

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: P242015

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

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242015  
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  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM HAZE  
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1231.6 lumens  
Efficiency: N/A  
Efficacy: 61.6 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

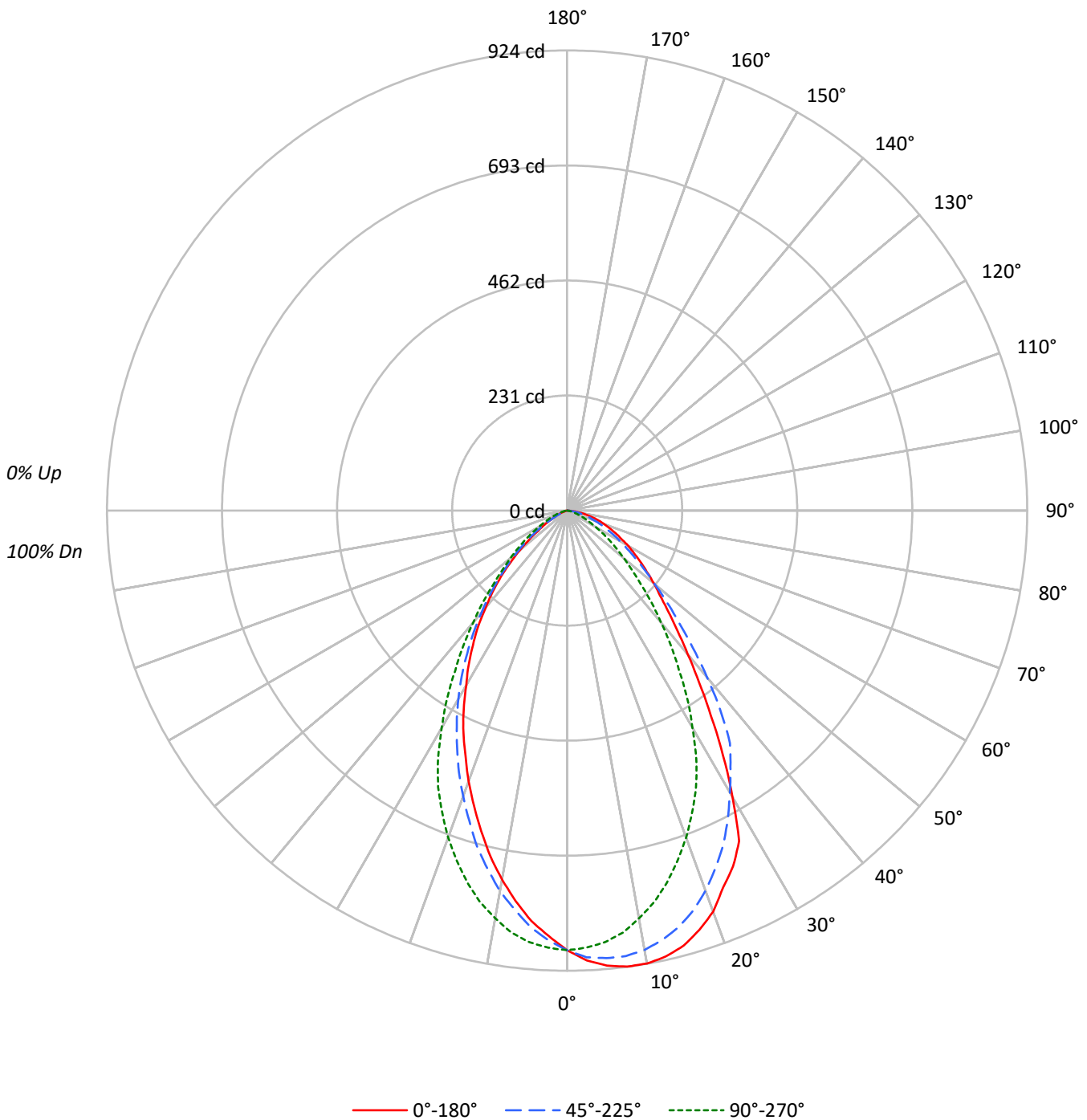
Input Watts (W): 20  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	67573	67573	67573
5°	70466	66839	63551
10°	71778	64620	58456
15°	71652	61295	52808
20°	69816	56897	47122
25°	66594	51755	41620
30°	58705	44502	35796
35°	47048	36639	30836
40°	37680	29337	25480
45°	31078	22732	20416
50°	27043	17600	14802
55°	24021	13732	9435
60°	21646	10165	6231
65°	19398	7371	3876
70°	17747	5282	2395
75°	15852	3164	1272
80°	13224	1895	926
85°	9397	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	82.0	6.7
10°-20°	218.6	17.7
20°-30°	287.7	23.4
30°-40°	267.0	21.7
40°-50°	186.5	15.1
50°-60°	109.5	8.9
60°-70°	54.3	4.4
70°-80°	21.9	1.8
80°-90°	4.0	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°	588.2	47.8
0°-40°	855.3	69.4
0°-60°	1151.3	93.5
0°-90°	1231.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1231.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	883	883	883	883	883	
5°	917	902	870	840	827	88
15°	904	866	774	698	666	254
25°	788	741	613	523	493	358
35°	504	570	392	349	330	317
45°	287	317	210	195	189	225
55°	180	167	103	84	71	162
65°	107	86	41	17	21	107
75°	54	36	11	4	4	57
85°	11	6	0	0	0	13
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°	882.8	882.8	882.8	882.8	882.8	882.8	882.8	882.8	882.8	882.8	882.8
2.5°	904.2	902.1	902.1	902.1	902.1	899.9	899.9	899.9	897.8	897.8	897.8
5°	917.1	917.1	914.9	914.9	912.8	912.8	912.8	910.7	908.5	906.4	902.1
7.5°	923.5	923.5	921.4	921.4	919.2	917.1	917.1	912.8	910.7	906.4	902.1
10°	923.5	923.5	921.4	921.4	917.1	914.9	914.9	912.8	906.4	902.1	895.7
12.5°	917.1	917.1	914.9	912.8	910.7	908.5	906.4	902.1	895.7	889.2	882.8
