

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: P345438

Luminaire Tested: **PR4FS12D010 PR4M12WW8FSMMS 1500Lm4000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P345438
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 1500Lm4000K
Description: PR4 WALLWASH ASSEMBLY WITH, MATTE METALLIC SILVER FINISH
Light Source: ARRAY OF HIGH LUMEN LEDs 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1105.9 lumens
Efficiency: N/A
Efficacy: 79.6 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

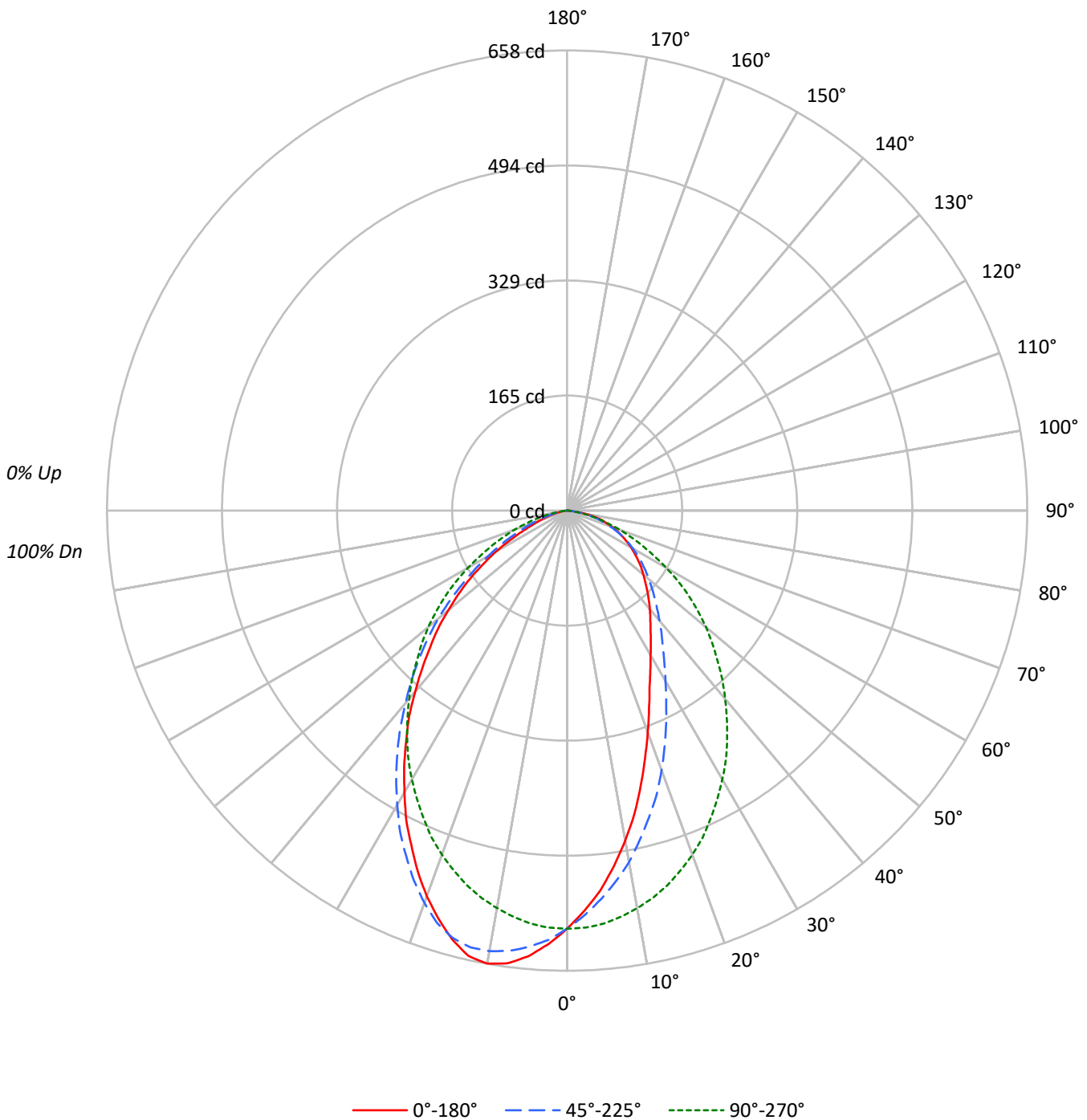
Input Watts (W): 13.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	36	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°	58260	58260	58260
5°	53308	58023	62582
10°	47363	57130	65097
15°	41034	55937	64059
20°	34972	54304	60848
25°	29980	52229	56724
30°	26840	49943	52340
35°	24711	47447	47733
40°	23409	44706	43001
45°	22314	41899	38206
50°	21545	39269	33644
55°	21069	36090	28715
60°	20622	31869	22942
65°	20040	27327	16396
70°	19576	22739	11711
75°	18752	17547	8322
80°	13301	10215	4883
85°	3578	5256	895



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	55.9	5.1
10°-20°	151.4	13.7
20°-30°	204.0	18.4
30°-40°	214.2	19.4
40°-50°	193.1	17.5
50°-60°	149.1	13.5
60°-70°	91.8	8.3
70°-80°	40.4	3.7
80°-90°	5.9	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°	411.4	37.2
0°-40°	625.6	56.6
0°-60°	967.8	87.5
0°-90°	1105.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1105.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	598	598	598	598	598	
5°	545	558	593	626	640	50
15°	407	453	554	633	635	113
25°	279	335	486	545	528	129
35°	208	238	399	423	401	131
45°	162	177	304	299	277	125
55°	124	130	212	182	169	111
65°	87	87	118	88	71	86
75°	50	44	47	28	22	51
85°	3	4	5	2	1	8
90°	0	0	0	0	0	



TEST NUMBER: P345438

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	597.8	597.8	597.8	597.8	597.8	597.8	597.8	597.8	597.8	597.8	597.8
2.5°	572.5	571.7	571.0	572.5	572.5	573.3	573.3	574.9	574.9	576.5	578.9
5°	544.9	543.3	544.1	544.1	546.5	546.5	548.1	549.6	552.0	555.2	557.5
7.5°	512.5	512.5	513.3	514.9	517.3	517.3	519.6	522.0	525.9	529.9	534.6
10°	478.6	480.1	480.9	482.5	486.5	488.0	488.8	492.8	498.3	502.3	510.1
12.5°	444.6	444.6	446.2	449.3	452.5	454.9	456.4	462.0	467.5	474.6	481.7
