

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: P345436

Luminaire Tested: **PR4FS12D010 PR4M12WW8FSMMS 1500Lm3000K**

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P345436  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1908-453-8)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 03/03/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: PR4FS12D010 PR4M12WW8FSMMS 1500lm3000K  
Description: PR4 WALLWASH ASSEMBLY WITH, MATTE METALLIC SILVER FINISH  
Light Source: ARRAY OF HIGH LUMEN LEDs 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1041.9 lumens  
Efficiency: N/A  
Efficacy: 75.0 lumens/watt  
Spacing Criteria (0/90/45): 0.94 / 1.12 / 1.1  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

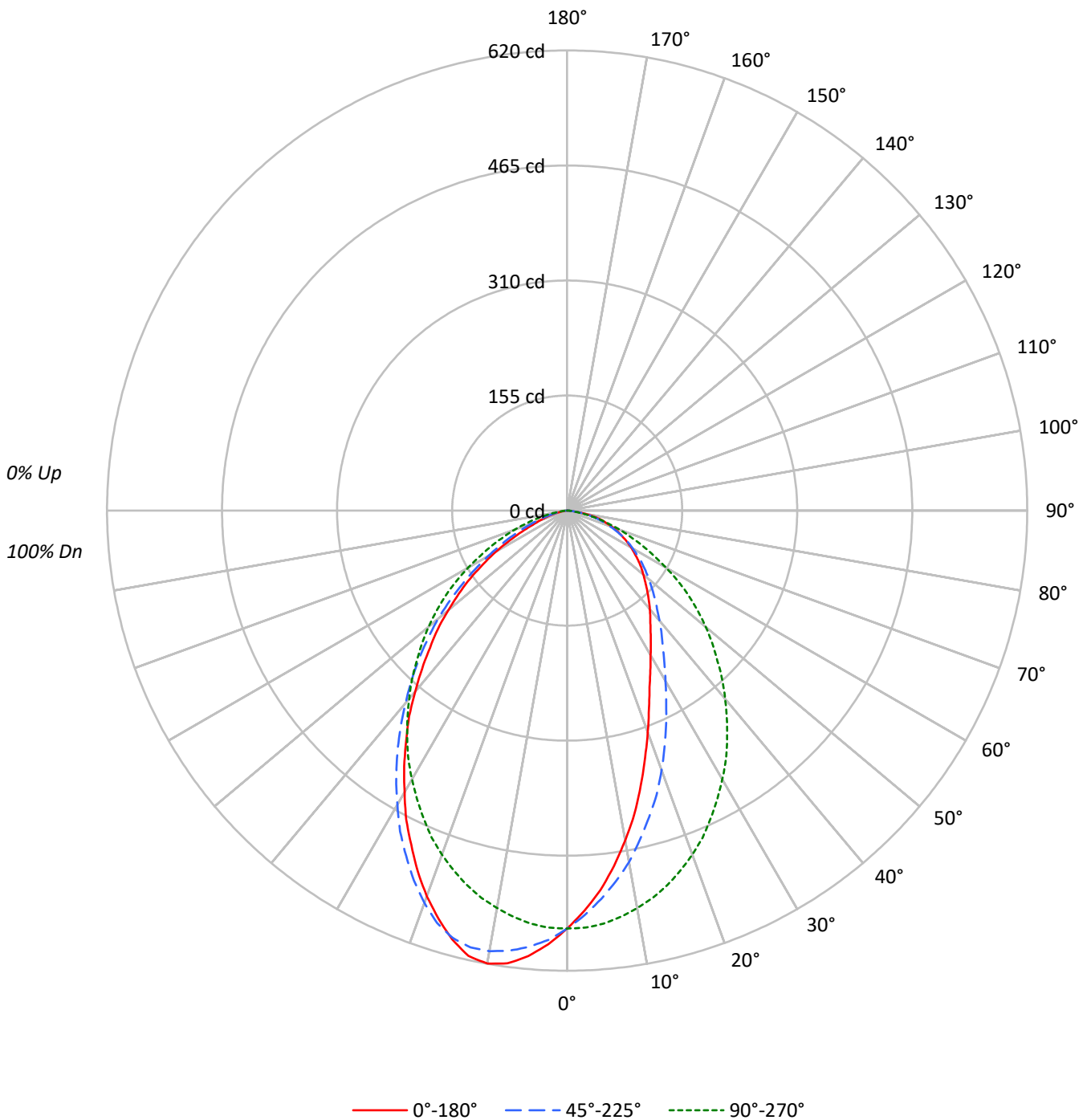
Input Watts (W): 13.9  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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CATALOG NUMBER: PR4FS12D010 PR4M12WW8FSMMS 1500lm3000K

