

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: P345403

Luminaire Tested: **PR4FS12D010 PR4M12WW9FSMW 1500Lm3000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P345403
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 PR4M12WW9FSMW 1500Lm3000K
Description: PR4 WALLWASH ASSEMBLY WITH, MATTE WHITE FINISH
Light Source: ARRAY OF HIGH LUMEN LEDs 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 892.9 lumens
Efficiency: N/A
Efficacy: 64.2 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

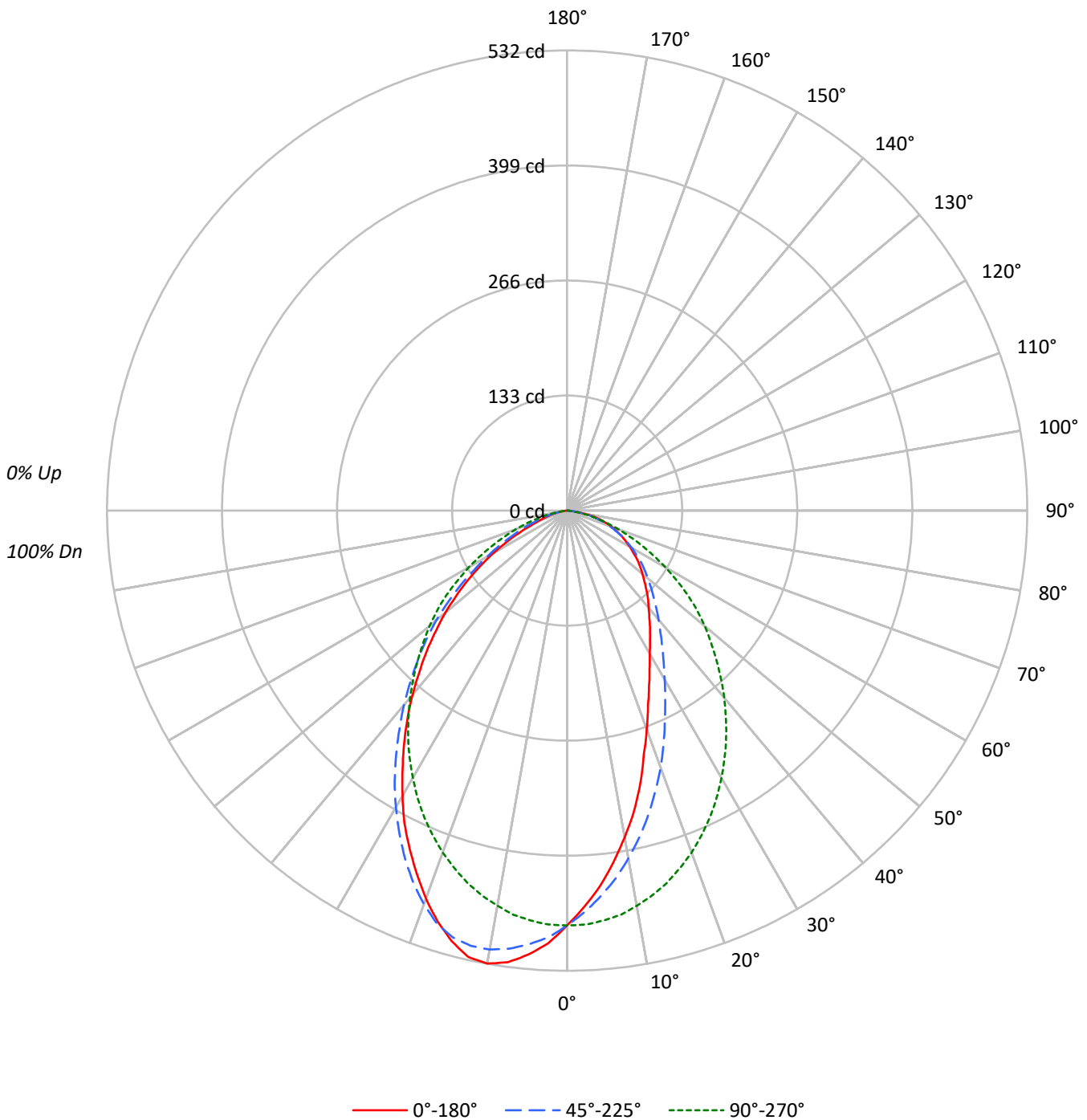
Input Watts (W): 13.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P345403

