

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: P345467

Luminaire Tested: **PR4FS12D010 PR4M12WW8FSBZ 1000Lm3500K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P345467
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 1000lm3500K
Description: PR4 WALLWASH ASSEMBLY WITH, BRONZE FINISH
Light Source: ARRAY OF HIGH LUMEN LEDs 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 848.3 lumens
Efficiency: N/A
Efficacy: 84.0 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

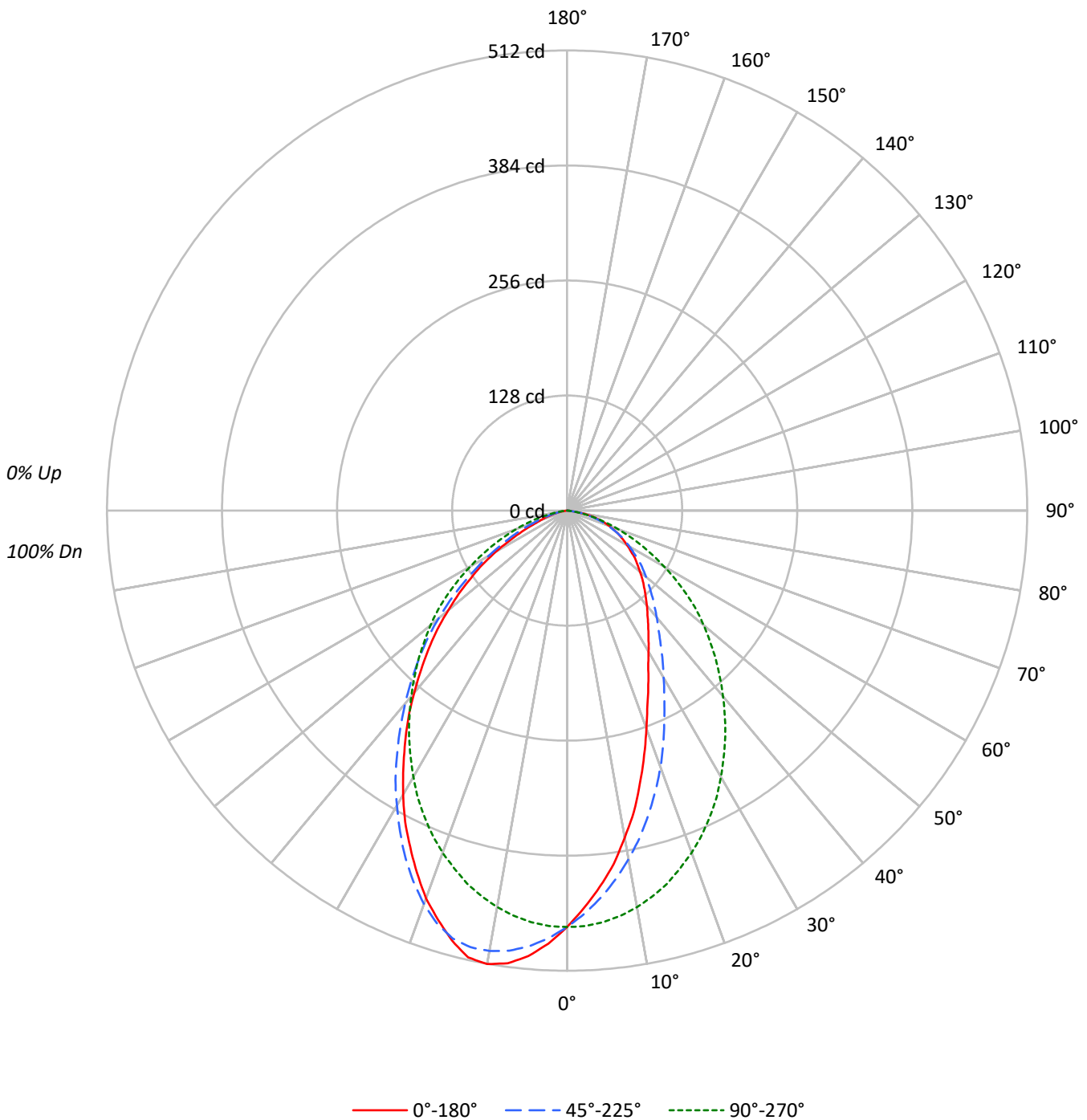
Input Watts (W): 10.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	40525	40525	40525
5°	36869	40363	43691
10°	32783	39791	45502
15°	28380	38911	44843
20°	23987	37717	42725
25°	20615	36269	39869
30°	18301	34552	36845
35°	16797	32739	33529
40°	15792	30818	30259
45°	14992	28921	26954
50°	14411	26984	23487
55°	13999	24644	19886
60°	13488	21727	15954
65°	13184	18752	11528
70°	12685	15345	7979
75°	11795	11592	5576
80°	8009	6145	2770
85°	602	2409	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	43.4	5.1
10°-20°	117.4	13.8
20°-30°	158.0	18.6
30°-40°	165.5	19.5
40°-50°	148.4	17.5
50°-60°	113.6	13.4
60°-70°	69.2	8.2
70°-80°	29.4	3.5
80°-90°	3.3	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°	318.8	37.6
0°-40°	484.3	57.1
0°-60°	746.4	88.0
0°-90°	848.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	848.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	463	463	463	463	463	
5°	420	432	460	487	498	39
15°	313	350	430	493	495	87
25°	214	256	376	426	413	99
35°	157	181	307	330	314	99
45°	121	133	234	233	218	94
55°	92	97	162	141	130	82
65°	64	64	91	67	56	63
75°	35	31	34	21	16	36
85°	1	1	2	1	0	4
90°	0	0	0	0	0	



TEST NUMBER: P345467

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	463.3	463.3	463.3	463.3	463.3	463.3	463.3	463.3	463.3	463.3	463.3
2.5°	441.9	442.5	443.7	443.1	444.4	444.4	444.4	445.6	446.8	447.4	448.6
5°	419.9	420.5	421.1	422.3	422.9	422.3	424.2	426.0	427.8	430.3	432.1
7.5°	396.6	396.6	396.0	397.8	400.3	400.9	402.1	404.0	406.4	410.1	413.8
10°	369.1	369.7	370.9	371.5	375.2	375.8	377.6	380.1	384.4	388.7	393.6
12.5°	343.4	342.8	343.4	345.2	347.7	350.7	352.5	355.6	361.1	366.6	372.7
