

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: P345468

Luminaire Tested: **PR4FS12D010 PR4M12WW8FSBZ 1000Lm4000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P345468
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1908-453-9)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PR4FS12D010 PR4M12WW8FSBZ 1000lm4000K
Description: PR4 WALLWASH ASSEMBLY WITH, BRONZE FINISH
Light Source: ARRAY OF HIGH LUMEN LEDs 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 828.1 lumens
Efficiency: N/A
Efficacy: 79.6 lumens/watt
Spacing Criteria (0/90/45): 0.94 / 1.12 / 1.1
Luminous Opening: Circular (Dia: 0.4' x H: 0')
CIE Type: Direct

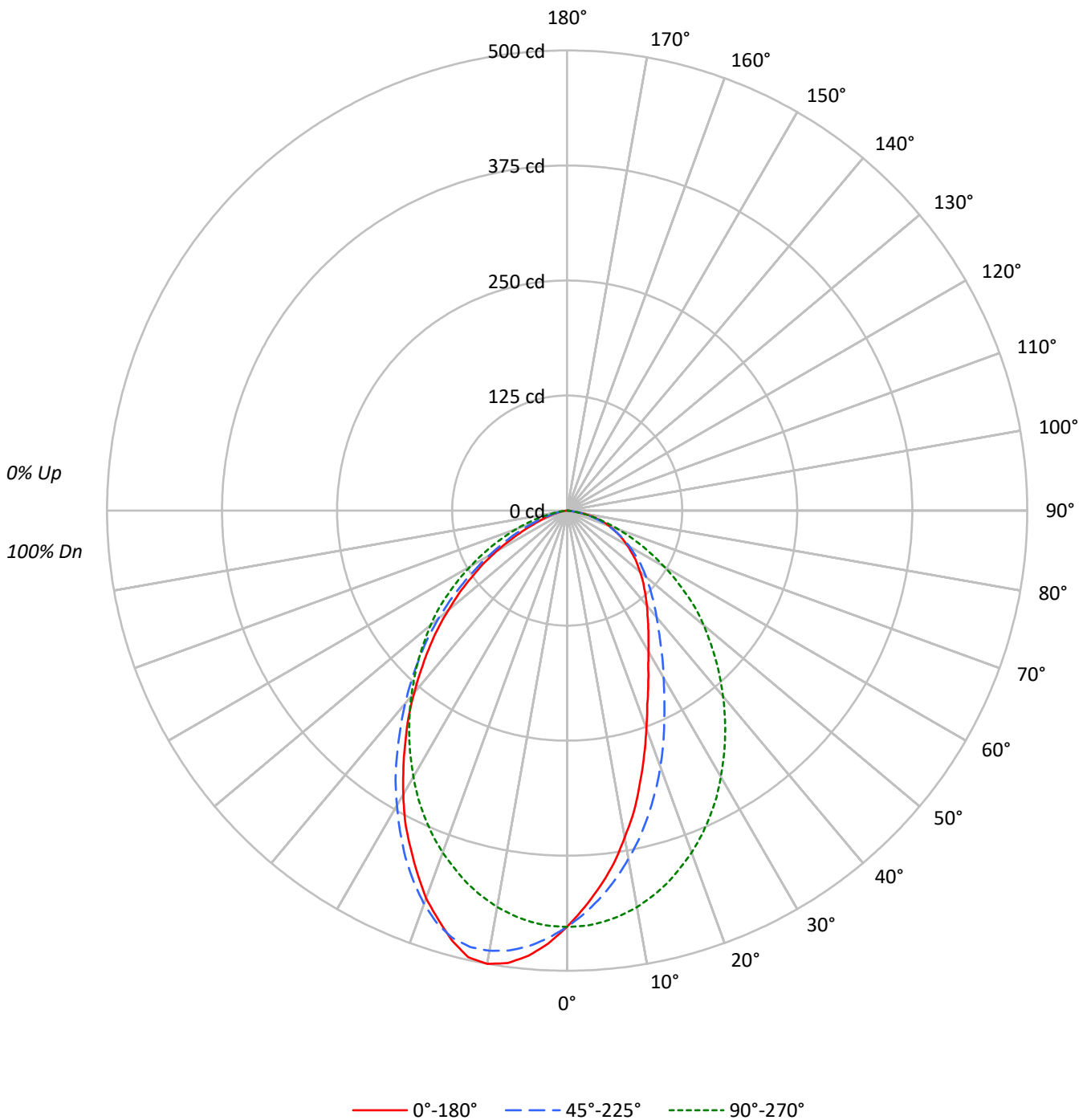
Input Watts (W): 10.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88
2	102	95	89	84	100	93	88	83	90	85	81	86	83	79	84	80	78	76
3	94	85	78	72	92	83	77	71	80	75	70	78	73	69	75	71	68	66
4	87	76	69	63	85	75	68	62	73	66	61	70	65	61	68	64	60	58
5	81	69	61	55	79	68	60	55	66	59	54	64	58	54	62	57	53	51
6	75	63	55	49	73	62	54	49	60	53	48	59	53	48	57	52	48	46
7	70	58	50	44	68	57	49	44	55	48	43	54	48	43	53	47	43	41
8	65	53	45	40	64	52	45	40	51	44	39	50	44	39	49	43	39	37
9	61	49	41	36	60	48	41	36	47	41	36	46	40	36	45	40	36	34
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	39562	39562	39562
5°	35991	39397	42646
10°	32001	38849	44418
15°	27701	37979	43774
20°	23410	36814	41711
25°	20123	35401	38923
30°	17867	33734	35966
35°	16401	31959	32728
40°	15415	30087	29539
45°	14634	28228	26311
50°	14070	26345	22929
55°	13664	24049	19413
60°	13173	21220	15570
65°	12853	18296	11259
70°	12378	14987	7800
75°	11524	11322	5441
80°	7808	5994	2720
85°	602	2409	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.4	5.1
10°-20°	114.6	13.8
20°-30°	154.3	18.6
30°-40°	161.6	19.5
40°-50°	144.9	17.5
50°-60°	110.9	13.4
60°-70°	67.6	8.2
70°-80°	28.7	3.5
80°-90°	3.2	0.4
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°	311.2	37.6
0°-40°	472.8	57.1
0°-60°	728.6	88.0
0°-90°	828.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	828.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	452	452	452	452	452	
5°	410	422	449	475	486	38
15°	306	342	419	481	483	85
25°	208	250	367	416	403	96
35°	154	177	299	322	306	96
45°	118	130	228	227	213	92
55°	90	95	158	138	127	80
65°	62	63	88	66	54	61
75°	34	30	34	20	16	35
85°	1	1	2	1	0	4
