

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: P345395

Luminaire Tested: **PR4FS12D010 PR4M12WW8FSMW 1000Lm3500K**

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P345395  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1908-453-7)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 03/03/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: PR4FS12D010 PR4M12WW8FSMW 1000Lm3500K  
Description: PR4 WALLWASH ASSEMBLY WITH, MATTE WHITE FINISH  
Light Source: ARRAY OF HIGH LUMEN LEDs 80CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 861.2 lumens  
Efficiency: N/A  
Efficacy: 85.3 lumens/watt  
Spacing Criteria (0/90/45): 0.95 / 1.12 / 1.11  
Luminous Opening: Circular (Dia: 0.4' x H: 0')  
CIE Type: Direct

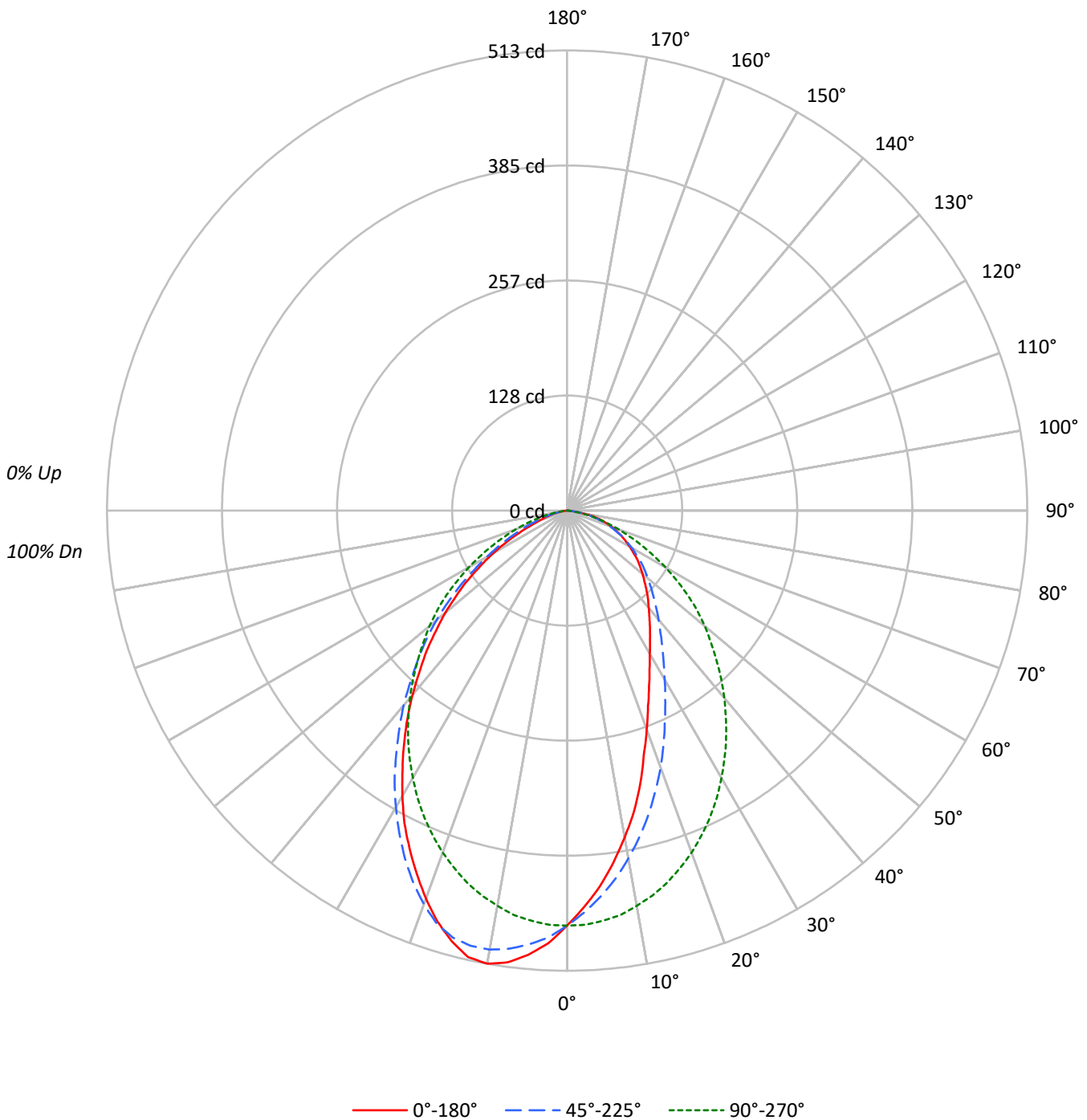
Input Watts (W): 10.1  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	106	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89					87				
2	102	95	89	84	99	93	87	83	89	85	81	86	82	79	83	80	77					75				
3	94	85	77	72	92	83	76	71	80	75	70	78	73	69	75	71	68					66				
4	87	76	68	62	85	75	67	62	72	66	61	70	65	60	68	63	59					57				
5	80	69	61	55	78	68	60	54	66	59	54	64	58	53	62	57	53					51				
6	75	63	54	49	73	62	54	48	60	53	48	58	52	48	57	51	47					45				
7	70	57	49	44	68	57	49	43	55	48	43	54	47	43	52	47	43					41				
8	65	53	45	39	64	52	45	39	51	44	39	50	43	39	48	43	39					37				
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35					34				
10	58	45	38	33	56	45	38	33	44	37	33	43	37	33	42	36	32					31				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	40472	40472	40472
5°	36921	40302	43638
10°	32836	39738	45555
15°	28543	38911	45006
20°	24155	37773	42846
25°	20856	36385	40110
30°	18604	34744	37088
35°	17192	33006	33849
40°	16146	31104	30613
45°	15450	29070	27412
50°	14914	27229	24154
55°	14564	25010	20633
60°	14135	22165	16707
65°	13805	18876	12294
70°	13452	15498	8465
75°	12809	11795	6421
80°	8916	6800	3677
85°	3713	2409	1204



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	43.3	5.0
10°-20°	117.5	13.6
20°-30°	158.8	18.4
30°-40°	167.2	19.4
40°-50°	150.6	17.5
50°-60°	116.3	13.5
60°-70°	71.6	8.3
70°-80°	31.5	3.7
80°-90°	4.5	0.5
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°	319.7	37.1
0°-40°	486.8	56.5
0°-60°	753.7	87.5
0°-90°	861.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	861.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	463	463	463	463	463	
5°	420	432	459	485	497	39
