

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: P345401

Luminaire Tested: **PR4FS12D010 PR4M12WW8FSMW 1500Lm3500K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P345401
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 1500Lm3500K
Description: PR4 WALLWASH ASSEMBLY WITH, MATTE WHITE FINISH
Light Source: ARRAY OF HIGH LUMEN LEDs 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1138.6 lumens
Efficiency: N/A
Efficacy: 85.6 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

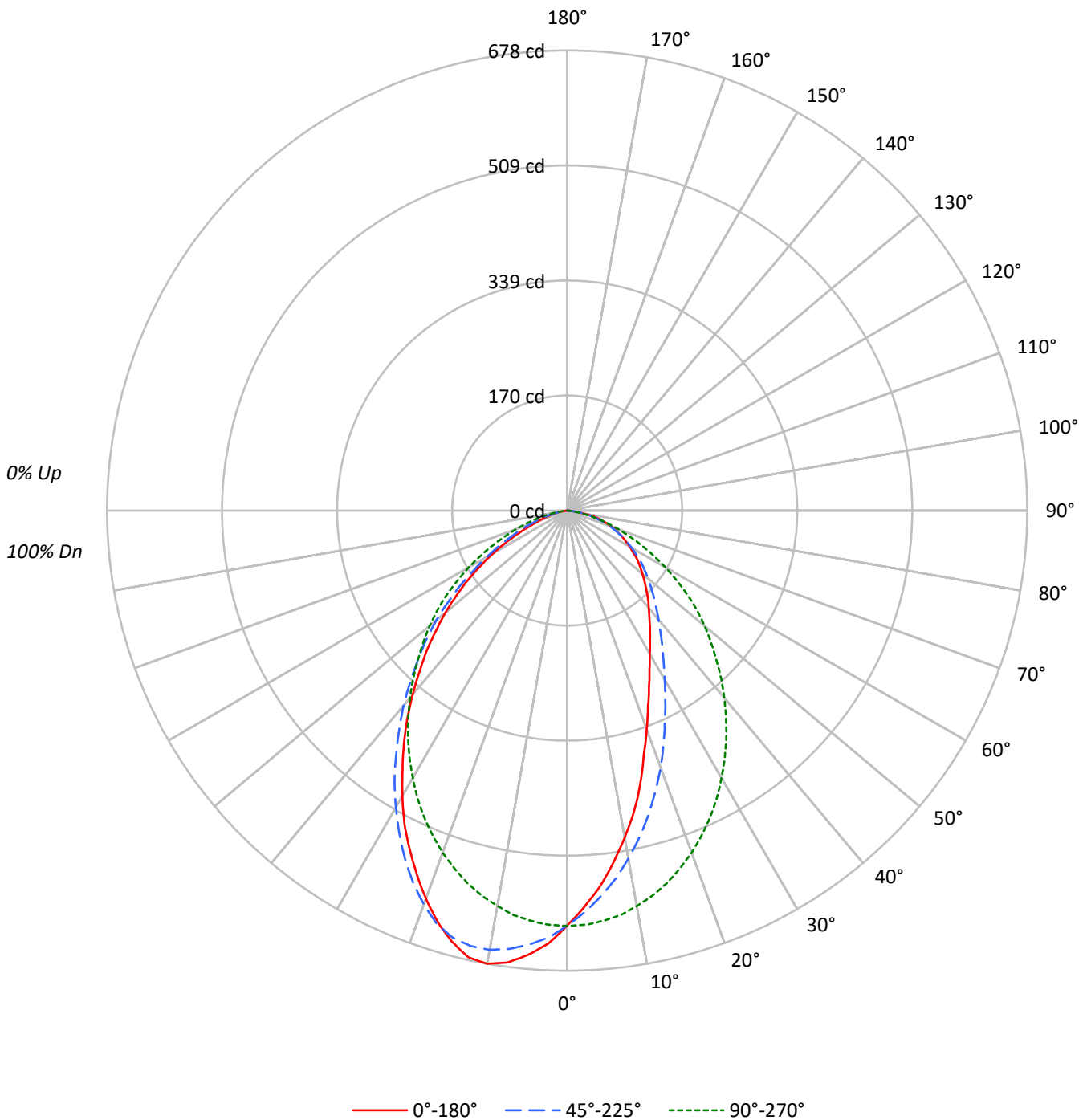
Input Watts (W): 13.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	53514	53514	53514
5°	48810	53288	57696
10°	43415	52536	60228
15°	37734	51444	59504
20°	31937	49939	56641
25°	27573	48111	53033
30°	24604	45935	49036
35°	22723	43641	44762
40°	21341	41117	40467
45°	20423	38434	36232
50°	19704	36006	31938
55°	19245	33077	27267
60°	18683	29302	22077
65°	18255	24961	16247
70°	17800	20485	11176
75°	16965	15580	8483
80°	11837	8966	4886
85°	4918	3212	1606



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	57.3	5.0
10°-20°	155.4	13.6
20°-30°	209.9	18.4
30°-40°	221.0	19.4
40°-50°	199.1	17.5
50°-60°	153.7	13.5
60°-70°	94.6	8.3
70°-80°	41.6	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°	422.6	37.1
0°-40°	643.6	56.5
0°-60°	996.4	87.5
0°-90°	1138.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1138.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	612	612	612	612	612	
5°	556	570	607	642	657	51
15°	417	464	568	651	657	116
25°	286	341	498	566	550	132
35°	213	244	409	439	419	134
45°	165	180	311	311	293	128
55°	126	133	217	192	179	112
65°	88	88	121	91	78	87
75°	50	44	46	30	25	52
85°	5	4	3	2	2	8
90°	0	0	0	0	0	



TEST NUMBER: P345401

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8
2.5°	584.2	585.1	585.1	585.1	585.9	586.7	586.7	588.3	589.1	590.7	592.3
5°	555.9	555.1	555.1	556.7	558.4	559.2	559.2	562.4	564.8	567.3	570.5
7.5°	522.7	521.9	524.4	525.2	526.8	529.2	530.8	534.1	536.5	542.2	547.0
10°	488.8	488.8	490.4	492.8	495.2	497.7	499.3	503.3	508.2	513.8	520.3
12.5°	454.8	452.3	454.8	458.0	460.4	462.9	465.3	470.2	477.4	484.7	492.8
15°	416.7	415.9	417.6	420.8	426.5	428.1	430.5	437.8	445.1	454.8	463.7
17.5°	376.3	378.7	379.5	384.4	390.0	392.5	394.9	402.2	412.7	422.4	432.9