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°	452.3	452.3	452.3	452.3	452.3	452.3	452.3	452.3	452.3	452.3	452.3
2.5°	431.4	432.0	433.2	432.6	433.8	433.8	433.8	435.0	436.2	436.8	437.9
5°	409.9	410.5	411.1	412.3	412.9	412.3	414.0	415.8	417.6	420.0	421.8
7.5°	387.2	387.2	386.6	388.4	390.7	391.3	392.5	394.3	396.7	400.3	403.9
10°	360.3	360.9	362.1	362.7	366.3	366.8	368.6	371.0	375.2	379.4	384.2
12.5°	335.2	334.6	335.2	337.0	339.4	342.4	344.1	347.1	352.5	357.9	363.9
15°	305.9	306.5	308.3	310.1	313.7	315.5	318.5	323.8	329.2	334.6	341.8
17.5°	278.4	277.8	280.2	283.2	286.2	289.2	291.6	296.3	303.5	311.3	319.1
20°	251.5	250.9	252.7	255.1	259.9	261.7	264.7	271.9	278.4	286.8	296.3
22.5°	227.6	227.6	229.4	232.4	235.4	237.2	240.2	246.2	253.9	263.5	273.0
25°	208.5	208.5	209.7	211.5	215.1	216.9	219.9	224.1	231.2	240.2	249.7
27.5°	190.6	191.8	192.4	194.2	197.2	199.0	200.8	205.5	211.5	219.3	228.2
30°	176.9	177.4	178.0	179.2	181.6	182.8	185.2	189.4	194.8	201.3	209.7
32.5°	164.3	164.9	164.9	166.7	168.5	170.3	171.5	175.1	178.6	185.2	193.0
35°	153.6	153.6	154.7	155.3	156.5	157.7	158.9	161.9	166.1	170.9	176.9
37.5°	143.4	143.4	144.0	145.2	146.4	147.6	148.2	150.6	154.1	158.3	163.1
40°	135.0	135.0	135.0	136.2	137.4	138.0	138.6	141.0	144.0	147.0	151.2
42.5°	126.1	126.7	127.3	127.9	128.5	129.7	130.2	131.4	133.8	136.2	140.4
45°	118.3	118.9	118.9	119.5	120.7	120.7	121.3	123.1	124.9	127.3	130.2
47.5°	111.1	111.1	111.1	111.7	112.3	112.9	113.5	114.7	116.5	117.7	120.7
50°	103.4	103.4	104.0	104.6	105.2	105.2	105.8	106.4	108.1	109.3	111.7
52.5°	96.2	96.2	96.8	96.8	97.4	97.4	98.0	99.2	99.8	101.6	103.4
55°	89.6	89.0	89.6	89.6	89.6	90.2	90.2	91.4	92.6	93.2	95.0
57.5°	81.9	82.5	82.5	83.0	83.0	83.0	83.6	83.6	84.8	85.4	86.0
60°	75.3	75.9	75.9	75.9	75.9	75.9	76.5	76.5	77.1	77.7	78.3
62.5°	68.7	68.7	68.7	68.7	68.7	69.3	69.3	69.3	69.3	69.9	70.5
65°	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.1	62.7
67.5°	55.0	55.0	55.0	55.6	55.0	55.0	55.0	55.0	55.0	55.0	54.4
70°	48.4	48.4	48.4	48.4	48.4	47.8	47.8	47.2	47.2	46.6	46.6
72.5°	41.2	41.2	41.2	40.6	40.6	40.6	40.0	39.4	38.8	38.8	38.8
75°	34.1	34.1	33.5	33.5	32.9	32.9	32.3	31.7	31.1	30.5	30.5
77.5°	25.7	25.7	25.7	25.7	25.1	24.5	24.5	23.9	23.3	23.3	22.7
80°	15.5	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.3	14.3
82.5°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