15°	315	351	430	493	497	88
25°	216	258	377	428	416	100
35°	161	185	309	332	317	101
45°	125	136	235	235	222	97
55°	96	100	164	145	135	85
65°	67	67	91	69	59	66
75°	38	34	35	23	19	39
85°	4	3	2	2	1	6
90°	0	0	0	0	0	



TEST NUMBER: P345395

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	462.7	462.7	462.7	462.7	462.7	462.7	462.7	462.7	462.7	462.7	462.7
2.5°	441.9	442.5	442.5	442.5	443.1	443.7	443.7	445.0	445.6	446.8	448.0
5°	420.5	419.9	419.9	421.1	422.3	422.9	422.9	425.4	427.2	429.1	431.5
7.5°	395.4	394.8	396.6	397.2	398.4	400.3	401.5	404.0	405.8	410.1	413.8
10°	369.7	369.7	370.9	372.7	374.6	376.4	377.6	380.7	384.4	388.7	393.6
12.5°	344.0	342.1	344.0	346.4	348.3	350.1	351.9	355.6	361.1	366.6	372.7
15°	315.2	314.6	315.8	318.3	322.6	323.8	325.6	331.1	336.6	344.0	350.7
17.5°	284.6	286.4	287.1	290.7	295.0	296.8	298.7	304.2	312.1	319.5	327.5
20°	259.5	258.3	260.7	263.2	266.9	269.9	272.4	278.5	287.1	295.0	304.8
22.5°	235.6	235.0	236.9	239.9	243.0	245.4	247.9	254.0	260.7	269.9	280.9
25°	216.1	215.4	217.3	219.1	222.8	224.6	226.5	232.6	239.9	247.3	257.7
27.5°	198.9	198.9	200.1	201.4	204.4	206.3	208.7	213.6	219.7	227.1	236.9
30°	184.2	184.2	185.5	186.7	189.7	191.0	192.8	196.5	201.4	209.3	217.3
32.5°	172.0	172.0	172.6	174.4	175.7	176.9	178.7	181.8	186.7	192.8	200.1
35°	161.0	161.0	161.6	162.8	164.6	165.3	166.5	169.5	173.2	178.1	184.8
37.5°	150.6	151.2	151.2	152.4	153.6	154.2	155.5	157.9	161.0	165.3	170.8
40°	141.4	142.0	142.0	143.2	144.4	145.1	145.7	146.9	150.6	153.6	158.5
42.5°	133.4	133.4	133.4	134.0	135.3	135.9	136.5	138.3	140.2	143.2	146.9
45°	124.9	124.9	125.5	126.1	127.3	127.3	127.9	129.8	131.0	133.4	136.5
47.5°	116.9	116.9	117.5	117.5	118.7	118.7	119.4	120.6	121.8	124.2	126.7
50°	109.6	109.6	109.6	110.2	110.8	111.4	111.4	112.6	113.8	115.7	117.5
52.5°	102.2	102.2	102.2	102.2	102.8	103.4	103.4	104.7	105.9	107.1	108.9
55°	95.5	94.9	95.5	95.5	95.5	96.1	96.1	97.3	97.3	98.5	100.4
57.5°	87.5	88.1	88.1	87.5	88.1	88.7	88.7	88.7	89.4	90.6	91.2
60°	80.8	80.8	80.8	80.8	81.4	81.4	81.4	81.4	82.0	82.0	83.2
62.5°	73.4	73.4	74.1	74.1	73.4	74.1	74.1	74.1	74.7	74.7	74.7
65°	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7
67.5°	59.4	59.4	59.4	59.4	59.4	59.4	59.4	58.8	58.8	58.8	58.1
70°	52.6	52.6	52.6	52.0	52.0	52.0	52.0	51.4	51.4	50.8	50.2
72.5°	45.3	45.3	45.3	44.7	44.7	44.7	44.1	43.5	42.8	42.2	42.2
75°	37.9	37.9	37.3	36.7	36.7	36.1	36.1	35.5	35.5	34.3	33.7