15°	313.4	314.0	315.8	317.7	321.3	323.2	326.2	331.7	337.2	342.8	350.1
17.5°	285.2	284.6	287.1	290.1	293.2	296.2	298.7	303.6	310.9	318.9	326.8
20°	257.7	257.1	258.9	261.4	266.2	268.1	271.1	278.5	285.2	293.8	303.6
22.5°	233.2	233.2	235.0	238.1	241.2	243.0	246.1	252.2	260.1	269.9	279.7
25°	213.6	213.6	214.8	216.7	220.3	222.2	225.2	229.5	236.9	246.1	255.8
27.5°	195.2	196.5	197.1	198.9	202.0	203.8	205.7	210.6	216.7	224.6	233.8
30°	181.2	181.8	182.4	183.6	186.1	187.3	189.7	194.0	199.5	206.3	214.8
32.5°	168.3	168.9	168.9	170.8	172.6	174.4	175.7	179.3	183.0	189.7	197.7
35°	157.3	157.3	158.5	159.1	160.4	161.6	162.8	165.9	170.2	175.1	181.2
37.5°	146.9	146.9	147.5	148.7	150.0	151.2	151.8	154.2	157.9	162.2	167.1
40°	138.3	138.3	138.3	139.6	140.8	141.4	142.0	144.4	147.5	150.6	154.9
42.5°	129.1	129.8	130.4	131.0	131.6	132.8	133.4	134.7	137.1	139.6	143.8
45°	121.2	121.8	121.8	122.4	123.6	123.6	124.2	126.1	127.9	130.4	133.4
47.5°	113.8	113.8	113.8	114.5	115.1	115.7	116.3	117.5	119.4	120.6	123.6
50°	105.9	105.9	106.5	107.1	107.7	107.7	108.3	108.9	110.8	112.0	114.5
52.5°	98.5	98.5	99.2	99.2	99.8	99.8	100.4	101.6	102.2	104.1	105.9
55°	91.8	91.2	91.8	91.8	91.8	92.4	92.4	93.6	94.9	95.5	97.3
57.5°	83.9	84.5	84.5	85.1	85.1	85.1	85.7	85.7	86.9	87.5	88.1
60°	77.1	77.7	77.7	77.7	77.7	77.7	78.3	78.3	79.0	79.6	80.2
62.5°	70.4	70.4	70.4	70.4	70.4	71.0	71.0	71.0	71.0	71.6	72.2
65°	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7	64.3
67.5°	56.3	56.3	56.3	56.9	56.3	56.3	56.3	56.3	56.3	56.3	55.7
70°	49.6	49.6	49.6	49.6	49.6	49.0	49.0	48.4	48.4	47.7	47.7
72.5°	42.2	42.2	42.2	41.6	41.6	41.6	41.0	40.4	39.8	39.8	39.8
75°	34.9	34.9	34.3	34.3	33.7	33.7	33.1	32.4	31.8	31.2	31.2
77.5°	26.3	26.3	26.3	26.3	25.7	25.1	25.1	24.5	23.9	23.9	23.3
80°	15.9	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	14.7	14.7
82.5°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
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°	463.3	463.3	463.3	463.3	463.3	463.3	463.3	463.3	463.3	463.3	463.3
2.5°	449.9	451.1	452.9	454.2	454.8	455.4	457.2	459.0	460.9	462.7	463.9
5°	435.2	437.6	440.1	443.1	444.4	446.2	449.9	452.9	456.0	459.7	462.7
