

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: 766692

Luminaire Tested: **QDEW-28xxxx**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: 766692  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: QDEW-28xxxx  
Description: FAIL-SAFE WHITE 9 x 9  
Light Source: #036 - PHILIPS PL-C 15mm/28W/27 1600 LUMENS  
TOTAL INPUT WATTS = 35.25 AT 120 VOLTS  
Ballast/Driver: ONE ADVANCE #H1Q28

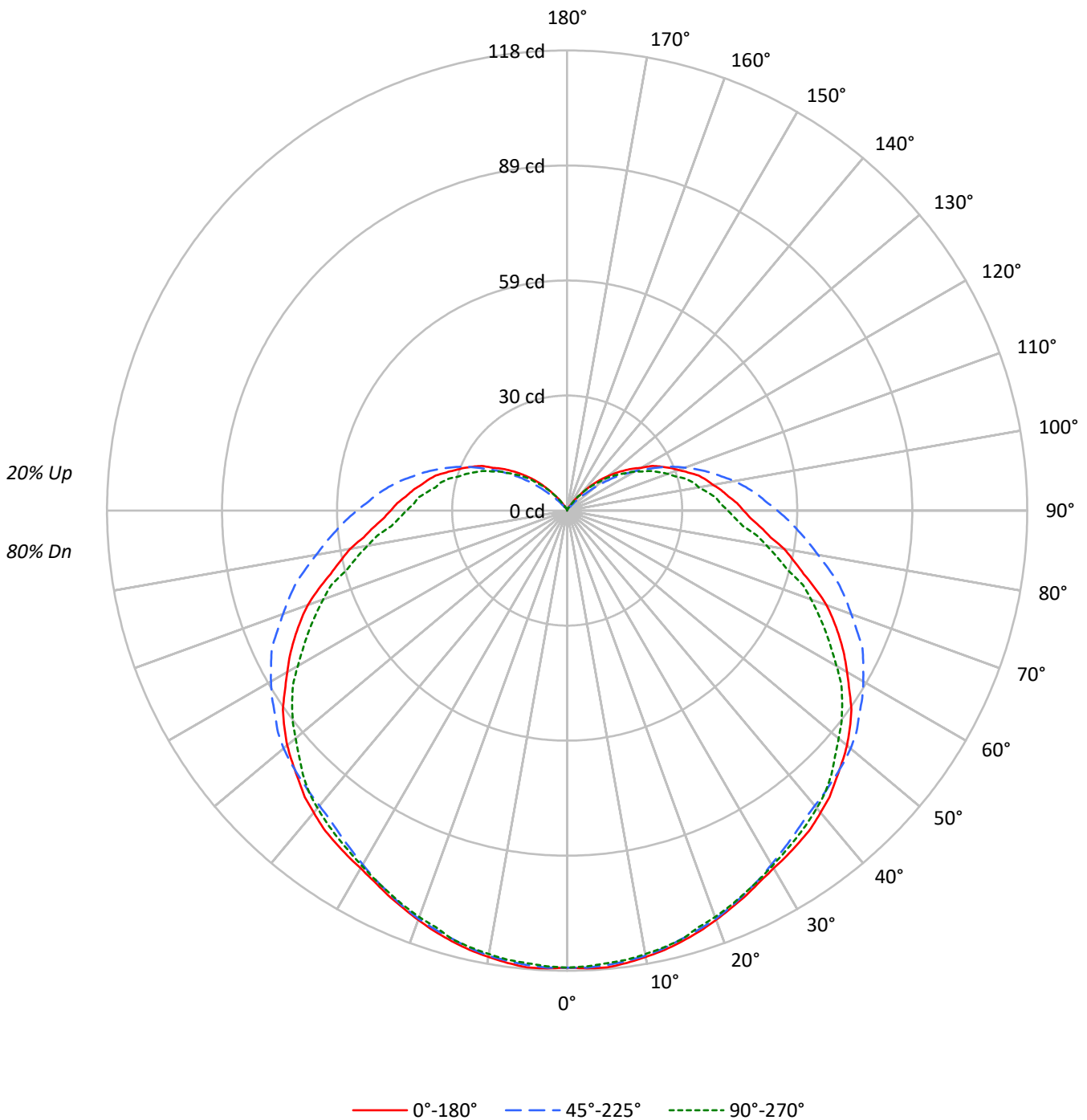
**Summary**

Lumens per Lamp: 1600 (1 lamp)  
Luminaire Lumens: 654.5 lumens  
Efficiency: 40.9%  
Efficacy: 23.4 lumens/watt  
Spacing Criteria (0/90/45): 1.37 / 1.35 / 1.55  
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			
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	47	47	47	47	45	45	45	45	41	41	41	37	37	37	34	34	34	33		
1	41	38	36	34	39	37	34	32	33	32	30	30	29	28	27	26	25	24		
2	37	32	29	26	35	31	28	25	28	26	23	25	23	22	23	21	20	19		
3	33	28	24	21	31	27	23	20	24	21	19	22	20	18	20	18	16	15		
4	30	24	20	17	28	23	20	17	21	18	16	19	17	15	17	15	14	12		
5	27	22	18	15	26	21	17	14	19	16	13	17	14	12	16	13	11	10		
6	25	19	15	13	24	18	15	12	17	14	11	15	13	11	14	12	10	9		
7	23	17	14	11	22	17	13	11	15	12	10	14	11	9	13	10	9	8		
8	22	16	12	10	20	15	12	9	14	11	9	13	10	8	12	9	8	7		
9	20	14	11	9	19	14	11	8	13	10	8	12	9	7	11	8	7	6		
10	19	13	10	8	18	13	10	7	12	9	7	11	8	7	10	8	6	5		

