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
70°	10.3	10.3	10.3	10.3	10.3	10.3	8.3	10.3
72.5°	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
75°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
77.5°	2.1	4.1	2.1	2.1	2.1	2.1	2.1	2.1
80°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
82.5°	2.1	2.1	2.1	0.0	0.0	0.0	0.0	2.1
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

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