

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: P345430

Luminaire Tested: **PR4FS12D010 PR4M12WW8FSMMS 1000Lm3000K**

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P345430  
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 1000Lm3000K  
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: 788.1 lumens  
Efficiency: N/A  
Efficacy: 75.8 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

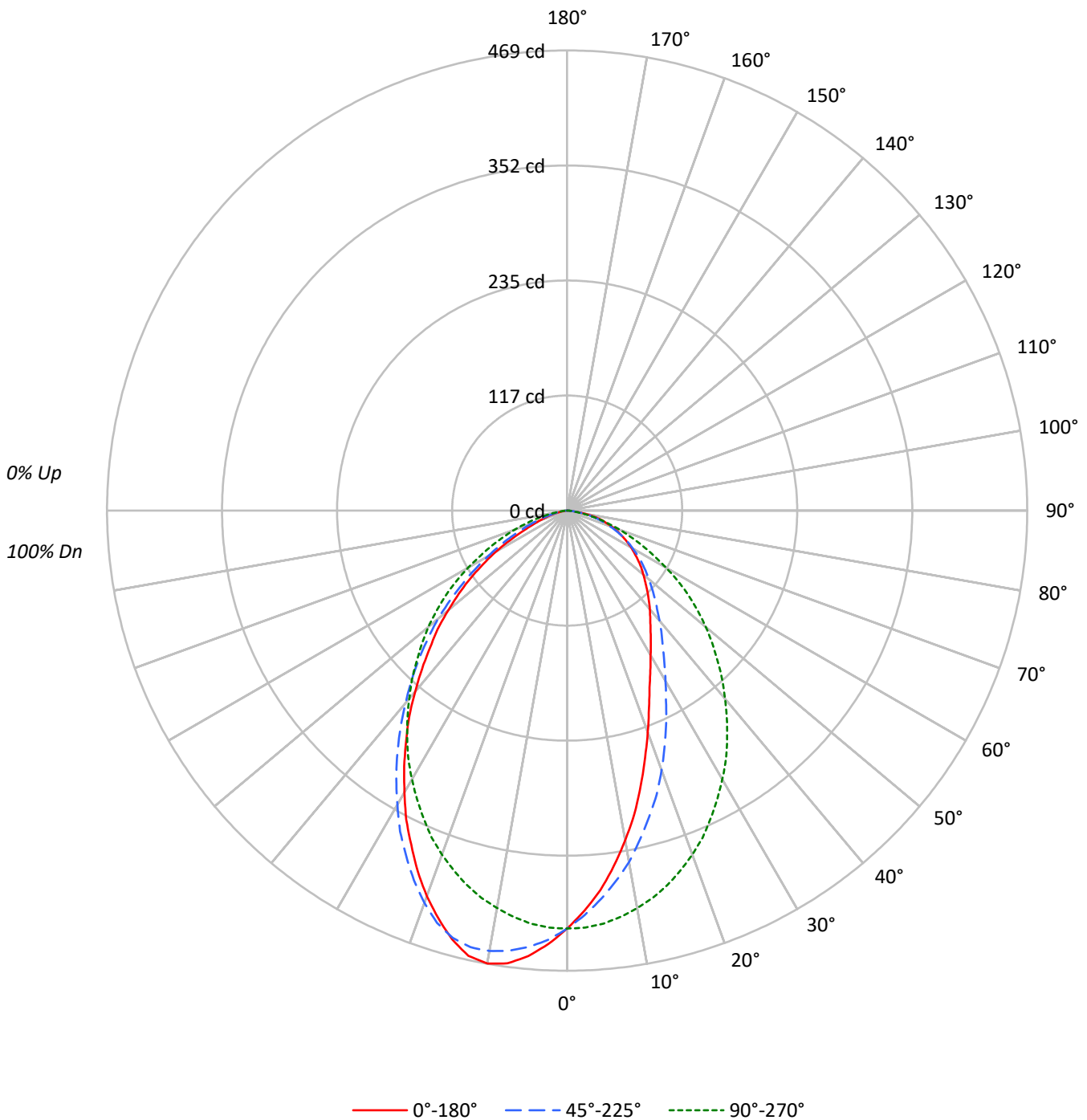
Input Watts (W): 10.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	41517	41517	41517
5°	37988	41343	44591
10°	33746	40713	46393
15°	29240	39864	45655
20°	24922	38695	43362
25°	21367	37217	40422
30°	19131	35595	37305
35°	17608	33813	34015
40°	16679	31857	30648
45°	15905	29867	27221
50°	15359	27989	23971
55°	15020	25725	20458
60°	14697	22708	16353
65°	14274	19463	11669
70°	13962	16185	8349
75°	13367	12501	5949
80°	9485	7240	3480
85°	2572	3802	671



