

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: P345472

Luminaire Tested: **PR4FS12D010 PR4M12WW8FSBZ 1500Lm3000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P345472
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 1500lm3000K
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: 1031.5 lumens
Efficiency: N/A
Efficacy: 74.2 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

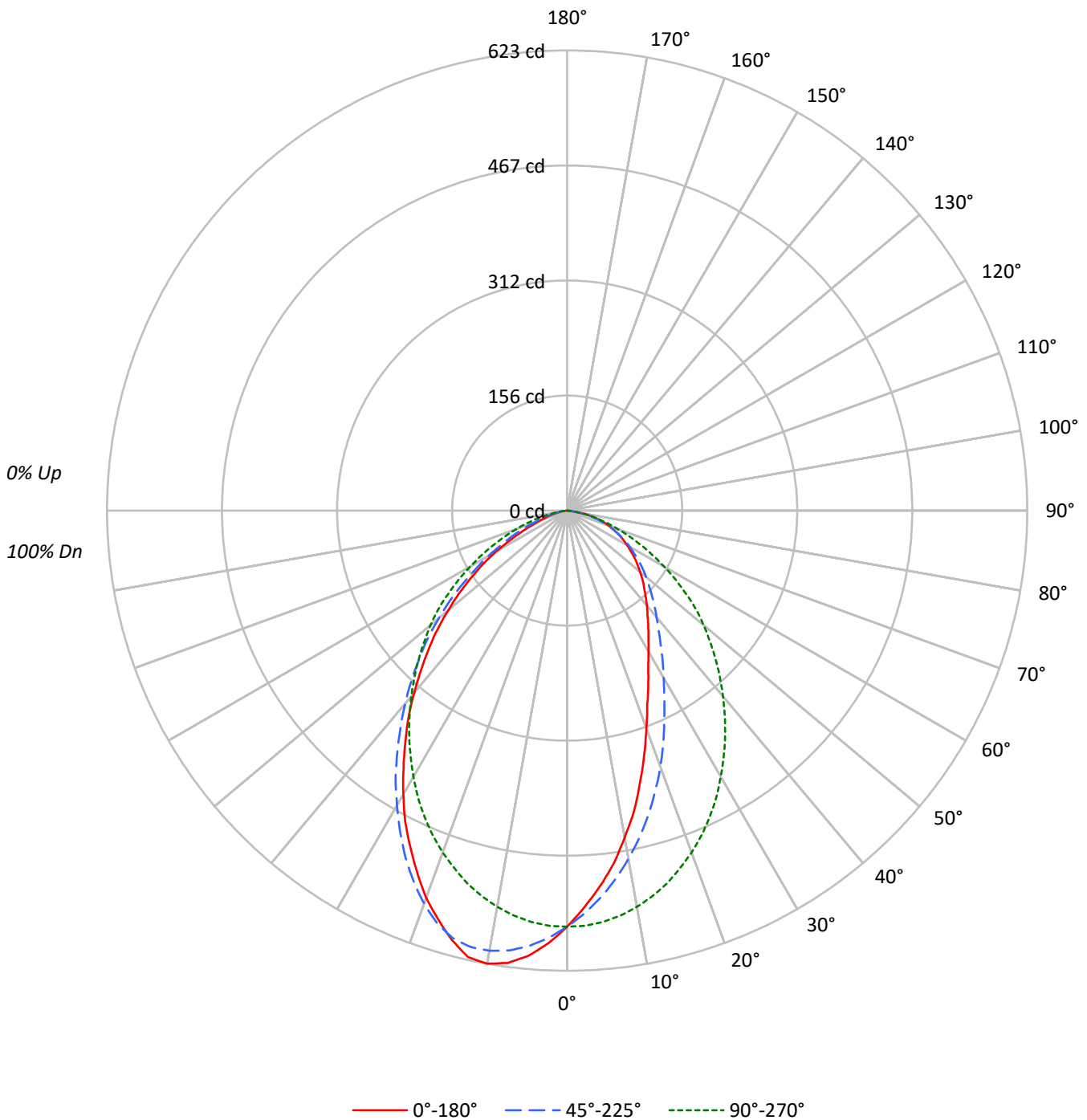
Input Watts (W): 13.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	49280	49280	49280
5°	44824	49073	53130
10°	39862	48388	55325
15°	34511	47315	54523
20°	29163	45862	51959
25°	25064	44106	48488
30°	22251	42016	44804
35°	20427	39818	40769
40°	19206	37475	36801
45°	18233	35168	32768
50°	17527	32808	28563
55°	17019	29966	24171
60°	16409	26433	19401
65°	16020	22787	14012
70°	15421	18644	9718
75°	14329	14093	6793
80°	9772	7505	3375
85°	703	3011	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.8	5.1
10°-20°	142.7	13.8
20°-30°	192.1	18.6
30°-40°	201.3	19.5
40°-50°	180.5	17.5
50°-60°	138.2	13.4
60°-70°	84.2	8.2
70°-80°	35.8	3.5
80°-90°	4.0	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°	387.6	37.6
0°-40°	588.9	57.1
0°-60°	907.6	88.0
0°-90°	1031.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1031.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	563	563	563	563	563	
5°	510	525	559	592	605	47
15°	381	426	522	599	602	106
25°	260	311	457	518	502	120
35°	191	220	373	401	382	120
45°	147	162	284	283	265	114
55°	112	118	196	172	158	99
65°	77	78	110	82	68	76
75°	42	38	42	25	20	44
85°	1	2	3	1	0	5
90°	0	0	0	0	0	



TEST NUMBER: P345472

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4
2.5°	537.3	538.1	539.6	538.8	540.3	540.3	540.3	541.8	543.3	544.0	545.5
5°	510.5	511.3	512.0	513.5	514.3	513.5	515.8	518.0	520.2	523.2	525.4
7.5°	482.3	482.3	481.5	483.8	486.7	487.5	489.0	491.2	494.2	498.6	503.1
10°	448.8	449.5	451.0	451.8	456.2	457.0	459.2	462.2	467.4	472.6	478.5
12.5°	417.5	416.8	417.5	419.8	422.7	426.4	428.7	432.4	439.1	445.8	453.2
15°	381.1	381.8	384.0	386.3	390.7	393.0	396.7	403.4	410.1	416.8	425.7
17.5°	346.8	346.1	349.0	352.8	356.5	360.2	363.2	369.1	378.1	387.7	397.4