15°	406.7	407.5	409.9	413.0	418.5	420.1	423.3	429.6	437.5	446.2	453.3
17.5°	370.4	371.9	373.5	378.3	382.2	384.6	389.3	396.4	405.1	414.6	425.6
20°	337.2	334.8	338.0	341.2	345.1	350.6	353.8	361.7	371.2	383.8	394.9
22.5°	305.6	305.6	308.0	310.4	314.3	318.2	322.2	328.5	338.8	351.4	364.1
25°	278.8	279.6	281.9	284.3	288.2	290.6	294.6	300.9	311.1	320.6	334.8
27.5°	257.4	258.2	259.0	262.2	265.3	267.7	270.1	276.4	284.3	294.6	306.4
30°	238.5	238.5	239.3	242.4	244.0	247.2	248.8	254.3	261.4	270.1	281.1
32.5°	222.7	222.7	223.5	225.1	228.2	229.8	230.6	236.1	241.6	250.3	259.0
35°	207.7	207.7	208.5	210.1	212.4	213.2	215.6	218.7	224.3	230.6	238.5
37.5°	195.1	195.1	195.8	196.6	198.2	199.8	201.4	204.5	207.7	214.0	221.9
40°	184.0	183.2	184.0	184.8	187.2	187.2	187.9	191.1	194.3	199.0	205.3
42.5°	172.9	172.9	172.9	173.7	175.3	176.1	176.9	178.5	181.6	185.6	190.3
45°	161.9	161.9	162.7	163.5	164.3	165.0	166.6	168.2	169.8	172.2	176.9
47.5°	151.6	152.4	152.4	153.2	154.0	154.8	155.6	157.2	158.7	161.1	164.3
50°	142.1	142.9	142.9	143.7	144.5	144.5	145.3	146.9	148.5	150.0	152.4
52.5°	133.5	133.5	132.7	133.5	134.2	134.2	135.0	135.8	137.4	139.8	141.4
55°	124.0	124.0	124.0	124.8	124.8	124.8	125.6	126.4	127.1	127.9	130.3
57.5°	114.5	114.5	115.3	114.5	115.3	115.3	115.3	116.1	116.9	118.5	119.2
60°	105.8	105.8	105.8	105.8	105.8	105.8	106.6	106.6	106.6	107.4	108.2
62.5°	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	97.1	97.1	97.9
65°	86.9	86.9	87.7	86.9	86.9	86.9	86.9	86.9	86.9	86.9	86.9
67.5°	78.2	77.4	78.2	77.4	77.4	77.4	77.4	76.6	76.6	76.6	75.8
70°	68.7	67.9	67.9	67.9	67.9	67.1	67.9	67.1	66.3	65.5	64.8
72.5°	58.4	58.4	58.4	58.4	58.4	57.6	56.9	56.9	56.1	55.3	54.5
75°	49.8	49.8	49.0	48.2	47.4	47.4	47.4	46.6	45.8	45.0	44.2
77.5°	38.7	37.9	37.9	37.1	36.3	35.5	36.3	35.5	34.7	34.0	33.2
80°	23.7	23.7	23.7	23.7	23.7	23.7	22.9	23.7	22.9	22.1	22.1
82.5°	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
85°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.9	3.9
87.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	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°	597.8	597.8	597.8	597.8	597.8	597.8	597.8	597.8	597.8	597.8	597.8
2.5°	580.4	582.0	584.4	586.0	586.7	587.5	589.9	592.3	594.6	597.0	598.6
5°	561.5	565.4	567.8	571.7	574.1	576.5	580.4	584.4	588.3	593.1	597.0
