

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: P242045

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

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242045
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
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 / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 976.7 lumens
Efficiency: N/A
Efficacy: 48.8 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

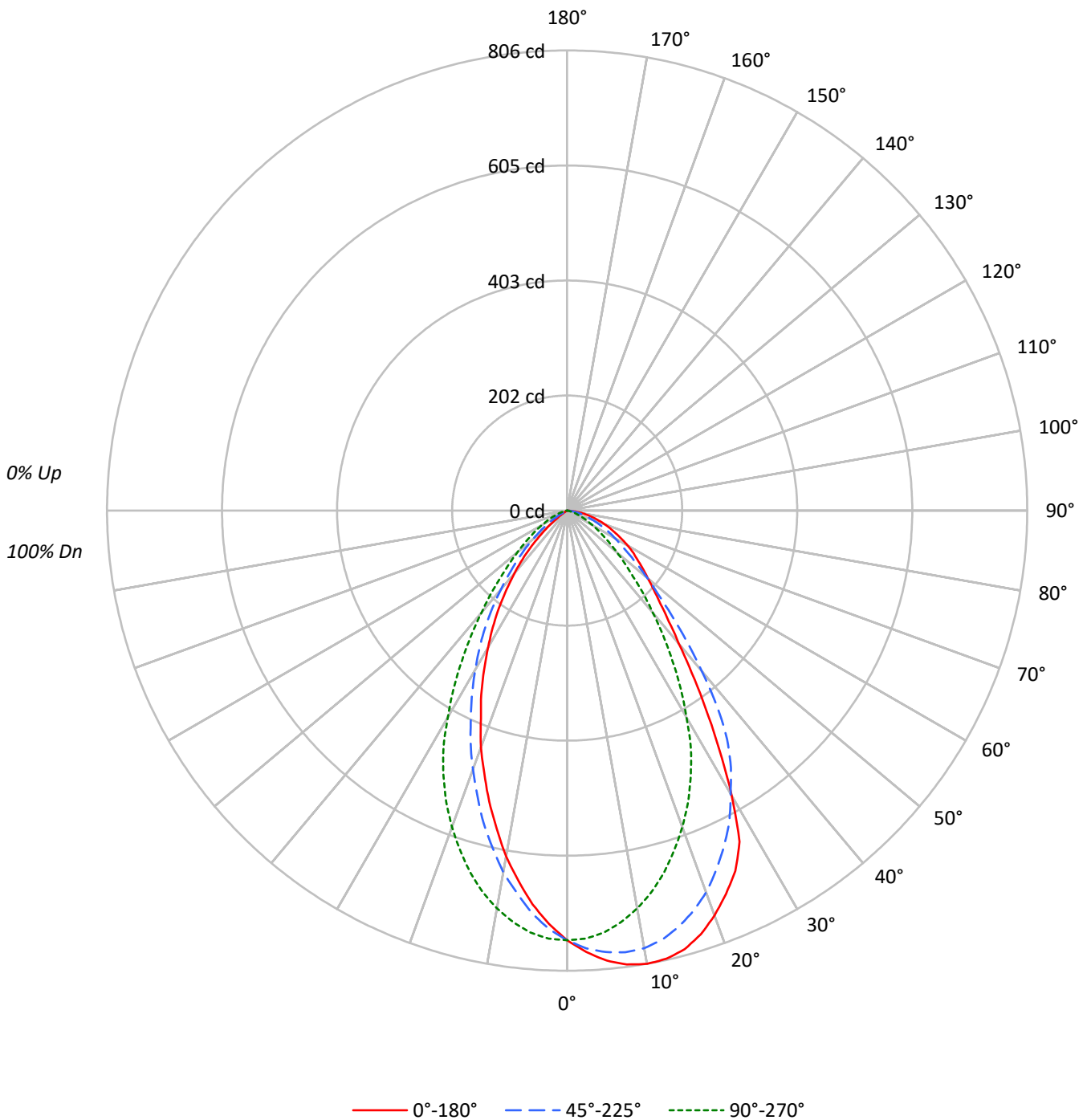
Input Watts (W): 20
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	57607	57607	57607
5°	60792	56997	53209
10°	62661	54990	47824
15°	63038	51992	41793
20°	61475	48026	35979
25°	58849	43275	30058
30°	50980	36954	24447
35°	39470	30051	19436
40°	30426	23351	14359
45°	25070	17634	9515
50°	21958	13528	4847
55°	20031	10302	1148
60°	18707	7884	321
65°	17079	5832	0
70°	15845	3849	0
75°	13959	2543	0
80°	12298	926	0
85°	7553	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.8	7.1
10°-20°	184.6	18.9
20°-30°	238.5	24.4
30°-40°	211.8	21.7
40°-50°	137.7	14.1
50°-60°	76.5	7.8
60°-70°	38.7	4.0
70°-80°	16.3	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°	492.8	50.5
0°-40°	704.6	72.1
0°-60°	918.9	94.1
0°-90°	976.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	976.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	753	753	753	753	753	
5°	791	776	742	708	692	76
15°	796	755	656	566	527	223
25°	697	650	512	399	356	315
35°	422	489	322	251	208	266
45°	232	257	163	124	88	182
55°	150	131	77	45	9	136
65°	94	69	32	2	0	94
75°	47	30	9	0	0	50
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°	752.6	752.6	752.6	752.6	752.6	752.6	752.6	752.6	752.6	752.6	752.6
2.5°	774.0	771.9	774.0	771.9	771.9	771.9	771.9	769.7	769.7	767.6	767.6
5°	791.2	791.2	789.0	789.0	786.9	786.9	786.9	784.7	782.6	780.4	776.2
7.5°	801.9	801.9	799.7	799.7	797.6	795.5	795.5	791.2	789.0	784.7	780.4
10°	806.2	806.2	804.0	801.9	799.7	797.6	797.6	793.3	789.0	782.6	778.3
12.5°	804.0	804.0	801.9	799.7	797.6	795.5	793.3	789.0	782.6	776.2	769.7
15°	795.5	795.5	793.3	791.2	786.9	784.7	782.6	778.3	771.9	763.3	754.7
17.5°	778.3	778.3	776.2	774.0	771.9	769.7	765.4	761.1	752.6	744.0	735.4
20°	754.7	754.7	754.7	752.6	748.3	746.1	744.0	737.6	731.1	722.6	711.8
22.5°	726.8	726.8	724.7	722.6	718.3	718.3	714.0	707.5	701.1	692.5	681.8
25°	696.8	694.7	692.5	692.5	686.1	684.0	681.8	675.4	669.0	660.4	649.7
27.5°	653.9	651.8	653.9	653.9	651.8	649.7	647.5	641.1	630.4	621.8	615.3
