

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: P345437

Luminaire Tested: **PR4FS12D010 PR4M12WW8FSMMS 1500Lm3500K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P345437
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 1500lm3500K
Description: PR4 WALLWASH ASSEMBLY WITH, MATTE METALLIC SILVER FINISH
Light Source: ARRAY OF HIGH LUMEN LEDs 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1132.9 lumens
Efficiency: N/A
Efficacy: 85.2 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

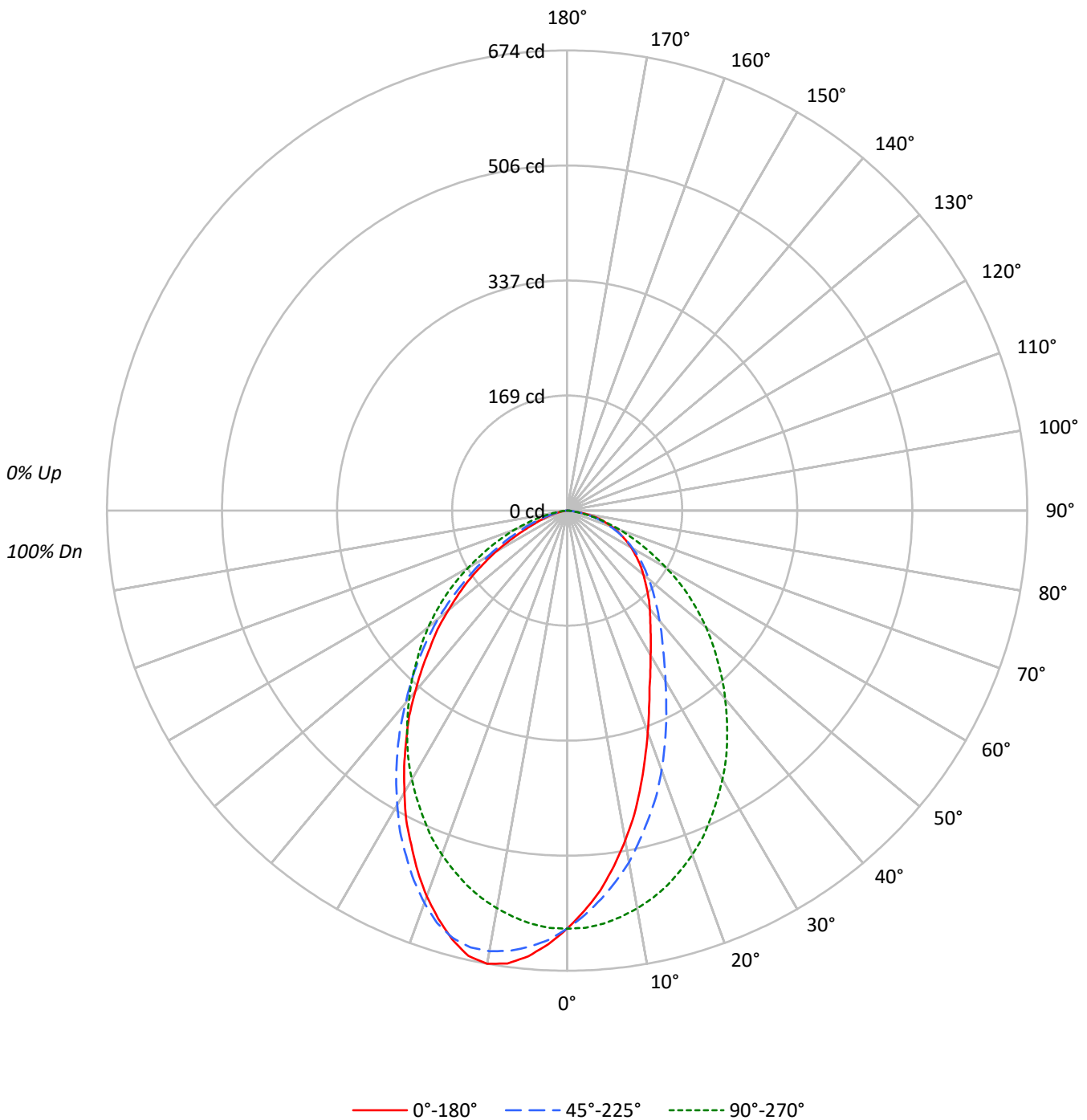
Input Watts (W): 13.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	36	45	39	35					34				
10	58	45	38	33	56	45	38	33	44	37	33	43	37	33	42	37	32					31				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	59683	59683	59683
5°	54609	59432	64108
10°	48511	58526	66690
15°	42033	57299	65623
20°	35822	55632	62342
25°	30711	53498	58111
30°	27492	51170	53623
35°	25318	48601	48898
40°	23981	45800	44044
45°	22852	42933	39143
50°	22076	40224	34463
55°	21579	36973	29412
60°	21129	32648	23487
65°	20524	27972	16788
70°	20060	23280	11996
75°	19204	17961	8548
80°	13638	10439	4995
85°	3578	5479	895



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	57.3	5.1
10°-20°	155.1	13.7
20°-30°	209.0	18.4
30°-40°	219.5	19.4
40°-50°	197.8	17.5
50°-60°	152.8	13.5
60°-70°	94.0	8.3
70°-80°	41.4	3.7
80°-90°	6.1	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°	421.4	37.2
0°-40°	640.9	56.6
0°-60°	991.4	87.5
0°-90°	1132.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1132.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	612	612	612	612	612	
5°	558	571	608	642	655	51
15°	417	464	568	648	650	116
25°	286	343	498	558	540	133
35°	213	244	408	434	411	134
45°	166	181	312	307	284	128
55°	127	134	218	187	173	114
65°	89	89	121	90	73	88
75°	51	45	48	28	23	52
85°	3	4	5	2	1	8
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	612.4	612.4	612.4	612.4	612.4	612.4	612.4	612.4	612.4	612.4	612.4
2.5°	586.5	585.7	584.9	586.5	586.5	587.3	587.3	588.9	588.9	590.6	593.0
5°	558.2	556.6	557.4	557.4	559.8	559.8	561.4	563.1	565.5	568.7	571.1
7.5°	525.0	525.0	525.8	527.5	529.9	529.9	532.3	534.7	538.8	542.8	547.7
10°	490.2	491.9	492.7	494.3	498.3	500.0	500.8	504.8	510.5	514.5	522.6
