

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: P345399

Luminaire Tested: **PR4FS12D010 PR4M12WW9FSMW 1000Lm4000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P345399
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 1000Lm4000K
Description: PR4 WALLWASH ASSEMBLY WITH, MATTE WHITE FINISH
Light Source: ARRAY OF HIGH LUMEN LEDs 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 702.9 lumens
Efficiency: N/A
Efficacy: 67.6 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

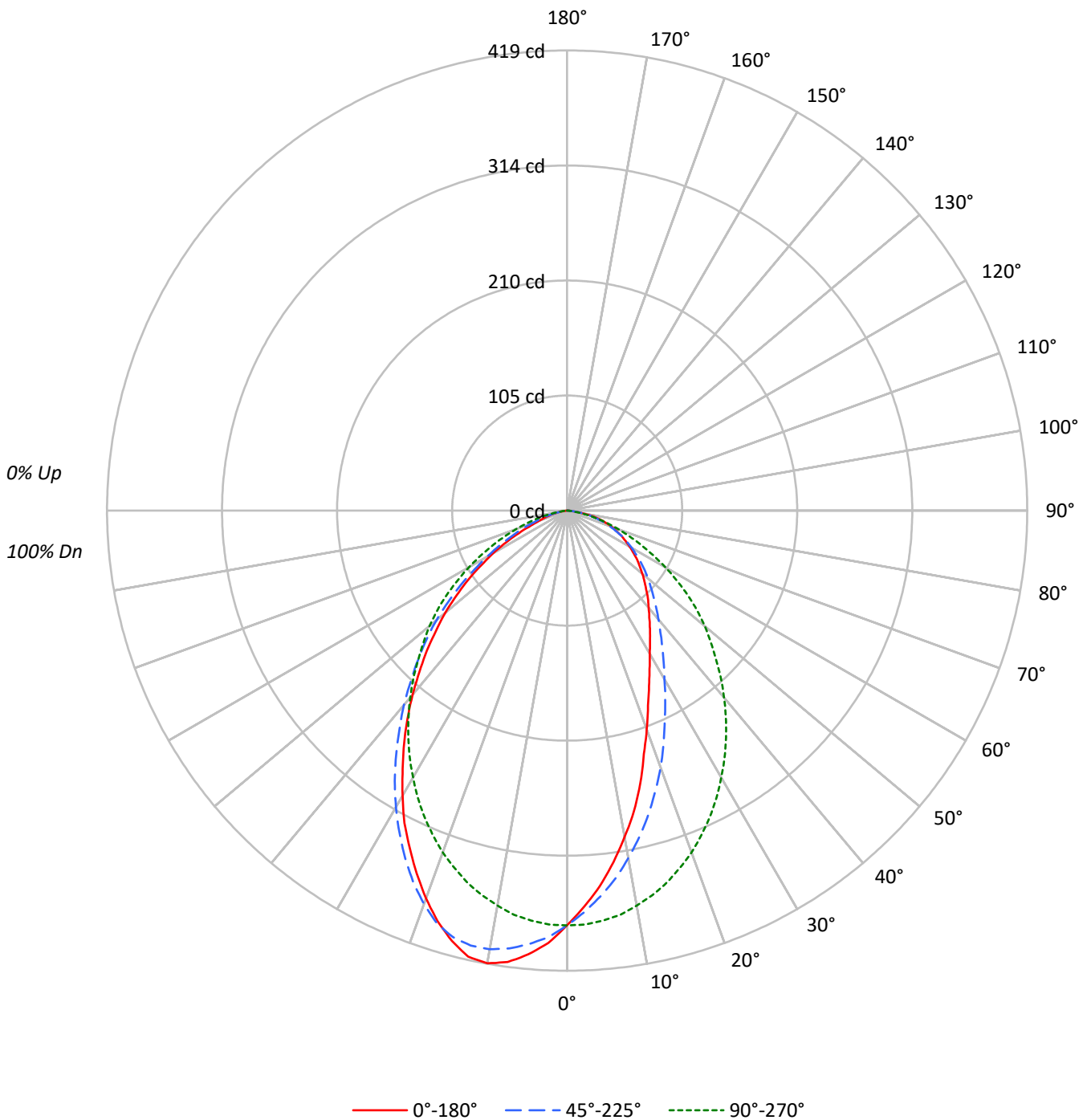
Input Watts (W): 10.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P345399