**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°	11.1	1.7	0.7	0°	117	117	117	117	117	
10°-20°	32.2	4.9	2.0	5°	118	117	117	117	116	11
20°-30°	50.1	7.7	3.1	15°	114	114	114	114	114	32
30°-40°	64.3	9.8	4.0	25°	109	109	108	108	108	50
40°-50°	74.8	11.4	4.7	35°	104	103	102	102	102	65
50°-60°	79.9	12.2	5.0	45°	98	98	97	96	96	75
60°-70°	78.7	12.0	4.9	55°	89	90	91	88	86	79
70°-80°	71.1	10.9	4.4	65°	77	81	84	78	73	76
80°-90°	59.8	9.1	3.7	75°	63	69	72	67	58	67
90°-100°	48.8	7.5	3.0	85°	50	57	60	54	45	42
100°-110°	37.1	5.7	2.3	90°	45	52	54	49	41	25
110°-120°	24.9	3.8	1.6	95°	42	47	49	44	38	33
120°-130°	14.0	2.1	0.9	105°	35	36	38	34	32	37
130°-140°	5.8	0.9	0.4	115°	27	25	26	23	24	26
140°-150°	1.4	0.2	0.1	125°	18	16	15	15	16	16
150°-160°	0.4	0.1	0.0	135°	10	8	5	7	9	8
160°-170°	0.1	0.0	0.0	145°	3	2	1	2	3	2
170°-180°	0.0	0.0	0.0	155°	1	1	1	1	1	0
0°-30°	93.4	14.3	5.8	165°	0	0	0	0	0	0
0°-40°	157.7	24.1	9.9	175°	0	0	0	0	0	0
0°-60°	312.4	47.7	19.5	180°	0	0	0	0	0	0
0°-90°	522.0	79.8	32.6							
90°-120°	110.8	16.9	6.9							
90°-150°	132.1	20.2	8.3							
90°-180°	133.0	20.3	8.3							
0°-180°	654.5	100.0	40.9							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	117.2	117.2	117.2	117.2	117.2
2.5°	117.5	117.2	117.3	117.2	117.0
5°	117.6	117.0	117.0	117.1	116.5
7.5°	117.0	116.3	116.5	116.5	116.2
10°	116.2	115.9	115.9	115.9	115.5
12.5°	115.4	115.1	114.9	114.9	114.7
15°	114.3	114.2	113.7	113.9	113.8
17.5°	113.1	112.8	112.6	112.8	112.0
20°	111.7	111.7	111.4	111.5	110.9
22.5°	110.2	110.1	109.9	109.9	109.6
25°	108.8	108.7	108.2	108.1	108.1
27.5°	107.2	107.3	106.6	106.5	106.7
30°	105.9	105.5	104.8	105.1	105.2
32.5°	104.9	104.0	103.1	103.8	103.8
35°	103.8	102.9	101.5	102.2	102.5
