

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: P242000

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

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242000  
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: PRS420D010-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: 1287.3 lumens  
Efficiency: N/A  
Efficacy: 64.4 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

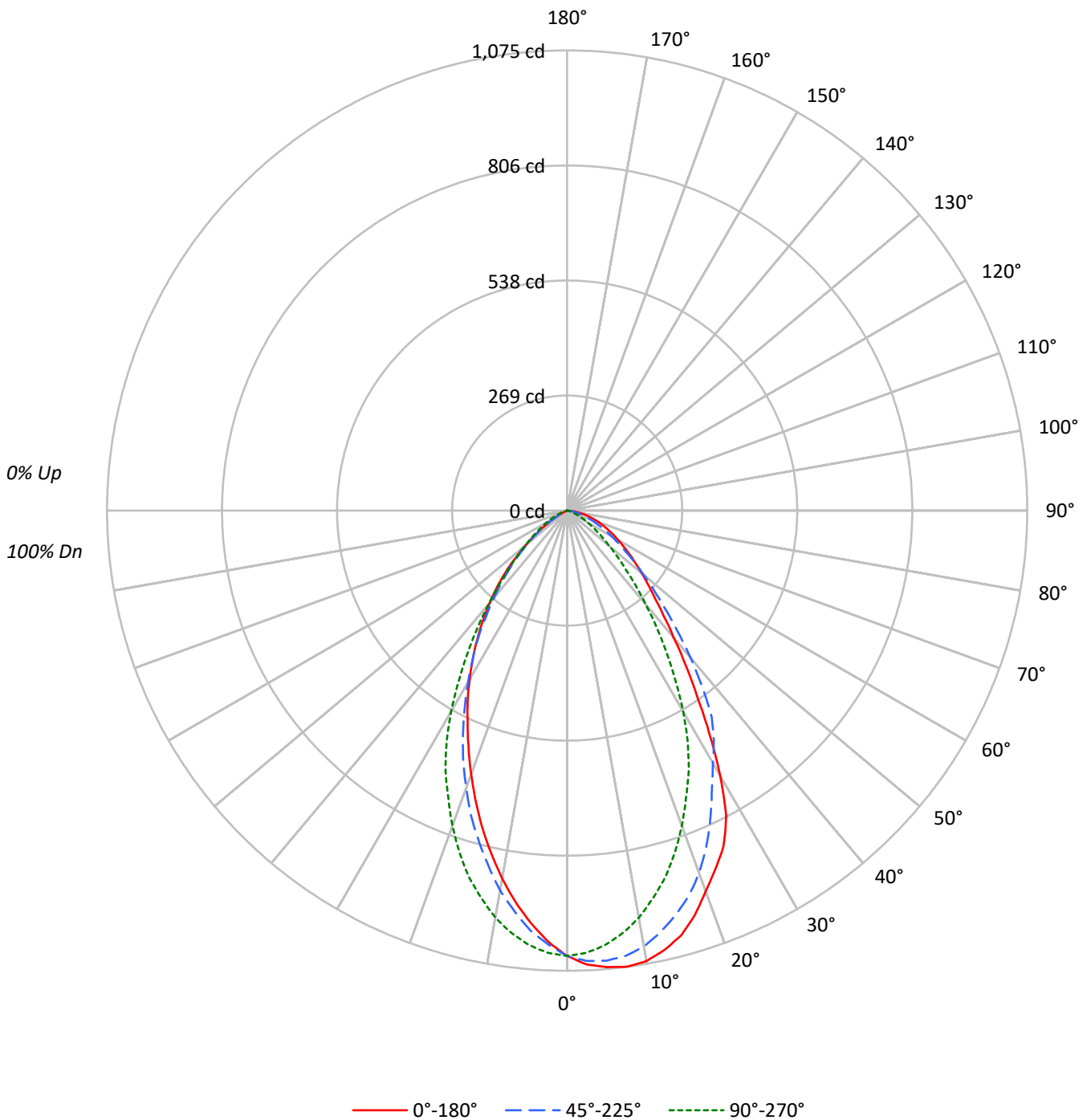
Input Watts (W): 20  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	79636	79636	79636
5°	82245	78296	74346
10°	83033	75043	67884
15°	81431	70234	60732
20°	77073	63821	53362
25°	73046	56772	46468
30°	63195	47869	40303
35°	49412	37807	34209
40°	38719	28447	28018
45°	31511	20860	22018
50°	27019	15290	15290
55°	23714	11423	9141
60°	20973	8190	4256
65°	18999	5814	779
70°	17255	3827	0
75°	15201	2543	0
80°	12254	926	0
85°	7553	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	95.7	7.4
10°-20°	248.7	19.3
20°-30°	313.9	24.4
30°-40°	278.3	21.6
40°-50°	184.6	14.3
50°-60°	100.5	7.8
60°-70°	45.1	3.5
70°-80°	17.5	1.4
80°-90°	2.9	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°	658.3	51.1
0°-40°	936.5	72.8
0°-60°	1221.7	94.9
0°-90°	1287.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1287.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1040	1040	1040	1040	1040	
5°	1070	1055	1019	985	968	102
15°	1028	978	886	798	766	287
25°	865	792	672	576	550	391
35°	529	589	405	362	366	334
45°	291	323	193	186	203	229
55°	178	167	86	66	68	160
65°	105	81	32	2	4	105
75°	51	32	9	0	0	55
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°	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4
2.5°	1061.8	1059.7	1059.7	1059.7	1057.6	1057.6	1057.6	1057.6	1055.4	1053.3	1053.3
5°	1070.4	1072.5	1070.4	1068.3	1068.3	1068.3	1066.1	1064.0	1061.8	1059.7	1055.4
7.5°	1074.7	1072.5	1072.5	1070.4	1068.3	1066.1	1064.0	1061.8	1057.6	1053.3	1049.0
10°	1068.3	1066.1	1064.0	1064.0	1057.6	1057.6	1055.4	1051.1	1044.7	1040.4	1034.0
12.5°	1051.1	1051.1	1049.0	1046.8	1040.4	1040.4	1036.1	1031.9	1025.4	1016.9	1008.3