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	39.9	5.1
10°-20°	107.9	13.7
20°-30°	145.4	18.4
30°-40°	152.7	19.4
40°-50°	137.6	17.5
50°-60°	106.3	13.5
60°-70°	65.4	8.3
70°-80°	28.8	3.7
80°-90°	4.2	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°	293.1	37.2
0°-40°	445.8	56.6
0°-60°	689.7	87.5
0°-90°	788.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	788.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	426	426	426	426	426	
5°	388	397	423	446	456	36
15°	290	323	395	451	452	81
25°	199	239	346	388	376	92
35°	148	170	284	302	286	93
45°	115	126	217	213	198	89
55°	88	93	151	130	120	79
65°	62	62	84	62	51	62
75°	36	32	33	20	16	36
85°	2	3	3	2	1	5
90°	0	0	0	0	0	



TEST NUMBER: P345430

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	426.0	426.0	426.0	426.0	426.0	426.0	426.0	426.0	426.0	426.0	426.0
2.5°	408.0	407.4	406.9	408.0	408.0	408.6	408.6	409.7	409.7	410.8	412.5
5°	388.3	387.2	387.7	387.7	389.4	389.4	390.6	391.7	393.4	395.6	397.3
7.5°	365.2	365.2	365.8	366.9	368.6	368.6	370.3	372.0	374.8	377.6	381.0
10°	341.0	342.2	342.7	343.8	346.7	347.8	348.3	351.2	355.1	357.9	363.5
12.5°	316.8	316.8	318.0	320.2	322.5	324.1	325.3	329.2	333.1	338.2	343.3
15°	289.8	290.4	292.1	294.3	298.3	299.4	301.6	306.1	311.8	318.0	323.0
17.5°	263.9	265.1	266.2	269.6	272.4	274.1	277.4	282.5	288.7	295.4	303.3
20°	240.3	238.6	240.9	243.1	245.9	249.9	252.1	257.7	264.5	273.5	281.4
22.5°	217.8	217.8	219.5	221.2	224.0	226.8	229.6	234.1	241.4	250.4	259.4
25°	198.7	199.2	200.9	202.6	205.4	207.1	209.9	214.4	221.7	228.5	238.6
27.5°	183.5	184.0	184.6	186.8	189.1	190.8	192.5	197.0	202.6	209.9	218.3
30°	170.0	170.0	170.5	172.8	173.9	176.1	177.3	181.2	186.3	192.5	200.3
32.5°	158.7	158.7	159.3	160.4	162.6	163.8	164.3	168.3	172.2	178.4	184.6
35°	148.0	148.0	148.6	149.7	151.4	151.9	153.6	155.9	159.8	164.3	170.0
37.5°	139.0	139.0	139.6	140.1	141.3	142.4	143.5	145.8	148.0	152.5	158.1
40°	131.1	130.6	131.1	131.7	133.4	133.4	133.9	136.2	138.4	141.8	146.3
42.5°	123.2	123.2	123.2	123.8	124.9	125.5	126.1	127.2	129.4	132.2	135.6
45°	115.4	115.4	115.9	116.5	117.1	117.6	118.7	119.9	121.0	122.7	126.1
47.5°	108.0	108.6	108.6	109.2	109.7	110.3	110.9	112.0	113.1	114.8	117.1
50°	101.3	101.9	101.9	102.4	103.0	103.0	103.5	104.7	105.8	106.9	108.6
52.5°	95.1	95.1	94.5	95.1	95.7	95.7	96.2	96.8	97.9	99.6	100.7
55°	88.4	88.4	88.4	88.9	88.9	88.9	89.5	90.0	90.6	91.2	92.9
57.5°	81.6	81.6	82.2	81.6	82.2	82.2	82.2	82.7	83.3	84.4	85.0
60°	75.4	75.4	75.4	75.4	75.4	75.4	76.0	76.0	76.0	76.5	77.1
62.5°	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	69.2	69.2	69.8
65°	61.9	61.9	62.5	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9
67.5°	55.7	55.1	55.7	55.1	55.1	55.1	55.1	54.6	54.6	54.6	54.0
70°	49.0	48.4	48.4	48.4	48.4	47.8	48.4	47.8	47.3	46.7	46.1