7.5°	538.6	544.9	549.6	555.2	558.3	561.5	567.0	573.3	579.6	586.0	592.3
10°	516.5	522.0	530.7	538.6	540.9	545.7	554.4	561.5	570.2	577.3	586.0
12.5°	491.2	498.3	507.8	517.3	522.8	527.5	537.8	547.3	557.5	567.0	577.3
15°	463.6	474.6	484.9	495.9	503.0	507.8	519.6	531.5	542.5	554.4	566.2
17.5°	435.9	448.6	461.2	474.6	480.1	487.2	500.7	513.3	526.7	539.4	552.8
20°	408.3	421.7	435.1	450.1	458.0	465.1	479.3	494.4	509.4	523.6	537.8
22.5°	379.1	393.3	409.1	425.6	434.3	440.7	457.2	473.8	489.6	506.2	521.2
25°	349.8	366.4	383.0	400.4	409.1	418.5	435.1	452.5	469.1	485.7	503.0
27.5°	321.4	338.8	356.2	375.9	384.6	394.1	412.2	429.6	447.8	465.1	482.5
30°	295.3	311.9	330.9	350.6	360.1	369.6	388.5	407.5	425.6	443.8	460.4
32.5°	271.7	285.9	305.6	325.4	335.6	345.1	364.8	384.6	403.5	422.5	439.1
35°	249.5	263.0	279.6	300.9	310.4	320.6	341.2	360.1	379.8	398.8	416.2
37.5°	229.8	242.4	257.4	275.6	287.5	296.9	317.5	337.2	356.2	375.1	392.5
40°	212.4	223.5	236.1	252.7	263.8	274.0	294.6	314.3	333.3	351.4	368.8
42.5°	196.6	205.3	217.2	232.2	240.9	251.1	272.4	291.4	310.4	328.5	344.3
45°	181.6	188.7	199.0	212.4	219.5	230.6	250.3	269.3	287.5	304.0	321.4
47.5°	168.2	174.5	182.4	193.5	200.6	209.3	229.0	248.0	265.3	281.9	296.9
50°	156.4	161.1	168.2	177.7	183.2	189.5	209.3	227.4	243.2	259.0	273.2
52.5°	144.5	147.7	153.2	161.1	166.6	172.2	188.7	206.1	221.9	235.3	250.3
55°	131.9	135.8	140.6	146.1	150.0	154.8	168.2	184.8	198.2	212.4	224.3
57.5°	120.8	123.2	126.4	131.1	134.2	138.2	148.5	162.7	176.1	187.9	199.8
60°	109.8	111.3	113.7	116.9	119.2	122.4	129.5	142.1	154.0	163.5	173.7
62.5°	98.7	98.7	100.3	102.7	104.2	106.6	112.9	122.4	132.7	139.8	148.5
65°	86.9	87.7	88.4	90.0	90.8	92.4	96.3	103.5	111.3	118.5	124.8
67.5°	75.8	75.8	76.6	77.4	77.4	78.2	80.5	85.3	93.2	97.9	102.7
70°	64.8	64.8	64.8	64.8	65.5	64.8	66.3	69.5	75.0	79.8	82.1
72.5°	54.5	53.7	52.9	52.9	52.9	52.9	53.7	56.1	59.2	61.6	64.8
75°	43.4	42.6	41.9	41.1	41.9	41.9	41.9	42.6	44.2	46.6	47.4
77.5°	32.4	32.4	30.8	30.0	30.8	30.0	29.2	29.2	30.0	30.8	30.8
80°	22.1	21.3	20.5	19.7	19.7	19.7	19.0	18.2	18.2	18.2	17.4
82.5°	11.1	11.1	10.3	10.3	10.3	10.3	10.3	9.5	9.5	8.7	8.7
85°	3.9	3.9	3.9	3.9	4.7	3.9	4.7	4.7	4.7	4.7	4.7
87.5°	2.4	2.4	3.2	3.2	3.2	3.2	3.2	3.9	3.9	3.9	3.2