15°	1027.6	1027.6	1023.3	1021.2	1016.9	1014.7	1010.5	1004.0	997.6	989.0	978.3
17.5°	991.2	991.2	989.0	984.8	982.6	980.5	974.1	969.8	961.2	952.7	944.1
20°	946.2	941.9	941.9	939.8	935.5	933.4	931.2	924.8	918.4	909.8	901.3
22.5°	905.6	903.4	897.0	892.7	886.3	882.0	879.9	871.3	867.0	860.6	849.9
25°	864.9	860.6	858.5	852.0	843.5	841.3	834.9	822.1	813.5	802.8	792.1
27.5°	804.9	804.9	807.1	804.9	796.4	794.2	790.0	779.2	762.1	745.0	732.2
30°	715.0	712.9	715.0	719.3	725.7	727.9	732.2	730.0	717.2	697.9	680.8
32.5°	618.7	618.7	627.3	633.7	640.1	642.2	646.5	657.2	657.2	650.8	638.0
35°	528.8	533.1	539.5	545.9	554.5	556.6	567.3	569.5	582.3	590.9	588.7
37.5°	453.8	458.1	460.3	466.7	475.3	477.4	481.7	496.7	511.6	522.4	518.1
40°	387.5	387.5	393.9	400.3	408.9	411.0	417.5	426.0	443.1	447.4	447.4
42.5°	334.0	336.1	338.2	342.5	348.9	353.2	357.5	370.4	378.9	385.3	381.1
45°	291.1	293.3	295.4	299.7	304.0	306.1	310.4	319.0	325.4	325.4	323.3
47.5°	256.9	256.9	259.0	261.2	265.5	267.6	271.9	276.2	278.3	276.2	274.0
50°	226.9	229.1	229.1	231.2	233.3	237.6	239.8	239.8	239.8	237.6	233.3
52.5°	201.2	201.2	203.4	203.4	207.7	209.8	209.8	209.8	207.7	203.4	197.0
55°	177.7	177.7	177.7	179.8	184.1	184.1	184.1	182.0	179.8	173.4	167.0
57.5°	156.3	158.4	158.4	158.4	160.6	160.6	160.6	158.4	154.1	147.7	141.3
60°	137.0	139.2	139.2	139.2	141.3	141.3	139.2	137.0	132.7	124.2	119.9
62.5°	122.0	122.0	122.0	122.0	122.0	122.0	119.9	115.6	111.3	104.9	100.6
65°	104.9	104.9	104.9	107.0	104.9	102.8	102.8	98.5	94.2	87.8	81.4
67.5°	89.9	89.9	89.9	89.9	87.8	87.8	85.6	81.4	77.1	72.8	66.4
70°	77.1	77.1	77.1	74.9	72.8	72.8	70.6	66.4	62.1	57.8	53.5
72.5°	64.2	64.2	64.2	62.1	59.9	57.8	57.8	53.5	49.2	45.0	42.8
75°	51.4	51.4	51.4	49.2	47.1	45.0	45.0	40.7	38.5	36.4	32.1
77.5°	40.7	40.7	38.5	36.4	36.4	34.3	34.3	32.1	30.0	25.7	23.5
80°	27.8	27.8	27.8	27.8	25.7	23.5	23.5	21.4	19.3	17.1	15.0
82.5°	19.3	19.3	17.1	17.1	15.0	15.0	15.0	12.8	12.8	10.7	8.6
85°	8.6	8.6	8.6	8.6	6.4	6.4	6.4	6.4	6.4	4.3	4.3