15°	904.2	904.2	902.1	899.9	895.7	893.5	891.4	887.1	880.7	872.1	865.7
17.5°	882.8	882.8	880.7	878.5	876.4	872.1	869.9	863.5	857.1	850.7	842.1
20°	857.1	854.9	854.9	852.8	848.5	848.5	844.2	837.8	831.4	820.7	812.1
22.5°	818.5	820.7	820.7	816.4	812.1	812.1	807.8	805.7	797.1	788.5	777.8
25°	788.5	786.4	786.4	782.1	775.7	775.7	773.5	767.1	758.5	750.0	741.4
27.5°	747.8	745.7	745.7	745.7	739.2	739.2	735.0	726.4	717.8	711.4	698.5
30°	664.2	670.7	670.7	677.1	683.5	687.8	692.1	687.8	677.1	666.4	653.5
32.5°	582.8	587.1	591.4	597.8	606.4	612.8	619.2	625.7	634.2	623.5	610.7
35°	503.5	507.8	510.0	518.5	529.3	531.4	540.0	555.0	563.5	572.1	570.0
37.5°	435.0	437.1	441.4	447.8	456.4	462.8	469.3	480.0	495.0	507.8	505.7
40°	377.1	375.0	381.4	383.5	392.1	398.5	407.1	415.7	430.7	437.1	437.1
42.5°	327.8	327.8	330.0	334.3	340.7	345.0	349.3	357.8	370.7	372.8	372.8
45°	287.1	287.1	289.3	293.6	297.8	297.8	304.3	312.8	315.0	317.1	317.1
47.5°	252.8	255.0	255.0	257.1	259.3	263.6	265.7	270.0	270.0	270.0	270.0
50°	227.1	227.1	227.1	229.3	231.4	233.6	233.6	233.6	233.6	231.4	229.3
52.5°	201.4	201.4	201.4	203.6	203.6	205.7	205.7	203.6	201.4	199.3	197.1
55°	180.0	177.8	180.0	180.0	182.1	182.1	180.0	177.8	175.7	171.4	167.1
57.5°	158.6	158.6	158.6	158.6	160.7	158.6	158.6	156.4	152.1	147.8	143.6
60°	141.4	139.3	139.3	139.3	141.4	139.3	139.3	135.0	132.8	126.4	122.1
62.5°	122.1	122.1	122.1	124.3	122.1	122.1	120.0	115.7	113.6	109.3	105.0
65°	107.1	107.1	107.1	107.1	105.0	102.9	102.9	98.6	96.4	92.1	85.7
67.5°	92.1	92.1	92.1	92.1	90.0	87.9	87.9	83.6	81.4	77.1	72.9
70°	79.3	77.1	79.3	77.1	75.0	72.9	72.9	70.7	66.4	62.1	57.9
72.5°	66.4	66.4	66.4	64.3	62.1	60.0	60.0	55.7	53.6	51.4	47.1
75°	53.6	53.6	53.6	51.4	49.3	49.3	47.1	45.0	42.9	40.7	36.4
77.5°	40.7	40.7	40.7	40.7	38.6	36.4	36.4	34.3	32.1	30.0	27.9
80°	30.0	30.0	30.0	27.9	27.9	27.9	25.7	25.7	23.6	21.4	19.3
82.5°	19.3	19.3	19.3	19.3	17.1	17.1	17.1	15.0	15.0	12.9	10.7
85°	10.7	10.7	10.7	10.7	8.6	8.6	8.6	8.6	8.6	6.4	6.4
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°	882.8	882.8	882.8	882.8	882.8	882.8	882.8	882.8	882.8	882.8	882.8
