

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: P345402

Luminaire Tested: **PR4FS12D010 PR4M12WW8FSMW 1500Lm4000K**

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P345402  
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 1500Lm4000K  
Description: PR4 WALLWASH ASSEMBLY WITH, MATTE WHITE FINISH  
Light Source: ARRAY OF HIGH LUMEN LEDs 80CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1111.4 lumens  
Efficiency: N/A  
Efficacy: 80.0 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

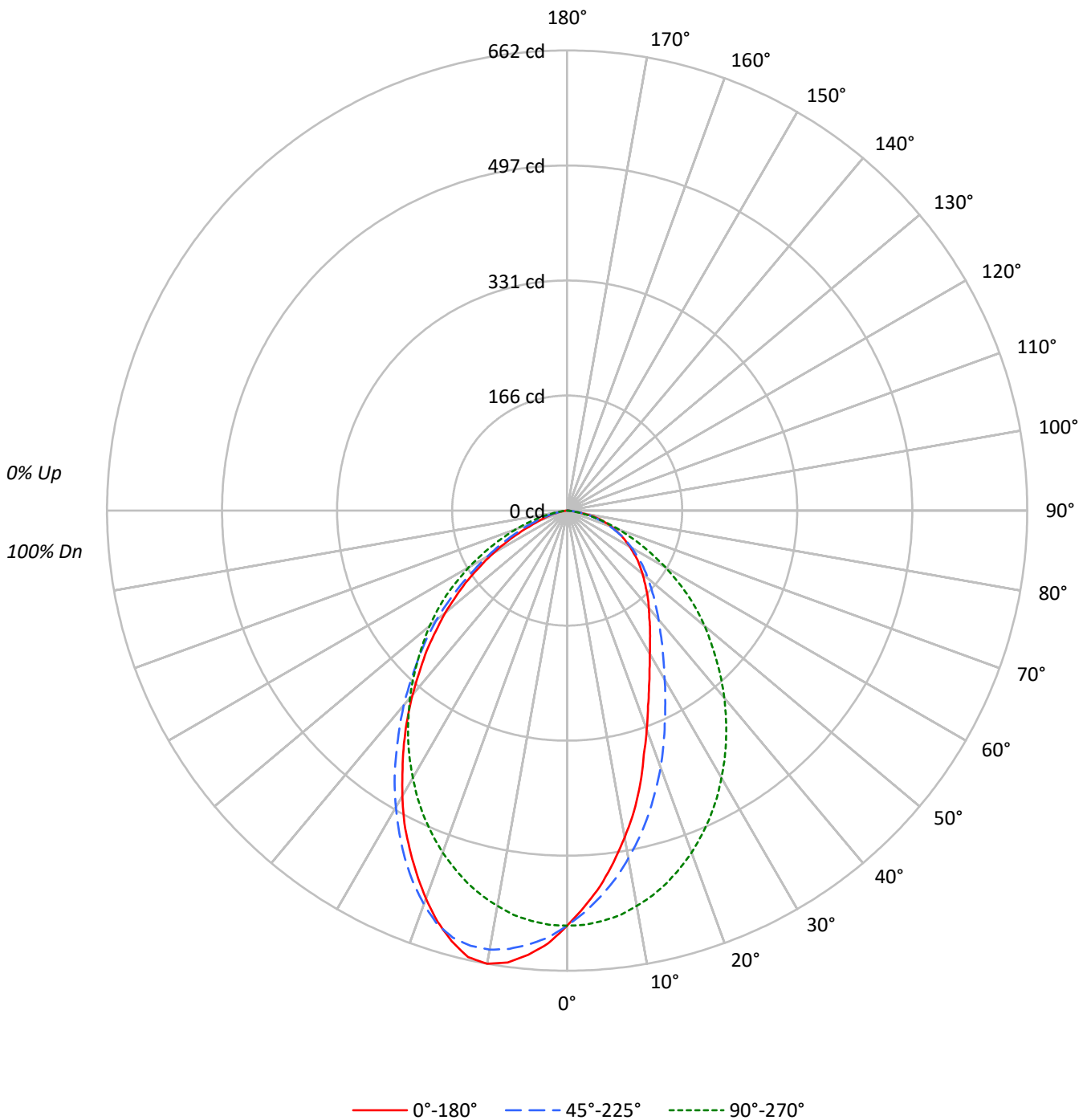
Input Watts (W): 13.9  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	52237	52237	52237
5°	47651	52015	56317
10°	42375	51284	58798
15°	36838	50213	58082
20°	31174	48748	55291
25°	26908	46963	51769
30°	24018	44834	47874
35°	22178	42595	43695
40°	20838	40135	39507
45°	19928	37518	35378
50°	19241	35149	31176
55°	18788	32284	26626
60°	18246	28603	21552
65°	17820	24360	15854
70°	17365	19999	10920
75°	16560	15208	8280
80°	11535	8765	4785
85°	4717	3212	1606



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	55.9	5.0
10°-20°	151.7	13.6
20°-30°	204.9	18.4
30°-40°	215.7	19.4
40°-50°	194.3	17.5
50°-60°	150.0	13.5
60°-70°	92.4	8.3
70°-80°	40.6	3.7
80°-90°	5.8	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°	412.6	37.1
0°-40°	628.3	56.5
0°-60°	972.7	87.5
0°-90°	1111.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1111.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	597	597	597	597	597	
5°	543	557	592	626	641	50
15°	407	453	554	636	641	113
25°	279	333	487	552	536	129
35°	208	239	399	429	409	130
45°	161	176	303	303	286	125
55°	123	130	212	187	175	110
65°	86	86	118	89	77	85
75°	49	43	45	29	24	50
85°	5	4	3	2	2	8
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°	597.2	597.2	597.2	597.2	597.2	597.2	597.2	597.2	597.2	597.2	597.2
2.5°	570.3	571.1	571.1	571.1	571.9	572.7	572.7	574.3	575.1	576.6	578.2
5°	542.7	541.9	541.9	543.5	545.0	545.8	545.8	549.0	551.4	553.7	556.9
7.5°	510.3	509.5	511.9	512.7	514.2	516.6	518.2	521.3	523.7	529.2	534.0
10°	477.1	477.1	478.7	481.1	483.4	485.8	487.4	491.3	496.1	501.6	507.9
12.5°	443.9	441.6	443.9	447.1	449.5	451.8	454.2	458.9	466.1	473.2	481.1
15°	406.8	406.0	407.6	410.8	416.3	417.9	420.2	427.3	434.5	443.9	452.6