20°	313.3	312.6	314.8	317.8	323.7	326.0	329.7	338.6	346.8	357.2	369.1
22.5°	283.6	283.6	285.8	289.5	293.2	295.5	299.2	306.6	316.3	328.2	340.1
25°	259.7	259.7	261.2	263.5	267.9	270.2	273.9	279.1	288.0	299.2	311.1
27.5°	237.4	238.9	239.6	241.9	245.6	247.8	250.1	256.0	263.5	273.1	284.3
30°	220.3	221.0	221.8	223.3	226.2	227.7	230.7	235.9	242.6	250.8	261.2
32.5°	204.7	205.4	205.4	207.6	209.9	212.1	213.6	218.1	222.5	230.7	240.4
35°	191.3	191.3	192.8	193.5	195.0	196.5	198.0	201.7	206.9	212.9	220.3
37.5°	178.6	178.6	179.4	180.9	182.3	183.8	184.6	187.5	192.0	197.2	203.2
40°	168.2	168.2	168.2	169.7	171.2	171.9	172.7	175.6	179.4	183.1	188.3
42.5°	157.0	157.8	158.5	159.3	160.0	161.5	162.2	163.7	166.7	169.7	174.9
45°	147.4	148.1	148.1	148.8	150.3	150.3	151.1	153.3	155.5	158.5	162.2
47.5°	138.4	138.4	138.4	139.2	139.9	140.7	141.4	142.9	145.1	146.6	150.3
50°	128.8	128.8	129.5	130.2	131.0	131.0	131.7	132.5	134.7	136.2	139.2
52.5°	119.8	119.8	120.6	120.6	121.3	121.3	122.1	123.5	124.3	126.5	128.8
55°	111.6	110.9	111.6	111.6	111.6	112.4	112.4	113.9	115.4	116.1	118.3
57.5°	102.0	102.7	102.7	103.4	103.4	103.4	104.2	104.2	105.7	106.4	107.2
60°	93.8	94.5	94.5	94.5	94.5	94.5	95.3	95.3	96.0	96.8	97.5
62.5°	85.6	85.6	85.6	85.6	85.6	86.3	86.3	86.3	86.3	87.1	87.8
65°	77.4	77.4	77.4	77.4	77.4	77.4	77.4	77.4	77.4	77.4	78.1
67.5°	68.5	68.5	68.5	69.2	68.5	68.5	68.5	68.5	68.5	68.5	67.7
70°	60.3	60.3	60.3	60.3	60.3	59.5	59.5	58.8	58.8	58.1	58.1
72.5°	51.4	51.4	51.4	50.6	50.6	50.6	49.9	49.1	48.4	48.4	48.4
75°	42.4	42.4	41.7	41.7	40.9	40.9	40.2	39.4	38.7	38.0	38.0
77.5°	32.0	32.0	32.0	32.0	31.3	30.5	30.5	29.8	29.0	29.0	28.3
80°	19.4	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	17.9	17.9
82.5°	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
85°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.5
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	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°	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4
2.5°	547.0	548.5	550.7	552.2	553.0	553.7	555.9	558.2	560.4	562.6	564.1
5°	529.2	532.1	535.1	538.8	540.3	542.6	547.0	550.7	554.5	558.9	562.6
7.5°	507.6	512.8	518.0	523.9	526.2	528.4	534.4	541.1	546.3	553.0	558.9