2.5°	895.7	893.5	891.4	889.2	889.2	887.1	884.9	882.8	880.7	878.5	878.5
5°	899.9	895.7	893.5	889.2	887.1	887.1	882.8	878.5	874.2	869.9	865.7
7.5°	897.8	893.5	887.1	882.8	880.7	876.4	872.1	865.7	859.2	854.9	848.5
10°	889.2	882.8	876.4	867.8	865.7	861.4	854.9	846.4	839.9	831.4	824.9
12.5°	876.4	867.8	859.2	850.7	846.4	842.1	833.5	822.8	814.2	805.7	795.0
15°	854.9	848.5	835.7	827.1	820.7	816.4	805.7	795.0	784.2	773.5	765.0
17.5°	829.2	820.7	810.0	797.1	790.7	786.4	773.5	758.5	747.8	737.1	728.5
20°	803.5	790.7	777.8	765.0	756.4	752.1	737.1	722.1	711.4	698.5	685.7
22.5°	769.2	754.2	741.4	726.4	720.0	711.4	698.5	681.4	666.4	655.7	640.7
25°	728.5	717.8	700.7	685.7	677.1	670.7	653.5	640.7	625.7	612.8	597.8
27.5°	687.8	672.8	660.0	645.0	634.2	625.7	610.7	593.5	578.5	561.4	548.5
30°	642.8	632.1	615.0	591.4	580.7	572.1	552.8	533.5	518.5	503.5	492.8
32.5°	597.8	576.4	557.1	535.7	525.0	516.4	495.0	480.0	462.8	450.0	439.3
35°	544.3	522.8	501.4	475.7	467.1	456.4	437.1	422.1	405.0	392.1	383.5
37.5°	490.7	465.0	441.4	422.1	413.5	400.7	383.5	366.4	353.5	342.8	332.1
40°	432.8	411.4	390.0	366.4	357.8	349.3	332.1	319.3	302.1	293.6	285.0
42.5°	368.5	360.0	338.6	319.3	308.6	300.0	282.8	270.0	259.3	250.7	242.1
45°	312.8	306.4	291.4	272.1	265.7	257.1	242.1	227.1	218.6	210.0	203.6
47.5°	265.7	259.3	248.6	231.4	222.8	216.4	203.6	192.8	184.3	175.7	171.4
50°	225.0	218.6	207.8	197.1	190.7	182.1	171.4	162.8	154.3	147.8	143.6
52.5°	190.7	184.3	173.6	165.0	160.7	154.3	143.6	137.1	128.6	124.3	120.0
55°	162.8	156.4	147.8	139.3	135.0	128.6	120.0	111.4	107.1	102.9	98.6
57.5°	139.3	130.7	124.3	117.8	113.6	107.1	98.6	94.3	87.9	83.6	79.3
60°	117.8	111.4	105.0	96.4	92.1	90.0	81.4	75.0	70.7	66.4	62.1
62.5°	98.6	92.1	85.7	79.3	77.1	72.9	66.4	60.0	55.7	51.4	49.3
65°	81.4	77.1	70.7	64.3	62.1	57.9	51.4	47.1	42.9	40.7	38.6
67.5°	68.6	62.1	57.9	51.4	49.3	47.1	40.7	36.4	34.3	32.1	27.9
70°	53.6	49.3	45.0	40.7	38.6	36.4	32.1	27.9	25.7	23.6	21.4
72.5°	42.9	38.6	34.3	30.0	27.9	27.9	23.6	21.4	19.3	17.1	15.0
75°	34.3	30.0	25.7	23.6	21.4	19.3	17.1	15.0	12.9	10.7	10.7
77.5°	23.6	21.4	19.3	15.0	15.0	12.9	10.7	10.7	8.6	8.6	6.4