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°	597.8	597.8	597.8	597.8	597.8	597.8	597.8	597.8	597.8	597.8	597.8
2.5°	601.0	603.3	604.9	606.5	607.3	608.9	611.2	612.8	614.4	616.0	617.5
5°	601.0	605.7	608.9	611.2	613.6	616.8	620.7	623.9	626.2	629.4	631.8
7.5°	598.6	604.9	610.4	613.6	616.8	621.5	626.2	631.0	634.9	638.9	642.0
10°	593.9	601.8	609.6	612.8	616.8	623.1	629.4	634.9	639.7	644.4	648.3
12.5°	586.7	596.2	605.7	609.6	613.6	621.5	628.6	634.9	639.7	643.6	646.0
15°	577.3	588.3	598.6	603.3	608.1	616.0	623.1	628.6	632.6	634.9	636.5
17.5°	565.4	577.3	588.3	593.9	599.4	607.3	612.8	616.0	618.3	618.3	617.5
20°	552.0	564.6	576.5	582.0	586.7	593.1	597.0	597.8	597.0	595.4	593.9
22.5°	535.4	549.6	561.5	566.2	570.2	574.9	574.9	574.1	572.5	570.2	569.4
25°	518.0	531.5	543.3	548.1	549.6	552.8	550.4	548.8	544.9	542.5	540.2
27.5°	499.1	513.3	522.0	525.2	526.7	525.2	522.8	519.6	517.3	513.3	510.1
30°	478.6	491.2	498.3	500.7	499.9	497.5	495.1	489.6	485.7	481.7	477.8
32.5°	454.9	467.5	473.0	473.8	471.5	467.5	463.6	459.6	454.9	450.1	447.8
35°	432.0	443.0	446.2	444.6	442.2	437.5	432.0	427.2	423.3	417.8	413.8
37.5°	407.5	417.0	417.0	414.6	413.0	407.5	402.0	397.2	391.7	387.0	381.4
40°	383.0	390.1	387.7	385.4	383.0	376.7	371.9	364.8	359.3	353.8	349.8
42.5°	358.5	362.5	359.3	356.2	353.0	346.7	341.9	334.0	329.3	323.8	320.6
45°	334.0	334.8	330.1	327.7	324.6	316.7	310.4	304.8	299.3	293.0	289.0
47.5°	308.8	307.2	301.7	298.5	295.3	288.2	281.9	275.6	269.3	264.6	259.8
50°	283.5	279.6	274.0	270.9	266.9	260.6	253.5	246.4	240.9	236.1	232.2
52.5°	255.9	252.7	246.4	241.6	238.5	229.8	223.5	217.2	210.9	206.1	203.0
55°	228.2	223.5	216.4	213.2	208.5	201.4	195.1	187.2	182.4	178.5	174.5
57.5°	200.6	195.1	188.7	184.8	180.1	172.9	165.8	161.1	156.4	151.6	149.3
60°	173.7	168.2	160.3	158.7	154.0	146.9	140.6	135.0	130.3	127.1	124.8
62.5°	148.5	142.9	135.0	131.9	128.7	121.6	116.1	111.3	108.2	105.0	102.7
65°	123.2	118.5	112.1	108.2	105.0	99.5	94.8	90.0	87.7	83.7	81.3
67.5°	100.3	94.8	90.0	86.9	84.5	79.0	75.0	71.9	68.7	66.3	63.2
70°	79.0	74.2	69.5	67.9	65.5	61.6	58.4	55.3	52.9	50.5	47.4
72.5°	60.8	57.6	52.9	51.3	49.8	46.6	44.2	41.9	38.7	37.1	35.5
75°	45.0	41.9	38.7	37.1	36.3	33.2	31.6	29.2	27.6	26.8	25.3
77.5°	29.2	26.8	25.3	24.5	23.7	22.1	20.5	19.7	18.2	17.4	17.4
