

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: P242030

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

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242030
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1802-584-63)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PRS420D010-S4M12-41SWWMW
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM MATTE WHITE
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1272.3 lumens
Efficiency: N/A
Efficacy: 63.6 lumens/watt
Spacing Criteria (0/90/45): 1 / 0.97 / 1.07
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')
CIE Type: Direct

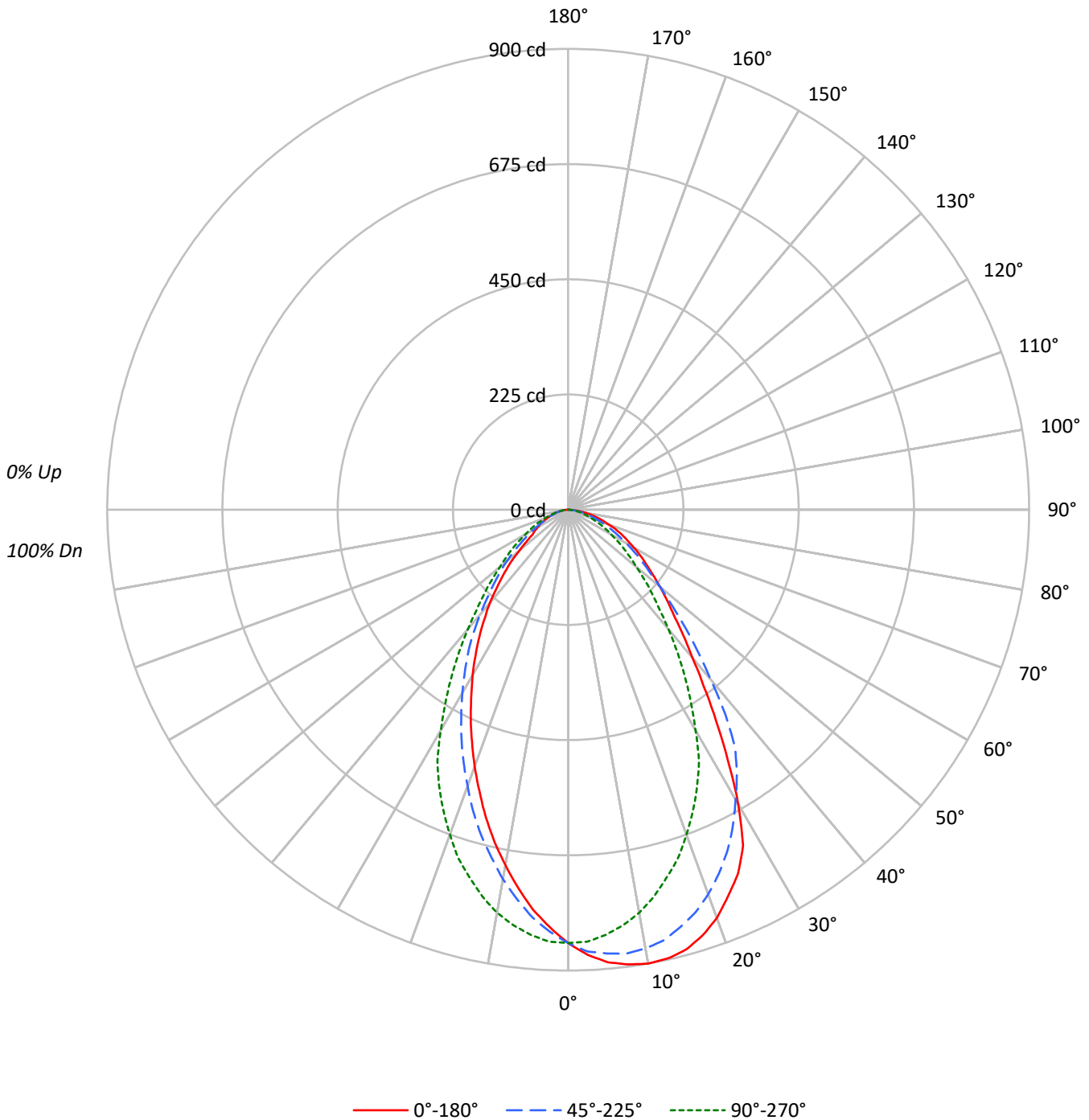
Input Watts (W): 20
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	107	104	101	109	105	102	99	101	98	96	97	95	93	94	92	91	89					89			
2	103	97	91	86	101	95	90	85	91	87	84	88	85	82	85	82	80	78					78			
3	96	87	81	75	94	86	80	75	83	78	73	80	76	72	78	74	71	69					69			
4	89	79	72	66	87	78	71	66	76	70	65	73	68	64	71	67	63	62					62			
5	83	72	65	59	81	71	64	59	69	63	58	67	62	58	66	61	57	55					55			
6	78	66	59	53	76	65	58	53	64	57	53	62	57	52	61	56	52	50					50			
7	73	61	54	48	71	60	53	48	59	53	48	58	52	48	56	51	47	45					45			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	44	53	47	43	42					42			
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38					38			
10	61	49	42	37	60	49	42	37	48	41	37	47	41	37	46	41	37	35					35			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	64786	64786	64786
5°	68161	64050	60262
10°	69952	62125	54796
15°	70471	58926	49242
20°	69123	54983	43465
25°	66239	50311	38005
30°	58714	43936	32959
35°	47058	37041	28229
40°	37680	30406	23771
45°	31544	25049	19257
50°	27817	20672	14802
55°	24875	17735	11437
60°	22642	14758	10502
65°	20955	12805	9708
70°	18710	10541	8639
75°	17123	8872	7601
80°	15119	7538	6612
85°	9397	5621	5621



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.6	6.2
10°-20°	210.2	16.5
20°-30°	279.1	21.9
30°-40°	263.0	20.7
40°-50°	192.4	15.1
50°-60°	126.4	9.9
60°-70°	76.2	6.0
70°-80°	37.5	2.9
80°-90°	8.9	0.7
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	44.6
0°-40°	830.8	65.3
0°-60°	1149.7	90.4
0°-90°	1272.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1272.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	846	846	846	846	846	
5°	887	870	834	799	784	85
15°	889	844	744	658	621	250
25°	784	735	596	493	450	356