30°	576.8	578.9	578.9	583.2	591.8	598.2	602.5	602.5	593.9	585.3	572.5
32.5°	495.3	499.6	501.7	510.3	518.9	525.3	529.6	538.2	548.9	546.7	533.9
35°	422.4	426.7	428.8	435.2	446.0	450.3	456.7	469.6	482.4	493.1	488.8
37.5°	358.1	358.1	364.5	370.9	379.5	385.9	392.4	403.1	420.2	428.8	431.0
40°	304.5	306.6	308.7	317.3	323.8	330.2	334.5	345.2	360.2	366.6	366.6
42.5°	263.7	263.7	265.9	270.2	278.7	280.9	285.2	293.7	302.3	306.6	308.7
45°	231.6	231.6	231.6	235.8	240.1	242.3	246.6	253.0	255.1	257.3	257.3
47.5°	205.8	205.8	205.8	208.0	210.1	212.3	214.4	216.6	218.7	218.7	214.4
50°	184.4	184.4	186.5	186.5	186.5	188.7	188.7	188.7	186.5	184.4	182.2
52.5°	167.2	167.2	167.2	167.2	167.2	167.2	167.2	165.1	160.8	158.7	154.4
55°	150.1	152.2	152.2	152.2	150.1	150.1	147.9	145.8	139.4	135.1	130.8
57.5°	137.2	137.2	137.2	135.1	135.1	132.9	130.8	126.5	122.2	117.9	111.5
60°	122.2	122.2	122.2	120.1	120.1	117.9	115.8	111.5	107.2	100.8	96.5
62.5°	107.2	107.2	107.2	107.2	105.1	102.9	100.8	96.5	92.2	87.9	83.6
65°	94.3	94.3	94.3	94.3	90.1	87.9	85.8	81.5	77.2	72.9	68.6
67.5°	81.5	81.5	81.5	79.3	77.2	75.0	72.9	70.8	66.5	62.2	57.9
70°	70.8	70.8	68.6	66.5	64.3	64.3	62.2	57.9	55.7	51.5	47.2
72.5°	57.9	57.9	57.9	55.7	53.6	51.5	49.3	47.2	45.0	40.7	38.6
75°	47.2	47.2	47.2	45.0	42.9	40.7	40.7	36.4	34.3	32.2	30.0
77.5°	36.4	36.4	36.4	34.3	32.2	32.2	30.0	27.9	25.7	23.6	21.4
80°	27.9	27.9	25.7	25.7	23.6	23.6	21.4	21.4	19.3	17.2	15.0
82.5°	17.2	17.2	17.2	17.2	15.0	15.0	15.0	12.9	12.9	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	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°	752.6	752.6	752.6	752.6	752.6	752.6	752.6	752.6	752.6	752.6	752.6
2.5°	765.4	763.3	761.1	759.0	759.0	756.9	756.9	754.7	752.6	750.4	748.3
5°	774.0	769.7	765.4	763.3	761.1	759.0	754.7	750.4	746.1	741.8	737.6
7.5°	774.0	769.7	763.3	759.0	754.7	752.6	746.1	739.7	733.3	726.8	720.4
10°	771.9	763.3	756.9	750.4	744.0	739.7	733.3	724.7	716.1	707.5	699.0
12.5°	761.1	752.6	744.0	735.4	729.0	724.7	714.0	703.3	694.7	684.0	673.2
15°	746.1	737.6	726.8	714.0	709.7	703.3	692.5	679.7	669.0	656.1	645.4
17.5°	726.8	714.0	703.3	690.4	684.0	677.5	664.7	649.7	638.9	623.9	611.1
20°	701.1	690.4	673.2	662.5	653.9	647.5	632.5	617.5	602.5	589.6	572.5
22.5°	671.1	658.2	643.2	628.2	621.8	613.2	598.2	581.0	568.2	553.2	536.0
25°	638.9	623.9	608.9	591.8	585.3	578.9	561.7	546.7	529.6	512.4	499.6
27.5°	600.3	587.5	572.5	555.3	548.9	540.3	521.0	503.9	486.7	469.6	454.5
