

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: P345396

Luminaire Tested: **PR4FS12D010 PR4M12WW8FSMW 1000Lm4000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P345396
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 1000Lm4000K
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: 840.7 lumens
Efficiency: N/A
Efficacy: 80.8 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

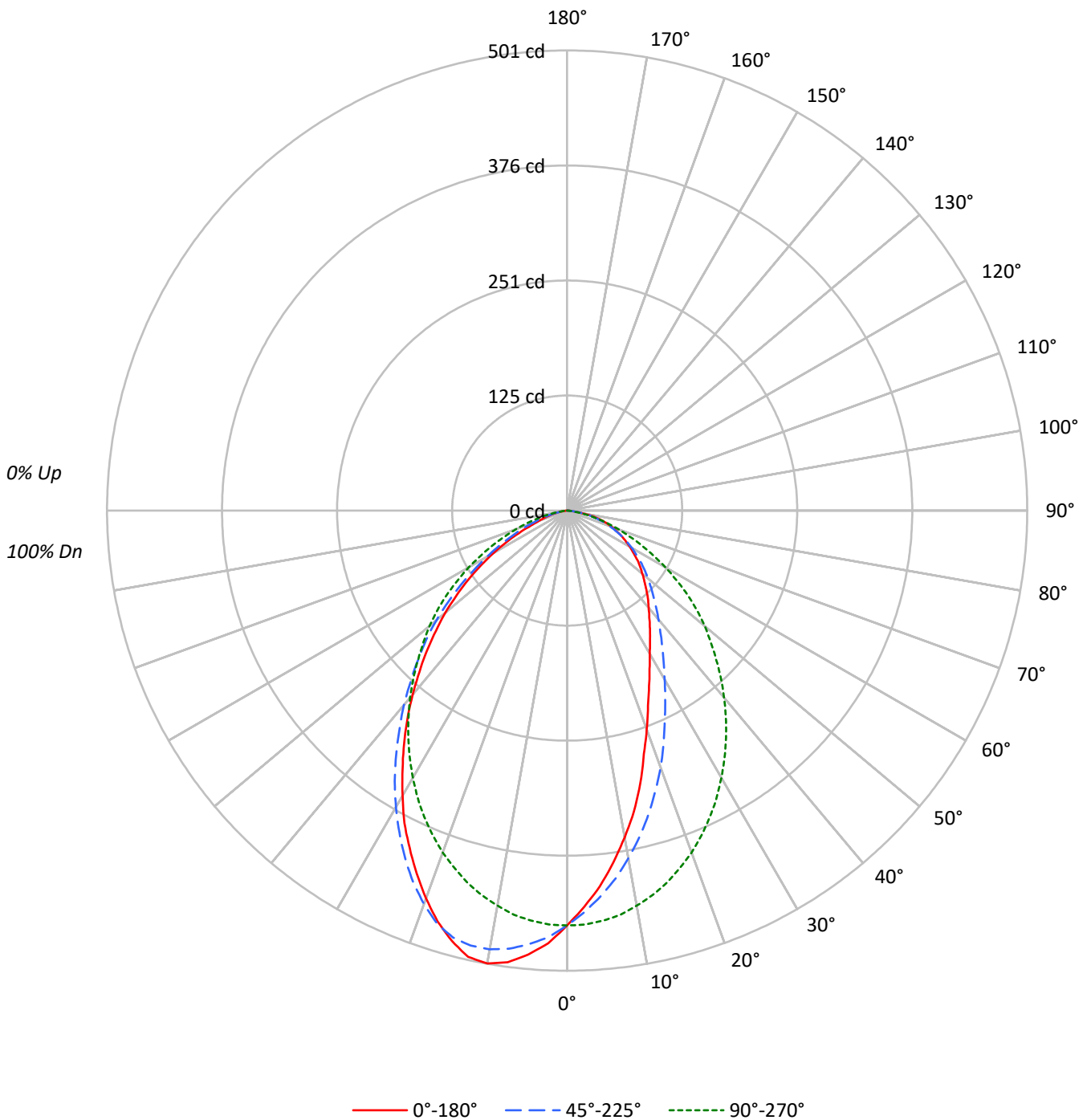
Input Watts (W): 10.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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CATALOG NUMBER: PR4FS12D010 PR4M12WW8FSMW 1000Lm4000K