77.5°	29.4	28.8	28.8	28.8	28.2	27.5	27.5	26.9	26.3	26.3	25.7
80°	17.7	17.7	18.4	17.7	18.4	17.7	17.7	18.4	17.7	17.1	17.1
82.5°	8.6	8.6	9.2	8.6	9.2	9.2	9.2	8.6	8.6	8.6	8.6
85°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.1	3.1	3.1
87.5°	2.4	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
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°	462.7	462.7	462.7	462.7	462.7	462.7	462.7	462.7	462.7	462.7	462.7
2.5°	449.2	451.1	451.7	453.5	454.1	455.4	456.6	458.4	460.3	462.1	463.3
5°	433.9	437.0	439.5	442.5	444.4	445.6	449.2	452.3	456.0	459.0	462.1
7.5°	417.4	421.1	426.6	430.3	432.1	435.2	439.5	444.4	449.2	454.8	459.0
10°	398.4	404.0	409.5	416.2	419.3	422.3	427.8	434.6	441.3	447.4	454.1
12.5°	378.3	385.6	392.9	399.7	404.0	407.6	416.2	423.5	431.5	439.5	446.8
15°	358.7	366.6	375.2	383.8	388.7	392.9	401.5	410.7	420.5	429.7	438.2
17.5°	337.2	346.4	356.2	366.0	370.9	376.4	387.4	397.2	408.2	418.0	428.4
20°	315.2	325.6	336.0	348.3	353.2	359.3	370.3	382.5	394.2	405.8	416.8
22.5°	292.6	304.2	315.8	328.7	335.4	341.5	354.4	366.6	379.5	391.7	404.0
25°	269.3	282.8	296.2	309.1	316.4	322.6	336.6	350.7	364.2	377.0	389.9
27.5°	247.9	260.7	275.4	289.5	296.8	303.6	318.9	332.3	347.0	361.1	374.0
30°	228.3	240.5	255.2	270.5	277.9	285.2	300.5	315.8	329.3	344.0	358.1
32.5°	209.9	221.0	235.6	250.9	259.5	266.2	282.2	296.8	312.1	326.8	340.9
35°	192.8	203.8	216.7	232.0	239.3	247.3	263.8	279.1	293.8	309.1	321.9
37.5°	178.1	186.7	198.3	213.0	221.0	228.9	245.4	260.7	275.4	290.7	304.2
40°	164.0	172.0	182.4	195.2	203.2	211.2	227.1	242.4	257.1	272.4	286.4
42.5°	152.4	158.5	167.1	179.3	186.1	194.0	209.9	224.6	239.3	254.0	267.5
45°	140.8	146.3	153.6	163.4	170.2	177.5	192.8	208.1	221.6	235.0	248.5
47.5°	129.8	134.0	140.8	149.3	154.9	161.6	176.3	191.0	204.4	217.3	229.5
50°	120.0	123.6	129.8	135.9	140.8	146.9	159.7	174.4	187.3	200.1	211.2
52.5°	110.8	113.8	118.1	124.2	127.9	132.8	145.1	157.9	170.8	182.4	192.8
55°	102.2	104.0	107.7	112.0	115.1	119.4	129.8	142.0	153.6	164.0	172.6
57.5°	92.4	94.9	97.3	100.4	103.4	105.9	113.8	124.9	135.3	144.4	153.0
60°	83.9	85.7	86.9	90.0	91.2	93.6	99.8	108.9	118.7	126.7	132.8
62.5°	75.3	75.9	77.1	79.6	80.2	82.0	86.3	93.6	101.0	108.3	114.5
65°	66.7	66.7	67.9	68.6	69.8	70.4	73.4	79.0	85.7	91.2	94.9
67.5°	58.1	58.1	58.8	58.8	60.0	60.0	61.8	66.1	70.4	75.3	78.3
70°	49.6	49.6	49.6	49.6	49.6	50.2	51.4	53.9	56.9	60.6	62.4
72.5°	41.6	41.0	41.0	40.4	40.4	40.4	41.0	42.2	44.7	47.1	49.0
75°	33.1	32.4	31.8	31.8	31.2	31.2	31.2	32.4	33.7	34.9	35.5
