

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: P242024

Luminaire Tested: **PRS415D010-S4M12-41SWWMW-3000K**

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242024  
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: PRS415D010-S4M12-41SWWMW-3000K  
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 / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 764.9 lumens  
Efficiency: N/A  
Efficacy: 63.7 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

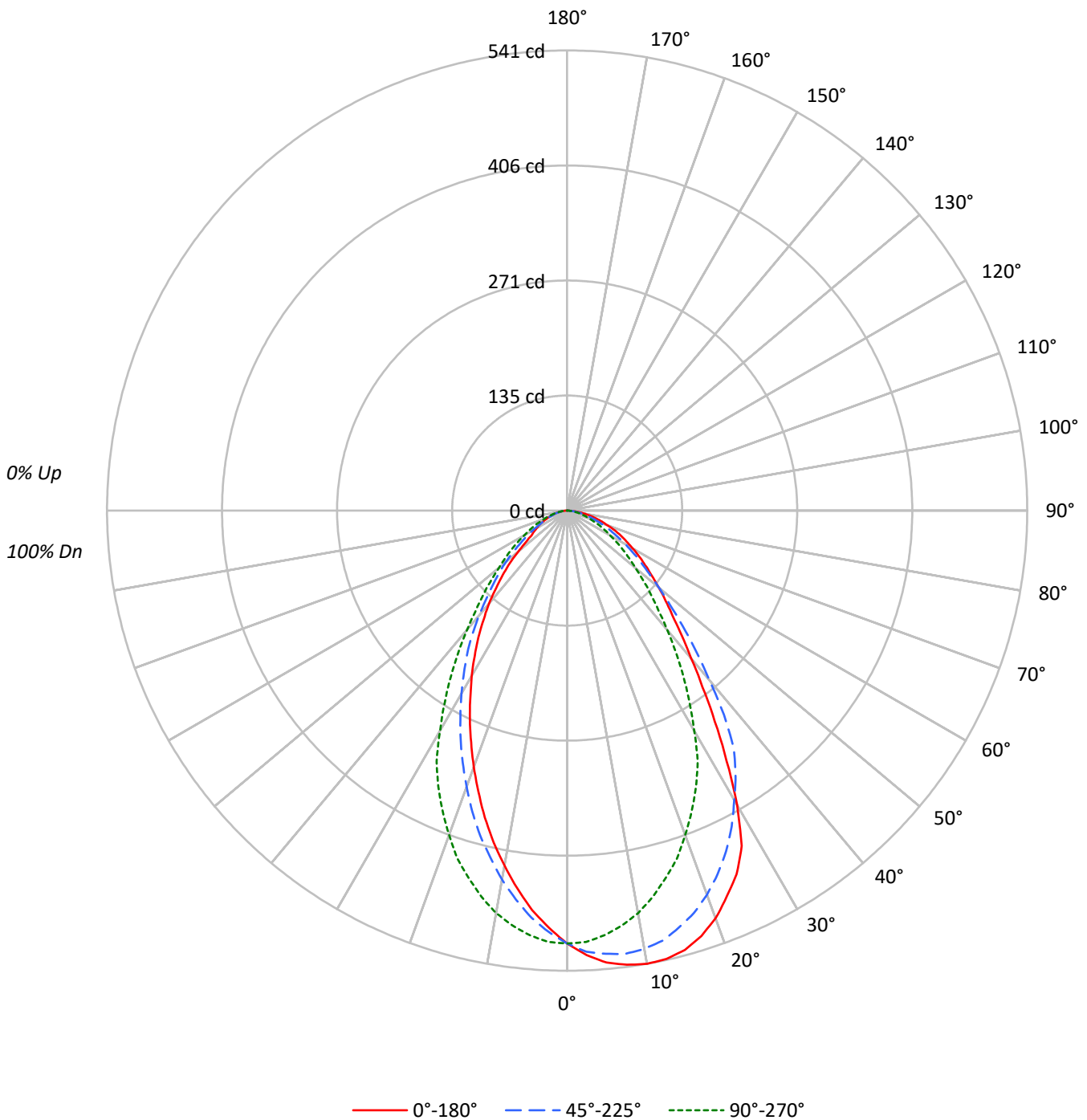
Input Watts (W): 12  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	38953	38953	38953
5°	40984	38510	36228
10°	42057	37346	32947
15°	42372	35430	29605
20°	41559	33055	26131
25°	39821	30252	22854
30°	35301	26418	19816
35°	28294	22267	16978
40°	22652	18275	14289
45°	18965	15057	11572
50°	16719	12432	8895
55°	14960	10663	6873
60°	13609	8879	6307
65°	12606	7697	5832
70°	11235	6333	5192
75°	10292	5323	4584
80°	9080	4540	3967
85°	5621	3425	3425



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	47.3	6.2
10°-20°	126.4	16.5
20°-30°	167.8	21.9
30°-40°	158.1	20.7
40°-50°	115.7	15.1
50°-60°	76.0	9.9
60°-70°	45.8	6.0
70°-80°	22.6	2.9
80°-90°	5.4	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°	341.4	44.6
0°-40°	499.5	65.3
0°-60°	691.2	90.4
0°-90°	764.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	764.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	509	509	509	509	509	
5°	533	523	501	480	472	51
15°	535	508	447	396	374	150
25°	472	442	358	296	271	214
35°	303	341	238	205	182	190
45°	175	192	139	124	107	138
55°	112	106	80	67	52	101
65°	70	57	42	31	32	69
75°	35	26	18	16	16	37
85°	6	5	4	4	4	9
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°	508.9	508.9	508.9	508.9	508.9	508.9	508.9	508.9	508.9	508.9	508.9
2.5°	523.1	523.1	523.1	523.1	521.8	521.8	521.8	520.5	520.5	519.2	519.2
5°	533.4	533.4	532.1	532.1	530.8	530.8	529.5	528.2	526.9	525.6	523.1
7.5°	538.5	538.5	537.2	537.2	535.9	535.9	534.7	533.4	530.8	528.2	525.6
10°	541.1	539.8	539.8	538.5	537.2	535.9	534.7	533.4	529.5	526.9	523.1
12.5°	539.8	538.5	538.5	535.9	534.7	533.4	532.1	529.5	525.6	521.8	517.9
15°	534.7	533.4	532.1	530.8	528.2	526.9	525.6	521.8	517.9	512.8	507.6