Luminous Intensity Polar Plot





TEST NUMBER: P345396

CATALOG NUMBER: PR4F512D010 PR4M12WW8FSMW 1000Lm4000K

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°	39510	39510	39510
5°	36043	39345	42594
10°	32055	38787	44472
15°	27864	37979	43928
20°	23578	36870	41822
25°	20354	35516	39155
30°	18160	33916	36209
35°	16775	32216	33049
40°	15757	30361	29882
45°	15079	28377	26756
50°	14547	26590	23582
55°	14213	24415	20130
60°	13803	21640	16304
65°	13474	18420	12004
70°	13145	15114	8261
75°	12504	11524	6252
80°	8714	6599	3627
85°	3613	2409	1204



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.3	5.0
10°-20°	114.7	13.6
20°-30°	155.0	18.4
30°-40°	163.2	19.4
40°-50°	147.0	17.5
50°-60°	113.5	13.5
60°-70°	69.9	8.3
70°-80°	30.7	3.7
80°-90°	4.4	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°	312.0	37.1
0°-40°	475.2	56.5
0°-60°	735.7	87.5
0°-90°	840.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	840.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	452	452	452	452	452	
5°	410	421	448	474	485	38
15°	308	342	419	481	485	85
25°	211	252	368	418	406	98
35°	157	180	302	324	310	99
45°	122	133	229	229	216	94
55°	93	98	160	142	132	83
65°	65	65	89	68	58	64
75°	37	33	34	22	18	38
85°	4	3	2	2	1	6
90°	0	0	0	0	0	