77.5°	24.5	24.5	23.9	22.6	22.6	22.0	22.0	22.0	22.6	23.9	23.3
80°	17.1	15.9	15.3	15.3	14.7	14.7	14.1	13.5	13.5	13.5	12.9
82.5°	8.0	8.0	8.0	7.3	7.3	7.3	7.3	6.7	6.7	6.1	6.1
85°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.4	2.4	2.4	2.4
87.5°	1.8	1.8	1.8	1.8	1.8	1.2	1.2	1.2	1.2	1.2	1.2
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°	462.7	462.7	462.7	462.7	462.7	462.7	462.7	462.7	462.7	462.7	462.7
2.5°	465.2	467.0	468.8	469.4	470.1	471.9	473.1	475.0	476.2	476.8	478.0
5°	465.8	468.8	471.9	473.7	475.0	478.0	480.5	483.5	485.4	488.4	490.3
7.5°	463.9	468.8	473.1	475.6	478.0	482.3	486.0	489.6	492.7	495.8	498.8
10°	460.3	466.4	472.5	475.0	478.0	482.9	488.4	492.7	497.0	500.7	504.3
12.5°	454.8	462.1	469.4	472.5	475.6	482.3	487.8	492.7	497.0	500.7	503.1
15°	447.4	456.0	463.9	468.2	471.9	478.6	484.1	489.0	492.7	495.2	497.0
17.5°	438.2	448.0	457.2	460.9	465.2	471.3	476.8	480.5	482.9	482.9	483.5
20°	427.8	438.2	447.4	451.7	456.0	460.9	465.2	467.0	467.0	467.0	465.8
22.5°	415.6	426.6	435.8	440.1	443.7	447.4	449.9	449.9	448.6	446.8	445.0
25°	401.5	413.1	421.7	426.0	427.8	430.9	430.3	429.7	427.8	426.0	423.5
27.5°	386.2	397.8	407.0	408.9	410.1	410.7	408.9	407.6	405.2	402.7	400.9
30°	370.3	381.3	388.7	389.3	390.5	389.9	387.4	384.4	381.9	378.9	376.4
32.5°	353.2	363.6	368.5	369.7	369.1	366.6	364.2	361.1	358.1	354.4	351.3
35°	334.8	344.6	347.6	347.0	346.4	343.4	339.7	336.6	332.3	329.9	325.6
37.5°	315.8	325.0	326.2	324.4	322.6	318.9	315.2	312.1	307.3	304.8	301.7
40°	296.8	303.0	303.0	301.1	299.9	296.2	291.3	287.1	283.4	279.1	277.3
42.5°	277.3	282.2	279.7	278.5	276.6	271.1	267.5	263.2	258.3	255.8	252.8
45°	257.7	260.7	257.7	255.2	253.4	248.5	244.8	239.3	235.0	232.6	228.9
47.5°	237.5	238.7	236.3	232.6	231.4	225.8	221.6	217.3	213.0	208.7	205.7
50°	219.1	217.9	214.2	211.8	209.9	203.8	198.9	194.0	190.3	186.7	183.6
52.5°	198.3	197.1	192.2	189.1	186.1	181.2	175.0	171.4	167.1	164.0	161.0
55°	176.9	173.2	169.5	166.5	163.4	158.5	153.0	148.1	145.1	141.4	139.5
57.5°	154.9	152.4	146.3	143.8	141.4	136.5	131.0	126.7	122.4	120.0	118.7
60°	135.3	131.0	126.1	123.0	120.6	115.7	110.8	106.5	103.4	102.2	100.4
62.5°	114.5	110.8	105.3	102.8	101.0	96.1	91.8	88.1	85.7	83.2	82.0
65°	95.5	91.2	86.9	84.5	82.0	77.7	74.7	72.2	69.2	67.3	66.1
67.5°	77.1	73.4	69.8	67.9	66.1	62.4	59.4	57.5	55.1	53.2	50.8
70°	60.6	57.5	55.1	53.2	51.4	48.4	45.9	44.1	42.2	40.4	38.6
72.5°	47.1	44.1	41.0	40.4	39.2	36.7	34.9	33.1	31.2	30.0	28.8