### Luminous Intensity Polar Plot





TEST NUMBER: P345436

CATALOG NUMBER: PR4F512D010 PR4M12WW8FSMMS 1500lm3000K

**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	36	45	39	35					34				
10	58	45	38	33	56	45	38	33	44	37	33	43	37	33	42	37	32					31				

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

	0°	90°	180°
0°	54888	54888	54888
5°	50226	54668	58962
10°	44622	53825	61336
15°	38663	52698	60356
20°	32950	51161	57332
25°	28238	49207	53444
30°	25287	47051	49313
35°	23283	44699	44972
40°	22060	42123	40508
45°	21019	39474	36000
50°	20302	36995	31703
55°	19846	34000	27050
60°	19433	30017	21616
65°	18864	25736	15451
70°	18436	21400	11028
75°	17660	16531	7832
80°	12516	9597	4602
85°	3355	5032	783



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	52.7	5.1
10°-20°	142.7	13.7
20°-30°	192.2	18.4
30°-40°	201.9	19.4
40°-50°	181.9	17.5
50°-60°	140.5	13.5
60°-70°	86.5	8.3
70°-80°	38.1	3.7
80°-90°	5.6	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°	387.6	37.2
0°-40°	589.4	56.6
0°-60°	911.8	87.5
0°-90°	1041.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1041.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	563	563	563	563	563	
5°	513	525	559	590	603	47
15°	383	427	522	596	598	107
25°	263	316	458	513	497	122
35°	196	225	376	399	378	123
45°	152	167	286	282	261	118
55°	117	123	200	172	159	104
65°	82	82	112	83	67	81
75°	47	42	44	26	21	48
85°	3	4	4	2	1	7
90°	0	0	0	0	0	



