

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: P345466

Luminaire Tested: **PR4FS12D010 PR4M12WW8FSBZ 1000Lm3000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P345466
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 1000lm3000K
Description: PR4 WALLWASH ASSEMBLY WITH, BRONZE FINISH
Light Source: ARRAY OF HIGH LUMEN LEDs 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 780.2 lumens
Efficiency: N/A
Efficacy: 75.0 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

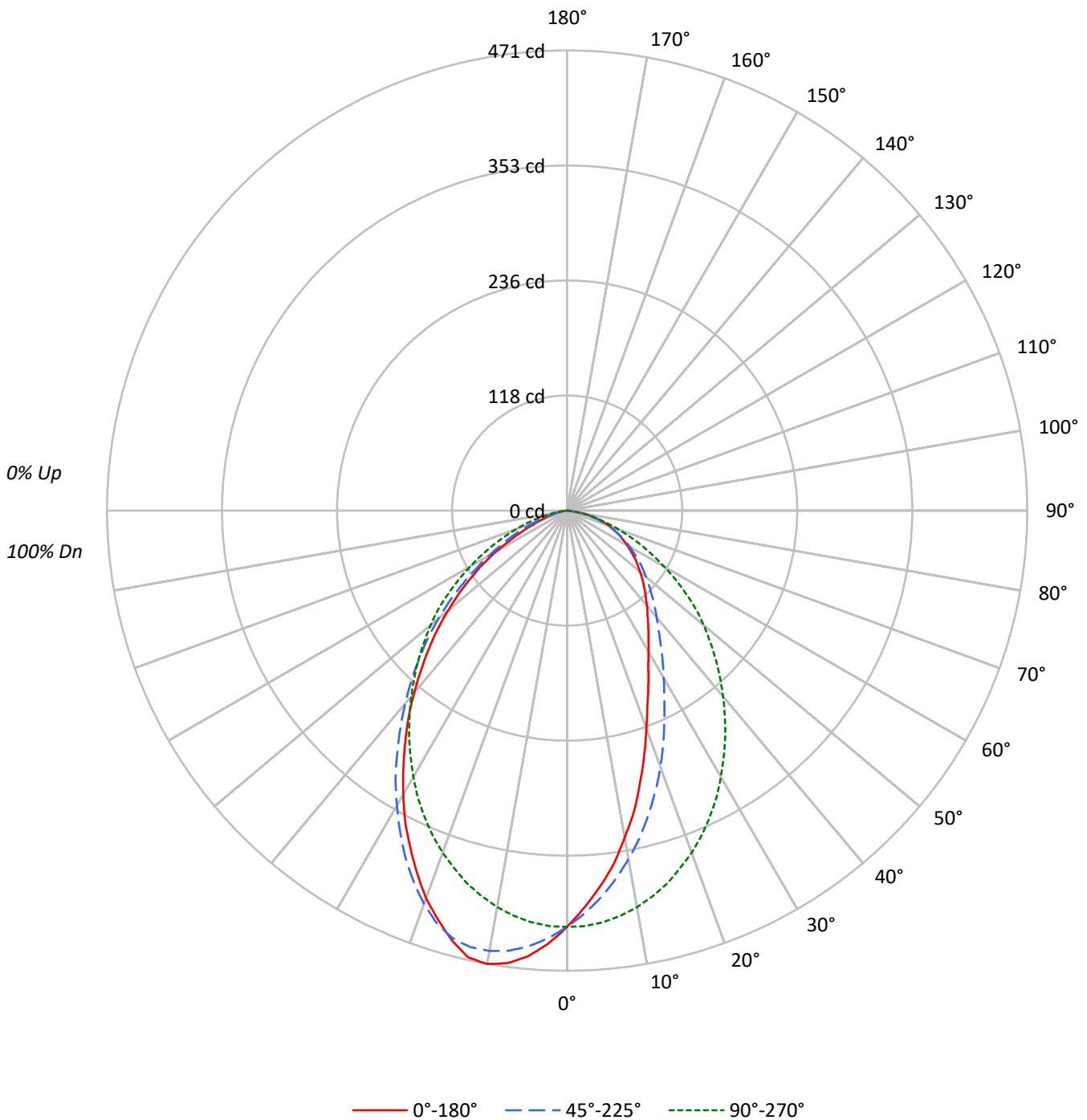
Input Watts (W): 10.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	37271	37271	37271
5°	33910	37123	40188
10°	30145	36602	41851
15°	26098	35787	41239
20°	22061	34692	39300
25°	18965	33354	36675
30°	16827	31785	33886
35°	15451	30112	30838
40°	14524	28340	27826
45°	13793	26596	24790
50°	13254	24821	21596
55°	12871	22661	18285
60°	12403	19996	14677
65°	12108	17241	10597
70°	11662	14117	7340
75°	10848	10646	5137
80°	7354	5692	2569
85°	602	2308	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	39.9	5.1
10°-20°	108.0	13.8
20°-30°	145.3	18.6
30°-40°	152.2	19.5
40°-50°	136.5	17.5
50°-60°	104.5	13.4
60°-70°	63.6	8.2
70°-80°	27.0	3.5
80°-90°	3.0	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°	293.2	37.6
0°-40°	445.4	57.1
0°-60°	686.5	88.0
0°-90°	780.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	780.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	426	426	426	426	426	
5°	386	397	423	448	458	35
15°	288	322	395	453	455	80
25°	196	235	346	392	380	91
35°	145	167	282	303	289	91
45°	112	123	215	214	200	86
55°	84	90	149	130	120	75
65°	58	59	83	62	51	58
75°	32	29	32	19	15	33
85°	1	1	2	1	0	4
90°	0	0	0	0	0	



TEST NUMBER: P345466

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1
2.5°	406.4	407.0	408.1	407.6	408.7	408.7	408.7	409.8	410.9	411.5	412.6
5°	386.2	386.7	387.3	388.4	389.0	388.4	390.1	391.8	393.5	395.7	397.4
7.5°	364.8	364.8	364.2	365.9	368.1	368.7	369.8	371.5	373.8	377.2	380.5
10°	339.4	340.0	341.1	341.7	345.1	345.6	347.3	349.6	353.5	357.5	362.0
12.5°	315.8	315.2	315.8	317.5	319.7	322.6	324.2	327.1	332.1	337.2	342.8
15°	288.2	288.8	290.5	292.2	295.5	297.2	300.0	305.1	310.2	315.2	322.0