CATALOG NUMBER: PR4F512D010 PR4M12WW9FSMW 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°	33037	33037	33037
5°	30134	32900	35613
10°	26797	32437	37180
15°	23300	31758	36729
20°	19715	30829	34971
25°	17015	29697	32737
30°	15191	28351	30270
35°	14031	26941	27635
40°	13177	25383	24983
45°	12605	23726	22365
50°	12165	22235	19718
55°	11880	20420	16836
60°	11528	18089	13628
65°	11280	15399	10038
70°	10997	12659	6905
75°	10477	9632	5238
80°	7304	5541	3022
85°	3011	2007	1004



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.4	5.0
10°-20°	95.9	13.6
20°-30°	129.6	18.4
30°-40°	136.4	19.4
40°-50°	122.9	17.5
50°-60°	94.9	13.5
60°-70°	58.4	8.3
70°-80°	25.7	3.7
80°-90°	3.7	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°	260.9	37.1
0°-40°	397.3	56.5
0°-60°	615.1	87.5
0°-90°	702.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	702.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	378	378	378	378	378	
5°	343	352	375	396	406	31
15°	257	286	351	402	406	71
25°	176	210	308	349	339	82
35°	131	151	252	271	259	82
45°	102	111	192	192	181	79
55°	78	82	134	118	110	69
65°	54	54	74	56	48	54
75°	31	28	28	18	16	32
85°	3	2	2	2	1	5
90°	0	0	0	0	0	