35°	504	568	396	341	302	317
45°	291	319	231	206	178	229
55°	186	176	133	111	86	168
65°	116	94	71	51	54	114
75°	58	43	30	26	26	61
85°	11	9	6	6	6	15
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°	846.4	846.4	846.4	846.4	846.4	846.4	846.4	846.4	846.4	846.4	846.4
2.5°	870.0	870.0	870.0	870.0	867.8	867.8	867.8	865.7	865.7	863.6	863.6
5°	887.1	887.1	885.0	885.0	882.8	882.8	880.7	878.6	876.4	874.3	870.0
7.5°	895.7	895.7	893.6	893.6	891.4	891.4	889.3	887.1	882.8	878.6	874.3
10°	900.0	897.8	897.8	895.7	893.6	891.4	889.3	887.1	880.7	876.4	870.0
12.5°	897.8	895.7	895.7	891.4	889.3	887.1	885.0	880.7	874.3	867.8	861.4
15°	889.3	887.1	885.0	882.8	878.6	876.4	874.3	867.8	861.4	852.8	844.3
17.5°	872.1	870.0	870.0	865.7	861.4	859.3	857.1	850.7	842.1	833.6	825.0
20°	848.6	846.4	844.3	842.1	837.8	835.7	833.6	827.1	818.6	810.0	799.3
22.5°	816.4	814.3	814.3	812.1	807.8	805.7	803.6	797.1	790.7	780.0	769.3
25°	784.3	782.1	780.0	777.8	773.6	769.3	767.1	760.7	754.3	747.8	735.0
27.5°	739.3	741.4	741.4	739.3	737.1	735.0	732.8	724.3	715.7	707.1	696.4
30°	664.3	660.0	664.3	670.7	677.1	679.3	685.7	685.7	677.1	666.4	653.6
32.5°	580.7	582.9	585.0	593.6	602.1	604.3	608.6	621.4	632.1	625.7	612.9
35°	503.6	505.7	510.0	516.4	522.9	533.6	537.9	548.6	559.3	572.1	567.9
37.5°	435.0	437.1	441.4	445.7	456.4	460.7	469.3	477.9	495.0	505.7	503.6
40°	377.1	379.3	381.4	385.7	398.6	400.7	405.0	417.9	428.6	437.1	432.9
42.5°	332.1	330.0	334.3	338.6	345.0	347.1	351.4	360.0	368.6	372.9	372.9
45°	291.4	293.6	295.7	300.0	302.1	306.4	308.6	315.0	317.1	319.3	319.3
47.5°	261.4	261.4	263.6	265.7	267.9	270.0	272.1	274.3	274.3	274.3	272.1
50°	233.6	233.6	235.7	237.9	237.9	240.0	240.0	240.0	237.9	235.7	233.6
52.5°	207.9	207.9	210.0	212.1	212.1	212.1	212.1	210.0	207.9	205.7	201.4
55°	186.4	186.4	188.6	188.6	188.6	188.6	188.6	184.3	180.0	177.9	175.7
57.5°	167.1	167.1	167.1	167.1	167.1	167.1	165.0	160.7	158.6	154.3	152.1
60°	147.9	147.9	147.9	147.9	147.9	145.7	143.6	141.4	137.1	132.9	130.7
62.5°	130.7	130.7	130.7	130.7	128.6	126.4	126.4	122.1	120.0	115.7	111.4
65°	115.7	115.7	113.6	113.6	111.4	109.3	109.3	105.0	102.9	98.6	94.3
67.5°	100.7	98.6	98.6	98.6	96.4	94.3	92.1	90.0	87.9	83.6	79.3
70°	83.6	83.6	85.7	83.6	81.4	79.3	79.3	75.0	72.9	70.7	66.4
72.5°	70.7	70.7	70.7	68.6	68.6	66.4	64.3	62.1	60.0	57.9	53.6
75°	57.9	57.9	57.9	55.7	53.6	53.6	53.6	49.3	49.3	45.0	42.9
