

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: 766690

Luminaire Tested: **QDDWPP28xxxx**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: 766690
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: QDDWPP28xxxx
Description: FAIL-SAFE WHITE DECORATIVE
Light Source: #038 - PHILIPS PL-C 15mm/28W/27 1600 LUMENS
TOTAL INPUT WATTS = 32.5 AT 120 VOLTS
Ballast/Driver: ONE ROBERTSON #028C

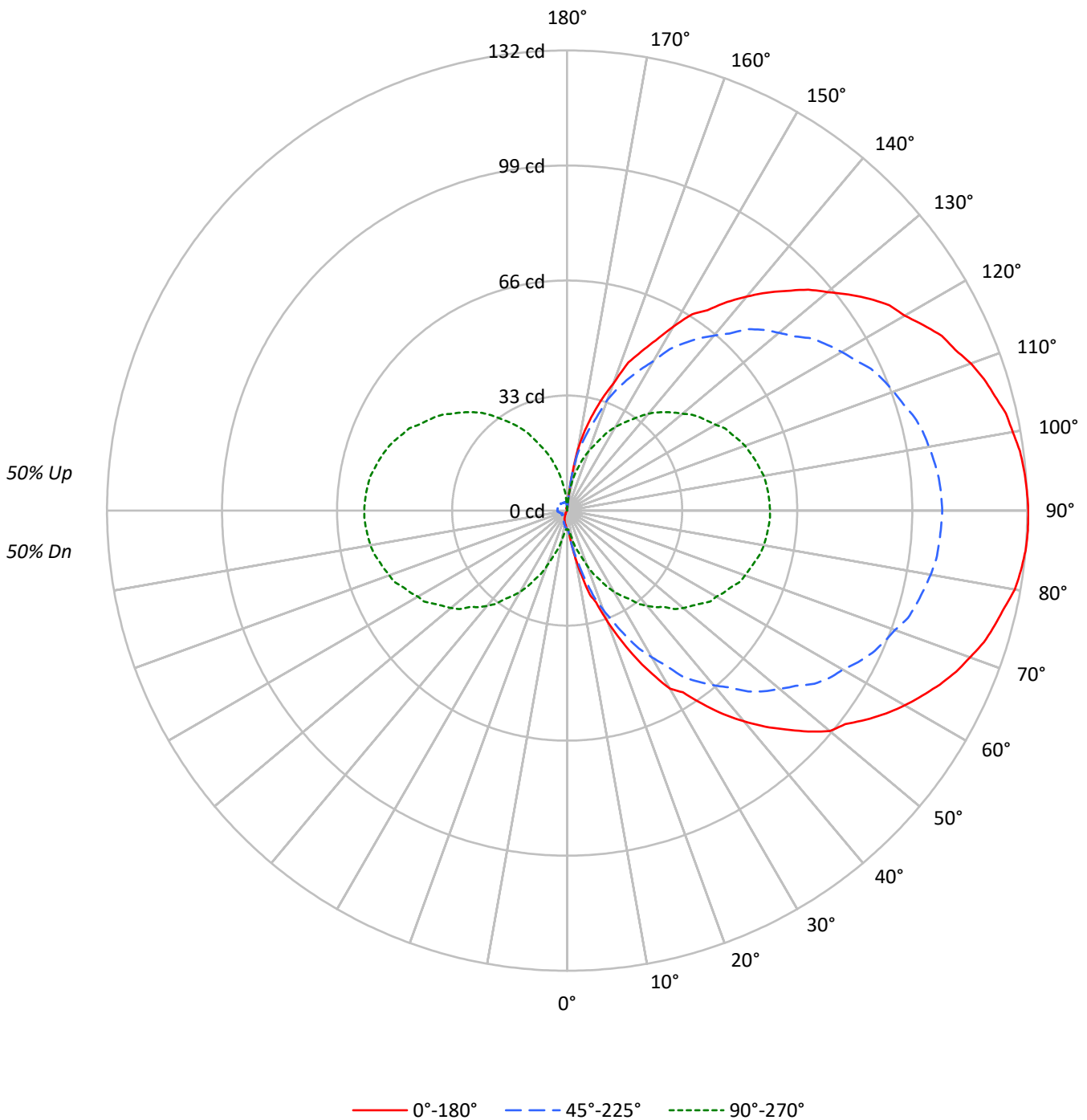
Summary

Lumens per Lamp: 1600 (1 lamp)
Luminaire Lumens: 574.3 lumens
Efficiency: 35.9%
Efficacy: 20.5 lumens/watt
Spacing Criteria (0/90/45): 5.25 / 5 / 4.64
Luminous Opening: Point Source (0' x 0' x 0')
CIE Type: General Diffuse