72.5°	41.6	41.6	41.6	41.6	41.6	41.1	40.5	40.5	40.0	39.4	38.8
75°	35.5	35.5	34.9	34.3	33.8	33.8	33.8	33.2	32.6	32.1	31.5
77.5°	27.6	27.0	27.0	26.4	25.9	25.3	25.9	25.3	24.8	24.2	23.6
80°	16.9	16.9	16.9	16.9	16.9	16.9	16.3	16.9	16.3	15.8	15.8
82.5°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
85°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.8	2.8
87.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.7	1.7	1.7
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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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	426.0	426.0	426.0	426.0	426.0	426.0	426.0	426.0	426.0	426.0	426.0
2.5°	413.6	414.7	416.4	417.6	418.1	418.7	420.4	422.1	423.8	425.4	426.6
5°	400.1	402.9	404.6	407.4	409.1	410.8	413.6	416.4	419.3	422.6	425.4
7.5°	383.8	388.3	391.7	395.6	397.9	400.1	404.1	408.6	413.1	417.6	422.1
10°	368.0	372.0	378.2	383.8	385.5	388.9	395.1	400.1	406.3	411.4	417.6
12.5°	350.0	355.1	361.9	368.6	372.5	375.9	383.2	390.0	397.3	404.1	411.4
15°	330.3	338.2	345.5	353.4	358.5	361.9	370.3	378.7	386.6	395.1	403.5
17.5°	310.6	319.6	328.6	338.2	342.2	347.2	356.8	365.8	375.4	384.4	393.9
20°	290.9	300.5	310.1	320.8	326.4	331.5	341.6	352.3	363.0	373.1	383.2
22.5°	270.1	280.3	291.5	303.3	309.5	314.0	325.8	337.7	348.9	360.7	371.4
25°	249.3	261.1	272.9	285.3	291.5	298.3	310.1	322.5	334.3	346.1	358.5
27.5°	229.0	241.4	253.8	267.9	274.1	280.8	293.8	306.1	319.1	331.5	343.8
30°	210.5	222.3	235.8	249.9	256.6	263.4	276.9	290.4	303.3	316.3	328.1
32.5°	193.6	203.7	217.8	231.9	239.2	245.9	260.0	274.1	287.6	301.1	312.9
35°	177.8	187.4	199.2	214.4	221.2	228.5	243.1	256.6	270.7	284.2	296.6
37.5°	163.8	172.8	183.5	196.4	204.8	211.6	226.2	240.3	253.8	267.3	279.7
40°	151.4	159.3	168.3	180.1	188.0	195.3	209.9	224.0	237.5	250.4	262.8
42.5°	140.1	146.3	154.8	165.4	171.6	179.0	194.1	207.7	221.2	234.1	245.4
45°	129.4	134.5	141.8	151.4	156.4	164.3	178.4	191.9	204.8	216.7	229.0
47.5°	119.9	124.4	130.0	137.9	142.9	149.1	163.2	176.7	189.1	200.9	211.6
50°	111.4	114.8	119.9	126.6	130.6	135.1	149.1	162.1	173.3	184.6	194.7
52.5°	103.0	105.2	109.2	114.8	118.7	122.7	134.5	146.9	158.1	167.7	178.4
55°	94.0	96.8	100.2	104.1	106.9	110.3	119.9	131.7	141.3	151.4	159.8
57.5°	86.1	87.8	90.0	93.4	95.7	98.5	105.8	115.9	125.5	133.9	142.4
60°	78.2	79.3	81.0	83.3	85.0	87.2	92.3	101.3	109.7	116.5	123.8
62.5°	70.3	70.3	71.5	73.2	74.3	76.0	80.5	87.2	94.5	99.6	105.8
65°	61.9	62.5	63.0	64.2	64.7	65.8	68.7	73.7	79.3	84.4	88.9
67.5°	54.0	54.0	54.6	55.1	55.1	55.7	57.4	60.8	66.4	69.8	73.2
70°	46.1	46.1	46.1	46.1	46.7	46.1	47.3	49.5	53.5	56.8	58.5
72.5°	38.8	38.3	37.7	37.7	37.7	37.7	38.3	40.0	42.2	43.9	46.1
75°	31.0	30.4	29.8	29.3	29.8	29.8	29.8	30.4	31.5	33.2	33.8