17.5°	524.4	523.1	523.1	520.5	517.9	516.6	515.3	511.5	506.3	501.2	496.0
20°	510.2	508.9	507.6	506.3	503.7	502.5	501.2	497.3	492.1	487.0	480.5
22.5°	490.9	489.6	489.6	488.3	485.7	484.4	483.1	479.3	475.4	469.0	462.5
25°	471.5	470.2	469.0	467.7	465.1	462.5	461.2	457.4	453.5	449.6	441.9
27.5°	444.5	445.8	445.8	444.5	443.2	441.9	440.6	435.5	430.3	425.2	418.7
30°	399.4	396.8	399.4	403.2	407.1	408.4	412.3	412.3	407.1	400.7	392.9
32.5°	349.1	350.4	351.7	356.9	362.0	363.3	365.9	373.6	380.1	376.2	368.5
35°	302.8	304.0	306.6	310.5	314.4	320.8	323.4	329.8	336.3	344.0	341.4
37.5°	261.5	262.8	265.4	268.0	274.4	277.0	282.1	287.3	297.6	304.0	302.8
40°	226.7	228.0	229.3	231.9	239.6	240.9	243.5	251.2	257.7	262.8	260.2
42.5°	199.7	198.4	201.0	203.6	207.4	208.7	211.3	216.4	221.6	224.2	224.2
45°	175.2	176.5	177.8	180.4	181.7	184.2	185.5	189.4	190.7	192.0	192.0
47.5°	157.2	157.2	158.5	159.8	161.0	162.3	163.6	164.9	164.9	164.9	163.6
50°	140.4	140.4	141.7	143.0	143.0	144.3	144.3	144.3	143.0	141.7	140.4
52.5°	125.0	125.0	126.3	127.5	127.5	127.5	127.5	126.3	125.0	123.7	121.1
55°	112.1	112.1	113.4	113.4	113.4	113.4	113.4	110.8	108.2	106.9	105.6
57.5°	100.5	100.5	100.5	100.5	100.5	100.5	99.2	96.6	95.3	92.8	91.5
60°	88.9	88.9	88.9	88.9	88.9	87.6	86.3	85.0	82.5	79.9	78.6
62.5°	78.6	78.6	78.6	78.6	77.3	76.0	76.0	73.4	72.1	69.6	67.0
65°	69.6	69.6	68.3	68.3	67.0	65.7	65.7	63.1	61.8	59.3	56.7
67.5°	60.6	59.3	59.3	59.3	58.0	56.7	55.4	54.1	52.8	50.2	47.7
70°	50.2	50.2	51.5	50.2	49.0	47.7	47.7	45.1	43.8	42.5	39.9
72.5°	42.5	42.5	42.5	41.2	41.2	39.9	38.7	37.4	36.1	34.8	32.2
75°	34.8	34.8	34.8	33.5	32.2	32.2	32.2	29.6	29.6	27.1	25.8
77.5°	27.1	27.1	27.1	25.8	25.8	25.8	24.5	23.2	21.9	21.9	20.6
80°	20.6	20.6	19.3	19.3	18.0	18.0	18.0	16.7	16.7	15.5	14.2
82.5°	14.2	12.9	12.9	12.9	12.9	12.9	11.6	11.6	10.3	10.3	9.0
85°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	5.2	5.2	5.2
87.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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°	508.9	508.9	508.9	508.9	508.9	508.9	508.9	508.9	508.9	508.9	508.9
2.5°	516.6	516.6	515.3	514.0	512.8	512.8	511.5	510.2	508.9	507.6	505.0
5°	521.8	519.2	516.6	514.0	514.0	512.8	508.9	506.3	503.7	501.2	498.6
7.5°	521.8	517.9	515.3	511.5	510.2	507.6	503.7	499.9	496.0	492.1	488.3