17.5°	367.3	369.7	370.5	375.2	380.7	383.1	385.5	392.6	402.9	412.3	422.6
20°	334.9	333.3	336.5	339.7	344.4	348.4	351.5	359.4	370.5	380.7	393.4
22.5°	304.1	303.3	305.7	309.6	313.6	316.8	319.9	327.8	336.5	348.4	362.6
25°	278.8	278.1	280.4	282.8	287.5	289.9	292.3	300.2	309.6	319.1	332.6
27.5°	256.7	256.7	258.3	259.9	263.8	266.2	269.4	275.7	283.6	293.1	305.7
30°	237.8	237.8	239.3	240.9	244.9	246.5	248.8	253.6	259.9	270.2	280.4
32.5°	222.0	222.0	222.8	225.1	226.7	228.3	230.7	234.6	240.9	248.8	258.3
35°	207.7	207.7	208.5	210.1	212.5	213.3	214.9	218.8	223.5	229.9	238.6
37.5°	194.3	195.1	195.1	196.7	198.3	199.1	200.6	203.8	207.7	213.3	220.4
40°	182.5	183.3	183.3	184.8	186.4	187.2	188.0	189.6	194.3	198.3	204.6
42.5°	172.2	172.2	172.2	173.0	174.6	175.4	176.2	178.5	180.9	184.8	189.6
45°	161.1	161.1	161.9	162.7	164.3	164.3	165.1	167.5	169.0	172.2	176.2
47.5°	150.9	150.9	151.7	151.7	153.2	153.2	154.0	155.6	157.2	160.4	163.5
50°	141.4	141.4	141.4	142.2	143.0	143.8	143.8	145.3	146.9	149.3	151.7
52.5°	131.9	131.9	131.9	131.9	132.7	133.5	133.5	135.1	136.7	138.2	140.6
55°	123.2	122.4	123.2	123.2	123.2	124.0	124.0	125.6	125.6	127.2	129.5
57.5°	113.0	113.7	113.7	113.0	113.7	114.5	114.5	114.5	115.3	116.9	117.7
60°	104.3	104.3	104.3	104.3	105.1	105.1	105.1	105.1	105.8	105.8	107.4
62.5°	94.8	94.8	95.6	95.6	94.8	95.6	95.6	95.6	96.4	96.4	96.4
65°	86.1	86.1	86.1	86.1	86.1	86.1	86.1	86.1	86.1	86.1	86.1
67.5°	76.6	76.6	76.6	76.6	76.6	76.6	76.6	75.8	75.8	75.8	75.0
70°	67.9	67.9	67.9	67.1	67.1	67.1	67.1	66.4	66.4	65.6	64.8
72.5°	58.5	58.5	58.5	57.7	57.7	57.7	56.9	56.1	55.3	54.5	54.5
75°	49.0	49.0	48.2	47.4	47.4	46.6	46.6	45.8	45.8	44.2	43.4
77.5°	37.9	37.1	37.1	37.1	36.3	35.5	35.5	34.8	34.0	34.0	33.2
80°	22.9	22.9	23.7	22.9	23.7	22.9	22.9	23.7	22.9	22.1	22.1
82.5°	11.1	11.1	11.8	11.1	11.8	11.8	11.8	11.1	11.1	11.1	11.1
85°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	3.9	3.9	3.9
87.5°	3.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
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°	597.2	597.2	597.2	597.2	597.2	597.2	597.2	597.2	597.2	597.2	597.2
2.5°	579.8	582.2	583.0	585.3	586.1	587.7	589.3	591.6	594.0	596.4	598.0
5°	560.1	564.0	567.2	571.1	573.5	575.1	579.8	583.7	588.5	592.4	596.4
7.5°	538.7	543.5	550.6	555.3	557.7	561.6	567.2	573.5	579.8	586.9	592.4