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	38	38	38	38	35	35	35	35	30	30	30	25	25	25	20	20	20	18
1	33	31	28	26	30	28	26	24	23	22	20	19	17	16	14	14	13	11
2	29	26	22	20	27	23	21	18	19	17	15	15	14	12	12	10	9	7
3	26	22	18	16	24	20	17	14	16	14	12	13	11	9	10	8	7	5
4	24	19	15	13	21	17	14	12	14	11	9	11	9	7	8	7	5	4
5	22	17	13	10	19	15	12	10	12	10	8	10	8	6	7	6	4	3
6	20	15	11	9	18	13	10	8	11	8	7	9	7	5	6	5	4	3
7	18	13	10	7	16	12	9	7	10	7	6	8	6	4	6	4	3	2
8	17	12	9	6	15	11	8	6	9	6	5	7	5	4	5	4	3	2
9	15	11	8	6	14	10	7	5	8	6	4	6	4	3	5	3	2	1
10	14	10	7	5	13	9	6	4	7	5	4	6	4	3	4	3	2	1

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
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°	45°	90°	135°	180°	Flux
0°-10°	0.6	0.1	0.0	0°	6	6	6	6	6	
10°-20°	3.7	0.6	0.2	5°	6	7	6	5	4	1
20°-30°	10.3	1.8	0.6	15°	25	21	12	4	3	7
30°-40°	19.9	3.5	1.2	25°	47	40	22	3	1	22
40°-50°	31.1	5.4	1.9	35°	68	58	31	2	0	43
50°-60°	42.6	7.4	2.7	45°	89	73	39	2	0	69
60°-70°	52.7	9.2	3.3	55°	105	87	47	2	0	94
70°-80°	60.5	10.5	3.8	65°	118	97	52	2	0	117
80°-90°	64.7	11.3	4.0	75°	127	104	56	2	0	134
90°-100°	64.7	11.3	4.0	85°	132	107	58	3	0	107
100°-110°	60.5	10.5	3.8	90°	132	108	58	3	0	72
110°-120°	52.9	9.2	3.3	95°	132	107	58	3	0	107
120°-130°	42.7	7.4	2.7	105°	127	103	56	3	0	134
130°-140°	31.5	5.5	2.0	115°	119	96	52	3	0	117
140°-150°	20.4	3.6	1.3	125°	106	86	47	3	0	95
150°-160°	10.9	1.9	0.7	135°	89	74	40	3	0	69
160°-170°	4.0	0.7	0.3	145°	70	59	32	2	0	45
170°-180°	0.4	0.1	0.0	155°	50	42	23	2	0	24
0°-30°	14.7	2.6	0.9	165°	29	24	13	2	1	8
0°-40°	34.6	6.0	2.2	175°	1	1	4	1	0	1
0°-60°	108.3	18.9	6.8	180°	0	0	0	0	0	
0°-90°	286.2	49.8	17.9							
90°-120°	178.1	31.0	11.1							
90°-150°	272.7	47.5	17.0							
90°-180°	288.0	50.1	18.0							
0°-180°	574.3	100.0	35.9							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
2.5°	5.6	5.7	5.6	5.6	5.4	5.3	5.1	5.1	5.0
5°	6.5	7.1	7.0	6.4	5.7	5.3	4.8	4.7	4.3
7.5°	9.6	9.5	9.9	7.9	6.7	5.4	4.7	4.2	4.0
10°	14.0	13.8	12.9	11.3	8.4	5.9	4.2	3.9	3.7
12.5°	18.9	17.7	16.3	14.0	10.6	6.5	3.9	3.4	3.1
15°	24.8	23.1	21.1	16.9	12.3	7.3	3.6	2.9	2.8
17.5°	27.6	27.9	26.2	20.2	14.3	8.2	3.3	2.6	2.5
20°	33.8	32.8	30.3	25.0	16.8	9.0	2.9	2.2	1.9
22.5°	40.1	37.4	34.5	28.3	19.6	10.1	2.8	1.9	1.6
25°	46.6	43.5	39.6	31.7	21.6	11.3	2.8	1.7	1.2
27.5°	52.8	49.5	44.6	35.7	24.4	12.6	2.5	1.4	0.9
30°	59.0	54.2	48.6	39.7	26.9	13.7	2.3	0.9	0.6
32.5°	61.8	58.8	52.6	42.8	28.9	14.9	2.2	0.6	0.6
35°	67.7	63.3	58.4	45.8	30.9	16.0	2.2	0.5	0.0
37.5°	73.6	69.9	61.9	50.5	33.7	17.2	2.0	0.3	0.0
40°	78.9	74.1	65.4	53.2	35.7	18.3	2.0	0.0	0.0
42.5°	84.1	78.1	68.8	56.0	37.6	19.4	1.9	0.0	0.0
45°	88.8	81.7	73.4	58.4	39.0	20.3	1.6	0.0	0.0
47.5°	93.8	87.4	76.7	62.6	41.8	21.7	1.7	0.0	0.0