7.5°	417.4	421.7	426.0	430.9	432.7	434.6	439.5	445.0	449.3	454.8	459.7
10°	399.1	404.0	409.5	416.2	419.3	422.3	428.4	435.2	441.3	448.0	454.2
12.5°	378.3	386.2	393.6	400.9	404.0	407.6	415.6	423.5	431.5	439.5	446.8
15°	357.4	365.4	374.6	383.2	387.4	392.3	401.5	411.3	420.5	429.7	438.2
17.5°	336.6	344.6	354.4	365.4	370.9	375.8	385.6	396.6	407.6	417.4	428.4
20°	313.4	323.8	335.4	347.0	352.5	358.7	370.3	381.9	394.2	405.2	416.8
22.5°	290.7	301.7	315.8	327.5	333.6	339.7	353.2	366.6	378.9	391.1	402.7
25°	268.1	280.9	294.4	308.5	315.2	321.9	336.0	348.9	363.0	375.8	389.3
27.5°	246.1	259.5	273.6	288.3	295.6	303.0	317.1	331.7	345.8	359.9	373.4
30°	225.2	238.1	253.4	268.7	276.0	284.0	298.7	314.0	328.1	342.1	356.8
32.5°	206.9	217.9	233.2	248.5	256.5	264.4	280.3	295.6	309.7	324.4	339.7
35°	189.7	200.1	213.6	229.5	237.5	245.4	261.4	277.3	292.6	306.6	321.3
37.5°	175.1	184.2	195.9	209.9	219.1	227.1	243.0	258.9	273.6	288.3	302.4
40°	161.0	168.9	179.9	193.4	200.8	208.7	224.6	241.2	255.8	269.9	284.0
42.5°	148.7	155.5	164.6	176.3	184.2	191.0	207.5	223.4	237.5	251.6	265.6
45°	137.7	143.2	150.6	160.4	167.1	175.7	191.0	205.7	219.7	233.8	247.3
47.5°	126.7	131.6	137.7	146.9	152.4	159.1	174.4	188.5	202.6	215.4	228.3
50°	117.5	121.2	126.1	133.4	138.9	143.8	157.9	172.6	185.5	198.3	209.9
52.5°	108.3	110.8	115.1	121.8	125.5	130.4	142.6	156.1	168.9	181.2	191.6
55°	99.2	101.6	104.7	109.6	113.2	116.9	127.3	140.2	151.8	161.6	172.0
57.5°	90.0	91.8	94.3	98.5	101.0	104.1	112.6	123.0	133.4	143.2	151.2
60°	82.0	83.2	85.1	87.5	89.4	91.2	97.3	107.1	116.9	124.2	131.6
62.5°	72.8	73.4	74.7	77.1	78.3	79.6	83.9	92.4	100.4	107.1	113.2
65°	64.3	64.9	65.5	66.7	67.9	68.6	72.2	78.3	85.1	90.6	94.9
67.5°	55.7	56.3	56.3	57.5	57.5	58.8	60.6	64.3	70.4	74.7	78.3
70°	47.1	47.7	47.7	48.4	47.7	48.4	50.2	52.6	56.3	60.0	62.4
72.5°	39.2	38.6	38.6	38.6	38.6	39.2	39.8	41.0	44.1	47.1	47.7
75°	30.6	30.6	30.0	30.0	30.0	30.0	30.0	30.6	32.4	34.3	34.9
77.5°	22.6	22.0	22.0	21.4	21.4	21.4	20.8	20.8	21.4	22.6	22.6
80°	14.7	14.1	13.5	14.1	12.9	13.5	12.9	12.2	12.2	12.2	11.6
82.5°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	5.5	5.5	5.5