TEST NUMBER: P345436

CATALOG NUMBER: PR4FS12D010 PR4M12WW8FSMMS 1500lm3000K

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	563.2	563.2	563.2	563.2	563.2	563.2	563.2	563.2	563.2	563.2	563.2
2.5°	539.4	538.7	537.9	539.4	539.4	540.2	540.2	541.7	541.7	543.1	545.4
5°	513.4	511.9	512.6	512.6	514.9	514.9	516.4	517.8	520.1	523.0	525.3
7.5°	482.9	482.9	483.6	485.1	487.3	487.3	489.6	491.8	495.5	499.2	503.7
10°	450.9	452.4	453.1	454.6	458.3	459.8	460.6	464.3	469.5	473.2	480.6
12.5°	418.9	418.9	420.4	423.4	426.3	428.6	430.0	435.3	440.5	447.2	453.9
15°	383.2	383.9	386.1	389.1	394.3	395.8	398.8	404.7	412.2	420.4	427.1
17.5°	348.9	350.4	351.9	356.4	360.1	362.3	366.8	373.5	381.7	390.6	401.0
20°	317.7	315.5	318.4	321.4	325.1	330.3	333.3	340.8	349.7	361.6	372.0
22.5°	287.9	287.9	290.2	292.4	296.1	299.8	303.6	309.5	319.2	331.1	343.0
25°	262.6	263.4	265.6	267.8	271.6	273.8	277.5	283.5	293.1	302.1	315.5
27.5°	242.6	243.3	244.0	247.0	250.0	252.2	254.5	260.4	267.8	277.5	288.7
30°	224.7	224.7	225.4	228.4	229.9	232.9	234.4	239.6	246.3	254.5	264.9
32.5°	209.8	209.8	210.6	212.0	215.0	216.5	217.3	222.5	227.7	235.9	244.0
35°	195.7	195.7	196.4	197.9	200.1	200.9	203.1	206.1	211.3	217.3	224.7
37.5°	183.8	183.8	184.5	185.3	186.8	188.2	189.7	192.7	195.7	201.6	209.1
40°	173.4	172.6	173.4	174.1	176.3	176.3	177.1	180.1	183.0	187.5	193.4
42.5°	162.9	162.9	162.9	163.7	165.2	165.9	166.7	168.1	171.1	174.8	179.3
45°	152.5	152.5	153.3	154.0	154.8	155.5	157.0	158.5	160.0	162.2	166.7
47.5°	142.9	143.6	143.6	144.3	145.1	145.8	146.6	148.1	149.5	151.8	154.8
50°	133.9	134.7	134.7	135.4	136.2	136.2	136.9	138.4	139.9	141.4	143.6
52.5°	125.7	125.7	125.0	125.7	126.5	126.5	127.2	128.0	129.5	131.7	133.2
55°	116.8	116.8	116.8	117.6	117.6	117.6	118.3	119.0	119.8	120.5	122.8
57.5°	107.9	107.9	108.6	107.9	108.6	108.6	108.6	109.4	110.1	111.6	112.3
60°	99.7	99.7	99.7	99.7	99.7	99.7	100.4	100.4	100.4	101.2	101.9
62.5°	90.8	90.8	90.8	90.8	90.8	90.8	90.8	90.8	91.5	91.5	92.3
65°	81.8	81.8	82.6	81.8	81.8	81.8	81.8	81.8	81.8	81.8	81.8
67.5°	73.7	72.9	73.7	72.9	72.9	72.9	72.9	72.2	72.2	72.2	71.4
70°	64.7	64.0	64.0	64.0	64.0	63.2	64.0	63.2	62.5	61.8	61.0
72.5°	55.1	55.1	55.1	55.1	55.1	54.3	53.6	53.6	52.8	52.1	51.3
75°	46.9	46.9	46.1	45.4	44.6	44.6	44.6	43.9	43.2	42.4	41.7
77.5°	36.5	35.7	35.7	35.0	34.2	33.5	34.2	33.5	32.7	32.0	31.2
80°	22.3	22.3	22.3	22.3	22.3	22.3	21.6	22.3	21.6	20.8	20.8
82.5°	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
85°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.7	3.7
87.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.2	2.2	2.2
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	563.2	563.2	563.2	563.2	563.2	563.2	563.2	563.2	563.2	563.2	563.2
2.5°	546.9	548.3	550.6	552.1	552.8	553.6	555.8	558.0	560.3	562.5	564.0
5°	529.0	532.7	535.0	538.7	540.9	543.1	546.9	550.6	554.3	558.8	562.5
7.5°	507.4	513.4	517.8	523.0	526.0	529.0	534.2	540.2	546.1	552.1	558.0
10°	486.6	491.8	500.0	507.4	509.7	514.1	522.3	529.0	537.2	543.9	552.1
12.5°	462.8	469.5	478.4	487.3	492.5	497.0	506.7	515.6	525.3	534.2	543.9
15°	436.7	447.2	456.8	467.2	473.9	478.4	489.6	500.7	511.1	522.3	533.5
17.5°	410.7	422.6	434.5	447.2	452.4	459.1	471.7	483.6	496.3	508.2	520.8
20°	384.7	397.3	410.0	424.1	431.5	438.2	451.6	465.8	479.9	493.3	506.7
22.5°	357.1	370.5	385.4	401.0	409.2	415.2	430.8	446.4	461.3	476.9	491.1
25°	329.6	345.2	360.9	377.2	385.4	394.3	410.0	426.3	442.0	457.6	473.9
27.5°	302.8	319.2	335.6	354.2	362.3	371.3	388.4	404.7	421.9	438.2	454.6
30°	278.3	293.9	311.7	330.3	339.3	348.2	366.1	383.9	401.0	418.1	433.8
32.5°	255.9	269.3	287.9	306.5	316.2	325.1	343.7	362.3	380.2	398.1	413.7
35°	235.1	247.8	263.4	283.5	292.4	302.1	321.4	339.3	357.9	375.7	392.1
37.5°	216.5	228.4	242.6	259.7	270.8	279.8	299.1	317.7	335.6	353.4	369.8
40°	200.1	210.6	222.5	238.1	248.5	258.2	277.5	296.1	314.0	331.1	347.5