80°	17.1	15.0	12.9	10.7	8.6	8.6	6.4	6.4	4.3	4.3	4.3
82.5°	10.7	8.6	6.4	6.4	6.4	4.3	4.3	4.3	2.1	2.1	2.1
85°	4.3	4.3	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°	882.8	882.8	882.8	882.8	882.8	882.8	882.8	882.8	882.8	882.8	882.8
2.5°	876.4	874.2	872.1	869.9	869.9	869.9	865.7	865.7	863.5	861.4	861.4
5°	863.5	859.2	854.9	854.9	850.7	848.5	846.4	842.1	839.9	837.8	835.7
7.5°	842.1	837.8	831.4	829.2	827.1	822.8	816.4	814.2	807.8	805.7	803.5
10°	818.5	810.0	805.7	799.2	799.2	790.7	786.4	780.0	775.7	771.4	767.1
12.5°	788.5	777.8	769.2	767.1	762.8	754.2	750.0	741.4	737.1	732.8	728.5
15°	754.2	745.7	735.0	730.7	726.4	717.8	711.4	705.0	698.5	692.1	687.8
17.5°	715.7	707.1	694.2	690.0	687.8	677.1	668.5	660.0	653.5	649.2	642.8
20°	675.0	664.2	653.5	649.2	645.0	636.4	627.8	619.2	610.7	604.2	600.0
22.5°	630.0	617.1	608.5	604.2	600.0	589.2	582.8	574.3	567.8	561.4	557.1
25°	587.1	574.3	563.5	559.3	552.8	544.3	537.8	531.4	522.8	516.4	512.1
27.5°	537.8	525.0	516.4	514.3	507.8	501.4	492.8	484.3	480.0	473.5	469.3
30°	484.3	475.7	469.3	462.8	460.7	454.3	450.0	443.5	437.1	430.7	424.3
32.5°	428.5	422.1	413.5	413.5	411.4	407.1	402.8	398.5	394.3	390.0	383.5
35°	377.1	368.5	364.3	364.3	360.0	357.8	357.8	353.5	349.3	347.1	345.0
37.5°	325.7	321.4	315.0	315.0	312.8	312.8	310.7	308.6	308.6	308.6	306.4
40°	278.6	274.3	270.0	267.8	267.8	267.8	265.7	267.8	267.8	267.8	267.8
42.5°	235.7	233.6	229.3	229.3	229.3	229.3	229.3	229.3	229.3	231.4	231.4
45°	201.4	197.1	195.0	192.8	195.0	192.8	192.8	195.0	195.0	197.1	195.0
47.5°	167.1	167.1	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	165.0
50°	141.4	137.1	137.1	135.0	135.0	135.0	135.0	135.0	132.8	135.0	135.0
52.5°	117.8	113.6	113.6	111.4	111.4	109.3	109.3	107.1	107.1	107.1	107.1
55°	96.4	92.1	92.1	90.0	90.0	87.9	87.9	85.7	83.6	83.6	81.4
57.5°	77.1	72.9	72.9	70.7	70.7	68.6	66.4	64.3	62.1	62.1	60.0
60°	60.0	57.9	55.7	55.7	53.6	51.4	49.3	45.0	42.9	42.9	40.7
62.5°	47.1	45.0	42.9	40.7	40.7	36.4	34.3	30.0	27.9	25.7	27.9
65°	36.4	34.3	32.1	30.0	27.9	25.7	21.4	19.3	17.1	19.3	19.3
67.5°	25.7	23.6	21.4	21.4	19.3	17.1	12.9	12.9	12.9	12.9	15.0