TEST NUMBER: P345396

CATALOG NUMBER: PR4FS12D010 PR4M12WW8FSMW 1000Lm4000K

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	451.7	451.7	451.7	451.7	451.7	451.7	451.7	451.7	451.7	451.7	451.7
2.5°	431.4	432.0	432.0	432.0	432.6	433.2	433.2	434.4	435.0	436.1	437.3
5°	410.5	409.9	409.9	411.1	412.3	412.8	412.8	415.2	417.0	418.8	421.2
7.5°	386.0	385.4	387.2	387.8	388.9	390.7	391.9	394.3	396.1	400.3	403.9
10°	360.9	360.9	362.1	363.9	365.6	367.4	368.6	371.6	375.2	379.4	384.2
12.5°	335.8	334.0	335.8	338.2	340.0	341.8	343.5	347.1	352.5	357.9	363.9
15°	307.7	307.1	308.3	310.7	314.9	316.1	317.9	323.2	328.6	335.8	342.3
17.5°	277.8	279.6	280.2	283.8	288.0	289.8	291.6	296.9	304.7	311.9	319.6
20°	253.3	252.1	254.5	256.9	260.5	263.5	265.9	271.8	280.2	288.0	297.5
22.5°	230.0	229.4	231.2	234.2	237.2	239.6	242.0	247.9	254.5	263.5	274.2
25°	210.9	210.3	212.1	213.9	217.5	219.3	221.1	227.0	234.2	241.4	251.5
27.5°	194.2	194.2	195.4	196.6	199.6	201.3	203.7	208.5	214.5	221.7	231.2
30°	179.8	179.8	181.0	182.2	185.2	186.4	188.2	191.8	196.6	204.3	212.1
32.5°	167.9	167.9	168.5	170.3	171.5	172.7	174.5	177.4	182.2	188.2	195.4
35°	157.1	157.1	157.7	158.9	160.7	161.3	162.5	165.5	169.1	173.9	180.4
37.5°	147.0	147.6	147.6	148.8	150.0	150.6	151.8	154.1	157.1	161.3	166.7
40°	138.0	138.6	138.6	139.8	141.0	141.6	142.2	143.4	147.0	150.0	154.7
42.5°	130.2	130.2	130.2	130.8	132.0	132.6	133.2	135.0	136.8	139.8	143.4
45°	121.9	121.9	122.5	123.1	124.3	124.3	124.9	126.7	127.9	130.2	133.2
47.5°	114.1	114.1	114.7	114.7	115.9	115.9	116.5	117.7	118.9	121.3	123.7
50°	106.9	106.9	106.9	107.5	108.1	108.7	108.7	109.9	111.1	112.9	114.7
52.5°	99.8	99.8	99.8	99.8	100.4	101.0	101.0	102.2	103.4	104.6	106.3
55°	93.2	92.6	93.2	93.2	93.2	93.8	93.8	95.0	95.0	96.2	98.0
57.5°	85.4	86.0	86.0	85.4	86.0	86.6	86.6	86.6	87.2	88.4	89.0
60°	78.9	78.9	78.9	78.9	79.5	79.5	79.5	79.5	80.1	80.1	81.3
62.5°	71.7	71.7	72.3	72.3	71.7	72.3	72.3	72.3	72.9	72.9	72.9
65°	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1
67.5°	58.0	58.0	58.0	58.0	58.0	58.0	58.0	57.4	57.4	57.4	56.8
70°	51.4	51.4	51.4	50.8	50.8	50.8	50.8	50.2	50.2	49.6	49.0
72.5°	44.2	44.2	44.2	43.6	43.6	43.6	43.0	42.4	41.8	41.2	41.2
75°	37.0	37.0	36.4	35.8	35.8	35.3	35.3	34.7	34.7	33.5	32.9
77.5°	28.7	28.1	28.1	28.1	27.5	26.9	26.9	26.3	25.7	25.7	25.1
80°	17.3	17.3	17.9	17.3	17.9	17.3	17.3	17.9	17.3	16.7	16.7
82.5°	8.4	8.4	9.0	8.4	9.0	9.0	9.0	8.4	8.4	8.4	8.4
85°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.0	3.0	3.0
87.5°	2.4	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
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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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	451.7	451.7	451.7	451.7	451.7	451.7	451.7	451.7	451.7	451.7	451.7
2.5°	438.5	440.3	440.9	442.7	443.3	444.5	445.7	447.5	449.3	451.1	452.3
5°	423.6	426.6	429.0	432.0	433.8	435.0	438.5	441.5	445.1	448.1	451.1
7.5°	407.5	411.1	416.4	420.0	421.8	424.8	429.0	433.8	438.5	443.9	448.1
10°	388.9	394.3	399.7	406.3	409.3	412.3	417.6	424.2	430.8	436.7	443.3
12.5°	369.2	376.4	383.6	390.1	394.3	397.9	406.3	413.4	421.2	429.0	436.1
15°	350.1	357.9	366.2	374.6	379.4	383.6	391.9	400.9	410.5	419.4	427.8
17.5°	329.2	338.2	347.7	357.3	362.1	367.4	378.2	387.8	398.5	408.1	418.2
20°	307.7	317.9	328.0	340.0	344.7	350.7	361.5	373.4	384.8	396.1	406.9
22.5°	285.6	296.9	308.3	320.8	327.4	333.4	345.9	357.9	370.4	382.4	394.3
25°	262.9	276.0	289.2	301.7	308.9	314.9	328.6	342.3	355.5	368.0	380.6
27.5°	242.0	254.5	268.9	282.6	289.8	296.3	311.3	324.4	338.8	352.5	365.1
30°	222.9	234.8	249.1	264.1	271.2	278.4	293.4	308.3	321.4	335.8	349.5
32.5°	204.9	215.7	230.0	245.0	253.3	259.9	275.4	289.8	304.7	319.0	332.8
35°	188.2	199.0	211.5	226.4	233.6	241.4	257.5	272.4	286.8	301.7	314.3
37.5°	173.9	182.2	193.6	207.9	215.7	223.5	239.6	254.5	268.9	283.8	296.9