10°	519.2	514.0	510.2	505.0	502.5	499.9	494.7	489.6	484.4	480.5	474.1
12.5°	511.5	506.3	501.2	494.7	492.1	489.6	483.1	476.7	471.5	465.1	459.9
15°	501.2	496.0	489.6	483.1	479.3	476.7	469.0	461.2	453.5	447.1	440.6
17.5°	489.6	481.8	475.4	467.7	463.8	458.6	450.9	443.2	435.5	429.0	421.3
20°	472.8	466.4	457.4	448.3	444.5	439.3	431.6	422.6	414.8	405.8	398.1
22.5°	456.1	447.1	438.0	427.7	423.9	418.7	409.7	399.4	391.7	382.6	373.6
25°	434.2	425.2	416.1	407.1	400.7	396.8	387.8	377.5	368.5	358.2	349.1
27.5°	411.0	402.0	392.9	382.6	377.5	372.3	360.7	350.4	340.1	332.4	322.1
30°	385.2	377.5	367.2	353.0	346.6	341.4	328.5	316.9	306.6	298.9	292.5
32.5°	359.4	347.9	333.7	319.5	313.1	306.6	293.7	283.4	275.7	268.0	260.2
35°	325.9	313.1	300.2	287.3	280.9	274.4	264.1	253.8	244.8	238.3	231.9
37.5°	295.0	280.9	266.7	255.1	248.6	243.5	231.9	224.2	216.4	210.0	203.6
40°	257.7	249.9	234.5	224.2	217.7	212.6	202.3	194.5	188.1	182.9	177.8
42.5°	221.6	217.7	204.8	194.5	189.4	185.5	176.5	170.1	163.6	158.5	155.9
45°	189.4	184.2	179.1	168.8	164.9	161.0	153.3	146.9	141.7	139.1	135.3
47.5°	162.3	158.5	153.3	145.6	141.7	139.1	132.7	127.5	123.7	121.1	118.5
50°	137.9	135.3	131.4	126.3	122.4	119.8	114.7	110.8	106.9	104.4	103.1
52.5°	118.5	116.0	112.1	108.2	105.6	103.1	99.2	95.3	94.0	91.5	88.9
55°	101.8	99.2	96.6	92.8	91.5	90.2	86.3	83.7	81.2	79.9	78.6
57.5°	88.9	86.3	82.5	79.9	78.6	77.3	74.7	72.1	69.6	68.3	67.0
60°	76.0	73.4	70.9	68.3	67.0	65.7	64.4	61.8	59.3	58.0	58.0
62.5°	65.7	63.1	60.6	58.0	58.0	56.7	54.1	52.8	51.5	50.2	49.0
65°	55.4	52.8	51.5	49.0	47.7	47.7	46.4	43.8	42.5	42.5	41.2
67.5°	46.4	45.1	42.5	41.2	39.9	39.9	37.4	37.4	36.1	34.8	33.5
70°	38.7	36.1	34.8	33.5	33.5	32.2	30.9	30.9	29.6	28.3	27.1
72.5°	30.9	29.6	28.3	27.1	27.1	25.8	25.8	24.5	23.2	23.2	21.9
75°	24.5	23.2	23.2	20.6	20.6	20.6	19.3	19.3	18.0	18.0	16.7
77.5°	19.3	18.0	16.7	16.7	15.5	15.5	15.5	14.2	14.2	14.2	12.9
80°	12.9	12.9	11.6	11.6	11.6	11.6	10.3	10.3	10.3	10.3	9.0
82.5°	9.0	7.7	7.7	7.7	7.7	7.7	6.4	6.4	6.4	6.4	6.4
85°	5.2	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
87.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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°	508.9	508.9	508.9	508.9	508.9	508.9	508.9	508.9	508.9	508.9	508.9