77.5°	45.0	45.0	45.0	42.9	42.9	42.9	40.7	38.6	36.4	36.4	34.3
80°	34.3	34.3	32.1	32.1	30.0	30.0	30.0	27.9	27.9	25.7	23.6
82.5°	23.6	21.4	21.4	21.4	21.4	21.4	19.3	19.3	17.1	17.1	15.0
85°	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	8.6	8.6	8.6
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°	846.4	846.4	846.4	846.4	846.4	846.4	846.4	846.4	846.4	846.4	846.4
2.5°	859.3	859.3	857.1	855.0	852.8	852.8	850.7	848.6	846.4	844.3	840.0
5°	867.8	863.6	859.3	855.0	855.0	852.8	846.4	842.1	837.8	833.6	829.3
7.5°	867.8	861.4	857.1	850.7	848.6	844.3	837.8	831.4	825.0	818.6	812.1
10°	863.6	855.0	848.6	840.0	835.7	831.4	822.8	814.3	805.7	799.3	788.6
12.5°	850.7	842.1	833.6	822.8	818.6	814.3	803.6	792.8	784.3	773.6	765.0
15°	833.6	825.0	814.3	803.6	797.1	792.8	780.0	767.1	754.3	743.6	732.8
17.5°	814.3	801.4	790.7	777.8	771.4	762.8	750.0	737.1	724.3	713.6	700.7
20°	786.4	775.7	760.7	745.7	739.3	730.7	717.8	702.8	690.0	675.0	662.1
22.5°	758.6	743.6	728.6	711.4	705.0	696.4	681.4	664.3	651.4	636.4	621.4
25°	722.1	707.1	692.1	677.1	666.4	660.0	645.0	627.8	612.9	595.7	580.7
27.5°	683.6	668.6	653.6	636.4	627.8	619.3	600.0	582.9	565.7	552.9	535.7
30°	640.7	627.8	610.7	587.1	576.4	567.9	546.4	527.1	510.0	497.1	486.4
32.5°	597.9	578.6	555.0	531.4	520.7	510.0	488.6	471.4	458.6	445.7	432.9
35°	542.1	520.7	499.3	477.9	467.1	456.4	439.3	422.1	407.1	396.4	385.7
37.5°	490.7	467.1	443.6	424.3	413.6	405.0	385.7	372.9	360.0	349.3	338.6
40°	428.6	415.7	390.0	372.9	362.1	353.6	336.4	323.6	312.9	304.3	295.7
42.5°	368.6	362.1	340.7	323.6	315.0	308.6	293.6	282.9	272.1	263.6	259.3
45°	315.0	306.4	297.9	280.7	274.3	267.9	255.0	244.3	235.7	231.4	225.0
47.5°	270.0	263.6	255.0	242.1	235.7	231.4	220.7	212.1	205.7	201.4	197.1
50°	229.3	225.0	218.6	210.0	203.6	199.3	190.7	184.3	177.9	173.6	171.4
52.5°	197.1	192.9	186.4	180.0	175.7	171.4	165.0	158.6	156.4	152.1	147.9
55°	169.3	165.0	160.7	154.3	152.1	150.0	143.6	139.3	135.0	132.9	130.7
57.5°	147.9	143.6	137.1	132.9	130.7	128.6	124.3	120.0	115.7	113.6	111.4
60°	126.4	122.1	117.9	113.6	111.4	109.3	107.1	102.9	98.6	96.4	96.4
62.5°	109.3	105.0	100.7	96.4	96.4	94.3	90.0	87.9	85.7	83.6	81.4
65°	92.1	87.9	85.7	81.4	79.3	79.3	77.1	72.9	70.7	70.7	68.6
67.5°	77.1	75.0	70.7	68.6	66.4	66.4	62.1	62.1	60.0	57.9	55.7
70°	64.3	60.0	57.9	55.7	55.7	53.6	51.4	51.4	49.3	47.1	45.0
72.5°	51.4	49.3	47.1	45.0	45.0	42.9	42.9	40.7	38.6	38.6	36.4