87.5°	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	2.1	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°	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4
2.5°	1051.1	1049.0	1049.0	1044.7	1044.7	1042.6	1040.4	1038.3	1036.1	1034.0	1031.9
5°	1053.3	1049.0	1044.7	1040.4	1040.4	1036.1	1031.9	1027.6	1025.4	1019.0	1014.7
7.5°	1044.7	1038.3	1034.0	1027.6	1025.4	1021.2	1014.7	1008.3	1001.9	995.5	989.0
10°	1027.6	1019.0	1012.6	1006.2	999.7	997.6	989.0	982.6	971.9	965.5	959.1
12.5°	1001.9	993.3	984.8	974.1	971.9	967.6	956.9	946.2	937.7	927.0	918.4
15°	969.8	961.2	948.4	939.8	933.4	927.0	918.4	907.7	894.9	886.3	875.6
17.5°	933.4	920.5	907.7	897.0	888.4	884.1	869.2	856.3	847.8	837.0	826.3
20°	890.6	875.6	860.6	845.6	839.2	830.6	817.8	804.9	792.1	783.5	768.5
22.5°	839.2	824.2	809.2	792.1	787.8	779.2	764.3	751.4	740.7	725.7	712.9
25°	781.4	768.5	757.8	742.9	734.3	725.7	712.9	697.9	682.9	672.2	657.2
27.5°	723.6	715.0	704.3	689.3	680.8	672.2	655.1	640.1	620.8	610.1	593.0
30°	667.9	661.5	646.5	631.5	616.5	610.1	586.6	569.5	552.3	541.6	528.8
32.5°	618.7	599.4	580.2	558.7	550.2	541.6	518.1	500.9	486.0	471.0	458.1
35°	563.0	533.1	511.6	492.4	481.7	473.1	453.8	434.6	421.7	404.6	396.0
37.5°	503.1	477.4	451.7	428.2	419.6	406.8	391.8	370.4	357.5	342.5	329.7
40°	438.9	421.7	393.9	370.4	359.7	351.1	331.8	314.7	297.6	284.7	276.2
42.5°	372.5	361.8	340.4	316.8	306.1	297.6	280.4	261.2	246.2	235.5	224.8
45°	316.8	308.3	291.1	269.7	256.9	248.3	231.2	214.1	201.2	192.7	186.2
47.5°	267.6	259.0	244.1	224.8	214.1	205.5	188.4	173.4	164.8	158.4	154.1
50°	224.8	214.1	201.2	188.4	177.7	169.1	154.1	143.4	134.9	128.4	126.3
52.5°	188.4	179.8	167.0	154.1	145.6	139.2	124.2	115.6	111.3	104.9	100.6
55°	158.4	149.9	139.2	126.3	119.9	113.5	102.8	96.3	89.9	85.6	81.4
57.5°	132.7	124.2	113.5	102.8	96.3	92.1	83.5	77.1	72.8	68.5	64.2
60°	111.3	102.8	94.2	83.5	79.2	74.9	68.5	62.1	57.8	53.5	49.2
62.5°	92.1	83.5	74.9	66.4	64.2	59.9	55.7	49.2	45.0	42.8	38.5
65°	77.1	68.5	59.9	53.5	51.4	47.1	42.8	38.5	34.3	32.1	30.0
67.5°	62.1	53.5	47.1	42.8	40.7	38.5	34.3	30.0	27.8	23.5	21.4
70°	49.2	42.8	36.4	32.1	30.0	27.8	25.7	23.5	19.3	17.1	15.0