10°	514.2	521.3	528.5	537.1	541.1	545.0	552.2	560.8	569.5	577.4	586.1
12.5°	488.2	497.6	507.1	515.8	521.3	526.1	537.1	546.6	556.9	567.2	576.6
15°	462.9	473.2	484.2	495.3	501.6	507.1	518.2	530.0	542.7	554.5	565.6
17.5°	435.2	447.1	459.7	472.4	478.7	485.8	500.0	512.7	526.9	539.5	552.9
20°	406.8	420.2	433.7	449.5	455.8	463.7	477.9	493.7	508.7	523.7	537.9
22.5°	377.6	392.6	407.6	424.2	432.9	440.8	457.4	473.2	489.7	505.5	521.3
25°	347.6	364.9	382.3	398.9	408.4	416.3	434.5	452.6	470.0	486.6	503.2
27.5°	319.9	336.5	355.5	373.6	383.1	391.8	411.5	428.9	447.9	466.1	482.6
30°	294.6	310.4	329.4	349.1	358.6	368.1	387.8	407.6	425.0	443.9	462.1
32.5°	270.9	285.2	304.1	323.9	334.9	343.6	364.2	383.1	402.9	421.8	440.0
35°	248.8	263.0	279.6	299.4	308.9	319.1	340.5	360.2	379.2	398.9	415.5
37.5°	229.9	240.9	255.9	274.9	285.2	295.4	316.8	336.5	355.5	375.2	392.6
40°	211.7	222.0	235.4	252.0	262.3	272.5	293.1	312.8	331.8	351.5	369.7
42.5°	196.7	204.6	215.6	231.4	240.1	250.4	270.9	289.9	308.9	327.8	345.2
45°	181.7	188.8	198.3	210.9	219.6	229.1	248.8	268.6	286.0	303.3	320.7
47.5°	167.5	173.0	181.7	192.7	199.8	208.5	227.5	246.5	263.8	280.4	296.2
50°	154.8	159.6	167.5	175.4	181.7	189.6	206.2	225.1	241.7	258.3	272.5
52.5°	143.0	146.9	152.5	160.4	165.1	171.4	187.2	203.8	220.4	235.4	248.8
55°	131.9	134.3	139.0	144.6	148.5	154.0	167.5	183.3	198.3	211.7	222.8
57.5°	119.3	122.4	125.6	129.5	133.5	136.7	146.9	161.1	174.6	186.4	197.5
60°	108.2	110.6	112.2	116.1	117.7	120.9	128.8	140.6	153.2	163.5	171.4
62.5°	97.2	97.9	99.5	102.7	103.5	105.8	111.4	120.9	130.3	139.8	147.7
65°	86.1	86.1	87.7	88.5	90.1	90.8	94.8	101.9	110.6	117.7	122.4
67.5°	75.0	75.0	75.8	75.8	77.4	77.4	79.8	85.3	90.8	97.2	101.1
70°	64.0	64.0	64.0	64.0	64.0	64.8	66.4	69.5	73.5	78.2	80.6
72.5°	53.7	52.9	52.9	52.1	52.1	52.1	52.9	54.5	57.7	60.8	63.2
75°	42.7	41.9	41.1	41.1	40.3	40.3	40.3	41.9	43.4	45.0	45.8
77.5°	31.6	31.6	30.8	29.2	29.2	28.4	28.4	28.4	29.2	30.8	30.0
80°	22.1	20.5	19.7	19.7	19.0	19.0	18.2	17.4	17.4	17.4	16.6
82.5°	10.3	10.3	10.3	9.5	9.5	9.5	9.5	8.7	8.7	7.9	7.9
85°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.2	3.2	3.2	3.2
87.5°	2.4	2.4	2.4	2.4	2.4	1.6	1.6	1.6	1.6	1.6	1.6
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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**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	597.2	597.2	597.2	597.2	597.2	597.2	597.2	597.2	597.2	597.2	597.2