70°	19.3	17.1	15.0	12.9	10.7	8.6	8.6	8.6	8.6	8.6	10.7
72.5°	12.9	10.7	8.6	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
75°	8.6	6.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
77.5°	6.4	4.3	2.1	2.1	2.1	2.1	2.1	4.3	4.3	2.1	4.3
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

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	882.8	882.8	882.8	882.8	882.8	882.8	882.8	882.8
2.5°	861.4	859.2	859.2	857.1	857.1	859.2	857.1	854.9
5°	831.4	831.4	831.4	829.2	827.1	827.1	827.1	827.1
7.5°	799.2	797.1	797.1	797.1	795.0	790.7	790.7	790.7
10°	762.8	758.5	758.5	756.4	756.4	754.2	754.2	752.1
12.5°	724.2	720.0	717.8	715.7	713.5	711.4	713.5	711.4
15°	683.5	679.2	675.0	675.0	672.8	668.5	668.5	666.4
17.5°	638.5	632.1	632.1	630.0	625.7	625.7	623.5	621.4
20°	593.5	589.2	587.1	585.0	582.8	578.5	578.5	578.5
22.5°	548.5	544.3	542.1	542.1	540.0	535.7	535.7	533.5
25°	505.7	501.4	499.3	497.1	495.0	495.0	492.8	492.8
27.5°	465.0	458.5	458.5	454.3	452.1	450.0	450.0	450.0
30°	420.0	417.8	413.5	415.7	409.3	409.3	409.3	405.0
32.5°	379.3	377.1	375.0	375.0	370.7	368.5	370.7	368.5
35°	340.7	338.6	336.4	334.3	332.1	332.1	330.0	330.0
37.5°	304.3	300.0	297.8	297.8	295.7	295.7	293.6	293.6
40°	265.7	265.7	263.6	261.4	259.3	257.1	255.0	255.0
42.5°	231.4	229.3	227.1	227.1	225.0	220.7	220.7	220.7
45°	197.1	195.0	192.8	192.8	190.7	188.6	186.4	188.6
47.5°	162.8	162.8	162.8	160.7	158.6	156.4	154.3	154.3
50°	135.0	132.8	132.8	132.8	128.6	126.4	124.3	124.3
52.5°	107.1	105.0	105.0	105.0	102.9	98.6	96.4	96.4
55°	81.4	81.4	81.4	79.3	77.1	75.0	72.9	70.7
57.5°	57.9	57.9	57.9	57.9	57.9	57.9	55.7	55.7
60°	40.7	42.9	42.9	45.0	45.0	42.9	40.7	40.7
62.5°	30.0	32.1	32.1	32.1	32.1	30.0	30.0	30.0
65°	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
67.5°	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
70°	10.7	10.7	10.7	10.7	10.7	10.7	8.6	10.7
72.5°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
75°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
77.5°	2.1	4.3	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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