20°	343.1	341.5	344.7	348.0	352.8	356.9	360.1	368.2	379.5	390.0	403.0
22.5°	311.5	310.7	313.2	317.2	321.3	324.5	327.7	335.8	344.7	356.9	371.4
25°	285.7	284.8	287.3	289.7	294.6	297.0	299.4	307.5	317.2	326.9	340.7
27.5°	263.0	263.0	264.6	266.2	270.3	272.7	275.9	282.4	290.5	300.2	313.2
30°	243.6	243.6	245.2	246.8	250.9	252.5	254.9	259.8	266.2	276.7	287.3
32.5°	227.4	227.4	228.2	230.6	232.2	233.9	236.3	240.3	246.8	254.9	264.6
35°	212.8	212.8	213.6	215.2	217.7	218.5	220.1	224.2	229.0	235.5	244.4
37.5°	199.1	199.9	199.9	201.5	203.1	203.9	205.5	208.8	212.8	218.5	225.8
40°	186.9	187.7	187.7	189.4	191.0	191.8	192.6	194.2	199.1	203.1	209.6
42.5°	176.4	176.4	176.4	177.2	178.8	179.6	180.5	182.9	185.3	189.4	194.2
45°	165.1	165.1	165.9	166.7	168.3	168.3	169.1	171.6	173.2	176.4	180.5
47.5°	154.6	154.6	155.4	155.4	157.0	157.0	157.8	159.4	161.0	164.3	167.5
50°	144.8	144.8	144.8	145.7	146.5	147.3	147.3	148.9	150.5	152.9	155.4
52.5°	135.1	135.1	135.1	135.1	135.9	136.8	136.8	138.4	140.0	141.6	144.0
55°	126.2	125.4	126.2	126.2	126.2	127.0	127.0	128.7	128.7	130.3	132.7
57.5°	115.7	116.5	116.5	115.7	116.5	117.3	117.3	117.3	118.1	119.8	120.6
60°	106.8	106.8	106.8	106.8	107.6	107.6	107.6	107.6	108.4	108.4	110.1
62.5°	97.1	97.1	97.9	97.9	97.1	97.9	97.9	97.9	98.7	98.7	98.7
65°	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.2
67.5°	78.5	78.5	78.5	78.5	78.5	78.5	78.5	77.7	77.7	77.7	76.9
70°	69.6	69.6	69.6	68.8	68.8	68.8	68.8	68.0	68.0	67.2	66.4
72.5°	59.9	59.9	59.9	59.1	59.1	59.1	58.3	57.5	56.6	55.8	55.8
75°	50.2	50.2	49.4	48.6	48.6	47.7	47.7	46.9	46.9	45.3	44.5
77.5°	38.8	38.0	38.0	38.0	37.2	36.4	36.4	35.6	34.8	34.8	34.0
80°	23.5	23.5	24.3	23.5	24.3	23.5	23.5	24.3	23.5	22.7	22.7
82.5°	11.3	11.3	12.1	11.3	12.1	12.1	12.1	11.3	11.3	11.3	11.3
85°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.0	4.0	4.0
87.5°	3.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	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°	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8
2.5°	594.0	596.4	597.2	599.6	600.4	602.1	603.7	606.1	608.5	611.0	612.6
5°	573.7	577.8	581.0	585.1	587.5	589.1	594.0	598.0	602.9	606.9	611.0
7.5°	551.9	556.7	564.0	568.9	571.3	575.3	581.0	587.5	594.0	601.2	606.9