40°	160.1	167.9	178.0	190.6	198.4	206.1	221.7	236.6	250.9	265.9	279.6
42.5°	148.8	154.7	163.1	175.1	181.6	189.4	204.9	219.3	233.6	247.9	261.1
45°	137.4	142.8	150.0	159.5	166.1	173.3	188.2	203.1	216.3	229.4	242.6
47.5°	126.7	130.8	137.4	145.8	151.2	157.7	172.1	186.4	199.6	212.1	224.0
50°	117.1	120.7	126.7	132.6	137.4	143.4	155.9	170.3	182.8	195.4	206.1
52.5°	108.1	111.1	115.3	121.3	124.9	129.6	141.6	154.1	166.7	178.0	188.2
55°	99.8	101.6	105.2	109.3	112.3	116.5	126.7	138.6	150.0	160.1	168.5
57.5°	90.2	92.6	95.0	98.0	101.0	103.4	111.1	121.9	132.0	141.0	149.4
60°	81.9	83.6	84.8	87.8	89.0	91.4	97.4	106.3	115.9	123.7	129.6
62.5°	73.5	74.1	75.3	77.7	78.3	80.1	84.2	91.4	98.6	105.8	111.7
65°	65.1	65.1	66.3	66.9	68.1	68.7	71.7	77.1	83.6	89.0	92.6
67.5°	56.8	56.8	57.4	57.4	58.6	58.6	60.3	64.5	68.7	73.5	76.5
70°	48.4	48.4	48.4	48.4	48.4	49.0	50.2	52.6	55.6	59.1	60.9
72.5°	40.6	40.0	40.0	39.4	39.4	39.4	40.0	41.2	43.6	46.0	47.8
75°	32.3	31.7	31.1	31.1	30.5	30.5	30.5	31.7	32.9	34.1	34.7
77.5°	23.9	23.9	23.3	22.1	22.1	21.5	21.5	21.5	22.1	23.3	22.7
80°	16.7	15.5	14.9	14.9	14.3	14.3	13.7	13.1	13.1	13.1	12.5
82.5°	7.8	7.8	7.8	7.2	7.2	7.2	7.2	6.6	6.6	6.0	6.0
85°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.4	2.4	2.4	2.4
87.5°	1.8	1.8	1.8	1.8	1.8	1.2	1.2	1.2	1.2	1.2	1.2
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°	451.7	451.7	451.7	451.7	451.7	451.7	451.7	451.7	451.7	451.7	451.7
2.5°	454.1	455.9	457.7	458.3	458.9	460.6	461.8	463.6	464.8	465.4	466.6
5°	454.7	457.7	460.6	462.4	463.6	466.6	469.0	472.0	473.8	476.8	478.6
7.5°	452.9	457.7	461.8	464.2	466.6	470.8	474.4	478.0	481.0	483.9	486.9
10°	449.3	455.3	461.2	463.6	466.6	471.4	476.8	481.0	485.1	488.7	492.3
12.5°	443.9	451.1	458.3	461.2	464.2	470.8	476.2	481.0	485.1	488.7	491.1
15°	436.7	445.1	452.9	457.1	460.6	467.2	472.6	477.4	481.0	483.3	485.1
17.5°	427.8	437.3	446.3	449.9	454.1	460.0	465.4	469.0	471.4	471.4	472.0
20°	417.6	427.8	436.7	440.9	445.1	449.9	454.1	455.9	455.9	455.9	454.7
22.5°	405.7	416.4	425.4	429.6	433.2	436.7	439.1	439.1	437.9	436.1	434.4
25°	391.9	403.3	411.7	415.8	417.6	420.6	420.0	419.4	417.6	415.8	413.4
27.5°	377.0	388.4	397.3	399.1	400.3	400.9	399.1	397.9	395.5	393.1	391.3
30°	361.5	372.2	379.4	380.0	381.2	380.6	378.2	375.2	372.8	369.8	367.4
32.5°	344.7	354.9	359.7	360.9	360.3	357.9	355.5	352.5	349.5	345.9	342.9
35°	326.8	336.4	339.4	338.8	338.2	335.2	331.6	328.6	324.4	322.0	317.9
37.5°	308.3	317.3	318.4	316.7	314.9	311.3	307.7	304.7	299.9	297.5	294.6
40°	289.8	295.7	295.7	294.0	292.8	289.2	284.4	280.2	276.6	272.4	270.7
42.5°	270.7	275.4	273.0	271.8	270.1	264.7	261.1	256.9	252.1	249.7	246.8
45°	251.5	254.5	251.5	249.1	247.4	242.6	239.0	233.6	229.4	227.0	223.5
47.5°	231.8	233.0	230.6	227.0	225.8	220.5	216.3	212.1	207.9	203.7	200.7
50°	213.9	212.7	209.1	206.7	204.9	199.0	194.2	189.4	185.8	182.2	179.2
52.5°	193.6	192.4	187.6	184.6	181.6	176.8	170.9	167.3	163.1	160.1	157.1
55°	172.7	169.1	165.5	162.5	159.5	154.7	149.4	144.6	141.6	138.0	136.2
57.5°	151.2	148.8	142.8	140.4	138.0	133.2	127.9	123.7	119.5	117.1	115.9
60°	132.0	127.9	123.1	120.1	117.7	112.9	108.1	104.0	101.0	99.8	98.0
62.5°	111.7	108.1	102.8	100.4	98.6	93.8	89.6	86.0	83.6	81.3	80.1
65°	93.2	89.0	84.8	82.5	80.1	75.9	72.9	70.5	67.5	65.7	64.5
67.5°	75.3	71.7	68.1	66.3	64.5	60.9	58.0	56.2	53.8	52.0	49.6
70°	59.1	56.2	53.8	52.0	50.2	47.2	44.8	43.0	41.2	39.4	37.6
72.5°	46.0	43.0	40.0	39.4	38.2	35.8	34.1	32.3	30.5	29.3	28.1
75°	32.9	31.7	29.3	28.1	27.5	25.7	23.9	22.7	22.1	20.9	20.3
77.5°	21.5	20.3	18.5	18.5	17.9	17.3	16.1	14.9	14.9	14.3	14.3
80°	11.9	11.4	10.8	10.2	10.8	10.2	9.6	9.0	9.0	9.0	8.4
82.5°	5.4	5.4	4.8	4.8	4.8	4.8	4.8	4.2	4.2	4.2	4.2
85°	2.4	2.4	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
87.5°	1.2	1.2	1.2	1.2	1.2	1.2	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: P345396