75°	33.7	32.4	30.0	28.8	28.2	26.3	24.5	23.3	22.6	21.4	20.8
77.5°	22.0	20.8	19.0	19.0	18.4	17.7	16.5	15.3	15.3	14.7	14.7
80°	12.2	11.6	11.0	10.4	11.0	10.4	9.8	9.2	9.2	9.2	8.6
82.5°	5.5	5.5	4.9	4.9	4.9	4.9	4.9	4.3	4.3	4.3	4.3
85°	2.4	2.4	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
87.5°	1.2	1.2	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6
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: PR4FS12D010 PR4M12WW8FSMW 1000lm3500K

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	462.7	462.7	462.7	462.7	462.7	462.7	462.7	462.7
2.5°	479.2	479.9	480.5	481.1	481.7	481.7	482.3	482.9
5°	491.5	493.3	493.9	494.5	495.8	496.4	496.4	497.0
7.5°	501.3	503.7	504.3	505.6	506.8	507.4	508.0	508.0
10°	506.8	508.6	509.2	510.5	511.7	512.3	512.9	512.9
12.5°	504.9	506.8	507.4	508.0	509.2	509.8	509.8	509.8
15°	498.2	498.2	498.2	498.2	497.6	498.2	498.2	497.0
17.5°	482.9	482.3	482.9	481.7	481.1	481.1	480.5	480.5
20°	464.6	463.9	463.3	463.3	462.7	461.5	460.9	460.3
22.5°	443.7	442.5	441.9	441.9	440.7	440.1	439.5	438.2
25°	422.3	419.3	419.3	419.3	418.0	418.0	416.8	415.6
27.5°	397.8	396.0	396.0	394.8	393.6	392.9	392.3	392.9
30°	374.6	372.1	370.9	370.3	369.7	369.7	367.8	367.2
32.5°	348.9	347.0	345.8	345.2	344.0	343.4	342.8	341.5
35°	323.8	321.9	320.7	320.7	318.3	317.7	317.0	317.0
37.5°	298.1	296.8	296.2	294.4	293.8	293.2	293.2	292.6
40°	274.2	272.4	271.8	269.9	269.3	269.3	267.5	268.1
42.5°	249.7	247.3	246.7	246.0	245.4	244.2	244.8	243.6
45°	226.5	224.6	223.4	223.4	222.8	221.6	221.0	221.6
47.5°	203.8	201.4	201.4	200.8	200.1	199.5	199.5	198.3
50°	182.4	180.6	179.3	178.1	178.7	178.1	176.9	177.5
52.5°	159.1	157.3	156.7	156.7	156.1	156.1	155.5	155.5
55°	138.3	136.5	136.5	135.9	135.9	135.9	135.3	135.3
57.5°	117.5	116.3	115.7	115.7	114.5	115.1	114.5	113.8
60°	99.2	97.3	96.1	96.7	96.1	96.1	94.9	95.5
62.5°	80.2	79.0	78.3	78.3	77.1	77.1	75.9	76.5
65°	64.3	62.4	61.8	61.2	60.0	59.4	59.4	59.4
67.5°	49.6	48.4	47.7	46.5	45.3	44.7	44.1	43.5
70°	37.3	36.1	35.5	34.9	34.3	33.7	33.7	33.1
72.5°	28.2	26.9	26.9	26.3	26.3	25.7	25.7	25.7
75°	20.2	20.2	19.6	19.6	19.0	19.6	19.0	19.0
77.5°	14.1	13.5	14.1	13.5	12.9	12.9	12.9	12.9
80°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.3
82.5°	4.3	4.3	4.3	3.7	3.7	3.7	3.7	3.7
85°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
87.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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