12.5°	455.5	455.5	457.1	460.3	463.5	466.0	467.6	473.3	478.9	486.2	493.5
15°	416.6	417.4	419.9	423.1	428.8	430.4	433.6	440.1	448.2	457.1	464.4
17.5°	379.4	381.0	382.7	387.5	391.5	394.0	398.8	406.1	415.0	424.7	436.0
20°	345.4	343.0	346.2	349.5	353.5	359.2	362.4	370.5	380.2	393.2	404.5
22.5°	313.1	313.1	315.5	317.9	322.0	326.0	330.1	336.5	347.1	360.0	372.9
25°	285.6	286.4	288.8	291.2	295.3	297.7	301.8	308.2	318.7	328.4	343.0
27.5°	263.7	264.5	265.3	268.6	271.8	274.2	276.7	283.1	291.2	301.8	313.9
30°	244.3	244.3	245.1	248.4	250.0	253.2	254.8	260.5	267.8	276.7	288.0
32.5°	228.1	228.1	228.9	230.6	233.8	235.4	236.2	241.9	247.6	256.4	265.3
35°	212.8	212.8	213.6	215.2	217.6	218.4	220.9	224.1	229.8	236.2	244.3
37.5°	199.8	199.8	200.6	201.4	203.1	204.7	206.3	209.5	212.8	219.2	227.3
40°	188.5	187.7	188.5	189.3	191.7	191.7	192.5	195.8	199.0	203.9	210.3
42.5°	177.2	177.2	177.2	178.0	179.6	180.4	181.2	182.8	186.1	190.1	195.0
45°	165.8	165.8	166.7	167.5	168.3	169.1	170.7	172.3	173.9	176.4	181.2
47.5°	155.3	156.1	156.1	156.9	157.8	158.6	159.4	161.0	162.6	165.0	168.3
50°	145.6	146.4	146.4	147.2	148.0	148.0	148.9	150.5	152.1	153.7	156.1
52.5°	136.7	136.7	135.9	136.7	137.5	137.5	138.3	139.1	140.8	143.2	144.8
55°	127.0	127.0	127.0	127.8	127.8	127.8	128.6	129.4	130.2	131.1	133.5
57.5°	117.3	117.3	118.1	117.3	118.1	118.1	118.1	118.9	119.7	121.3	122.2
60°	108.4	108.4	108.4	108.4	108.4	108.4	109.2	109.2	109.2	110.0	110.8
62.5°	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7	99.5	99.5	100.3
65°	89.0	89.0	89.8	89.0	89.0	89.0	89.0	89.0	89.0	89.0	89.0
67.5°	80.1	79.3	80.1	79.3	79.3	79.3	79.3	78.5	78.5	78.5	77.7
70°	70.4	69.6	69.6	69.6	69.6	68.8	69.6	68.8	68.0	67.1	66.3
72.5°	59.9	59.9	59.9	59.9	59.9	59.1	58.2	58.2	57.4	56.6	55.8
75°	51.0	51.0	50.2	49.3	48.5	48.5	48.5	47.7	46.9	46.1	45.3
77.5°	39.6	38.8	38.8	38.0	37.2	36.4	37.2	36.4	35.6	34.8	34.0
80°	24.3	24.3	24.3	24.3	24.3	24.3	23.5	24.3	23.5	22.7	22.7
82.5°	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3
85°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	4.0	4.0
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°	612.4	612.4	612.4	612.4	612.4	612.4	612.4	612.4	612.4	612.4	612.4