30°	561.7	551.0	531.7	512.4	501.7	491.0	471.7	452.4	433.1	418.1	405.2
32.5°	523.2	501.7	480.3	458.8	446.0	435.2	418.1	400.9	383.8	370.9	355.9
35°	471.7	450.3	426.7	405.2	394.5	385.9	366.6	349.5	334.5	321.6	308.7
37.5°	418.1	396.7	375.2	353.8	345.2	336.6	317.3	302.3	287.3	276.6	263.7
40°	360.2	349.5	325.9	306.6	298.0	289.4	274.4	257.3	246.6	233.7	223.0
42.5°	306.6	295.9	278.7	261.6	253.0	246.6	231.6	218.7	208.0	197.3	188.7
45°	257.3	248.7	235.8	223.0	214.4	208.0	193.0	182.2	173.7	162.9	156.5
47.5°	214.4	208.0	199.4	186.5	180.1	173.7	160.8	152.2	143.7	137.2	130.8
50°	178.0	173.7	165.1	156.5	150.1	145.8	135.1	126.5	120.1	113.6	109.3
52.5°	150.1	143.7	137.2	128.6	124.4	120.1	113.6	105.1	100.8	94.3	90.1
55°	126.5	122.2	115.8	107.2	102.9	100.8	94.3	87.9	81.5	77.2	72.9
57.5°	107.2	102.9	96.5	90.1	87.9	83.6	77.2	70.8	66.5	64.3	60.0
60°	92.2	85.8	81.5	75.0	70.8	68.6	62.2	57.9	53.6	51.5	47.2
62.5°	77.2	72.9	66.5	60.0	57.9	55.7	51.5	47.2	42.9	40.7	36.4
65°	64.3	60.0	55.7	49.3	47.2	45.0	40.7	36.4	34.3	32.2	30.0
67.5°	53.6	49.3	45.0	40.7	38.6	34.3	32.2	30.0	25.7	23.6	21.4
70°	42.9	38.6	34.3	30.0	30.0	27.9	23.6	21.4	19.3	17.2	15.0
72.5°	34.3	30.0	27.9	23.6	21.4	21.4	19.3	17.2	15.0	12.9	10.7
75°	25.7	23.6	19.3	17.2	15.0	15.0	12.9	10.7	10.7	8.6	6.4
77.5°	19.3	17.2	15.0	12.9	10.7	10.7	8.6	6.4	6.4	4.3	4.3
80°	12.9	10.7	8.6	6.4	6.4	6.4	4.3	4.3	4.3	2.1	2.1
82.5°	6.4	6.4	4.3	4.3	4.3	4.3	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°	752.6	752.6	752.6	752.6	752.6	752.6	752.6	752.6	752.6	752.6	752.6
2.5°	746.1	744.0	741.8	741.8	739.7	737.6	735.4	735.4	733.3	731.1	731.1
5°	733.3	729.0	724.7	722.6	720.4	716.1	714.0	709.7	707.5	703.3	701.1
7.5°	714.0	707.5	701.1	699.0	696.8	692.5	686.1	679.7	675.4	673.2	669.0
10°	692.5	684.0	675.4	671.1	669.0	660.4	653.9	647.5	643.2	636.8	630.4
12.5°	662.5	653.9	645.4	641.1	636.8	628.2	621.8	613.2	604.6	598.2	591.8
15°	632.5	621.8	611.1	606.8	600.3	591.8	583.2	574.6	566.0	557.5	551.0
17.5°	598.2	587.5	574.6	568.2	563.9	553.2	540.3	533.9	523.2	516.7	508.1
20°	561.7	548.9	536.0	531.7	525.3	512.4	501.7	491.0	482.4	473.8	465.3
22.5°	523.2	508.1	495.3	491.0	484.6	471.7	461.0	452.4	441.7	431.0	422.4
25°	484.6	469.6	456.7	448.1	441.7	431.0	418.1	409.5	398.8	390.2	383.8
27.5°	441.7	426.7	413.8	407.4	403.1	392.4	381.6	370.9	360.2	351.6	343.1
30°	392.4	381.6	370.9	366.6	360.2	351.6	340.9	332.3	321.6	313.0	304.5
32.5°	345.2	334.5	323.8	321.6	317.3	308.7	302.3	293.7	285.2	276.6	270.2