CATALOG NUMBER: PR4FS12D010 PR4M12WW9FSMW 1500lm3000K

Luminous Intensity Polar Plot





TEST NUMBER: P345403

CATALOG NUMBER: PR4FS12D010 PR4M12WW9FSMW 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	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°	41959	41959	41959
5°	38282	41786	45245
10°	34044	41203	47234
15°	29593	40342	46663
20°	25049	39160	44419
25°	21619	37726	41587
30°	19291	36017	38451
35°	17822	34223	35099
40°	16739	32245	31732
45°	16019	30146	28414
50°	15458	28236	25038
55°	15097	25940	21380
60°	14660	22987	17319
65°	14322	19579	12749
70°	13964	16061	8772
75°	13282	12234	6658
80°	9268	7052	3828
85°	3814	2509	1305



TEST NUMBER: P345403

CATALOG NUMBER: PR4FS12D010 PR4M12WW9FSMW 1500Lm3000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.9	5.0
10°-20°	121.8	13.6
20°-30°	164.6	18.4
30°-40°	173.3	19.4
40°-50°	156.1	17.5
50°-60°	120.5	13.5
60°-70°	74.2	8.3
70°-80°	32.6	3.7
80°-90°	4.7	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°	331.4	37.1
0°-40°	504.7	56.5
0°-60°	781.4	87.5
0°-90°	892.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	892.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	480	480	480	480	480	
5°	436	447	476	503	515	40
15°	327	364	446	511	515	91
25°	224	267	391	444	431	104
35°	167	192	320	345	329	105
45°	130	142	244	244	230	100
55°	99	104	170	150	140	88
65°	69	69	95	72	62	68
75°	39	35	36	24	20	40
85°	4	3	2	2	1	7
90°	0	0	0	0	0	



TEST NUMBER: P345403

CATALOG NUMBER: PR4FS12D010 PR4M12WW9FSMW 1500Lm3000K

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7
2.5°	458.2	458.8	458.8	458.8	459.4	460.1	460.1	461.3	462.0	463.2	464.5
5°	436.0	435.3	435.3	436.6	437.9	438.5	438.5	441.0	442.9	444.8	447.4
7.5°	409.9	409.3	411.2	411.8	413.1	415.0	416.3	418.8	420.7	425.2	429.0
10°	383.3	383.3	384.6	386.5	388.4	390.3	391.5	394.7	398.5	403.0	408.0
12.5°	356.6	354.7	356.6	359.2	361.1	363.0	364.9	368.7	374.4	380.1	386.5
15°	326.8	326.2	327.4	330.0	334.4	335.7	337.6	343.3	349.0	356.6	363.6
17.5°	295.1	297.0	297.6	301.4	305.9	307.8	309.7	315.4	323.6	331.2	339.5
20°	269.1	267.8	270.3	272.9	276.7	279.8	282.4	288.7	297.6	305.9	316.0
22.5°	244.3	243.7	245.6	248.8	251.9	254.5	257.0	263.3	270.3	279.8	291.3
25°	224.0	223.4	225.3	227.2	231.0	232.9	234.8	241.1	248.8	256.4	267.2
27.5°	206.2	206.2	207.5	208.8	211.9	213.9	216.4	221.5	227.8	235.4	245.6
30°	191.0	191.0	192.3	193.5	196.7	198.0	199.9	203.7	208.8	217.0	225.3
32.5°	178.3	178.3	178.9	180.9	182.1	183.4	185.3	188.5	193.5	199.9	207.5
35°	166.9	166.9	167.5	168.8	170.7	171.3	172.6	175.8	179.6	184.7	191.6
37.5°	156.1	156.7	156.7	158.0	159.3	159.9	161.2	163.7	166.9	171.3	177.0
40°	146.6	147.2	147.2	148.5	149.8	150.4	151.0	152.3	156.1	159.3	164.4
42.5°	138.3	138.3	138.3	139.0	140.2	140.9	141.5	143.4	145.3	148.5	152.3
45°	129.5	129.5	130.1	130.7	132.0	132.0	132.6	134.5	135.8	138.3	141.5
47.5°	121.2	121.2	121.8	121.8	123.1	123.1	123.7	125.0	126.3	128.8	131.4
50°	113.6	113.6	113.6	114.2	114.9	115.5	115.5	116.8	118.0	119.9	121.8
52.5°	106.0	106.0	106.0	106.0	106.6	107.2	107.2	108.5	109.8	111.1	113.0
55°	99.0	98.4	99.0	99.0	99.0	99.6	99.6	100.9	100.9	102.2	104.1
57.5°	90.7	91.4	91.4	90.7	91.4	92.0	92.0	92.0	92.6	93.9	94.6
60°	83.8	83.8	83.8	83.8	84.4	84.4	84.4	84.4	85.0	85.0	86.3
62.5°	76.1	76.1	76.8	76.8	76.1	76.8	76.8	76.8	77.4	77.4	77.4
65°	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2
67.5°	61.6	61.6	61.6	61.6	61.6	61.6	61.6	60.9	60.9	60.9	60.3
70°	54.6	54.6	54.6	53.9	53.9	53.9	53.9	53.3	53.3	52.7	52.0
72.5°	47.0	47.0	47.0	46.3	46.3	46.3	45.7	45.1	44.4	43.8	43.8
75°	39.3	39.3	38.7	38.1	38.1	37.4	37.4	36.8	36.8	35.5	34.9
77.5°	30.5	29.8	29.8	29.8	29.2	28.6	28.6	27.9	27.3	27.3	26.7
80°	18.4	18.4	19.0	18.4	19.0	18.4	18.4	19.0	18.4	17.8	17.8
82.5°	8.9	8.9	9.5	8.9	9.5	9.5	9.5	8.9	8.9	8.9	8.9
85°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.2	3.2	3.2
87.5°	2.5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
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: P345403