2.5°	594.6	596.2	598.7	600.3	601.1	601.9	604.3	606.7	609.2	611.6	613.2
5°	575.2	579.2	581.7	585.7	588.1	590.6	594.6	598.7	602.7	607.5	611.6
7.5°	551.7	558.2	563.1	568.7	572.0	575.2	580.9	587.3	593.8	600.3	606.7
10°	529.1	534.7	543.6	551.7	554.2	559.0	567.9	575.2	584.1	591.4	600.3
12.5°	503.2	510.5	520.2	529.9	535.5	540.4	550.9	560.6	571.1	580.9	591.4
15°	474.9	486.2	496.7	508.0	515.3	520.2	532.3	544.4	555.8	567.9	580.0
17.5°	446.6	459.5	472.4	486.2	491.9	499.1	512.9	525.8	539.6	552.5	566.3
20°	418.2	432.0	445.8	461.1	469.2	476.5	491.1	506.4	521.8	536.4	550.9
22.5°	388.3	402.9	419.1	436.0	444.9	451.4	468.4	485.4	501.6	518.6	533.9
25°	358.4	375.4	392.4	410.2	419.1	428.8	445.8	463.5	480.5	497.5	515.3
27.5°	329.3	347.1	364.9	385.1	394.0	403.7	422.3	440.1	458.7	476.5	494.3
30°	302.6	319.6	339.0	359.2	368.9	378.6	398.0	417.4	436.0	454.7	471.6
32.5°	278.3	292.9	313.1	333.3	343.8	353.5	373.8	394.0	413.4	432.8	449.8
35°	255.6	269.4	286.4	308.2	317.9	328.4	349.5	368.9	389.1	408.5	426.3
37.5°	235.4	248.4	263.7	282.3	294.5	304.2	325.2	345.4	364.9	384.3	402.1
40°	217.6	228.9	241.9	258.9	270.2	280.7	301.8	322.0	341.4	360.0	377.8
42.5°	201.4	210.3	222.5	237.8	246.7	257.3	279.1	298.5	317.9	336.5	352.7
45°	186.1	193.3	203.9	217.6	224.9	236.2	256.4	275.9	294.5	311.5	329.3
47.5°	172.3	178.8	186.9	198.2	205.5	214.4	234.6	254.0	271.8	288.8	304.2
50°	160.2	165.0	172.3	182.0	187.7	194.2	214.4	233.0	249.2	265.3	279.9
52.5°	148.0	151.3	156.9	165.0	170.7	176.4	193.3	211.1	227.3	241.1	256.4
55°	135.1	139.1	144.0	149.7	153.7	158.6	172.3	189.3	203.1	217.6	229.8
57.5°	123.8	126.2	129.4	134.3	137.5	141.6	152.1	166.7	180.4	192.5	204.7
60°	112.4	114.1	116.5	119.7	122.2	125.4	132.7	145.6	157.8	167.5	178.0
62.5°	101.1	101.1	102.7	105.2	106.8	109.2	115.7	125.4	135.9	143.2	152.1
65°	89.0	89.8	90.6	92.2	93.0	94.7	98.7	106.0	114.1	121.3	127.8
67.5°	77.7	77.7	78.5	79.3	79.3	80.1	82.5	87.4	95.5	100.3	105.2
70°	66.3	66.3	66.3	66.3	67.1	66.3	68.0	71.2	76.9	81.7	84.1
72.5°	55.8	55.0	54.2	54.2	54.2	54.2	55.0	57.4	60.7	63.1	66.3
75°	44.5	43.7	42.9	42.1	42.9	42.9	42.9	43.7	45.3	47.7	48.5
77.5°	33.2	33.2	31.6	30.7	31.6	30.7	29.9	29.9	30.7	31.6	31.6
80°	22.7	21.8	21.0	20.2	20.2	20.2	19.4	18.6	18.6	18.6	17.8
82.5°	11.3	11.3	10.5	10.5	10.5	10.5	10.5	9.7	9.7	8.9	8.9