10°	485.2	491.2	497.9	506.1	509.8	513.5	521.0	529.2	536.6	544.8	552.2
12.5°	459.9	469.6	478.5	487.5	491.2	495.7	505.3	515.0	524.7	534.4	543.3
15°	434.6	444.3	455.5	465.9	471.1	477.1	488.2	500.1	511.3	522.5	532.9
17.5°	409.3	419.0	430.9	444.3	451.0	457.0	468.9	482.3	495.7	507.6	521.0
20°	381.1	393.7	407.8	422.0	428.7	436.1	450.3	464.4	479.3	492.7	506.8
22.5°	353.5	366.9	384.0	398.2	405.6	413.1	429.4	445.8	460.7	475.6	489.7
25°	326.0	341.6	358.0	375.1	383.3	391.5	408.6	424.2	441.3	457.0	473.3
27.5°	299.2	315.6	332.7	350.5	359.5	368.4	385.5	403.4	420.5	437.6	454.0
30°	273.9	289.5	308.1	326.7	335.7	345.3	363.2	381.8	398.9	416.0	433.9
32.5°	251.6	264.9	283.6	302.2	311.8	321.5	340.9	359.5	376.6	394.4	413.1
35°	230.7	243.4	259.7	279.1	288.8	298.4	317.8	337.1	355.7	372.9	390.7
37.5°	212.9	224.0	238.2	255.3	266.4	276.1	295.5	314.8	332.7	350.5	367.7
40°	195.7	205.4	218.8	235.2	244.1	253.8	273.1	293.2	311.1	328.2	345.3
42.5°	180.9	189.0	200.2	214.3	224.0	232.2	252.3	271.6	288.8	305.9	323.0
45°	167.5	174.2	183.1	195.0	203.2	213.6	232.2	250.1	267.2	284.3	300.7
47.5°	154.1	160.0	167.5	178.6	185.3	193.5	212.1	229.2	246.3	262.0	277.6
50°	142.9	147.4	153.3	162.2	168.9	174.9	192.0	209.9	225.5	241.1	255.3
52.5°	131.7	134.7	139.9	148.1	152.6	158.5	173.4	189.8	205.4	220.3	232.9
55°	120.6	123.5	127.3	133.2	137.7	142.1	154.8	170.4	184.6	196.5	209.1
57.5°	109.4	111.6	114.6	119.8	122.8	126.5	136.9	149.6	162.2	174.2	183.8
60°	99.7	101.2	103.4	106.4	108.7	110.9	118.3	130.2	142.1	151.1	160.0
62.5°	88.6	89.3	90.8	93.8	95.3	96.8	102.0	112.4	122.1	130.2	137.7
65°	78.1	78.9	79.6	81.1	82.6	83.4	87.8	95.3	103.4	110.1	115.4
67.5°	67.7	68.5	68.5	70.0	70.0	71.4	73.7	78.1	85.6	90.8	95.3
70°	57.3	58.1	58.1	58.8	58.1	58.8	61.0	64.0	68.5	72.9	75.9
72.5°	47.6	46.9	46.9	46.9	46.9	47.6	48.4	49.9	53.6	57.3	58.1
75°	37.2	37.2	36.5	36.5	36.5	36.5	36.5	37.2	39.4	41.7	42.4
77.5°	27.5	26.8	26.8	26.0	26.0	26.0	25.3	25.3	26.0	27.5	27.5
80°	17.9	17.1	16.4	17.1	15.6	16.4	15.6	14.9	14.9	14.9	14.1
82.5°	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	6.7	6.7	6.7
85°	1.5	1.5	2.2	2.2	2.2	2.2	2.2	2.2	3.0	3.0	2.2
87.5°	1.5	1.5	1.5	2.2	2.2	2.2	2.2	2.2	3.0	3.0	3.0
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°	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4