35°	300.2	289.4	283.0	278.7	274.4	268.0	261.6	257.3	250.9	242.3	235.8
37.5°	255.1	250.9	240.1	238.0	235.8	229.4	225.1	220.8	214.4	210.1	203.7
40°	216.6	210.1	203.7	201.5	197.3	193.0	188.7	184.4	180.1	178.0	171.5
42.5°	180.1	175.8	169.4	169.4	165.1	160.8	156.5	154.4	150.1	145.8	143.7
45°	152.2	145.8	143.7	139.4	139.4	135.1	130.8	128.6	124.4	120.1	115.8
47.5°	126.5	122.2	117.9	115.8	115.8	111.5	107.2	102.9	100.8	94.3	90.1
50°	105.1	100.8	98.6	96.5	94.3	92.2	87.9	83.6	79.3	75.0	68.6
52.5°	85.8	83.6	79.3	79.3	77.2	72.9	68.6	64.3	60.0	55.7	49.3
55°	70.8	66.5	64.3	62.2	60.0	57.9	53.6	49.3	45.0	38.6	34.3
57.5°	55.7	53.6	49.3	49.3	47.2	42.9	38.6	34.3	30.0	23.6	19.3
60°	45.0	40.7	38.6	36.4	34.3	32.2	25.7	21.4	17.2	12.9	6.4
62.5°	34.3	32.2	27.9	27.9	25.7	21.4	17.2	12.9	6.4	2.1	0.0
65°	25.7	23.6	21.4	19.3	17.2	12.9	8.6	4.3	2.1	0.0	0.0
67.5°	19.3	17.2	12.9	12.9	10.7	6.4	2.1	0.0	0.0	0.0	0.0
70°	12.9	10.7	8.6	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	2.1	0.0	0.0	0.0	0.0	0.0	0.0
75°	6.4	4.3	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

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	752.6	752.6	752.6	752.6	752.6	752.6	752.6	752.6
2.5°	729.0	726.8	729.0	726.8	726.8	724.7	726.8	724.7
5°	699.0	696.8	696.8	694.7	694.7	694.7	692.5	692.5
7.5°	664.7	662.5	660.4	660.4	658.2	656.1	656.1	653.9
10°	628.2	623.9	619.6	621.8	617.5	617.5	615.3	615.3
12.5°	587.5	583.2	583.2	578.9	574.6	574.6	570.3	570.3
15°	546.7	542.5	538.2	536.0	531.7	531.7	529.6	527.4
17.5°	501.7	497.4	493.1	491.0	488.8	486.7	484.6	482.4
20°	458.8	452.4	450.3	448.1	443.8	441.7	439.5	441.7
22.5°	418.1	409.5	407.4	405.2	403.1	398.8	396.7	394.5
25°	375.2	368.8	364.5	364.5	360.2	358.1	353.8	355.9
27.5°	334.5	330.2	325.9	323.8	319.5	317.3	315.2	315.2
30°	298.0	291.6	289.4	285.2	283.0	278.7	276.6	276.6
32.5°	261.6	255.1	253.0	250.9	246.6	242.3	242.3	242.3
35°	229.4	223.0	220.8	216.6	212.3	208.0	208.0	208.0
37.5°	197.3	190.8	186.5	184.4	180.1	178.0	173.7	173.7
40°	167.2	160.8	156.5	154.4	150.1	145.8	143.7	143.7
42.5°	137.2	132.9	128.6	126.5	122.2	117.9	115.8	115.8
45°	109.3	105.1	102.9	100.8	96.5	90.1	87.9	87.9
47.5°	85.8	81.5	79.3	75.0	70.8	66.5	62.2	62.2
50°	64.3	60.0	55.7	53.6	49.3	45.0	40.7	40.7
52.5°	45.0	40.7	38.6	34.3	30.0	25.7	23.6	21.4
55°	27.9	23.6	21.4	19.3	15.0	12.9	8.6	8.6
57.5°	15.0	10.7	8.6	6.4	4.3	2.1	2.1	2.1
60°	4.3	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)