CATALOG NUMBER: PR4FS12D010 PR4M12WW9FSMW 1500lm3000K

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7
2.5°	465.8	467.7	468.3	470.2	470.9	472.1	473.4	475.3	477.2	479.1	480.4
5°	449.9	453.1	455.6	458.8	460.7	462.0	465.8	469.0	472.8	475.9	479.1
7.5°	432.8	436.6	442.3	446.1	448.0	451.2	455.6	460.7	465.8	471.5	475.9
10°	413.1	418.8	424.5	431.5	434.7	437.9	443.6	450.5	457.5	463.9	470.9
12.5°	392.2	399.8	407.4	414.4	418.8	422.6	431.5	439.1	447.4	455.6	463.2
15°	371.9	380.1	389.0	397.9	403.0	407.4	416.3	425.8	436.0	445.5	454.4
17.5°	349.7	359.2	369.3	379.5	384.6	390.3	401.7	411.8	423.3	433.4	444.2
20°	326.8	337.6	348.4	361.1	366.1	372.5	383.9	396.6	408.7	420.7	432.1
22.5°	303.3	315.4	327.4	340.8	347.7	354.1	367.4	380.1	393.4	406.1	418.8
25°	279.2	293.2	307.1	320.5	328.1	334.4	349.0	363.6	377.6	390.9	404.2
27.5°	257.0	270.3	285.6	300.2	307.8	314.7	330.6	344.6	359.8	374.4	387.7
30°	236.7	249.4	264.6	280.5	288.1	295.7	311.6	327.4	341.4	356.6	371.2
32.5°	217.7	229.1	244.3	260.2	269.1	276.0	292.5	307.8	323.6	338.9	353.5
35°	199.9	211.3	224.6	240.5	248.1	256.4	273.5	289.4	304.6	320.5	333.8
37.5°	184.7	193.5	205.6	220.8	229.1	237.3	254.5	270.3	285.6	301.4	315.4
40°	170.1	178.3	189.1	202.4	210.7	218.9	235.4	251.3	266.5	282.4	297.0
42.5°	158.0	164.4	173.2	185.9	192.9	201.2	217.7	232.9	248.1	263.3	277.3
45°	146.0	151.7	159.3	169.4	176.4	184.0	199.9	215.8	229.7	243.7	257.6
47.5°	134.5	139.0	146.0	154.8	160.5	167.5	182.8	198.0	211.9	225.3	238.0
50°	124.4	128.2	134.5	140.9	146.0	152.3	165.6	180.9	194.2	207.5	218.9
52.5°	114.9	118.0	122.5	128.8	132.6	137.7	150.4	163.7	177.0	189.1	199.9
55°	106.0	107.9	111.7	116.1	119.3	123.7	134.5	147.2	159.3	170.1	178.9
57.5°	95.8	98.4	100.9	104.1	107.2	109.8	118.0	129.5	140.2	149.8	158.6
60°	86.9	88.8	90.1	93.3	94.6	97.1	103.4	113.0	123.1	131.4	137.7
62.5°	78.1	78.7	80.0	82.5	83.1	85.0	89.5	97.1	104.7	112.3	118.7
65°	69.2	69.2	70.4	71.1	72.3	73.0	76.1	81.9	88.8	94.6	98.4
67.5°	60.3	60.3	60.9	60.9	62.2	62.2	64.1	68.5	73.0	78.1	81.2
70°	51.4	51.4	51.4	51.4	51.4	52.0	53.3	55.8	59.0	62.8	64.7
72.5°	43.2	42.5	42.5	41.9	41.9	41.9	42.5	43.8	46.3	48.9	50.8
75°	34.3	33.6	33.0	33.0	32.4	32.4	32.4	33.6	34.9	36.2	36.8
77.5°	25.4	25.4	24.7	23.5	23.5	22.8	22.8	22.8	23.5	24.7	24.1
80°	17.8	16.5	15.9	15.9	15.2	15.2	14.6	14.0	14.0	14.0	13.3
82.5°	8.2	8.2	8.2	7.6	7.6	7.6	7.6	7.0	7.0	6.3	6.3
85°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.5	2.5	2.5	2.5
87.5°	1.9	1.9	1.9	1.9	1.9	1.3	1.3	1.3	1.3	1.3	1.3
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: P345403