72.5°	36.4	32.1	27.8	23.5	23.5	21.4	19.3	17.1	15.0	12.8	10.7
75°	27.8	23.5	21.4	17.1	17.1	15.0	12.8	10.7	8.6	8.6	6.4
77.5°	19.3	17.1	15.0	12.8	10.7	10.7	8.6	6.4	6.4	4.3	4.3
80°	12.8	10.7	8.6	6.4	6.4	6.4	4.3	4.3	4.3	2.1	2.1
82.5°	8.6	6.4	4.3	4.3	4.3	2.1	2.1	2.1	2.1	2.1	0.0
85°	2.1	2.1	2.1	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°	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4
2.5°	1029.7	1027.6	1025.4	1023.3	1023.3	1019.0	1019.0	1016.9	1014.7	1014.7	1012.6
5°	1010.5	1006.2	1001.9	999.7	999.7	993.3	989.0	986.9	984.8	982.6	978.3
7.5°	982.6	978.3	971.9	967.6	965.5	959.1	954.8	948.4	944.1	941.9	935.5
10°	950.5	944.1	933.4	931.2	927.0	920.5	914.1	907.7	901.3	894.9	890.6
12.5°	909.8	899.1	892.7	886.3	882.0	875.6	864.9	856.3	849.9	845.6	839.2
15°	864.9	854.2	845.6	839.2	834.9	826.3	813.5	807.1	798.5	790.0	787.8
17.5°	813.5	800.7	792.1	785.7	779.2	772.8	760.0	753.6	747.1	738.6	732.2
20°	757.8	745.0	736.4	727.9	721.4	715.0	706.5	695.8	689.3	685.1	676.5
22.5°	700.0	689.3	676.5	672.2	667.9	652.9	646.5	638.0	633.7	627.3	623.0
25°	644.4	629.4	620.8	614.4	608.0	597.3	586.6	580.2	575.9	571.6	565.2
27.5°	582.3	573.7	563.0	554.5	552.3	541.6	530.9	524.5	518.1	513.8	507.4
30°	515.9	505.2	496.7	496.7	492.4	483.8	479.5	471.0	462.4	460.3	458.1
32.5°	447.4	441.0	434.6	430.3	430.3	423.9	417.5	415.3	411.0	406.8	406.8
35°	385.3	378.9	372.5	370.4	370.4	366.1	363.9	361.8	361.8	359.7	357.5
37.5°	325.4	316.8	310.4	310.4	310.4	310.4	310.4	310.4	310.4	314.7	312.6
40°	269.7	265.5	263.3	261.2	261.2	261.2	263.3	263.3	265.5	269.7	271.9
42.5°	220.5	220.5	218.4	218.4	216.2	218.4	220.5	222.6	224.8	224.8	229.1
45°	184.1	182.0	179.8	179.8	182.0	179.8	182.0	186.2	186.2	188.4	190.5
47.5°	149.9	147.7	147.7	147.7	147.7	147.7	147.7	149.9	152.0	152.0	154.1
50°	122.0	119.9	117.7	119.9	117.7	117.7	119.9	119.9	119.9	122.0	122.0
52.5°	96.3	94.2	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1
55°	74.9	72.8	70.6	70.6	68.5	68.5	66.4	66.4	66.4	66.4	66.4
57.5°	59.9	55.7	53.5	51.4	51.4	47.1	45.0	45.0	42.8	42.8	42.8
