

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: FAIL-SAFE

Report Number: 766698

Luminaire Tested: **DDGW-28xxxx**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: 766698  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: DDGW-28xxxx  
Description: FAIL-SAFE WHITE 12 x 12  
Light Source: #049 - GE 28W2D/827 2050 LUMENS  
TOTAL INPUT WATTS = 37.75 AT 120 VOLTS  
Ballast/Driver: ONE MAGNATEK #4123P

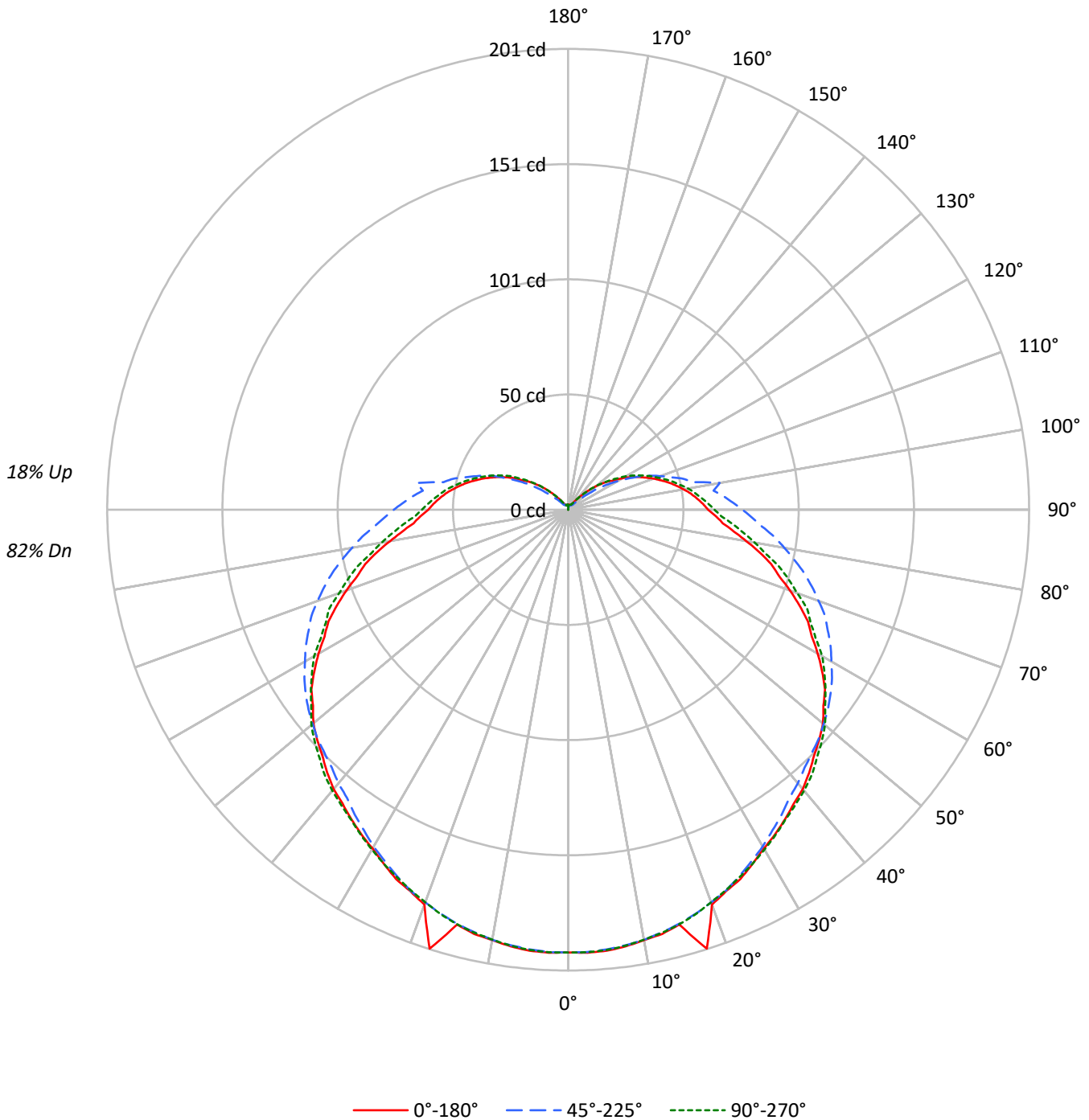
**Summary**

Lumens per Lamp: 2050 (1 lamp)  
Luminaire Lumens: 989.0 lumens  
Efficiency: 48.2%  
Efficacy: 35.3 lumens/watt  
Spacing Criteria (0/90/45): 1.32 / 1.33 / 1.5  
Luminous Opening: Point Source (0' x 0' x 0')  
CIE Type: Semi-Direct

Input Watts (W): 28  
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	55	55	55	55	53	53	53	53	49	49	49	45	45	45	41	41	41	39
1	49	46	43	40	46	44	41	39	40	38	36	36	35	33	33	32	31	29
2	43	39	35	31	41	37	33	30	34	31	28	31	28	26	28	26	24	23
3	39	33	29	25	37	32	28	24	29	26	23	27	24	21	24	22	20	18
4	36	29	25	21	34	28	24	20	26	22	19	23	20	18	21	19	17	15
5	33	26	21	18	31	25	20	17	23	19	16	21	18	15	19	16	14	13
6	30	23	18	15	28	22	18	15	20	17	14	19	16	13	17	14	12	11
7	28	21	16	13	26	20	16	13	18	15	12	17	14	11	16	13	11	10
8	26	19	15	12	24	18	14	11	17	13	11	15	12	10	14	12	10	9
9	24	17	13	10	23	17	13	10	15	12	10	14	11	9	13	11	9	8
10	22	16	12	9	21	15	12	9	14	11	9	13	10	8	12	10	8	7

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	Luminaire represents a point source (luminous area is zero).		
5°	No luminance values can be calculated.		
10°			
15°			
20°			
25°			
30°			
35°			
40°			
45°			
50°			
55°			
60°			
65°			
70°			
75°			
80°			
85°			