10°	526.8	534.1	541.4	550.3	554.3	558.4	565.6	574.5	583.4	591.5	600.4
12.5°	500.1	509.8	519.5	528.4	534.1	538.9	550.3	560.0	570.5	581.0	590.7
15°	474.2	484.7	496.0	507.4	513.8	519.5	530.8	543.0	555.9	568.1	579.4
17.5°	445.9	458.0	471.0	483.9	490.4	497.7	512.2	525.2	539.7	552.7	566.4
20°	416.7	430.5	444.3	460.4	466.9	475.0	489.6	505.8	521.1	536.5	551.1
22.5°	386.8	402.2	417.6	434.5	443.4	451.5	468.5	484.7	501.7	517.9	534.1
25°	356.1	373.9	391.7	408.7	418.4	426.5	445.1	463.7	481.5	498.5	515.5
27.5°	327.7	344.7	364.1	382.8	392.5	401.4	421.6	439.4	458.8	477.4	494.4
30°	301.8	318.0	337.4	357.7	367.4	377.1	397.3	417.6	435.4	454.8	473.4
32.5°	277.6	292.1	311.5	331.8	343.1	352.0	373.0	392.5	412.7	432.1	450.7
35°	254.9	269.5	286.5	306.7	316.4	326.9	348.8	369.0	388.4	408.7	425.6
37.5°	235.5	246.8	262.2	281.6	292.1	302.6	324.5	344.7	364.1	384.4	402.2
40°	216.9	227.4	241.1	258.1	268.7	279.2	300.2	320.4	339.9	360.1	378.7
42.5°	201.5	209.6	220.9	237.1	246.0	256.5	277.6	297.0	316.4	335.8	353.6
45°	186.1	193.4	203.1	216.1	225.0	234.7	254.9	275.1	292.9	310.7	328.5
47.5°	171.6	177.2	186.1	197.4	204.7	213.6	233.1	252.5	270.3	287.3	303.5
50°	158.6	163.5	171.6	179.6	186.1	194.2	211.2	230.6	247.6	264.6	279.2
52.5°	146.5	150.5	156.2	164.3	169.1	175.6	191.8	208.8	225.8	241.1	254.9
55°	135.1	137.6	142.4	148.1	152.1	157.8	171.6	187.7	203.1	216.9	228.2
57.5°	122.2	125.4	128.7	132.7	136.8	140.0	150.5	165.1	178.8	191.0	202.3
60°	110.9	113.3	114.9	119.0	120.6	123.8	131.9	144.0	157.0	167.5	175.6
62.5°	99.5	100.3	102.0	105.2	106.0	108.4	114.1	123.8	133.5	143.2	151.3
65°	88.2	88.2	89.8	90.6	92.2	93.1	97.1	104.4	113.3	120.6	125.4
67.5°	76.9	76.9	77.7	77.7	79.3	79.3	81.7	87.4	93.1	99.5	103.6
70°	65.5	65.5	65.5	65.5	65.5	66.4	68.0	71.2	75.3	80.1	82.5
72.5°	55.0	54.2	54.2	53.4	53.4	53.4	54.2	55.8	59.1	62.3	64.7
75°	43.7	42.9	42.1	42.1	41.3	41.3	41.3	42.9	44.5	46.1	46.9
77.5°	32.4	32.4	31.6	29.9	29.9	29.1	29.1	29.1	29.9	31.6	30.7
80°	22.7	21.0	20.2	20.2	19.4	19.4	18.6	17.8	17.8	17.8	17.0
82.5°	10.5	10.5	10.5	9.7	9.7	9.7	9.7	8.9	8.9	8.1	8.1
85°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.2	3.2	3.2	3.2
87.5°	2.4	2.4	2.4	2.4	2.4	1.6	1.6	1.6	1.6	1.6	1.6
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°	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8