CATALOG NUMBER: PR4FS12D010 PR4M12WW9FSMW 1500lm3000K

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7
2.5°	482.3	484.2	486.1	486.7	487.4	489.3	490.5	492.4	493.7	494.3	495.6
5°	482.9	486.1	489.3	491.2	492.4	495.6	498.1	501.3	503.2	506.4	508.3
7.5°	481.0	486.1	490.5	493.1	495.6	500.0	503.9	507.7	510.8	514.0	517.2
10°	477.2	483.5	489.9	492.4	495.6	500.7	506.4	510.8	515.3	519.1	522.9
12.5°	471.5	479.1	486.7	489.9	493.1	500.0	505.8	510.8	515.3	519.1	521.6
15°	463.9	472.8	481.0	485.4	489.3	496.2	501.9	507.0	510.8	513.4	515.3
17.5°	454.4	464.5	474.0	477.8	482.3	488.6	494.3	498.1	500.7	500.7	501.3
20°	443.6	454.4	463.9	468.3	472.8	477.8	482.3	484.2	484.2	484.2	482.9
22.5°	430.9	442.3	451.8	456.3	460.1	463.9	466.4	466.4	465.1	463.2	461.3
25°	416.3	428.3	437.2	441.7	443.6	446.7	446.1	445.5	443.6	441.7	439.1
27.5°	400.4	412.5	422.0	423.9	425.2	425.8	423.9	422.6	420.1	417.5	415.6
30°	383.9	395.3	403.0	403.6	404.9	404.2	401.7	398.5	396.0	392.8	390.3
32.5°	366.1	376.9	382.0	383.3	382.6	380.1	377.6	374.4	371.2	367.4	364.2
35°	347.1	357.3	360.4	359.8	359.2	356.0	352.2	349.0	344.6	342.0	337.6
37.5°	327.4	337.0	338.2	336.3	334.4	330.6	326.8	323.6	318.6	316.0	312.8
40°	307.8	314.1	314.1	312.2	310.9	307.1	302.1	297.6	293.8	289.4	287.5
42.5°	287.5	292.5	290.0	288.7	286.8	281.1	277.3	272.9	267.8	265.3	262.1
45°	267.2	270.3	267.2	264.6	262.7	257.6	253.8	248.1	243.7	241.1	237.3
47.5°	246.2	247.5	244.9	241.1	239.9	234.2	229.7	225.3	220.8	216.4	213.2
50°	227.2	225.9	222.1	219.6	217.7	211.3	206.2	201.2	197.4	193.5	190.4
52.5°	205.6	204.3	199.3	196.1	192.9	187.8	181.5	177.7	173.2	170.1	166.9
55°	183.4	179.6	175.8	172.6	169.4	164.4	158.6	153.6	150.4	146.6	144.7
57.5°	160.5	158.0	151.7	149.1	146.6	141.5	135.8	131.4	126.9	124.4	123.1
60°	140.2	135.8	130.7	127.5	125.0	119.9	114.9	110.4	107.2	106.0	104.1
62.5°	118.7	114.9	109.1	106.6	104.7	99.6	95.2	91.4	88.8	86.3	85.0
65°	99.0	94.6	90.1	87.6	85.0	80.6	77.4	74.9	71.7	69.8	68.5
67.5°	80.0	76.1	72.3	70.4	68.5	64.7	61.6	59.6	57.1	55.2	52.7
70°	62.8	59.6	57.1	55.2	53.3	50.1	47.6	45.7	43.8	41.9	40.0
72.5°	48.9	45.7	42.5	41.9	40.6	38.1	36.2	34.3	32.4	31.1	29.8
75°	34.9	33.6	31.1	29.8	29.2	27.3	25.4	24.1	23.5	22.2	21.6
77.5°	22.8	21.6	19.7	19.7	19.0	18.4	17.1	15.9	15.9	15.2	15.2
80°	12.7	12.1	11.4	10.8	11.4	10.8	10.2	9.5	9.5	9.5	8.9
82.5°	5.7	5.7	5.1	5.1	5.1	5.1	5.1	4.4	4.4	4.4	4.4
85°	2.5	2.5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
87.5°	1.3	1.3	1.3	1.3	1.3	1.3	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