85°	4.0	4.0	4.0	4.0	4.9	4.0	4.9	4.9	4.9	4.9	4.9
87.5°	2.4	2.4	3.2	3.2	3.2	3.2	3.2	4.0	4.0	4.0	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°	612.4	612.4	612.4	612.4	612.4	612.4	612.4	612.4	612.4	612.4	612.4
2.5°	615.6	618.1	619.7	621.3	622.1	623.7	626.2	627.8	629.4	631.0	632.6
5°	615.6	620.5	623.7	626.2	628.6	631.8	635.9	639.1	641.5	644.8	647.2
7.5°	613.2	619.7	625.3	628.6	631.8	636.7	641.5	646.4	650.4	654.5	657.7
10°	608.4	616.4	624.5	627.8	631.8	638.3	644.8	650.4	655.3	660.1	664.2
12.5°	601.1	610.8	620.5	624.5	628.6	636.7	644.0	650.4	655.3	659.3	661.8
15°	591.4	602.7	613.2	618.1	622.9	631.0	638.3	644.0	648.0	650.4	652.0
17.5°	579.2	591.4	602.7	608.4	614.0	622.1	627.8	631.0	633.4	633.4	632.6
20°	565.5	578.4	590.6	596.2	601.1	607.5	611.6	612.4	611.6	610.0	608.4
22.5°	548.5	563.1	575.2	580.0	584.1	588.9	588.9	588.1	586.5	584.1	583.3
25°	530.7	544.4	556.6	561.4	563.1	566.3	563.9	562.2	558.2	555.8	553.3
27.5°	511.3	525.8	534.7	538.0	539.6	538.0	535.5	532.3	529.9	525.8	522.6
30°	490.2	503.2	510.5	512.9	512.1	509.7	507.2	501.6	497.5	493.5	489.4
32.5°	466.0	478.9	484.6	485.4	483.0	478.9	474.9	470.8	466.0	461.1	458.7
35°	442.5	453.8	457.1	455.5	453.0	448.2	442.5	437.7	433.6	428.0	423.9
37.5°	417.4	427.1	427.1	424.7	423.1	417.4	411.8	406.9	401.3	396.4	390.7
40°	392.4	399.6	397.2	394.8	392.4	385.9	381.0	373.8	368.1	362.4	358.4
42.5°	367.3	371.3	368.1	364.9	361.6	355.1	350.3	342.2	337.3	331.7	328.4
45°	342.2	343.0	338.2	335.7	332.5	324.4	317.9	312.3	306.6	300.1	296.1
47.5°	316.3	314.7	309.0	305.8	302.6	295.3	288.8	282.3	275.9	271.0	266.2
50°	290.4	286.4	280.7	277.5	273.4	267.0	259.7	252.4	246.7	241.9	237.8
52.5°	262.1	258.9	252.4	247.6	244.3	235.4	228.9	222.5	216.0	211.1	207.9
55°	233.8	228.9	221.7	218.4	213.6	206.3	199.8	191.7	186.9	182.8	178.8
57.5°	205.5	199.8	193.3	189.3	184.4	177.2	169.9	165.0	160.2	155.3	152.9
60°	178.0	172.3	164.2	162.6	157.8	150.5	144.0	138.3	133.5	130.2	127.8
62.5°	152.1	146.4	138.3	135.1	131.9	124.6	118.9	114.1	110.8	107.6	105.2
65°	126.2	121.3	114.9	110.8	107.6	101.9	97.1	92.2	89.8	85.8	83.3
67.5°	102.7	97.1	92.2	89.0	86.6	80.9	76.9	73.6	70.4	68.0	64.7
70°	80.9	76.0	71.2	69.6	67.1	63.1	59.9	56.6	54.2	51.8	48.5