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	18.3	1.9	0.9	0°	193	193	193	193	193	
10°-20°	53.0	5.4	2.6	5°	193	193	192	193	193	18
20°-30°	81.6	8.2	4.0	15°	187	187	187	187	187	54
30°-40°	102.7	10.4	5.0	25°	178	176	176	177	177	82
40°-50°	117.1	11.8	5.7	35°	165	164	162	164	165	103
50°-60°	123.1	12.4	6.0	45°	152	151	150	152	153	117
60°-70°	119.4	12.1	5.8	55°	137	136	140	138	137	122
70°-80°	106.3	10.7	5.2	65°	115	120	125	122	117	114
80°-90°	86.5	8.8	4.2	75°	92	101	106	103	95	96
90°-100°	69.0	7.0	3.4	85°	68	80	85	81	72	58
100°-110°	51.4	5.2	2.5	90°	61	70	76	72	64	34
110°-120°	33.0	3.3	1.6	95°	56	63	68	64	58	45
120°-130°	17.3	1.8	0.8	105°	46	47	52	49	47	48
130°-140°	6.5	0.7	0.3	115°	34	31	34	32	35	33
140°-150°	2.0	0.2	0.1	125°	22	19	17	19	22	19
150°-160°	1.0	0.1	0.1	135°	11	8	5	8	11	8
160°-170°	0.5	0.1	0.0	145°	3	2	3	3	3	2
170°-180°	0.1	0.0	0.0	155°	2	2	2	2	2	1
0°-30°	152.9	15.5	7.5	165°	2	2	2	2	2	1
0°-40°	255.6	25.8	12.5	175°	2	2	2	2	2	0
0°-60°	495.8	50.1	24.2	180°	0	0	0	0	0	
0°-90°	808.1	81.7	39.4							
90°-120°	153.4	15.5	7.5							
90°-150°	179.2	18.1	8.7							
90°-180°	181.0	18.3	8.8							
0°-180°	989.0	100.0	48.2							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	193.1	193.1	193.1	193.1	193.1
2.5°	193.4	193.1	193.1	193.1	193.2
5°	193.1	192.7	192.5	192.6	192.8
7.5°	192.1	191.7	191.6	191.7	191.8
10°	190.6	190.6	190.5	190.4	190.4
12.5°	189.5	189.2	188.8	189.0	189.0
15°	187.3	187.2	187.0	186.8	187.2
17.5°	200.8	184.7	184.8	184.4	185.0
20°	183.3	182.1	182.3	182.7	182.2
22.5°	180.0	179.5	179.8	180.0	179.6
25°	177.7	176.1	176.4	176.8	176.8
27.5°	174.1	173.3	173.0	173.4	174.1
30°	170.6	170.0	169.6	170.4	171.2
32.5°	167.9	166.2	165.8	167.2	168.2
35°	164.8	163.7	162.3	163.6	165.1
37.5°	161.6	160.8	158.4	160.8	162.5