50°	98.4	91.0	79.6	65.0	43.5	22.5	1.9	0.0	0.0
52.5°	100.6	94.2	82.6	67.4	44.9	23.6	1.9	0.0	0.0
55°	104.6	97.3	86.6	70.2	46.6	24.7	1.9	0.0	0.0
57.5°	108.4	101.8	89.3	73.0	48.6	25.3	1.7	0.0	0.0
60°	111.8	104.5	91.3	74.7	49.4	25.6	1.6	0.0	0.0
62.5°	114.9	107.0	94.1	76.4	50.8	26.7	1.7	0.0	0.0
65°	118.0	110.1	96.6	78.6	51.9	27.2	1.7	0.0	0.0
67.5°	120.8	112.7	98.4	80.6	53.6	27.9	2.0	0.0	0.0
70°	123.0	114.7	100.1	82.0	54.3	28.4	2.0	0.0	0.0
72.5°	125.4	116.9	102.5	83.5	55.1	29.2	2.2	0.0	0.0
75°	127.0	118.4	103.7	84.8	55.9	29.5	2.2	0.0	0.0
77.5°	128.5	120.0	104.8	86.0	56.8	30.0	2.3	0.0	0.0
80°	130.4	121.2	105.9	86.8	57.3	30.6	2.5	0.0	0.0
82.5°	131.3	122.0	106.8	87.4	57.6	30.7	2.5	0.0	0.0
85°	132.0	122.8	107.1	87.9	57.9	31.0	2.8	0.0	0.0
87.5°	132.3	123.3	107.4	88.2	58.2	31.0	2.8	0.0	0.0
90°	132.3	123.3	107.6	88.6	58.2	31.2	2.8	0.0	0.0
92.5°	132.0	123.3	107.4	88.3	58.1	31.2	2.8	0.0	0.0
95°	131.6	122.6	107.0	87.9	57.9	31.0	2.8	0.0	0.0
97.5°	131.0	122.0	106.3	87.2	57.6	30.9	2.8	0.0	0.0
100°	129.8	121.2	105.4	86.6	57.3	30.7	2.8	0.0	0.0
102.5°	128.9	119.8	104.5	85.5	56.5	30.4	2.8	0.0	0.0
105°	127.0	118.3	103.2	84.6	55.9	30.0	2.8	0.0	0.0
107.5°	125.4	116.6	101.2	83.5	55.1	29.5	2.8	0.0	0.0
110°	123.3	114.4	99.7	82.0	54.3	29.2	2.8	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	120.5	112.6	98.1	80.3	53.2	28.7	2.8	0.0	0.0
115°	118.6	110.4	96.2	78.7	52.0	27.8	2.8	0.0	0.0
117.5°	115.2	107.4	93.3	77.0	51.1	27.2	2.8	0.0	0.0
120°	111.8	104.0	91.0	74.7	49.2	26.5	2.6	0.0	0.0
122.5°	109.6	101.2	88.5	72.2	47.8	25.9	2.6	0.0	0.0
125°	105.9	98.3	86.0	70.2	46.6	24.8	2.6	0.0	0.0
127.5°	101.8	95.0	82.1	67.8	45.2	23.9	2.5	0.0	0.0
130°	97.5	91.1	79.3	65.0	43.2	23.1	2.3	0.0	0.0
132.5°	93.8	87.1	76.7	62.9	41.6	22.5	2.6	0.0	0.0
135°	89.1	83.5	73.6	59.8	39.9	21.4	2.6	0.0	0.0
137.5°	84.8	79.8	68.9	57.1	38.2	20.2	2.8	0.0	0.0
140°	80.1	75.9	65.5	54.3	36.3	19.1	2.6	0.0	0.0
142.5°	75.4	70.0	62.3	50.8	34.0	18.2	2.6	0.0	0.0
145°	70.2	66.0	58.7	47.0	31.7	17.1	2.5	0.2	0.0
147.5°	66.8	61.8	55.0	44.1	29.7	15.7	2.5	0.2	0.0
150°	60.9	57.6	49.5	41.1	27.6	14.6	2.5	0.2	0.0
152.5°	55.0	53.1	45.6	37.9	25.5	13.2	2.5	0.5	0.0
155°	50.3	46.6	41.8	33.8	22.8	12.1	2.5	0.5	0.0
157.5°	46.0	42.1	37.9	30.7	20.2	11.0	2.3	0.6	0.3
160°	38.8	37.4	33.8	26.7	18.2	9.9	2.5	0.6	0.3
162.5°	33.8	32.9	27.9	23.4	16.0	8.5	2.5	0.8	0.6
165°	28.6	27.3	23.9	20.0	13.4	7.6	2.5	0.9	0.6
167.5°	23.6	21.6	19.9	16.9	11.3	6.2	2.5	1.1	0.6
170°	17.7	16.5	15.7	12.7	8.7	5.3	2.5	1.2	0.9
172.5°	9.6	10.4	9.9	8.2	6.2	4.0	2.2	1.2	0.9
175°	0.6	0.3	0.9	3.6	3.6	2.0	1.1	0.6	0.3
177.5°	0.0	0.2	0.2	0.2	0.2	0.5	0.3	0.0	0.0
180°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

(END OF REPORT)