60°	45.0	42.8	38.5	38.5	36.4	32.1	30.0	25.7	25.7	23.5	23.5
62.5°	34.3	32.1	30.0	27.8	25.7	21.4	17.1	12.8	8.6	8.6	10.7
65°	25.7	23.5	19.3	17.1	17.1	12.8	8.6	4.3	2.1	2.1	4.3
67.5°	19.3	17.1	12.8	10.7	8.6	6.4	2.1	0.0	0.0	0.0	0.0
70°	12.8	10.7	6.4	6.4	4.3	2.1	0.0	0.0	0.0	0.0	0.0
72.5°	8.6	6.4	4.3	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	4.3	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	2.1	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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CATALOG NUMBER: PRS420D010-S4M12-41SWWC

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4	1040.4
2.5°	1010.5	1010.5	1010.5	1010.5	1008.3	1008.3	1008.3	1008.3
5°	978.3	971.9	971.9	971.9	971.9	971.9	969.8	967.6
7.5°	933.4	929.1	929.1	927.0	927.0	924.8	924.8	922.7
10°	886.3	882.0	882.0	877.7	877.7	875.6	873.4	873.4
12.5°	832.8	828.5	828.5	828.5	824.2	824.2	819.9	819.9
15°	779.2	775.0	772.8	772.8	768.5	768.5	766.4	766.4
17.5°	723.6	721.4	717.2	717.2	715.0	710.7	710.7	710.7
20°	672.2	665.8	663.6	663.6	657.2	657.2	655.1	655.1
22.5°	616.5	612.3	610.1	608.0	603.7	605.8	601.6	601.6
25°	560.9	560.9	556.6	556.6	554.5	552.3	550.2	550.2
27.5°	507.4	507.4	505.2	505.2	503.1	500.9	500.9	503.1
30°	456.0	456.0	456.0	458.1	456.0	453.8	456.0	456.0
32.5°	406.8	406.8	408.9	406.8	408.9	408.9	408.9	408.9
35°	359.7	359.7	361.8	361.8	363.9	363.9	366.1	366.1
37.5°	312.6	316.8	316.8	316.8	321.1	321.1	323.3	323.3
40°	271.9	271.9	274.0	276.2	278.3	280.4	282.6	280.4
42.5°	231.2	231.2	233.3	235.5	237.6	239.8	241.9	241.9
45°	190.5	192.7	194.8	194.8	199.1	201.2	201.2	203.4
47.5°	154.1	158.4	158.4	158.4	160.6	162.7	164.8	162.7
50°	122.0	124.2	124.2	124.2	126.3	128.4	128.4	128.4
52.5°	92.1	94.2	94.2	94.2	96.3	96.3	96.3	98.5
55°	66.4	66.4	66.4	68.5	68.5	68.5	68.5	68.5
57.5°	42.8	42.8	42.8	45.0	47.1	47.1	45.0	45.0
60°	23.5	25.7	27.8	27.8	27.8	30.0	27.8	27.8
62.5°	12.8	15.0	15.0	15.0	15.0	15.0	15.0	15.0
65°	4.3	6.4	6.4	6.4	6.4	6.4	4.3	4.3
67.5°	2.1	2.1	2.1	2.1	2.1	0.0	2.1	2.1
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)