2.5°	615.0	617.4	619.9	620.7	621.5	623.9	625.5	627.9	629.6	630.4	632.0
5°	615.8	619.9	623.9	626.3	627.9	632.0	635.2	639.3	641.7	645.7	648.2
7.5°	613.4	619.9	625.5	628.8	632.0	637.7	642.5	647.4	651.4	655.5	659.5
10°	608.5	616.6	624.7	627.9	632.0	638.5	645.7	651.4	657.1	661.9	666.8
12.5°	601.2	611.0	620.7	624.7	628.8	637.7	644.9	651.4	657.1	661.9	665.2
15°	591.5	602.9	613.4	619.0	623.9	632.8	640.1	646.6	651.4	654.7	657.1
17.5°	579.4	592.3	604.5	609.3	615.0	623.1	630.4	635.2	638.5	638.5	639.3
20°	565.6	579.4	591.5	597.2	602.9	609.3	615.0	617.4	617.4	617.4	615.8
22.5°	549.5	564.0	576.2	581.8	586.7	591.5	594.8	594.8	593.2	590.7	588.3
25°	530.8	546.2	557.5	563.2	565.6	569.7	568.9	568.1	565.6	563.2	560.0
27.5°	510.6	526.0	538.1	540.6	542.2	543.0	540.6	538.9	535.7	532.5	530.0
30°	489.6	504.1	513.8	514.7	516.3	515.5	512.2	508.2	504.9	500.9	497.7
32.5°	466.9	480.7	487.1	488.8	488.0	484.7	481.5	477.4	473.4	468.5	464.5
35°	442.6	455.6	459.6	458.8	458.0	454.0	449.1	445.1	439.4	436.2	430.5
37.5°	417.6	429.7	431.3	428.9	426.5	421.6	416.7	412.7	406.2	403.0	398.9
40°	392.5	400.6	400.6	398.1	396.5	391.7	385.2	379.5	374.7	369.0	366.6
42.5°	366.6	373.0	369.8	368.2	365.8	358.5	353.6	348.0	341.5	338.2	334.2
45°	340.7	344.7	340.7	337.4	335.0	328.5	323.7	316.4	310.7	307.5	302.6
47.5°	314.0	315.6	312.4	307.5	305.9	298.6	292.9	287.3	281.6	275.9	271.9
50°	289.7	288.1	283.2	280.0	277.6	269.5	263.0	256.5	251.7	246.8	242.8
52.5°	262.2	260.6	254.1	250.0	246.0	239.5	231.4	226.6	220.9	216.9	212.8
55°	233.9	229.0	224.2	220.1	216.1	209.6	202.3	195.8	191.8	186.9	184.5
57.5°	204.7	201.5	193.4	190.2	186.9	180.5	173.2	167.5	161.8	158.6	157.0
60°	178.8	173.2	166.7	162.7	159.4	152.9	146.5	140.8	136.8	135.1	132.7
62.5°	151.3	146.5	139.2	135.9	133.5	127.0	121.4	116.5	113.3	110.1	108.4
65°	126.2	120.6	114.9	111.7	108.4	102.8	98.7	95.5	91.4	89.0	87.4
67.5°	102.0	97.1	92.2	89.8	87.4	82.5	78.5	76.1	72.8	70.4	67.2
70°	80.1	76.1	72.8	70.4	68.0	63.9	60.7	58.3	55.8	53.4	51.0
72.5°	62.3	58.3	54.2	53.4	51.8	48.6	46.1	43.7	41.3	39.7	38.0
75°	44.5	42.9	39.7	38.0	37.2	34.8	32.4	30.7	29.9	28.3	27.5
77.5°	29.1	27.5	25.1	25.1	24.3	23.5	21.8	20.2	20.2	19.4	19.4
80°	16.2	15.4	14.6	13.8	14.6	13.8	12.9	12.1	12.1	12.1	11.3