17.5°	262.3	261.8	264.0	266.8	269.6	272.5	274.7	279.2	286.0	293.3	300.6
20°	237.0	236.4	238.1	240.4	244.9	246.6	249.4	256.1	262.3	270.2	279.2
22.5°	214.5	214.5	216.2	219.0	221.8	223.5	226.3	231.9	239.2	248.2	257.3
25°	196.5	196.5	197.6	199.3	202.6	204.3	207.2	211.1	217.8	226.3	235.3
27.5°	179.6	180.7	181.3	182.9	185.8	187.5	189.1	193.6	199.3	206.6	215.0
30°	166.6	167.2	167.7	168.9	171.1	172.3	174.5	178.4	183.5	189.7	197.6
32.5°	154.8	155.4	155.4	157.1	158.7	160.4	161.6	164.9	168.3	174.5	181.8
35°	144.7	144.7	145.8	146.4	147.5	148.6	149.7	152.6	156.5	161.0	166.6
37.5°	135.1	135.1	135.7	136.8	137.9	139.0	139.6	141.9	145.2	149.2	153.7
40°	127.2	127.2	127.2	128.3	129.5	130.0	130.6	132.8	135.7	138.5	142.4
42.5°	118.8	119.3	119.9	120.5	121.0	122.2	122.7	123.8	126.1	128.3	132.3
45°	111.5	112.0	112.0	112.6	113.7	113.7	114.3	116.0	117.6	119.9	122.7
47.5°	104.7	104.7	104.7	105.3	105.8	106.4	107.0	108.1	109.8	110.9	113.7
50°	97.4	97.4	97.9	98.5	99.1	99.1	99.6	100.2	101.9	103.0	105.3
52.5°	90.6	90.6	91.2	91.2	91.8	91.8	92.3	93.4	94.0	95.7	97.4
55°	84.4	83.9	84.4	84.4	84.4	85.0	85.0	86.1	87.3	87.8	89.5
57.5°	77.1	77.7	77.7	78.2	78.2	78.2	78.8	78.8	79.9	80.5	81.1
60°	70.9	71.5	71.5	71.5	71.5	71.5	72.1	72.1	72.6	73.2	73.7
62.5°	64.7	64.7	64.7	64.7	64.7	65.3	65.3	65.3	65.3	65.9	66.4
65°	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	59.1
67.5°	51.8	51.8	51.8	52.4	51.8	51.8	51.8	51.8	51.8	51.8	51.2
70°	45.6	45.6	45.6	45.6	45.6	45.0	45.0	44.5	44.5	43.9	43.9
72.5°	38.8	38.8	38.8	38.3	38.3	38.3	37.7	37.2	36.6	36.6	36.6
75°	32.1	32.1	31.5	31.5	31.0	31.0	30.4	29.8	29.3	28.7	28.7
77.5°	24.2	24.2	24.2	24.2	23.6	23.1	23.1	22.5	22.0	22.0	21.4
80°	14.6	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	13.5	13.5
82.5°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
85°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.1
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	1.1
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°	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1
2.5°	413.7	414.9	416.6	417.7	418.2	418.8	420.5	422.2	423.9	425.6	426.7
5°	400.2	402.5	404.7	407.6	408.7	410.4	413.7	416.6	419.4	422.8	425.6
7.5°	383.9	387.8	391.8	396.3	398.0	399.7	404.2	409.2	413.2	418.2	422.8