42.5°	185.3	193.4	204.6	218.7	226.9	236.6	256.7	274.5	292.4	309.5	324.4
45°	171.1	177.8	187.5	200.1	206.8	217.3	235.9	253.7	270.8	286.4	302.8
47.5°	158.5	164.4	171.9	182.3	189.0	197.2	215.8	233.6	250.0	265.6	279.8
50°	147.3	151.8	158.5	167.4	172.6	178.6	197.2	214.3	229.2	244.0	257.4
52.5°	136.2	139.1	144.3	151.8	157.0	162.2	177.8	194.2	209.1	221.7	235.9
55°	124.3	128.0	132.4	137.6	141.4	145.8	158.5	174.1	186.8	200.1	211.3
57.5°	113.8	116.1	119.0	123.5	126.5	130.2	139.9	153.3	165.9	177.1	188.2
60°	103.4	104.9	107.1	110.1	112.3	115.3	122.0	133.9	145.1	154.0	163.7
62.5°	93.0	93.0	94.5	96.7	98.2	100.4	106.4	115.3	125.0	131.7	139.9
65°	81.8	82.6	83.3	84.8	85.6	87.1	90.8	97.5	104.9	111.6	117.6
67.5°	71.4	71.4	72.2	72.9	72.9	73.7	75.9	80.4	87.8	92.3	96.7
70°	61.0	61.0	61.0	61.0	61.8	61.0	62.5	65.5	70.7	75.1	77.4
72.5°	51.3	50.6	49.8	49.8	49.8	49.8	50.6	52.8	55.8	58.0	61.0
75°	40.9	40.2	39.4	38.7	39.4	39.4	39.4	40.2	41.7	43.9	44.6
77.5°	30.5	30.5	29.0	28.3	29.0	28.3	27.5	27.5	28.3	29.0	29.0
80°	20.8	20.1	19.3	18.6	18.6	18.6	17.9	17.1	17.1	17.1	16.4
82.5°	10.4	10.4	9.7	9.7	9.7	9.7	9.7	8.9	8.9	8.2	8.2
85°	3.7	3.7	3.7	3.7	4.5	3.7	4.5	4.5	4.5	4.5	4.5
87.5°	2.2	2.2	3.0	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.0
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°	563.2	563.2	563.2	563.2	563.2	563.2	563.2	563.2	563.2	563.2	563.2
2.5°	566.2	568.4	569.9	571.4	572.2	573.6	575.9	577.4	578.9	580.3	581.8
5°	566.2	570.7	573.6	575.9	578.1	581.1	584.8	587.8	590.0	593.0	595.2
7.5°	564.0	569.9	575.1	578.1	581.1	585.5	590.0	594.5	598.2	601.9	604.9
10°	559.5	566.9	574.4	577.4	581.1	587.0	593.0	598.2	602.7	607.1	610.8
12.5°	552.8	561.7	570.7	574.4	578.1	585.5	592.2	598.2	602.7	606.4	608.6
15°	543.9	554.3	564.0	568.4	572.9	580.3	587.0	592.2	596.0	598.2	599.7
17.5°	532.7	543.9	554.3	559.5	564.7	572.2	577.4	580.3	582.6	582.6	581.8
20°	520.1	532.0	543.1	548.3	552.8	558.8	562.5	563.2	562.5	561.0	559.5
22.5°	504.4	517.8	529.0	533.5	537.2	541.7	541.7	540.9	539.4	537.2	536.4
25°	488.1	500.7	511.9	516.4	517.8	520.8	518.6	517.1	513.4	511.1	508.9
27.5°	470.2	483.6	491.8	494.8	496.3	494.8	492.5	489.6	487.3	483.6	480.6
30°	450.9	462.8	469.5	471.7	471.0	468.7	466.5	461.3	457.6	453.9	450.1
32.5°	428.6	440.5	445.7	446.4	444.2	440.5	436.7	433.0	428.6	424.1	421.9
35°	407.0	417.4	420.4	418.9	416.7	412.2	407.0	402.5	398.8	393.6	389.9
37.5°	383.9	392.8	392.8	390.6	389.1	383.9	378.7	374.2	369.0	364.6	359.4
40°	360.9	367.5	365.3	363.1	360.9	354.9	350.4	343.7	338.5	333.3	329.6
42.5°	337.8	341.5	338.5	335.6	332.6	326.6	322.2	314.7	310.3	305.1	302.1
45°	314.7	315.5	311.0	308.8	305.8	298.4	292.4	287.2	282.0	276.0	272.3
47.5°	290.9	289.4	284.2	281.2	278.3	271.6	265.6	259.7	253.7	249.2	244.8
50°	267.1	263.4	258.2	255.2	251.5	245.5	238.8	232.1	226.9	222.5	218.7
52.5°	241.1	238.1	232.1	227.7	224.7	216.5	210.6	204.6	198.7	194.2	191.2
55°	215.0	210.6	203.9	200.9	196.4	189.7	183.8	176.3	171.9	168.1	164.4
57.5°	189.0	183.8	177.8	174.1	169.6	162.9	156.2	151.8	147.3	142.9	140.6
60°	163.7	158.5	151.0	149.5	145.1	138.4	132.4	127.2	122.8	119.8	117.6
62.5°	139.9	134.7	127.2	124.3	121.3	114.6	109.4	104.9	101.9	99.0	96.7
65°	116.1	111.6	105.7	101.9	99.0	93.7	89.3	84.8	82.6	78.9	76.6
67.5°	94.5	89.3	84.8	81.8	79.6	74.4	70.7	67.7	64.7	62.5	59.5
70°	74.4	69.9	65.5	64.0	61.8	58.0	55.1	52.1	49.8	47.6	44.6
72.5°	57.3	54.3	49.8	48.4	46.9	43.9	41.7	39.4	36.5	35.0	33.5
75°	42.4	39.4	36.5	35.0	34.2	31.2	29.8	27.5	26.0	25.3	23.8
77.5°	27.5	25.3	23.8	23.1	22.3	20.8	19.3	18.6	17.1	16.4	16.4
80°	15.6	14.9	14.1	13.4	12.6	11.9	11.9	11.2	10.4	9.7	8.9
82.5°	7.4	7.4	6.7	6.7	6.7	6.0	6.0	5.2	5.2	4.5	4.5
85°	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	2.2	2.2	1.5
87.5°	3.0	3.0	3.0	3.0	3.0	2.2	2.2	2.2	1.5	1.5	0.7
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 PR4M12WW8FSMMS 1500lm3000K