40°	159.1	157.5	155.8	158.1	160.0
42.5°	155.5	154.5	152.6	154.9	157.1
45°	151.6	151.2	150.2	151.9	153.3
47.5°	148.5	147.7	148.1	148.4	149.9
50°	145.0	143.8	145.4	144.9	146.2
52.5°	140.3	139.9	142.8	141.5	141.2
55°	136.7	136.0	139.7	137.7	137.0
57.5°	131.3	132.1	136.4	133.7	132.5
60°	125.7	128.0	132.5	129.7	127.9
62.5°	119.8	123.8	129.0	125.9	121.7
65°	115.3	119.7	124.9	121.7	116.6
67.5°	109.1	115.1	121.2	117.5	112.8
70°	102.9	111.1	116.2	112.1	106.2
72.5°	96.4	106.3	111.4	107.6	100.7
75°	91.6	100.9	106.5	102.8	95.0
77.5°	85.4	95.8	101.0	96.8	88.0
80°	78.8	90.6	95.7	91.7	82.6
82.5°	72.9	84.8	90.6	86.7	77.1
85°	67.7	79.7	84.9	80.9	72.0
87.5°	64.4	75.0	80.3	76.4	66.9
90°	61.0	70.5	76.0	71.9	63.8
92.5°	58.8	66.7	71.8	67.9	61.1
95°	56.3	62.9	67.9	64.3	58.4
97.5°	53.9	58.6	63.9	60.3	55.7
100°	51.1	55.2	67.1	56.3	53.2
102.5°	48.3	51.2	55.7	52.5	50.0
105°	45.5	46.8	52.0	48.7	47.2
107.5°	42.5	42.8	47.1	43.8	44.2
110°	39.6	38.9	42.8	40.7	41.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	36.6	34.5	38.8	36.4	38.3
115°	33.7	31.3	34.3	32.4	35.4
117.5°	30.6	28.2	29.3	28.9	32.3
120°	27.6	24.8	24.9	25.4	29.3
122.5°	23.7	21.5	20.7	22.3	25.5
125°	21.6	18.6	16.7	19.1	22.5
127.5°	18.8	15.8	12.6	16.4	19.4
130°	16.0	12.8	9.2	13.6	16.6
132.5°	13.3	10.2	6.8	10.9	13.2
135°	10.7	7.9	4.7	8.3	10.6
137.5°	8.1	6.5	3.1	6.5	8.2
140°	6.1	4.7	2.9	4.7	6.2
142.5°	4.5	3.5	2.6	3.3	4.8
145°	3.3	2.5	2.6	2.6	3.3
147.5°	2.6	2.4	2.5	2.7	2.8
150°	2.5	2.3	2.4	2.5	2.8
152.5°	2.3	2.2	2.3	2.5	2.5
155°	2.3	2.1	2.0	2.2	2.5
157.5°	2.3	2.0	1.9	2.1	2.3
160°	2.0	2.0	1.9	1.9	2.0
162.5°	2.0	1.9	1.8	1.9	1.9
165°	2.0	1.7	1.7	1.8	1.9
167.5°	2.0	1.8	1.6	1.8	1.9
170°	2.0	1.8	1.7	1.6	1.9
172.5°	2.0	1.8	1.7	1.8	1.9
175°	2.2	1.9	2.0	1.9	2.2
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)