85°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.2
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	452.3	452.3	452.3	452.3	452.3	452.3	452.3	452.3	452.3	452.3	452.3
2.5°	439.1	440.3	442.1	443.3	443.9	444.5	446.3	448.1	449.9	451.7	452.9
5°	424.8	427.2	429.6	432.6	433.8	435.6	439.1	442.1	445.1	448.7	451.7
7.5°	407.5	411.7	415.8	420.6	422.4	424.2	429.0	434.4	438.5	443.9	448.7
10°	389.6	394.3	399.7	406.3	409.3	412.3	418.2	424.8	430.8	437.4	443.3
12.5°	369.2	377.0	384.2	391.3	394.3	397.9	405.7	413.5	421.2	429.0	436.2
15°	348.9	356.7	365.7	374.0	378.2	383.0	391.9	401.5	410.5	419.4	427.8
17.5°	328.6	336.4	345.9	356.7	362.1	366.8	376.4	387.2	397.9	407.5	418.2
20°	305.9	316.1	327.4	338.8	344.1	350.1	361.5	372.8	384.8	395.5	406.9
22.5°	283.8	294.6	308.3	319.6	325.6	331.6	344.7	357.9	369.8	381.8	393.1
25°	261.7	274.2	287.4	301.1	307.7	314.3	328.0	340.6	354.3	366.8	380.0
27.5°	240.2	253.3	267.1	281.4	288.6	295.7	309.5	323.8	337.6	351.3	364.5
30°	219.9	232.4	247.4	262.3	269.5	277.2	291.6	306.5	320.2	334.0	348.3
32.5°	201.9	212.7	227.6	242.6	250.3	258.1	273.6	288.6	302.3	316.7	331.6
35°	185.2	195.4	208.5	224.1	231.8	239.6	255.1	270.7	285.6	299.3	313.7
37.5°	170.9	179.8	191.2	204.9	213.9	221.7	237.2	252.7	267.1	281.4	295.2
40°	157.1	164.9	175.7	188.8	196.0	203.7	219.3	235.4	249.7	263.5	277.2
42.5°	145.2	151.8	160.7	172.1	179.8	186.4	202.5	218.1	231.8	245.6	259.3
45°	134.4	139.8	147.0	156.5	163.1	171.5	186.4	200.8	214.5	228.2	241.4
47.5°	123.7	128.5	134.4	143.4	148.8	155.3	170.3	184.0	197.8	210.3	222.9
50°	114.7	118.3	123.1	130.2	135.6	140.4	154.1	168.5	181.0	193.6	204.9
52.5°	105.8	108.1	112.3	118.9	122.5	127.3	139.2	152.4	164.9	176.9	187.0
55°	96.8	99.2	102.2	106.9	110.5	114.1	124.3	136.8	148.2	157.7	167.9
57.5°	87.8	89.6	92.0	96.2	98.6	101.6	109.9	120.1	130.2	139.8	147.6
60°	80.1	81.3	83.0	85.4	87.2	89.0	95.0	104.6	114.1	121.3	128.5
62.5°	71.1	71.7	72.9	75.3	76.5	77.7	81.9	90.2	98.0	104.6	110.5
65°	62.7	63.3	63.9	65.1	66.3	66.9	70.5	76.5	83.0	88.4	92.6
67.5°	54.4	55.0	55.0	56.2	56.2	57.4	59.1	62.7	68.7	72.9	76.5
70°	46.0	46.6	46.6	47.2	46.6	47.2	49.0	51.4	55.0	58.6	60.9
72.5°	38.2	37.6	37.6	37.6	37.6	38.2	38.8	40.0	43.0	46.0	46.6
75°	29.9	29.9	29.3	29.3	29.3	29.3	29.3	29.9	31.7	33.5	34.1
77.5°	22.1	21.5	21.5	20.9	20.9	20.9	20.3	20.3	20.9	22.1	22.1