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°	463.3	463.3	463.3	463.3	463.3	463.3	463.3	463.3	463.3	463.3	463.3
2.5°	465.8	467.6	469.5	470.1	470.7	472.5	473.7	475.6	476.2	477.4	478.6
5°	465.8	469.5	472.5	474.4	475.6	478.6	481.7	483.5	486.6	488.4	490.3
7.5°	464.6	469.5	473.7	476.2	478.6	482.3	486.6	490.3	493.9	496.4	499.4
10°	460.9	467.0	472.5	475.6	478.6	484.1	489.0	493.3	497.6	501.3	504.3
12.5°	455.4	462.7	469.5	473.1	476.2	482.9	488.4	493.3	497.6	500.7	503.1
15°	447.4	456.6	464.6	468.2	471.9	479.2	484.8	489.0	492.7	494.5	496.4
17.5°	438.2	448.0	457.2	461.5	465.2	471.9	476.8	479.9	481.7	482.9	482.3
20°	427.8	438.2	447.4	451.7	456.0	461.5	465.2	466.4	465.8	465.2	463.9
22.5°	415.0	426.0	435.8	439.5	443.1	447.4	448.6	448.0	446.8	445.6	443.7
25°	401.5	412.5	421.7	424.8	427.8	429.7	429.1	427.8	426.0	424.2	421.1
27.5°	386.2	397.8	405.2	408.9	409.5	409.5	407.6	405.8	402.7	400.3	397.2
30°	370.3	380.1	387.4	388.7	389.3	388.0	386.2	383.2	378.9	377.0	374.0
32.5°	351.9	362.3	367.9	367.9	366.6	364.8	361.1	358.1	355.6	351.3	348.3
35°	334.8	342.8	345.8	345.8	344.0	340.9	337.9	333.6	329.9	327.5	323.2
37.5°	315.2	323.2	324.4	322.6	321.3	317.7	312.8	309.1	304.8	301.7	298.7
40°	296.9	302.4	301.1	299.3	298.1	294.4	288.9	284.6	280.3	276.7	273.6
42.5°	276.0	279.7	277.9	276.7	274.2	269.9	265.0	260.7	256.5	252.8	249.7
45°	257.1	258.9	255.8	253.4	251.6	246.7	243.0	236.9	232.6	228.9	226.5
47.5°	236.9	236.9	233.8	231.4	228.3	223.4	219.1	213.0	210.6	205.7	203.2
50°	217.3	215.4	211.8	208.7	206.3	200.8	195.2	191.0	186.7	183.0	180.6
52.5°	196.5	194.0	189.1	186.1	184.8	178.1	173.2	167.7	164.0	159.7	157.3
55°	175.7	172.0	166.5	164.0	161.6	156.1	150.6	145.1	141.4	138.3	135.9
57.5°	154.2	150.0	145.1	142.0	138.9	133.4	127.9	123.0	120.0	116.9	115.1
60°	132.2	129.1	124.2	121.2	118.1	113.2	107.1	103.4	101.0	97.3	96.7
62.5°	113.2	108.9	103.4	101.0	98.5	93.6	88.7	85.7	82.6	80.8	78.3
65°	94.3	90.0	85.1	82.6	80.8	76.5	72.8	69.8	67.3	64.9	63.0
67.5°	75.9	72.8	68.6	66.7	64.3	60.6	57.5	55.1	52.6	50.2	48.4
70°	60.6	56.9	53.2	52.0	50.8	47.1	44.7	42.2	39.8	37.9	36.1
72.5°	46.5	43.5	40.4	38.6	37.3	35.5	33.7	31.2	29.4	27.5	26.3