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	563.2	563.2	563.2	563.2	563.2	563.2	563.2	563.2
2.5°	581.8	582.6	583.3	584.1	584.1	584.8	585.5	584.8
5°	596.7	598.9	599.7	600.4	601.2	601.9	602.7	602.7
7.5°	607.9	610.8	611.6	611.6	613.8	614.6	615.3	615.3
10°	613.8	615.3	616.8	616.8	618.3	618.3	619.8	619.8
12.5°	610.8	612.3	613.1	613.8	613.8	614.6	614.6	614.6
15°	600.4	599.7	599.7	598.9	598.9	598.2	598.2	598.2
17.5°	581.1	580.3	579.6	579.6	578.1	578.1	576.6	576.6
20°	558.0	556.5	555.8	555.0	555.0	554.3	552.8	552.8
22.5°	533.5	532.0	530.5	529.0	527.5	526.8	526.0	526.0
25°	505.9	503.7	503.0	502.2	500.0	499.2	497.8	497.0
27.5°	477.7	473.9	473.2	472.5	471.0	470.2	469.5	469.5
30°	447.9	445.7	444.2	443.4	441.2	440.5	438.2	438.2
32.5°	418.1	414.4	412.9	412.2	410.7	409.2	408.5	408.5
35°	386.9	384.7	383.9	381.7	379.5	379.5	378.0	378.0
37.5°	357.1	354.9	352.7	351.9	350.4	348.2	347.5	349.7
40°	327.4	324.4	322.9	322.2	320.7	318.4	318.4	318.4
42.5°	298.4	296.1	295.4	293.9	292.4	291.7	290.2	289.4
45°	268.6	267.1	266.4	264.9	264.1	262.6	261.2	261.2
47.5°	242.6	239.6	239.6	238.1	236.6	235.9	235.9	236.6
50°	216.5	214.3	212.8	212.0	210.6	210.6	209.8	209.1
52.5°	188.2	186.8	186.0	186.0	184.5	184.5	183.8	183.8
55°	162.2	162.2	161.5	160.7	159.2	159.2	159.2	159.2
57.5°	139.1	137.6	136.9	136.2	135.4	134.7	134.7	133.9
60°	115.3	114.6	113.1	113.8	111.6	111.6	111.6	110.9
62.5°	93.7	92.3	91.5	90.8	89.3	89.3	87.8	87.1
65°	75.1	72.9	71.4	71.4	69.9	68.5	67.7	67.0
67.5°	56.5	55.1	54.3	53.6	52.1	50.6	50.6	49.8
70°	43.2	41.7	40.9	40.2	39.4	38.7	38.7	38.7
72.5°	32.0	31.2	30.5	30.5	29.8	29.0	29.0	29.8
75°	23.1	22.3	22.3	22.3	21.6	21.6	21.6	20.8
77.5°	15.6	14.9	14.9	14.1	14.1	14.1	14.1	14.1
80°	8.9	8.2	8.2	8.2	8.2	8.2	8.2	8.2
82.5°	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0
85°	1.5	1.5	1.5	1.5	1.5	0.7	0.7	0.7
87.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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