TEST NUMBER: P345399

CATALOG NUMBER: PR4FS12D010 PR4M12WW9FSMW 1000Lm4000K

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7
2.5°	360.7	361.2	361.2	361.2	361.7	362.2	362.2	363.2	363.7	364.7	365.7
5°	343.2	342.7	342.7	343.7	344.7	345.2	345.2	347.2	348.7	350.2	352.2
7.5°	322.7	322.2	323.7	324.2	325.2	326.7	327.7	329.7	331.2	334.7	337.7
10°	301.7	301.7	302.7	304.2	305.7	307.2	308.2	310.7	313.7	317.2	321.2
12.5°	280.7	279.2	280.7	282.7	284.2	285.7	287.2	290.2	294.7	299.2	304.2
15°	257.3	256.8	257.8	259.8	263.3	264.3	265.8	270.3	274.8	280.7	286.2
17.5°	232.3	233.8	234.3	237.3	240.8	242.3	243.8	248.3	254.8	260.8	267.3
20°	211.8	210.8	212.8	214.8	217.8	220.3	222.3	227.3	234.3	240.8	248.8
22.5°	192.3	191.8	193.3	195.8	198.3	200.3	202.3	207.3	212.8	220.3	229.3
25°	176.3	175.8	177.3	178.8	181.8	183.3	184.8	189.8	195.8	201.8	210.3
27.5°	162.4	162.4	163.4	164.4	166.9	168.3	170.3	174.3	179.3	185.3	193.3
30°	150.4	150.4	151.4	152.4	154.9	155.9	157.4	160.4	164.4	170.8	177.3
32.5°	140.4	140.4	140.9	142.4	143.4	144.4	145.9	148.4	152.4	157.4	163.4
35°	131.4	131.4	131.9	132.9	134.4	134.9	135.9	138.4	141.4	145.4	150.9
37.5°	122.9	123.4	123.4	124.4	125.4	125.9	126.9	128.9	131.4	134.9	139.4
40°	115.4	115.9	115.9	116.9	117.9	118.4	118.9	119.9	122.9	125.4	129.4
42.5°	108.9	108.9	108.9	109.4	110.4	110.9	111.4	112.9	114.4	116.9	119.9
45°	101.9	101.9	102.4	102.9	103.9	103.9	104.4	105.9	106.9	108.9	111.4
47.5°	95.4	95.4	95.9	95.9	96.9	96.9	97.4	98.4	99.4	101.4	103.4
50°	89.4	89.4	89.4	89.9	90.4	90.9	90.9	91.9	92.9	94.4	95.9
52.5°	83.4	83.4	83.4	83.4	83.9	84.4	84.4	85.4	86.4	87.4	88.9
55°	77.9	77.4	77.9	77.9	77.9	78.4	78.4	79.4	79.4	80.4	81.9
57.5°	71.4	71.9	71.9	71.4	71.9	72.4	72.4	72.4	72.9	73.9	74.4
60°	65.9	65.9	65.9	65.9	66.4	66.4	66.4	66.4	66.9	66.9	67.9
62.5°	59.9	59.9	60.4	60.4	59.9	60.4	60.4	60.4	60.9	60.9	60.9
65°	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5
67.5°	48.5	48.5	48.5	48.5	48.5	48.5	48.5	48.0	48.0	48.0	47.5
70°	43.0	43.0	43.0	42.5	42.5	42.5	42.5	42.0	42.0	41.5	41.0
72.5°	37.0	37.0	37.0	36.5	36.5	36.5	36.0	35.5	35.0	34.5	34.5
75°	31.0	31.0	30.5	30.0	30.0	29.5	29.5	29.0	29.0	28.0	27.5
77.5°	24.0	23.5	23.5	23.5	23.0	22.5	22.5	22.0	21.5	21.5	21.0
80°	14.5	14.5	15.0	14.5	15.0	14.5	14.5	15.0	14.5	14.0	14.0
82.5°	7.0	7.0	7.5	7.0	7.5	7.5	7.5	7.0	7.0	7.0	7.0
85°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5	2.5
87.5°	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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°	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7
2.5°	366.7	368.2	368.7	370.2	370.7	371.7	372.7	374.2	375.7	377.2	378.2
5°	354.2	356.7	358.7	361.2	362.7	363.7	366.7	369.2	372.2	374.7	377.2
7.5°	340.7	343.7	348.2	351.2	352.7	355.2	358.7	362.7	366.7	371.2	374.7
10°	325.2	329.7	334.2	339.7	342.2	344.7	349.2	354.7	360.2	365.2	370.7
12.5°	308.7	314.7	320.7	326.2	329.7	332.7	339.7	345.7	352.2	358.7	364.7
15°	292.7	299.2	306.2	313.2	317.2	320.7	327.7	335.2	343.2	350.7	357.7
17.5°	275.3	282.7	290.7	298.7	302.7	307.2	316.2	324.2	333.2	341.2	349.7
20°	257.3	265.8	274.3	284.2	288.2	293.2	302.2	312.2	321.7	331.2	340.2
22.5°	238.8	248.3	257.8	268.3	273.8	278.7	289.2	299.2	309.7	319.7	329.7
25°	219.8	230.8	241.8	252.3	258.3	263.3	274.8	286.2	297.2	307.7	318.2
27.5°	202.3	212.8	224.8	236.3	242.3	247.8	260.3	271.3	283.2	294.7	305.2
30°	186.3	196.3	208.3	220.8	226.8	232.8	245.3	257.8	268.8	280.7	292.2
32.5°	171.3	180.3	192.3	204.8	211.8	217.3	230.3	242.3	254.8	266.8	278.3
35°	157.4	166.4	176.8	189.3	195.3	201.8	215.3	227.8	239.8	252.3	262.8
37.5°	145.4	152.4	161.9	173.8	180.3	186.8	200.3	212.8	224.8	237.3	248.3
40°	133.9	140.4	148.9	159.4	165.9	172.3	185.3	197.8	209.8	222.3	233.8