2.5°	566.4	568.6	570.8	571.6	572.3	574.6	576.0	578.3	579.0	580.5	582.0
5°	566.4	570.8	574.6	576.8	578.3	582.0	585.7	587.9	591.7	593.9	596.1
7.5°	564.9	570.8	576.0	579.0	582.0	586.5	591.7	596.1	600.6	603.6	607.3
10°	560.4	567.9	574.6	578.3	582.0	588.7	594.6	599.9	605.1	609.5	613.3
12.5°	553.7	562.6	570.8	575.3	579.0	587.2	593.9	599.9	605.1	608.8	611.8
15°	544.0	555.2	564.9	569.3	573.8	582.7	589.4	594.6	599.1	601.3	603.6
17.5°	532.9	544.8	555.9	561.2	565.6	573.8	579.8	583.5	585.7	587.2	586.5
20°	520.2	532.9	544.0	549.2	554.5	561.2	565.6	567.1	566.4	565.6	564.1
22.5°	504.6	518.0	529.9	534.4	538.8	544.0	545.5	544.8	543.3	541.8	539.6
25°	488.2	501.6	512.8	516.5	520.2	522.5	521.7	520.2	518.0	515.8	512.0
27.5°	469.6	483.8	492.7	497.2	497.9	497.9	495.7	493.4	489.7	486.7	483.0
30°	450.3	462.2	471.1	472.6	473.3	471.8	469.6	465.9	460.7	458.5	454.7
32.5°	427.9	440.6	447.3	447.3	445.8	443.6	439.1	435.4	432.4	427.2	423.5
35°	407.1	416.8	420.5	420.5	418.3	414.5	410.8	405.6	401.1	398.2	393.0
37.5°	383.3	393.0	394.4	392.2	390.7	386.3	380.3	375.8	370.6	366.9	363.2
40°	361.0	367.7	366.2	363.9	362.4	358.0	351.3	346.1	340.9	336.4	332.7
42.5°	335.7	340.1	337.9	336.4	333.4	328.2	322.3	317.0	311.8	307.4	303.7
45°	312.6	314.8	311.1	308.1	305.9	299.9	295.5	288.0	282.8	278.3	275.4
47.5°	288.0	288.0	284.3	281.3	277.6	271.6	266.4	259.0	256.0	250.1	247.1
50°	264.2	262.0	257.5	253.8	250.8	244.1	237.4	232.2	227.0	222.5	219.6
52.5°	238.9	235.9	230.0	226.2	224.8	216.6	210.6	203.9	199.5	194.2	191.3
55°	213.6	209.1	202.4	199.5	196.5	189.8	183.1	176.4	171.9	168.2	165.2
57.5°	187.5	182.3	176.4	172.7	168.9	162.2	155.5	149.6	145.9	142.1	139.9
60°	160.8	157.0	151.1	147.4	143.6	137.7	130.2	125.8	122.8	118.3	117.6
62.5°	137.7	132.5	125.8	122.8	119.8	113.9	107.9	104.2	100.5	98.2	95.3
65°	114.6	109.4	103.4	100.5	98.2	93.0	88.6	84.8	81.9	78.9	76.7
67.5°	92.3	88.6	83.4	81.1	78.1	73.7	70.0	67.0	64.0	61.0	58.8
70°	73.7	69.2	64.7	63.3	61.8	57.3	54.3	51.4	48.4	46.1	43.9
72.5°	56.6	52.8	49.1	46.9	45.4	43.2	40.9	38.0	35.7	33.5	32.0
75°	40.2	38.0	35.0	33.5	32.0	30.5	27.5	26.0	25.3	23.8	22.3
77.5°	26.0	23.8	22.3	20.8	20.8	19.4	17.9	17.1	15.6	15.6	14.9