75°	40.7	38.6	38.6	34.3	34.3	34.3	32.1	32.1	30.0	30.0	27.9
77.5°	32.1	30.0	27.9	27.9	25.7	25.7	25.7	23.6	23.6	23.6	21.4
80°	21.4	21.4	19.3	19.3	19.3	19.3	17.1	17.1	17.1	17.1	15.0
82.5°	15.0	12.9	12.9	12.9	12.9	12.9	10.7	10.7	10.7	10.7	10.7
85°	8.6	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	846.4	846.4	846.4	846.4	846.4	846.4	846.4	846.4	846.4	846.4	846.4
2.5°	837.8	835.7	833.6	833.6	831.4	829.3	829.3	827.1	825.0	822.8	820.7
5°	825.0	820.7	816.4	814.3	812.1	810.0	805.7	801.4	799.3	795.0	792.8
7.5°	805.7	799.3	795.0	790.7	788.6	782.1	777.8	773.6	767.1	765.0	760.7
10°	782.1	773.6	765.0	762.8	758.6	752.1	745.7	737.1	732.8	728.6	724.3
12.5°	754.3	745.7	735.0	730.7	726.4	717.8	709.3	702.8	694.3	690.0	683.6
15°	722.1	711.4	700.7	696.4	692.1	681.4	672.8	664.3	657.8	649.3	642.8
17.5°	687.8	675.0	662.1	657.8	653.6	642.8	634.3	623.6	617.1	608.6	602.1
20°	649.3	636.4	623.6	621.4	612.9	602.1	591.4	582.9	574.3	567.9	559.3
22.5°	608.6	595.7	585.0	578.6	572.1	561.4	550.7	542.1	533.6	522.9	516.4
25°	570.0	555.0	542.1	540.0	531.4	522.9	512.1	501.4	492.9	484.3	477.9
27.5°	525.0	514.3	501.4	495.0	490.7	480.0	471.4	460.7	452.1	443.6	437.1
30°	473.6	462.9	454.3	450.0	445.7	439.3	428.6	422.1	413.6	405.0	398.6
32.5°	424.3	417.9	409.3	405.0	402.9	394.3	390.0	383.6	375.0	368.6	362.1
35°	375.0	370.7	362.1	362.1	357.9	353.6	349.3	345.0	340.7	334.3	327.9
37.5°	332.1	327.9	321.4	317.1	317.1	312.9	310.7	306.4	304.3	300.0	295.7
40°	291.4	285.0	280.7	278.6	276.4	274.3	270.0	267.9	267.9	265.7	261.4
42.5°	250.7	248.6	244.3	242.1	244.3	240.0	240.0	237.9	233.6	231.4	229.3
45°	220.7	216.4	216.4	214.3	214.3	212.1	210.0	207.9	205.7	201.4	201.4
47.5°	192.9	190.7	188.6	188.6	186.4	186.4	184.3	182.1	180.0	177.9	173.6
50°	169.3	167.1	165.0	165.0	162.9	162.9	160.7	158.6	156.4	152.1	147.9
52.5°	147.9	145.7	143.6	143.6	141.4	141.4	139.3	135.0	132.9	130.7	126.4
55°	128.6	126.4	124.3	124.3	122.1	122.1	120.0	115.7	111.4	109.3	105.0
57.5°	109.3	109.3	107.1	107.1	105.0	102.9	100.7	96.4	94.3	92.1	87.9
60°	94.3	92.1	92.1	90.0	90.0	87.9	83.6	81.4	77.1	75.0	70.7
62.5°	79.3	79.3	77.1	75.0	75.0	70.7	68.6	66.4	64.3	60.0	62.1
65°	66.4	64.3	64.3	62.1	62.1	57.9	55.7	53.6	51.4	51.4	53.6
67.5°	55.7	53.6	51.4	51.4	49.3	47.1	45.0	45.0	45.0	45.0	45.0
70°	45.0	42.9	40.7	40.7	40.7	38.6	36.4	36.4	36.4	38.6	38.6
72.5°	36.4	34.3	32.1	32.1	30.0	30.0	30.0	30.0	30.0	32.1	32.1
75°	27.9	25.7	25.7	25.7	25.7	25.7	25.7	25.7	25.7	25.7	25.7