77.5°	23.1	23.1	21.9	21.4	21.9	21.4	20.8	20.8	21.4	21.9	21.9
80°	15.8	15.2	14.6	14.1	14.1	14.1	13.5	12.9	12.9	12.9	12.4
82.5°	7.9	7.9	7.3	7.3	7.3	7.3	7.3	6.8	6.8	6.2	6.2
85°	2.8	2.8	2.8	2.8	3.4	2.8	3.4	3.4	3.4	3.4	3.4
87.5°	1.7	1.7	2.3	2.3	2.3	2.3	2.3	2.8	2.8	2.8	2.3
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°	426.0	426.0	426.0	426.0	426.0	426.0	426.0	426.0	426.0	426.0	426.0
2.5°	428.3	429.9	431.1	432.2	432.8	433.9	435.6	436.7	437.8	438.9	440.1
5°	428.3	431.6	433.9	435.6	437.3	439.5	442.3	444.6	446.3	448.5	450.2
7.5°	426.6	431.1	435.0	437.3	439.5	442.9	446.3	449.6	452.5	455.3	457.5
10°	423.2	428.8	434.4	436.7	439.5	444.0	448.5	452.5	455.8	459.2	462.0
12.5°	418.1	424.9	431.6	434.4	437.3	442.9	448.0	452.5	455.8	458.6	460.3
15°	411.4	419.3	426.6	429.9	433.3	438.9	444.0	448.0	450.8	452.5	453.6
17.5°	402.9	411.4	419.3	423.2	427.1	432.8	436.7	438.9	440.6	440.6	440.1
20°	393.4	402.4	410.8	414.7	418.1	422.6	425.4	426.0	425.4	424.3	423.2
22.5°	381.5	391.7	400.1	403.5	406.3	409.7	409.7	409.1	408.0	406.3	405.7
25°	369.2	378.7	387.2	390.6	391.7	393.9	392.2	391.1	388.3	386.6	384.9
27.5°	355.7	365.8	372.0	374.2	375.4	374.2	372.5	370.3	368.6	365.8	363.5
30°	341.0	350.0	355.1	356.8	356.2	354.5	352.8	348.9	346.1	343.3	340.5
32.5°	324.1	333.1	337.1	337.7	336.0	333.1	330.3	327.5	324.1	320.8	319.1
35°	307.8	315.7	318.0	316.8	315.1	311.8	307.8	304.4	301.6	297.7	294.9
37.5°	290.4	297.1	297.1	295.4	294.3	290.4	286.4	283.1	279.1	275.7	271.8
40°	272.9	278.0	276.3	274.6	272.9	268.4	265.1	260.0	256.1	252.1	249.3
42.5°	255.5	258.3	256.1	253.8	251.6	247.0	243.7	238.0	234.7	230.7	228.5
45°	238.0	238.6	235.2	233.5	231.3	225.7	221.2	217.2	213.3	208.8	206.0
47.5°	220.0	218.9	215.0	212.7	210.5	205.4	200.9	196.4	191.9	188.5	185.1
50°	202.0	199.2	195.3	193.0	190.2	185.7	180.6	175.6	171.6	168.3	165.4
52.5°	182.3	180.1	175.6	172.2	170.0	163.8	159.3	154.8	150.3	146.9	144.6
55°	162.6	159.3	154.2	151.9	148.6	143.5	139.0	133.4	130.0	127.2	124.4
57.5°	142.9	139.0	134.5	131.7	128.3	123.2	118.2	114.8	111.4	108.0	106.4
60°	123.8	119.9	114.2	113.1	109.7	104.7	100.2	96.2	92.9	90.6	88.9
62.5°	105.8	101.9	96.2	94.0	91.7	86.7	82.7	79.3	77.1	74.8	73.2
65°	87.8	84.4	79.9	77.1	74.8	70.9	67.5	64.2	62.5	59.7	58.0
67.5°	71.5	67.5	64.2	61.9	60.2	56.3	53.5	51.2	49.0	47.3	45.0
70°	56.3	52.9	49.5	48.4	46.7	43.9	41.6	39.4	37.7	36.0	33.8
72.5°	43.3	41.1	37.7	36.6	35.5	33.2	31.5	29.8	27.6	26.4	25.3
75°	32.1	29.8	27.6	26.4	25.9	23.6	22.5	20.8	19.7	19.1	18.0
77.5°	20.8	19.1	18.0	17.4	16.9	15.8	14.6	14.1	12.9	12.4	12.4
80°	11.8	11.3	10.7	10.1	9.6	9.0	9.0	8.4	7.9	7.3	6.8
82.5°	5.6	5.6	5.1	5.1	5.1	4.5	4.5	3.9	3.9	3.4	3.4
85°	2.8	2.8	2.8	2.8	2.8	2.3	2.3	2.3	1.7	1.7	1.1
87.5°	2.3	2.3	2.3	2.3	2.3	1.7	1.7	1.7	1.1	1.1	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