42.5°	124.4	129.4	136.4	146.4	151.9	158.4	171.3	183.3	195.3	207.3	218.3
45°	114.9	119.4	125.4	133.4	138.9	144.9	157.4	169.8	180.8	191.8	202.8
47.5°	105.9	109.4	114.9	121.9	126.4	131.9	143.9	155.9	166.9	177.3	187.3
50°	97.9	100.9	105.9	110.9	114.9	119.9	130.4	142.4	152.9	163.4	172.3
52.5°	90.4	92.9	96.4	101.4	104.4	108.4	118.4	128.9	139.4	148.9	157.4
55°	83.4	84.9	87.9	91.4	93.9	97.4	105.9	115.9	125.4	133.9	140.9
57.5°	75.4	77.4	79.4	81.9	84.4	86.4	92.9	101.9	110.4	117.9	124.9
60°	68.4	69.9	70.9	73.4	74.4	76.4	81.4	88.9	96.9	103.4	108.4
62.5°	61.4	61.9	62.9	64.9	65.4	66.9	70.4	76.4	82.4	88.4	93.4
65°	54.5	54.5	55.5	55.9	56.9	57.4	59.9	64.4	69.9	74.4	77.4
67.5°	47.5	47.5	48.0	48.0	49.0	49.0	50.5	54.0	57.4	61.4	63.9
70°	40.5	40.5	40.5	40.5	40.5	41.0	42.0	44.0	46.5	49.5	51.0
72.5°	34.0	33.5	33.5	33.0	33.0	33.0	33.5	34.5	36.5	38.5	40.0
75°	27.0	26.5	26.0	26.0	25.5	25.5	25.5	26.5	27.5	28.5	29.0
77.5°	20.0	20.0	19.5	18.5	18.5	18.0	18.0	18.0	18.5	19.5	19.0
80°	14.0	13.0	12.5	12.5	12.0	12.0	11.5	11.0	11.0	11.0	10.5
82.5°	6.5	6.5	6.5	6.0	6.0	6.0	6.0	5.5	5.5	5.0	5.0
85°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0
87.5°	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.0	1.0	1.0
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°	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7
2.5°	379.7	381.2	382.7	383.2	383.7	385.2	386.2	387.7	388.7	389.2	390.1
5°	380.2	382.7	385.2	386.7	387.7	390.1	392.1	394.6	396.1	398.6	400.1
7.5°	378.7	382.7	386.2	388.2	390.1	393.6	396.6	399.6	402.1	404.6	407.1
10°	375.7	380.7	385.7	387.7	390.1	394.1	398.6	402.1	405.6	408.6	411.6
12.5°	371.2	377.2	383.2	385.7	388.2	393.6	398.1	402.1	405.6	408.6	410.6
15°	365.2	372.2	378.7	382.2	385.2	390.6	395.1	399.1	402.1	404.1	405.6
17.5°	357.7	365.7	373.2	376.2	379.7	384.7	389.2	392.1	394.1	394.1	394.6
20°	349.2	357.7	365.2	368.7	372.2	376.2	379.7	381.2	381.2	381.2	380.2
22.5°	339.2	348.2	355.7	359.2	362.2	365.2	367.2	367.2	366.2	364.7	363.2
25°	327.7	337.2	344.2	347.7	349.2	351.7	351.2	350.7	349.2	347.7	345.7
27.5°	315.2	324.7	332.2	333.7	334.7	335.2	333.7	332.7	330.7	328.7	327.2
30°	302.2	311.2	317.2	317.7	318.7	318.2	316.2	313.7	311.7	309.2	307.2
32.5°	288.2	296.7	300.7	301.7	301.2	299.2	297.2	294.7	292.2	289.2	286.7
35°	273.3	281.2	283.7	283.2	282.7	280.2	277.3	274.8	271.3	269.3	265.8
37.5°	257.8	265.3	266.3	264.8	263.3	260.3	257.3	254.8	250.8	248.8	246.3
40°	242.3	247.3	247.3	245.8	244.8	241.8	237.8	234.3	231.3	227.8	226.3
42.5°	226.3	230.3	228.3	227.3	225.8	221.3	218.3	214.8	210.8	208.8	206.3
45°	210.3	212.8	210.3	208.3	206.8	202.8	199.8	195.3	191.8	189.8	186.8
47.5°	193.8	194.8	192.8	189.8	188.8	184.3	180.8	177.3	173.8	170.3	167.8
50°	178.8	177.8	174.8	172.8	171.3	166.4	162.4	158.4	155.4	152.4	149.9
52.5°	161.9	160.9	156.9	154.4	151.9	147.9	142.9	139.9	136.4	133.9	131.4
55°	144.4	141.4	138.4	135.9	133.4	129.4	124.9	120.9	118.4	115.4	113.9
57.5°	126.4	124.4	119.4	117.4	115.4	111.4	106.9	103.4	99.9	97.9	96.9
60°	110.4	106.9	102.9	100.4	98.4	94.4	90.4	86.9	84.4	83.4	81.9
62.5°	93.4	90.4	85.9	83.9	82.4	78.4	74.9	71.9	69.9	67.9	66.9
65°	77.9	74.4	70.9	68.9	66.9	63.4	60.9	58.9	56.4	55.0	54.0
67.5°	62.9	59.9	56.9	55.5	54.0	51.0	48.5	47.0	45.0	43.5	41.5
70°	49.5	47.0	45.0	43.5	42.0	39.5	37.5	36.0	34.5	33.0	31.5
72.5°	38.5	36.0	33.5	33.0	32.0	30.0	28.5	27.0	25.5	24.5	23.5
75°	27.5	26.5	24.5	23.5	23.0	21.5	20.0	19.0	18.5	17.5	17.0
77.5°	18.0	17.0	15.5	15.5	15.0	14.5	13.5	12.5	12.5	12.0	12.0
80°	10.0	9.5	9.0	8.5	9.0	8.5	8.0	7.5	7.5	7.5	7.0
82.5°	4.5	4.5	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5
85°	2.0	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
87.5°	1.0	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.5
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: P345399