10°	367.0	371.5	376.6	382.8	385.6	388.4	394.0	400.2	405.9	412.1	417.7
12.5°	347.9	355.2	362.0	368.7	371.5	374.9	382.2	389.5	396.9	404.2	410.9
15°	328.7	336.1	344.5	352.4	356.3	360.8	369.3	378.3	386.7	395.2	403.0
17.5°	309.6	316.9	325.9	336.1	341.1	345.6	354.6	364.8	374.9	383.9	394.0
20°	288.2	297.8	308.5	319.2	324.2	329.9	340.6	351.3	362.5	372.7	383.3
22.5°	267.4	277.5	290.5	301.2	306.8	312.4	324.8	337.2	348.4	359.7	370.4
25°	246.6	258.4	270.8	283.7	289.9	296.1	309.0	320.9	333.8	345.6	358.0
27.5°	226.3	238.7	251.6	265.1	271.9	278.6	291.6	305.1	318.0	331.0	343.4
30°	207.2	219.0	233.0	247.1	253.9	261.2	274.7	288.8	301.7	314.7	328.2
32.5°	190.3	200.4	214.5	228.5	235.9	243.2	257.8	271.9	284.8	298.3	312.4
35°	174.5	184.1	196.5	211.1	218.4	225.7	240.4	255.0	269.1	282.0	295.5
37.5°	161.0	169.4	180.1	193.1	201.5	208.8	223.5	238.1	251.6	265.1	278.1
40°	148.0	155.4	165.5	177.9	184.6	192.0	206.6	221.8	235.3	248.2	261.2
42.5°	136.8	143.0	151.4	162.1	169.4	175.6	190.8	205.5	218.4	231.4	244.3
45°	126.7	131.7	138.5	147.5	153.7	161.6	175.6	189.1	202.1	215.0	227.4
47.5°	116.5	121.0	126.7	135.1	140.2	146.4	160.4	173.4	186.3	198.1	210.0
50°	108.1	111.5	116.0	122.7	127.8	132.3	145.2	158.7	170.6	182.4	193.1
52.5°	99.6	101.9	105.8	112.0	115.4	119.9	131.2	143.5	155.4	166.6	176.2
55°	91.2	93.4	96.3	100.8	104.1	107.5	117.1	128.9	139.6	148.6	158.2
57.5°	82.7	84.4	86.7	90.6	92.9	95.7	103.6	113.1	122.7	131.7	139.0
60°	75.4	76.6	78.2	80.5	82.2	83.9	89.5	98.5	107.5	114.3	121.0
62.5°	67.0	67.5	68.7	70.9	72.1	73.2	77.1	85.0	92.3	98.5	104.1
65°	59.1	59.7	60.2	61.4	62.5	63.0	66.4	72.1	78.2	83.3	87.3
67.5°	51.2	51.8	51.8	52.9	52.9	54.0	55.7	59.1	64.7	68.7	72.1
70°	43.3	43.9	43.9	44.5	43.9	44.5	46.2	48.4	51.8	55.2	57.4
72.5°	36.0	35.5	35.5	35.5	35.5	36.0	36.6	37.7	40.5	43.3	43.9
75°	28.1	28.1	27.6	27.6	27.6	27.6	27.6	28.1	29.8	31.5	32.1
77.5°	20.8	20.3	20.3	19.7	19.7	19.7	19.1	19.1	19.7	20.8	20.8
80°	13.5	12.9	12.4	12.9	11.8	12.4	11.8	11.3	11.3	11.3	10.7
82.5°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.1	5.1	5.1
85°	1.1	1.1	1.7	1.7	1.7	1.7	1.7	1.7	2.3	2.3	1.7
87.5°	1.1	1.1	1.1	1.7	1.7	1.7	1.7	1.7	2.3	2.3	2.3