72.5°	62.3	59.1	54.2	52.6	51.0	47.7	45.3	42.9	39.6	38.0	36.4
75°	46.1	42.9	39.6	38.0	37.2	34.0	32.4	29.9	28.3	27.5	25.9
77.5°	29.9	27.5	25.9	25.1	24.3	22.7	21.0	20.2	18.6	17.8	17.8
80°	17.0	16.2	15.4	14.6	13.8	12.9	12.9	12.1	11.3	10.5	9.7
82.5°	8.1	8.1	7.3	7.3	7.3	6.5	6.5	5.7	5.7	4.9	4.9
85°	4.0	4.0	4.0	4.0	4.0	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 1500lm3500K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	612.4	612.4	612.4	612.4	612.4	612.4	612.4	612.4
2.5°	632.6	633.4	634.2	635.1	635.1	635.9	636.7	635.9
5°	648.8	651.2	652.0	652.9	653.7	654.5	655.3	655.3
7.5°	660.9	664.2	665.0	665.0	667.4	668.2	669.0	669.0
10°	667.4	669.0	670.7	670.7	672.3	672.3	673.9	673.9
12.5°	664.2	665.8	666.6	667.4	667.4	668.2	668.2	668.2
15°	652.9	652.0	652.0	651.2	651.2	650.4	650.4	650.4
17.5°	631.8	631.0	630.2	630.2	628.6	628.6	627.0	627.0
20°	606.7	605.1	604.3	603.5	603.5	602.7	601.1	601.1
22.5°	580.0	578.4	576.8	575.2	573.6	572.8	572.0	572.0
25°	550.1	547.7	546.9	546.1	543.6	542.8	541.2	540.4
27.5°	519.4	515.3	514.5	513.7	512.1	511.3	510.5	510.5
30°	487.0	484.6	483.0	482.2	479.7	478.9	476.5	476.5
32.5°	454.7	450.6	449.0	448.2	446.6	444.9	444.1	444.1
35°	420.7	418.2	417.4	415.0	412.6	412.6	411.0	411.0
37.5°	388.3	385.9	383.5	382.7	381.0	378.6	377.8	380.2
40°	356.0	352.7	351.1	350.3	348.7	346.2	346.2	346.2
42.5°	324.4	322.0	321.2	319.6	317.9	317.1	315.5	314.7
45°	292.0	290.4	289.6	288.0	287.2	285.6	284.0	284.0
47.5°	263.7	260.5	260.5	258.9	257.3	256.4	256.4	257.3
50°	235.4	233.0	231.4	230.6	228.9	228.9	228.1	227.3
52.5°	204.7	203.1	202.2	202.2	200.6	200.6	199.8	199.8
55°	176.4	176.4	175.6	174.7	173.1	173.1	173.1	173.1
57.5°	151.3	149.7	148.9	148.0	147.2	146.4	146.4	145.6
60°	125.4	124.6	123.0	123.8	121.3	121.3	121.3	120.5
62.5°	101.9	100.3	99.5	98.7	97.1	97.1	95.5	94.7
65°	81.7	79.3	77.7	77.7	76.0	74.4	73.6	72.8
67.5°	61.5	59.9	59.1	58.2	56.6	55.0	55.0	54.2
70°	46.9	45.3	44.5	43.7	42.9	42.1	42.1	42.1
72.5°	34.8	34.0	33.2	33.2	32.4	31.6	31.6	32.4
75°	25.1	24.3	24.3	24.3	23.5	23.5	23.5	22.7
77.5°	17.0	16.2	16.2	15.4	15.4	15.4	15.4	15.4
80°	9.7	8.9	8.9	8.9	8.9	8.9	8.9	8.9
82.5°	4.0	4.0	4.0	4.0	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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