75°	33.1	31.2	28.8	27.5	26.3	25.1	22.6	21.4	20.8	19.6	18.4
77.5°	21.4	19.6	18.4	17.1	17.1	15.9	14.7	14.1	12.9	12.9	12.2
80°	11.0	10.4	9.8	9.8	9.8	8.6	8.0	8.0	7.3	6.7	6.7
82.5°	4.9	4.9	4.3	4.3	4.3	3.7	3.7	3.1	3.1	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



TEST NUMBER: P345467

CATALOG NUMBER: PR4FS12D010 PR4M12WW8FSBZ 1000lm3500K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	463.3	463.3	463.3	463.3	463.3	463.3	463.3	463.3
2.5°	479.2	480.5	480.5	481.1	481.7	482.3	481.7	482.3
5°	492.1	493.9	494.5	494.5	495.8	496.4	497.6	497.6
7.5°	501.9	503.7	505.0	505.6	506.8	508.0	508.0	508.0
10°	506.8	508.6	509.2	510.5	511.1	511.7	512.3	512.3
12.5°	505.0	506.8	507.4	507.4	508.6	508.6	508.6	509.2
15°	497.0	496.4	496.4	496.4	495.8	495.8	495.8	495.2
17.5°	481.1	480.5	480.5	480.5	479.9	479.2	478.6	477.4
20°	463.3	462.1	460.9	461.5	460.3	459.7	459.0	459.0
22.5°	442.5	440.7	440.1	439.5	438.2	437.6	436.4	436.4
25°	419.9	418.7	416.8	416.2	415.6	414.4	413.1	413.1
27.5°	396.0	394.2	393.6	392.3	391.7	390.5	389.9	390.5
30°	371.5	369.7	369.1	367.9	365.4	366.6	365.4	364.8
32.5°	345.8	344.0	342.8	341.5	341.5	339.7	339.7	339.1
35°	320.7	318.9	317.7	317.1	315.8	315.8	314.6	314.0
37.5°	296.2	294.4	293.2	292.6	291.3	290.1	289.5	290.1
40°	271.1	269.3	268.1	267.5	266.2	265.0	265.0	265.0
42.5°	246.7	244.8	244.8	243.6	241.8	241.2	240.5	240.5
45°	224.0	221.6	221.0	219.7	219.7	218.5	217.9	217.9
47.5°	200.1	198.3	197.7	197.1	196.5	195.9	195.9	195.9
50°	178.1	175.7	175.7	174.4	173.8	174.4	173.2	172.6
52.5°	156.1	154.2	153.6	153.6	152.4	152.4	152.4	151.8
55°	134.0	132.8	132.8	132.2	131.0	131.6	131.6	130.4
57.5°	113.8	112.0	112.0	111.4	111.4	111.4	110.2	111.4
60°	94.9	93.6	93.0	92.4	91.8	91.8	91.8	91.2
62.5°	77.1	75.9	75.3	74.7	73.4	73.4	72.2	71.6
65°	61.2	60.0	58.8	58.1	56.9	56.3	56.3	55.7
67.5°	46.5	45.3	44.1	43.5	42.2	41.6	41.0	41.0
70°	34.9	33.1	33.1	32.4	31.8	31.8	31.2	31.2
72.5°	25.1	25.1	24.5	24.5	23.9	23.9	23.9	23.9
75°	17.7	17.7	17.7	17.7	17.1	17.1	16.5	16.5
77.5°	11.6	11.6	11.6	11.0	11.0	11.0	11.0	11.0
80°	6.1	6.1	6.1	6.1	6.1	5.5	6.1	5.5
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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