80°	14.3	13.7	13.1	13.7	12.5	13.1	12.5	11.9	11.9	11.9	11.4
82.5°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.4	5.4	5.4
85°	1.2	1.2	1.8	1.8	1.8	1.8	1.8	1.8	2.4	2.4	1.8
87.5°	1.2	1.2	1.2	1.8	1.8	1.8	1.8	1.8	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	452.3	452.3	452.3	452.3	452.3	452.3	452.3	452.3	452.3	452.3	452.3
2.5°	454.7	456.5	458.3	458.9	459.5	461.3	462.4	464.2	464.8	466.0	467.2
5°	454.7	458.3	461.3	463.0	464.2	467.2	470.2	472.0	475.0	476.8	478.6
7.5°	453.5	458.3	462.4	464.8	467.2	470.8	475.0	478.6	482.2	484.6	487.5
10°	449.9	455.9	461.3	464.2	467.2	472.6	477.4	481.6	485.7	489.3	492.3
12.5°	444.5	451.7	458.3	461.8	464.8	471.4	476.8	481.6	485.7	488.7	491.1
15°	436.8	445.7	453.5	457.1	460.7	467.8	473.2	477.4	481.0	482.8	484.6
17.5°	427.8	437.4	446.3	450.5	454.1	460.7	465.4	468.4	470.2	471.4	470.8
20°	417.6	427.8	436.8	440.9	445.1	450.5	454.1	455.3	454.7	454.1	452.9
22.5°	405.1	415.8	425.4	429.0	432.6	436.8	437.9	437.4	436.2	435.0	433.2
25°	391.9	402.7	411.7	414.6	417.6	419.4	418.8	417.6	415.8	414.0	411.1
27.5°	377.0	388.4	395.5	399.1	399.7	399.7	397.9	396.1	393.1	390.7	387.8
30°	361.5	371.0	378.2	379.4	380.0	378.8	377.0	374.0	369.8	368.0	365.1
32.5°	343.5	353.7	359.1	359.1	357.9	356.1	352.5	349.5	347.1	343.0	340.0
35°	326.8	334.6	337.6	337.6	335.8	332.8	329.8	325.6	322.0	319.6	315.5
37.5°	307.7	315.5	316.7	314.9	313.7	310.1	305.3	301.7	297.5	294.6	291.6
40°	289.8	295.2	294.0	292.2	291.0	287.4	282.0	277.8	273.6	270.1	267.1
42.5°	269.5	273.0	271.3	270.1	267.7	263.5	258.7	254.5	250.3	246.8	243.8
45°	250.9	252.7	249.7	247.4	245.6	240.8	237.2	231.2	227.0	223.5	221.1
47.5°	231.2	231.2	228.2	225.8	222.9	218.1	213.9	207.9	205.5	200.8	198.4
50°	212.1	210.3	206.7	203.7	201.3	196.0	190.6	186.4	182.2	178.6	176.3
52.5°	191.8	189.4	184.6	181.6	180.4	173.9	169.1	163.7	160.1	155.9	153.6
55°	171.5	167.9	162.5	160.1	157.7	152.4	147.0	141.6	138.0	135.0	132.6
57.5°	150.6	146.4	141.6	138.6	135.6	130.2	124.9	120.1	117.1	114.1	112.3
60°	129.1	126.1	121.3	118.3	115.3	110.5	104.6	101.0	98.6	95.0	94.4
62.5°	110.5	106.4	101.0	98.6	96.2	91.4	86.6	83.6	80.7	78.9	76.5
65°	92.0	87.8	83.0	80.7	78.9	74.7	71.1	68.1	65.7	63.3	61.5
67.5°	74.1	71.1	66.9	65.1	62.7	59.1	56.2	53.8	51.4	49.0	47.2
70°	59.1	55.6	52.0	50.8	49.6	46.0	43.6	41.2	38.8	37.0	35.3
72.5°	45.4	42.4	39.4	37.6	36.4	34.7	32.9	30.5	28.7	26.9	25.7