2.5°	600.3	602.7	605.1	605.9	606.7	609.0	610.6	613.0	614.6	615.3	616.9
5°	601.1	605.1	609.0	611.4	613.0	616.9	620.1	624.0	626.4	630.4	632.7
7.5°	598.8	605.1	610.6	613.8	616.9	622.5	627.2	631.9	635.9	639.8	643.8
10°	594.0	601.9	609.8	613.0	616.9	623.2	630.4	635.9	641.4	646.2	650.9
12.5°	586.9	596.4	605.9	609.8	613.8	622.5	629.6	635.9	641.4	646.2	649.3
15°	577.4	588.5	598.8	604.3	609.0	617.7	624.8	631.1	635.9	639.0	641.4
17.5°	565.6	578.2	590.1	594.8	600.3	608.2	615.3	620.1	623.2	623.2	624.0
20°	552.2	565.6	577.4	583.0	588.5	594.8	600.3	602.7	602.7	602.7	601.1
22.5°	536.4	550.6	562.4	568.0	572.7	577.4	580.6	580.6	579.0	576.6	574.3
25°	518.2	533.2	544.3	549.8	552.2	556.1	555.3	554.5	552.2	549.8	546.6
27.5°	498.4	513.4	525.3	527.7	529.2	530.0	527.7	526.1	522.9	519.8	517.4
30°	477.9	492.1	501.6	502.4	504.0	503.2	500.0	496.1	492.9	489.0	485.8
32.5°	455.8	469.2	475.5	477.1	476.3	473.2	470.0	466.1	462.1	457.4	453.4
35°	432.1	444.7	448.7	447.9	447.1	443.1	438.4	434.5	428.9	425.8	420.2
37.5°	407.6	419.4	421.0	418.7	416.3	411.5	406.8	402.9	396.5	393.4	389.4
40°	383.1	391.0	391.0	388.6	387.1	382.3	376.0	370.5	365.7	360.2	357.8
42.5°	357.8	364.2	361.0	359.4	357.0	349.9	345.2	339.7	333.3	330.2	326.2
45°	332.6	336.5	332.6	329.4	327.0	320.7	316.0	308.9	303.3	300.2	295.4
47.5°	306.5	308.1	304.9	300.2	298.6	291.5	286.0	280.4	274.9	269.4	265.4
50°	282.8	281.2	276.5	273.3	270.9	263.0	256.7	250.4	245.7	240.9	237.0
52.5°	255.9	254.4	248.0	244.1	240.1	233.8	225.9	221.2	215.6	211.7	207.7
55°	228.3	223.5	218.8	214.9	210.9	204.6	197.5	191.2	187.2	182.5	180.1
57.5°	199.8	196.7	188.8	185.6	182.5	176.2	169.0	163.5	158.0	154.8	153.2
60°	174.6	169.0	162.7	158.8	155.6	149.3	143.0	137.4	133.5	131.9	129.5
62.5°	147.7	143.0	135.9	132.7	130.3	124.0	118.5	113.7	110.6	107.4	105.8
65°	123.2	117.7	112.2	109.0	105.8	100.3	96.4	93.2	89.3	86.9	85.3
67.5°	99.5	94.8	90.1	87.7	85.3	80.6	76.6	74.3	71.1	68.7	65.6
70°	78.2	74.3	71.1	68.7	66.4	62.4	59.2	56.9	54.5	52.1	49.8
72.5°	60.8	56.9	52.9	52.1	50.6	47.4	45.0	42.7	40.3	38.7	37.1
75°	43.4	41.9	38.7	37.1	36.3	34.0	31.6	30.0	29.2	27.6	26.9
77.5°	28.4	26.9	24.5	24.5	23.7	22.9	21.3	19.7	19.7	19.0	19.0
80°	15.8	15.0	14.2	13.4	14.2	13.4	12.6	11.8	11.8	11.8	11.1