2.5°	503.7	502.5	501.2	501.2	499.9	498.6	498.6	497.3	496.0	494.7	493.4
5°	496.0	493.4	490.9	489.6	488.3	487.0	484.4	481.8	480.5	478.0	476.7
7.5°	484.4	480.5	478.0	475.4	474.1	470.2	467.7	465.1	461.2	459.9	457.4
10°	470.2	465.1	459.9	458.6	456.1	452.2	448.3	443.2	440.6	438.0	435.5
12.5°	453.5	448.3	441.9	439.3	436.7	431.6	426.4	422.6	417.4	414.8	411.0
15°	434.2	427.7	421.3	418.7	416.1	409.7	404.5	399.4	395.5	390.4	386.5
17.5°	413.6	405.8	398.1	395.5	392.9	386.5	381.3	374.9	371.0	365.9	362.0
20°	390.4	382.6	374.9	373.6	368.5	362.0	355.6	350.4	345.3	341.4	336.3
22.5°	365.9	358.2	351.7	347.9	344.0	337.5	331.1	325.9	320.8	314.4	310.5
25°	342.7	333.7	325.9	324.7	319.5	314.4	307.9	301.5	296.3	291.2	287.3
27.5°	315.6	309.2	301.5	297.6	295.0	288.6	283.4	277.0	271.8	266.7	262.8
30°	284.7	278.3	273.1	270.6	268.0	264.1	257.7	253.8	248.6	243.5	239.6
32.5°	255.1	251.2	246.1	243.5	242.2	237.1	234.5	230.6	225.5	221.6	217.7
35°	225.5	222.9	217.7	217.7	215.2	212.6	210.0	207.4	204.8	201.0	197.1
37.5°	199.7	197.1	193.3	190.7	190.7	188.1	186.8	184.2	182.9	180.4	177.8
40°	175.2	171.3	168.8	167.5	166.2	164.9	162.3	161.0	161.0	159.8	157.2
42.5°	150.7	149.4	146.9	145.6	146.9	144.3	144.3	143.0	140.4	139.1	137.9
45°	132.7	130.1	130.1	128.8	128.8	127.5	126.3	125.0	123.7	121.1	121.1
47.5°	116.0	114.7	113.4	113.4	112.1	112.1	110.8	109.5	108.2	106.9	104.4
50°	101.8	100.5	99.2	99.2	97.9	97.9	96.6	95.3	94.0	91.5	88.9
52.5°	88.9	87.6	86.3	86.3	85.0	85.0	83.7	81.2	79.9	78.6	76.0
55°	77.3	76.0	74.7	74.7	73.4	73.4	72.1	69.6	67.0	65.7	63.1
57.5°	65.7	65.7	64.4	64.4	63.1	61.8	60.6	58.0	56.7	55.4	52.8
60°	56.7	55.4	55.4	54.1	54.1	52.8	50.2	49.0	46.4	45.1	42.5
62.5°	47.7	47.7	46.4	45.1	45.1	42.5	41.2	39.9	38.7	36.1	37.4
65°	39.9	38.7	38.7	37.4	37.4	34.8	33.5	32.2	30.9	30.9	32.2
67.5°	33.5	32.2	30.9	30.9	29.6	28.3	27.1	27.1	27.1	27.1	27.1
70°	27.1	25.8	24.5	24.5	24.5	23.2	21.9	21.9	21.9	23.2	23.2
72.5°	21.9	20.6	19.3	19.3	18.0	18.0	18.0	18.0	18.0	19.3	19.3
75°	16.7	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
77.5°	12.9	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
80°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
82.5°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