TEST NUMBER: P345403

CATALOG NUMBER: PR4FS12D010 PR4M12WW9FSMW 1500lm3000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	479.7	479.7	479.7	479.7	479.7	479.7	479.7	479.7
2.5°	496.9	497.5	498.1	498.8	499.4	499.4	500.0	500.7
5°	509.6	511.5	512.1	512.7	514.0	514.6	514.6	515.3
7.5°	519.7	522.3	522.9	524.2	525.4	526.1	526.7	526.7
10°	525.4	527.3	528.0	529.2	530.5	531.1	531.8	531.8
12.5°	523.5	525.4	526.1	526.7	528.0	528.6	528.6	528.6
15°	516.5	516.5	516.5	516.5	515.9	516.5	516.5	515.3
17.5°	500.7	500.0	500.7	499.4	498.8	498.8	498.1	498.1
20°	481.6	481.0	480.4	480.4	479.7	478.5	477.8	477.2
22.5°	460.1	458.8	458.2	458.2	456.9	456.3	455.6	454.4
25°	437.9	434.7	434.7	434.7	433.4	433.4	432.1	430.9
27.5°	412.5	410.6	410.6	409.3	408.0	407.4	406.8	407.4
30°	388.4	385.8	384.6	383.9	383.3	383.3	381.4	380.7
32.5°	361.7	359.8	358.5	357.9	356.6	356.0	355.4	354.1
35°	335.7	333.8	332.5	332.5	330.0	329.3	328.7	328.7
37.5°	309.0	307.8	307.1	305.2	304.6	304.0	304.0	303.3
40°	284.3	282.4	281.8	279.8	279.2	279.2	277.3	277.9
42.5°	258.9	256.4	255.7	255.1	254.5	253.2	253.8	252.6
45°	234.8	232.9	231.6	231.6	231.0	229.7	229.1	229.7
47.5°	211.3	208.8	208.8	208.1	207.5	206.9	206.9	205.6
50°	189.1	187.2	185.9	184.7	185.3	184.7	183.4	184.0
52.5°	165.0	163.1	162.5	162.5	161.8	161.8	161.2	161.2
55°	143.4	141.5	141.5	140.9	140.9	140.9	140.2	140.2
57.5°	121.8	120.6	119.9	119.9	118.7	119.3	118.7	118.0
60°	102.8	100.9	99.6	100.3	99.6	99.6	98.4	99.0
62.5°	83.1	81.9	81.2	81.2	80.0	80.0	78.7	79.3
65°	66.6	64.7	64.1	63.5	62.2	61.6	61.6	61.6
67.5°	51.4	50.1	49.5	48.2	47.0	46.3	45.7	45.1
70°	38.7	37.4	36.8	36.2	35.5	34.9	34.9	34.3
72.5°	29.2	27.9	27.9	27.3	27.3	26.7	26.7	26.7
75°	20.9	20.9	20.3	20.3	19.7	20.3	19.7	19.7
77.5°	14.6	14.0	14.6	14.0	13.3	13.3	13.3	13.3
80°	8.2	8.2	8.2	8.2	8.2	8.2	8.2	7.6
82.5°	4.4	4.4	4.4	3.8	3.8	3.8	3.8	3.8
85°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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

(END OF REPORT)