82.5°	7.1	7.1	6.3	6.3	6.3	6.3	6.3	5.5	5.5	5.5	5.5
85°	3.2	3.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
87.5°	1.6	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.8	0.8	0.8
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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CATALOG NUMBER: PR4FS12D010 PR4M12WW8FSMW 1500lm4000K

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	597.2	597.2	597.2	597.2	597.2	597.2	597.2	597.2
2.5°	618.5	619.3	620.1	620.9	621.7	621.7	622.5	623.2
5°	634.3	636.7	637.5	638.3	639.8	640.6	640.6	641.4
7.5°	646.9	650.1	650.9	652.5	654.1	654.8	655.6	655.6
10°	654.1	656.4	657.2	658.8	660.4	661.2	662.0	662.0
12.5°	651.7	654.1	654.8	655.6	657.2	658.0	658.0	658.0
15°	643.0	643.0	643.0	643.0	642.2	643.0	643.0	641.4
17.5°	623.2	622.5	623.2	621.7	620.9	620.9	620.1	620.1
20°	599.5	598.8	598.0	598.0	597.2	595.6	594.8	594.0
22.5°	572.7	571.1	570.3	570.3	568.7	568.0	567.2	565.6
25°	545.0	541.1	541.1	541.1	539.5	539.5	537.9	536.4
27.5°	513.4	511.1	511.1	509.5	507.9	507.1	506.3	507.1
30°	483.4	480.3	478.7	477.9	477.1	477.1	474.7	474.0
32.5°	450.3	447.9	446.3	445.5	443.9	443.1	442.4	440.8
35°	417.9	415.5	413.9	413.9	410.8	410.0	409.2	409.2
37.5°	384.7	383.1	382.3	380.0	379.2	378.4	378.4	377.6
40°	353.9	351.5	350.7	348.4	347.6	347.6	345.2	346.0
42.5°	322.3	319.1	318.3	317.5	316.8	315.2	316.0	314.4
45°	292.3	289.9	288.3	288.3	287.5	286.0	285.2	286.0
47.5°	263.0	259.9	259.9	259.1	258.3	257.5	257.5	255.9
50°	235.4	233.0	231.4	229.9	230.7	229.9	228.3	229.1
52.5°	205.4	203.0	202.2	202.2	201.4	201.4	200.6	200.6
55°	178.5	176.2	176.2	175.4	175.4	175.4	174.6	174.6
57.5°	151.7	150.1	149.3	149.3	147.7	148.5	147.7	146.9
60°	128.0	125.6	124.0	124.8	124.0	124.0	122.4	123.2
62.5°	103.5	101.9	101.1	101.1	99.5	99.5	97.9	98.7
65°	82.9	80.6	79.8	79.0	77.4	76.6	76.6	76.6
67.5°	64.0	62.4	61.6	60.0	58.5	57.7	56.9	56.1
70°	48.2	46.6	45.8	45.0	44.2	43.4	43.4	42.7
72.5°	36.3	34.8	34.8	34.0	34.0	33.2	33.2	33.2
75°	26.1	26.1	25.3	25.3	24.5	25.3	24.5	24.5
77.5°	18.2	17.4	18.2	17.4	16.6	16.6	16.6	16.6
80°	10.3	10.3	10.3	10.3	10.3	10.3	10.3	9.5
82.5°	5.5	5.5	5.5	4.7	4.7	4.7	4.7	4.7
85°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
87.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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