80°	13.4	12.7	11.9	11.9	11.9	10.4	9.7	9.7	8.9	8.2	8.2
82.5°	6.0	6.0	5.2	5.2	5.2	4.5	4.5	3.7	3.7	3.0	3.0
85°	2.2	2.2	2.2	2.2	2.2	1.5	1.5	1.5	0.7	0.7	0.7
87.5°	2.2	2.2	2.2	2.2	2.2	1.5	1.5	1.5	0.7	0.7	0.7
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: P345472

CATALOG NUMBER: PR4FS12D010 PR4M12WW8FSBZ 1500lm3000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	563.4	563.4	563.4	563.4	563.4	563.4	563.4	563.4
2.5°	582.7	584.2	584.2	585.0	585.7	586.5	585.7	586.5
5°	598.4	600.6	601.3	601.3	602.8	603.6	605.1	605.1
7.5°	610.3	612.5	614.0	614.7	616.2	617.7	617.7	617.7
10°	616.2	618.5	619.2	620.7	621.4	622.2	622.9	622.9
12.5°	614.0	616.2	617.0	617.0	618.5	618.5	618.5	619.2
15°	604.3	603.6	603.6	603.6	602.8	602.8	602.8	602.1
17.5°	585.0	584.2	584.2	584.2	583.5	582.7	582.0	580.5
20°	563.4	561.9	560.4	561.2	559.7	558.9	558.2	558.2
22.5°	538.1	535.9	535.1	534.4	532.9	532.1	530.6	530.6
25°	510.5	509.1	506.8	506.1	505.3	503.9	502.4	502.4
27.5°	481.5	479.3	478.5	477.1	476.3	474.8	474.1	474.8
30°	451.8	449.5	448.8	447.3	444.3	445.8	444.3	443.6
32.5°	420.5	418.3	416.8	415.3	415.3	413.1	413.1	412.3
35°	390.0	387.7	386.3	385.5	384.0	384.0	382.5	381.8
37.5°	360.2	358.0	356.5	355.7	354.3	352.8	352.0	352.8
40°	329.7	327.5	326.0	325.2	323.7	322.3	322.3	322.3
42.5°	299.9	297.7	297.7	296.2	294.0	293.2	292.5	292.5
45°	272.4	269.4	268.7	267.2	267.2	265.7	264.9	264.9
47.5°	243.4	241.1	240.4	239.6	238.9	238.2	238.2	238.2
50°	216.6	213.6	213.6	212.1	211.4	212.1	210.6	209.9
52.5°	189.8	187.5	186.8	186.8	185.3	185.3	185.3	184.6
55°	163.0	161.5	161.5	160.8	159.3	160.0	160.0	158.5
57.5°	138.4	136.2	136.2	135.5	135.5	135.5	134.0	135.5
60°	115.4	113.9	113.1	112.4	111.6	111.6	111.6	110.9
62.5°	93.8	92.3	91.5	90.8	89.3	89.3	87.8	87.1
65°	74.4	72.9	71.4	70.7	69.2	68.5	68.5	67.7
67.5°	56.6	55.1	53.6	52.8	51.4	50.6	49.9	49.9
70°	42.4	40.2	40.2	39.4	38.7	38.7	38.0	38.0
72.5°	30.5	30.5	29.8	29.8	29.0	29.0	29.0	29.0
75°	21.6	21.6	21.6	21.6	20.8	20.8	20.1	20.1
77.5°	14.1	14.1	14.1	13.4	13.4	13.4	13.4	13.4
80°	7.4	7.4	7.4	7.4	7.4	6.7	7.4	6.7
82.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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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