85°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
87.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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: PRS415D010-S4M12-41SWWMW-3000K

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	508.9	508.9	508.9	508.9	508.9	508.9	508.9	508.9
2.5°	493.4	493.4	493.4	492.1	492.1	492.1	492.1	490.9
5°	475.4	475.4	474.1	474.1	472.8	472.8	472.8	471.5
7.5°	454.8	453.5	453.5	452.2	450.9	449.6	449.6	448.3
10°	432.9	430.3	427.7	429.0	426.4	426.4	423.9	423.9
12.5°	408.4	405.8	405.8	403.2	400.7	400.7	399.4	399.4
15°	382.6	380.1	378.8	377.5	376.2	374.9	374.9	373.6
17.5°	356.9	355.6	354.3	353.0	350.4	349.1	347.9	346.6
20°	332.4	328.5	327.2	327.2	323.4	323.4	320.8	320.8
22.5°	306.6	302.8	302.8	301.5	298.9	296.3	296.3	295.0
25°	282.1	279.6	277.0	275.7	274.4	271.8	271.8	270.6
27.5°	257.7	255.1	253.8	252.5	249.9	248.6	247.4	246.1
30°	235.8	231.9	230.6	229.3	226.7	225.5	224.2	224.2
32.5°	213.9	210.0	210.0	207.4	206.1	203.6	202.3	202.3
35°	193.3	190.7	188.1	186.8	184.2	184.2	181.7	181.7
37.5°	172.6	170.1	170.1	167.5	164.9	163.6	162.3	161.0
40°	154.6	150.7	150.7	148.2	145.6	144.3	143.0	143.0
42.5°	136.6	132.7	131.4	130.1	127.5	125.0	125.0	123.7
45°	118.5	116.0	114.7	113.4	110.8	108.2	108.2	106.9
47.5°	101.8	100.5	97.9	96.6	95.3	92.8	91.5	91.5
50°	87.6	86.3	83.7	82.5	79.9	77.3	76.0	74.7
52.5°	73.4	72.1	70.9	69.6	67.0	64.4	63.1	61.8
55°	61.8	60.6	58.0	58.0	55.4	54.1	52.8	51.5
57.5°	50.2	49.0	47.7	47.7	46.4	46.4	46.4	46.4
60°	41.2	42.5	42.5	42.5	42.5	42.5	42.5	41.2
62.5°	37.4	37.4	37.4	37.4	37.4	37.4	37.4	37.4
65°	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2
67.5°	27.1	27.1	28.3	27.1	27.1	27.1	27.1	27.1
70°	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2
72.5°	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3
75°	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
77.5°	12.9	12.9	11.6	11.6	12.9	12.9	11.6	12.9
80°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
82.5°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
85°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
87.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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