CATALOG NUMBER: PR4FS12D010 PR4M12WW8FSMW 1000Lm4000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	451.7	451.7	451.7	451.7	451.7	451.7	451.7	451.7
2.5°	467.8	468.4	469.0	469.6	470.2	470.2	470.8	471.4
5°	479.8	481.6	482.2	482.8	483.9	484.5	484.5	485.1
7.5°	489.3	491.7	492.3	493.5	494.7	495.3	495.9	495.9
10°	494.7	496.5	497.1	498.3	499.5	500.1	500.7	500.7
12.5°	492.9	494.7	495.3	495.9	497.1	497.7	497.7	497.7
15°	486.3	486.3	486.3	486.3	485.7	486.3	486.3	485.1
17.5°	471.4	470.8	471.4	470.2	469.6	469.6	469.0	469.0
20°	453.5	452.9	452.3	452.3	451.7	450.5	449.9	449.3
22.5°	433.2	432.0	431.4	431.4	430.2	429.6	429.0	427.8
25°	412.3	409.3	409.3	409.3	408.1	408.1	406.9	405.7
27.5°	388.4	386.6	386.6	385.4	384.2	383.6	383.0	383.6
30°	365.6	363.3	362.1	361.5	360.9	360.9	359.1	358.5
32.5°	340.6	338.8	337.6	337.0	335.8	335.2	334.6	333.4
35°	316.1	314.3	313.1	313.1	310.7	310.1	309.5	309.5
37.5°	291.0	289.8	289.2	287.4	286.8	286.2	286.2	285.6
40°	267.7	265.9	265.3	263.5	262.9	262.9	261.1	261.7
42.5°	243.8	241.4	240.8	240.2	239.6	238.4	239.0	237.8
45°	221.1	219.3	218.1	218.1	217.5	216.3	215.7	216.3
47.5°	199.0	196.6	196.6	196.0	195.4	194.8	194.8	193.6
50°	178.0	176.3	175.1	173.9	174.5	173.9	172.7	173.3
52.5°	155.3	153.5	153.0	153.0	152.4	152.4	151.8	151.8
55°	135.0	133.2	133.2	132.6	132.6	132.6	132.0	132.0
57.5°	114.7	113.5	112.9	112.9	111.7	112.3	111.7	111.1
60°	96.8	95.0	93.8	94.4	93.8	93.8	92.6	93.2
62.5°	78.3	77.1	76.5	76.5	75.3	75.3	74.1	74.7
65°	62.7	60.9	60.3	59.7	58.6	58.0	58.0	58.0
67.5°	48.4	47.2	46.6	45.4	44.2	43.6	43.0	42.4
70°	36.4	35.3	34.7	34.1	33.5	32.9	32.9	32.3
72.5°	27.5	26.3	26.3	25.7	25.7	25.1	25.1	25.1
75°	19.7	19.7	19.1	19.1	18.5	19.1	18.5	18.5
77.5°	13.7	13.1	13.7	13.1	12.5	12.5	12.5	12.5
80°	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.2
82.5°	4.2	4.2	4.2	3.6	3.6	3.6	3.6	3.6
85°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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

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