77.5°	21.4	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3
80°	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
82.5°	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
85°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	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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CATALOG NUMBER: PRS420D010-S4M12-41SWWMW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	846.4	846.4	846.4	846.4	846.4	846.4	846.4	846.4
2.5°	820.7	820.7	820.7	818.6	818.6	818.6	818.6	816.4
5°	790.7	790.7	788.6	788.6	786.4	786.4	786.4	784.3
7.5°	756.4	754.3	754.3	752.1	750.0	747.8	747.8	745.7
10°	720.0	715.7	711.4	713.6	709.3	709.3	705.0	705.0
12.5°	679.3	675.0	675.0	670.7	666.4	666.4	664.3	664.3
15°	636.4	632.1	630.0	627.8	625.7	623.6	623.6	621.4
17.5°	593.6	591.4	589.3	587.1	582.9	580.7	578.6	576.4
20°	552.9	546.4	544.3	544.3	537.9	537.9	533.6	533.6
22.5°	510.0	503.6	503.6	501.4	497.1	492.9	492.9	490.7
25°	469.3	465.0	460.7	458.6	456.4	452.1	452.1	450.0
27.5°	428.6	424.3	422.1	420.0	415.7	413.6	411.4	409.3
30°	392.1	385.7	383.6	381.4	377.1	375.0	372.9	372.9
32.5°	355.7	349.3	349.3	345.0	342.9	338.6	336.4	336.4
35°	321.4	317.1	312.9	310.7	306.4	306.4	302.1	302.1
37.5°	287.1	282.9	282.9	278.6	274.3	272.1	270.0	267.9
40°	257.1	250.7	250.7	246.4	242.1	240.0	237.9	237.9
42.5°	227.1	220.7	218.6	216.4	212.1	207.9	207.9	205.7
45°	197.1	192.9	190.7	188.6	184.3	180.0	180.0	177.9
47.5°	169.3	167.1	162.9	160.7	158.6	154.3	152.1	152.1
50°	145.7	143.6	139.3	137.1	132.9	128.6	126.4	124.3
52.5°	122.1	120.0	117.9	115.7	111.4	107.1	105.0	102.9
55°	102.9	100.7	96.4	96.4	92.1	90.0	87.9	85.7
57.5°	83.6	81.4	79.3	79.3	77.1	77.1	77.1	77.1
60°	68.6	70.7	70.7	70.7	70.7	70.7	70.7	68.6
62.5°	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1
65°	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6
67.5°	45.0	45.0	47.1	45.0	45.0	45.0	45.0	45.0
70°	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6
72.5°	32.1	32.1	32.1	32.1	32.1	32.1	32.1	32.1
75°	25.7	25.7	25.7	25.7	25.7	25.7	25.7	25.7
77.5°	21.4	21.4	19.3	19.3	21.4	21.4	19.3	21.4
80°	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
82.5°	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
85°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
87.5°	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

(END OF REPORT)