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°	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1
2.5°	428.4	430.1	431.8	432.3	432.9	434.6	435.7	437.4	437.9	439.1	440.2
5°	428.4	431.8	434.6	436.3	437.4	440.2	443.0	444.7	447.5	449.2	450.9
7.5°	427.3	431.8	435.7	437.9	440.2	443.6	447.5	450.9	454.3	456.5	459.3
10°	423.9	429.5	434.6	437.4	440.2	445.3	449.8	453.7	457.7	461.0	463.8
12.5°	418.8	425.6	431.8	435.1	437.9	444.1	449.2	453.7	457.7	460.5	462.7
15°	411.5	419.9	427.3	430.6	434.0	440.8	445.8	449.8	453.1	454.8	456.5
17.5°	403.0	412.1	420.5	424.4	427.8	434.0	438.5	441.3	443.0	444.1	443.6
20°	393.5	403.0	411.5	415.4	419.4	424.4	427.8	428.9	428.4	427.8	426.7
22.5°	381.7	391.8	400.8	404.2	407.6	411.5	412.6	412.1	410.9	409.8	408.1
25°	369.3	379.4	387.8	390.7	393.5	395.2	394.6	393.5	391.8	390.1	387.3
27.5°	355.2	365.9	372.7	376.0	376.6	376.6	374.9	373.2	370.4	368.1	365.3
30°	340.6	349.6	356.3	357.5	358.0	356.9	355.2	352.4	348.4	346.8	343.9
32.5°	323.7	333.2	338.3	338.3	337.2	335.5	332.1	329.3	327.1	323.1	320.3
35°	307.9	315.2	318.0	318.0	316.4	313.5	310.7	306.8	303.4	301.2	297.2
37.5°	289.9	297.2	298.3	296.7	295.5	292.2	287.7	284.3	280.3	277.5	274.7
40°	273.0	278.1	277.0	275.3	274.1	270.8	265.7	261.8	257.8	254.4	251.6
42.5°	253.9	257.3	255.6	254.4	252.2	248.2	243.7	239.8	235.9	232.5	229.7
45°	236.4	238.1	235.3	233.0	231.4	226.9	223.5	217.8	213.9	210.5	208.3
47.5°	217.8	217.8	215.0	212.8	210.0	205.5	201.5	195.9	193.6	189.1	186.9
50°	199.8	198.1	194.8	192.0	189.7	184.6	179.6	175.6	171.7	168.3	166.1
52.5°	180.7	178.4	173.9	171.1	170.0	163.8	159.3	154.2	150.9	146.9	144.7
55°	161.6	158.2	153.1	150.9	148.6	143.5	138.5	133.4	130.0	127.2	125.0
57.5°	141.9	137.9	133.4	130.6	127.8	122.7	117.6	113.1	110.3	107.5	105.8
60°	121.6	118.8	114.3	111.5	108.6	104.1	98.5	95.1	92.9	89.5	88.9
62.5°	104.1	100.2	95.1	92.9	90.6	86.1	81.6	78.8	76.0	74.3	72.1
65°	86.7	82.7	78.2	76.0	74.3	70.4	67.0	64.2	61.9	59.7	58.0
67.5°	69.8	67.0	63.0	61.4	59.1	55.7	52.9	50.7	48.4	46.2	44.5
70°	55.7	52.4	49.0	47.8	46.7	43.3	41.1	38.8	36.6	34.9	33.2
72.5°	42.8	40.0	37.2	35.5	34.3	32.6	31.0	28.7	27.0	25.3	24.2
75°	30.4	28.7	26.5	25.3	24.2	23.1	20.8	19.7	19.1	18.0	16.9
77.5°	19.7	18.0	16.9	15.8	15.8	14.6	13.5	12.9	11.8	11.8	11.3