75°	32.3	30.5	28.1	26.9	25.7	24.5	22.1	20.9	20.3	19.1	17.9
77.5°	20.9	19.1	17.9	16.7	16.7	15.5	14.3	13.7	12.5	12.5	11.9
80°	10.8	10.2	9.6	9.6	9.6	8.4	7.8	7.8	7.2	6.6	6.6
82.5°	4.8	4.8	4.2	4.2	4.2	3.6	3.6	3.0	3.0	2.4	2.4
85°	1.8	1.8	1.8	1.8	1.8	1.2	1.2	1.2	0.6	0.6	0.6
87.5°	1.8	1.8	1.8	1.8	1.8	1.2	1.2	1.2	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



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CATALOG NUMBER: PR4FS12D010 PR4M12WW8FSBZ 1000lm4000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	452.3	452.3	452.3	452.3	452.3	452.3	452.3	452.3
2.5°	467.8	469.0	469.0	469.6	470.2	470.8	470.2	470.8
5°	480.4	482.2	482.8	482.8	484.0	484.6	485.7	485.7
7.5°	489.9	491.7	492.9	493.5	494.7	495.9	495.9	495.9
10°	494.7	496.5	497.1	498.3	498.9	499.5	500.1	500.1
12.5°	492.9	494.7	495.3	495.3	496.5	496.5	496.5	497.1
15°	485.1	484.6	484.6	484.6	484.0	484.0	484.0	483.4
17.5°	469.6	469.0	469.0	469.0	468.4	467.8	467.2	466.0
20°	452.3	451.1	449.9	450.5	449.3	448.7	448.1	448.1
22.5°	432.0	430.2	429.6	429.0	427.8	427.2	426.0	426.0
25°	409.9	408.7	406.9	406.3	405.7	404.5	403.3	403.3
27.5°	386.6	384.8	384.2	383.0	382.4	381.2	380.6	381.2
30°	362.7	360.9	360.3	359.1	356.7	357.9	356.7	356.1
32.5°	337.6	335.8	334.6	333.4	333.4	331.6	331.6	331.0
35°	313.1	311.3	310.1	309.5	308.3	308.3	307.1	306.5
37.5°	289.2	287.4	286.2	285.6	284.4	283.2	282.6	283.2
40°	264.7	262.9	261.7	261.1	259.9	258.7	258.7	258.7
42.5°	240.8	239.0	239.0	237.8	236.0	235.4	234.8	234.8
45°	218.7	216.3	215.7	214.5	214.5	213.3	212.7	212.7
47.5°	195.4	193.6	193.0	192.4	191.8	191.2	191.2	191.2
50°	173.9	171.5	171.5	170.3	169.7	170.3	169.1	168.5
52.5°	152.4	150.6	150.0	150.0	148.8	148.8	148.8	148.2
55°	130.8	129.7	129.7	129.1	127.9	128.5	128.5	127.3
57.5°	111.1	109.3	109.3	108.7	108.7	108.7	107.5	108.7
60°	92.6	91.4	90.8	90.2	89.6	89.6	89.6	89.0
62.5°	75.3	74.1	73.5	72.9	71.7	71.7	70.5	69.9
65°	59.7	58.6	57.4	56.8	55.6	55.0	55.0	54.4
67.5°	45.4	44.2	43.0	42.4	41.2	40.6	40.0	40.0
70°	34.1	32.3	32.3	31.7	31.1	31.1	30.5	30.5
72.5°	24.5	24.5	23.9	23.9	23.3	23.3	23.3	23.3
75°	17.3	17.3	17.3	17.3	16.7	16.7	16.1	16.1
77.5°	11.4	11.4	11.4	10.8	10.8	10.8	10.8	10.8
80°	6.0	6.0	6.0	6.0	6.0	5.4	6.0	5.4
82.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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