82.5°	7.3	7.3	6.5	6.5	6.5	6.5	6.5	5.7	5.7	5.7	5.7
85°	3.2	3.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
87.5°	1.6	1.6	1.6	1.6	1.6	1.6	0.8	0.8	0.8	0.8	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



TEST NUMBER: P345401

CATALOG NUMBER: PR4FS12D010 PR4M12WW8FSMW 1500lm3500K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	611.8	611.8	611.8	611.8	611.8	611.8	611.8	611.8
2.5°	633.6	634.4	635.2	636.0	636.8	636.8	637.7	638.5
5°	649.8	652.2	653.0	653.8	655.5	656.3	656.3	657.1
7.5°	662.7	666.0	666.8	668.4	670.0	670.8	671.6	671.6
10°	670.0	672.5	673.3	674.9	676.5	677.3	678.1	678.1
12.5°	667.6	670.0	670.8	671.6	673.3	674.1	674.1	674.1
15°	658.7	658.7	658.7	658.7	657.9	658.7	658.7	657.1
17.5°	638.5	637.7	638.5	636.8	636.0	636.0	635.2	635.2
20°	614.2	613.4	612.6	612.6	611.8	610.1	609.3	608.5
22.5°	586.7	585.1	584.2	584.2	582.6	581.8	581.0	579.4
25°	558.4	554.3	554.3	554.3	552.7	552.7	551.1	549.5
27.5°	526.0	523.6	523.6	521.9	520.3	519.5	518.7	519.5
30°	495.2	492.0	490.4	489.6	488.8	488.8	486.3	485.5
32.5°	461.2	458.8	457.2	456.4	454.8	454.0	453.2	451.5
35°	428.1	425.6	424.0	424.0	420.8	420.0	419.2	419.2
37.5°	394.1	392.5	391.7	389.2	388.4	387.6	387.6	386.8
40°	362.5	360.1	359.3	356.9	356.1	356.1	353.6	354.4
42.5°	330.2	326.9	326.1	325.3	324.5	322.9	323.7	322.1
45°	299.4	297.0	295.4	295.4	294.6	292.9	292.1	292.9
47.5°	269.5	266.2	266.2	265.4	264.6	263.8	263.8	262.2
50°	241.1	238.7	237.1	235.5	236.3	235.5	233.9	234.7
52.5°	210.4	208.0	207.2	207.2	206.3	206.3	205.5	205.5
55°	182.9	180.5	180.5	179.6	179.6	179.6	178.8	178.8
57.5°	155.4	153.7	152.9	152.9	151.3	152.1	151.3	150.5
60°	131.1	128.7	127.0	127.9	127.0	127.0	125.4	126.2
62.5°	106.0	104.4	103.6	103.6	102.0	102.0	100.3	101.2
65°	85.0	82.5	81.7	80.9	79.3	78.5	78.5	78.5
67.5°	65.5	63.9	63.1	61.5	59.9	59.1	58.3	57.5
70°	49.4	47.7	46.9	46.1	45.3	44.5	44.5	43.7
72.5°	37.2	35.6	35.6	34.8	34.8	34.0	34.0	34.0
75°	26.7	26.7	25.9	25.9	25.1	25.9	25.1	25.1
77.5°	18.6	17.8	18.6	17.8	17.0	17.0	17.0	17.0
80°	10.5	10.5	10.5	10.5	10.5	10.5	10.5	9.7
82.5°	5.7	5.7	5.7	4.9	4.9	4.9	4.9	4.9
85°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
87.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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