CATALOG NUMBER: PR4FS12D010 PR4M12WW9FSMW 1000Lm4000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	377.7	377.7	377.7	377.7	377.7	377.7	377.7	377.7
2.5°	391.1	391.6	392.1	392.6	393.1	393.1	393.6	394.1
5°	401.1	402.6	403.1	403.6	404.6	405.1	405.1	405.6
7.5°	409.1	411.1	411.6	412.6	413.6	414.1	414.6	414.6
10°	413.6	415.1	415.6	416.6	417.6	418.1	418.6	418.6
12.5°	412.1	413.6	414.1	414.6	415.6	416.1	416.1	416.1
15°	406.6	406.6	406.6	406.6	406.1	406.6	406.6	405.6
17.5°	394.1	393.6	394.1	393.1	392.6	392.6	392.1	392.1
20°	379.2	378.7	378.2	378.2	377.7	376.7	376.2	375.7
22.5°	362.2	361.2	360.7	360.7	359.7	359.2	358.7	357.7
25°	344.7	342.2	342.2	342.2	341.2	341.2	340.2	339.2
27.5°	324.7	323.2	323.2	322.2	321.2	320.7	320.2	320.7
30°	305.7	303.7	302.7	302.2	301.7	301.7	300.2	299.7
32.5°	284.7	283.2	282.2	281.7	280.7	280.2	279.7	278.7
35°	264.3	262.8	261.8	261.8	259.8	259.3	258.8	258.8
37.5°	243.3	242.3	241.8	240.3	239.8	239.3	239.3	238.8
40°	223.8	222.3	221.8	220.3	219.8	219.8	218.3	218.8
42.5°	203.8	201.8	201.3	200.8	200.3	199.3	199.8	198.8
45°	184.8	183.3	182.3	182.3	181.8	180.8	180.3	180.8
47.5°	166.4	164.4	164.4	163.9	163.4	162.9	162.9	161.9
50°	148.9	147.4	146.4	145.4	145.9	145.4	144.4	144.9
52.5°	129.9	128.4	127.9	127.9	127.4	127.4	126.9	126.9
55°	112.9	111.4	111.4	110.9	110.9	110.9	110.4	110.4
57.5°	95.9	94.9	94.4	94.4	93.4	93.9	93.4	92.9
60°	80.9	79.4	78.4	78.9	78.4	78.4	77.4	77.9
62.5°	65.4	64.4	63.9	63.9	62.9	62.9	61.9	62.4
65°	52.5	51.0	50.5	50.0	49.0	48.5	48.5	48.5
67.5°	40.5	39.5	39.0	38.0	37.0	36.5	36.0	35.5
70°	30.5	29.5	29.0	28.5	28.0	27.5	27.5	27.0
72.5°	23.0	22.0	22.0	21.5	21.5	21.0	21.0	21.0
75°	16.5	16.5	16.0	16.0	15.5	16.0	15.5	15.5
77.5°	11.5	11.0	11.5	11.0	10.5	10.5	10.5	10.5
80°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.0
82.5°	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0
85°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
87.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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