37.5°	102.7	101.8	99.9	100.8	101.1
40°	101.1	100.3	98.8	99.5	99.6
42.5°	99.6	99.0	97.9	97.8	98.0
45°	97.5	97.5	96.9	96.2	95.8
47.5°	95.6	95.6	96.0	94.1	93.2
50°	93.7	94.0	94.9	92.1	90.9
52.5°	91.4	92.0	93.5	90.1	88.7
55°	89.0	89.9	91.4	87.9	86.1
57.5°	85.8	88.1	89.7	85.8	83.4
60°	82.9	85.7	87.7	83.5	79.8
62.5°	80.1	83.3	85.6	81.1	76.3
65°	77.1	80.8	83.6	78.5	73.1
67.5°	74.0	78.4	80.4	76.1	69.8
70°	70.8	75.6	77.5	72.7	66.6
72.5°	66.8	72.6	74.8	70.0	63.4
75°	62.8	69.4	72.0	66.9	58.4
77.5°	59.5	66.3	68.6	63.8	55.2
80°	56.5	63.0	65.3	60.8	52.0
82.5°	52.6	60.2	62.4	57.0	49.1
85°	49.9	56.8	59.5	54.4	45.2
87.5°	47.2	53.9	56.8	51.5	43.0
90°	45.2	51.7	53.9	48.8	41.2
92.5°	43.6	48.8	51.1	46.7	39.4
95°	41.5	46.6	48.8	43.8	38.3
97.5°	39.9	43.9	46.2	41.5	36.2
100°	38.0	41.1	43.5	38.5	34.3
102.5°	36.5	38.4	40.5	36.3	33.2
105°	34.8	36.0	37.9	33.6	31.5
107.5°	32.5	33.6	35.0	30.9	29.1
110°	30.4	30.7	32.2	28.4	27.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	28.6	28.0	29.4	25.6	25.7
115°	26.6	25.4	26.2	23.2	24.0
117.5°	24.8	22.6	23.0	21.1	21.7
120°	21.9	20.4	20.3	18.3	20.0
122.5°	20.0	17.6	17.4	16.3	17.9
125°	17.9	15.7	14.8	14.6	16.1
127.5°	15.9	13.7	12.0	12.2	14.5
130°	13.8	11.8	9.3	10.7	12.7
132.5°	11.9	9.5	6.8	9.0	10.5
135°	10.0	7.9	4.9	7.2	8.9
137.5°	7.6	6.0	3.3	5.6	7.2
140°	5.8	4.5	2.0	4.3	5.6
142.5°	4.3	3.2	1.4	3.1	4.2
145°	3.1	2.0	1.1	2.0	2.9
147.5°	1.9	1.3	1.0	1.2	1.9
150°	1.3	1.0	1.0	0.9	1.1
152.5°	1.0	0.8	0.9	0.7	0.8
155°	0.8	0.8	0.7	0.7	0.8
157.5°	0.8	0.6	0.7	0.6	0.8
160°	0.6	0.6	0.5	0.6	0.6
162.5°	0.6	0.6	0.5	0.6	0.6
165°	0.5	0.5	0.4	0.5	0.5
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
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)