80°	16.6	15.8	15.0	14.2	13.4	12.6	12.6	11.8	11.1	10.3	9.5
82.5°	7.9	7.9	7.1	7.1	7.1	6.3	6.3	5.5	5.5	4.7	4.7
85°	3.9	3.9	3.9	3.9	3.9	3.2	3.2	3.2	2.4	2.4	1.6
87.5°	3.2	3.2	3.2	3.2	3.2	2.4	2.4	2.4	1.6	1.6	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 PR4M12WW8FSMMS 1500Lm4000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	597.8	597.8	597.8	597.8	597.8	597.8	597.8	597.8
2.5°	617.5	618.3	619.1	619.9	619.9	620.7	621.5	620.7
5°	633.3	635.7	636.5	637.3	638.1	638.9	639.7	639.7
7.5°	645.2	648.3	649.1	649.1	651.5	652.3	653.1	653.1
10°	651.5	653.1	654.7	654.7	656.2	656.2	657.8	657.8
12.5°	648.3	649.9	650.7	651.5	651.5	652.3	652.3	652.3
15°	637.3	636.5	636.5	635.7	635.7	634.9	634.9	634.9
17.5°	616.8	616.0	615.2	615.2	613.6	613.6	612.0	612.0
20°	592.3	590.7	589.9	589.1	589.1	588.3	586.7	586.7
22.5°	566.2	564.6	563.1	561.5	559.9	559.1	558.3	558.3
25°	537.0	534.6	533.8	533.0	530.7	529.9	528.3	527.5
27.5°	507.0	503.0	502.3	501.5	499.9	499.1	498.3	498.3
30°	475.4	473.0	471.5	470.7	468.3	467.5	465.1	465.1
32.5°	443.8	439.9	438.3	437.5	435.9	434.3	433.5	433.5
35°	410.6	408.3	407.5	405.1	402.7	402.7	401.2	401.2
37.5°	379.1	376.7	374.3	373.5	371.9	369.6	368.8	371.2
40°	347.5	344.3	342.7	341.9	340.4	338.0	338.0	338.0
42.5°	316.7	314.3	313.5	311.9	310.4	309.6	308.0	307.2
45°	285.1	283.5	282.7	281.1	280.3	278.8	277.2	277.2
47.5°	257.4	254.3	254.3	252.7	251.1	250.3	250.3	251.1
50°	229.8	227.4	225.9	225.1	223.5	223.5	222.7	221.9
52.5°	199.8	198.2	197.4	197.4	195.8	195.8	195.1	195.1
55°	172.2	172.2	171.4	170.6	169.0	169.0	169.0	169.0
57.5°	147.7	146.1	145.3	144.5	143.7	142.9	142.9	142.1
60°	122.4	121.6	120.0	120.8	118.5	118.5	118.5	117.7
62.5°	99.5	97.9	97.1	96.3	94.8	94.8	93.2	92.4
65°	79.8	77.4	75.8	75.8	74.2	72.7	71.9	71.1
67.5°	60.0	58.4	57.6	56.9	55.3	53.7	53.7	52.9
70°	45.8	44.2	43.4	42.6	41.9	41.1	41.1	41.1
72.5°	34.0	33.2	32.4	32.4	31.6	30.8	30.8	31.6
75°	24.5	23.7	23.7	23.7	22.9	22.9	22.9	22.1
77.5°	16.6	15.8	15.8	15.0	15.0	15.0	15.0	15.0
80°	9.5	8.7	8.7	8.7	8.7	8.7	8.7	8.7
82.5°	3.9	3.9	3.9	3.9	3.2	3.2	3.2	3.2
85°	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.8
87.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.0	0.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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