TEST NUMBER: P345430

CATALOG NUMBER: PR4FS12D010 PR4M12WW8FSMMS 1000lm3000K

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	426.0	426.0	426.0	426.0	426.0	426.0	426.0	426.0
2.5°	440.1	440.6	441.2	441.8	441.8	442.3	442.9	442.3
5°	451.3	453.0	453.6	454.1	454.7	455.3	455.8	455.8
7.5°	459.8	462.0	462.6	462.6	464.3	464.8	465.4	465.4
10°	464.3	465.4	466.5	466.5	467.6	467.6	468.8	468.8
12.5°	462.0	463.1	463.7	464.3	464.3	464.8	464.8	464.8
15°	454.1	453.6	453.6	453.0	453.0	452.5	452.5	452.5
17.5°	439.5	438.9	438.4	438.4	437.3	437.3	436.1	436.1
20°	422.1	420.9	420.4	419.8	419.8	419.3	418.1	418.1
22.5°	403.5	402.4	401.2	400.1	399.0	398.4	397.9	397.9
25°	382.7	381.0	380.4	379.9	378.2	377.6	376.5	375.9
27.5°	361.3	358.5	357.9	357.3	356.2	355.7	355.1	355.1
30°	338.8	337.1	336.0	335.4	333.7	333.1	331.5	331.5
32.5°	316.3	313.5	312.3	311.8	310.6	309.5	309.0	309.0
35°	292.6	290.9	290.4	288.7	287.0	287.0	285.9	285.9
37.5°	270.1	268.4	266.7	266.2	265.1	263.4	262.8	264.5
40°	247.6	245.4	244.2	243.7	242.5	240.9	240.9	240.9
42.5°	225.7	224.0	223.4	222.3	221.2	220.6	219.5	218.9
45°	203.2	202.0	201.5	200.3	199.8	198.7	197.5	197.5
47.5°	183.5	181.2	181.2	180.1	179.0	178.4	178.4	179.0
50°	163.8	162.1	160.9	160.4	159.3	159.3	158.7	158.1
52.5°	142.4	141.3	140.7	140.7	139.6	139.6	139.0	139.0
55°	122.7	122.7	122.1	121.6	120.4	120.4	120.4	120.4
57.5°	105.2	104.1	103.5	103.0	102.4	101.9	101.9	101.3
60°	87.2	86.7	85.5	86.1	84.4	84.4	84.4	83.9
62.5°	70.9	69.8	69.2	68.7	67.5	67.5	66.4	65.8
65°	56.8	55.1	54.0	54.0	52.9	51.8	51.2	50.6
67.5°	42.8	41.6	41.1	40.5	39.4	38.3	38.3	37.7
70°	32.6	31.5	31.0	30.4	29.8	29.3	29.3	29.3
72.5°	24.2	23.6	23.1	23.1	22.5	21.9	21.9	22.5
75°	17.4	16.9	16.9	16.9	16.3	16.3	16.3	15.8
77.5°	11.8	11.3	11.3	10.7	10.7	10.7	10.7	10.7
80°	6.8	6.2	6.2	6.2	6.2	6.2	6.2	6.2
82.5°	2.8	2.8	2.8	2.8	2.3	2.3	2.3	2.3
85°	1.1	1.1	1.1	1.1	1.1	0.6	0.6	0.6
87.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.0	0.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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