80°	10.1	9.6	9.0	9.0	9.0	7.9	7.3	7.3	6.8	6.2	6.2
82.5°	4.5	4.5	3.9	3.9	3.9	3.4	3.4	2.8	2.8	2.3	2.3
85°	1.7	1.7	1.7	1.7	1.7	1.1	1.1	1.1	0.6	0.6	0.6
87.5°	1.7	1.7	1.7	1.7	1.7	1.1	1.1	1.1	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: P345466

CATALOG NUMBER: PR4FS12D010 PR4M12WW8FSBZ 1000lm3000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	426.1	426.1	426.1	426.1	426.1	426.1	426.1	426.1
2.5°	440.8	441.9	441.9	442.5	443.0	443.6	443.0	443.6
5°	452.6	454.3	454.8	454.8	456.0	456.5	457.7	457.7
7.5°	461.6	463.3	464.4	465.0	466.1	467.2	467.2	467.2
10°	466.1	467.8	468.3	469.5	470.0	470.6	471.2	471.2
12.5°	464.4	466.1	466.7	466.7	467.8	467.8	467.8	468.3
15°	457.1	456.5	456.5	456.5	456.0	456.0	456.0	455.4
17.5°	442.5	441.9	441.9	441.9	441.3	440.8	440.2	439.1
20°	426.1	425.0	423.9	424.4	423.3	422.8	422.2	422.2
22.5°	407.0	405.3	404.7	404.2	403.0	402.5	401.4	401.4
25°	386.2	385.0	383.3	382.8	382.2	381.1	380.0	380.0
27.5°	364.2	362.5	362.0	360.8	360.3	359.1	358.6	359.1
30°	341.7	340.0	339.4	338.3	336.1	337.2	336.1	335.5
32.5°	318.0	316.4	315.2	314.1	314.1	312.4	312.4	311.9
35°	295.0	293.3	292.2	291.6	290.5	290.5	289.3	288.8
37.5°	272.5	270.8	269.6	269.1	267.9	266.8	266.3	266.8
40°	249.4	247.7	246.6	246.0	244.9	243.7	243.7	243.7
42.5°	226.9	225.2	225.2	224.0	222.4	221.8	221.2	221.2
45°	206.0	203.8	203.2	202.1	202.1	201.0	200.4	200.4
47.5°	184.1	182.4	181.8	181.3	180.7	180.1	180.1	180.1
50°	163.8	161.6	161.6	160.4	159.9	160.4	159.3	158.7
52.5°	143.5	141.9	141.3	141.3	140.2	140.2	140.2	139.6
55°	123.3	122.2	122.2	121.6	120.5	121.0	121.0	119.9
57.5°	104.7	103.0	103.0	102.5	102.5	102.5	101.3	102.5
60°	87.3	86.1	85.6	85.0	84.4	84.4	84.4	83.9
62.5°	70.9	69.8	69.2	68.7	67.5	67.5	66.4	65.9
65°	56.3	55.2	54.0	53.5	52.4	51.8	51.8	51.2
67.5°	42.8	41.7	40.5	40.0	38.8	38.3	37.7	37.7
70°	32.1	30.4	30.4	29.8	29.3	29.3	28.7	28.7
72.5°	23.1	23.1	22.5	22.5	22.0	22.0	22.0	22.0
75°	16.3	16.3	16.3	16.3	15.8	15.8	15.2	15.2
77.5°	10.7	10.7	10.7	10.1	10.1	10.1	10.1	10.1
80°	5.6	5.6	5.6	5.6	5.6	5.1	5.6	5.1
82.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
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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